

Operator
manual

Installation and Operating Instruction

Mobile Hotwater High Pressure Cleaners

Series HD Etronic I



HD523 Standard (DE/UK)



HD623 Standard (DE/UK)
 HD640 Standard (DE)



HD623 Premium (DE/UK)
 HD640 Premium (DE)

Series HD Etronic II



HD823 Standard (DE/UK)
 HD940 Standard (DE)
 HD1140 Standard (DE)
 HD1240 Standard (DE)
 HD923 Standard (UK)



HD823 Premium (DE/UK)
 HD940 Premium (DE)
 HD1140 Premium (DE)
 HD1240 Premium (DE)
 HD923 Premium (UK)

HDE-Series



HDE840-12 KW Standard
 HDE840-18 KW Standard
 HDE840-24 KW Standard



HDE840-12 KW Premium
 HDE840-18 KW Premium
 HDE840-24 KW Premium

Declaration of Conformity

Manufacturer:

Ehrle GmbH

Address:

**Industriestraße 3
D – 89165 Dietenheim**

Product:
Mobile Hotwater High Pressure Cleaners

**Series Etronic I (DE/UK)
Series Etronic II (DE/UK)
HDE-Series (DE)
each Standard/Premium**

The product given below is in conformity with the European Directives:

Relevant EC Directives:

2000/14/EG
2006/42/EG
2011/65/EU
2014/30/EU

Applied harmonized standards:

EN 60335-1
EN 60335-2-79
EN 50581
EN 55014-1: 2018-08
EN 55014-2: 2015
EN 62233: 2008
EN IEC 61000-3-2: 2019-12
EN 61000-3-3: 2020-07

Conformity procedures applied:

2000/14/EG: Anhang V

**This product is used like
follows marked:**

**UK UK
CA NI**

CE EAC CE-0085

Illertissen, 15.01.2023

Development



**Christoph Nöldner
Head of Development**



**Reiner Ehrle
CEO**

Inhaltsverzeichnis

1	User information	
1.1	General	7
1.2	Functional device concept.....	7
1.3	Terminology.....	8
1.4	Meaning of the emphasis.....	8
1.5	Meaning of the symbols.....	8
1.6	Target group.....	10
1.7	Warranty and Liability.....	10
1.8	Environmental protection.....	11
2	Safety	
2.1	General safety information.....	13
2.2	Authorized persons for device access.....	13
2.3	Safety instructions for cleaning operation.....	13
2.4	Accident prevention regulations.....	16
2.5	Lifting and moving loads.....	16
2.6	Periodic inspections.....	16
2.7	Guidelines for pressure vessels and steam boiler regulation.....	16
2.8	Operator obligations.....	16
2.9	Manufacturer tests and certificates.....	16
2.10	Federal Immission Control Act.....	17
2.11	Guidelines for liquid sprayers	17
2.12	Design changes to the device.....	17
2.13	Safety devices.....	17
3	Product information	
3.1	Device views HD523 / HD523-UK Standard (Etronic I)	19
3.2	Device views HD623 / HD623-UK / HD640 Standard (Etronic I)	20
3.3	Device views HD623 / HD623-UK HD640 Premium (Etronic I)	21
3.4	Device views HD823 / HD823-UK / HD940 HD923-UK Standard (Etronic II).....	22
3.5	Device views HD823 / HD823-UK HD940 HD923-UK Premium (Etronic II)	23
3.6	Device views HD1140 / HD1240 Standard (Etronic II).....	24
3.7	Device views HD1140 / HD1240 Premium (Etronic II).....	25
3.8	Device views HDE840 Standard, HDE-Series 12 KW/18 KW/24 KW	26
3.9	Device views HDE840 Premium, HDE-Serie 12 KW/18 KW/24 KW	27
3.10	Type plates	28
3.10.1	Series Etronic I, Standard	28
3.10.2	Series Etronic I, Premium	29
3.10.3	Series Etronic II, Standard	30
3.10.4	Series Etronic II, Premium	31
3.10.5	HDE-Series, Standard	32
3.10.6	HDE-Series, Premium	33
3.11	Serial number	33

3.12	Technical data.....	34
3.12.1	Mobile hotwater high pressure cleaners, oil heated, Series Etronic I.....	34
3.12.2	Mobile hotwater high pressure cleaners, oil heated, UK Series Etronic I.....	36
3.12.3	Mobile hotwater high pressure cleaners, oil heated, Series Etronic II	38
3.12.4	Mobile hotwater high pressure cleaners, oil heated, UK Serie Etronic II.....	40
3.12.5	Mobile hotwater high pressure cleaners, electric heated, HDE-Series.....	42
4	Device assembly	
4.1	Accessories for Series Etronic I / Etronic II and HDE-Series (Standard)	45
4.2	Accessories for Series Etronic I / Etronic II and HDE-Serie (Premium)	46
4.3	Device assembly	47
4.3.1	Device version Standard	47
4.3.2	Device version Premium	50
5	Commissioning	
5.1	Select location for device operation	55
5.2	Establishing the water connection	55
5.3	Fuel supply for Series Etronic I / Etronic II.....	56
5.4	Establishing the electrical mains connection	56
5.5	Commissioning the device.....	59
6	Operation	
6.1	Control and indicator elements of the device.....	60
6.1.1	HD523 / HD523-UK Standard (Series Etronic I)	60
6.1.2	HD623 / HD623-UK / HD640 Standard (Series Etronic I).....	61
6.1.3	HD823 / HD823-UK / HD940 / HD923-UK Standard (Series Etronic II)	62
6.1.4	HD1140 / HD1240 Standard (Series Etronic II).....	63
6.1.5	HDE840 (12 KW/18 KW/24 KW) Standard (HDE-Series).....	64
6.2	Control elements of the trigger gun.....	64
6.3	EMERGENCY STOP switch-off in case of danger.....	65
6.4	Commissioning.....	66
6.4.1	Cleaning operation with HD523/HD523-UK (Etronic I).....	68
6.4.2	Cleaning operation with HD623/HD623-UK HD640 (Etronic I).....	69
6.4.3	Cleaning operation with HD823, HD823-UK, HD940 and HD923-UK (Etronic II)	70
6.4.4	Cleaning operation with HD1140/HD1240 (Etronic II)	71
6.4.5	Cleaning operation with HDE840 (HDE-Series 12 KW/18 KW/24 KW)	72
6.5	Operation with cleaning detergent (chemistry)	73
6.5.1	Cleaning detergent operation with HD523 Standard (optional equipment required).....	75
6.5.2	Cleaning detergent operation with HD623 to HD1240 and HDE-Series.....	76
6.6	Special application of detergent agents for food appliance (only version Premium).....	77
7	Decommissioning	
7.1	Temporary decommissioning	79
7.2	Decommissioning for a longer period of time.....	80

8	Maintenance	
8.1	General Information	81
8.2	EHRLE Maintenance and Inspection Contract	81
8.3	Maintenance work.....	81
8.3.1	Frost Protection	83
8.3.1.1	Drain water from high pressure cleaner	83
8.3.1.2	Rinse high pressure cleaner with antifreeze agent	83
8.3.2	Filter on the adapter connection water inlet	84
8.3.3	Checking the HP-Hoses	84
8.3.4	Oil change.....	84
9	Troubleshooting	
9.1	Troubleshooting table.....	85

Device overview

Series	Device	Version
Etronic I, oil heated	HD523, HD523-UK	Standard
	HD623, HD623-UK	Standard and Premium
	HD640	Standard and Premium
Etronic II, oil heated	HD823, HD823-UK	Standard and Premium
	HD940	Standard and Premium
	HD1140	Standard and Premium
	HD1240	Standard and Premium
	HD923-UK	Standard and Premium
HDE-Serie, electric heated	HDE840 12 KW	Standard and Premium
	HDE840 18 KW	Standard and Premium
	HDE840 24 KW	Standard and Premium

1 User information

1.1 General



General Information

For a comprehensive advice and information on the Mobile Hotwater High Pressure Cleaners of the Series Etronic I/II and HDE-Series please contact the EHRLE Customer Service.

With the purchase of a EHRLE Mobile Hotwater High Pressure Cleaner of the Series Etronic I/II and HDE-Series you are the owner of a quality product, which is characterised by:

- user-friendliness,
- reliability,
- environmental friendliness.

These Installation and Operating Instruction are part of the Mobile Hotwater High Pressure Cleaners of the Series Etronic I/II and HDE-Series and must be kept at the operating site and available at all times.

For the Mobile Hotwater High Pressure Cleaners of the Series Etronic I/II and HDE-Series, the manual contains information on

- User information
- Safety
- Product information
- Device assembly
- Commissioning, Decommissioning
- Operation
- Maintenance
- Troubleshooting

The German Installation and Operating Instruction are the original version.

1.2 Functional device concept

Due to the specific constructive properties the high pressure cleaners can be used in a variety of ways in all conceivable industries depending on type, for example:

- Industrial plants or installations (e.g. plants, machines, tools)
- Businesses, shopping centres, food industry, etc.
- Buildings (e.g. floors, facades)
- Construction companies (structural engineering, underground construction and road construction)
- Agricultural buildings and machinery
- Vehicles (cars, trucks, construction site vehicles, construction machinery)
- Public facilities (swimming pools, airports, sanitary facilities).

1.3 Terminology

In this manual the terminology listed below is replaced by the relevant short terms whenever possible

- Mobile Hotwater High Pressure Cleaners of the Series Etronic I/II and HDE-Series high pressure cleaner or device
- Installation and Operating Instruction manual
- High pressure hose HP-Hose

If a clear reference to a subject is required in the description parts, the terminology „Mobile Hotwater High Pressure Cleaners of the Series Etronic I/II and HDE-Series“ is used.

1.4 Meaning of the emphasis

The emphasis used in this manual have the following meanings:

WARNING

Warning precedes operating procedures, instructions, etc., which, if not strictly observed, could result in personal injury or loss of life. Warning precedes also, when device misuse could result in personal injury or loss of life.



CAUTION







Caution precedes operating procedures, instructions, etc., which, if not strictly observed, could result in damage to the high pressure cleaner. Caution precedes also, when device misuse could result in damage to the high pressure cleaner.








This symbol indicates additional information.

1.5 Meaning of the symbols

Symbol	Meaning
	<p>WARNING Follow instructions!</p> <p>Non-observance or neglecting of prescribed instructions, incorrect operation or misuse of the device may endanger life and limb of persons.</p>
	<p>WARNING Danger of death due to electric shock.</p> <p>Do not open the device. During operation, dangerous voltages are present on live parts of the device. Touching live parts can lead to life-threatening injuries.</p>

Symbol	Meaning
	<p>WARNING Danger of burns and scalds.</p> <p>When operating with a water temperature of up to 98 °C or even higher water vapour temperatures, the cleaning objects, the hot water emerging from the trigger gun or device components can become hot.</p> <p>Touching hot surfaces, hot water or the hot water vapour can cause burns or scalding of the skin surface.</p> <p>Make sure surfaces have cooled before touching.</p>
	<p>WARNING Explosion hazard due to use of unauthorised cleaning agents.</p> <p>Never aspirate liquids containing solvents such as paint thinners, petrol, oil or similar liquids.</p> <p>The spray mist of solvents is highly flammable, explosive and toxic.</p> <p>Follow the instructions of the additive manufacturer!</p>
	<p>WARNING Danger with heavy loads.</p> <p>A person is not allowed to lift and move loads more than 23 kg.</p> <p>Otherwise the health of persons may be endangered (e.g. overload of the spinal column, injuries from falling loads).</p> <p>For loads of more than 23 kg, use suitable lifting equipment (e.g. forklift truck, lift truck).</p>
	<p>CAUTION Observe instructions for installation, device adjustment, operation, maintenance and repair.</p> <p>Non-observance or neglecting prescribed instructions, incorrect operation or misuse of the device may result in damage to device parts, assemblies or components.</p>
	<p>General Information General additional information.</p>
	<p>Information on recycling General information on recycling.</p>

Symbol	Meaning
	<p>Information on disposal General information on the professional and environmentally sound disposal of old appliances, assemblies, components, materials and consumables. The symbol with the crossed-out dustbin indicates that.</p>
	<p>Information on hearing protection General information on hearing protection.</p>
	<p>Requires direct action.</p>
	<p>Result after an action.</p>
	<p>Itemisation</p>

1.6 Target group

These Installation and Operating Instruction contain information and instructions for operators on how to carry out

- device mounting in the delivery state
- general cleaning works
- specific cleaning tasks such as
 - oil-smearred surfaces
 - tarred surfaces
 - greasy surfaces
 - chemically contaminated surfaces.

1.7 Warranty and Liability

The EHRLE Mobile Hotwater High Pressure Cleaners of the Series Etronic I/II and HDE-Series may only be used for its intended purpose.

Intended use includes:

- Operation only by authorised persons who
 - are instructed and trained on the device, or
 - have completely read and understood the information and instructions in these Installation and Operating Instruction and can therefore guarantee safe handling of the device.

- The information and instructions contained in this Manual must be observed.
- If the safety and protective devices are faulty, the high pressure cleaner must not be put into operation.
- The high pressure cleaner may only be operated with fully functional safety and protective devices. In the event of functional failures during operation, the high pressure cleaner must be taken out of operation immediately.
- Faulty, insufficient or defective high pressure cleaners must not be put into operation. Before commissioning, carry out a visual inspection for faulty or defective
 - device parts, assemblies or components
 - electrical cables
 - HP-Hoses.
- The high pressure cleaner must be switched off immediately and taken out of operation if defects, faults or deficiencies occur on
 - device parts, assemblies or components
 - electrical cables
 - HP-Hoses.
- No constructive changes may be made to the device.
- The device may only be operated in the configuration certified by the manufacturer. Operation with subsequently installed modules, components or additional devices is not permitted and may endanger life and limb of persons or lead to damage to the device.
- Only original parts from the manufacturer or consumables approved by the manufacturer may be used for maintenance and repair work.

Any warranty and liability claims for personal injury and damage to the device are void if the high pressure cleaner is not used for its intended purpose.

1.8 Environmental protection



Note on recycling

The packaging materials are recyclable. Please do not throw the packaging into the household waste, but recycle it.



Note on disposal

Old appliances, assemblies or parts contain valuable recyclable materials that should be sent for possible recovery.

The old appliances must not be disposed of together with unsorted municipal waste (household waste). The symbol with the crossed-out dustbin on the appliance indicates this obligation.

Therefore, please dispose of discarded devices, assemblies or parts properly via suitable collection systems.

Dispose of used materials in an appropriate and environmentally friendly manner. Observe the local regulations.

Old appliances contain valuable recyclable materials that should be recycled.

According to environmental regulations, waste water containing mineral oil, fuels for hot water heating or lubricants such as oils and greases must not enter the soil, water or sewerage system. Dispose of these substances properly.

Do not allow engine oil, fuel oil or petrol to escape into the environment. Protect the soil and dispose of used oil in an environmentally friendly manner.

Engine cleaning or underbody washing of all types of vehicles may only be carried out at washing stations equipped with oil separators in accordance with environmental regulations (environmental protection).

2 Safety

2.1 General safety information

Observe the respective national regulations of the legislator for liquid sprayers. Liquid sprayers must be inspected regularly and the result of the inspection must be recorded in writing.

Observe the relevant national regulations of the legislator on accident prevention.

Observe the safety data sheets and instructions of the cleaning agent manufacturers supplied with the detergents used.

Keep cleaning agents out of the reach of unauthorized persons. Risk of poisoning or caustic burns from cleaning agents! Observe the instructions on the cleaning agents.

Perform prescribed maintenance and inspection work in due time (see Section 8, Maintenance).

Safety-relevant defects must be rectified immediately.

Observe all warning and information signs attached to the unit. Keep all signs on the device legible.

2.2 Authorized persons for device access

Ensure that access to the device is only possible for the persons who

- have completely read and understood the information and instructions in this Installation and Operating Instruction and can therefore guarantee safe handling of the device or
- are instructed and trained on the device.

Children as well as persons with reduced physical, sensory or mental abilities are not allowed to operate the device.

2.3 Safety instructions for cleaning operation

During cleaning work, the personnel at the workplace must wear the necessary Personal Protective Equipment (PPE). This includes waterproof protective suits, rubber boots, protective goggles, headgear, ear protection if necessary, etc.

No cleaning work may be carried out in the presence of persons without sufficient PPE.

Before switching on, carry out a visual inspection of the device parts from the outside for damage (HP-Hose, electrical or mechanical parts). Devices with damaged parts, assemblies or components must not be put into operation.

The water jet leaving the trigger gun must not be directed at

- persons
- animals
- live electrical installations (building mains connections, sockets, electrical wiring, etc.)
- live electrical installations, machines, devices, assemblies or components
- system, machinery or equipment in operation.

Under the influence of the high pressure jet, parts can be separated from the cleaning object and thrown away. Persons can be injured as a result.

Never aim the high pressure jet at fragile or loose objects.

When cleaning tyres and their valves, keep a minimum distance of 30 cm from the high pressure nozzle. Otherwise damage may occur.

Before cleaning the high pressure cleaner itself, take the device out of operation and disconnect it from the electrical mains connection. Secure the device against unintentional or unauthorised restarting (e.g. lock main switch, disconnect mains cable from power outlet, provide warning sign indicating work on the high pressure cleaner, etc.).

Never operate the device unattended.

The device is designed for a water inlet temperature of up to 98 °C or even higher water vapour temperatures. When operated with hot water, water-carrying parts (for example pump housing, uninsulated pipes, metal parts of the trigger gun and spray lance) as well as cleaning objects may become hot. Touching hot surfaces can cause burns or scalding of the skin surface. Make sure surfaces have cooled before touching.

The hot water escaping from the trigger gun must not come into contact with the skin. After hot water operation, wait until the water has cooled down again.

Asbestos-containing and other materials containing substances hazardous to health must not be sprayed off.



Information on hearing protection.

If the sound levels exceed the permissible values, the personnel and persons in the area of exposure must wear hearing protection

The sound level for EHRLE high pressure cleaners under maximum load is 82 dB (A). A high sound level over a long period can cause hearing loss. If the noise produced by the application of the emerging high pressure jet to noise-enhancing objects exceeds the permissible values, the operating personnel and any persons affected must wear hearing protection.

Do not operate the device if electrical cables or other safety-relevant parts (pressure relief valve, HP-Hose, trigger gun, etc.) are defective.

Before changing the cleaning agent, flush out the complete high pressure system for minimum 2 minutes by pulled trigger gun. This avoids subsequent dangerous chemical reactions

Generally, Mobile High Pressure Cleaners of the Series Etronic I and Etronic II are not to be used in rooms with flammable or explosiveness atmosphere. During operation of oil fired High Pressure Cleaners in enclosure rooms, make sure that the exhaust is leaded off properly and there is sufficient fresh air circulation.

Using High Pressure Cleaners in gas-stations or other hazardous areas

- refer to the regulation of „Technical rules for flammable liquids“
- the relevant safety regulations must be observed.

For special applications in rooms with flammable or explosiveness atmosphere use only electrical heated High Pressure Cleaners of the appropriate EEx protection class.

The heating installation of the EHRLE Mobile High Pressure Cleaners of the Series Etronic I and Etronic II underlie the regulations of fire equipments. The heating installations must be inspected regularly in accordance with the respective national regulations of the legislator.

When setting them up, the locally applicable regulations must be observed.

If a Mobile Hotwater High Pressure Cleaner of the Series Etronic I is not operated in the direct field of vision of the operating personnel, a flame monitoring system must be retrofitted in accordance with DIN 4787. In the series Etronic II, flame monitoring is fitted as standard.

Aerosols can be formed when using high pressure cleaners. An aerosol is a mixture of solid or liquid suspended particles in a gas. Inhaling aerosols can be harmful for your health.

Employers are obliged to perform a hazard assessment in order to define, depending on the surface to be cleaned and the environment, protective measures necessary to prevent inhalation of aerosols.

Respiratory protection masks of class FFP 2 or above are suitable for protection against aqueous aerosols.

Using the device for longer periods can cause poor circulation in the hands due to vibrations. A general period of use cannot be set, because this depends on several influencing factors:

- Personal tendency to suffer from poor circulation (frequently cold fingers, tingling sensation in the fingers)
- Low ambient temperature. Wear warm gloves to protect your hands.
- Holding the device too tightly hindering blood circulation.
- Continuous operation is more harmful than operation interrupted by work breaks.

You should see a doctor if using the device regularly and for lengthy periods of time, and in the event of repeated occurrences of symptoms such as tingling in the fingers or cold fingers.

Exhaust gases are toxic. Never breathe in the exhaust gases. Ensure rooms where the device is operated are sufficiently ventilated and that exhaust gases can be conducted away.

Risk of burns. Never bend down over the exhaust gas opening and never reach inside it. Do not touch the heating boiler while the burner is in operation. Never close off exhaust gas openings

When operating the oil heated Mobile Hotwater High Pressure Cleaners of the Series Etronic I and Etronic II, the exhaust air and the device parts around the exhaust opening can become very hot. Do not touch or reach into these device parts around the exhaust opening. Touching the parts can cause burns to persons. Before touching, wait until the parts have cooled down after operation

During combustion, exhaust gases are produced. Do not come into contact with the exhaust gases during operation. The escaping exhaust gases are hot and toxic. Contact with the exhaust gases or inhalation can cause burns or poisoning to people.

The exhaust gas openings must never be closed or covered. There is a risk of fire, among other things, if the exhaust gas openings are covered or closed.

During operation of oil heated Mobile Hotwater High Pressure Cleaners of the Series Etronic I and Etronic II in enclosure rooms, make sure that the exhaust is led off properly and there is sufficient fresh air circulation.

Observe the local regulations on the installation and operation of the high pressure cleaners.

The HP-hose do not

- run over, pull excessively or twist
- pull over sharp edges
- repair.

Replace the defective HP-hose with an HP-hose approved by the manufacturer.

2.4 Accident prevention regulations

Observe the applicable national regulations of the legislator on accident prevention.

2.5 Lifting and moving loads

The Mobile Hotwater High Pressure Cleaners of the Series Etronic I/II and HDE-Series weigh from 118 kg to 187 kg depending on the type (with packing from approx. 139 kg to approx. 218 kg).

Lifting and moving loads is permitted for one person up to 23 kg. If the load exceeds 23 kg use suitable lifting equipment (e.g. forklift, lift trucks).

Observe the international standard „ISO 11228-1 Ergonomie - Manuelles Handhaben von Lasten - Teil 1 Heben und Tragen 05/2003“.

2.6 Periodic inspections

The periodic inspections are listed in Section 8 (Maintenance).

2.7 Guidelines for pressure vessels and steam boiler regulation

EHRLE High Pressure Cleaners comply with the German and European pressure vessel regulation and the steam boiler regulation. The water capacity is less than 10 l. The high pressure cleaner is thus free of installation regulations with respect to its boiler. For operation at temperatures higher than 100 °C, for unsupervised operation or the length of the high pressure hose exceeds 18 m, the oil burner must be equipped with a flame monitor (the HD623 and HD640 are not equipped with a flame monitor).

Observe the local planning authority regulations.

2.8 Operator obligations

The operator must ensure that before each commissioning of the liquid sprayer, its safety-relevant parts are checked for their perfect condition (safety relief valves, HP-Hoses, trigger gun, electrical cable, fuel tank etc.).

2.9 Manufacturer tests and certificates

Before delivery the high pressure cleaner passed the following factory tests:

- heat coil water pressure test with 350 bar
- high pressure cleaner factory test
(the scope of delivery encloses the factory test protocol).

2.10 Federal Immission Control Act

The heating installation (Series Etronic I and Etronic II, not HDE-Series) of the EHRLE High Pressure Cleaner underlie the regulations of fire equipments. According to these regulations oil- or gasfired high pressure cleaners have to be checked annually by your responsible district chimney sweep to ensure observance of the emission limit values. The first test must be carried out within the first four weeks after commissioning. The operator of the high pressure cleaner must arrange for the measurement to be performed.

2.11 Guidelines for liquid sprayers

The device complies with the „Guidelines for liquid sprayers“. These guidelines were published by the Federation of Institutions for Statutory Accident Insurance and Prevention and can be obtained from Carl Heymann-Verlag KG, Luxemburger Str. 449, 50939 Cologne, Germany.

High pressure cleaners must be inspected by an expert in accordance with the „Guidelines for liquid sprayers“, if necessary or at least every 12 months. The result of the test must be recorded in writing.

In the appendix of this manual there is a test sheet (proof of customer service) to record the tests carried out.

EHRLE service technicians are experts and can be consulted and commissioned by EHRLE service for this prescribed inspection.

2.12 Design changes to the device

Design changes to the high pressure cleaner are not permitted.

Inadmissibly constructively modified devices can endanger the life and limb of persons.

When operating a device which has been modified or changed in design, the device will not be used for its intended purpose. If the device is not used for its intended purpose, no liability or warranty will be accepted (see Section 1.7, Warranty and Liability).

2.13 Safety devices

Safety devices serve to protect the user and must not be suspended or circumvented in their function.

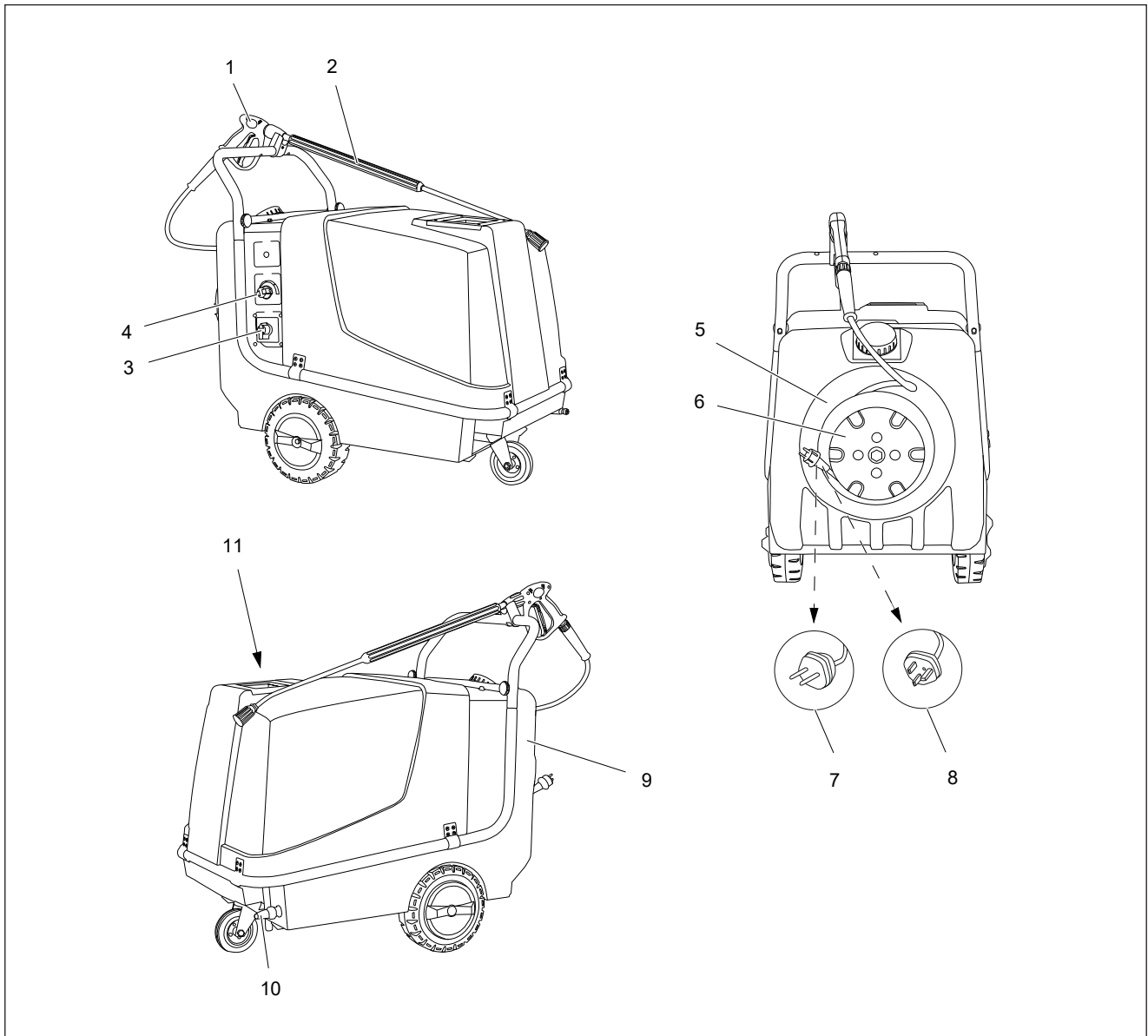
The high pressure cleaner has the following safety devices listed below:

- Pressure switches:
Device functions are switched on or off (safety functions) based on type of construction and intended use.
- Unloader valve and non-return valve:
The first serves to adjust the operating pressure and the second valve keeps the pump head depressurised when the trigger gun is deactivated.
- TSS system with pump-off delay:
After deactivating the trigger gun, the pump continues operation for approx. 30 s in the pressureless bypass mode (avoidance of too high pressure build-up in the pump); then the motor is switched off.

- **Total Switch-off:**
Automatically switches the high pressure cleaner off in the event of prolonged interruption of operation or unused trigger gun for more than 20 minutes.
- **Overload protection switch:**
When the motor current load is too high the switch releases and the device is switched off.
- **Mechanical arrest for trigger gun:**
Prevents unintentional or unconscious activating the trigger gun.
- **Thermo switch with switch-off in case of overtemperature**
(only HDE-Series).

3 Product information

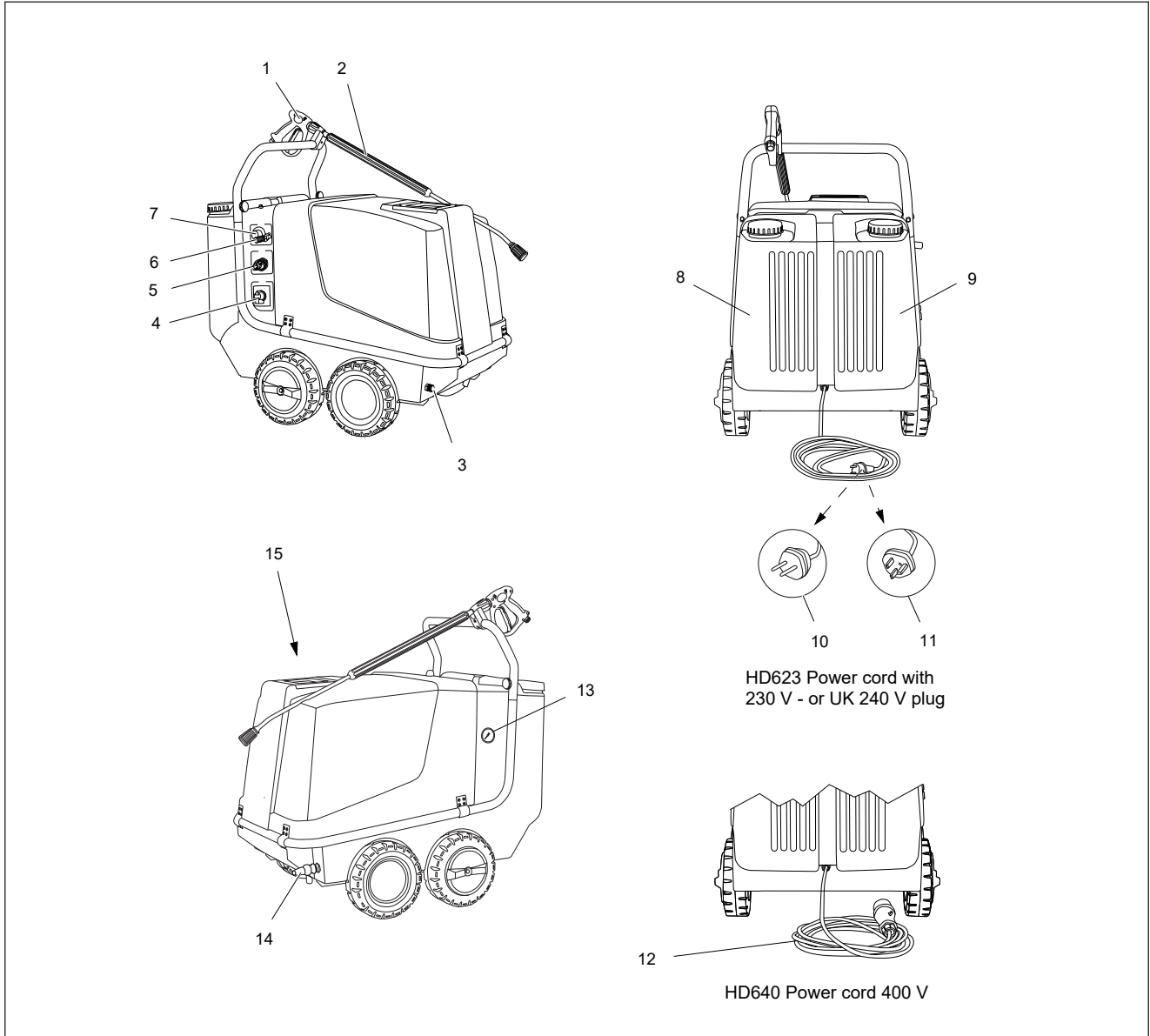
3.1 Device views HD523 / HD523-UK Standard (Etronic I)



- | | | | |
|---|---|----|-------------------------------|
| 1 | Trigger gun | 6 | Cable drum for power cord |
| 2 | Spray lance 900 mm with nozzle protection and HP spray nozzle | 7 | Power cord with 230 V plug |
| 3 | Device switch 0/1/Burner | 8 | Power cord with 240 V UK plug |
| 4 | Thermostat | 9 | Fuel tank (Diesel) |
| 5 | Hose drum for HP-hose | 10 | Water inlet with filter |
| | | 11 | Exhaust opening |

Fig. 3 - 1 HD523 / HD523-UK Standard (Etronic I), device views

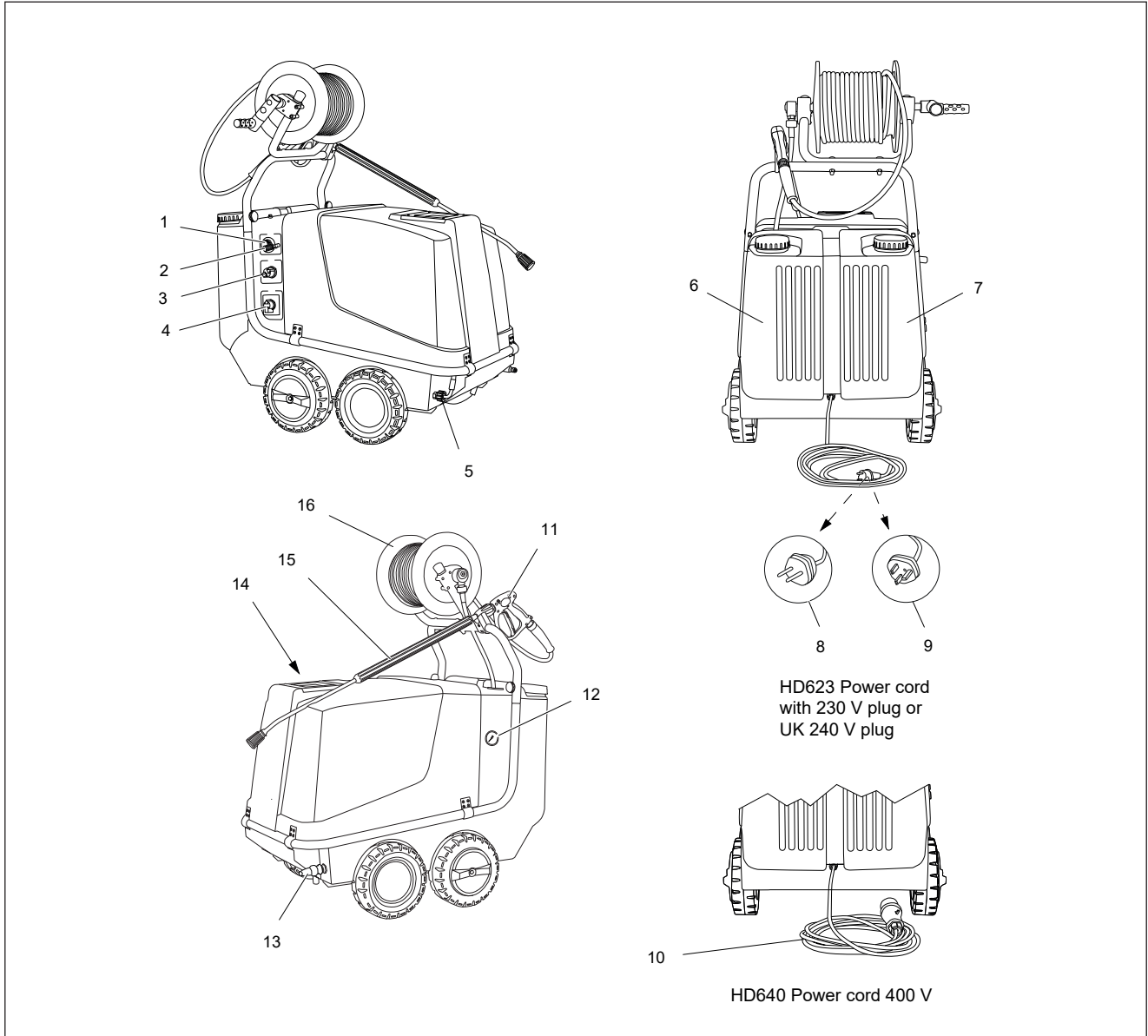
3.2 Device views HD623 / HD623-UK / HD640 Standard (Etronic I)



- | | | | |
|---|---|----|-------------------------------|
| 1 | Trigger gun | 8 | Fuel tank (Diesel) |
| 2 | Spray lance 900 mm with nozzle protection and HP spray nozzle | 9 | Detergent tank |
| 3 | High pressure outlet | 10 | Power cord with 230 V plug |
| 4 | Device switch 0/1/Burner | 11 | Power cord with 240 V UK plug |
| 5 | Thermostat | 12 | Power cord 400 V |
| 6 | Filter (detergent suction hose) | 13 | Pressure gauge |
| 7 | Detergent control valve | 14 | Water inlet with filter |
| | | 15 | Exhaust opening |

Fig. 3 - 2 HD623 / HD623-UK / HD640 Standard (Etronic I), device views

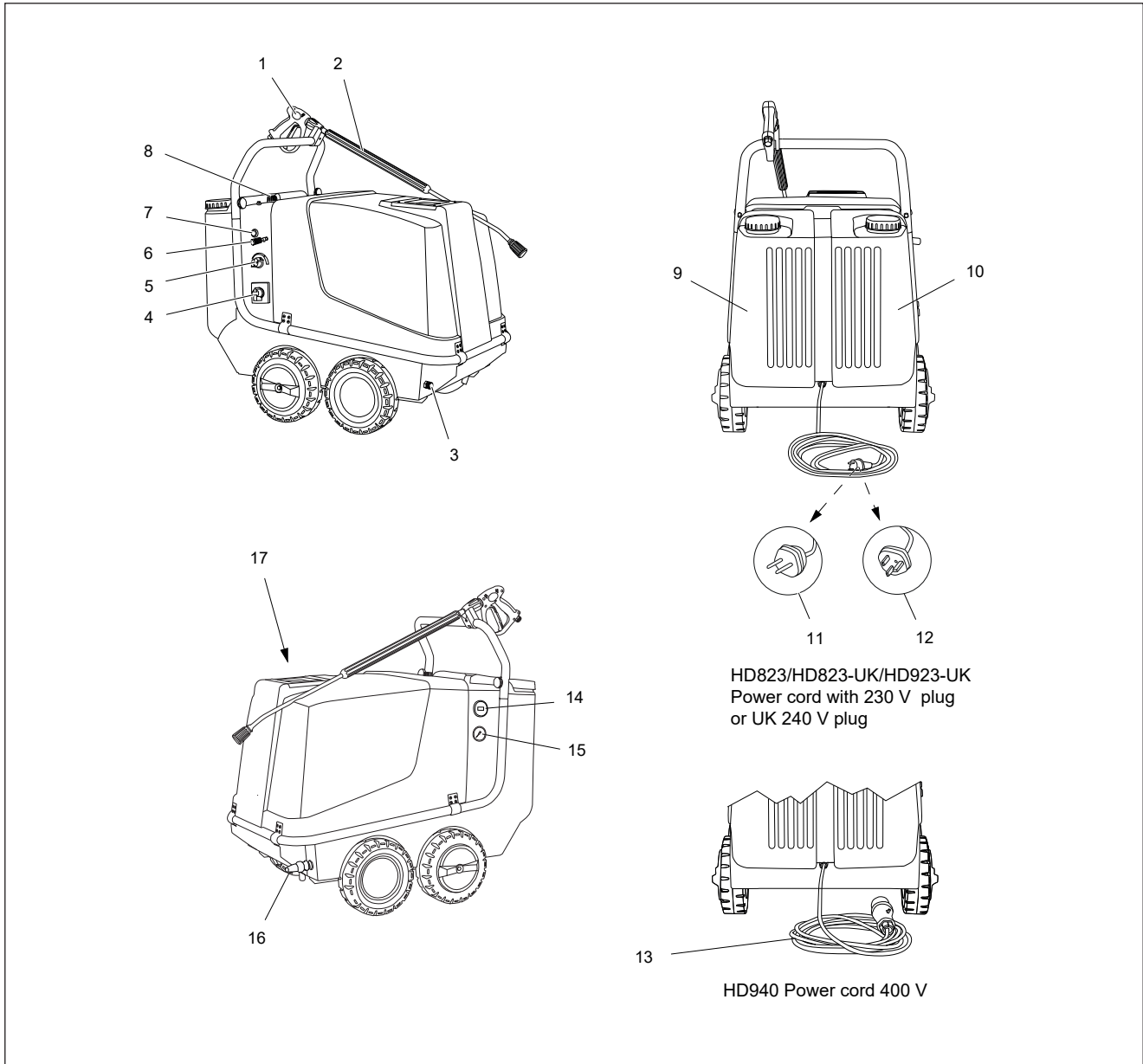
3.3 Device views HD623 / HD623-UK HD640 Premium (Etronic I)



- | | |
|-----------------------------------|--|
| 1 Detergent control valve | 10 Power cord 400 V |
| 2 Filter (detergent suction hose) | 11 Trigger gun |
| 3 Thermostat | 12 Pressure gauge |
| 4 Device switch 0/1/Burner | 13 Water inlet with filter |
| 5 High pressure outlet | 14 Exhaust opening |
| 6 Fuel tank (Diesel) | 15 Spray lance 900 mm with nozzle protection and HP spray nozzle |
| 7 Detergent tank | 16 Hose drum for HP-hose |
| 8 Power cord with 230 V plug | |
| 9 Power cord with 240 V UK plug | |

Fig. 3 - 3 HD623 / HD623-UK / HD640 Premium (Etronic I), device views

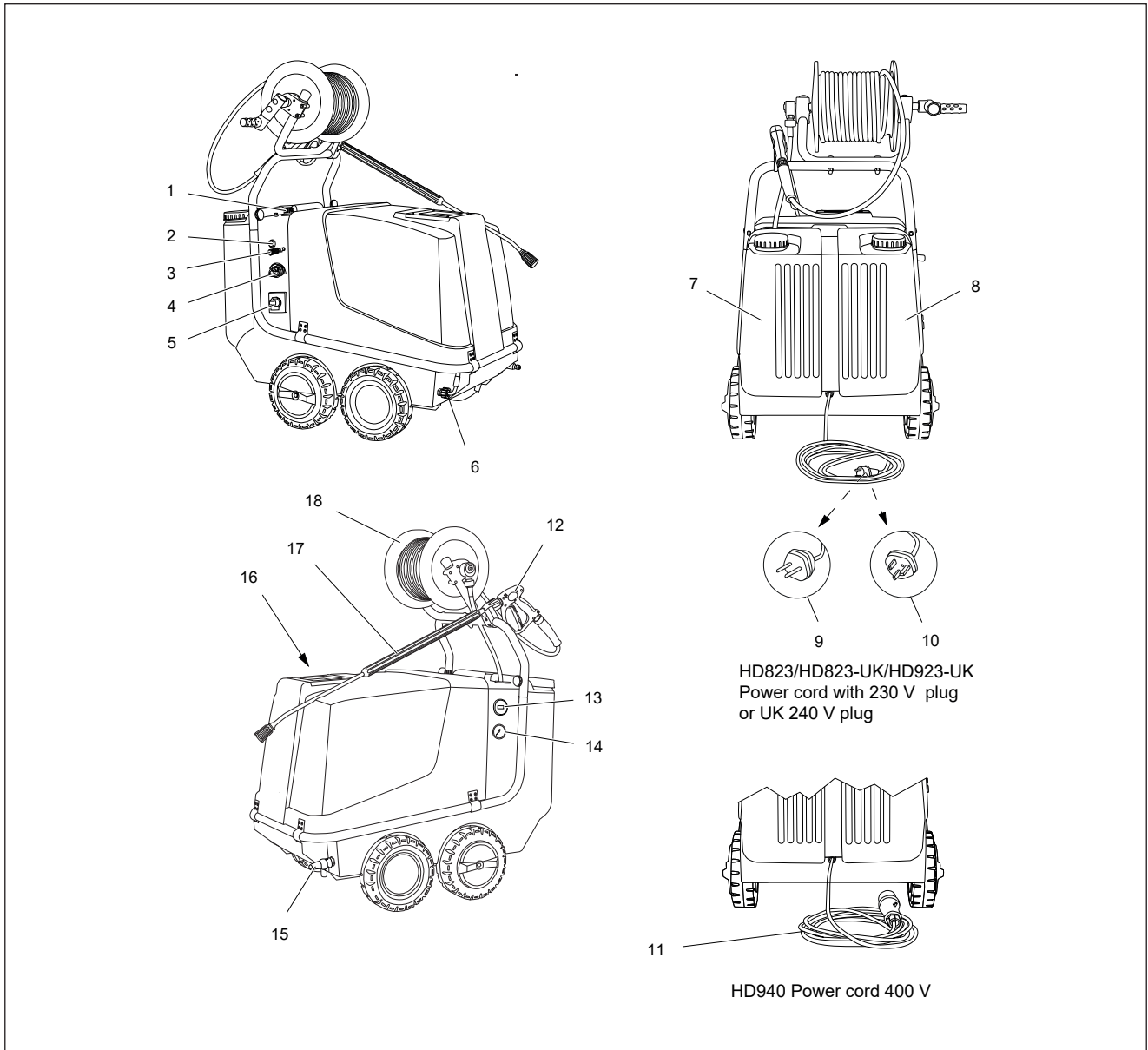
3.4 Device views HD823 / HD823-UK / HD940 HD923-UK Standard (Etronic II)



- | | |
|---|----------------------------------|
| 1 Trigger gun | 9 Fuel tank (Diesel) |
| 2 Spray lance 900 mm with nozzle protection and HP spray nozzle | 10 Detergent tank |
| 3 High pressure outlet | 11 Power cord with 230 V plug |
| 4 Device switch 0/1/Burner | 12 Power cord with 240 V UK plug |
| 5 Thermostat | 13 Power cord 400 V |
| 6 Filter (detergent suction hose) | 14 Service hour meter |
| 7 Optical flame monitoring | 15 Pressure gauge |
| 8 Detergent control valve | 16 Water inlet with filter |
| | 17 Exhaust opening |

Fig. 3 - 4 HD823 / HD823-UK / HD923-UK / HD940 Standard (Etronic II), device views

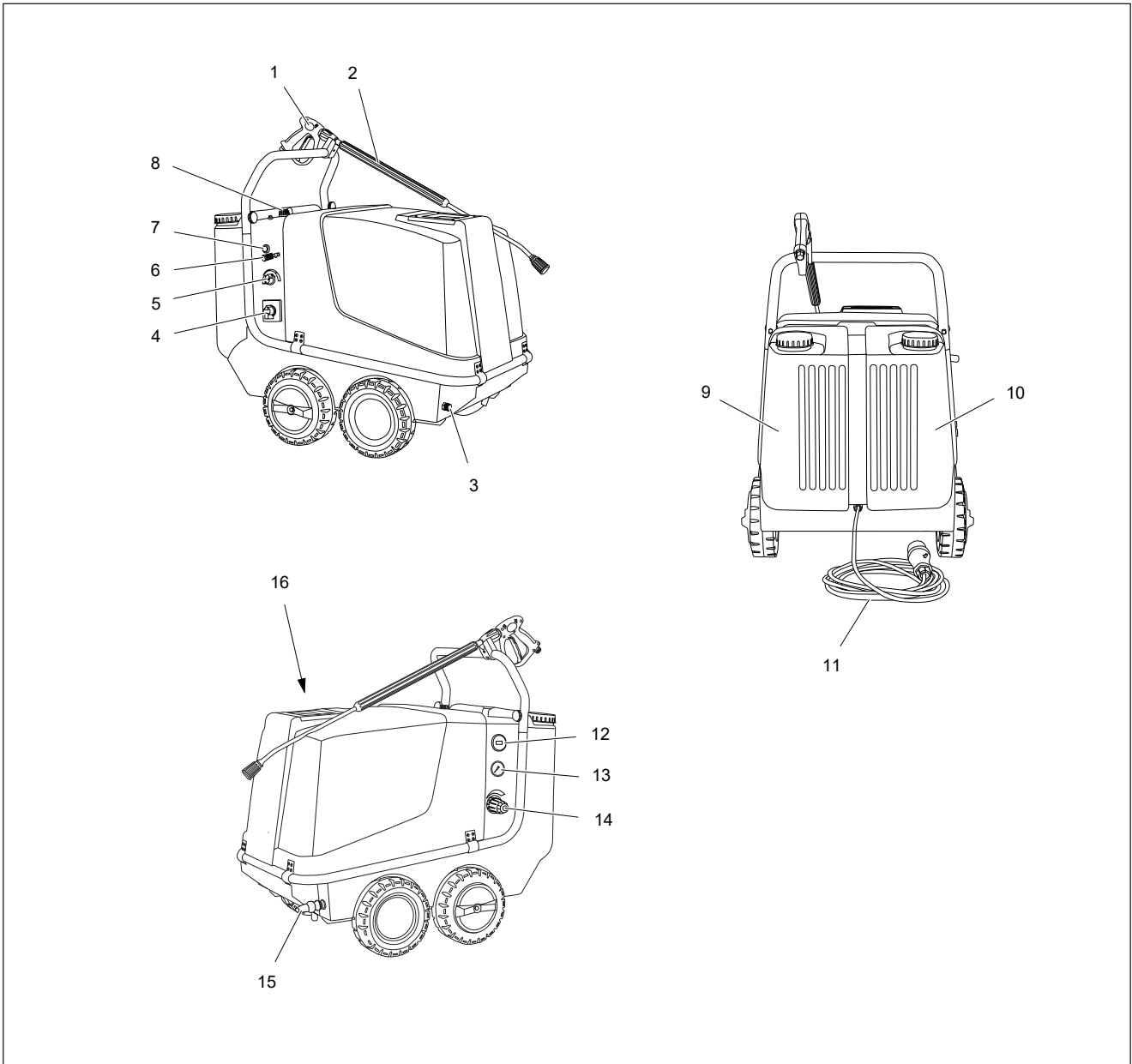
3.5 Device views HD823 / HD823-UK HD940 HD923-UK Premium (Etronic II)



- | | |
|-----------------------------------|---|
| 1 Detergent control valve | 11 Power cord 400 V |
| 2 Optical flame monitoring | 12 Trigger gun |
| 3 Filter (detergent suction hose) | 13 Service hour meter |
| 4 Thermostat | 14 Pressure gauge |
| 5 Device switch 0/1/Burner | 15 Water inlet with filter |
| 6 High pressure outlet | 16 Exhaust opening |
| 7 Fuel tank (Diesel) | 17 Spray lance 900 mm with nozzle
protection and HP spray nozzle |
| 8 Detergent tank | 18 Hose drum for HP-hose |
| 9 Power cord with 230 V plug | |
| 10 Power cord with 240 V UK plug | |

Fig. 3 - 5 HD823 / HD823-UK / HD923-UK / HD940 Premium (Etronic II), device views

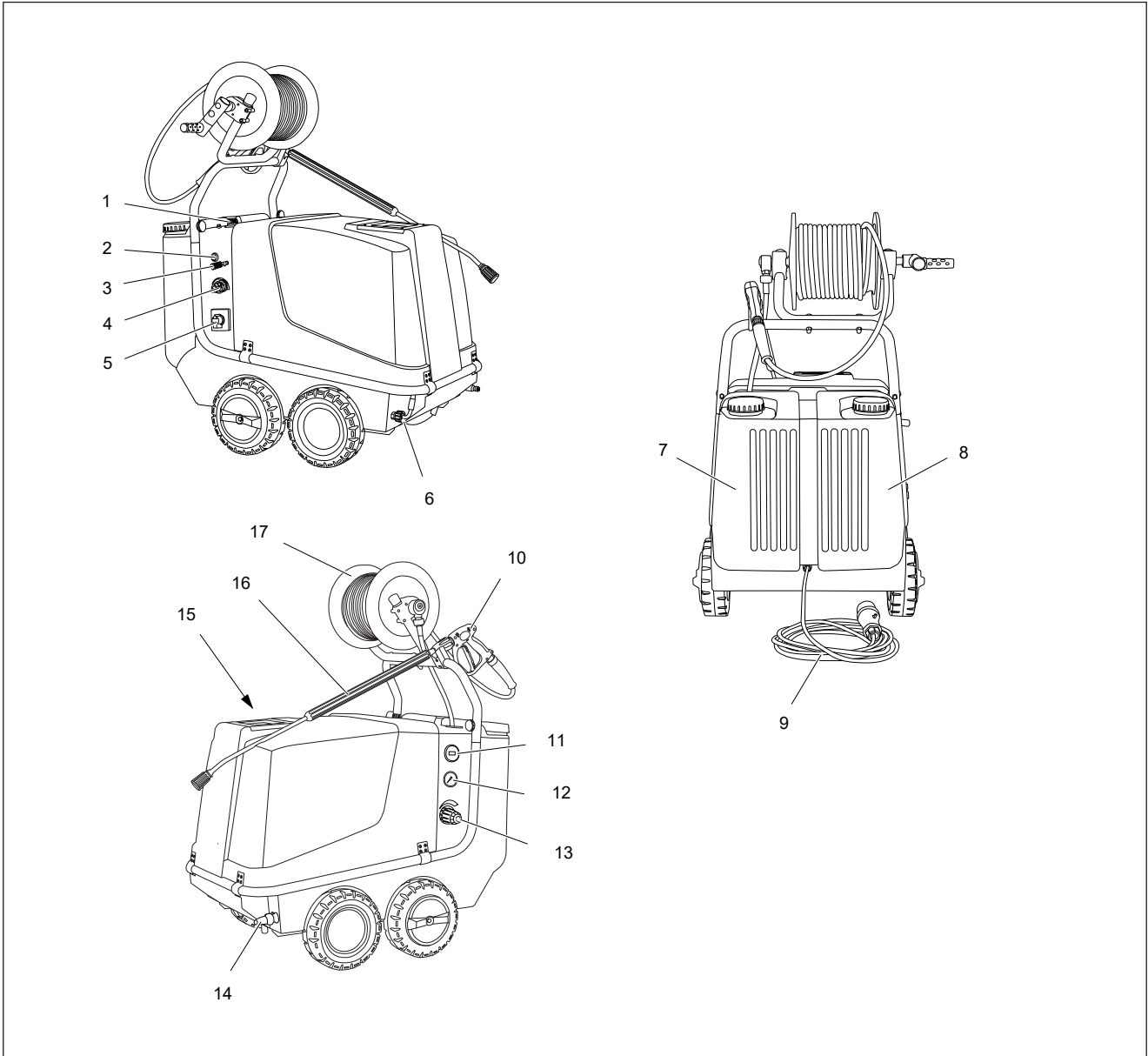
3.6 Device views HD1140 / HD1240 Standard (Etronic II)



- | | | | |
|---|---|----|-------------------------|
| 1 | Trigger gun | 9 | Fuel tank (Diesel) |
| 2 | Spray lance 900 mm with nozzle protection and HP spray nozzle | 10 | Detergent tank |
| 3 | High pressure outlet | 11 | Power cord 400 V |
| 4 | Device switch 0/1/Burner | 12 | Service hour meter |
| 5 | Thermostat | 13 | Pressure gauge |
| 6 | Filter (detergent suction hose) | 14 | Unloader valve |
| 7 | Optical flame monitoring | 15 | Water inlet with filter |
| 8 | Detergent control valve | 16 | Exhaust opening |

Fig. 3 - 6 HD1140 / HD1240 Standard (Etronic II), device views

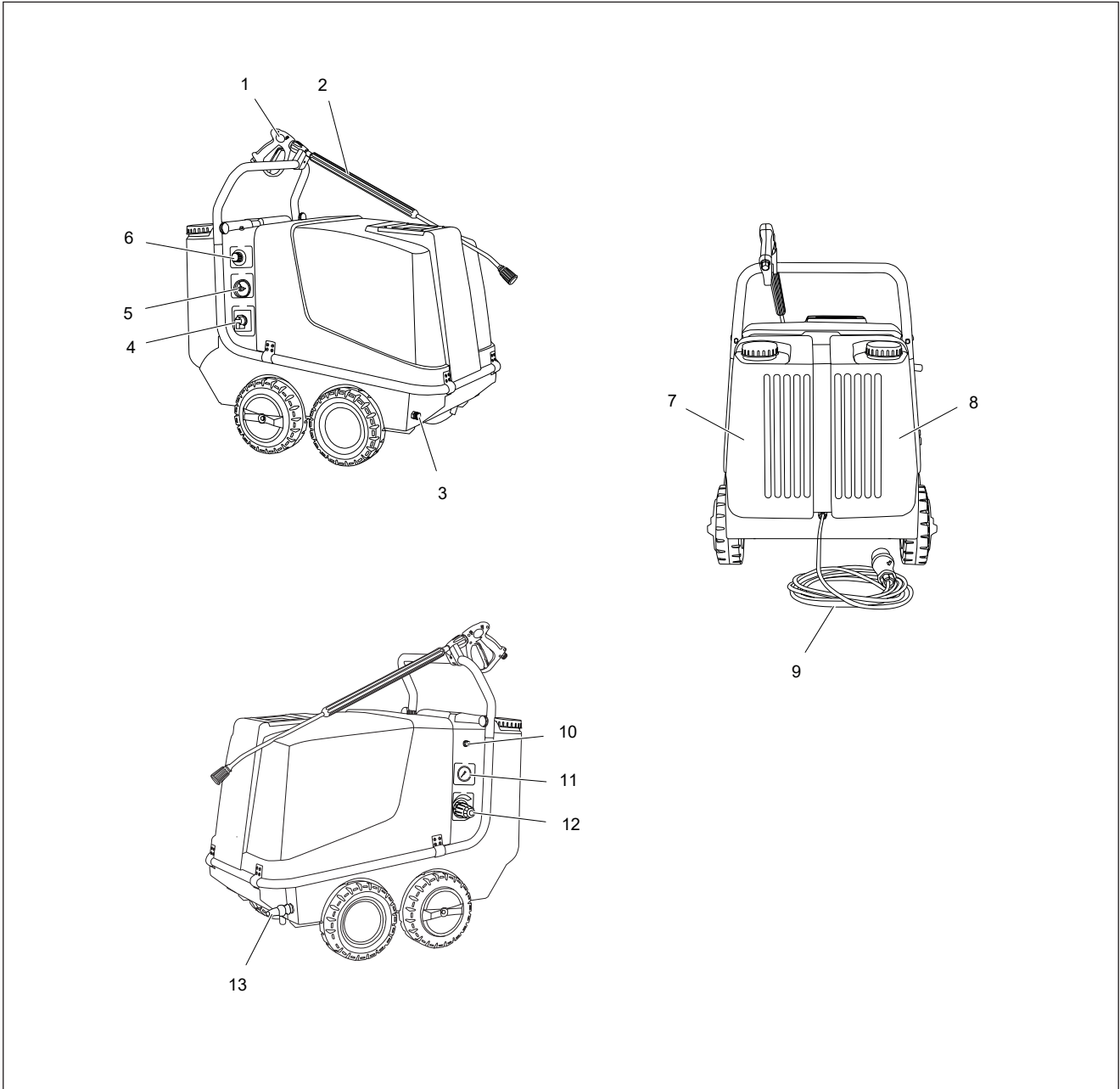
3.7 Device views HD1140 / HD1240 Premium (Etronic II)



- | | |
|-----------------------------------|--|
| 1 Detergent control valve | 10 Trigger gun |
| 2 Optical flame monitoring | 11 Service hour meter |
| 3 Filter (detergent suction hose) | 12 Pressure gauge |
| 4 Thermostat | 13 Unloader valve |
| 5 Device switch 0/1/Burner | 14 Water inlet with filter |
| 6 High pressure outlet | 15 Exhaust opening |
| 7 Fuel tank (Diesel) | 16 Spray lance 900 mm with nozzle protection and HP spray nozzle |
| 8 Detergent tank | 17 Hose drum for HP-hose |
| 9 Power cord 400 V | |

Fig. 3 - 7 HD1140 / HD1240 Premium (Etronic II), device views

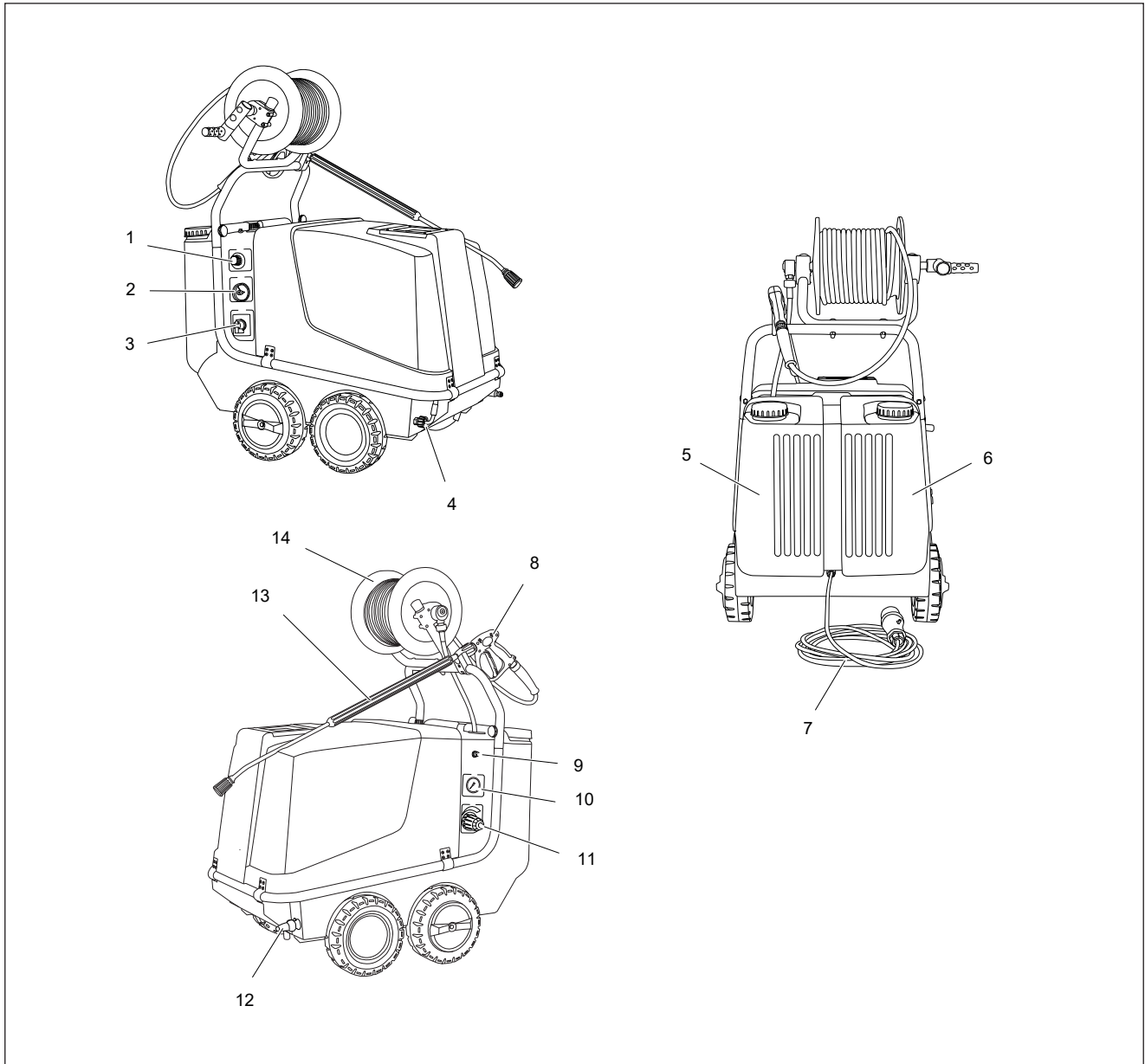
3.8 Device views HDE840 Standard, HDE-Series 12 KW/18 KW/24 KW



- | | | | |
|---|---|----|--|
| 1 | Trigger gun | 7 | Detergent tank 1 |
| 2 | Spray lance 900 mm with nozzle protection and HP spray nozzle | 8 | Detergent tank 2 |
| 3 | High pressure outlet | 9 | Power cord 400 V |
| 4 | Device switch 0/Preheating/1 | 10 | Thermo switch (overtemperature switch-off) |
| 5 | Thermostat with temp. indicator | 11 | Pressure gauge |
| 6 | Detergent control valve | 12 | Unloader valve |
| | | 13 | Water inlet with filter |

Fig. 3 - 8 HDE840 Standard (HDE-Series 12 KW / 18 KW / 24 KW), device views

3.9 Device views HDE840 Premium, HDE-Serie 12 KW/18 KW/24 KW



- | | |
|-----------------------------------|---|
| 1 Detergent control valve | 9 Thermo switch (overtemperature switch-off) |
| 2 Thermostat with temp. indicator | 10 Pressure gauge |
| 3 Device switch 0/Preheating/1 | 11 Unloader valve |
| 4 High pressure outlet | 12 Water inlet with filter |
| 5 Detergent tank 1 | 13 Spray lance 900 mm with nozzle
protection and HP spray nozzle |
| 6 Detergent tank 2 | 14 Hose drum for HP-hose |
| 7 Power cord 400 V | |
| 8 Trigger gun | |

Fig. 3 - 9 HDE840 Premium (HDE-Serie 12 KW / 18 KW / 24 KW), device views

3.10.2 Series Etronic I, Premium

HD623-Premium

Type: HD623-Premium
 497002-XX-B



Voltage	1/N/PE/AC/50Hz/230V	
Operating pressure	30-160bar/ 3-16MPa	*30bar/ 3MPa
Max. pressure	180bar/ 18MPa	
Discharge capacity	300 - 600l/h	*6l/min
Nozzle size	035	
Hot water capacity	30 - 98°C	*150°C
Pump speed	1400rpm	
Connected load	3.1kW / 15,1A	
Electrical protection	16A slow	



*Steam level

Serial No.: 01101011087204

EHRLE GmbH | Industriestraße 3 D-89165 Dietenheim
 Tel.: 0 73 03 / 16 00-0 | Fax: 0 73 03 / 16 00-600

HD640-Premium

Type: HD640-Premium
 412002-XX-B



Voltage	3/PE/AC/50Hz/400V	
Operating pressure	30-200bar/ 3-20MPa	*30bar/ 3MPa
Max. pressure	220bar/ 22MPa	
Discharge capacity	300 - 600l/h	*6l/min
Nozzle size	030	
Hot water capacity	30 - 98°C	*150°C
Pump speed	1400rpm	
Connected load	4,6kW / 9,3A	
Electrical protection	3x16A slow	



*Steam program

Serial No.: 110010110 87204

EHRLE GmbH | Industriestraße 3 D-89165 Dietenheim
 Tel.: 0 73 03 / 16 00-0 | Fax: 0 73 03 / 16 00-600

HD623-UK-Premium

Type: HD623 UK-Premium
 497003-UK-B



Voltage	1/240V/ 50Hz	
Operating pressure	30-135bar/ 3-13,5MPa	*30bar/ 3MPa
Max. pressure	150bar/ 15MPa	
Discharge capacity	300 - 600l/h	*6l/min
Nozzle size	040	
Hot water capacity	30 - 98°C	*150°C
Pump speed	1400rpm	
Connected load	3.1kW / 12,3A	
Electrical protection	13A slow	



*Steam level

Serial No.: 00011011087204 Bolt On-Unloader 25 bar Spring

EHRLE GmbH | Industriestraße 3 D-89165 Dietenheim
 Tel.: 0 73 03 / 16 00-0 | Fax: 0 73 03 / 16 00-600

3.10.3 Series Etronic II, Standard

HD823-Standard

Type: HD823-Standard
 496001-XX-B



Voltage	1/230V/ 50Hz	
Operating pressure	30-140bar/ 3-14MPa	*30bar/ 3MPa
Max. pressure	165bar/ 16,5MPa	
Discharge capacity	300 - 720l/h	*6l/min
Nozzle size	045	
Hot water capacity	30 - 98°C	*150°C
Pump speed	1400rpm	
Connected load	3,4kW / 15A	
Electrical protection	16A slow	



*Steam level

Serial No.: 11001011087204

EHRLE GmbH | Industriestraße 3 D-89165 Dietenheim
 Tel.: 0 73 03 / 16 00-0 | Fax: 0 73 03 / 16 00-600

HD940-Standard

Type: HD940-Standard
 442001-XX-B



Voltage	3/PE/AC/50Hz/400V	
Operating pressure	30-190bar/ 3-19MPa	*30bar/ 3MPa
Max. pressure	210bar/ 21MPa	
Discharge capacity	300 - 840l/h	*14l/min
Nozzle size	045	
Hot water capacity	30 - 98°C	*150°C
Pump speed	1400rpm	
Connected load	5,4kW / 10,1A	
Electrical protection	3x16A slow	



*Steam level

Serial No.: 00110110 87204

EHRLE GmbH | Industriestraße 3 D-89165 Dietenheim
 Tel.: 0 73 03 / 16 00-0 | Fax: 0 73 03 / 16 00-600

HD1140-Standard

Type: HD1140-Standard
 Etronic II 410001-XX-B



Voltage	3/400-415V/ 50Hz	
Operating pressure	30-230bar/ 3-23MPa	*30bar/ 3MPa
Max. pressure	250bar/ 25MPa	
Discharge capacity	300 - 1000l/h	*7l
Nozzle size	045	
Hot water capacity	30 - 98°C	*150°C
Pump speed	1400U/min	
Connection load	7,6kW / 14,1A	
Electrical protection	3x16A träge	



*Steam level

Serial No.: 101110110 87204

EHRLE GmbH | Industriestraße 3 D-89165 Dietenheim
 Tel.: 0 73 03 / 16 00-0 | Fax: 0 73 03 / 16 00-600

HD1240-Standard

Type: HD1240-Standard
 Etronic II 411001-XX-B



Voltage	3/400-415V/ 50Hz	
Operating pressure	30-160bar/ 3-16MPa	*30bar/ 3MPa
Max. pressure	180bar/ 18MPa	
Discharge capacity	300 - 1200l/h	*7l
Nozzle size	070	
Hot water capacity	30 - 98°C	*150°C
Pump speed	1400U/min	
Connection load	7,6kW / 14,1A	
Electrical protection	3x16A träge	



*Steam level

Serial No.: 101110110 87204

EHRLE GmbH | Industriestraße 3 D-89165 Dietenheim
 Tel.: 0 73 03 / 16 00-0 | Fax: 0 73 03 / 16 00-600

HD823-UK-Standard

Type: HD823 UK-Standard
 496003-UK-B



Voltage	1/240V/ 50Hz	
Operating pressure	30-120bar/ 3-12MPa	*30bar/ 3MPa
Max. pressure	140bar/ 14MPa	
Discharge capacity	300 - 720l/h	*6l/min
Nozzle size	050	
Hot water capacity	30 - 98°C	*150°C
Pump speed	1400rpm	
Connected load	3,3kW / 13A	
Electrical protection	13A slow	



*Steam level

Serial No.: 10011010187204 Bolt On-Unloader 25 bar Spring

EHRLE GmbH | Industriestraße 3 D-89165 Dietenheim
 Tel.: 0 73 03 / 16 00-0 | Fax: 0 73 03 / 16 00-600

HD923-UK-Standard

Type: HD923 UK-Standard
 444001-UK-A



Voltage	1/NI/PE/AC/50Hz/240V	
Operating pressure	30-100bar/ 3-10MPa	*30bar/ 3MPa
Max. pressure	120bar/ 12MPa	
Discharge capacity	300 - 840l/h	*6l/min
Nozzle size	070	
Hot water capacity	30 - 98°C	*150°C
Pump speed	1400rpm	
Connected load	3,3kW / 13A	
Electrical protection	13A slow	



*Steam program

*Steam level

Serial No.: 01101011087204

EHRLE GmbH | Industriestraße 3 D-89165 Dietenheim
 Tel.: 0 73 03 / 16 00-0 | Fax: 0 73 03 / 16 00-600

3.10.4 Series Etronic II, Premium

HD823-Premium

Type: HD823-Premium
 496002-XX-B



Voltage	1/230V/ 50Hz	
Operating pressure	30-140bar/ 3-14MPa	*30bar/ 3MPa
Max. pressure	165bar/ 16,5MPa	
Discharge capacity	300 - 720l/h	*6l/min
Nozzle size	045	
Hot water capacity	30 - 98°C	*150°C
Pump speed	1400rpm	
Connected load	3,4kW / 15A	
Electrical protection	16A slow	



*Steam level

Serial No.: 10111011087204

EHRLE GmbH | Industriestraße 3 D-89165 Dietenheim
 Tel.: 0 73 03 / 16 00-0 | Fax: 0 73 03 / 16 00-600

HD940-Premium

Type: HD940-Premium
 442002-XX-B



Voltage	3/PE/AC/50Hz/400V	
Operating pressure	30-190bar/ 3-19MPa	*30bar/ 3MPa
Max. pressure	210bar/ 21MPa	
Discharge capacity	300 - 840l/h	*14l/min
Nozzle size	045	
Hot water capacity	30 - 98°C	*150°C
Pump speed	1400rpm	
Connected load	5,4kW / 10,1A	
Electrical protection	3x16A slow	



*Steam level

Serial No.: 00101011087204

EHRLE GmbH | Industriestraße 3 D-89165 Dietenheim
 Tel.: 0 73 03 / 16 00-0 | Fax: 0 73 03 / 16 00-600

HD1140-Premium

Type: HD1140-Premium
 Etronic II 410002-XX-B



Voltage	3/400-415V/ 50Hz	
Operating pressure	30-230bar/ 3-23MPa	*30bar/ 3MPa
Max. pressure	250bar/ 25MPa	
Discharge capacity	300 - 1000l/h	*7l
Nozzle size	045	
Hot water capacity	30 - 98°C	*150°C
Pump speed	1400U/min	
Connection load	7,6kW / 14,1A	
Electrical protection	3x16A träge	



*Steam level

Serial No.: 101110110 87204

EHRLE GmbH | Industriestraße 3 D-89165 Dietenheim
 Tel.: 0 73 03 / 16 00-0 | Fax: 0 73 03 / 16 00-600

HD1240-Premium

Type: HD1240-Premium
 Etronic II 411002-XX-B



Voltage	3/400-415V/ 50Hz	
Operating pressure	30-160bar/ 3-16MPa	*30bar/ 3MPa
Max. pressure	180bar/ 18MPa	
Discharge capacity	300 - 1200l/h	*7l
Nozzle size	070	
Hot water capacity	30 - 98°C	*150°C
Pump speed	1400U/min	
Connection load	7,6kW / 14,1A	
Electrical protection	3x16A träge	



*Steam level

Serial No.: 100110110 87204

EHRLE GmbH | Industriestraße 3 D-89165 Dietenheim
 Tel.: 0 73 03 / 16 00-0 | Fax: 0 73 03 / 16 00-600

HD823-UK-Premium

Type: HD823 UK-Premium
 496004-UK-B



Voltage	1/240V/ 50Hz	
Operating pressure	30-120bar/ 3-12MPa	*30bar/ 3MPa
Max. pressure	140bar/ 14MPa	
Discharge capacity	300 - 720l/h	*6l/min
Nozzle size	050	
Hot water capacity	30 - 98°C	*150°C
Pump speed	1400rpm	
Connected load	3,3kW / 13A	
Electrical protection	13A slow	



*Steam level

Serial No.: 00011011087204 Bolt On-Unloader 25 bar Spring

EHRLE GmbH | Industriestraße 3 D-89165 Dietenheim
 Tel.: 0 73 03 / 16 00-0 | Fax: 0 73 03 / 16 00-600

HD923-UK-Premium

Type: HD923 UK-Premium
 444002-UK-A



Voltage	1/N/PE/AC/50Hz/240V	
Operating pressure	30-100bar/ 3-10MPa	*30bar/ 3MPa
Max. pressure	120bar/ 12MPa	
Discharge capacity	300 - 840l/h	*6l/min
Nozzle size	070	
Hot water capacity	30 - 98°C	*150°C
Pump speed	1400rpm	
Connected load	3,3kW / 13A	
Electrical protection	13A slow	



*Steam program

*Steam level

Serial No.: 01101011087204

EHRLE GmbH | Industriestraße 3 D-89165 Dietenheim
 Tel.: 0 73 03 / 16 00-0 | Fax: 0 73 03 / 16 00-600

3.10.5 HDE-Series, Standard

HDE840-12 KW-Standard

Type: HDE840 12kW
 Standard 106001XX-C



Spannung	3/400-415V/ 50Hz
Arbeitsdruck	30-140bar/ 3-14MPa
Max. Druck	160bar/ 16MPa
Fördermenge	300 - 720l/h
Düsengröße	045
Heizleistung	12kW
Heißwasserleistung	30 - 80°C
Pumpendrehzahl	1400U/min
Anschlussleistung	16,8kW / 26,2A
Elektr. Absicherung	3x32A träge



Serial No.: 10011011087204

EHRLE GmbH | Industriestraße 3 D-89165 Dietenheim
 Tel.: 0 73 03 / 16 00-0 | Fax: 0 73 03 / 16 00-600

HDE840-18 KW-Standard

Type: HDE840 18kW-
 Standard 107001-XX-B



Voltage	3/400-415V/ 50Hz
Operating pressure	30-140bar/ 3-14MPa
Max. pressure	160bar/ 16MPa
Discharge capacity	300 - 720l/h
Nozzle size	045
Heating capacity	18kW
Hot water capacity.	30 - 80°C
Pump speed	1400U/min
Connected load	22,8kW / 32A
Electrical protection	3x32A träge



Serial No.: 10011010187204

EHRLE GmbH | Industriestraße 3 D-89165 Dietenheim
 Tel.: 0 73 03 / 16 00-0 | Fax: 0 73 03 / 16 00-600

HDE840-24 KW-Standard

Type: HDE840 24kW
 Standard 108001XX-B



Spannung	3/400-415V/ 50Hz
Arbeitsdruck	30-140bar/ 3-14MPa
Max. Druck	160bar/ 16MPa
Fördermenge	300 - 720l/h
Düsengröße	045
Heizleistung	24kW
Heißwasserleistung	30 - 80°C
Pumpendrehzahl	1400U/min
Anschlussleistung	28,8kW / 44,A
Elektr. Absicherung	3x50A träge



Serial No.: 01001011087260

EHRLE GmbH | Industriestraße 3 D-89165 Dietenheim
 Tel.: 0 73 03 / 16 00-0 | Fax: 0 73 03 / 16 00-600

3.10.6 HDE-Series, Premium

HDE840-12 KW-Premium

Type: HDE840 12kW
 Premium 106002XX-C



Spannung	3/400-415V/ 50Hz
Arbeitsdruck	30-140bar/ 3-14MPa
Max. Druck	160bar/ 16MPa
Fördermenge	300 - 720l/h
Düsengröße	045
Heizleistung	12kW
Heißwasserleistung	30 - 80°C
Pumpendrehzahl	1400U/min
Anschlussleistung	16,8kW / 26,2A
Elektr. Absicherung	3x32A träge



Serial No.: 10011011087204

EHRLE GmbH | Industriestraße 3 D-89165 Dietenheim
 Tel.: 0 73 03 / 16 00-0 | Fax: 0 73 03 / 16 00-600

HDE840-18 KW-Premium

Type: HDE840 18kW-
 Premium 107002-XX-B



Voltage	3/400-415V/ 50Hz
Operating pressure	30-140bar/ 3-14MPa
Max. pressure	160bar/ 16MPa
Discharge capacity	300 - 720l/h
Nozzle size	045
Heating capacity	18kW
Hot water capacity.	30 - 80°C
Pump speed	1400U/min
Connected load	22,8kW / 32A
Electrical protection	3x32A träge



Serial No.: 10011010187260

EHRLE GmbH | Industriestraße 3 D-89165 Dietenheim
 Tel.: 0 73 03 / 16 00-0 | Fax: 0 73 03 / 16 00-600

HDE840-24 KW-Premium

Type: HDE840 24kW
 Premium 108002-XX-B



Spannung	3/400-415V/ 50Hz
Arbeitsdruck	30-140bar/ 3-14MPa
Max. Druck	160bar/ 16MPa
Fördermenge	300 - 720l/h
Düsengröße	045
Heizleistung	24kW
Heißwasserleistung	30 - 80°C
Pumpendrehzahl	1400U/min
Anschlussleistung	28,8kW / 44,A
Elektr. Absicherung	3x50A träge



Serial No.: 11001011087204

EHRLE GmbH | Industriestraße 3 D-89165 Dietenheim
 Tel.: 0 73 03 / 16 00-0 | Fax: 0 73 03 / 16 00-600

3.11 Serial number

The serial number on the type plate uniquely identifies the product. It is required for the Ehrle customer service.

3.12 Technical data

3.12.1 Mobile hotwater high pressure cleaners, oil heated, Series Etronic I

		Standard	Standard und Premium	
		HD523	HD623	HD640
Performance data device				
Operating pressure	bar	30 - 120	30 - 160	30 - 200
	MPA	3 - 12	3 - 16	3 - 20
Max. operating over-pressure	bar	140	180	220
	MPA	14	18	22
Discharge capacity	l/h	300 - 600	300 - 600	300 - 600
Hot water capacity	° C	30 - 98	30 - 98	30 - 98
Pump speed	rpm	2800	1400	1400
Recoil force trigger gun	N	25,3	29,1	33,6
Nozzle size	---	045	035	030
Temperature values				
Max. delivery temperature	° C	45	45	45
Infiniteley variable	° C	30 - 98	30 - 98	30 - 98
Steam stage	° C	-	-	-
with a heating capacity of	kW	46	46	46
Electrical connection				
Mains voltage	V	230	230	400
Phase	~	1	1	3
Mains frequency	Hz	50	50	50
Connected load	kW	2,4	3,1	4,6
Current (max.)	A	12	15,1	9,0
Degree of protection	IP	IPX5	IPX5	IPX5
Main fuse (slow-blowing)	A	13	16	3 x 16
Residual current circuit breaker (max. allowed residual current)	mA	30	30	30
Extension cable up to 20 m	Wires	3 x	3 x	5 x
	mm ²	2,5	2,5	2,5

Tab. 3 - 1 Technical data for Series Etronic I

		Standard	Standard und Premium	
		HD523	HD623	HD640
Oil consumption				
Max. oil consumption	kg/h	4	4	4
Tank filling quantities and chemical suction quantity				
Fuel tank	l	22	24	24
Chemical tank	l	-	19	19
Chemical suction quantity	l/h	-	26	33
Water connection				
Max. feed pressure	bar	5	5	5
	MPa	0,5	0,5	0,5
Max. feed temperature	° C	45	45	45
Feed volume	l/min	10	10	10
Suction height	m	0	0	0
Dimensions and weights				
Weight				
Standard (with packaging)	kg	118 (139)	149 (170)	157 (185)
Premium (with packaging)	kg	-	158 (179)	167 (195)
Length (with packaging)	mm	1070 (1190)	1070 (1190)	1070 (1190)
Width (with packaging)	mm	735 (880)	735 (880)	735 (880)
Height (with packaging)	mm	1020 (960)	1020 (1270)	1020 (1270)
Lubricant				
Amount of oil	l	0,18	0,25	0,25
Oil grade	Type	10W40	10W40	10W40
Fuel				
Only heating oil or diesel oil may be used as fuel				
Heating oil EL 51 603	l	22	24	24
Diesel oil	l	22	24	24

Tab. 3 - 1 Technical data for Series Etronic I

3.12.2 Mobile hotwater high pressure cleaners, oil heated, UK Series Etronic I

		Standard	Standard und Premium
		HD523-UK	HD623-UK
Performance data device			
Operating pressure	bar	30 - 120	30 - 135
	MPA	3 - 12	3 - 13,5
Max. operating over-pressure	bar	140	150
	MPA	14	15
Discharge capacity	l/h	300 - 600	300 - 600
Hot water capacity	° C	30 - 98	30 - 98
Pump speed	rpm	2800	1400
Recoil force trigger gun	N	23,3	35,5
Nozzle size	---	045	040
Temperature values			
Max. delivery temperature	° C	45	45
Infiniteley variable	° C	30 - 98	30 - 98
Steam stage	° C	-	-
with a heating capacity of	kW	46	46
Electrical connection			
Mains voltage	V	240	240
Phase	~	1	1
Mains frequency	Hz	50	50
Connected load	kW	2,4	3,1
Current (max.)	A	12,4	12,3
Degree of protection	IP	IPX5	IPX5
Main fuse (slow-blowing)	A	13	13
Residual current circuit breaker (max. allowed residual current)	mA	30	30
Extension cable up to 20 m	Wires	3 x	3 x
	mm ²	2,5	2,5

Tab. 3 - 2 Technical data for UK Series Etronic I

		Standard	Standard und Premium
		HD523-UK	HD623-UK
Oil consumption			
Max. oil consumption	kg/h	4	4
Tank filling quantities and chemical suction quantity			
Fuel tank	l	22	24
Chemical tank	l	-	19
Chemical suction quantity	l/h	-	24
Water connection			
Max. feed pressure	bar	5	5
	MPa	0,5	0,5
Max. feed temperature	° C	45	45
Feed volume	l/min	10	10
Suction height	m	0	0
Dimensions and weights			
Weight			
Standard (with packaging)	kg	118 (139)	149 (170)
Premium (with packaging)	kg	-	158 (179)
Length (with packaging)	mm	1070 (1160)	1070 (1190)
Width (with packaging)	mm	735 (770)	735 (880)
Height (with packaging)	mm	1020 (960)	1020 (1270)
Lubricant			
Amount of oil	l	0,18	0,25
Oil grade	Typ	10W40	10W40
Fuel			
Only heating oil or diesel oil may be used as fuel			
Heating oil EL 51 603	l	22	24
Diesel oil	l	22	24

Tab. 3 - 2 Technical data for UK Series Etronic I

3.12.3 Mobile hotwater high pressure cleaners, oil heated, Series Etronic II

		Standard und Premium			
		HD823	HD940	HD1140	HD1240
Performance data device					
Operating pressure	bar	30 - 140	30 - 190	30 - 230	30 - 160
	MPA	3 - 14	3 - 19	3 - 23	3 - 16
Max. operating over-pressure	bar	165	210	250	180
	MPA	16,5	21	25	18
Discharge capacity	l/h	300 - 720	300 - 840	300 - 1000	300 - 1200
Hot water capacity	° C	30 - 98 (150)	30 - 98 (150)	30 - 98 (150)	30 - 98 (150)
Pump speed	rpm	1400	1400	1400	1400
Recoil force trigger gun	N	30,4	43	53,2	64,3
Nozzle size	---	045	045	045	070
Temperature values					
Max. delivery temperature	° C	45	45	45	45
Infiniteley variable	° C	30 - 98	30 - 98	30 - 98	30 - 98
Steam stage	° C	150	150	150	150
with a heating capacity of	kW	60	60	60	60
Electrical connection					
Mains voltage	V	230	400	400	400
Phase	~	1	3	3	3
Mains frequency	Hz	50	50	50	50
Connected load	kW	3,4	5,4	7,6	7,6
Current (max.)	A	15	10,1	14,1	14,1
Degree of protection	IP	IPX5	IPX5	IPX5	IPX5
Main fuse (slow-blowing)	A	16	3 x 16	3 x 16	3 x 16
Residual current circuit breaker (max. allowed residual current)	mA	30	30	30	30
Extension cable up to 20 m	Wires	3 x	5 x	5 x	5 x
	mm ²	2,5	2,5	2,5	2,5

Tab. 3 - 3 Technical data for Series Etronic II

		Standard und Premium			
		HD823	HD940	HD1140	HD1240
Oil consumption					
Max. oil consumption	kg/h	4,5	4,5	4,5	4,5
Tank filling quantities and chemical suction quantity					
Fuel tank	l	24	24	24	24
Chemical tank	l	19	19	19	19
Chemical suction quantity	l/h	28	24	19	50
Water connection					
Max. feed pressure	bar	5	5	5	5
	MPA	0,5	0,5	0,5	0,5
Max. feed temperature	° C	45	45	45	45
Feed volume	l/min	12	14	15	18
Suction height	m	0	0	0	0
Dimensions and weights					
Weight					
Standard (with packaging)	kg	158 (186)	159 (186)	178 (199)	177 (206)
Premium (with packaging)	kg	167 (195)	168 (198)	187 (208)	186 (218)
Length (with packaging)	mm	1070	1070	1070	1070
		(1190)	(1190)	(1190)	(1190)
Width (with packaging)	mm	735 (880)	735 (880)	735 (880)	735 (880)
Height (with packaging)	mm	1020	1020	1020	1020
		(1270)	(1270)	(1270)	(1270)
Lubricant					
Amount of oil	l	0,25	0,25	0,65	0,65
Oil grade	Typ	10W40	10W40	10W40	10W40
Fuel					
Only heating oil or diesel oil may be used as fuel					
Heating oil EL 51 603	l	24	24	24	24
Diesel oil	l	24	24	24	24

Tab. 3 - 3 Technical data for Series Etronic II

3.12.4 Mobile hotwater high pressure cleaners, oil heated, UK Serie Etronic II

		Standard und Premium	
		HD823-UK	HD923-UK
Performance data device			
Operating pressure	bar	30 - 125	30 - 100
	MPA	3 - 12,5	3 - 10
Max. operating over-pressure	bar	140	120
	MPA	14	12
Discharge capacity	l/h	300 - 720	300 - 840
Hot water capacity	° C	30 - 98 (150)	30 - 98 (150)
Pump speed	rpm	1400	1400
Recoil force trigger gun	N	26,6	32,2
Nozzle size	---	050	070
Temperature values			
Max. delivery temperature	° C	45	45
Infiniteley variable	° C	30 - 98	30 - 98
Steam stage	° C	150	150
with a heating capacity of	kW	60	60
Electrical connection			
Mains voltage	V	240	240
Phase	~	1	1
Mains frequency	Hz	50	50
Connected load	kW	3,3	3,3
Current (max.)	A	13	13
Degree of protection	IP	IPX5	IPX5
Main fuse (slow-blowing)	A	13	13
Residual current circuit breaker (max. allowed residual current)	mA	30	30
Extension cable up to 20 m	Wires	3 x	3 x
	mm ²	2,5	2,5

Tab. 3 - 4 Technical data for UK Series Etronic II

		Standard und Premium	
		HD823-UK	HD923-UK
Oil consumption			
Max. oil consumption	kg/h	4,5	4,5
Tank filling quantities and chemical suction quantity			
Fuel tank	l	24	24
Chemical tank	l	19	19
Chemical suction quantity	l/h	20	22
Water connection			
Max. feed pressure	bar	5	5
	MPA	0,5	0,5
Max. feed temperature	° C	45	45
Feed volume	l/min	12	14
Suction height	m	0	0
Dimensions and weights			
Weight			
Standard (with packaging)	kg	158 (186)	149 (170)
Premium (with packaging)	kg	167 (195)	158 (179)
Length (with packaging)	mm	1070 (1190)	1070 (1190)
Width (with packaging)	mm	735 (880)	735 (880)
Height (with packaging)	mm	1020 (1270)	1020 (1270)
Lubricant			
Amount of oil	l	0,25	0,45
Oil grade	Typ	10W40	10W40
Fuel			
Only heating oil or diesel oil may be used as fuel			
Heating oil EL 51 603	l	24	24
Diesel oil	l	24	24

Tab. 3 - 4 Technical data for UK Series Etronic II

3.12.5 Mobile hotwater high pressure cleaners, electric heated, HDE-Series

		Standard und Premium		
		HDE840 12 KW	HDE840 18 KW	HDE840 24 KW
Performance data device				
Operating pressure	bar	30 - 140	30 - 140	30 - 140
	MPA	3 - 14	3 - 14	3 - 14
Max. operating over-pressure	bar	160	160	160
	MPA	16	16	16
Discharge capacity	l/h	300 - 720	300 - 720	300 - 720
Hot water capacity	° C	30 - 80	30 - 80	30 - 80
Pump speed	rpm	1400	1400	1400
Recoil force trigger gun	N	30,4	30,4	30,4
Nozzle size	---	045	045	045
Temperature values				
Max. delivery temperature	° C	80	80	80
Infiniteley variable	° C	30 - 80	30 - 80	30 - 80
Steam stage	° C	-	-	-
with a heating capacity of	kW	12	18	24
Electrical connection				
Mains voltage	V	400	400	400
Phase	~	3	3	3
Mains frequency	Hz	50	50	50
Connected load	kW	16,8	22,8	28,8
Current (max.)	A	26,2	32	44
Heating power	kW	12	18	24
Degree of protection	IP	IPX5	IPX5	IPX5
Main fuse (slow-blowing)	A	3 x 32	3 x 32	3 x 50
Residual current circuit breaker (max. allowed residual current)	mA	30	30	30

Tab. 3 - 5 Technical data for HDE-Series

		Standard und Premium		
		HDE840 12 KW	HDE840 18 KW	HDE840 24 KW
Extension cable up to 20 m	Wires	5 x	5 x	5 x
	mm ²	4	6	10
Tank filling quantities and chemical suction quantity				
Chemical tank 1	l	24	24	24
Chemical tank 2	l	19	19	19
Chemical suction quantity	l/h	42	42	42
Water connection				
Max. feed pressure	bar	5	5	5
	MPA	0,5	0,5	0,5
Max. feed temperature	° C	80	80	80
Feed volume	l/min	12	12	12
Suction height	m	0	0	0
Dimensions and weights				
Weight				
Standard (with packaging)	kg	119 (140)	121 (142)	124 (145)
Premium (with packaging)	kg	128 (149)	130 (151)	133 (154)
Length (with packaging)	mm	1070 (1190)	1070 (1190)	1070 (1190)
Width (with packaging)	mm	735 (880)	735 (880)	735 (880)
Height (with packaging)	mm	1020 (1270)	1020 (1270)	1020 (1270)

Tab. 3 - 5 Technical data for HDE-Series

4 Device assembly



WARNING

Ensure correct device assembly.

The persons assembling the high pressure cleaners must have

- read this manual and understood, that error-free device assembly can be guaranteed, or
- specially trained and instructed on the respective device.

Otherwise, the life and limb of persons may be endangered.



WARNING

Danger with heavy loads.

The Mobile Hotwater High Pressure Cleaners of the Series Etronic I/II and HDE-Series weigh from 118 kg to 187 kg depending on the type (with packaging from approx. 139 kg to approx. 218 kg).

A person is not allowed to lift and move loads (e.g. devices, assemblies) more than 23 kg.

Otherwise the health of persons may be endangered (e.g. overload of the spinal column, injuries from falling loads).

For loads of more than 23 kg, use suitable lifting equipment (e.g. forklift, lift truck).



General Information

For detailed advice and information on the device assembly please contact the EHRLE customer service.

4.1 Accessories for Series Etronic I / Etronic II and HDE-Series (Standard)



General Information

The HD523 device version Standard is equipped with a guide roller at the front and two wheels at the rear.

The HD623 to HD1240 and HDE-Series are equipped with four wheels.






 <p>Basic device HD523 two wheels, one guide roller, without attachments</p>	 <p>HP-Hose, red, length 15 m (for HD523 only)</p>	 <p>Basic device, high pressure cleaner, four wheels, without attachments</p>	 <p>Spray lance 900 mm with nozzle-protection</p>
 <p>Trigger gun</p>	 <p>HP-Hose red, length 10 m</p>	 <p>Handle, screws</p>	 <p>Water inlet filter</p>

Fig. 4 - 1 Accessories for Series Etronic I / Etronic II and HDE-Series (Standard)

4.2 Accessories for Series Etronic I / Etronic II and HDE-Serie (Premium)









 <p>Basic device, high pressure cleaner, four wheels, without attachments</p>	 <p>Spray lance 900 mm with nozzle-protection</p>	 <p>Spray lance 900 mm with rotary-nozzle</p>	 <p>Trigger gun</p>
 <p>HP-Hose red, length 20 m</p>	 <p>Handle with hose drum, screws</p>	 <p>Water inlet filter</p>	 <p>Hose holder clip, screw, nut</p>

Fig. 4 - 2 Accessories for Series Etronic I / Etronic II and HDE-Series (Premium)

4.3 Device assembly

4.3.1 Device version Standard



General Information

The following assembly instruction provides a general example of assembling the device version Standard.

All handles are slightly angled. On the HD523, the slight tilt shows to the rear side. On all other devices, the slight tilt shows towards the device hood.

For device assembly proceed as follows:



- ▶ Mount the handle on the device version HD523 with the slight tilt backwards
 - Insert the handle into the chassis openings provided for this purpose.
 - Position the two screw holes integrated in the handle to match the chassis screw holes.



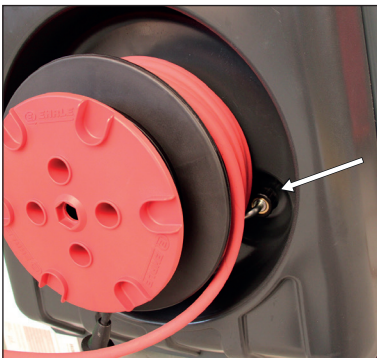
- ▶ Mont the handle on the device versions HD623 to HD1240 and HDE-Series with the slight tilt towards the device hood
 - Insert the handle into the chassis openings provided for this purpose.
 - Position the two screw holes integrated in the handle to match the chassis screw holes.



- ▶ Fixing the handle on the HD523
 - Guide the attachment screw through the handle hole.
 - From the other side, put on the fastening nut and tighten the screw connection hand-tight.
 - Repeat this on the other side of the device.



- ▶ Fixing the handle on the HD623 to HD1240 and HDE-Series
 - Guide the attachment screw through the handle hole.
 - From the other side, put on the fastening nut and tighten the screw connection hand-tight.
 - Repeat this on the other side of the device.



- ▶ Connecting the HP-Hose on the HD523
 - Before winding the HP-Hose on the rear of the device, connect the hose adapter with the 90° angle to the high pressure outlet.



- ▶ Connecting the HP-Hose on the HD623 to HD1240 and HDE-Series
 - Connect the HP-Hose to the high pressure outlet.



- ▶ Connecting the filter (general example for all device versions)
 - Provide the filter to the water inlet adapter.
 - Tighten filter hand-tight.



- ▶ Connecting the water supply hose (general example for all device versions)
 - Connect the water supply hose 1/2" (DN13) to the filter.



- ▶ Connecting the HP-Hose to trigger gun
 - Attach the hose end with the bend protection to the trigger gun and tighten by hand.



- ▶ Mounting the trigger gun onto the spray lance
 - Pull back the quick lock (see figure lower left) of the trigger gun and insert the lance.
 - After inserting the lance, make sure that the quick lock arrests fully forward again.

4.3.2 Device version Premium



General Information

The following assembly instruction provides a general example of assembling the device version Premium.

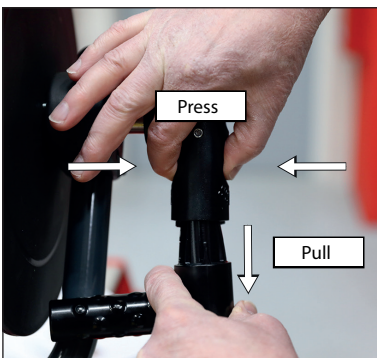
For device assembly proceed as follows:



- ▶ Mont the handle with the slight tilt towards the device hood
 - Insert the handle into the chassis openings provided for this purpose.
 - Position the two screw holes integrated in the handle to match the chassis screw holes.



- ▶ Fixing the handle
 - Guide the attachment screw through the handle hole.
 - From the other side, put on the fastening nut and tighten the screw connection hand-tight.
 - Repeat this on the other side of the device.



- ▶ Unlocking the hose drum
 - Press in the locking buttons with the thumb and index finger and at the same time pull the handle out of the locking.
 - Turn the handle 180 ° into the working position.



- ▶ Crank handle in the working position
 - Crank handle turned 180 ° into the working position and arrested.



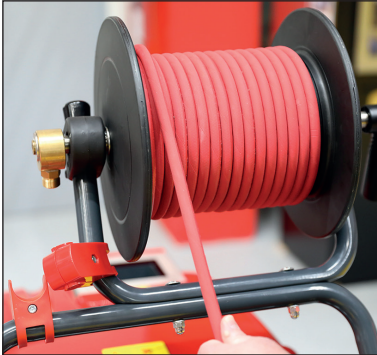
- ▶ Insert HP-Hose into the hose drum
 - Insert the HP-Hose inwards into the hose drum until it reaches the connection socket on the other side.



- ▶ Connecting the HP-Hose to the socket
 - Screw the HP-Hose into the hose drum at the connection socket hand-tight.



- ▶ Rolling up the HP-Hose
 - Guide the HP-Hose with the other hand during winding as shown in the figure.
 - Wind the HP-Hose in each row of a layer next to each other evenly with the width of the hose.



- ▶ Winding HP-Hose in several layers
 - Wind the HP-Hose systematically in each row and layer by layer according to the figure.
 - Guide the HP-Hose with the other hand during winding as shown in the figure.



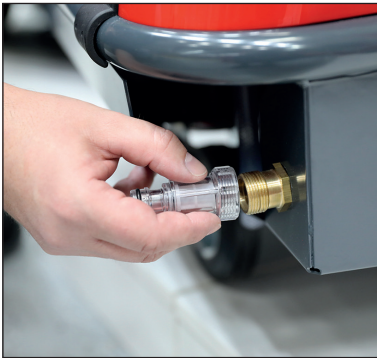
- ▶ Attaching the connection Hose
 - Provide the connection hose between the connection socket on the hose drum and the high pressure outlet inside the device.
 - Attach the connection hose to the high pressure pump outlet and tighten by hand.



- ▶ Mounting the hose holder clip
 - Provide the hose holder clip on the handle.
 - Insert the HP-Hose into the lead-through at the hose clip.
 - Tighten the fixing screw of the hose clip hand-tight with an Allen key.



- ▶ Connect HP-Hose to hose drum socket
 - Connect the HP-Hose to the transfer socket on the hose drum.



- ▶ Connecting the filter (general example for all device versions)
 - Provide the filter to the water inlet adapter.
 - Tighten filter hand-tight.



- ▶ Connecting the water supply hose (general example for all device versions)
 - Connect the water supply hose 1/2" (DN13) to the filter.



- ▶ Connecting the HP-Hose to trigger gun
 - Attach the hose end with the bend protection to the trigger gun and tighten by hand.



- ▶ Mounting the trigger gun onto the spray lance
 - Pull back the quick lock (see figure lower left) of the trigger gun and insert the lance.
 - After inserting the lance, make sure that the quick lock arrests fully forward again.

5 Commissioning



WARNING

Commissioning must be carried out professional.

The commissioning of the high pressure cleaners may only be carried out by authorised personnel which

- have completely read and understood the information and instructions in this Installation and Operating Instruction
- are instructed and trained on the device.

Otherwise the life and limb of persons may be endangered.



WARNING

Observe safety regulations.

The local regulations concerning the installation and operation of the device must be observed.

The oil heated high pressure cleaners (Series Etronic I and Etronic II) in the basic configuration Standard or Premium are not to be used in rooms with flammable or explosiveness atmosphere.

For special applications in rooms with flammable or explosiveness atmosphere use only electrical heated high pressure cleaners of the appropriate EEx protection class.

Using high pressure cleaners in gas-stations or other hazardous areas

- refer to the regulation of „Technical rules for flammable liquids“
- the relevant safety regulations must be observed.

Oil heated high pressure cleaners may only be installed and operated in enclosure rooms if provision is made that the exhaust is leaded off properly and there ist sufficient fresh air circulation.

Otherwise the life and limb of persons may be endangered.

The heating installation of the oil heated EHRLE Mobile High Pressure Cleaners of the Series Etronic I and Etronic II underlie the regulations of fire equipments. When installing them, the locally applicable regulations must be observed.

The EHRLE high pressure cleaners are subjected to a final test for correct function and safety before delivery.

The first commissioning and the first cleaning operation serve to check the correct functioning of the device, if damage to components that is not immediately visible during transport has occurred.

If the device functions incorrectly, consult the EHRLE customer service immediately.

The local regulations concerning the installation and operation of the high pressure cleaners must be observed.

5.1 Select location for device operation

The building water connection (tap water network) and the electrical mains connection (mains connection of buildings or mains junction box e.g. on construction sites) for the high pressure cleaner must be designed for trouble-free constant operation (see Section 3.12, Technical Data).

When selecting the location for device operation observe:

- The socket for the mains cable connection must be within easy reach (provide an extension cable if necessary).
- Water inlet hose of sufficient length for connection to fittings of the water supply network or water tap
- Select a suitable washing place for the cleaning object.

Do not set up the device in very wet areas (e.g. areas with puddles) or operate it under water. Do not lay cables and cable plugs in wet areas.

5.2 Establishing the water connection



CAUTION

Do not operate the device with contaminated or too hot water.

Operate the high pressure cleaner only with clear and unpolluted water.

Only operate the device in pressure and suction mode with the water inlet filter fitted to the water inlet adapter.

The water inlet temperature to the device may be max. 45 °C for Series Etronic I / II and for HDE-Series max. 80 °C.

Dirty or too hot water can damage the high pressure cleaner.

The building water connection (tap water network) for the water supply of the high pressure cleaner must be designed for trouble-free constant operation (see Section 3.12, Technical Data).

The design of the water connection to the drinking water network must meet the requirements according to DIN 1988 (Drinking water pipe systems in properties, technical regulations for construction and operation). Country-specific country-specific guidelines and regulations must be observed.

The regulations of the relevant water supply company must be observed! According to EN 61 770, the high pressure cleaner must not be directly connected to the public drinking water supply. However, according to DVGW (Deutscher Verband des Gas- und Wasserfaches - German Gas and Water Association), short-term connection is permissible if a backflow preventer with a pipe ventilator is installed in the supply line.

Water after the backflow preventer is no longer considered drinking water.

An indirect connection to the public drinking water supply is also permissible by means of a free outlet. The water supply must comply with EN 61 770, e.g. by using a tank with a float valve. Direct connection to a pipe network not intended for drinking water supply is permissible.

The water supply capacity for the device must ensure a minimum of 1200 l/h by a hydraulic pressure between 1 bar and 6 bar.

Equip the water connection of the tap water network with a shut-off valve.

Connect the high pressure cleaner to the water connection via a flexible water supply hose (at least 1/2").

The environmental, waste and water protection regulations must be observed by the system operator!

5.3 Fuel supply for Series Etronic I / Etronic II



WARNING

Danger from unapproved fuel.

Use only fuel approved by the manufacturer.

The use of non-approved fuels can impair the operational safety of the high pressure cleaner.

This can endanger the life and limb of people.



CAUTION

Monitor fuel supply.

A prolonged fuel dry run can lead to damage to the fuel pump.

Dirty, watery or highly sulphurous heating oils lead to burner malfunctions and can cause damage to the high-pressure cleaner.

Fill the fuel tank of the oil heated high pressure cleaners with EL heating oil or diesel oil.

Only low-sulphur heating oil EL 51 603 or diesel oil may be used as fuel.

5.4 Establishing the electrical mains connection



WARNING

Ensure a professional mains connection.

Only connect the device to voltage sources earthed in accordance with the safety regulations (mains connection of buildings or mains junction box e.g. on construction sites).

The connection plugs must not lie on the floor and must always be dry. Do not touch the connectors and cables with wet hands.

All live parts in the intended working area for cleaning work, e.g. devices, cables, sockets etc. must be water-jet proof in accordance with the safety regulations.

Depending on device, the electrical mains connection (mains connection of buildings or mains junction box e.g. on construction sites) must adhere the Technical Data (see Section 3.12) and

- comply with the electrical values indicated on the type plate of the device and therefore
- ensure trouble-free constant operation.

The mains connection must be equipped with a residual current circuit breaker 30 mA and protected via circuit breaker as given in the following table.

Device	Voltage	Fuse (slow-blowing)
Etronic I		
HD523 Standard	230 V	13 A
HD523-UK Standard	240 V	13 A
HD623 Standard/Premium	230 V	16 A
HD623-UK Standard/Premium	240 V	13 A
HD640 Standard/Premium	400 V	3 x 16 A
Etronic II		
HD823 Standard/Premium	230 V	16 A
HD823-UK Standard/Premium	240 V	13 A
HD940 Standard/Premium	400 V	3 x 16 A
HD1140 Standard/Premium	400 V	3 x 16 A
HD1240 Standard/Premium	400 V	3 x 16 A
HD923-UK Standard/Premium	240 V	13 A
HDE-Serie		
HDE840 12 KW Standard/Premium	400 V	3 x 32 A
HDE840 18 KW Standard/Premium	400 V	3 x 32 A
HDE840 24 KW Standard/Premium	400 V	3 x 50 A

Tab. 5 - 1 Device voltage and fuse protection

The high pressure cleaners are supplied with a mains cable length as follows:

- Etronic I, device HD523: 8 m
- Etronic I, device HD523-UK: 5 m
- all other devices of Etronic I: 7,5 m
- Etronic II devices: 7,5 m
- HDE-Series devices: 5 m

The cables must be dry and clean and must not be placed in wet areas. Do not touch the cable plugs with wet hands.

When using extension cables, the relevant national safety regulations must be observed. Extension cables that are too long cause a voltage drop and thus operating faults.

The following table lists the technical specifications for extension cables up to 20 m in length, which are permissible according to safety regulations. The plug connections must be splash-proof.

Device	Cable type	Wire cross section each wire in mm²
Etronic I		
HD523 Standard	H07RN-F 3 G	2,5
HD523-UK Standard	H07RN-F 3 G	2,5
HD623 Standard/Premium	H07RN-F 3 G	2,5
HD623-UK Standard/Premium	H07RN-F 3 G	2,5
HD640 Standard/Premium	H07RN-F 5 G	2,5
Etronic II		
HD823 Standard/Premium	H07RN-F 3 G	2,5
HD823-UK Standard/Premium	H07RN-F 3 G	2,5
HD923-UK Standard/Premium	H07RN-F 3 G	2,5
HD940 Standard/Premium	H07RN-F 5 G	2,5
HD1140 Standard/Premium	H07RN-F 5 G	2,5
HD1240 Standard/Premium	H07RN-F 5 G	2,5
HDE-Serie		
HD840 12 KW Standard/Premium	H07RN-F 5 G	4
HD840 18 KW Standard/Premium	H07RN-F 5 G	6
HD840 24 KW Standard/Premium	H07RN-F 5 G	10

Tab. 5 - 2 Specification for permissible extension cables up to 20 m in length

For the electrical connection proceed as follows

- ▶ Make sure, the device switch 0/1/Burner for Series Etronic I/II, resp. device switch 0/Preheating/I for HDE-Series (see Section 6.1, control and indicator elements of the devices) is switched off (position 0).
- ▶ Unwind the mains cable from the holder and place it on the floor. When using extension cables, always unwind the cable completely from the drum and lay it on the ground.

5.5 Commissioning the device

For commissioning the device proceed as follows:

- ▶ Open the water supply from the tap water network via the shut-off valve.
- ▶ Connect the power cord (see section 3, device views) to the mains connection (building connection or mains junction box e.g. on construction sites).
- ▶ Switch on the mains voltage via the main switch or circuit breaker of the mains connection (building connection or mains junction box e.g. on construction sites).
- ▶ To operate and perform cleaning work with the high pressure cleaner, proceed as given in Section 6 (Operation).

6 Operation

6.1 Control and indicator elements of the device

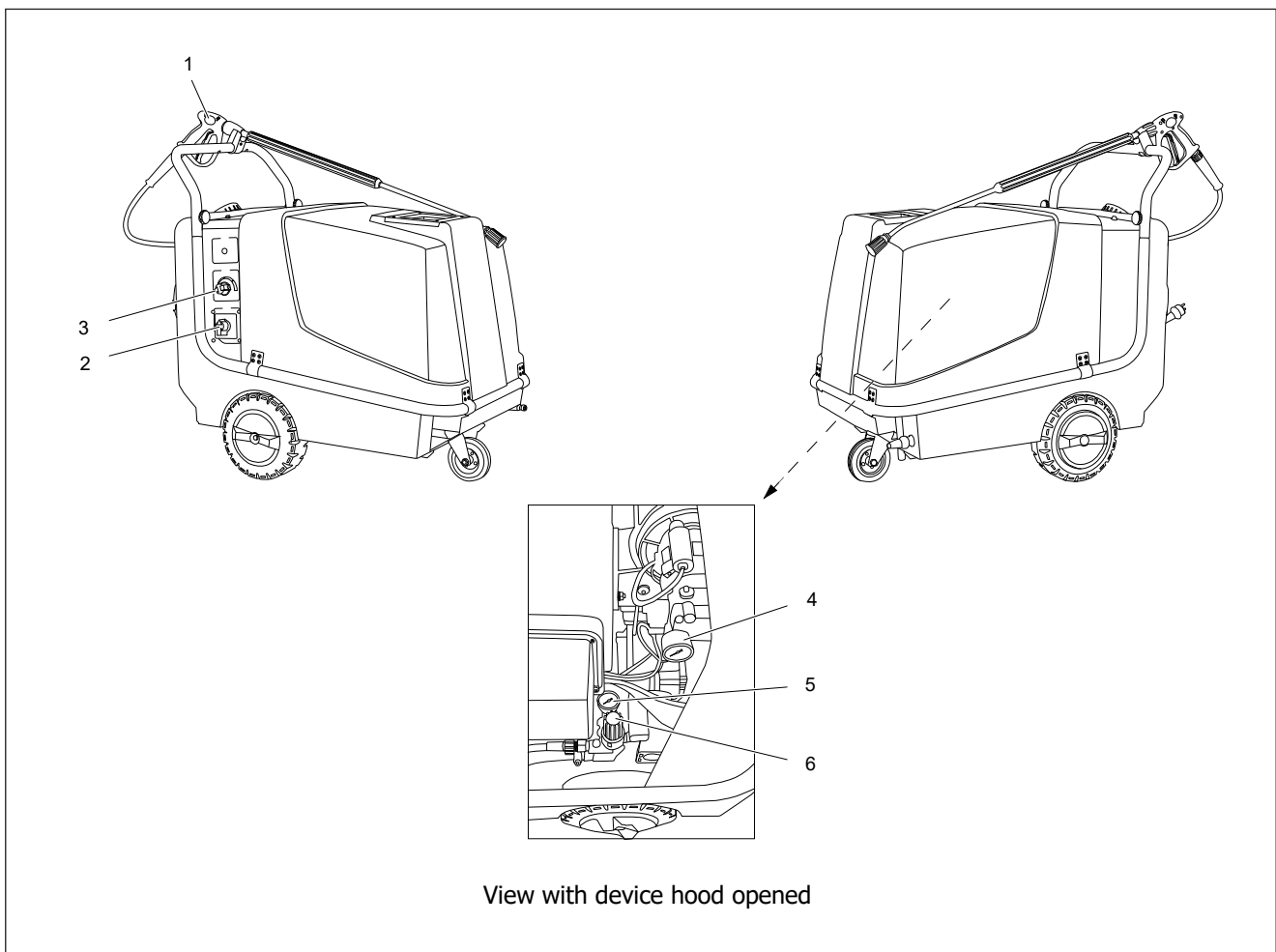


General Information

With the same device types, e.g. HD623 Standard and HD623 Premium, the control and indicator elements are the same.

The HD523 device is only available in the Standard version.

6.1.1 HD523 / HD523-UK Standard (Series Etronic I)



- | | | | |
|---|--|---|---|
| 1 | Trigger gun | 5 | Pressure gauge for operating pressure indication with running HP pump and trigger gun activated |
| 2 | Device switch 0/1/Burner | 6 | Unloader valve |
| 3 | Thermostat | | |
| 4 | Fuel pump oil pressure gauge (for customer service personnel only) | | |

Fig. 6 - 1 HD523 / HD523-UK (Standard), Control and indicator elements

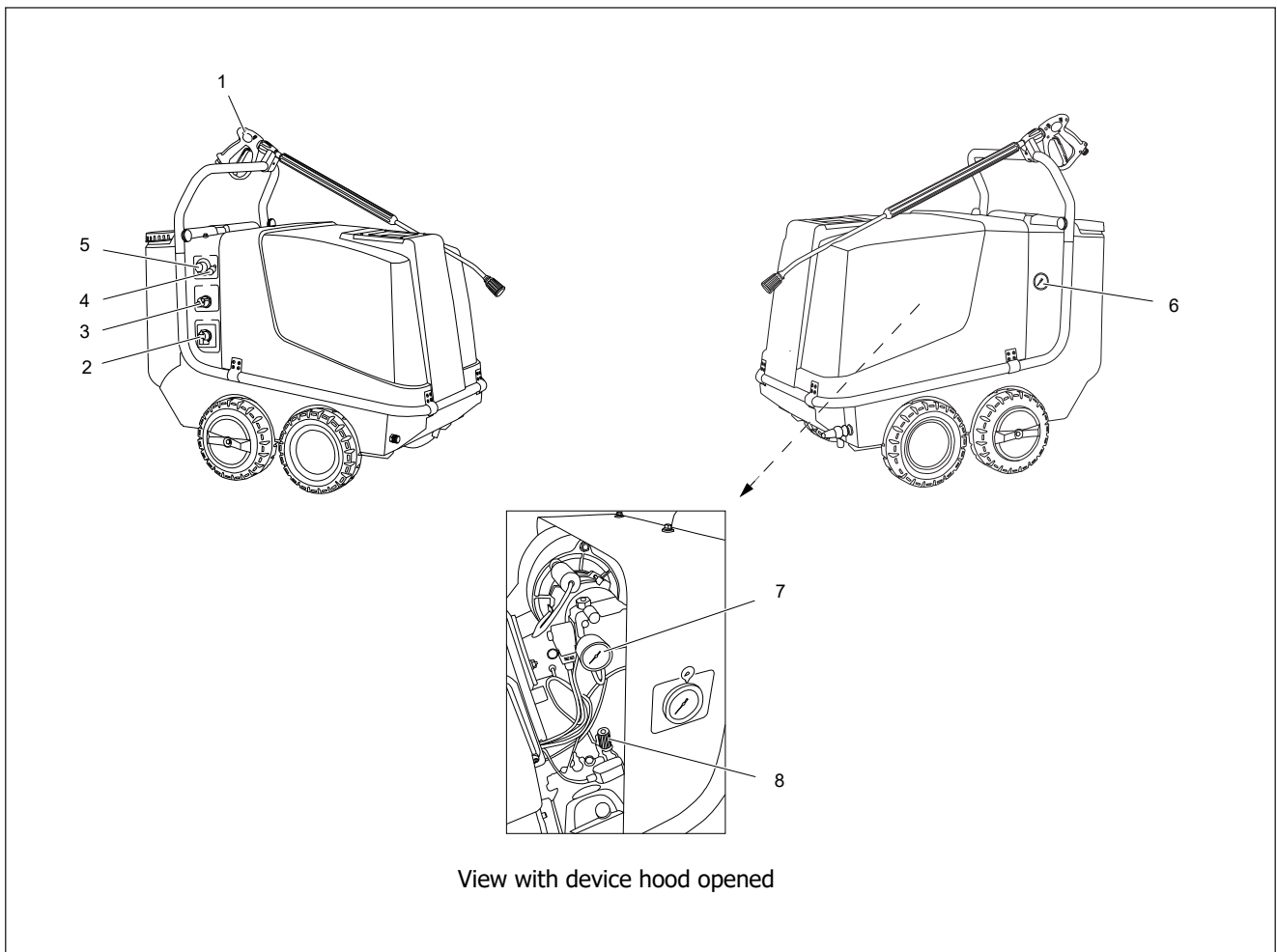
6.1.2 HD623 / HD623-UK / HD640 Standard (Series Etronic I)



General Information

The figure shows the Standard version.

The control and indicator elements are the same for the Premium version.



- | | | | |
|---|---------------------------------|---|---|
| 1 | Trigger gun | 6 | Pressure gauge for operating pressure indication with running HP pump and trigger gun activated |
| 2 | Device switch 0/1/Burner | 7 | Fuel pump oil pressure gauge (for customer service personnel only) |
| 3 | Thermostat | 8 | Unloader valve |
| 4 | Filter (detergent suction hose) | | |
| 5 | Detergent control valve | | |

Fig. 6 - 2 HD623 / HD623-UK / HD640 (Standard), Control and indicator elements

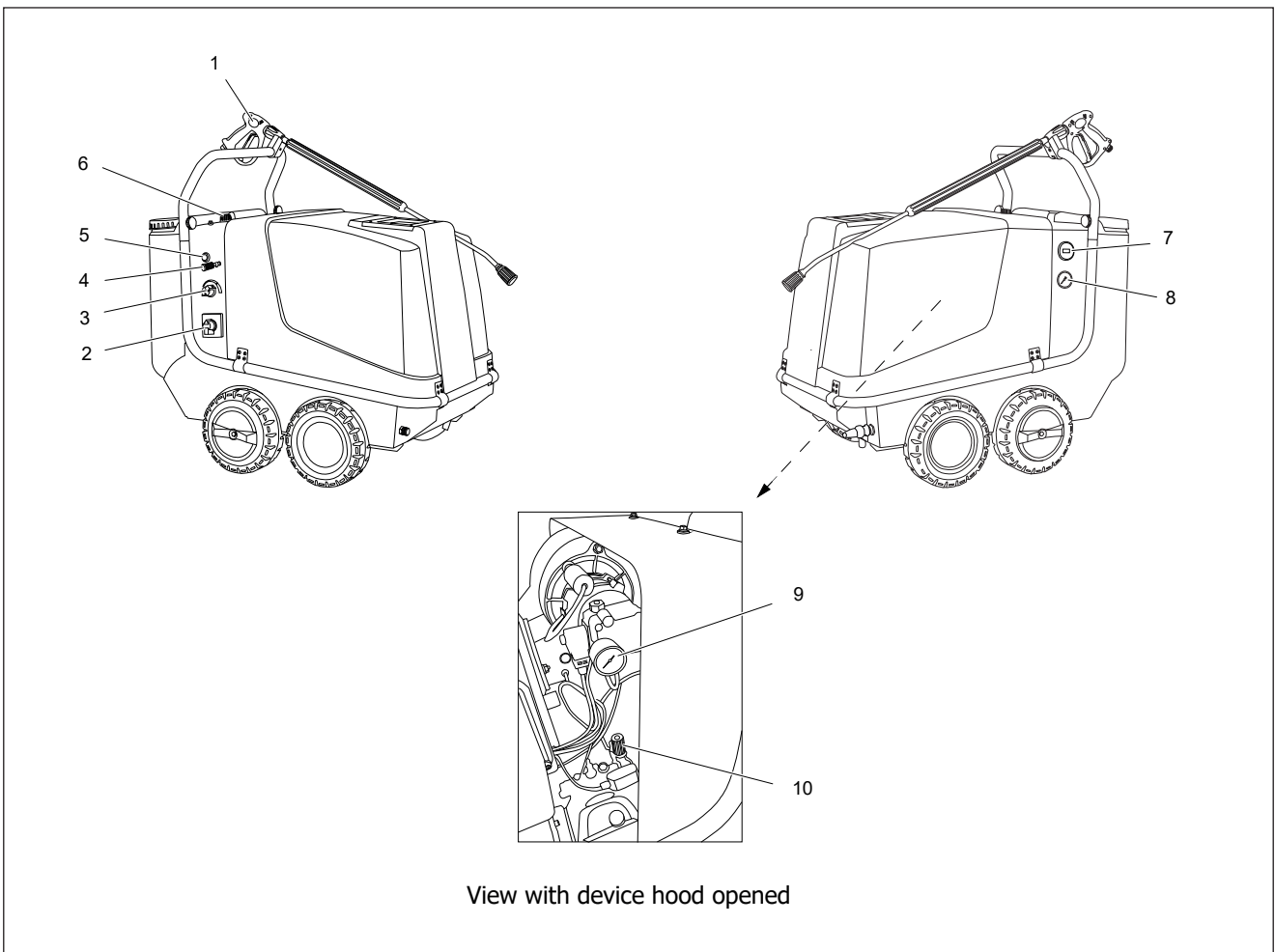
6.1.3 HD823 / HD823-UK / HD940 / HD923-UK Standard (Series Etronic II)



General Information

The figure shows the Standard version.

The control and indicator elements are the same for the Premium version.



View with device hood opened

- | | | | |
|---|---------------------------------|----|---|
| 1 | Trigger gun | 7 | Service hour meter |
| 2 | Device switch 0/1/Burner | 8 | Pressure gauge for operating pressure indication with running HP pump and trigger gun activated |
| 3 | Thermostat | 9 | Fuel pump oil pressure gauge (for customer service personnel only) |
| 4 | Filter (detergent suction hose) | 10 | Unloader valve |
| 5 | Optical flame monitoring | | |
| 6 | Detergent control valve | | |

Fig. 6 - 3 HD823 / HD823-UK / HD940 / HD923-UK (Standard), Control and indicator elements

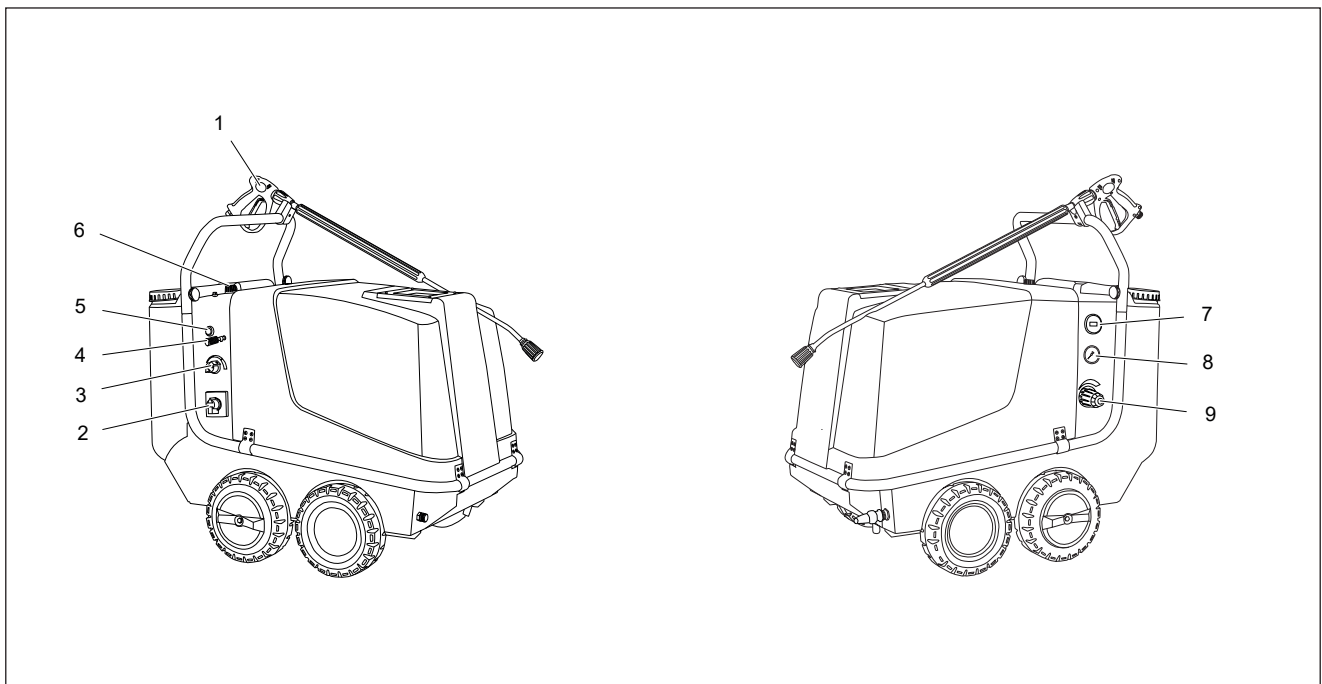
6.1.4 HD1140 / HD1240 Standard (Series Etronic II)



General Information

The figure shows the Standard version.

The control and indicator elements are the same for the Premium version.



- | | | | |
|---|---------------------------------|---|--|
| 1 | Trigger gun | 6 | Detergent control valve |
| 2 | Device switch 0/1/Burner | 7 | Service hour meter |
| 3 | Thermostat | 8 | Pressure gauge for operating pressure indication
with running HP pump and trigger gun activated |
| 4 | Filter (detergent suction hose) | 9 | Unloader valve |
| 5 | Optical flame monitoring | | |

Fig. 6 - 4 HD1140 / HD1240 (Standard), Control and indicator elements

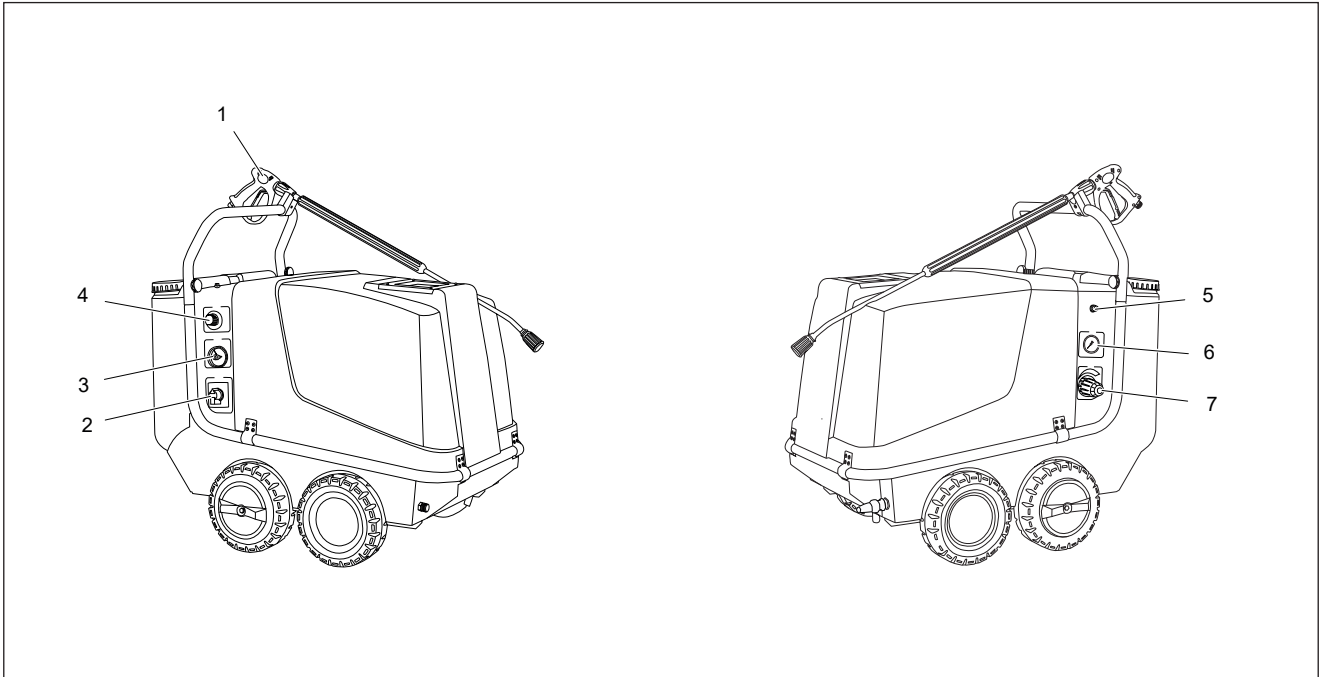
6.1.5 HDE840 (12 KW/18 KW/24 KW) Standard (HDE-Series)



General Information

The figure shows the Standard version.

The control and indicator elements are the same for the Premium version.



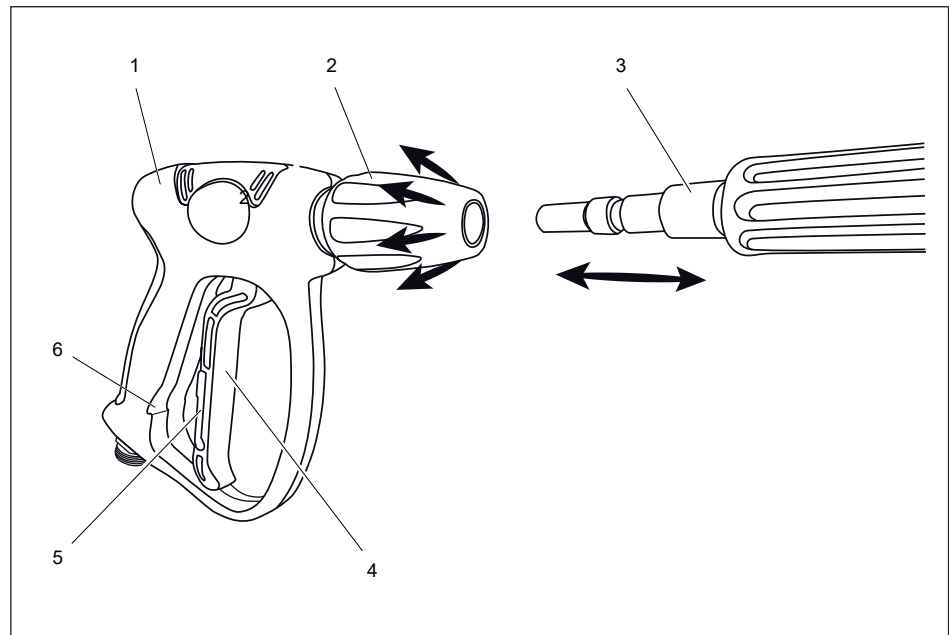
- | | | | |
|---|----------------------------------|---|---|
| 1 | Trigger gun | 5 | Thermo switch (overtemperature switch-off) |
| 2 | Device switch 0/Preheating/1 | 6 | Pressure gauge for operating pressure indication with running HP pump and trigger gun activated |
| 3 | Thermostat with temp. indication | 7 | Unloader valve |
| 4 | Detergent control valve | | |

Fig. 6 - 5 HDE840 (12 KW / 18 KW / 24 KW) Standard, Control and indicator elements

6.2 Control elements of the trigger gun

The following figure shows the control elements of the trigger gun.

To assemble (disassemble) the spray lance to the (from the) trigger gun see arrows in the following figure.



- | | | | |
|---|---------------|---|--|
| 1 | Trigger gun | 5 | Locking lever
(safety device) |
| 2 | Quick lock | 6 | Notch for locking lever
(arresting) |
| 3 | Spray lance | | |
| 4 | Trigger lever | | |

Fig. 6 - 6 Control elements of trigger gun

6.3 EMERGENCY STOP switch-off in case of danger



WARNING

In case of electrical accidents, never directly touch persons exposed life-threatening voltages.

In the event of accidents with persons at life-threatening voltages, immediately switch off the supply voltage to the high pressure cleaner or disconnect the power supply cable from the infrastructure mains plug. If possible, switch off the circuit breaker for the mains voltage.

Never touch the exposed person who has been involved in an accident directly. First aiders are also endangered by electric shock if they touch the person directly, in wet areas or over wet objects.

In extreme emergencies, without touching the injured person, use a dry garment, wooden slat or other insulating material to separate the person and mains voltage.

In case of accidents with persons or for accident prevention during device operation, perform an EMERGENCY STOP switch-off as follows:

- ▶ If necessary, if persons are still exposed to electric shock, switch off the mains voltage to the device via the circuit breaker (building connection) or disconnect the power supply cable from the mains socket.

- ▶ If necessary, switch off the device switch 0/1/Burner for Series Etronic I/II, resp. device switch 0/Preheating/1 for HDE-Series (to position 0) (see Section 6.1, control and indicator elements of the devices).
- ▶ If necessary, activate the trigger gun (1, Fig. 6-6) until the high pressure cleaner is depressurised.
- ▶ If necessary, close the shut-off valve of the mains water supply.

6.4 Commissioning



WARNING

Electric shock hazard.

In the event of accidents (e.g. due to life-threatening voltages) involving persons or to prevent accidents, switch off the device (see Section 6.3, EMERGENCY STOP - Switch-off in case of danger).

The water jet emerging from the trigger gun must not be directed at live electrical components or devices (machines, devices, lines, sockets, etc.).

Before cleaning, disconnect the cleaning objects such as electrical devices, assemblies or components from the power supply.



WARNING

Danger of skin burns due to hot surfaces or scalding by hot water or steam.

During operation, surfaces of the high pressure cleaner (pump parts, metal parts of the spray lance, cleaning objects, etc.) can become hot. In hot water operation, temperatures of up to 98 °C are achieved, as well as higher temperatures with water vapour components.

Touching hot surfaces, hot water or the hot water vapour can cause burns or scalding of the skin surface.

Avoid skin contact with hot water. Make sure that the hot water operation is switched off and that the device parts as well as the cleaning objects have cooled down before touching them.



WARNING

Ensure that the high pressure jet is used correctly.

The water jet coming out of the trigger gun must not be directed at persons or animals.

In the event of accidents (e.g. danger to persons, injured persons in the work area) or to prevent accidents, switch off the device (see Section 6.3, EMERGENCY STOP - Switch-off in case of danger).



WARNING

Before activating, hold the trigger gun and the spray lance tightly.

After activation of the trigger gun the emerging water jet exerts a jerky recoil force (see also Fig. 6-7).

This may result in unintentional jerking away from the selected cleaning object or the trigger gun slipping out of the hand, endangering the life and limb of persons

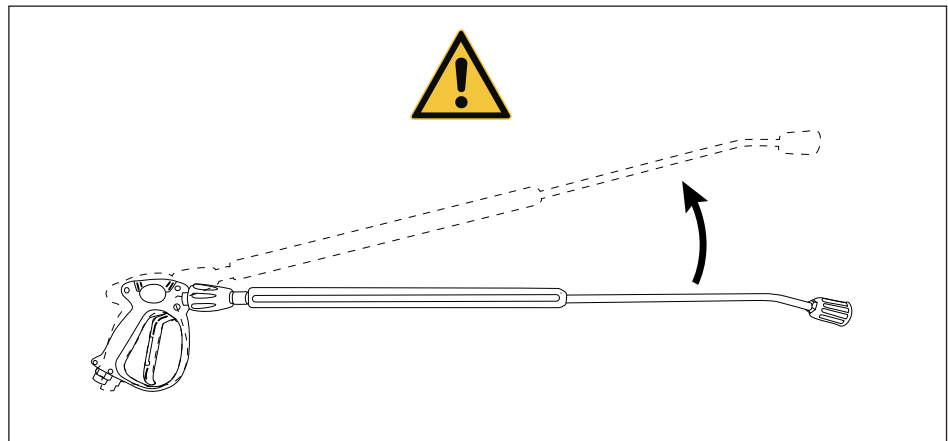


Fig. 6 - 7 Recoil force when switching on the trigger gun



General Information

In steam operation (90 - 150 °C) the working pressure must not exceed 30 bar!

To reach the steam stage (above 90 °C water temperature) regulate the working pressure below 30 bar and set the desired temperature with the thermostat up to a maximum of 150 °C.

For devices with hose drum (Premium version), the HP-hose must always be completely unwound during steam operation.

Preparing for operation

Prepare the high pressure cleaner for commissioning as follows:

- ▶ If necessary, set the device switch 0/1/Burner resp. for HDE-Series device switch 0/Preheat/1 to the initial position 0 (see section 6.1, control and indicator elements).
- ▶ If necessary, set the thermostat (see section 6.1) to the initial position Off (for HDE-Series devices set the desired hot water temperature).
- ▶ If necessary, set the detergent control valve for the devices HD623 to HD1240 and HDE-Series (see section 6.1) to the initial position 0.

To carry out the cleaning operation

- in normal operation without the addition of cleaning detergent with the devices
 - HD523 and HD523-UK (Etronic I) refer to section 6.4.1.
 - HD623, HD623-UK and HD640 (Etronic I) refer to section 6.4.2.
 - HD823, HD823-UK, HD940 and HD923-UK (Etronic II) refer to section 6.4.3.
 - HD1140 and HD1240 (Etronic II) refer to section 6.4.4.
 - HDE840 12 KW/18 KW/ 24 KW (HDE-Series) refer to section 6.4.5
- with the use of cleaning detergent (chemistry) refer to section 6.5
- for a special application of cleaning detergent in version Premium for the food industry, refer to section 6.6.

6.4.1 Cleaning operation with HD523/HD523-UK (Etronic I)

For carrying out cleaning work without the addition of cleaning detergent use the spray lance with the nozzle-protection and proceed as follows:

- ▶ Unlock and pull the trigger lever (4, Fig. 6-6) of the trigger gun.
- ▶ Set device switch 0/1/Burner (2, Fig. 6-1) into position 1. The high pressure cleaner starts. The pump first delivers air from the high pressure nozzle. After a short time, water then escapes.
- ▶ For hot water operation, set the device switch to the position Burner.
- ▶ Set the desired water temperature on the Thermostat (3, Fig. 6-1). A clicking sound is audible when the set water temperature is reached.
- ▶ Open the device hood to access the unloader valve (6, Fig. 6-1) and pressure gauge (5, Fig. 6-1).
- ▶ With the trigger gun activated and the pump running, the desired working pressure can be set via the unloader valve. By turning the unloader valve clockwise, the operating pressure increases - turning counterclockwise it decreases.
- ▶ The operating pressure can be read off the pressure gauge (5, Fig. 6-1) while the trigger gun (1, Fig. 6-6) is activated.
- ▶ If the trigger lever on the trigger gun is released, the high pressure cleaner switches to pressureless circulation operation. After approx. 20 sec. the device switches to stand-by mode. When the lever on the trigger gun is pulled again, the motor and the pump restart automatically.



General Information

If the device remains in stand-by mode for 20 minutes, the electronic control switches the high pressure cleaner off as programmed.

To resume operation, move the device switch 0/1/Burner into position 0 and then back to operating position 1, respectively for hot water operation into position Burner.

- ▶ For safety reasons after completion of cleaning work:
 - If necessary, after hot water operation, set the device switch (2, Fig. 6-1) from the Burner position to position 1.
 - Switch off the device via the device switch 0/1/Burner (into position 0)
 - If necessary, set the Thermostat (3, Fig. 6-1) to the off position.
 - Lock the trigger lever (4, Fig. 6-6) of the trigger gun against unintentional switching on using the locking lever (5, Fig. 6-6). Ensure that the locking lever is correctly arrested in the notch for locking lever (6, Fig. 6-6).
- ▶ If necessary, disconnect the power cord plug from the electrical mains socket.
- ▶ If necessary, close the shut-off valve of the mains water supply.
- ▶ If necessary, disconnect the water supply hose from the water inlet filter of the device.

6.4.2 Cleaning operation with HD623/HD623-UK HD640 (Etronic I)

For carrying out cleaning work without the addition of cleaning detergent use the spray lance with the nozzle-protection and proceed as follows:

- ▶ Unlock and pull the trigger lever (4, Fig. 6-6) of the trigger gun.
- ▶ Set device switch 0/1/Burner (2, Fig. 6-2) into position 1. The high pressure cleaner starts. The pump first delivers air from the high pressure nozzle. After a short time, water then escapes.
- ▶ For hot water operation, set the device switch to the position Burner.
- ▶ Set the desired water temperature on the Thermostat (3, Fig. 6-2). A clicking sound is audible when the set water temperature is reached.
- ▶ Open the device hood to access the unloader valve (8, Fig. 6-2).
- ▶ With the trigger gun activated and the pump running, the desired working pressure can be set via the unloader valve. By turning the unloader valve clockwise, the operating pressure increases - turning counterclockwise it decreases.
- ▶ The operating pressure can be read off the pressure gauge (6, Fig. 6-2) while the trigger gun (1, Fig. 6-6) is activated
- ▶ If the trigger lever on the trigger gun is released, the high pressure cleaner switches to pressureless circulation operation. After approx. 20 sec. the device switches to stand-by mode. When the lever on the trigger gun is pulled again, the motor and the pump restart automatically



General Information

If the device remains in stand-by mode for 20 minutes, the electronic control switches the high pressure cleaner off as programmed.

To resume operation, move the device switch 0/1/Burner into position 0 and then back to operating position 1, respectively for hot water operation into position Burner.

- ▶ For safety reasons after completion of cleaning work:
 - If necessary, after hot water operation, set the device switch (2, Fig. 6-2) from the Burner position to position 1.
 - Switch off the device via the device switch 0/1/Burner (into position 0)
 - If necessary, set the Thermostat (3, Fig. 6-2) to the off position.
 - Lock the trigger lever (4, Fig. 6-6) of the trigger gun against unintentional switching on using the locking lever (5, Fig. 6-6). Ensure that the locking lever is correctly arrested in the notch for locking lever (6, Fig. 6-6).
- ▶ If necessary, disconnect the power cord plug from the electrical mains socket.
- ▶ If necessary, close the shut-off valve of the mains water supply.
- ▶ If necessary, disconnect the water supply hose from the water inlet filter of the device.

6.4.3 Cleaning operation with HD823, HD823-UK, HD940 and HD923-UK (Etronic II)

For carrying out cleaning work without the addition of cleaning detergent use the spray lance with the nozzle-protection and proceed as follows:

- ▶ Unlock and pull the trigger lever (4, Fig. 6-6) of the trigger gun.
- ▶ Set device switch 0/1/Burner (2, Fig. 6-3) into position 1. The high pressure cleaner starts. The pump first delivers air from the high pressure nozzle. After a short time, water then escapes.
- ▶ For hot water operation, set the device switch to the position Burner.
- ▶ Set the desired water temperature on the Thermostat (3, Fig. 6-3). A clicking sound is audible when the set water temperature is reached.
- ▶ Open the device hood to access the unloader valve (10, Fig. 6-3).
- ▶ With the trigger gun activated and the pump running, the desired working pressure can be set via the unloader valve. By turning the unloader valve clockwise, the operating pressure increases - turning counterclockwise it decreases.
- ▶ The operating pressure can be read off the pressure gauge (8, Fig. 6-3) while the trigger gun (1, Fig. 6-6) is activated.
- ▶ If the trigger lever on the trigger gun is released, the high pressure cleaner switches to pressureless circulation operation. After approx. 20 sec. the device switches to stand-by mode. When the lever on the trigger gun is pulled again, the motor and the pump restart automatically.



General Information

If the device remains in stand-by mode for 20 minutes, the electronic control switches the high pressure cleaner off as programmed.

To resume operation, move the device switch 0/1/Burner into position 0 and then back to operating position 1, respectively for hot water operation into position Burner.

- ▶ For safety reasons after completion of cleaning work:
 - If necessary, after hot water operation, set the device switch (2, Fig. 6-3) from the Burner position to position 1.
 - Switch off the device via the device switch 0/1/Burner (into position 0)
 - If necessary, set the Thermostat (3, Fig. 6-3) to the off position.
 - Lock the trigger lever (4, Fig. 6-6) of the trigger gun against unintentional switching on using the locking lever (5, Fig. 6-6). Ensure that the locking lever is correctly arrested in the notch for locking lever (6, Fig. 6-6).
- ▶ If necessary, disconnect the power cord plug from the electrical mains socket.
- ▶ If necessary, close the shut-off valve of the mains water supply.
- ▶ If necessary, disconnect the water supply hose from the water inlet filter of the device.

6.4.4 Cleaning operation with HD1140/HD1240 (Etronic II)

For carrying out cleaning work without the addition of cleaning detergent use the spray lance with the nozzle-protection and proceed as follows:

- ▶ Unlock and pull the trigger lever (4, Fig. 6-6) of the trigger gun.
- ▶ Set device switch 0/1/Burner (2, Fig. 6-4) into position 1. The high pressure cleaner starts. The pump first delivers air from the high pressure nozzle. After a short time, water then escapes.
- ▶ For hot water operation, set the device switch to the position Burner.
- ▶ Set the desired water temperature on the Thermostat (3, Fig. 6-4). A clicking sound is audible when the set water temperature is reached.
- ▶ With the trigger gun activated and the pump running, the desired working pressure can be set via the unloader valve (9, Fig. 6-4). By turning the unloader valve clockwise, the operating pressure increases - turning counterclockwise it decreases.
- ▶ The operating pressure can be read off the pressure gauge (8, Fig. 6-4) while the trigger gun (1, Fig. 6-6) is activated.
- ▶ If the trigger lever on the trigger gun is released, the high pressure cleaner switches to pressureless circulation operation. After approx. 20 sec. the device switches to stand-by mode. When the lever on the trigger gun is pulled again, the motor and the pump restart automatically.



General Information

If the device remains in stand-by mode for 20 minutes, the electronic control switches the high pressure cleaner off as programmed.

To resume operation, move the device switch 0/1/Burner into position 0 and then back to operating position 1, respectively for hot water operation into position Burner.

- ▶ For safety reasons after completion of cleaning work:
 - If necessary, after hot water operation, set the device switch (2, Fig. 6-4) from the Burner position to position 1.
 - Switch off the device via the device switch 0/1/Burner (into position 0).

- If necessary, set the Thermostat (3, Fig. 6-4) to the off position.
- Lock the trigger lever (4, Fig. 6-6) of the trigger gun against unintentional switching on using the locking lever (5, Fig. 6-6). Ensure that the locking lever is correctly arrested in the notch for locking lever (6, Fig. 6-6).
- ▶ If necessary, disconnect the power cord plug from the electrical mains socket.
- ▶ If necessary, close the shut-off valve of the mains water supply.
- ▶ If necessary, disconnect the water supply hose from the water inlet filter of the device.

6.4.5 Cleaning operation with HDE840 (HDE-Series 12 KW/18 KW/24 KW)

For carrying out cleaning work without the addition of cleaning detergent use the spray lance with the nozzle-protection and proceed as follows:

- ▶ Set the red thermostat pointer (3, Fig. 6-5) to the desired water temperature using the knurled adjuster element.
- ▶ Set device switch 0/Preheating/1 (2, Fig. 6-5) into position Preheating.
- ▶ As soon as the black thermostat pointer covers the red one, the desired water temperature is reached.
- ▶ Unlock and pull the trigger lever (4, Fig. 6-6) of the trigger gun.
- ▶ Set device switch 0/Preheating/1 into position 1. The high pressure cleaner starts. The pump first delivers air from the high pressure nozzle. After a short time, water then escapes.
- ▶ With the trigger gun activated and the pump running, the desired working pressure can be set via the unloader valve (7, Fig. 6-5). By turning the unloader valve clockwise, the operating pressure increases - turning counterclockwise it decreases.
- ▶ The operating pressure can be read off the pressure gauge (6, Fig. 6-5) while the trigger gun (1, Fig. 6-6) is activated.
- ▶ If the trigger lever on the trigger gun is released, the high pressure cleaner switches to pressureless circulation operation. After approx. 20 sec. the device switches to stand-by mode. When the lever on the trigger gun is pulled again, the motor and the pump restart automatically.



General Information

If the device remains in stand-by mode for 20 minutes, the electronic control switches the high pressure cleaner off as programmed.

To resume operation, set the device switch 0/Preheating/1 into position 0 and then back to operating position 1.

- ▶ For safety reasons after completion of cleaning work:
 - Switch off the device via the device switch 0/Preheating/1 (into position 0)
 - Lock the trigger lever (4, Fig. 6-6) of the trigger gun against unintentional switching on using the locking lever (5, Fig. 6-6). Ensure that the locking lever is correctly arrested in the notch for locking lever (6, Fig. 6-6).

- ▶ If necessary, disconnect the power cord plug from the electrical mains socket.
- ▶ If necessary, close the shut-off valve of the mains water supply.
- ▶ If necessary, disconnect the water supply hose from the water inlet filter of the device.

6.5 Operation with cleaning detergent (chemistry)



WARNING

Only use permitted detergents.

Only use cleaning detergents approved by the manufacturer EHRLE. The use of inadmissible detergents can endanger the operational safety of the device and thus the life and limb of persons.

There is a risk of poisoning or caustic burns with cleaning detergents. Avoid contact with skin surface and eyes. Observe the manufacturer's safety data sheets. Keep cleaning agents out of the reach of unauthorized persons.

Observe specifications for neutral additive pH value 7 ... 9. Observe the instructions of the additive manufacturer, e.g. Personal Protective Equipment (PPE), waste water regulations.



WARNING

Risk of explosion due to use of inadmissible detergents.

Never aspirate solvent-containing liquids such as paint thinners, petrol, oil or similar liquids. The spray of solvents is highly flammable, explosive and toxic. Observe the specifications of the additive manufacturers!



CAUTION

Observe the safety data sheets for the detergent agents or chemical additives.

Follow the manufacturer's instructions for detergent agents or chemical additives in the safety data sheets.

Unsuitable and unapproved detergent agents can damage the unit as well as the object to be cleaned.

The temperature specifications for the detergent agents and chemical additives must be observed during hot water operation.

Exceeding temperature limits of the detergent agents or chemical additives during hot water operation can cause damage to the high pressure cleaner.



CAUTION

Chemical dry run or inadmissible detergents can damage the high pressure cleaner.

During detergent operation, the internal or external detergent tank must be sufficiently filled with approved detergent. When using external detergent tanks, the filter of the detergent suction hose must be completely inserted to the bottom of the tank.

Intake air or inadmissible detergents causes damage to seals and pumps.

For cleaning work with the high pressure cleaner, a detergent agent (chemical) can be added to the high pressure jet.

In order to protect the environment, we recommend using detergents sparingly. Observe the dosage recommendations on the container labels of the detergents.

An up-to-date list of approved detergents or chemical additives can be requested from the manufacturer EHRLE.

For the selection options of the device-specific detergent tank or external tank, see the following table.

High pressure cleaner type	Detergent tank		
	Left	Right	External
HD523/HD523-UK Standard (only with optional equipment for detergent operation) Series Etronic I	n/a	n/a	Suction via optional filter (detergent suction hose)
HD623/HD623-UK/HD640 Standard/Premium Series Etronic I	n/a	9, Fig. 3-2 resp. 7, Fig. 3-3	Suction via filter (detergent suction hose) 6, Fig. 3-2 resp. 2, Fig. 3-3
HD823/HD823-UK/HD940/HD923-UK Standard/Premium Series Etronic II	n/a	10, Fig. 3-4 resp. 8, Fig. 3-5	Suction via filter (detergent suction hose) 6, Fig. 3-4 resp. 3, Fig. 3-5
HD1140/HD1240 Standard/Premium Series Etronic II	n/a	10, Fig. 3-6 resp. 8, Fig. 3-7	Suction via filter (detergent suction hose) 6, Fig. 3-6 resp. 3, Fig. 3-7
HDE840 (12 KW/18 KW/24 KW) Standard/Premium HDE-Series	7, Fig. 3-8 resp. 5, Fig. 3-9	8, Fig. 3-8 resp. 6, Fig. 3-9	n/a

Tab. 6 - 1 Device-specific selectable detergent tank

6.5.1 Cleaning detergent operation with HD523 Standard (optional equipment required)



General Information

The basic configuration of the HD523 is not designed for detergent agent operation. The manufacturer offers the equipment for detergent operation as an option.

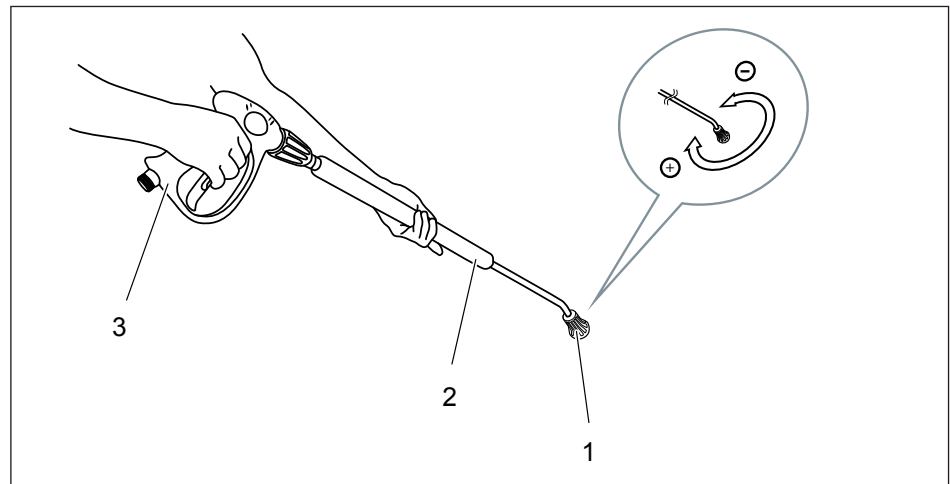
With the optional device version of the HD523, an external detergent tank is required for detergent operation.

The HD523 is designed for low-pressure operation in detergent mode. The Spray lance 900 mm with adjustable nozzle is used.

For cleaning detergent operation with the HD523, use the Spray lance 900 mm with adjustable nozzle.

For cleaning detergent operation proceed as follows:

- ▶ Provide external detergent tank (see Tab. 6-1).
- ▶ Fill or refill the external detergent tank with approved detergent.
- ▶ Insert the filter of the detergent suction hose to the bottom of the detergent tank.
- ▶ Turn adjustable nozzle (1, Fig. 6-8) on the spray lance (2, Fig. 6-8) counterclockwise (direction „-“). During operation, the cleaning detergent is now automatically sucked in via the high-pressure injector and mixed with the high-pressure jet. Depending on the setting of the adjustable nozzle, the cleaning detergent supply is dosed. Left stop is max. detergent dosage.



- 1 Adjustable nozzle
- 2 Spray lance 900 mm
- 3 Trigger gun

Fig. 6 - 8 Only for HD523:
Setting the adjustable nozzle of the spray lance

- ▶ To remove the dirt spray the cleaning detergent sparingly onto the cleaning object and let it work for approx. one to five minutes.
- ▶ Then spray off the loosened dirt with the high-pressure jet.

- ▶ After using cleaning detergents, switch the high pressure cleaner to normal operation and rinse for at least 30 seconds. For normal operation, turn the adjustable nozzle (1, Fig. 6-8) on the spray lance clockwise (direction „+“) to right stop. The cleaning agent is no longer admixed to the high-pressure jet.

6.5.2 Cleaning detergent operation with HD623 to HD1240 and HDE-Series



General Information

Devices Standard of HD623 to HD1240 and HDE-Series

For the Standard devices HD623 to HD1240 and HDE-Series, the Spray lance 900 mm with nozzle-protection and high pressure nozzle (see Section 4.1, Accessories) is used for cleaning detergent operation.

Devices Premium of Series HD623 to HD1240 and HDE-Series

For the Premium devices, the accessories include the Spray lance 900 mm with nozzle-protection and high pressure nozzle and the Spray lance 900 mm with rotary-nozzle (see section 4.2, Accessories). Both accessories are optionally available to the user for cleaning detergent operation.

To carry out the cleaning detergent operation, use device-specific as follows

- for Standard devices HD623 to HD1240 and HDE-Series, the Spray lance 900 mm with nozzle-protection and high pressure nozzle.
- for the Premium devices HD623 to HD1240 and the HDE-Series the Spray lance 900 mm with nozzle-protection and high pressure nozzle or the Spray lance 900 mm with rotary-nozzle.

For cleaning detergent operation proceed as follows:

- ▶ Select the detergent tank for the detergent supply specific to the device resp. provide an external tank (see Tab. 6-1 and Section 3, device views).
- ▶ Fill or top up (if necessary) the internal resp. external detergent tank with approved detergent.
- ▶ In case of an external detergent tank, guide the filter of the detergent suction hose to the bottom of the detergent tank.
- ▶ Initially set the detergent control valve (see Fig. 6-2 to 6-5) into position „0“.
- ▶ Open the detergent control valve from position „0“ according to the desired quantity of detergent. The detergent tank is selected by the direction of rotation
 - to the left, the internal detergent tank is selected (or, for HDE-Series the Detergent tank 1)
 - to the right, the external detergent tank with the supply via the filter and detergent suction hose is selected (or, for the HDE-Series the Detergent tank 2).



General Information

The more the detergent control valve is opened, the more amount of detergent is sucked in. Depending on the application, set the dosage via the detergent control valve.

- ▶ To remove the dirt, spray on the detergent sparingly onto the cleaning object and let it work for approx. one to five minutes.
- ▶ Then spray off the loosened dirt with the high pressure jet.
- ▶ After using detergents, set the detergent control valve to „0“. In normal operation, rinse the high pressure cleaner for at least 30 seconds.

6.6 Special application of detergent agents for food appliance (only version Premium)

For special cleaning tasks in the food industry, the operation can be converted to use with the 2 l bottle (2, Fig. 6-10). The 2 l bottle is provided for additional chemistry used for food industry.

For conversion to cleaning tasks in the food industry with the 2 l bottle proceed as follows:

- ▶ Remove the spray lance (3, Fig. 6-6) from the trigger gun (1, Fig. 6-6). To do this, retract the quick lock (2, Fig. 6-6) and remove the spray lance from the trigger gun.
- ▶ Mount the 2 l bottle on the trigger gun. Pull back the quick lock (see Fig. 6-9) and insert the mounting kit into the spray lance.
- ▶ Make sure that the quick lock locks fully forward again after inserting the mounting kit
- ▶ Fill the 2 l bottle (2, Fig. 6-10) with the desired chemical additive. The detergent is sucked in during operation via the injection principle and mixed directly into the high pressure jet.
- ▶ Adjust the detergent agent dosage according to the degree of soiling of the cleaning object via the adjustment controller (1, Fig. 6-10) on the 2 l tank.



General Information

The more the adjustment controller is turned to the left, the more of the amount of detergent agent is sucked in. Depending on the application, use this controller to specify the dosage.

- ▶ To remove the dirt, spray on the detergent sparingly onto the cleaning object and let it work for approx. one to five minutes.
- ▶ Then spray off the loosened dirt with the high pressure jet.
- ▶ After using detergents, rinse the high pressure cleaner for at least 30 seconds.

To return to normal operation with the spray lance, proceed in reverse order to the installation procedure for the 2 l bottle.



Fig. 6 - 9 Attachment of 2 l bottle (food appliance) to trigger gun



- 1 Adjustment controller for dosage of additional chemistry
- 2 2 l bottle for additional chemistry (food appliance)

Fig. 6 - 10 2 l bottle for additional chemistry (food appliance)

7 Decommissioning



General Information

Provide a frost sheltered location for the high pressure cleaner as well as all accessories (spray lances, trigger gun, spray lance, water inlet hose, etc.) for

- temporary storage until the next operation or
- storage over a longer period of time.

Otherwise provide frost protection (see section 8.3.1).

7.1 Temporary decommissioning

After completion of cleaning work for temporary decommissioning until the next use, proceed as follows

- ▶ After cleaning detergent operation according section 6.5 respectively section 6.6
 - turn off detergent supply
 - rinse the high pressure cleaner for at least 30 seconds.
- ▶ If necessary, set the Thermostat to off.
- ▶ If necessary, set the device switch
 - 0/1/Burner (Etronic I and Etronic II) to position 0.
 - 0/Preheating/1 (HDE-Series) to position 0.
- ▶ If necessary, close the shut-off valve of the mains water supply on the building side.
- ▶ Disconnect the water inlet hose from
 - water inlet filter of the device (see section 3, device views)
 - connection fitting from the mains water supply.
- ▶ Pull tripper lever of trigger gun (4, Fig. 6-6) until the high pressure cleaner is depressurised.



WARNING

Lock the lever of the trigger gun after completion of cleaning work.

After deactivating the trigger gun, lock the trigger lever (4, Fig. 6-6) against unintentional switching on by means of the locking lever (5, Fig. 6-6). Ensure that the locking lever is correctly positioned in the notch for the locking lever (6, Fig. 6-6).

Unintentional activation of the trigger gun after restarting the device can endanger life and limb of persons.

- ▶ Lock the trigger lever (4, Fig. 6-6) of the trigger gun against unintentional switching on using the locking lever (5, Fig. 6-6). Ensure that the locking lever is arrested in the notch for locking lever (6, Fig. 6-6).
- ▶ Remove HP-Hose from the trigger gun.

- ▶ To empty the high pressure pump, hold the HP-Hose and switch on the device only until no more water escapes at the end of the hose.
- ▶ Disconnect the power cord plug from the electrical mains socket.
- ▶ Wind up the power cable on the device holder.
- ▶ Roll up HP-Hose.
- ▶ Stow the accessories on the device holdings provided.

7.2 Decommissioning for a longer period of time

If the high pressure cleaner is to be taken out of operation for a longer period of time, refer to Section 7.1 and take it out of operation.

Store the device in a frost-protected room.

See also Section 8.3.1, Frost Protection.

8 Maintenance



WARNING

Carry out maintenance measures professionally.

Maintenance measures may only be carried out by authorised personnel (see Tab. 8-1).

Before carrying out any maintenance work, take the high pressure cleaner out of operation and disconnect it from the building's electrical power supply or from the mains junction box (e.g. on construction sites).

8.1 General Information

The maintenance measures must be carried out professionally, regularly and mean for the device:

- Guarantee of operational safety.
- Achieving a long service life.
- Maintaining the performance.

8.2 EHRLE Maintenance and Inspection Contract

With the sale of the high pressure cleaner the manufacturer EHRLE offers a maintenance contract or especially a security inspection agreement. The maintenance contract includes:

- Maintenance and repair work.
- Security inspection agreement.

The security inspection agreement includes the inspection according to

- Guidelines for Liquid Sprayers (see Section 2.11).
- An emission measurement can be carried out as part of a customer service. Despite of it, an annually check by the responsible district chimney sweep is mandatory to ensure observance of the emission limit values.

8.3 Maintenance work

Components which show increased wear or whose design duration has been exceeded or is exceeded before the next maintenance must be replaced as a precaution.

Replace defective parts. Only use spare parts recommended and approved by the manufacturer.

The following table contains the periodical maintenance work for the Mobile High Pressure Cleaners Etronic I, Etronic II and HDE-Series.

Period	Component	Measure	Authorized personnel
Daily	Trigger gun	Check if trigger gun closes tightly; check function of mechanical locking to prevent unintentional switch-on; replace defective trigger gun.	Trained operator
	HP-Hoses	Check the HP-Hoses (see section 8.3.3).	Trained operator
	Electrical plugs and cables	Check plugs and cables for damage. Replace damaged plugs and/or cables immediately by an authorized customer service/electrical specialist.	Customer Service/ Electrical Specialist
	High pressure pump	Check pump for leakage. If more than 3 drops per minute call customer service. Note: Due to condensate, higher drop formation is possible.	Customer Service
	High pressure pump	Oil leakage	Customer Service
Weekly resp. 8 operating hours	Oil level high pressure pump.	Change low quality oil (e.g. milky or aqueous oil). Condensation is possible with high humidity and temperature fluctuations. If the oil takes on a grey or whitish hue, it must be changed. For oil change see section 8.3.4.	Trained operator or Customer Service
	Filter in float valve (float container)	Check filter for dirt and clean if necessary (not applicable for HD523)	Trained operator
Weekly	Water inlet filter	Check filter for dirt and clean if necessary (see section 8.3.2).	Trained operator
	Filter (detergent suction hose)	Check filter for dirt and clean if necessary	Trained operator
Semi-annually or if required	Spray nozzle	Replace spray nozzle.	Trained operator
Semi-annually	High pressure pump	Oil change (see also section 8.3.4)	Customer Service
Annually	Boiler	Check boiler for scale.	Trained operator
Annually	Safety check for the high pressure cleaner.	Heating installation check by the responsible district chimney sweep to ensure observance of the emission limit values for Series Etronic I and Etronic II (see section 2.10).	Qualified expert

Tab. 8 - 1 List of maintenance work

Period	Component	Measure	Authorized personnel
Annually	Safety check for the high pressure cleaner.	An qualified expert has to inspect the high pressure cleaners in accordance with the „Guidelines for liquid sprayers“, if necessary or at least every 12 months (see section 2.11). The result of the test must be recorded in writing. Carry out a safety check in accordance with the respective national regulations of the legislator for liquid sprayers.	Qualified expert

Tab. 8 - 1 List of maintenance work

8.3.1 Frost Protection

For optimum protection, operate or store the device in a frost-protected area. If the device is exposed to temperatures below freezing point during temporary or prolonged decommissioning (e.g. storage in warehouse), frost protection must be provided (see section 8.3.1.1 and section 8.3.1.2).

8.3.1.1 Drain water from high pressure cleaner

Proceed as follows:

- ▶ Unscrew the water supply hose and the HP-Hose.
- ▶ Operate the high pressure cleaner for max. one minute until the pump and hoses are empty.

8.3.1.2 Rinse high pressure cleaner with antifreeze agent



General Information

Observe the handling instructions of the antifreeze manufacturer.

Proceed as follows:

- ▶ Provide commercially available antifreeze to the connection water inlet and connect the water supply hose
- ▶ Place the collecting container under the high pressure outlet
- ▶ Switch on the high pressure cleaner and operate until the antifreeze emerges at the high pressure outlet

It also provides corrosion protection.

8.3.2 Filter on the adapter connection water inlet

To clean the water inlet filter proceed as follows

- ▶ Close the water supply from the tap water network via the shut-off valve.
- ▶ Unscrew the water inlet hose from the filter.
- ▶ Unscrew the filter from the adapter on the connection water inlet.
- ▶ Rinse the filter with clear water.
- ▶ Reassemble in reverse order.

8.3.3 Checking the HP-Hoses



WARNING

Operation with worn, damaged or repaired HP-Hoses can endanger life and limb of persons.

Ensure that HP-Hoses are removed immediately in the case of:

- Signs of wear.
- Signs indicating repairs to the HP-Hose.
- Overaging and low durability.

Bursting or leaky HP-Hoses can cause hot high pressure water or steam to escape. This can endanger life and limb of persons.

Before each commissioning of the high pressure cleaners, carry out a visual inspection of the HP-Hoses for damage. Every HP-Hose must comply with the safety regulations and be marked with:

- Permissible operating pressure.
- Permissible operating temperature.
- Date of manufacture.
- Manufacturer.

Replace the HP-Hose at the slightest sign of damage.

Only use spare parts recommended by the manufacturer (see spare parts catalogue).

8.3.4 Oil change

For the oil change, use the oil specified by the manufacturer with the correct consistency.

Environmental protection requirements must be complied with and proper disposal must be ensured.

9 Troubleshooting



WARNING

Carry out troubleshooting and rectification properly.

Maintenance measures may only be carried out by authorised personnel. Before carrying out any troubleshooting activities, take the high pressure cleaner out of operation and disconnect it from the building's electrical power supply or from the mains junction box (e.g. on construction sites).

9.1 Troubleshooting table

For troubleshooting purposes, possible error causes are listed in the following table. Clean the contaminated parts (filter, high-pressure nozzle, etc.) to eliminate possible faults.

Replace defective parts. Only use spare parts recommended and approved by the manufacturer.

Error	Possible cause	Remedying	Authorized personnel
Device cannot be switched on.	Check that the power supply cable is plugged in.	Connect the power supply cable to the building power supply or mains junction box.	Trained operator
	Building supply or mains junction box circuit breaker has tripped.	Switch the circuit breaker on again.	Trained operator
	Circuit breaker trips again after repeatedly switched on.	If building power supply or mains junction box is ok, the device is defective; disconnect power supply cable, contact customer service.	Customer Service
	Check for defective power supply cable.	Replace defective power supply cable.	Customer Service / Electrical Specialist
	Water level in the float container is too low.	Clean the filter before the float container inlet.	Customer Service
	Low water cut off in the float container is defect.	Replace low water cut off.	Customer Service
	Device switch is defective.	Replace device switch.	Customer Service
	Defective control board Etronic.	Replace control board Etronic	Customer Service
	Internal device control or components defective.	Replace defective components.	Customer Service

Tab. 9 - 1 Troubleshooting table

Error	Possible cause	Remedying	Authorized personnel
Pump operation unstable, provides no performance during cleaning detergent operation.	Detergent container is empty or in case of external tank the filter of the detergent suction hose is not inserted to the bottom.	Fill or top up (if necessary) the detergent tank with approved detergent resp. in case of external tank insert the filter of the detergent hose to the bottom of the detergent tank.	Trained operator
Device has switched off in stand-by mode.	Device was in stand-by mode for 20 minutes. Electronic control has switched off high pressure cleaner according to program.	To resume operation, turn the device switch 0/1/burner into position 0 and then back to operating position 1 resp. to position Burner; for HDE-Series turn the device switch 0/Preheating/1 to position 0 and then back to position 1.	Trained operator
Device switched off during operation.	Motor of high pressure cleaner overheated.	Allow motor to cool down. To resume operation, turn the device switch 0/1/burner into position 0 and then back to operating position 1 resp. to position Burner; for HDE-Series turn the device switch 0/Preheating/1 to position 0 and then back to position 1.	Trained operator
	With HDE-Series: Thermo switch (5, Fig. 6-5) has tripped (Overtemperature switch-off)	Unscrew the cover cap and check the position of the pin; if the thermo switch tripped, press pin; if the thermo switch trips again, wait until the device has cooled down.	Trained operator
	After further attempts to switch on, the device does not go into operation.	Contact Customer Service.	Customer Service
	Internal control circuits or components defective.	Replace defective components.	Customer Service
No pressure build-up with high pressure cleaner.	High pressure nozzle dirty or defective.	Clean or replace high pressure nozzle.	Trained operator
	Filter on the adapter connection water inlet contaminated.	Clean the filter, see section 8.3.2.	Trained operator
	Water inflow volume is too low (see section 3.12, Technical Data).	Ensure sufficient water inflow volume.	Trained operator

Tab. 9 - 1 Troubleshooting table

Error	Possible cause	Remedying	Authorized personnel
No pressure build-up with high pressure cleaner (continued)	Filter in float valve contaminated.	Clean the filter.	Trained operator
	Filter (detergent suction hose) contaminated.	Clean the filter.	Trained operator
	Internal or external detergent tank empty.	Fill or refill the detergent internal or external detergent tank.	Trained operator
	Air has been sucked into the device, water supply or hose.	Vent the device or hoses.	Trained operator
	Leakage in the device, HP-Hoses, trigger gun or spray lance.	Check for cause of leakage; replace defective parts.	Trained operator resp. customer Service
	Detergent control valve is leaking.	Replace detergent control valve.	Customer Service
	One or more supply lines of the pump are leaking or clogged.	Replace leaking supply pipes or remove blockage.	Customer Service
	Unloader valve contaminated.	Clean the unloader valve.	Customer Service
	Unloader valve is defective.	Replace defective unloader valve.	Customer Service
	High pressure pump valves are dirty or defective.	Clean or replace valves.	Customer Service
	Cuffs of the high pressure pump are dirty or defective.	Clean or replace cuffs.	Customer Service
Etronic I / II: During hot-water operation no water heating.	Thermostat in position „Off“.	Set the desired water temperature on the Thermostat.	Trained operator
	Fuel tank is empty.	Refill fuel.	Trained operator
	Operation pressure is below 25 bar.	Detergent control valve is not in position „Off“.	Trained operator
	Etronic control board is defective.	Replace Etronic control board.	Customer Service
	Internal components are defective (flow switch, ignition transformer, burner motor etc.).	Replace defective components.	Customer Service

Tab. 9 - 1 Troubleshooting table

Error	Possible cause	Remedying	Authorized personnel
HDE-Series: During hot-water operation no water heating.	Thermostat in position „Off“.	Set the desired water temperature on the Thermostat.	Trained operator
	Thermostat is defective.	Replace thermostat.	
	Boiler is defective.	Check fuses and heating elements.	Customer Service
	Internal electronic components are defective.	Replace defective components.	Customer Service
In hotwater operation the set temperature is not reached.	Boiler is calcified.	Descale the boiler.	Customer Service
No detergent suction in cleaning detergent operation.	Internal or external detergent tank is empty.	Refill the detergent tank.	Trained operator
	With suction from external tank: filter (detergent suction hose) is contaminated.	Clean the filter.	Trained operator

Tab. 9 - 1 Troubleshooting table

Notes



Proof of customer service

Device type	Manufacture no.:	Commissioning on:
-------------	------------------	-------------------

Inspection carried out on:

Findings:

Signature

Inspection carried out on:

Findings:

Signature

Inspection carried out on:

Findings:

Signature

Inspection carried out on:

Findings:

Signature

EHRLE GmbH • D-89165 Dietenheim / Germany

EHRLE service near to you? Adresses, phone numbers etc. you will find under www.ehrle.com.

Subject to change without notice. Reprint prohibited.

