

SERVICE MANUAL

TRANSFORMERS TYPES "RW", "RWM" and "RW250"

The three transformers described in this section are similar in appearance and mechanical design and differ only in the winding of the coil and the amount of iron in the lamination stack. This difference is necessary to make them suitable for operation with power lines having different voltage and frequency ratings.

As indicated by the letter 'W' these transformers have a built-in whistle controller, operated by means of a push button on the panel while reversing is accomplished by a second push-button control.

These transformers have a metal case with a sloping panel, similar to the earlier Types R, Q and A, but are equipped with a lever-type voltage control. The transformers are equipped with a circuit breaker of the type illustrated in Section PS, Page 2, which are set to carry 5-1/2 6 amperes continuously and should open in 8 - 12 seconds with a current of 14 amperes.

A miniature bayonet-base 6-8 volt lamp, Q-90, in series with a 60-ohm resistor is placed across the circuit-breaker to serve as a short circuit indicator. Like all 'Multi-Control' transformers these transformers have a compensating secondary winding which is switched in automatically when the whistle control is operated.

When the sliding contact of the whistle controller is in its normal position, as shown in Figure 1, the rectifier together with its associated resistor and compensating winding are out of the circuit. As the whistle button is depressed, however, the slider makes contact with 'A' and the rectifier is thrown into the circuit resulting in a momentary surge of high d.c. 'pick-up' voltage. As the whistle button is pressed further, the slider loses contact with 'B' thus switching in the compensating winding. At the bottom of its stroke the slider contacts 'C' thus reducing the high 'pick-up' voltage to the lower 'holding' voltage.

The value of the holding voltage is equal to the product of the resistance in ohms and the current in amperes drawn through the resistor.

'RW' Transformer is rated at 110 watts and is designed to be operated with 110-115 volt 60-cycle alternating current power lines. It can deliver continuously approximately 70 watts at 5-6 amperes.

'RWM' Transformer is rated at 100 watts and is designed to be operated with 125 volts 50-cycle alternating current. It can deliver continuously approximately 65 watts at 4.5 - 5.5 amperes.

'RW250' Transformer is also rated at 100 watts and is designed to be operated on power lines rated at 220-250 volts 50-60 cycles. It can be loaded continuously as the 'RWM' transformer.

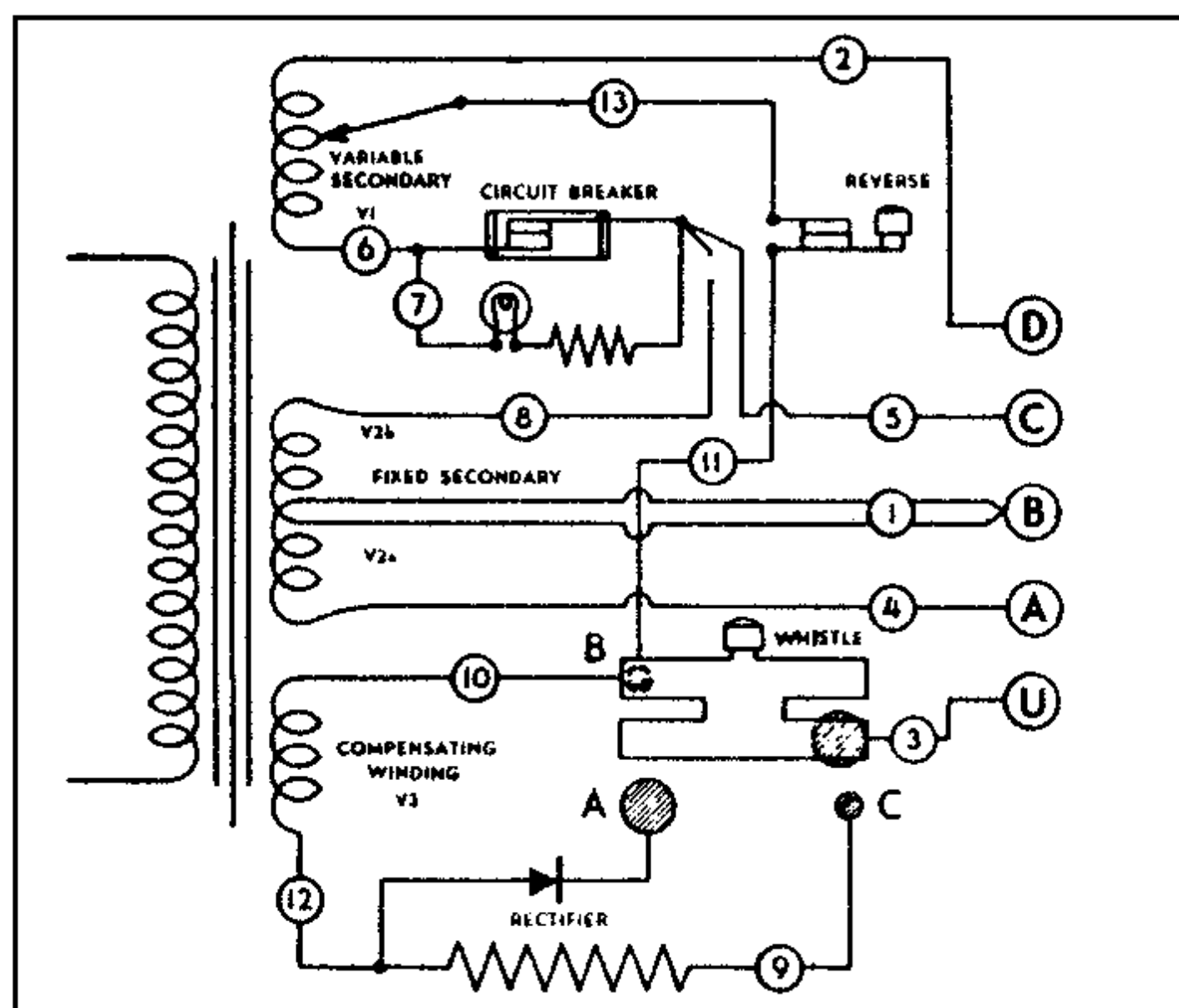


Fig. 1 - Schematic Wiring Diagram of Multi-Control Transformers RW, RWM and RW250.

| TYPE | POWER LINE RATING | | NOMINAL OUTPUT VOLTAGES | | | |
|--------|-------------------|--------------|-------------------------|-----|-----|-------|
| | Volts | Cycles | V1 | V2a | V2b | V3 |
| RW | 115 | 60 | 9.9 | 2.8 | 6.1 | 5.4 |
| RWM | 125 | 50 or higher | 6.0 | 1.7 | 8.0 | 5.4 |
| RWM250 | 220-250 | 50 or higher | 6.0 | 1.7 | 8.0 | 5.4 * |

* These voltages are obtained with 250 volt input