WORLD OF PIPE REPAIR

Operating Manual Hotbox 300

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1. Foreword

Your Hot Box 300 is a powerful system, which enables you to safely meet the industrial requirements. Sanikom are in conformance with the relevant European and international safety standards. This Operation Manual includes a CE Declaration of Conformity.

- This Operation Manual must be made available to the operators and thoroughly read before the start-up of the equipment. It should be noted that we accept no liability for any damage or malfunction caused by non-compliance with the Operation Manual.
- Sanikom offers training schemes enabling the user to use this unit according to its intended purpose, to carry out day-to-day routine care & service operations, and to eliminate minor problems that might occur with the machine.

	This symbol is used throughout the manual for work safety instructions referring to risk of death or injuries.
	This symbol is used throughout the manual for work safety instructions referring to risks from electricity.
	This symbol is used throughout the manual for instructions to be observed for compliance with directives, regulations, guidelines, instructions, work procedures, as well as for avoidance of damage to and destruction of the machine.

2. Safety instructions

Observe the following instructions before, during and after operation.
Read this Operation Manual before the initial start-up of the machine.
Operate the machine in compliance with the instructions to preclude dangers.

	Never allow the machine to be operated other than for its intended purpose and use. Never exceed the maximum authorised pressure indicated on the nameplate.
	It is not allowed to operate the Hotbox 300 in closed rooms having no ventilation or proper exhaust gas conduits. Flue and exhaust gases are detrimental to health; increased carbon monoxide levels are mortal. Never set up and operate the Hotbox 300 in locations with potential fire or explosion hazards. When using the equipment next to filling stations, observe the relevant rules and regulations governing inflammable and combustible liquids (in Germany: TfbF).
	Handle fuels and consumables with appropriate care. Observe technical safety rules and hazard warnings as well as environmental regulations.
	Before starting up the equipment, check to make sure the power cord, connectors, switches etc. are not defective. Always use properly dimensioned extension cords according to VDE. Reeled extension cords must be fully unwound for and during operation to avoid overheating in the reel. Connectors and couplers must be watertight. You are recommended to use an upstream residual-current-operated circuit-breaker. When opening the machine, in case of malfunctions and danger, switch off the machine using the start/stop switch, pull the plug connector or disconnect the machine from the power supply.
	The exhaust section is hot. Risk of burns! Never touch exhaust conduits.

	Electricity can cause severe injuries. Take seriously any indications of potentially defective or damaged electrical equipment and immediately eliminate any causes of possible accidents. Entrust troubleshooting operations always to specialists or, even better, to the Sanikom support team. Disconnect the equipment from the power mains for any repairs or service operations.
	Never use any spare parts, accessories, cleansers etc. other than those delivered or expressly approved in writing by Sanikom otherwise both EC conformity and product liability or warranty claims would become void.

3. Construction and function

The Hot Box 300 is an oil-fired hot water system heating a flow of water to a temperature value set via a thermo regulator. This design allows a controllable temperature increase of up to 130°C, depending on the delivery rate (litres per minute) of the cold water unit.

The burner temperature selector switch is used to extract diesel fuel from the diesel storage tank and pass it through a filter system into the diesel fuel pump and inject it through a nozzle at a defined pressure into the burner chamber.

The oxygen required for combustion is delivered by a blower into the burner chamber where the fuel is atomised then followed by ignition of the mixture via electrodes, which are supplied with continuous voltage by a high-voltage transformer.

The combustion flame in the burning chamber is a non-smoking high-efficiency flame without any contact with heat exchanger surfaces. The infrared radiation produced by the flame and the hot exhaust gases allow the water flow in the heating coil to be economically heated to the operating temperature set at the thermostat.

4. Start-up / shut-down

Read and observe the operation manual of the machine carefully.

	Before starting the Hotbox 300 in a room or closed location, make sure there is sufficient fresh air supply or an appropriate exhaust system.

To maintain machine availability and guarantee smooth operation, please perform the following

checks before each start-up:

- Check the general condition of the Hot Box 300 (screws, bolts, seals etc.).
- Check electric cables / electrical connections.
- Check hoses for damage.
- Make sure the air inlet is not obstructed.
- Always fill in diesel fuel – no biodiesel!
- Operate the unit with clean water only.
- Operate the epros® Hot Box always in a horizontal position (+/- 5%).

To maintain machine availability and guarantee smooth operation, please perform the following

checks during operation:

- Check indicators/gauges/components are working properly.
- Check for pressure/temperature changes.
- Check for excessive flue gas.
- Check for leaking hoses and connections.
- Check for unusual noise.

	In case of malfunctions, switch off the machine immediately. Remove problems as described in "Troubleshooting" section or contact the Sanikom Technical Support team.

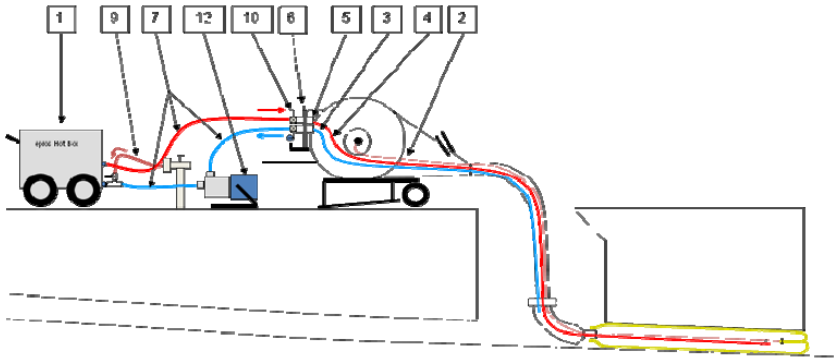
5.1 Start-up

Electrical connection

Plug the power cord of the equipment in a socket outlet (230 V) properly protected with 3 x 16 A slow-blow fuses. Always use sufficiently dimensioned extension cords according to VDE. Reeled extension cords must be fully unwound to avoid overheating in the reel. You are recommended to use an upstream residual-current-operated circuit-breaker. Observe the VDE instructions.

Water connection

Prior to start-up, establish the water connection according to the following schematic drawing.



No.:	Designation
1	Hot water unit
9	Flat hose with Storz couplings (20 m)
7	Supply hoses with Storz coupling
12	Circulation pump (part of Hot Box)
10	2 ball valves with Storz coupling
6	Window for hot cure
5	Storz coupling with sleeve
3	Hot water suction hose
4	Circulation flat hose
2	Control tape

	The circulation pump and the hoses must be filled with water and vented before the circulation pump is started. Never allow the circulation pump to run dry!

To switch on the machine:

To switch on HotBox300

Set the main switch to “1” and turn the continuously adjustable regulator to the desired temperature.

	During operation of the Sanikom Box 300 or in an emergency, never touch the high-voltage zone, the igniting electrodes or the spark plug socket / cable.

If the burner stops in normal operating condition without restarting automatically, the problem may have the following causes:

a)
The temperature safety cutout was triggered. To reset the system, fill the HotBox 300 with cold water and allow the system to cool down until the burner restarts.

b)
The flow/pressure switch was triggered. Check for proper water circulation (circulation pump and hoses).

5.2 Shut-down

To switch off the machine:

Turn the continuously adjustable temperature regulator back to 0°C and set the main switch to “0” position.

Continue operating the unit with cold water for approximately two minutes to allow the boiler system to cool down in order to avoid overheating.

Disconnect the unit from the power mains / water supply system.
When the unit has cooled down completely, disconnect the hoses.

	Never allow the diesel pump of the Hot Box 300 to be operated without diesel fuel, because its lubrication is not sufficient. If such case happens, immediately switch off the Hot Box 300 via the main switch and refill the diesel fuel tank. Any failure to observe this instruction will cause all and any warranty claims to be void.
	Store the equipment in a dry and frostproof place. For longer shut-down periods, drain the system completely. Whenever there is risk of frost, keep the unit and its accessories dry and frostproof (refer to maintenance and service), otherwise the equipment could suffer severe damage.

6. Maintenance and service

The good working condition and reliability of every machine depends on how it is maintained and serviced.

Diesel fuel tank
Remove accumulated dirt and water in the diesel tank at regular intervals.

Diesel pump
Clean the screen of the diesel pump periodically (at least once a year), replace where necessary.

Limescale removal
Despite low and uniform loads on heating surfaces, heating of water generally gives limited amounts of limescale, which need to be removed periodically (annually).

Pour 5 litres of the limescale remover ORM 1 in a clean container and add 5 litres of water.
In doing so, observe the safety instructions for limescale remover acids.
Place the suction hose of the circulation pump into the container.
Start the burner of the Hot Box 300 by operating the main switch and turning the temperature regulator to 70°C.

Start the circulation pump. The acid mixture will then be pumped through the heating coil of the Hot Box 300. The removal of limescale can be seen from the dirty brownish colour of the exiting water.

After complete use of the acid compound mixture, fill clear water into the container. Repeat the limescale removal process until the water from the heating coil is absolutely clean.

After the end of the antiliming process, allow the Hot Box 300 to run with clear water for other 5 minutes in the cleaning/circulation mode.

Collect the acid mixture for proper disposal in compliance with the relevant environmental regulations.

	Limescale remover acid is corrosive! Wear face screen, safety gloves and protective clothing.

Frost protection

Even if the risk of freezing is low, ensure proper frost protection for the entire water system during storage and transport by taking appropriate protective measures, otherwise critical damage to the entire water system and substantial operating hazards must be reckoned with. The best frost protection measure is to keep the unit and its accessories in a fully frostproof place.

If there is a risk of plant exposure to temperatures below freezing point during storage and/or transport, protect the equipment as follows:

• Connect the circulation pump with the Hot Box 300
(refer to chapter Start-up/shut-down).

• Prepare 5 litres of antifreeze with water at a mixing ratio of 1:1 in a clean container.

• Place the suction hose of the circulation pump into the container.

• Connect a hose to the “HOT” outlet of the Hot Box 300 and pass it to the container.

• Start the circulation pump and allow the liquid to circulate for approximately 5 minutes.

• Then stop the circulation pump and shut the ball valves on the Hot Box 300.

	Non-compliance with these frost protection instructions can cause severe damage to all water-carrying components. The warranty does not include frost damage.
	Prevent antifreeze from penetrating into the subsoil; collect it for re-use or proper disposal in compliance with environmental regulations.

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Hot Box 300

Hot Box

Power:	90 kW
Tank volume:	20 litres
Power supply:	230 Volt / 50/60 Hz.
Flow rate per minute:	42 litres
Length:	700 mm
Width:	570 mm
Height:	800 mm
Weight:	65 kg

Circulation pump

Power supply:	230 Volt / 50 Hz. / 0.6 kW /
Input	1.05 kW / 4.7 A
Length:	222 mm
Width:	462 mm
Height:	265 mm
Weight:	10,3 kg

- Diesel driven continuous-flow water-heater
- Mobile
- Capacity: 11-42 ltr./min up to 20 bar max 230 V
- Heating power: approx. 90 KW.
- Cold water connection: adapter ball valve 2xD-Storz
- Weight: Approx. 70 kg
- LxWxH: 700x570x800 mm
- Warm water connection: D-Storz

The scope of delivery comprises the following articles:

- 1x6m hot water hose with 2xD-Storz
- 1x6m hot water hose with 1xD-Storz
- 1x4m hot water hose with 2xD-Storz
- 1x2m hot water hose with 2xD-Storz

Declaration of Conformity

Manufacturer:

Sanikom d.o.o.
Industry zone A47
4208 Sencur
Slovenia

Product:

Hot Box 300 flow heater

We hereby confirm that the aforesaid product
is in compliance with the requirements of the following EU directives:

• 89/392/EEC

Technical Specifications:

79/113/EEC

81/1051/EEC

DIN 45 635

DIN VDE 0700 Part 265 10.91