

Chapter 2*(Completely revised)***ELECTRIC URNS, G.E.C. 2 GALLON TYPES****LIST OF CONTENTS**

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LEADING PARTICULARS

<i>Type</i>	H.E. 38164	H.E. 46483 M1	H.E. 46483 M7	H.E. 54257 L1 Mk. 1
<i>Ref. No.</i>	5V/152	5V/157	5V/158	5V/325
<i>Heating circuit</i>	112V d.c.	112V d.c.	112V d.c.	200V 3 phase a.c.
<i>Control circuit</i>	28V d.c.	28V d.c.	28V d.c.	28V d.c.
<i>Max. loading</i>	2KW	2KW	2KW	2KW
<i>Weight</i>	16 lb.	16 lb.	16 lb.	15½ lb.

Introduction

1. The urns are designed to boil or simmer quantities of water, up to a maximum of 2 gallons. The Type H.E. 54257 is basically an a.c. version of the others, all the urns being

similar in construction. Protection is incorporated in the event of excess heating due to the urn either boiling dry or being used in an unfilled state.

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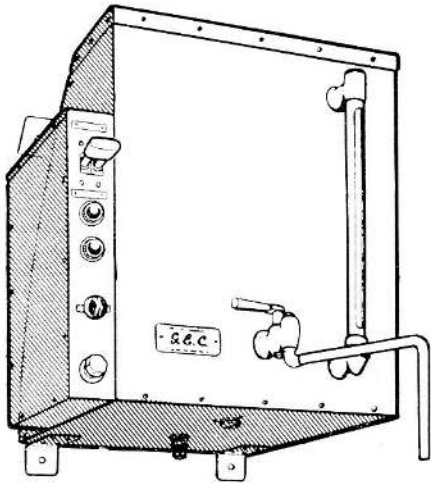


Fig. 1. Urn, G.E.C. Type H.E. 54257
L1 Mk. 1

DESCRIPTION

2. The urns are similar in construction and consist of an aluminium inner and outer container, separated by glass fibre lagging. The Type H.E. 54257 L1 Mk. 1 differs by

having a stainless steel inner container in lieu of an aluminium one. A lid is fitted to the top and retained by twelve screws. A rubber bushed hole is provided in the lid for filling the urns.

3. A glass water contents gauge is fitted to the front of the urn, together with a tap. The Type H.E. 46483 M7 urn differs from the others by having a fixed outlet tap, the remainder having swivel outlet taps. A drain plug and an overflow outlet are fitted to the base of the urns. The overflow outlet is connected to a pipe which is situated above the normal water level of the inner container.

4. An electrical control panel is situated on the left-hand side. For the Type H.E. 54257 L1 Mk. 1 this control panel houses two relays, the thermal cut-out and resetting lever, two warning lamps, a double pole changeover switch and two terminal blocks. For the remainder, it contains a single pole switch, one indicator lamp, a thermal cut out and resetting lever and two terminal blocks. The Type H.E. 38164 urn differs from these by having a reset button in lieu of the resetting lever.

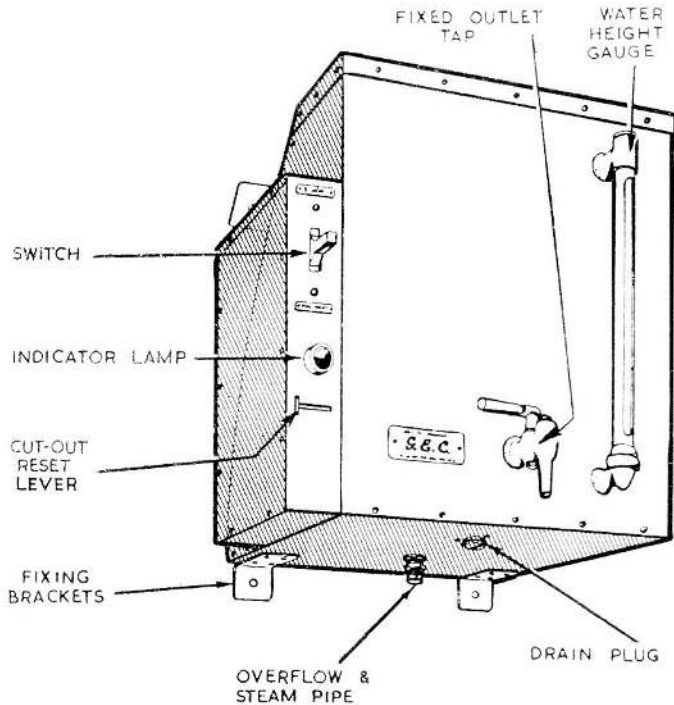


Fig. 2. Urn, G.E.C. Type H.E. 46483 M7

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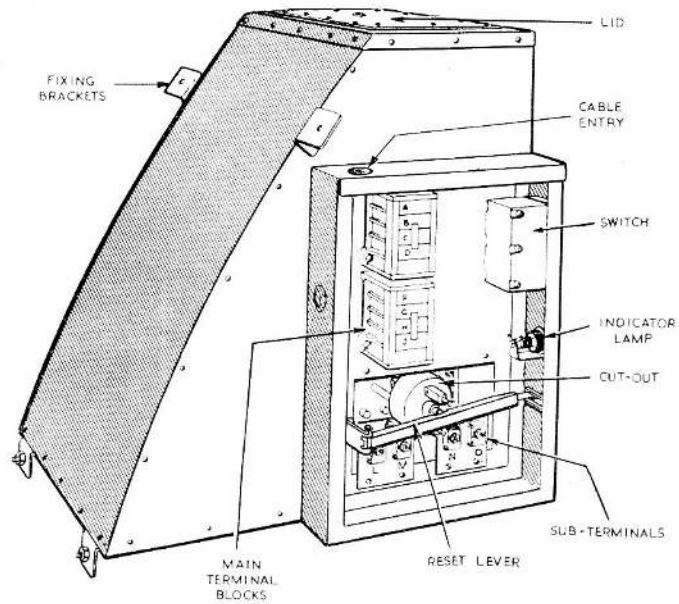


Fig. 3. Urn, G.E.C. Type H.E. 46483 M1 with side cover removed

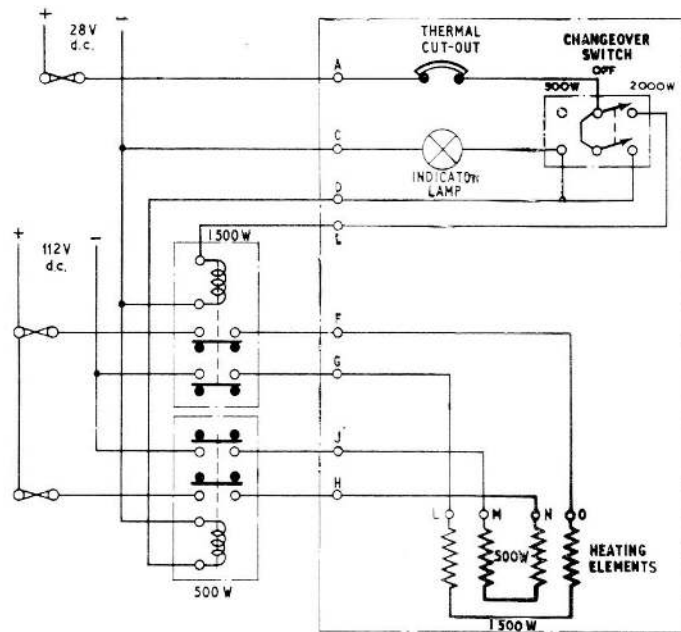


Fig. 4. Urn, G.E.C. Type H.E. 46483 M7 circuit diagram

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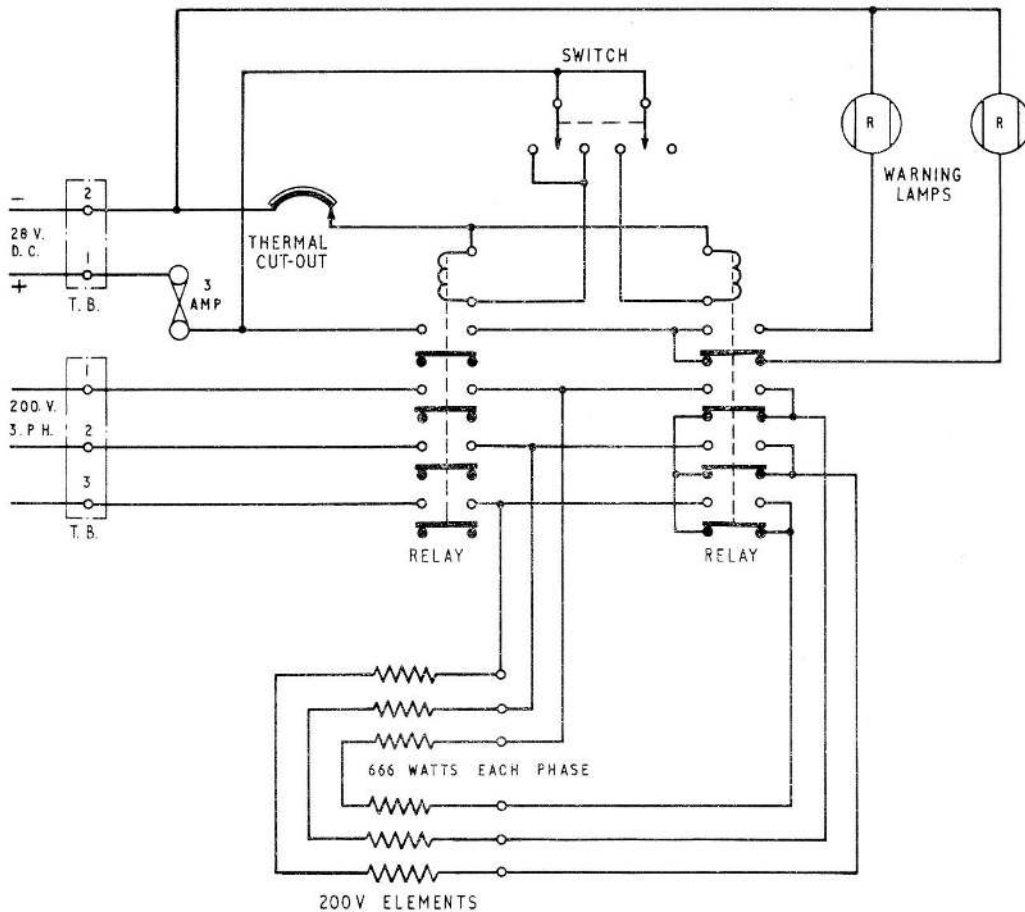


Fig. 5. Urn G.E.C. Type H.E.54257 L1 Mk. 1 circuit diagram

OPERATION

5. The heating elements are controlled by two relays. These relays are housed within the electrical control panel on the Type H.E. 54257, but on the other models they are part of the aircraft system. On all types the relays are controlled by the urn switch. Circuit diagrams are given in fig. 4 and 5.

SERVICING

6. Inspect the tap and all gasket joints for signs of leaking. Remove the lid and examine for the deposit of scale or fur on the interior and on the elements. Scale or fur can be removed by using a solution of glacial acetic acid, mixed in the proportion of one part acid to sixteen parts of water (i.e. half a pint of

glacial acetic acid to one gallon of water). The required amount of this solution should be boiled in the urn and then allowed to stand for a minimum of two hours, after which the solution should be drawn off and the loose scale and fur brushed out by hand. **NO SHARP METAL OR HARSH ABRASIVES SHOULD BE USED.**

7. The cover should be removed from the side of the control panel and all the electrical connections and terminals checked for corrosion and security. The reset lever pivot should be checked for freedom of movement and if necessary a drop of oil OM-13 applied. Check the pilot lamps for continuity and examine the relays, where applicable, for signs of burning or pitting of the contacts and overheating of the coil.

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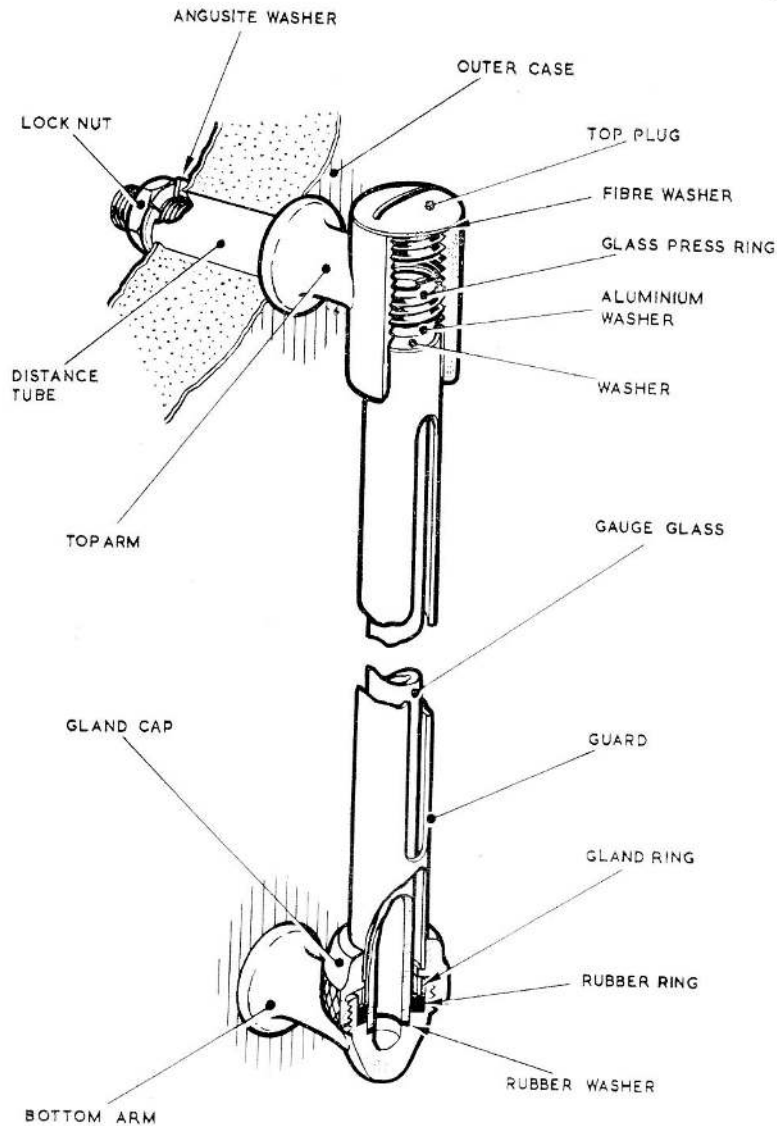


Fig. 6. Water contents gauge

Element renewal

8. (1) Remove the control box cover and disconnect the cables to the cut-out assembly and elements.

(2) Remove the re-set lever assembly.

(3) Remove the cut-out assembly and release the plunger from the bi-metal thermal cut-out.

(4) Remove the element assembly and gasket.

(5) Remove the backing plate from the interior of the urn.

(6) Clean any trace of the old washer from the mounting hole. Smear Boss-white sealing compound on both surfaces of the new washer supplied with the new element.

(7) Fit new washer to mounting hole and reassemble in the reverse order to that given above.

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Water contents gauge renewal

9. The water contents gauge, shown partially sectioned in fig. 3, may be renewed by removing the inner locknuts from the top and bottom arms, and withdrawing the assembly. The gland cap on the new contents gauge should be slackened off before attempting to fit the gauge to the urn. When fitting the gauge ensure that the screwed shanks of the top and bottom arms pass through the distance tubes inside the lagging space. Bosswhite jointing compound should be smeared on the new washers and on the threads of the top and bottom arms before the locknut is secured. After fitting the gauge to the urn tighten down the gland cap on the bottom arm and then adjust the glass press ring in the top arm as necessary. A new gauge glass or guard may be fitted by gaining access through the top plug and removing the glass press ring, the guard and the glass can then be removed by passing them through the top arm.

Testing

10. After all servicing, the urn should be filled with water and switched on to boil. After boiling for a few minutes switch off and allow to stand for one hour after which all water seals should be examined for leakage.

11. The thermal cut-out should be checked for operation by timing the time taken for the cut-out to operate when the urn is switched to "FULL HEAT" whilst empty. This should be between 2 minutes 10 seconds and 2 minutes 20 seconds for the H.E. 54257 L1 Mk. 1, and 1 minute 45 seconds to 1 minute 55 seconds for the remainder.

Insulation resistance test

12. The insulation resistance of the urn should be tested using a 500V insulation resistance tester for the heating circuits and a 250V insulation resistance tester for the control circuits. The minimum reading obtained in each instance should be 5 megohms.

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