

# Operating Instructions

*Be sure to read before unpacking!*

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## 0. General and unpacking the unit

### General

You have chosen to purchase a Bertschi cooking stove, which delighted us and what we want to thank at this place again.

Read these instructions in your free time, so you can enjoy the newly purchased unit a long time and safely.

We have to write this instruction manual ready to make this as clear and simple as possible. At the same moment the current EC directives and operational rules had to be met.

### Unpacking the cooking stove

- Unpack the unit carefully out, so this is not damaged.
- Place the device on a chair or on a table. See all burner valves are closed and can not be opened because the lines are bled and otherwise expire Petroleum. Each device is examined in detail in our work to its function. After confirming that the valves are closed, so that the pipes filled with oil, are closed air-free and dense.
- Check the appliance for transport damage. Transport damages are available, you must notify the carrier immediately and do not unpack on until you are in charge of the transport firm, agreed.
- Open the baking oven door and remove the accessories with the baking sheet.
- Check now with the delivery note / packing slip / Checklist parts. The delivered parts are marked on the delivery note / packing slip by hand with a hook. Must replenished part, this position is marked with a circle.

# 1 Description of the equipment and technical data

## Description of equipment

The Bertschi there Yachtherd in different technical designs. These differ as follows:

### Standard Version

- Accessories as per delivery note / packing slip (11 positions)
- Fixation for pot holders
- A stainless steel cover plate for 2-flames, stoves. An anodized aluminum Herdabdeckung for 3-flames, stoves, color according to customer requirements. The housing is made of stainless steel and is manufactured at the request of copper.
- The sidewall is excessive and serves as a suspension for the half-cardanic.
- Each burner has a control valve with which regulates the burner is turned off and cleaned.
- The back plate is like the housing made of V4A material.

### DeLuxe with shutoff valve

- Accessories as per delivery note / packing slip / checklist. (11 positions)
- Fixation for pot holders
- An anodized aluminum Herdabdeckung, color according to customer requirements. The housing is made of stainless steel and is manufactured at the request of copper.
- Brand new is a (made of composite material of aluminum-chromium-nickel steel) sheet produced, which combines all the advantages.
- The sidewall is excessive and serves as a suspension for the half-cardanic.
- Each burner has a control valve with which regulates the burner is turned off and cleaned.
- The back plate is like the housing made of V4A material.
- For each writer there is an additional Abstellventil, which normally must be **always open**. This valve should only be closed when the burner or the corresponding line must be removed and the control valve is then opened (see Brenner Service).

## Version with electric heating, 12 or 24 V for an additional charge

- Same as standard model. The burners are not electrically heated with 12 or 24 VDC. But you can always be pre-heated with alcohol, since the mass-mounted Vorwärmeschale.

## Specifications

### Fuel

The stove and oven is operated with oil or kerosene.

### Heating

Each burner has a heat output of about 2500 watts. The consumption per burner is 0.15 to 0.2 liters / hour at full load.

### Preheating

Filled with about 10 grams of alcohol, usually a Flaschenverschraub cover, per preheating. If electric heating is available, electric. If there is lack of electricity or an electrical problem, any burner, however, always be preheated with alcohol.

The Vorwärmeschale before preheating must always be dry. If this is not the case, it must be dried and the error must be sought and corrected will. See also errors and their correction.

A hot burners should **never** be doused with alcohol!

A "halbheisser" burner can only be used once in operation, if it can be electrically heated. If this is not the case, must wait until the burner has cooled completely. Serves the electric heating, it will be like a cold burner set on 1.5 to 2 minutes.

### Protection of the electrical supply line

The current consumption of the electric preheater is 17 to 20 A. Since the beginning the current consumption is higher, the inlet line shall be covered with 40 A.

The supply line must be run with a cross section of at least 4 mm<sup>2</sup> will. If the line is longer than 2 m must be the cross section 6 mm<sup>2</sup>.

## Fuel Tank

The capacity for the 7 gallon tank is 5 liters of fuel and 2 liters of air.

The interval for the 12 gallon tank is 10 liters of fuel and 2 liters of air.

The fuel tank must be pumped to a maximum of 2 - 2.5 bar.

Automatic and pressure sensor are set in the factory so.

## 2. Safety

### DeLuxe with shut-off valves

- Same as standard model. However, the burners on these additional valves can be individually closed, very advantageous for burners-service.
- **Caution: these valves must always be open, otherwise there is danger of overpressure during preheating. They are only closed for repair or service.**

## 3rd Structure and Function

### Structure

The stove is zusammengenietet welded or from different parts. The side walls and the back wall are double-walled, creating a much higher baking temperature. At the same time minimizes the energy loss.

The burners are installed so that an optimum heat transfer takes place and the burner still is easily expandable. Depending on the model can have up to three heating systems are installed.

These heating systems of the ship's interior can be heated.

### Functioning

From the tank the oil passes through a supply line "reinforced hose" to the stove. The stove and the kerosene is distributed via copper lines on the Abstellventile - depending on model - led to the burners. In the oil burner is heated, making it gassed. On the burner caps, and comes from the gas is burned. With each burner control valves can be individually regulated. For the heating systems is the same. It'll use the same burner.

## **4th operating and display elements, modes**

### **Operation Element Stove**

Each stove has its own control valve for each burner. This may cause the Flame for each burner separately regulated and purified. This applies to the burners as well as for the oven.

### **Depending on the version, there are**

- An electric heating which has a selector switch and a timer.
- Fan switch for heating
- Tilting heater for hot water
- Insertable heating element for the hot air treatment

### **Operation Fuel tank element**

- Filling, combined with a hand pump, if no electric pump or an air compressor is available.

### **Display elements Stove**

The stove has no Anzeigeelemente but 3 oval holes for vision

Monitoring of the flames.

### **Display Unit Fuel Tank**

- Pressure indicator gauge on the tank.
- For an additional charge gauge for separate mounting with or without T-piece, length upon request.

### **Modes**

#### **The stove is designed for the following modes**

- For cooking, grilling and baking
- Depending on the model for heating by:
- Air Circulation
- Fresh Air
- Central heating.

## 5th opening of the cooking stove

The Inbetriebnahme done through the following steps:

**5.1. All regulation and Abstellventile are closed and may initially not be opened.**

**5.2. Connecting the line to the tank.**

**5.3. Filling the fuel tank and prepare to Venting**

5.3.1. Close the outlet valve of the tank.

5.3.2. Fill the tank with the appropriate volume (5 or 10 liters, depending on tank capacity) with oil. Then sealing the tank well.

5.3.3. Close the tank hose, which connects the tank to the stove, the fuel tank after the main valve.

5.3.4. Pump with the pump until the pressure indicator at a pressure of 2.0 bar displays up to 2.2. Model compressor tank regulates the pressure automatically.

Full automatic model should not be filled by hand, since otherwise not enough

Air in the tank and the pressure regulation is negatively affected. However, the first time the inlet tube should be filled to the pump, especially if he is over six feet to prevent dry running of the pump.

5.3.5. The stove is connected to the rear wall. Insert the necessary wrench ready, so you can connect quickly deflated inner tube. The closure cap but may not yet be removed, otherwise escapes into the internal lines of the stove and kerosene are penetrating air.

**5.4. Priming the line**

5.4.1. The fuel tank is filled with petroleum, and is under pressure as described in 5.3. The fuel tank is located in a place which should be lower than the stove. If the stove will be tried before the assembly, the fuel tank must also be made deeper.

5.4.2. The reinforced hose is now being maintained in the amount that the tube is not siphon more. Now open at the upper end of the hose held up a flap so that the leaking oil is absorbed.

5.4.3. Open the valve at the tank so that very little oil flows out. Oil is now flowing through the pipe free from air. After a bit of oil is flowed, the exhaust valve is closed when tank again.

5.4.4. Now hold your thumb on the end of the hose so that flows out of the tube during Lowering no petroleum and can penetrate any air. With the other hand is now as under the Access 5.5. described prepared.

## 5.5. Connecting the line to the stove

5.5.1. As mentioned in 5.3. described in section 5 is a 14-he and a 12-wrench he was ready for the sealing cover behind the stove.

5.5.2. Now Distances the closure cap with the key and hold, but with the other hand the Parzerschlauch still closed.

5.5.3. If you have removed the cap lid, plug in the armored tube immediately on the thread and screw the connector nut.

5.5.4. Clean the area where oil has flowed a little on the ground. In particular, they clean the bolt.

5.5.5. Open the valve at the tank and check all locks on a Any other leak, which would now be visible, and would at best be resolved.

5.5.6. When the reinforced hose is connected and the cables are tight, start cooking the front left burner as in Part 6 described. Additional Abstellventile (DeLuxe stove below) installed on the stove, they must necessarily all be opened before the heating (deluxe model only). If the control valve and the Abstellventil for a burner while another burner is cooked, baked or heated, there arises in the closed line, an overpressure, which can not leak into the tank. Thus the appropriate burner can be **destroyed**.

## 6. Operation of the cooking stove

### Operation of the burner

Manual preheating with methylated spirits (methyl alcohol). Before you ignite the flame, the control knob to "CLOSE" is possible and would indicate the fuel tank has enough pressure (2 bar). Then the burner is preheated in the Vorwärmuschale with methylated spirits. If the alcohol almost burnt, turn control knob slightly to the left and the burner ignites. The operation of the burner for cooking, baking or heating is always the same. It will be as follows:

## 6.1. Preheat the burner

The burner must be checked before commissioning and pre-heated. This can be done with alcohol or electric.

### 6.1.1. Examination before the preheating

Before you can light the burner, this needs to be preheated. Be tested before preheating is essential to whether the Vorwärmeschale is dry. If it is wet, the error must be sought and addressed. Possibly the control valve opened prematurely.

### 6.1.2. Preheating with alcohol

If the burner as examined in section 6.1.1. This example with alcohol, as follows be preheated:

Man pours about 10 grams of alcohol (usually a bottle sealing cap full) over the corresponding burner. The spirit then proceeds automatically into the burner along the Vorwärmeschale.

Now the spirit is on the burner with a match or other means Flame (lighter) set on fire. Caution is required that you are no Burns incurs. The burning time of 10 grams of alcohol is about 2 minutes. Well must wait be, until the alcohol is completely burned. If you do this take too long to fry an egg on this flame.

A hot or "half-hot" burner must **never** be doused with alcohol! An electrically-heated burner may be electrically reheated.

If the alcohol completely burned, the burner, as described in 6.2. describes lit.

### 6.1.3. Electrical Preheating

If the burner as examined in section 6.1.1. It can, when an electric pre-heater is installed, the following are heated:

With the selector switch is selected to be taken into operation of the burner. Then the timer depending on outside temperature to 2 - 2.5 minutes (better a little more than enough set). Has expired the timer which is evident if the switch back to "zero" clicks, distillers be lit (6.2). An equipped with electric preheating burner can also be preheated as in section 6.1.2 with alcohol.

## 6.2. Lighting of the torch

If checked the burners as under 6.1.1, pre-heated (burnt 6.1.2) and the spirit or the time for the electric preheating run (6.1.3), which can easily be turned on in accordance with regulation valve (from, "CLOSE" that, OPEN "), while a burning match or a lighter is held to the burner so that ignites the evaporated petroleum.

Here, too, should be carefully worked accordingly, so that one incurs no burns.

If the burner with each Regulierventilstellung beautiful blue fire, everything is cooked in order and it may, baked or heated. Turns yellow when fully open, the flame, the burner must be something close to the beautiful blue flame burning.

Is the burner too cold, so the oil does not gassed or incomplete, and it gets into a liquid form of the burner cover, where it burns. The flame burns yellow, depending on the amount of the yellow flame may be larger or smaller. Occurs such a case, the burner must be switched off and cooled, or any other burner is preheated and burned. Only an electrically heated burner may be electrically reheated.

When using the burner with a yellow flame, sooting of the burner.

A hot or "half-hot" burner must never be doused with alcohol! Only an electrically heated burner may be electrically reheated.

## 6.3. Commissioning of / one oven burner

Remove the baking sheet in oven and the oven floor. Check and warm before / the burner as described in 6.1. described. Ignite the / the burner as described in 6.2. described and let the burn / the torch about 2 minutes, so the burner is really hot. Push soil back into the oven. Check that the flame is well regulated (possibly clean nozzle by briefly turning on full, see details in the burner operating instructions). Preheat the oven 5 to 10 minutes. Now slide the baking sheet and pastry book. To produce top heat of the oven, a torch lit up and opened the cover plates. The oven temperature is with the / the burner (s) down regulated.

If Abstellventile are present (deluxe model only), close that in any case. The burners should always be under pressure. The only way to determine whether a control valve is leaking. The Vorwärmuschale then slowly filled with petroleum.

## 6.5. The three main points

1. The Vorwärmerschale must always be dry (no petrol in the shell).
2. Never pour a hot burner with alcohol.
3. The Abstellventile (deluxe model only) must always be open. You will be entered into only with leaks or repairs. If a shut off valve is closed, the corresponding regulation valve will be absolutely open. The control valve may only be re-closed when the burner or repair the leak is fixed.

## 7. Maintenance of the cooking stove

### 7.1. Kochherdwartung

#### 7.1.1 Maintenance of a burner 1x (daily)

Turn the control valve to quickly open the far left (, open). Thus, the nozzle through the built-in nozzle needle is cleaned. Subsequently, the control valve to the right (close) is rotated.

The Bertschi stove itself is maintenance free. He needs the usual exterior cleaning, as every housewife knows.

The control valves and the burners can wear out or burn out over time. The corresponding procedure is described in section 7.2. „ Burner maintenance "below.

### 7.2. Burner Maintenance

The only regular maintenance is the cleaning of the burner before switching, as in 6.4. described.

Occasionally, it happens that licking the seal on the Regulierachse something. If this is the case, a tiny flame burning on Achsaustritt. This is remedied by a 10-key, he joins the Stopfbüchse approximately 2 / 6.

The same applies to the nozzle. Burns a small flame near the nozzle, the burner is turned off and tightened the nozzle with a special key (see large repair) in the cold state.

### **7.3 Regulating change (every few years)**

The wear of the control valve is largely dependent on the operation. Is worn, the cone, the valve is leaking and it accumulates in the Vorwärmerschale a small amount of petrol. Only dry Preheat Vorwärmerschale. Is the nozzle burned out, come to much oil to the carburetor, which can not evaporate all the oil, and the flame burns yellow. How to replace the nozzle, is described in Chapter 8.

### **7.4 Needle Nozzle**

Occasionally, the nozzle needle breaks off or is burned. This is evident when the nozzle can not be cleaned. If the control valve (far left open, closed) and turned the nozzle needle is not visible, then it is defective and must be replaced. The installation of a new jet needle is described in Chapter 8.

## **8. Maintenance of the burner**

### **8.1 Cleaning Nozzle**

Control knob to the left until it stops "CLEAN" and then immediately turn back. Normally, the flame burns, otherwise light a match.

### **8.2 Replacing the cleaning needle**

1. Remove burner caps.
2. Unscrew the nozzle with a key (to left).
3. Control knob to the left turn and pull cleaning needle. Then control knob clockwise until it stops.
4. New cleaning needle match against sprocket means to press the valve stem, light finger pressure, with the valve closed.
5. Turn control knob as far to the left until 3 or 4 teeth, the nozzle needle lift slightly on match easily noticeable. In this process, pressing lightly with a clean needle match down, is to determine where a tactile snap.
6. Turn control knob to the far right and then einschrauben nozzle. The clean needle is then inserted correctly, if after 1/3-Drehung the operating head to left, from the closed position, the needle can be seen in the nozzle hole.

For long-term operation, it is recommended to take one Reserve.

