VENTED CABIN STOVE
INSTALLATION AND OPERATION INSTRUCTIONS

MODEL **NS-1750-1**
MODEL **NS-1750E**

**IMPORTANT**
Read and understand instructions before installing or using the stove. Retain instructions for future reference.
Check and local codes for permitted use.

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# I. SPECIFICATIONS

<table>
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<th>Model</th>
<th>NS-1750-1</th>
<th>NS-1750E</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>Forced-exhaust (FE type), pot type</td>
<td></td>
</tr>
<tr>
<td>Ignition</td>
<td>Electric lighting (coil heater)</td>
<td></td>
</tr>
<tr>
<td>Fuel type</td>
<td>Water-clear Kerosene/Diesel oil (with select switch)</td>
<td></td>
</tr>
</tbody>
</table>
| Heat rating    | High: 1500 kcal/h, 1750 W (6,300 BTU/h)  
                Low: 900 kcal/h, 1050 W (3,800 BTU/h) |          |
| Fuel consumption | High: 0.18 l/h (0.048 gal./h)  
                 Low: 0.11 l/h (0.029 gal./h) |          |
| Heating efficiency | Approx. 80% |          |
| Dimensions     |          |          |
| Width          | 560 mm (22 in.) |          |
| Depth          | 320 mm (12-5/8 in.) |          |
| Height         | 160 mm (6-1/4 in.)  
                150 mm (5-7/8 in.) |          |
| Weight         | 10.0 kg (22.0 lbs.) |          |
| Power source   | DC 12 V (DC 10 — 16 V) |          |
| Power consumption | Igniting: 78 W (3 min.)  
                    Burning: High 10 W  
                    Low 6 W |          |
| Current fuse   | 10 A      |          |
| Safety devices | * Ignition safety device  
                 * Flame sensor  
                 * Overheat prevention device  
                 * Power failure safety device  
                 * Burner bottom temp. sensor  
                 * Low/high/reverse voltage safety device |          |
| Flue pipe      | Nominal: φ 25 mm (φ 1 in.) |          |
| Cooking plate  | Ceramic glass |          |
| Boiling efficiency | High: Approx. 45% (Flat pot) |          |
II. NAMES OF PARTS AND ACCESSORIES:
NS-1750-1/NS-1750E

OTHER ACCESSORIES:

<table>
<thead>
<tr>
<th>Accessory</th>
<th>Description</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fuel pipe</td>
<td></td>
<td>1.0 mm (3-1/4 ft.)</td>
</tr>
<tr>
<td>Strainer</td>
<td></td>
<td>1 pc.</td>
</tr>
<tr>
<td>Insert cap nut</td>
<td></td>
<td>2 pcs.</td>
</tr>
<tr>
<td>Sleeve</td>
<td></td>
<td>2 pcs.</td>
</tr>
<tr>
<td>Bolt</td>
<td>M6, L = 50 mm (2 in.)</td>
<td>4 pcs.</td>
</tr>
<tr>
<td>Nut</td>
<td>M6</td>
<td>4 pcs.</td>
</tr>
<tr>
<td>Washer</td>
<td>φ6</td>
<td>4 pcs.</td>
</tr>
<tr>
<td>Insulator mat</td>
<td>15 x 15 cm (6 x 6 in.)</td>
<td>1 pc.</td>
</tr>
<tr>
<td>Wire</td>
<td></td>
<td>1 roll</td>
</tr>
<tr>
<td>Tank cap adaptor</td>
<td></td>
<td>1 pc.</td>
</tr>
<tr>
<td>Wood screw (NS-1750E)</td>
<td>φ 4.1</td>
<td>4 pcs.</td>
</tr>
</tbody>
</table>
III. OPERATION AND PRECAUTIONS
NS-1750-1/NS-1750E

A. CHECK BEFORE OPERATION:

* Make sure that there is no oil leakage in the fuel feed line.
  Fuel is sucked from the fuel tank by fuel pump and supplied to the burner through a
  translucent pipe, which tank is installed in a lower level.

* Make sure also that there is no inflammable objects on and around the ceramic top plate
  and the exhaust pipe.

* Flue pipe must be installed in such a manner that it’s top comes outdoors.

* Do not use stove while in sailing.

* This stove is the forced-exhaust type having the structure by which emission gas is
  forcedly exhausted to outdoor.
  Make sure, therefore, that all the joints of the exhaust pipes are connected securely. Care
  must be taken not to let emission gas into the rooms, since it is extremely dangerous to
  human life.

* Do not operate stove with ceramic plate broken.

B. SELECTION OF FUEL:
(KEROSENE OR DIESEL OIL)

This stove is provided the select switch for using kerosene or diesel oil. The select switch
must be changed to required fuel type before using stove.

WARNING: Use only water-clear kerosene or diesel oil.
  Never use gasoline or other flammable liquids.
  Never use fuel with a yellow color.

The select switch is located on the bottom side of stove as illustrated.
Change the select switch to required
fuel type by using a screw driver or a

  Right: Kerosene
  Left: Diesel oil

Note: The select switch has been already set for the use of kero-
  sene.
C. LIGHTING

Press the operation “ON” switch on, so that the power lamp will light up and the igniter will be heated in red. In approximately 6 seconds, blower motor and fuel pump start at “LOW” power setting. Flame current detection starts in approx. three minutes after the operation switch is turned on. Igniter must be left off in the meantime. Furthermore, after a low combustion of two minutes, either of “HIGH” or “LOW” power can be selected at option. Flame lamp lights up while flames are in the stove.

**Caution:** It may take a few lighting actions to light up the stove in the first operation, since fuel may not be properly filled in the fuel line in the beginning. Try lighting up after waiting for a while.

**Caution:** When you first use your stove, or fuel is out, fuel pump may produce an audible operation noise at ignition. This is only temporary.

**Caution:** It will take several hours after the first operation to remove odor of adhesives for heat insulator in side of unit by heat.

**Caution:** Do not operate stove without any pans, pots or kettles on ceramic plate to prevent from overheating.

D. POWER ADJUSTMENT:

Burning power is selective in two steps of “HIGH” and “LOW” by select switch, in five minutes after lighting up. In case of high combustion, “HIGH” lamp will light up.

Heating power: Left — High 700 kcal/h, Low 400 kcal/h  
(High 3,000 BTU/h, Low 1,700 BTU/h)  
Right — High 400 kcal/h, Low 250 kcal/h  
(High 1,700 BTU/h, Low 1,000 BTU/h)

**Caution:** Use a flat pot for cooking due to stability and heat efficiency.

**Note:** This stove is provided with pot holder. Adjust the pot holder to fix and fit the size of the pot by sliding it.

**WARNING:** Do not handle the pot roughly. Ceramic plate which is a kind of heatproof glass could be broken in shock. Use pan or pot for cooking. Do not cook on the ceramic plate directly.

**Caution:** Always wipe off the surface of ceramic cooking plate with soft wet cloth after using stove.

**Caution:** Never burnish and scrape the ceramic cooking plate to take out the stuck dirty.

**Caution:** Risk of burns. Extremely hot surfaces! Keep away from children and clothing.
E. TURNING STOVE OFF:

To turn off flames, press the operation "OFF" switch, so "POWER" lamp goes off and next "FLAME" lamp goes off. Blower motor only keeps operation for two minutes before being stopped.

**Caution:** No re-lighting operation can be given for two minutes above.

**Caution:** Do not disconnect power supply to put off burning. Blower motor must be continued operation at least for two minutes to prevent the stove from overheating.

**Caution:** Do not touch the ceramic plate due to high surface temperatures on operation and just after turning off.

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F. MALFUNCTION OR TROUBLE:

If a malfunction occurs the stove will stop and the indicator lamps will flash. The flashing lamps indicate the cause of the malfunction as shown here:

<table>
<thead>
<tr>
<th>Malfunction or trouble</th>
<th>Power</th>
<th>Flame</th>
<th>High</th>
</tr>
</thead>
<tbody>
<tr>
<td>No ignition, no flame</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Burner bottom thermistor activated</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Igniter malfunction</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Power source, too high (12 V → more than 17 V)</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Power source, too low (12 V → less than 8.5 V)</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>ON/OFF switch on before power connected</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>High limit switch activated</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
</tbody>
</table>
IV. INSTALLATION

A: INSTALLATION OF STOVE UNIT: NS-1750-1
(EXAMPLE)

* Select a location free of flammable objects near the stove and exhaust pipe. The surface of stove and exhaust pipe often get extremely hot, so install stove and exhaust pipe in a place where it does not directly touch the structure of the building or its surrounding equipment. It is also suggested that stove shall be installed in a place where it is not subjected to direct sea water or rain.

* Allow at least 2 cm (1\(\frac{3}{16}\) in.) between sides of stove and walls. Keep all materials away at least 5 cm (2 in.) from rear of stove.

* Although stove will operate when tilted, install stove as plain as possible.

B: INSTALLATION OF STOVE UNIT: NS-1750E
(EXAMPLE)
* Select an installing place free of inflammable objects around the stove and exhaust pipe. Since surface of stove and exhaust pipe often gets extremely hot, install stove and exhaust pipe in a place where it does not directly touch the structure of the building or its surrounding equipment. It is also suggested that stove shall be installed in such a place where it is not subjected to direct sea water and rain.

* Allow at least 2 cm (\(\frac{13}{16}\) in.) between sides of stove and walls. Keep all materials away at least 5 cm (2 in.) from rear of stove. Allow at least 20 cm (8 in.) from stove top as shown the below.

* Open the location to install stove as shown below.

Unscrew six (6) screws on the top plate and disconnect black and white connectors. Insert the unit without top plate into its position and fix it to stand with wooden screw attached at “A” position as shown above. Fasten the connectors again and put top plate on its position. Fix it with six (6) screws.

* Although stove will operate when tilted, install stove as plain possible.
C : INSTALLATION OF EXHAUST PIPE LINE : NS-1750-1/NS-1750E

Make the installing hole as shown in fig. 1

First assemble flue pipe top ① and secure it as shown in fig. 2. Connect flue pipe top ① and stove unit with flexible exhaust pipe.

Note: Flexible exhaust pipe extension with NSP-41 can be made to 2 m (6-1/2 ft.) (4 pcs.). No longer extension than this is allowed. See section of “ACCESSORIES”.

Note: Always attach the pipe holder to the connection of the flexible exhaust pipe, stove unit and flue pipe top.

Caution: Wind the insulator mat round the part where the flexible exhaust pipe comes into contact with flammable material such as duct holl by using wires due to high surface temperatures. (fig. 3)

① Flue pipe
② Bolt
③ Rubber packing
④ Washer
⑤ Nut

* Exhaust gas is exhausted through the flue pipe top as illustrated. Do not install the flue pipe in close proximity to flammable materials due to high temperature (250°C).

  Side clearance — 30 cm (12”)  
  Top clearance — 100 cm (39”)

* Exhaust pipe opening must be fully exposed to outside air.

* Do not install flue pipe top where it will be exposed to heavy rain or seawater.
D : INSTALLATION OF FUEL TANK AND FUEL LINE : NS-1750-1/NS-1750E

Parts ⑪ through ⑬ are supplied with stove. Remove protective cap provided on the "IN" side of fuel pump. Next, insert cap nut ⑫ and sleeve ⑬ into fuel tube ⑪, as shown in the figure, firmly push fuel tube ⑪ in arrow marked direction, and then securely fasten the parts with cap nut ⑫.

**Caution:** A maximum of fuel tube is to be 1.0 m in length.

**Caution:** Be sure to install fuel tube upwards to fuel tank. If fuel tube is too long, be sure to cut to applicable size.

**Caution:** Fuel tank must be secured to prevent movement of the tank.

**Caution:** Be sure to install fuel tank in such a manner that its fuel level comes lower than stove bottom level (which is the suction inlet of fuel pump).

**Caution:** When stove is used for the first time, it may not pump up fuel from fuel tank. If this occurs, lift fuel tank above the level of stove before the stove ignites.

**Caution:** Remove any dust from the fuel line inlet before installing the fuel line. It may cause a fuel pump malfunction.

E. INSTALLATION OF POWER SUPPLY CORD : NS-1750-1/NS-1750E

Power supply cord is approximately 2.5 meters (8-1/5 ft.).

Care is to be taken not to misconnect (+) and (−) terminals. A 10A fuse is used for stove.
- Cord Black:(+)
- Cord White:(−)

**NOTE:** In case of using extension cord, always minimize the length as short as possible. Use of extension cord too long may occur ignition failure due to drop of voltage.
V. CROSS SECTION AND WIRING DIAGRAM
NS-1750-1/NS-1750E
CROSS SECTION

Caution: Always install igniter at the position indicated below.

WIRING DIAGRAM
VI. TIME CHART: NS-1750-1/NS-1750E

<table>
<thead>
<tr>
<th>Operation switch</th>
<th>Hi</th>
<th>Lo</th>
</tr>
</thead>
<tbody>
<tr>
<td>Select switch</td>
<td></td>
<td></td>
</tr>
<tr>
<td>High limit switch</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Burner thermistor</td>
<td>50kΩ</td>
<td></td>
</tr>
<tr>
<td>Flame rod</td>
<td>0.3μA</td>
<td></td>
</tr>
<tr>
<td>Power lamp</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Flame lamp</td>
<td></td>
<td></td>
</tr>
<tr>
<td>High lamp</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Igniter</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Blower motor</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Blower motor switchover</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fuel pump</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fuel pump switchover</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

$T_6: 130$ sec. $T_7: 5$ min. $T_8: 5$ sec. $T_9: 22$ min. $T_{10}: 120$ sec.
VII. ACCESSORIES : NS-1750-1/NS-1750E

* NSP-25 Power supply extension cord (8m) (26-1/4 ft.)

NSP-101 Circulation fan

NSP-12 Water proof cap

NSP-43 Side hull flue pipe

NSP-41 Extension exhaust pipe set
  Flexible exhaust pipe
  (0.5 m (20 in.) x 2 pcs)
  Pipe holder 2 pcs.

NSP-803 In-line fuel filter

NSP-35 Copper fuel line
  (64mm or 5/8 in. O.D.)

NSP-34 Plastic fuel tank (18l) (4.8 gal.)

NSP-33 Plastic fuel tank (10 l) (2.6 gal.)
VIII. TEMPLATE FOR STANDARD INSTALLATION

NOTE: Read and understand "INSTALLATION AND OPERATION INSTRUCTIONS" before installation.

SAFETY TIPS

* Before making a hole in the mounting surface, make sure no electric wires or other obstructions are present.

* Make sure the outside area to which flue pipe will be is clear of objects.

USE OF TEMPLATE

1. Pin or tape template on mounting surface at desired location.

2. Use 40 — 60 mm (1-5/16 ~ 2-3/8 in.) diameter hole saw.

3. Refer to "INSTALLATION AND OPERATION INSTRUCTIONS" for complete installation.