

# HD 1090

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English

Page 4

Please read these operating instructions before starting and strictly observe the "**Safety Instructions for High Pressure Cleaners**".

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Français

Page 14

Veillez lire attentivement la présente notice d'instructions avant la mise en service et respecter en particulier les "**Consignes de sécurité pour nettoyeurs haute pression**".

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Español

Página 22

Antes de poner en marcha el aparato deberá estudiar atentamente las "**Advertencias y observaciones relativas a la seguridad para limpiadoras de alta presión**".

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## IMPORTANT SAFETY INSTRUCTIONS

### WARNING

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

- Read all the instructions before using the product.
- To reduce the risk of injury, close supervision is necessary when a product is used near children.
- Know how to stop the product and bleed pressure quickly. Be thoroughly familiar with the controls.
- Stay alert - watch what you are doing.
- Do not operate the product when fatigued or under the influence of alcohol or drugs.
- Keep operating area clear of all persons.
- Do not overreach or stand on unstable support. Keep good footing and balance at all times.
- Follow the maintenance instructions specified in the manual.

**- SAVE THESE INSTRUCTIONS -**

## IMPORTANT SAFETY INSTRUCTIONS

### 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 adaptor with this product.**

### 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 outdoor 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.

**Important:** When using an extension cord always unwind cord completely.

#### **WARNING**

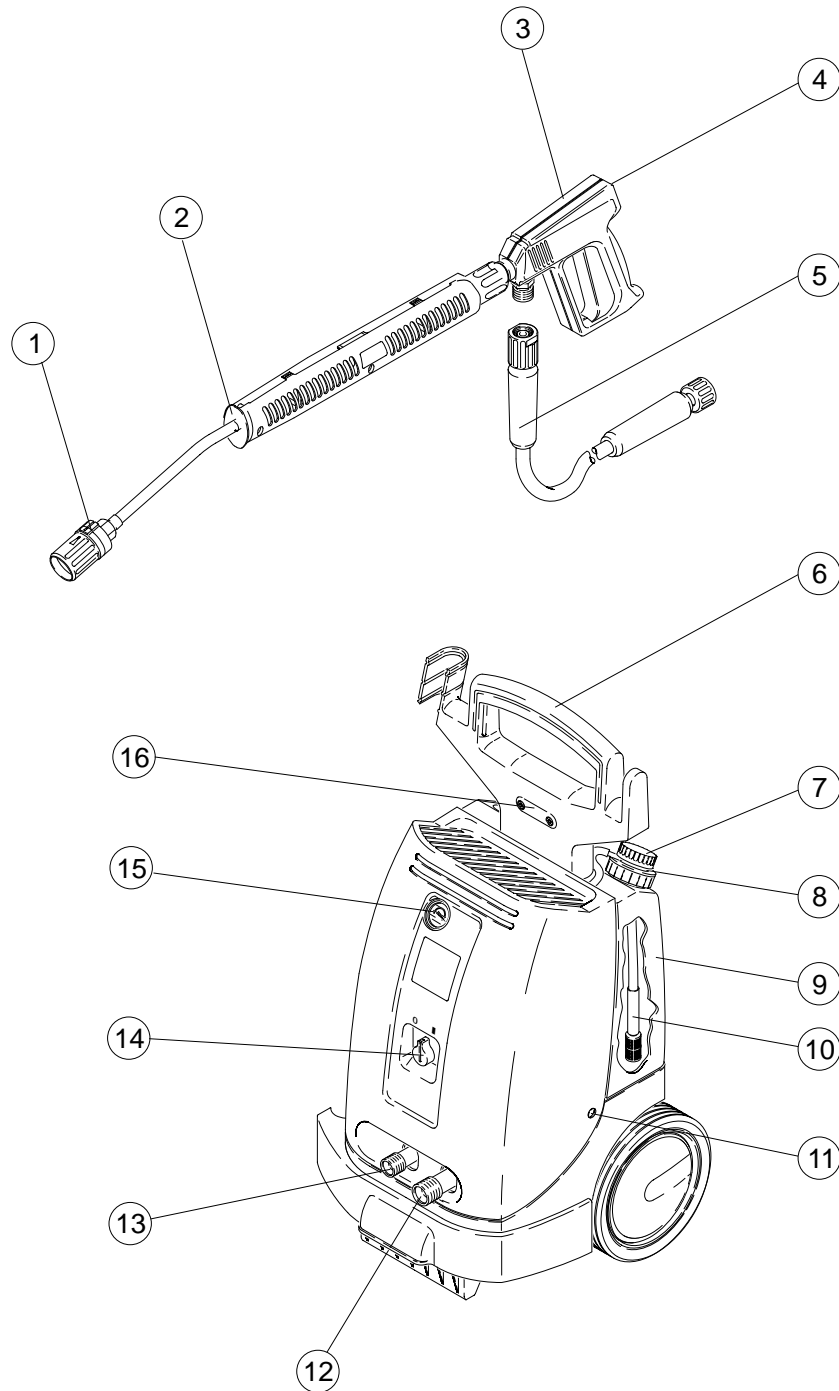
**To reduce the risk of electrocution, keep all connections dry and off the ground. Do not touch plug with wet hands.**

#### **WARNING**

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

High Pressure jets can be dangerous if subject to misuse. The jet must not be directed at persons, animals or machine itself. 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.

# 1. Starting



- |   |   |    |                                   |
|---|---|----|-----------------------------------|
| 1 | High-Pressure Nozzle                              | 9  | Detergent Tank                    |
| 2 | Spray Lance                                       | 10 | Detergent Intake Hose with Filter |
| 3 | Servopress Spray-Gun                              | 11 | Fastening Screw for the Hood      |
| 4 | Adjustment Wheel for Pressure and Flow Regulation | 12 | Water Connection with Sieve       |
| 5 | High-Pressure Hose                                | 13 | High-Pressure Connection          |
| 6 | Handle  | 14 | Unit Switch                       |
| 7 | Detergent Metering Valve                          | 15 | Pressure Gauge                    |
| 8 | Screw Cap for Detergent Tank                      | 16 | Fastening Screws for the Handle   |

# 1. Starting

## 1.1 Unpacking the unit

- If, while unpacking, you discover damage has been caused in transit, please inform your dealer immediately.
- Do not simply discard the packing materials with the house-hold waste. Take the packing materials to the appropriate collection areas for recycling.

## 1.2 Assembling the accessories

- Attach the handle to the unit with the supplied screws.

### **Note:**

*If the handle is too low for you, you can change the height as follows:*

- *Remove the handle and hood.*
- *Unscrew the fastening nut for the detergent tank and remove the tank.*
- *Unscrew the carry bar from the motor unit (three screws) and remove to the rear.*
- *Turn over the carry bar so that the top and bottom are interchanged.*
- *Screw the carry bar back onto the motor unit using the three new fastening holes. This way, the carry bar is about 85 mm higher.*
- *Reattach the detergent tank, hood and handle.*

## 1.3 Checking the oil level

- Unscrew both fastening screws from the left and right side of the hood and remove the hood.
- Cut off the tip of the oil tank cap.
- Check the oil level in the oil tank.

## 1.4 Connecting the power supply

- See technical data of connected values.
- Check whether the voltage shown on the rating plate corresponds to that of the power source.

### **Note:**

*If you are using an extension cable, it should always be completely unwound from the cable drum and have a sufficient cross-sectional area: 25 ft: 12 AWG, 50 ft: 10 AWG  
(10 m = 1.5 mm<sup>2</sup>, 30m = 2.5 mm<sup>2</sup>)*

## 1.5 Connecting the water supply

- See technical data for connected values.
- Connect a water supply hose (not supplied) to the appliance and the water pipe.

### **Note:**

*Dirt in the feed water could lead to the appliance being damaged. To avoid this risk, we recommend fitting a filter.*

*A suitable filter with 1" connection is available under Order No. 2.638-270.*

## Suction

Observe the following if you are drawing water from an open container:

- Attach a suction hose with filter (order no. 4.440-238) directly to the appliance.
- Allow the pump to operate without the high-pressure hose until water appears at the high-pressure outlet without any more bubbles.
- Then re-attach the high-pressure hose.

## 1.6 Purpose

- Use the appliance to clean machines, vehicles, buildings, tools, etc.
- Clean facades, patios, garden implements, etc. with the high-pressure spray only, i.e. without detergent. We recommend the dirt blaster, a special accessory, for stubborn dirt.
- Engines must only be cleaned in places which have appropriate oil traps (protection of the environment).
- If the machine is used at petrol stations or in other hazardous areas, the appropriate safety


## 2. Operation


### 2.1 Deaerating the unit


- Open the water supply.
- Let the unit run without the high-pressure hose until the water exits the high-pressure outlet without bubbles.
- Then, connect the high-pressure hose.

### 2.2 Working with the high-pressure nozzle

- The spray angle determines the effectiveness of the high-pressure spray. Turn the front safety device of the three-way nozzle to set the spray angle.

 High-pressure pencil jet (0°) for especially stubborn dirt.

 High-pressure fan jet (25°) for large areas of dirt.

 Low-pressure fan jet (CHEM) for operation with detergent.

- Always start by directing the high-pressure spray onto the object which is to be cleaned from a greater distance in order to prevent damage caused by excessively high pressure.
- Only turn the front safety device of the three-way nozzle when the spray gun is closed.

### 2.3 Adjusting the working pressure and flow rate

- You may infinitely adjust the working pressure and the flow rate on the Servopress spray gun. To do this, turn the small adjustment wheel on the spray gun to the desired position.
- At the lowest flow rate the waste heat from the motor heats the water by approx. 68 °F (20°C).

### 2.4 Operation with detergent

- Fill the detergent tank.
- Set the three-way nozzle to "CHEM".
- Set the detergent metering valve to the desired concentration.

Metering valve setting	1	3	5	7
Detergent concentration in % at maximum flow rate	0.5	2.5	5.0	7.0

- We recommend that you use detergent sparingly for the sake of the environment. Observe the recommended dosage on the detergent label.
- We offer you an individual cleaning and detergent range, thereby guaranteeing fault-free work. Please allow us to advise you or order our catalogue or the detergent information sheets.

**Note:**

*Only those detergents which have been approved by the appliance manufacturer may be used. Unsuitable detergents can damage the appliance and the object being cleaned.*

- We recommend the following cleaning methods:

Step 1: Loosening dirt

Spray on detergent sparingly and leave for 1-5 minutes.

Step 2: Removing dirt

Spray off the loosened dirt with the high-pressure spray.

- After operating with cleaning agent, you should set the cleaning agent metering valve to „0“ and flush the unit for approximately 1 minute with the gun open.

## 2. Operation

### 2.5 Interrupting operation

- If you release the trigger of the hand-held spray gun, the appliance switches off. If the trigger is pulled again, the appliance switches on again.

### 2.6 Switching off the unit

- Switch off the unit and pull the electric plug out of the socket.
- Close the water supply.
- Squeeze the lever on the spray gun until the unit has depressurized.
- Secure the lever on the spray gun against unintentional opening by turning the adjustment wheel to the „0“ position.



## 3. Care and Maintenance



*Disconnect the unit from the power mains before carrying out any service and maintenance work.*

- You may take out a regular safety inspection contract or service contract with your dealer. Please discuss this with your dealer.

### 3.1 Visual check

- Check connection cable  
The connection cable must not be damaged (danger of electrical accident). A damaged cable must be replaced immediately by authorized customer service/ electrician.
- Check high-pressure hose  
The high-pressure hose must not be damaged (danger of bursting). A damaged high-pressure hose must be replaced immediately.
- Check pump for leaks  
Three drops per minute are permissible. If the unit leaks more frequently, contact customer service.

### 3.2 Every week

- Check the oil level in the oil tank.  
If the oil is milky (water in oil), contact customer service immediately.
- Clean the sieve at the water connection.
- Clean the filter on the detergent intake hose.

### 3.3 Annually or after 500 operating hours

- Change oil.
  - Unscrew the oil drain plug from the side of the motor housing (on the left when viewed from the front). Tip the unit and drain out oil.
  - Dispose of used oil at an authorized collection centre (protection of the environment).
  - Slowly fill up with new oil.  
Air bubbles must be allowed to escape.
  - See Technical Data for oil type and amount.

### 3.4 Protection against freezing

- Freezing may destroy the unit if it has not been completely drained of water. It is best to store the unit over winter in a heated area, otherwise it is recommended to empty the unit or rinse out thoroughly with an antifreeze.

#### Emptying the unit

- Unscrew the water supply hose and the high-pressure hose from the unit.
- Run the unit until the pump and hoses are empty (max. one minute).

#### Antifreeze

If the unit is not to be used for prolonged periods, pump an antifreeze through the unit. To some extent this will protect the unit against corrosion.

### 3.5 Emptying and cleaning the detergent tank

- Unscrew the fastening screws for the hood.
- Remove the hood.
- Pull out screw cap and suction hose for the detergent tank.
- Unscrew the fastening nut for the detergent tank and remove the tank..
- Empty and clean the detergent tank.

## 4. Troubleshooting



*Disconnect the appliance from the power mains before all repair work.  
Only authorized customer service personnel may inspect electrical components.*

In this chapter, we would like to give you some hints on dealing with malfunctions yourself. In all other cases or in the case of electrical faults, please contact the authorized customer service.

### 4.1 Unit does not start

- Check mains voltage.
- Check connection cables for damage.
- If the motor has overheated, allow the unit to cool down. Then switch on again with the unit switch.
- Contact customer service if there is an electrical malfunction.

### 4.2 Unit does not reach operating pressure

- Set three-way nozzle to “High Pressure”.
- Clean/replace three-way nozzle.
- Clean sieve in the water connection.
- Deaerate the unit.
- Check water supply flow rate.  
(see Technical Data)
- Check all pump supply lines for leaks or blockages.
- Contact customer service if required.

### 4.3 Pump Leaks

- 3 drops per minute are permissible. In the case of more serious leakage, you should contact the authorized customer service.

### 4.4 Pump knocks

- Check all supply lines, even the detergent system, for leaks.
- Deaerate unit.
- Contact customer service if required.

### 4.5 No detergent intake

- Set three-way nozzle to “Low Pressure”.
- Check detergent intake hose and filter for leaks or blockages and clean.
- Clean/replace the check valve at detergent intake-hose connection.
- Clean the non-return valve on the pump head and the connection for the detergent suction hose.
- Contact customer service if required.

## 5. General Information

### 5.1 Safety inspection

You may arrange for a safety inspection with your Kärcher dealer. Your dealer will be glad to advise you.

### 5.2 Service contract

You may also take out a service contract with your dealer.

The safety inspection is included in the service contract. Your dealer will be glad to advise you.

### 5.3 Safety devices

#### Overflow Valve with Pressure Switch

When the water flow rate is reduced by the servopress valve in the hand-held spray gun, the over-flow valve opens and some of the water flows back to the intake side of the pump.

When the spray gun is closed completely, all the water flows back to the intake side of the pump, and the pressure switch switches off the pump. When the hand-held spray gun is opened again, the pressure switch switches the pump back on. The overflow valve and the pressure switch are factory-set and lead-sealed.

Adjustment by customer service only.

### 5.4 Spare Parts

A selection of the most common spare parts numbers is listed at the end of these operating instructions.

### 5.5 Guarantee

The terms of guarantee issued by our competent distribution company are valid in every country. If the appliance malfunctions in any way, we shall rectify the fault free of charge within the period of guarantee, provided the cause can be attributed to faulty material or a manufacturing error.

The guarantee will only come into force when your dealer has completely filled out, stamped and signed the enclosed reply card on completion of sale and when you have sent the reply card to the distribution company in your country.

In the event of a claim on the guarantee, please consult your dealer with accessories and receipt of purchase or contact your nearest authorized customer service centre.

## 6. Technical Data

	1.951-681	1.951-801 1.951-811 1.951-841
<b>Power connection</b>		
Voltage .....	440-460	208-240
Type of current .....	3~ 60	1~ 60
Connected load .....	11	8.3 (6.1 kW)
Mains fuse (slow) .....	16	30
<b>Water connection</b>		
Supply temperature (max.) .....	140	140 (60 °C)
Supply rate (min.) .....	5	5 (1100 l/h)
Supply hose		
– length (min.) .....	25	25 (7.5 m)
– diameter (min.) .....	3/4	3/4
Suction height from open tank at a water temperature of 68 °F /20°C .....	3	3 (1 m)
Supply pressure (max.) .....	150	150 (1100 kPa)
<b>Performance data</b>		
Operating pressure .....	150-3000	150-2250 (1100-16100 kPa)
Flow rate .....	1.3-4.0	1.3-4.0 (300-900 l/h)
Detergent intake .....	0-0.31	0-0.22 (0-50 l/h)
Recoil force of hand-held spray gun at operating pressure (max.) .....	55	45
Sound pressure level (DIN 45635) .....	74	74
<b>Dimensions</b>		
Length .....	20	20 (503 mm)
Width .....	19	19 (490 mm)
Height .....	41	41 (1027 mm)
Weight without accessories .....	121	118 (54 kg)
Detergent tank capacity .....	2.6	2.6 (10 l)
Pump oil quantity .....	0.18	0.18 (0.7 l)
Pump oil type .....	SAE 90	15W/40

# HD 1090

1.951-681 USA  
 1.951-801 USA  
 1.951-811 USA  
 1.951-841 CDN

