

## Chapter 4

### TRANSFORMER, B.T.H., TYPE L.T.A., FORM VI

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#### LEADING PARTICULARS

<i>Type of winding</i> ... ..	3-phase
<i>Primary connections</i> ... ..	Delta
<i>Secondary connections</i> ... ..	Star
<i>Input voltage</i> ... ..	25 to 28 V, a.c.
<i>Input frequency</i> ... ..	150 to 400 c/s
<i>Output voltage on open circuit</i> ... ..	36 V, a.c.
<i>Output on load</i> ... ..	4 watts
<i>Weight</i> ... ..	6 oz.

#### Introduction

1. The Type LTA, Form VI, transformer (*fig. 1*) is designed to operate on a 25 to 28V., three-phase input supply at frequencies between 150 and 400 c/s. It is rated at 4 watts on load and gives an open circuit secondary voltage of 36 volts.

2. The primary windings of the transformer are delta connected; the secondary windings are star-connected, with the neutral point brought out separately. The output is normally fed to a small half wave rectifier.

#### DESCRIPTION

3. The transformer consists of separate coils assembled on the three legs of an "E" shaped set of laminations. The laminations are stacked

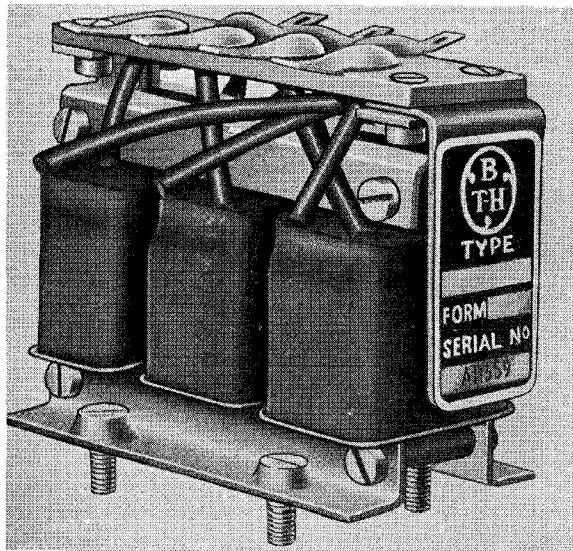


Fig. 1. Transformer, Type LTA, Form VI

(A.L.2, Nov. 57)

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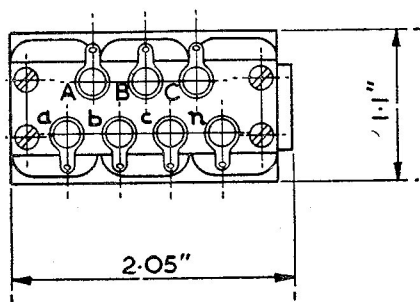
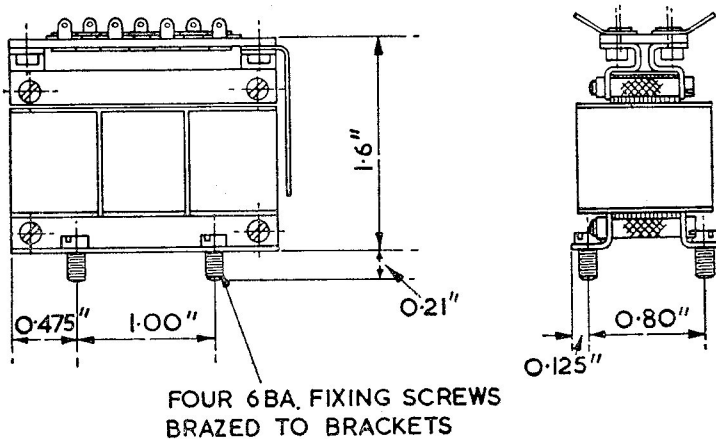


Fig. 2. Installation drawing

alternately, and the magnetic circuit is completed by an "I" shaped lamination laid along the open side of the "E" shaped laminations.

4. The stack of laminations is clamped by two sets of clamping brackets; one set has the terminal board and nameplate attached to it, and the other has four 6 B.A. screws brazed into it for use as mounting screws (fig. 2).

5. The leads from the coils are soldered to tags on the terminal board, which are marked A, B and C for the primary connections and a, b, c and n for the secondary connections (fig. 3).

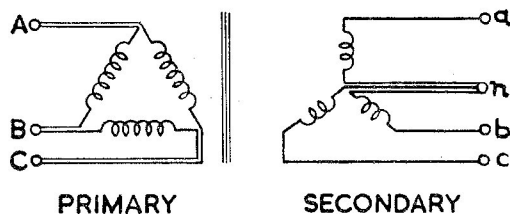


Fig. 3. Circuit diagram

#### INSTALLATION

6. The overall and fixing dimensions of the transformer are given in fig. 2, whilst the circuit diagram is shown in fig. 3.

7. The transformer may be mounted in any position by means of the four 6 B.A. studs, but must not be installed where it might be subject to high temperatures.

#### SERVICING

8. The soldered connections from the coil leads must be checked to make certain they are secure and the terminal board should be inspected for any signs of damage or indications of faulty windings. If the transformer appears to be faulty it should be removed from the aircraft and tested in accordance with the following paragraphs.

#### TESTING

9. Connect the primary windings (A, B and C) to a three-phase 50 c/s supply of 9V. The open circuit magnetizing current must not exceed 75 mA, when the open circuit secondary voltage is  $11.5V \pm 0.5V$ .

10. The primary resistances (measured between AB, BC and CA) must be  $32 \text{ ohm} \pm 5 \text{ per cent}$  at 20 deg. C. and the secondary resistances (measured between an, bn and cn) must be  $130 \text{ ohm} \pm 10 \text{ per cent}$  at 20 deg. C.

11. The insulation resistance at 250V d.c. between each winding, and between each winding and one of the mounting studs, should be not less than 2 megohms.

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