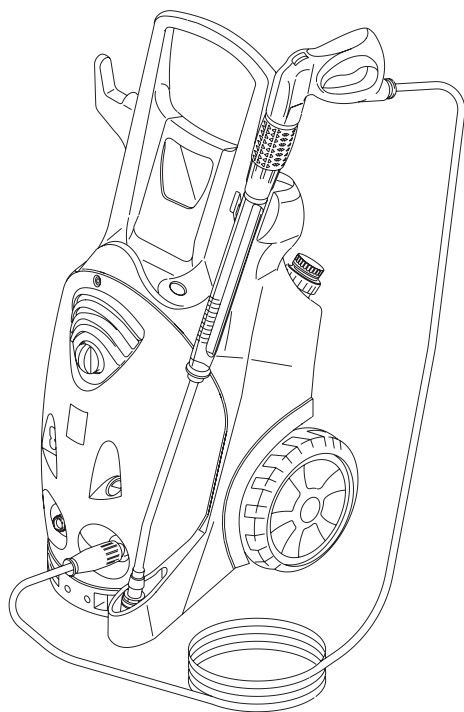


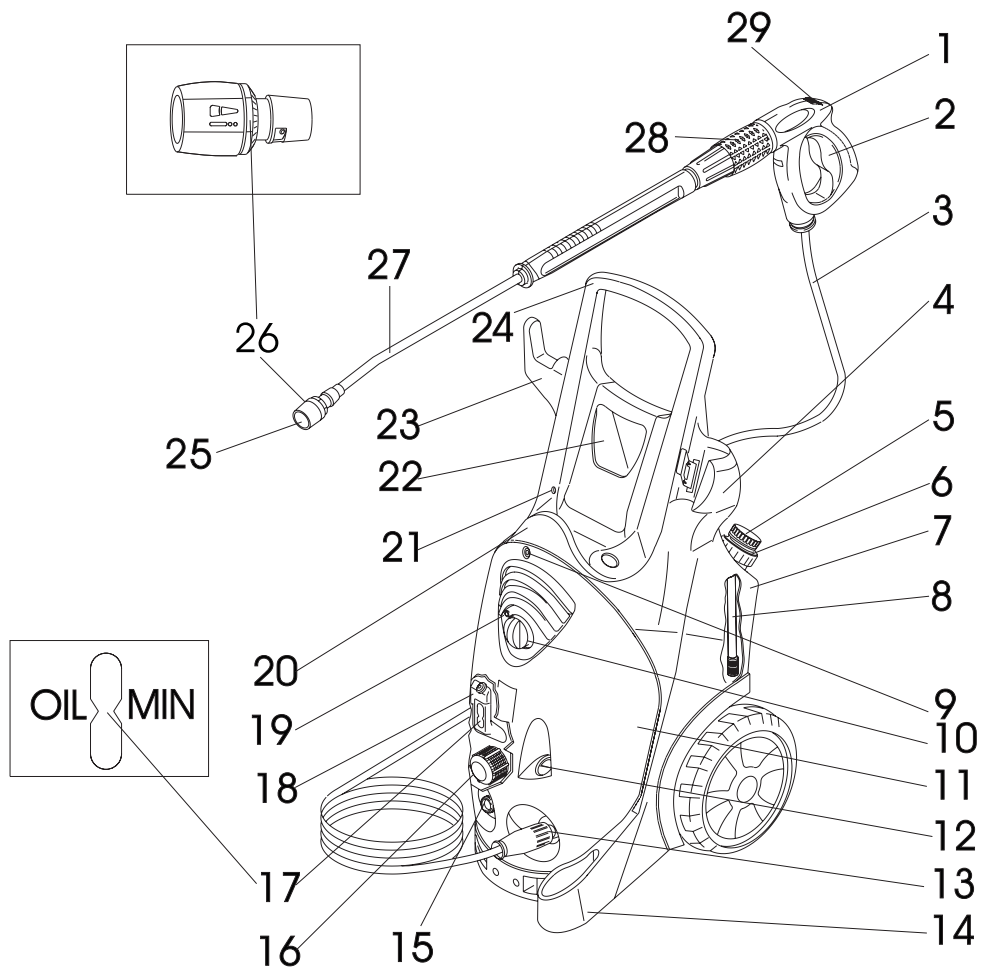
HD 4.5/32-4S Eb
HD 4.5/32-4S Ec



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IMPORTANT SAFETY INSTRUCTIONS

⚠ WARNING

When using this product basic precautions should always be followed, including the following:

- 1 Read all the instructions before using the product.
- 2 High pressure jets can be dangerous if misused. The jet must not be directed at persons, animals, electrical devices, or the unit itself.
- 3 To reduce the risk of injury, close supervision is necessary when a product is used near children.
- 4 Know how to stop the product and bleed pressures quickly. Be thoroughly familiar with the controls.
- 5 Stay alert – watch what you are doing.
- 6 Wear safety goggles.
- 7 Do not use acids, alkaline, solvents, or any flammable material in this product. These products can cause physical injuries to the operator and irreversible damage to the machine.
- 8 Do not operate the product when fatigued or under the influence of alcohol or drugs.
- 9 Do not overreach or stand on unstable support. Keep good footing and balance at all times.
- 10 To reduce the risk of electrocution, keep all connections dry and off the ground. Do not touch plug with wet hands.
- 11 The Trigger Gun Safety Lock prevents the trigger from accidentally being engaged. This safety feature DOES NOT lock trigger in the ON position.
- 12 Keep operating area clear of all persons.

- 13 Follow the maintenance instructions specified in the manual.
- 14 Risk of Injection or Injury – Do Not Direct Discharge Stream At Persons.
- 15 Do not use extension cord with this product.
- 16 This Product Shall Only Be Connected To A Power Supply Receptacle Protected By A Ground Fault Circuit Interrupter."

⚠ Warning

Risk of Injection or Injury – Do Not Direct Discharge Stream At Persons.

GROUNDING INSTRUCTIONS

This product must be grounded. If it should malfunction or breakdown, grounding provides a path of least resistance for electric current to reduce the risk of electric shock. This product is equipped with a cord having an equipment-grounding conductor and a grounding plug. The plug must be plugged into an appropriate outlet that is properly installed and grounded in accordance with all local codes and ordinances.

⚠ DANGER

Improper connection of the equipment-grounding conductor can result in a risk of electrocution. Check with a qualified electrician or service personnel if you are in doubt as to whether the outlet is properly grounded. Do not modify the plug provided with the product - if it will not fit the outlet, have a proper outlet installed by a qualified electrician. Do not use any type of adapter with this product.

GROUND FAULT CIRCUIT INTERRUPTER PROTECTION

To comply with the National Electrical Code (NFPA 70) and to provide additional protection from the risk of electric shock, this pressure washer should only be connected to a receptacle that is protected by a ground fault circuit interrupter (GFCI).

EXTENSION CORDS

Use only 3-wire extension cords that have 3-prong grounding-type plugs and 3-pole cord connectors that accept the plug from the product. Use only extension cords that are intended for outdoor use. These extension cords are identified by a marking "Acceptable for use with out-door appliances: store indoors while not in use." Use only extension cords having an electrical rating not less than the rating of the product. Do not use damaged extension cords. Examine extension cord before using and replace if damaged. Do not abuse extension cord and do not yank on any cord to disconnect. Keep cord away from heat and sharp edges. Always disconnect the extension cord from the receptacle before disconnecting the product from the extension cord.

⚠ Warning

To reduce the risk of electrocution, keep all connections dry and off the ground. Do not touch plug with wet hands.

⚠ Warning

To reduce the risk of fire, electric shock, or injury:
Injection hazard: equipment can cause serious injury if the spray penetrates the

skin. Do not point the gun at anyone or any part of the body. In case of penetration seek medical aid immediately.

This system is capable of producing 25000 kPa. To avoid rupture and injury, do not operate this pump with components rated less than 25000 kPa working pressure (including but not limited to spray guns, hose and hose connections).

Before servicing, cleaning, or removal of any part, shut off power and relieve pressure.

High Pressure. Keep clear of nozzle. Close cover before operating the machine.

This appliance is intended for commercial use.

Do not spray electrical apparatus and wiring.

This machine has been designed for use with cleaning chemicals supplied or recommended by the manufacturer. The use of other cleaning chemicals may affect the operation of the machine and void the warranty.

SAVE THESE INSTRUCTIONS

WATER SUPPLY

(Cold Water Only)

⚠ CAUTION

When connecting the water inlet to the water supply mains, local regulations of your water company must be observed. In some areas the unit must not be connected directly to the public drinking water supply. This is to ensure that there is no feedback of chemicals into the water supply. Direct connection via a receiver tank or backflow preventer, for example, is permitted.

Dirt in the feed water will damage the unit. To avoid this risk, we recommend fitting a water filter.

- Never use the pressure washer to draw in water contaminated with solvents, e.g. paint thinners, gasoline, oil, etc.
- Always prevent debris from being drawn into the unit by using a clean water source. Use additional water filter.



Please read and comply with these original instructions prior to the initial operation of your appliance and store them for later use or subsequent owners.

Contents

Device elements	EN	.. 3
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Device elements

Please unfold the front picture side

- 1 Hand blowing gun
- 2 Lever for hand spray gun
- 3 High pressure hose
- 4 Storage for hand spray gun
- 5 Dosage valve for detergent
- 6 Detergent tank lid
- 7 Detergent Tank
- 8 Detergent suction hose with detergent filter and lid
- 9 Fastening screw for device hood
- 10 Power switch
- 11 Cover
- 12 Manometer
- 13 High pressure connection
- 14 Nozzle holder
- 15 Water connection
- 16 Fine filter
- 17 Oil level indicator

- 18 Oil tank
- 19 Indicator lamp
- 20 Storage compartment for hoses
- 21 Deaerating the detergent tank
- 22 Accessory compartment
- 23 Cable clamp
- 24 Handle
- 25 Nozzle
- 26 Marking of the nozzle
- 27 Spray lance
- 28 Pressure and volume regulation
- 29 Safety lever

Colour coding

- The operating elements for the cleaning process are yellow.
- The controls for the maintenance and service are light gray.

Safety instructions

- Before first start-up it is definitely necessary to read the operating instructions and safety indications Nr. 5.951-949.0!
- Please follow the national rules and regulations for fuel spray jets of the respective country.
- Please follow the national rules and regulations for accident prevention of the respective country. Fuel spray jets must be tested regularly and the results of these tests must be documented in writing.

Symbols in the operating instructions

⚠ Danger

Immediate danger that can cause severe injury or even death.

⚠ Warning

Possible hazardous situation that could lead to severe injury or even death.

Caution

Possible hazardous situation that could lead to mild injury to persons or damage to property.

Symbols on the machine



High-pressure jets can be dangerous if improperly used. The jet may not be directed at persons, animals, live electrical equipment or at the appliance itself.



According to the applicable regulations, the appliance must never be used on the drinking water net without a system separator. Use a suitable system separator manufactured by Kärcher; or, as an alternative, a system separator as per EN 12729 Type BA. Water flowing through a system separator is considered non-drinkable.

Proper use

Use this high pressure cleaner exclusively for

- Cleaning using low pressure jet and detergent (for e.g. for cleaning machines, cars, buildings, tools),
- For cleaning using high pressure jet without detergent (for e.g. for cleaning facades, terraces, garden appliances).

For stubborn dirt, we recommend the use of the dirt blaster as a special accessory.

Safety Devices

Safety devices serve for the protection of the user and must not be put out of operation or bypassed with respect to their function.



Overflow valve with pressure switch

While reducing the water supply/quantity regulation at the pump head, the overflow valve opens and part of the water flows back to the pump suck side.

If the lever on the trigger gun is released the pressure switch turns off the pump, the high pressure jet is stopped. If the lever is pulled the pump is turned on again.

The overflow valve and pressure switch are set and sealed at the factory. Setting only by customer service.

Environmental protection

	The packaging material can be recycled. Please do not throw the packaging material into household waste; please send it for recycling.
	Old appliances contain valuable materials that can be recycled; these should be sent for recycling. Batteries, oil, and similar substances must not enter the environment. Please dispose of your old appliances using appropriate collection systems.

Please do not release engine oil, fuel oil, diesel and petrol into the environment. Protect the ground and dispose of used oil in an environmentally-clean manner.

Notes about the ingredients (REACH)

You will find current information about the ingredients at:

www.kaercher.com/REACH

Before Startup

Unpacking

- Check the contents of the pack before unpacking.
- In case of transport damage inform vendor immediately

Check oil level

- Read the oil level display when the device is not running. The oil level must be above the two pointers.

Activate deaeration of oil container

- Unscrew the fastening screws of the device hood; remove the device hood.
- Cut off tip of oil container cover
- Fasten the device hood.

Attaching the Accessories

- Mount the nozzle on the spray pipe (markings on the adjustment ring at the top).
- Install spray pipe on the hand-spray gun with pressure and volume regulation.
- Lock in the cable hook in the side-hole on the handle.
- Fasten the high pressure hose to the high pressure connection.

Start up

Electrical connection

⚠ Danger

Danger of injury by electric shock.

The appliance may only be connected to an electrical supply which has been installed in accordance with IEC 60364.

The voltage indicated on the type plate must correspond to the voltage of the electrical source.

The minimum fuse rating required at the socket outlet is (see technical specifications).

The appliance should always be connected to the electrical mains using a plug. It is forbidden to permanently connect the appliance to the power supply. The plug is only for mains separation. Check the power cord with mains plug for damage before every use. If the power cord is damaged, please arrange immediately for the exchange by an authorized customer service or a skilled electrician.

The plug and coupling of the extension cable used must be watertight.

Use the extension cord that has an adequate cross-section (see "Technical Data") and unwind it fully from the cable drum.

Unsuitable extension cables can be hazardous. Only use extension cables outdoors which have been approved for this purpose and labelled with a sufficient cable cross section:

For connection values, see type plate/technical data.

Water connection

Connection to the water supply

Warning

Observe regulations of water supplier. According to the applicable regulations, the appliance must never be used on the drinking water supply without a system separator. Use a suitable system separator manufactured by KÄRCHER; or, as an alternative, a system separator as per EN 12729 Type BA. Water flowing through a system separator is considered non-drinkable.



Caution

Always connect the system separator to the water supply, never directly to the appliance!

For connection values refer to technical specifications

- Connect the supply hose (minimum length 7.5 m, minimum diameter 3/4") to the water connection point of the machine and at the water supply point (for e.g. a tap).

Note

The supply hose is not included.

- Open the water supply.

Drawing in water from open reservoirs

- Screw the suction hose with filter (order no. 4.440-238.0) to the water connection.
- Deaerate the appliance:
Unscrew the nozzle.
Switch on the appliance and let it run until the water exiting is bubble-free. At the end let the appliance run for approx. 10 seconds - then switch off. Repeat the procedure for a couple of times.
- Switch off the appliance and fit the nozzle again.

Operation

Danger

Risk of explosion!

Do not spray flammable liquids.

If the appliance is used in hazardous areas (e.g. filling stations) all of the safety provisions and operating instructions detailed in this manual must be observed.

Caution

Clean engines only at places with corresponding oil separators (environmental safety).

High pressure operation

Note

The appliance is equipped with a pressure switch. The motor starts up only when the lever of the pistol is pulled.

- Set the appliance switch to "I".

The indicator lamp glows green.

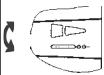
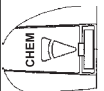
- Unlock the hand-spray gun and pull the lever of the gun.
- Set working pressure and water quantity by turning (rungsless) at the pressure and quantity regulation (+/-).

For transporting small quantities, the engine heat ensures that water is heated up to approx. 15 °C.

Select spray type

- Close the hand spray gun.
- Turn the casing of the nozzle till the desired symbol matches the marking.
- Select round or flat spray using touch-less switching:
Turn the spray-pipe that is inclined about 45° downward to the left or the right.

Meaning of the symbols

	High pressure flat spray (25°) for large dirt areas
	High pressure circular spray (0°) for specially stubborn dirt
	Flat low pressure spray (CHEM) for operating using detergents or cleaning at low pressure.

Operation with detergent

⚠ Warning

Unsuitable detergents can cause damage to the appliance and to the object to be cleaned. Use only those detergents that have been approved by Kärcher. Observe the dosage and other instructions provided with these detergents. For considerate treatment of the environment use detergent economically.

Follow the safety instructions for using detergents.

Kärcher detergents ensure smooth functioning. Please consult us or ask for our catalogue or our detergent information sheets.

- Fill detergent tank.
- Set nozzle to "CHEM".
- Set dosing value for detergent to the desired concentration.

Position of the dosing valve	1	3	5	7
Detergent concentration [%] (for max. flow quantity)	0,5	2,5	5,0	7,0

Recommended cleaning method

- Spray the detergent sparingly on the dry surface and allow it to react, but not to dry.
- Spray off loosened dirt with the high-pressure ray.
- Set dosing value for detergent to "0" after operation with cleaners. Start the appliance and rinse for one minute with clear water with an open hand spray gun.

Interrupting operation

- Release the lever of the hand-spray gun; the device will switch off.
- Release again the lever of the hand-spray gun; the device will switch on again.

Operational readiness period

On opening the hand-spray gun, the device starts within the readiness period. The indicator lamp glows green. The readiness period is over if the hand-spray gun remains closed for 30 minutes. The indicator lamp blinks green.

Reset readiness period

- Set the appliance switch to "0".
- Wait for a while.
- Set the appliance switch to "I".

Customer Service can switch the device to continuous operations.

Turn off the appliance

- Set the appliance switch to "0".
- Disconnect the mains plug from the socket.
- Shut off water supply.
- Activate hand spray gun until device is pressure-less.
- Press the safety lever of the hand-spray gun to secure the lever of the pistol against being released accidentally.

⚠ Danger

Danger of scalding by means of hot water. The water remaining in the switched off device can get heated up. When you remove the hose from the water inlet, the heated water can spray out and cause scalding. Remove the hose only when the device has cooled down.

Storing the Appliance

- Insert the hand-spray gun in the holder.
- Wind up the high-pressure hose and hang it over the hose storage.
- Wind the connection cable around the cable holder.
- Fasten the plug with the mounted clip.

Frost protection

⚠ Warning

Frost will destroy the not completely water drained device.

Store the appliance in a frost free area.

If you cannot store it in a frost-free place:

- Emptying the detergent tank (see "Care and Maintenance/ as required").
- Drain water.
- Pump in conventional frost protection agents through the appliance.

Note

Use normal glycol-based anti-freezing agents for automobiles.

Observe handling instructions of the anti-freeze agent manufacturer.

- Operate device for max. 1 minute until the pump and conduits are empty.

Transport

Caution

Risk of injury and damage! Observe the weight of the appliance when you transport it.

- Pull the device behind you at the handle for transporting it over longer distances.
- Hold the device at the handles for carrying, not at the push handle.
- Empty the detergent tank before transporting in horizontal position.
- When transporting in vehicles, secure the appliance according to the guidelines from slipping and tipping over.

Storage

Caution

Risk of injury and damage! Note the weight of the appliance in case of storage.

This appliance must only be stored in interior rooms.

Maintenance and care

⚠ Danger

Risk of injury by inadvertent startup of appliance and electrical shock.

First pull out the plug from the mains before carrying out any tasks on the machine.

Note

Please dispose off used oil only in the collection points provided for them.

Please hand over old oil, if any, only at such places. Polluting the environment with used oil is a punishable offence.

Safety inspection/ maintenance contract

You can sign with your dealer a contract for regular safety inspection or even sign a maintenance contract. Please take advice on this matter.

Before each use

- Check connection cable for damages (risk of electrical shock); get the damaged connection cable replaced immediately by an authorised customer service person/ electrician.
- Check the high pressure hose for damages (risk of bursting). Please arrange for the immediate exchange of a damaged high-pressure hose.
- Check appliance (pump) for leaks. 3 drops per minute are permitted and can come out from the lower side of the appliance. Call Customer Service if there is heavy leakage.

Weekly

- Check oil level Please contact Customer Service immediately if the oil is milky (water in oil).

- Clean the fine filter.
Unpressurize the appliance.
Unscrew the fastening screws of the device hood; remove the device hood.
Unscrew lid with filter.
Clean the filter with clean water or compressed air.
Reinstall in reverse sequence.
- Clean filter at the detergent suck hose.

monthly or after 500 operating hours

- Oil change.

Oil change

Note

See "Technical Details" for details of oil quantity and type.

- Unscrew the fastening screws of the device hood; remove the device hood.
- Loosen the oil drain screw at the rear on the motor casing.
- Drain the oil in a collection basin.
- Screw in the oil drain screw.
- Fill in new oil slowly; air bubbles should go out.
- Attach the lid of the oil container.
- Fasten the device hood.

If required

- Empty and clean the detergent tank. Pull out the locking cap for the detergent tank along with the suction hose.
Lay the device on the reverse.
Empty and clean the detergent tank.

Troubleshooting

⚠ Danger

Risk of injury by inadvertent startup of appliance and electrical shock.

First pull out the plug from the mains before carrying out any tasks on the machine.

Get the electrical components checked and repaired only by authorised customer service persons.

Contact an authorised customer service person in case of problems not mentioned in this chapter or if you are in doubt or when you have been explicitly asked to do so.

Indicator lamp

The indicator lamps display the operating states (green) and interruptions (red).

Reset:

- ➔ Set the appliance switch to "0".
- ➔ Wait for a while.
- ➔ Set the appliance switch to "I".

Operating status display

- Continuous green:
The appliance is now ready for operation.
- blinks green once:
Operational readiness has expired after 30 minutes.
The appliance has switched off after 30 minutes of continuous operation (safety if the high pressure hose bursts).

Fault indication

- blinks red once:
High-pressure side is leaky.
Check high pressure hose, hose connections and hand spray gun for leaks.
- blinks red twice:

Engine is too hot.

Set the appliance switch to "0".

Allow device to cool down.

Set the appliance switch to "I".

- blinks red thrice:
Fault in the voltage supply.
Check main connections and mains fuse.
- blinks red four times:
Excessive power consumption.
Call Customer Service.

Appliance is not running

- ➔ Operational readiness period has expired. Indicator lamp is blinking green. Switch on/off the device switch again.
- ➔ Check connection cable for damages.
- ➔ Call Customer Service in case of electrical defects.

Pressure does not build up in the appliance

- ➔ Set nozzle to "High pressure".
- ➔ Clean/ replace nozzle.
- ➔ Clean the fine filter; replace it, if necessary.
- ➔ Deaerate the appliance (see "Start-up")
- ➔ Check water supply level (refer to technical data).
- ➔ Check all inlet pipes to the pump.
- ➔ Contact Customer Service if needed.

Pump leaky

3 drops per minute are permitted and can come out from the lower side of the appliance. Call Customer Service if there is heavy leakage.

- ➔ With stronger leak, have device checked by customer service.

Pump is vibrating

- Check suction pipes for water and detergent and ensure that they are leak-proof.
- Deaerate the appliance (see "Start-up")
- Clean the fine filter.
- Contact Customer Service if needed.

Detergent is not getting sucked in

- Set nozzle to "CHEM".
- Check/ clean detergent suction hose with filter.
- Clean/ replace backflow valve in the connection of the detergent suction hose.
- Open or check/clean detergent dosing valve.
- Clean the deaerating hole of the detergent tank in the casing.
- Contact Customer Service if needed.

Accessories and Spare Parts

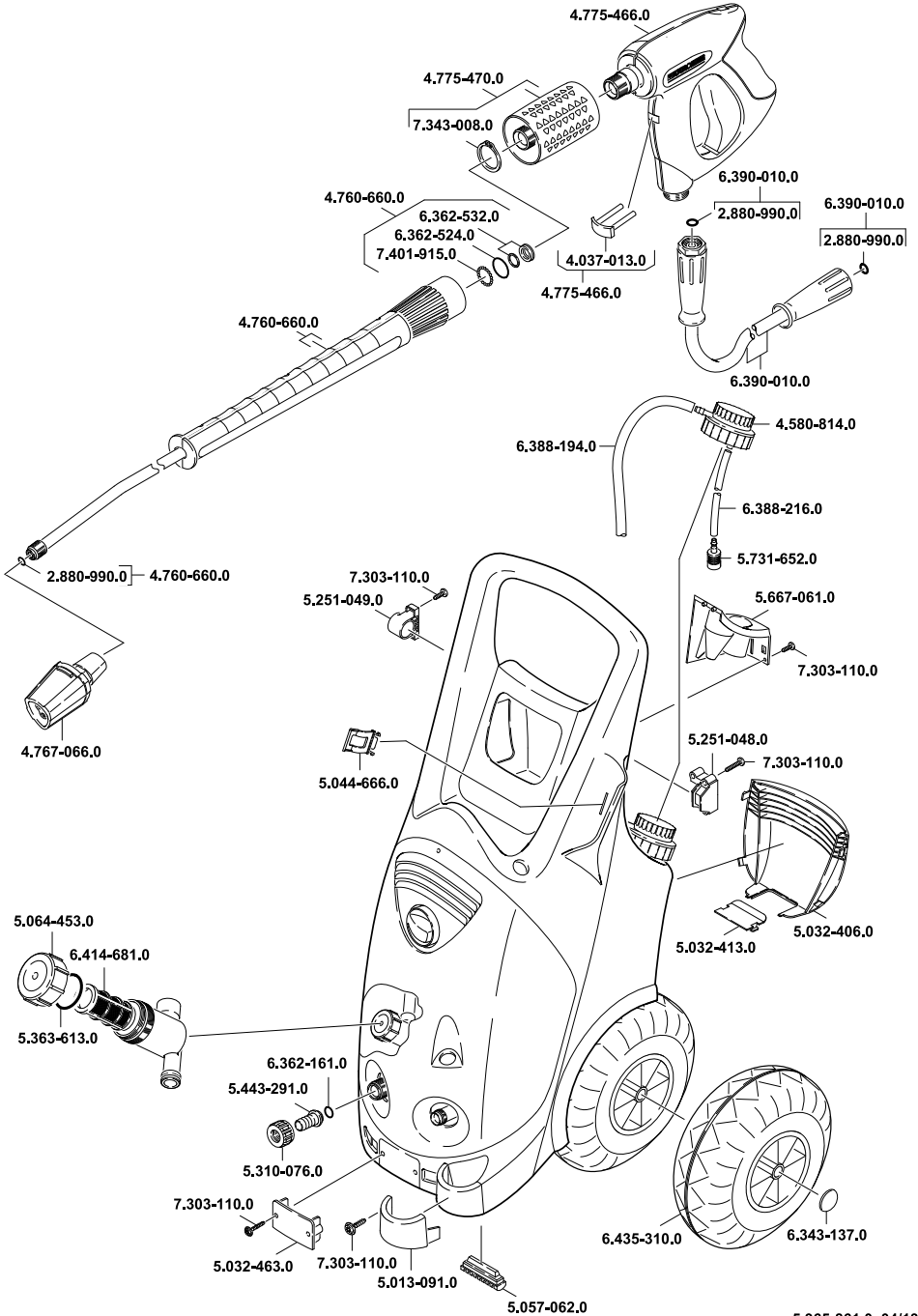
- Only use accessories and spare parts which have been approved by the manufacturer. The exclusive use of original accessories and original spare parts ensures that the appliance can be operated safely and trouble free.
- At the end of the operating instructions you will find a selected list of spare parts that are often required.
- For additional information about spare parts, please go to the Service section at www.kaercher.com.

Warranty

The warranty terms published by the relevant sales company are applicable in each country. We will repair potential failures of your appliance within the warranty period free of charge, provided that such failure is caused by faulty material or defects in manufacturing. In the event of a warranty claim please contact your dealer or the nearest authorized Customer Service centre. Please submit the proof of purchase.

Technical specifications

		HD 4.5/ 32-4S Eb	HD 4.5/ 32-4S Eb
Main Supply			
Voltage	V	220...240	440...460
Current type	Hz	3~ 60	
Power Input	hp	10	
Power consumption	A	25	14
Protection (slow, char. C)	A	30	16
Type of protection		IPX5	
Water connection			
Max. feed temperature	°F	140	
Min. feed volume	gpm	5.3	
Suck height from open container (20 °C)	ft/m	1.6/0.5	
Max. feed pressure	PSI	145	
Performance data			
Working pressure	PSI	435...3200	
Max. operating over-pressure	PSI	3600	
Nozzle size		055	
Flow rate	gpm	2.2...4.5	
Detergent suck in	gpm	0...0.3	
Max. recoil force of hand spray gun	N	62	
Values determined as per EN 60355-2-79			
Hand-arm vibration value			
Hand spray gun	m/s ²	<2.5	
Spray lance	m/s ²	<2.5	
Uncertainty K	m/s ²	0.3	
Sound pressure level L _{pA}	dB(A)	72	
Uncertainty K _{pA}	dB(A)	2	
Sound power level L _{WA} + Uncertainty K _{WA}	dB(A)	87	
Fuel			
Amount of oil	l	1.2	
Oil grade	--	SAE 90	
Dimensions and weights			
Length	mm	560	
Width	mm	500	
Height	mm	1090	
Volume detergent tank	l	6	
Typical operating weight	kg	62	





<http://www.kaercher.com/dealersearch>

