

FUTURA



Model: **E-5**

The King

Kerosene Heater

INSTRUCTION
MANUAL



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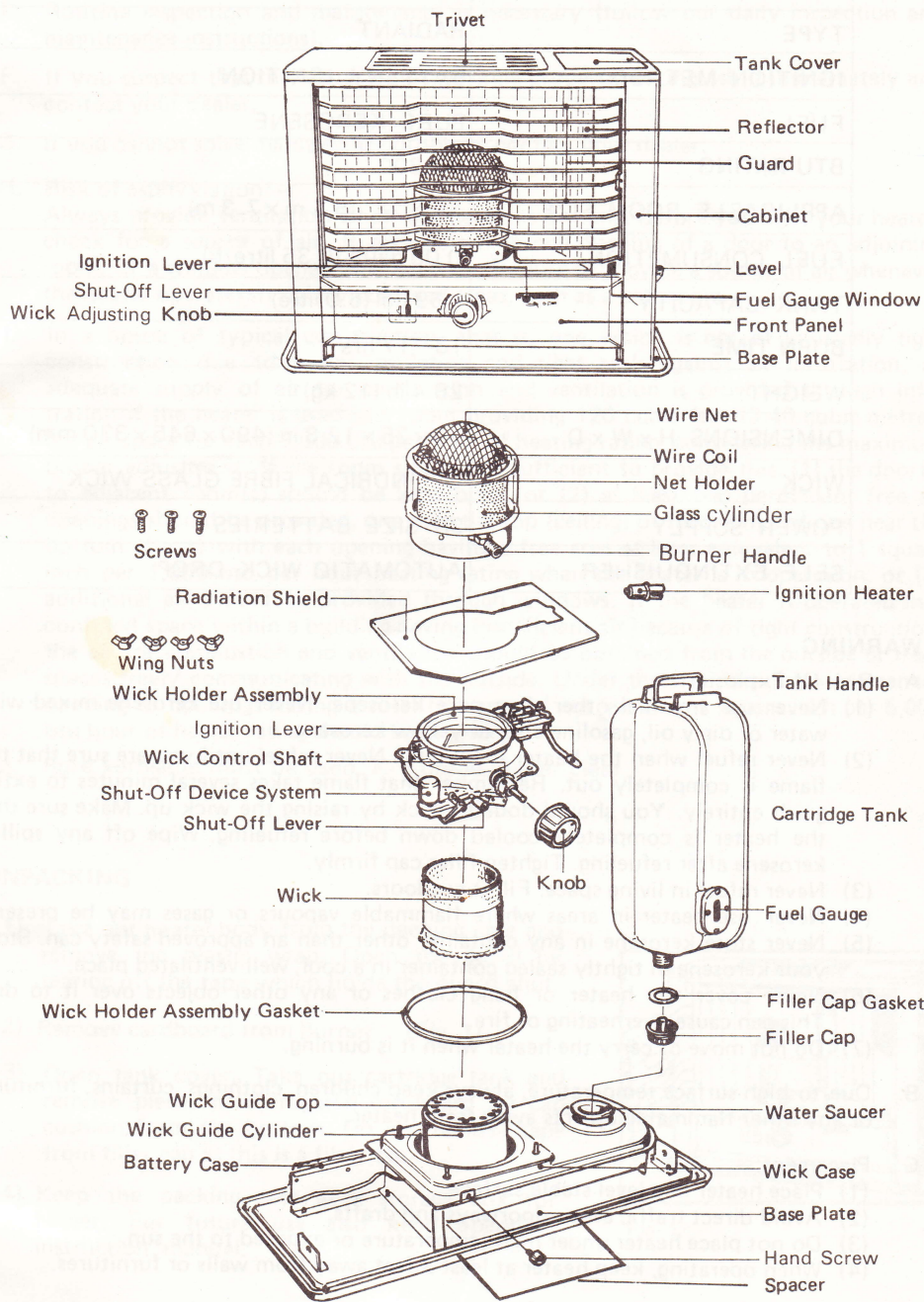
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PARTS LIST



SPECIFICATIONS:

MODEL	E5
TYPE	RADIANT
IGNITION METHOD	BATTERY IGNITION
FUEL	PURE KEROSENE
BTU RATING	12,300
APPLICABLE ROOM SIZE	18'×24' (5.5 m×7.3 m)
FUEL CONSUMPTION	0.09 gal/h (0.35 litre/h)
TANK CAPACITY	1.59 gal (6.0 litre)
BURN TIME	13—17 hrs
WEIGHT	26.4 lb (12 kg)
DIMENSIONS H x W x D	19×25×12.8 in (490×645×330 mm)
WICK	CYLINDRICAL FIBRE GLASS WICK
POWER SUPPLY	2D SIZE BATTERIES
SELF EXTINGUISHER	AUTOMATIC WICK DROP

WARNING**A. Risk Of Explosion:—**

- (1) Never use any fuel other than pure kerosene. Never use kerosene mixed with water or dirty oil, gasoline etc., or yellow kerosene.
- (2) Never refuel when the heater is burning. Never refuel until you are sure that the flame is completely out. Remember that flame takes several minutes to extinguish entirely. You should double-check by raising the wick up. Make sure that the heater is completely cooled down before refueling. Wipe off any spilled kerosene after refueling. Tighten filler cap firmly.
- (3) Never refuel in living space. Fill it outdoors.
- (4) Never use heater in areas where flammable vapours or gases may be present.
- (5) Never store kerosene in any container other than an approved safety can. Store your kerosene in tightly sealed container in a cool, well-ventilated place.
- (6) Never cover the heater or hang clothes or any other objects over it to dry. This can cause overheating or fire.
- (7) Do not move or carry the heater when it is burning.

B. Due to high surface temperature, always keep children, clothings, curtains, furnitures or any other flammable objects away from heater.**C. Placement:—**

- (1) Place heater in a level stable surface.
- (2) Avoid direct traffic areas, doorways and drafts.
- (3) Do not place heater under high temperature or exposed to the sun.
- (4) When operating, keep heater at least 3 feet away from walls or furnitures.

- D. Avoid tipping the heater while it is moving to prevent spilling.
- E. Routine inspection and maintenance is necessary (follow our daily inspection and maintenance instructions).
- F. If you suspect that the heater is not working properly, extinguish it immediately and contact your dealer.
- G. If you cannot solve maintenance problem, contact your dealer.
- H. Risk of asphyxiation:—
Always provide ventilation when the heater is burning. Before you light your heater, check for a source of air. It may be a half-inch opening of a door to an adjoining room, or a window opened one-half inch. Be sure to provide a source of air whenever the heater operates in tightly confined areas, such as a bathroom.
- I. In a house of typical construction, that is, one which is not of unusually tight construction due to heavy insulation and tight seals against air infiltration, an adequate supply of air for combustion and ventilation is provided through infiltration if the heater is used in a room providing 120 cubic feet (3.40 cubic metres) for air space for each 1,000 btu per hour of heating rating, considering the maximum burner adjustment. If the room size is not sufficient to provide this, (1) the door(s) to adjacent room(s) should be kept open, or (2) at least two permanent free air openings should be provided, one near the top (ceiling) of the room and one near the bottom (floor) with each opening having a free area at least equivalent to 1 square inch per 1,000 btu per hour heating rating when the heater is in operation, or (3) additional air should be provided through windows. If the heater is operated in a confined space within a building having insufficient air because of tight construction, the air for combustion and ventilation should be obtained from the outside or from spaces freely communicating with the outside. Under these conditions, a permanent opening or openings having a total free area of not less than 1 square inch per 5,000 btu hour of heater rating should be provided.
- J. Pure kerosene must be used. K-1 grade, water clear.

UNPACKING

- (1) Take out heater body from the packing case and remove the plastic wrap. Open the guard by tearing off the tape which holds the guard shut.
- (2) Remove cardboard from Burner (Fig. 1)
- (3) Open tank cover. Take out cartridge tank and remove pieces of corrugated cardboard for cap cushion from the bottom. Do not remove tape from filler cap as this is a filter tap.
- (4) Keep the packing case as a storage box for heater. For future use also keep operating instruction manual.

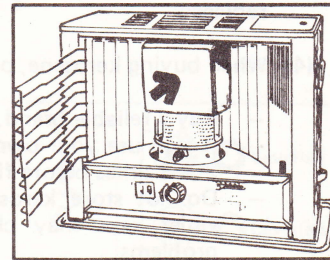


Fig. 1

INSTALLATION OF DRY CELLS

Pull off cover at the back of cabinet and insert the batteries into the battery case (Fig. 2). Check position of + - mark. Easy insertion will be obtained by inserting batteries into the spring side first. After inserting the batteries, replace cover over batteries.

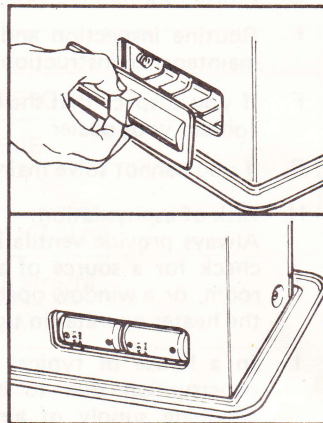


Fig. 2

FUEL

- (1) Never use gasoline.
 - (2) Pure kerosene must be used. K-1 grade, water clear.
 - (3) If kerosene is not clean, or mixed with vegetable oil, animal fat or machine oil, it will cause carbon deposits on the wick and the following troubles may result.
 - Fire circulation is slow on ignition.
 - Fumes may result and irritate the eyes.
 - Wire net will not heat to a cherry red even after 30 minutes.
 - Small flame and low heat.
 - Automatic ignition becomes difficult.
 - Wick gets hardened, making it difficult to adjust the up and down movement.
 - Wick does not drop even when the shut-off lever is pressed and fire does not extinguish.
- If any of the above occurs, the dirty kerosene and the contaminated wick should be replaced.
- (4) When buying kerosene, please note the following recommendations:
 - Buy a reliable brand.
 - If you use your own container, rinse container thoroughly with clean kerosene 2 - 3 times before filling to remove any foreign matter.
 - Do not store kerosene in transparent or translucent plastic container. Ultra-violet rays may change the quality of the kerosene and result in burning problems.

FUELING

- (1) Shut off the heater. Do not refuel while burning.
- (2) Pull out the cartridge tank and refuel. (Fig. 3)
- (3) Use either a siphon or a funnel to fill the tank.
- (4) Watch the fuel gauge when fueling.
- (5) Stop filling when the fuel level reaches the center of the fuel gauge. (Fig. 4)
- (6) Tighten the filler cap firmly.
- (7) Reset the cartridge tank in the stove. Improper seating will not allow the tank cover to close.
- (8) Wipe off any kerosene overflow.

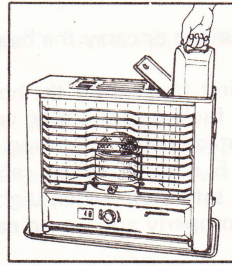


Fig. 3

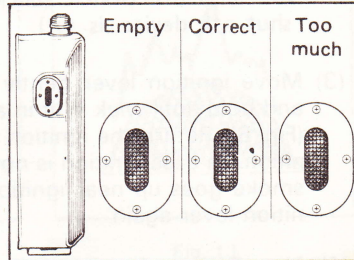


Fig. 4

PREPARATION FOR IGNITION

- (1) Checking of fuel level
The fuel level can be checked by looking at the fuel gauge window.
* The color portion (as shown in Fig. 5) shows the remaining kerosene.
- (2) Levelling
Make sure the heater is levelled by checking the level attached to heater (Fig. 6). Shut-off device may not work if heater is not fairly levelled.

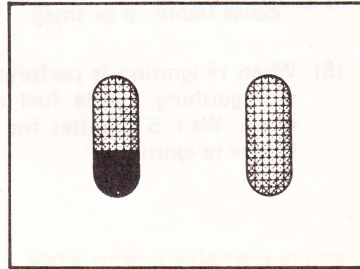


Fig. 5

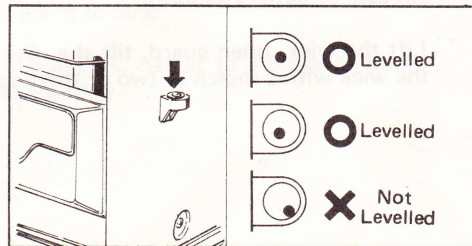


Fig. 6

IGNITION

* Do not move or carry the heater when it is burning.

- (1) For first time using the heater, wait 15 minutes after fueling, to allow wick to become fully saturated before lighting. Ignition is possible after 5 minutes when refueling. If wick is not fully saturated when lighted, heater will not burn properly and would cause odours.
- (2) Raise the wick to its full height by turning the wick adjusting knob clockwise till it stops (Fig. 7). This fully raises the wick and also sets the shut-off device (clicking will stop when shut-off device is set).
- (3) Move ignition lever gently to right till it stops and hold until wick is lit in about 2 – 5 seconds (Fig. 8). Return the ignition lever gently after ignition. In case ignition is not obtained and white smoke goes up near ignition heater, set the ignition lever again.
- (4) Use Burner handle to swing the Burner for 2 – 3 times, to make sure that Burner is properly seated after lighting. (Fig. 9)
* Even a slight unseating of the Burner will cause flame-up or smell.
- (5) When re-ignition is performed immediately after extinguishing, crude fuel can cause an intense smell. Wait 5 minutes for cooling the Burner before re-ignition.

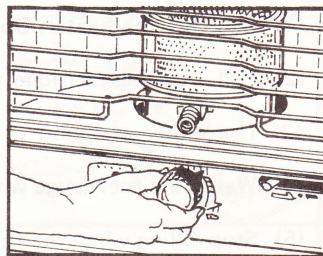


Fig. 7

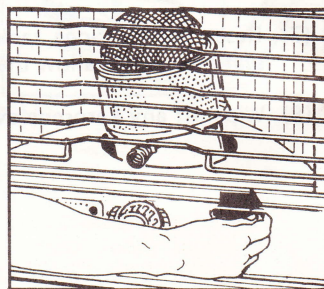


Fig. 8

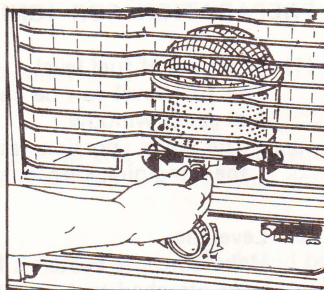


Fig. 9

MATCH IGNITION

(In case of battery failure)

Lift the wick, open guard, tilt the Burner and light the wick with a match at two or three spots. (Fig. 10)

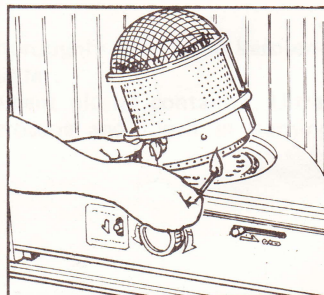


Fig. 10

FLAME ADJUSTMENT

After heater is lit, it takes about 5 minutes to obtain a stable flame. Adjust the flame to proper intensity. (Fig. 12)

- (1) If the flame flares too high above the wire net (Fig. 13), first check if Burner is seated properly by holding the Burner handle to swing the Burner for 2 – 3 times and see whether the flame becomes stable. If the flame continues to flare up, adjust by turning wick adjusting knob counter-clockwise slowly.

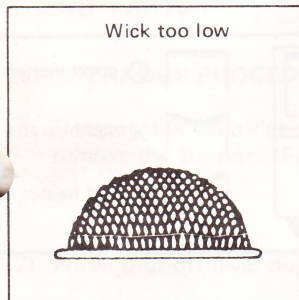


Fig. 11

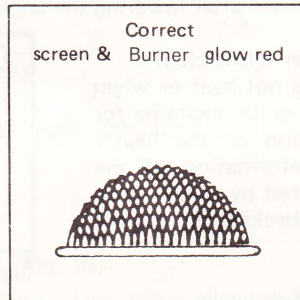


Fig. 12

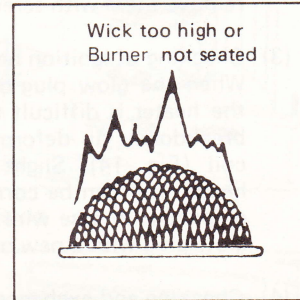


Fig. 13

CAUTION:

- It is dangerous to leave the wick too high after ignition. As the flame continues to rise, it will flare up to a too high flame condition. (Fig. 13)
- Ventilate while heater is on.

EXTINGUISHING

Push the shut-off lever down to extinguish the heater. Make sure the flame is extinguished.

ATTENTION:

- Always turn off the heater before going out or going to bed.
- Never abuse shut-off device by kicking or shaking the heater to extinguish flame. Constant abuse will result in damage to the extinguisher.

DAILY CHECK AND MAINTENANCE

Always clean the heater and the area around it. Spilled kerosene in base plate could cause accident. Lack of maintenance could shorten life of heater.

- (1) Checking of cartridge tank
Examine for fuel leakage during refueling. Make sure filler cap is tight.
- (2) Checking of wick and wick guide cylinder
Take off the Burner and examine wick for carbon and also on upper end of the wick holder assembly and the wick guide cylinder. If there are carbon deposits, remove them with screwdriver after lowering the wick.

- (3) Checking of ignition heater (glow plug)
When the glow plug does not heat or when the heater is difficult to ignite, examine for breakdown or deformation of the heater coil (Fig. 14). Slight deformation of the heater coil can be corrected by match stick or pencil. In case wire is broken, replace the glow plug with a new one.

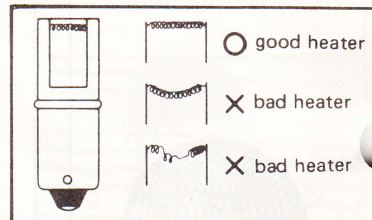


Fig. 14

- (4) Checking and exchange of dry cells
If the glow plug glows weak in spite of the normal heater coil, this is caused by weak dry cells. Replace the dry cells with new ones.
- (5) Checking and maintenance of wick
The wick used in this heater is made of heat resisting fibre glass which does not burn and should last for a long time. To keep the wick in good condition, you should burn the wick off every other month to remove the carbon deposits accumulated on the wick.

If carbon accumulates on the wick and causes difficulty in the up and down movement of the wick, or if the wire net is not heated to normal flame, and the fire is difficult to be ignited by the dry cell ignition, burn the wick without fuel for cleaning according to the following procedures to remove the carbon.

Procedures of No-Fuel Burning for cleaning:

- (a) Perform the wick cleaning outdoors without wind or at an open window.
- (b) Extract the cartridge tank. Re-ignite after cooling the Burner and allow the heater to burn.
- (c) When the red heat of the wire net becomes weak, raise the wick fully and leave it till the fire is naturally extinguished (in about 1 hour).
- (d) By this wick cleaning method, the carbon is removed and the wick becomes soft. Reset the cartridge tank after checking its fuel level and wait 15 minutes for the wick to become fully saturated before lighting the heater again.

NOTE: Carbon is gradually accumulated on a wick used over a long period of time and a wick used over 2 – 3 seasons may not be improved even when the no-fuel burning is performed. Replace such a wick with a new one.

(6) Checking and maintenance of wire net and wire coil

(a) Wire net

Brush off any accumulated soot or carbon. Check that the wire net has the correct round dome shape. In case the dome is deformed, reshape it by hand.

(b) Wire coil

Check for even loops. If loops are uneven, space them by hand. In case coil is broken, replace it.

CHANG PARTS

12-26-96

WICK CHANGE PROCEDURES

(1) Remove the cartridge tank. Open the guard and remove the Burner. (Fig. 15)

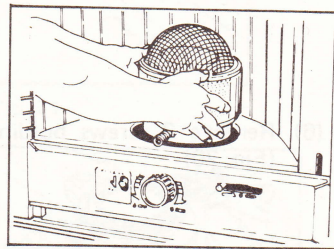


Fig. 15

(2) Press shut-off lever down. (Fig. 16)

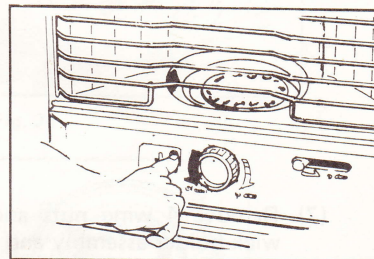


Fig. 16

(3) Extract wick adjusting knob. Remove the battery cover and extract the batteries. (Fig. 17)

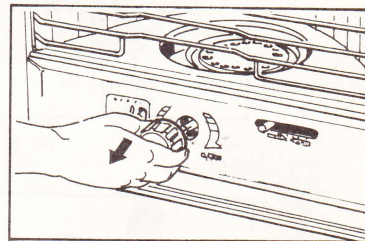


Fig. 17

(4) Remove set screws from sides and rear of the body. (Fig. 18)

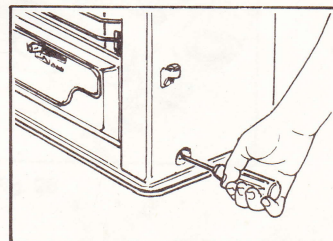


Fig. 18

- (5) Slant the body forward and lift upward to clear the wick control shaft through the hole in the panel. (Fig. 19)

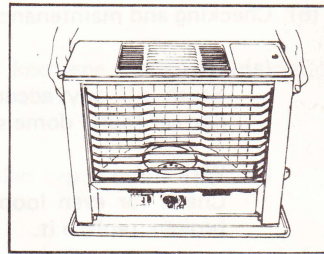


Fig. 19

- (6) Remove 3 screws holding the radiation shield. (Fig. 20)

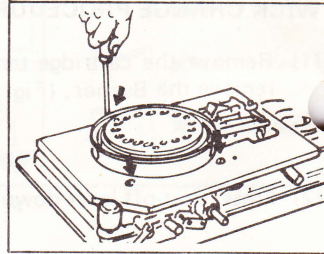


Fig. 20

- (7) Remove 4 wing nuts and 1 screw holding the wick holder assembly and lead wire. (Fig. 21)

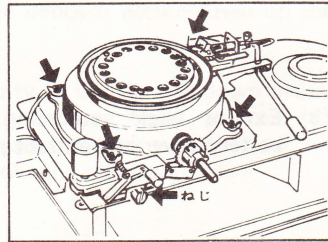


Fig. 21

- (8) Remove the wick holder assembly. (Fig. 22)

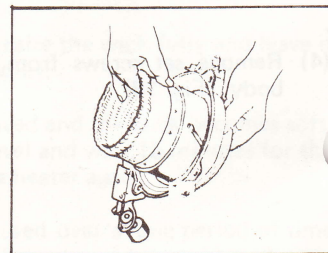


Fig. 22

- (9) Remove the wick from the wick holder assembly. (Fig. 23)
- (10) Set the lower end of the tape on the new wick to the lower end of holder in the wick holder assembly and smooth the wick in the holder over the wick holding pawls.
- (11) Insert the wick holder assembly with the new wick into the wick guide cylinder so that the wick control shaft points to front. (Fig. 24)
- (12) Tighten each two diagonal wing nuts simultaneously so that the gap for up and down movement of the wick is even throughout. (Fig. 25) Connect the lead wire for the glow plug.
- (13) Replace the body by reversing the procedures from (5) to (1).
- (14) After adding full cartridge, wait 15 minutes for the wick to become fully saturated before ignition.

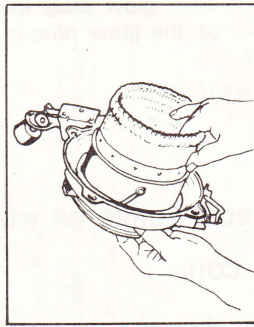


Fig. 23

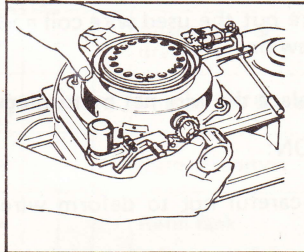


Fig. 24

NOTES:

- The wick holder assembly gasket stuck on the bottom of the burner cover should never be removed.
- After assembling the heater, test it in a safe place before you use it.

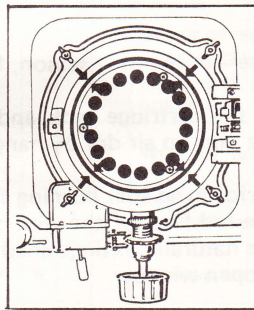


Fig. 25

IGNITION CHANGE PROCEDURES

HEATER

- (1) Remove the body following the exchange procedures of wick steps (1) to (5).
- (2) Take out the glow plug by moving the ignition lever with the right hand. Use left hand to turn glow plug to left while pushing in slightly to remove it. (Fig. 26)

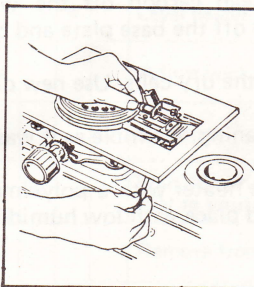


Fig. 26

- (3) Insert the new glow plug in a manner so that the guard of the glow plug is at the lower side. (Fig. 27)

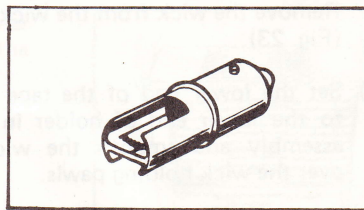


Fig. 27

CHANGE PROCEDURES OF WIRE NET AND WIRE COIL

- (1) Unfasten the wire net by turning left. (Fig. 28)
- (2) Take out the used wire coil and replace with a new one.
- (3) Replace the wire net by turning right.

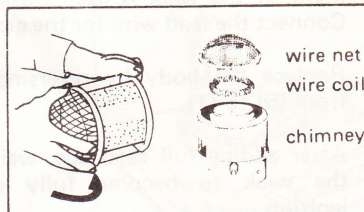


Fig. 28

CAUTION:

- Be careful not to deform wire net or wire coil.

STORAGE

To store heater for the next season, follow these directions:

- (1) Remove the cartridge tank and shake it to rinse inside out. Drain all kerosene and allow the tank to air dry by hanging with cap off.
- (2) Next perform no-fuel burning for cleaning. Burn the wick after removing the tank. When the red heat of the wire net becomes weak, raise the wick fully and leave it till the fire is naturally extinguished. Perform the no-fuel burning outdoors without wind or at an open window.
- (3) After no-fuel burning, remove the body following the exchange procedures of wick steps (1) to (5). Remove the wick holder assembly and dry the inside of the wick case. Clean carbon off the wick holder assembly and the Burner. Clean dust and stain off the base plate and body.
- (4) Remove the dry cells. Use new dry cells in next season.
- (5) After cleaning, assemble as it was before.
- (6) Cover the heater with a polyvinyl bag. Store it in the packing case and keep in a well-ventilated place with low humidity.

TROUBLE SHOOTING GUIDE

PROBLEM CAUSES	Fails to light	Low flame	Soot	Fails to extinguish	Self-extinguisher will not set	Fumes	Uneven flame	Cannot set; Wick too low	Burner will not glow red	Cannot control wick height	Slow heating	Weak flame	Uneven flame; too high or low	Unsettled flame	PROBLEM REPAIR
Wick too low	*	*							*	*					Adjust wick height
Water in fuel		*				*			*	*	*				Change fuel & dry wick
Contaminated fuel	*	*				*			*	*	*				Change fuel & wick
Carbon on wick									*	*	*				Burn off carbon
Out of fuel		*							*	*					Refill tank
Wick too high			*												Lower wick
Wick control malfunction				*			*								Repair or replace
Wick not fitted right									*						Re-fit wick in holder
Fuel spilled						*									Wipe off excess
Burner not seated			*			*							*		Re-seat Burner by moving handle
Water on wick	*	*				*			*	*	*	*			Remove wick & dry
Wire net dented								*							Remove & reshape
Heater not levelled				*		*							*		Level heater
Wick not adjusted	*	*	*	*		*		*	*	*					Adjust wick
Lack of air			*			*									Ventilate
Wick has not absorbed fuel											*				Wait 15 minutes for fuel to saturate
Wind or draft						*									Remove from draft
Exhaustion of dry cell or broken heater circuit	*														Replace dry cell or heater and repair broken circuit

LIMITED WARRANTY

This equipment is warranted against defects in its manufacture or assembly for a period of one year only from the date of retail sale. If a claim is made within that period of time, FUTURE PRODUCTS, INC, will, at its option, repair or replace the defective item. FUTURE PRODUCTS, INC, shall have no responsibility for any damages incidental to defective equipment and its sole liability shall be for repair or replacement as indicated. Shipping costs are not covered by this warranty.

This warranty shall not cover equipment which has been damaged after sale and does not cover equipment which is not used or maintained in conformity with the instructions packaged with the equipment.

THERE ARE NO IMPLIED OR EXPRESSED WARRANTIES OF FITNESS OR MERCHANTABILITY WHICH EXTEND BEYOND THE ABOVE WARRANTY.

The above warranty is void if any fuel other than good quality kerosene is used.

What to do in case of defect:

Bring your FUTURA product and sales slip to your FUTURA dealer, or send copy of sales slip as proof of purchase along with a brief letter stating nature of the defect, name and address of your FUTURA dealer, and your own address and telephone number to:

WARRANTY DEPARTMENT
FUTURE PRODUCTS, INC
817 Republican St.
Seattle, WA 98109

Our Customer Service Representative will direct you to the nearest FUTURA Service Center or otherwise solve service problems for you.

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