

## Steam Generator User Guide

### Models Covered

- KHD-16, KHD-32 Steam Generators

### Document Control

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### Manufacturer

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### Legal & Safety Notice

- This guide must be read in conjunction with the Maintenance Guide
- Failure to follow the described maintenance procedures may compromise operator safety, void the manufacturer's warranty, and affect CE/UKCA compliance.

# 1. Introduction

## 1.1 Purpose of this guide

This guide provides all necessary instructions for the routine usage and safe operation of KHD steam generators by the end user or operator.

This document is intended for trained operators.

For the **daily** drain down procedure please refer to the maintenance guide.

## 1.2 Intended Audience

This guide is intended for trained operators and maintenance staff responsible for the routine upkeep of the steam generator. Users must have received **manufacturer-approved training** and be familiar with basic industrial safety practices, including the handling of pressurised equipment and hot surfaces.

It is not intended for untrained users or those performing internal servicing, diagnostics, or electrical work. Any such work must be carried out by authorised service technicians in accordance with the procedures detailed in the technical service documentation.

## 2. SAFETY WARNINGS

The manufacturer declines all liability for:

1. Incorrect use of the machine or use for purposes other than those for which it has been designed.
2. All modifications made without manufacturer authorisation.
3. Replacement of original parts with parts produced by other manufacturers.
4. Use by untrained personnel or not in accordance with the instruction manual.
5. Inappropriate electrical supply.
6. Inappropriate grounding of the electrical supply.
7. Problems deriving from local water characteristics, such as hardness, dirt etc.
8. Problems deriving from the use of detergents.
9. Use of the machine without protective clothing, shoes, gloves, glasses or ear-defenders.
10. Use of the vacuum for ATEX type applications or general purpose vacuuming.
11. Use of the machine with electric generators.

### Safety Warnings

12. Make sure the machine is connected to the correct rating of power supply as shown on the rating plate of the machine.
13. Never direct steam and/or hot water against persons, animals or yourself.
14. Do not use the equipment near others if they are not aware or are not wearing appropriate protective clothing.
15. Caution! Hot accessories can lead to scalding injuries; do not allow to touch skin or inappropriately protected skin.
16. Make sure that the water used to fill the water tank is clean. Make sure buckets or canisters used to fill the tank are completely free of dirt or foreign objects.
17. Do not drag the machine by pulling the hose; this will damage the hose.
18. Never pull the plug out of the mains socket by pulling the power cord; pull the holding plug.
19. Do not vacuum flammable or toxic substances (such as petrol, solvents, paints etc.), welding fumes or ignited material; danger of explosion or fire!
20. Check the power supply cable for any damage prior to use.

21. Do not use if the power supply cable becomes damaged; have it immediately replaced by the manufacturer or qualified personnel.
22. Use of extension cables (longer than 25m) may lead to insufficient voltage supply and malfunction. Other factors may induce voltage drop, such as long distance from the distribution board to the socket.
23. CAUTION: inadequate extensions can be dangerous. Make sure that your extension is correctly dimensioned and constructed according to national electrical standards.
24. Never allow any part of the machine to become wet (excluding the tank). Do not use if wet.
25. Check the steam hose and all accessories for damage before use and replace or have them repaired immediately.
26. In the event of leakage of steam or liquid, switch off and disconnect immediately from the power supply. Contact the manufacturer or service centre.
27. The equipment must not be used by children, untrained personnel or left unattended.
28. To guarantee safety of the equipment, only original spare parts must be used supplied by the manufacturer or approved by it.
29. Only use the machine on a level surface with all four wheels level. Never used in a tilted position. This will give an incorrect level reading in the machine and boiler.
30. Do not clean heat sensitive materials with steam; risk of damage.
31. Always wear appropriate protective clothing, gloves, long sleeves, eye protection and ear protection.

## 3. Usage

### ATTENTION!

The machine is supplied with a power supply cable suitable for its rated voltage and current. Check that the electrical system on site complies with the current national regulations.

This instruction manual may include information about functions or accessories which are not part of the product you have purchased. This manual gives instructions for all of the versions available. Please ignore all information which does not pertain to your machine. Contact your dealer or distributor for further information.

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### Automatic Standby Function

- If the heaters are left ON for approximately 2 hours without steam being used, the machine will automatically enter standby mode and the heaters will switch off.
- To resume operation:
  1. Switch the machine OFF
  2. Restart the start-up procedure from the beginning

## 3.1 Basic Usage (White Hose)

Includes:

- White steam hose with no KHD attachment
- Hansen fitting

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### Basic Start-Up Procedure

1. **Before switching on**, ensure the following:
  - Steam switch: **OFF** (auto)
  - Heaters switch: **OFF**
  - Vacuum switch: **OFF**
  - Emergency stop: **Released**
2. Insert the steam hose Hansen fitting into the front socket.  
Secure the connection by rotating the socket locking tabs 90° to the horizontal locked position.
3. Attach the steam hose to the Hansen fitting
4. Switch on the mains power
5. Turn the Heaters switch **ON** and allow the steam generator to heat up.
6. When the boiler pressure reaches **8–10 bar**, the machine is ready to produce steam (approximately 4-5 mins from cold).
7. To produce steam, turn the Steam switch ON.  
Steam will be delivered through the white steam hose.
8. To stop steam output, turn the Steam switch OFF.

## 3.2 Steam Pistol Grip (lance)

Includes:

- Black pistol grip with any attachment

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### Basic Start-Up Procedure

1. **Before switching on**, ensure the following:
  - Steam switch: **OFF** (auto)
  - Heaters switch: **OFF**
  - Vacuum switch: **OFF**
  - Emergency stop: **Released**
2. Insert the steam pistol grip fitting into the front socket.  
Secure the connection by rotating the socket locking tabs 90° to the horizontal locked position.
3. Switch on the mains power
4. Turn the Heaters switch **ON** and allow the steam generator to heat up.
5. When the boiler pressure reaches **8–10 bar**, the machine is ready to produce steam (approximately 4-5 mins).
6. Leave the steam switch in the off (auto) position. To produce steam, pull the trigger on the pistol grip.

## 3.3 Hand-held Tools

Includes:

- Hand held spinner
- Telescopic steam mop

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### Basic Start-Up Procedure

1. **Before switching on**, ensure the following:
  - Steam switch: **OFF** (auto)
  - Heaters switch: **OFF**
  - Vacuum switch: **OFF**
  - Emergency stop: **Released**
2. Insert the steam hose Hansen fitting into the front socket.  
Secure the connection by rotating the socket locking tabs 90° to the horizontal locked position.
3. Attach the steam hose to the Hansen fitting and to the accessory
4. Attach the orange control+power lead to the Ext socket on the steam generator and to the accessory.
5. Switch on the mains power
6. Turn the Heaters switch **ON** and allow the steam generator to heat up.
7. When the boiler pressure reaches **8–10 bar**, the machine is ready to produce steam (approximately 4-5 mins).
8. Leave the steam switch in the off (auto) position. Steam can now be controlled by the trigger on the accessory

## 3.4 Jet System 6

Includes:

- Jet system 6

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### Basic Start-Up Procedure

1. **Before switching on**, ensure the following:
  - Steam switch: **OFF** (auto)
  - Heaters switch: **OFF**
  - Vacuum switch: **OFF**
  - Emergency stop: **Released**
2. Insert the steam hose Hansen fitting into the front socket.  
Secure the connection by rotating the socket locking tabs 90° to the horizontal locked position.
3. Attach the steam hose to the Hansen fitting and to the accessory
4. Attach the jet system lead to the Ext socket on the steam generator and to the accessory.
5. Switch on the mains power
6. Turn the Heaters switch **ON** and allow the steam generator to heat up.
7. When the boiler pressure reaches **8–10 bar**, the machine is ready to produce steam (approximately 4-5 mins).
8. Leave the steam switch in the off (auto) position. Steam is now controlled by the jet system

## 3.5 Brushless System

Includes:

- Brushless system
- Fixed system
- Double-sided fixed system

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### Basic Start-Up Procedure

1. **Before switching on**, ensure the following:
  - Steam switch: **OFF** (auto)
  - Heaters switch: **OFF**
  - Vacuum switch: **OFF**
  - Emergency stop: **Released**
2. Insert the steam hose Hansen fitting into the front socket.  
Secure the connection by rotating the socket locking tabs 90° to the horizontal locked position.
3. Attach the steam hose to the Hansen fitting and to the brushless system
4. Attach the vacuum 230V commando plug to the socket on the back of the steam generator.
5. Switch on the mains power
6. Turn the Heaters switch **ON** and allow the steam generator to heat up.
7. When the boiler pressure reaches **8–10 bar**, the machine is ready to produce steam (approximately 4-5 mins).
8. When ready to start cleaning turn the vacuum switch to on followed by the steam switch.
9. At the end of cleaning turn the steam switch to off followed by the vacuum switch.

## 4 Troubleshooting

Steam leaks from accessories due to dirt, wear or breakage of gaskets or Hansen fitting is difficult to disconnect.	Replace the gaskets on the connections making sure you do not cut or mark the gasket and that it is securely fitted in its housing. Clean and place a light film of silicone grease on the gaskets.
Hansen fitting is hard to insert in the machine socket.	Do not force it in; lubricate the steam socket connection with some silicone grease.
No steam output but machine has pressure.	Make sure the Steam Flow valve is open. Check the socket and plug of the hose for possible obstruction due to limescale and remove the obstruction. Use filtered or softened water to avoid further obstruction. Contact your service centre.
Machine heating time too long.	Follow drain down procedure outlined in the maintenance guide. Increase frequency of drain down. Contact your service centre.
The pressure drops rapidly during operation.	Follow drain down procedure outlined in the maintenance guide. Increase frequency of drain down. Pressure switch is faulty. Contact your service centre.
The pressure rises rapidly and the pump continues to fill the boiler with water.	Level sensor contaminated. The machine needs to be serviced. Contact your service centre.
Vacuum does not turn on	Check that the Vacuum is plugged into the 230V ~ socket on the rear of the machine and make sure that the vacuum is turned ON at the vacuum head.
Leak of steam or water from within the machine.	Push the Emergency OFF Button and unplug the machine. Contact your service centre.