

## 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.

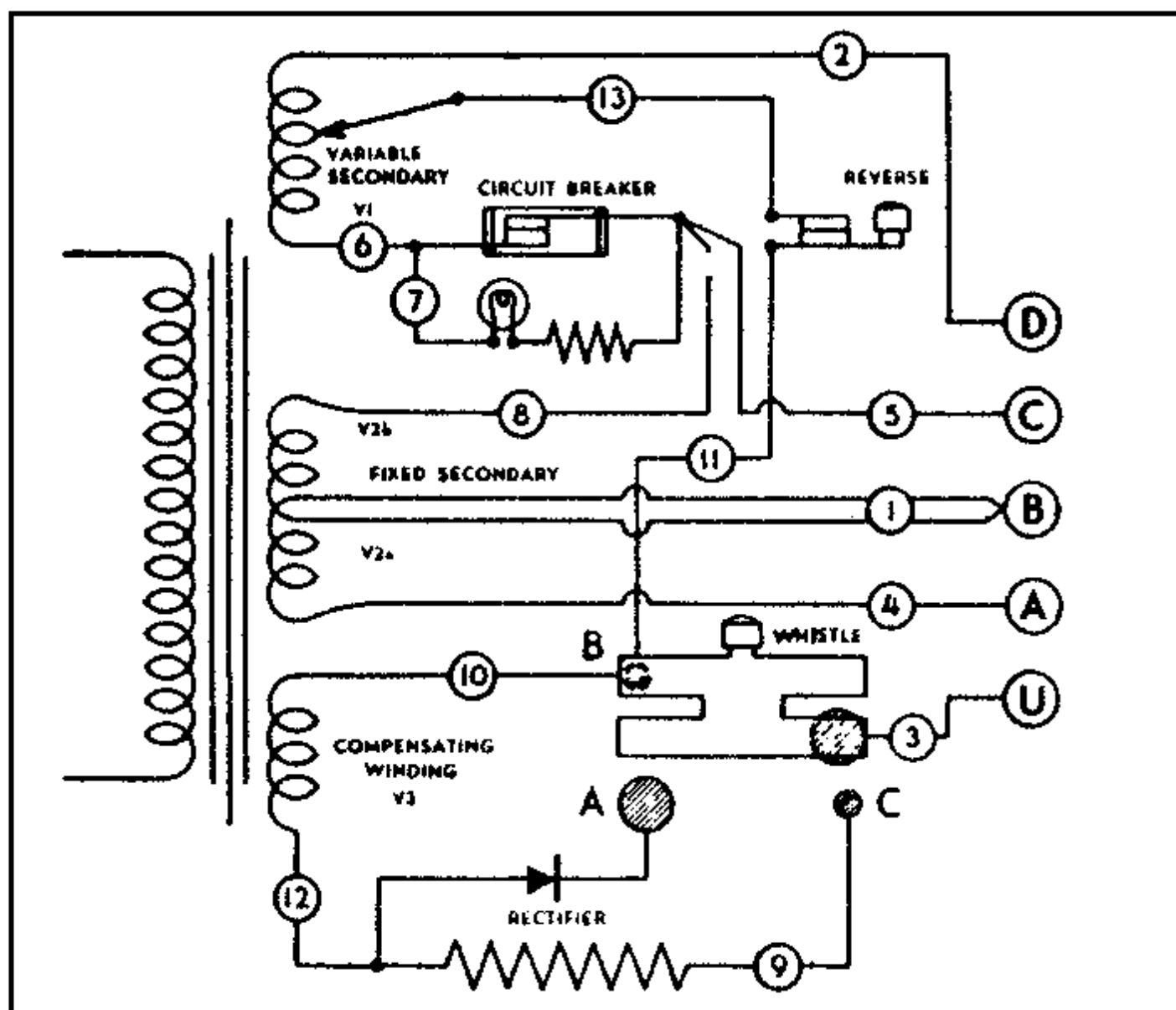


Fig. 1 - Schematic Wiring Diagram of Multi-Control Transformers RW, RWM and RW250.

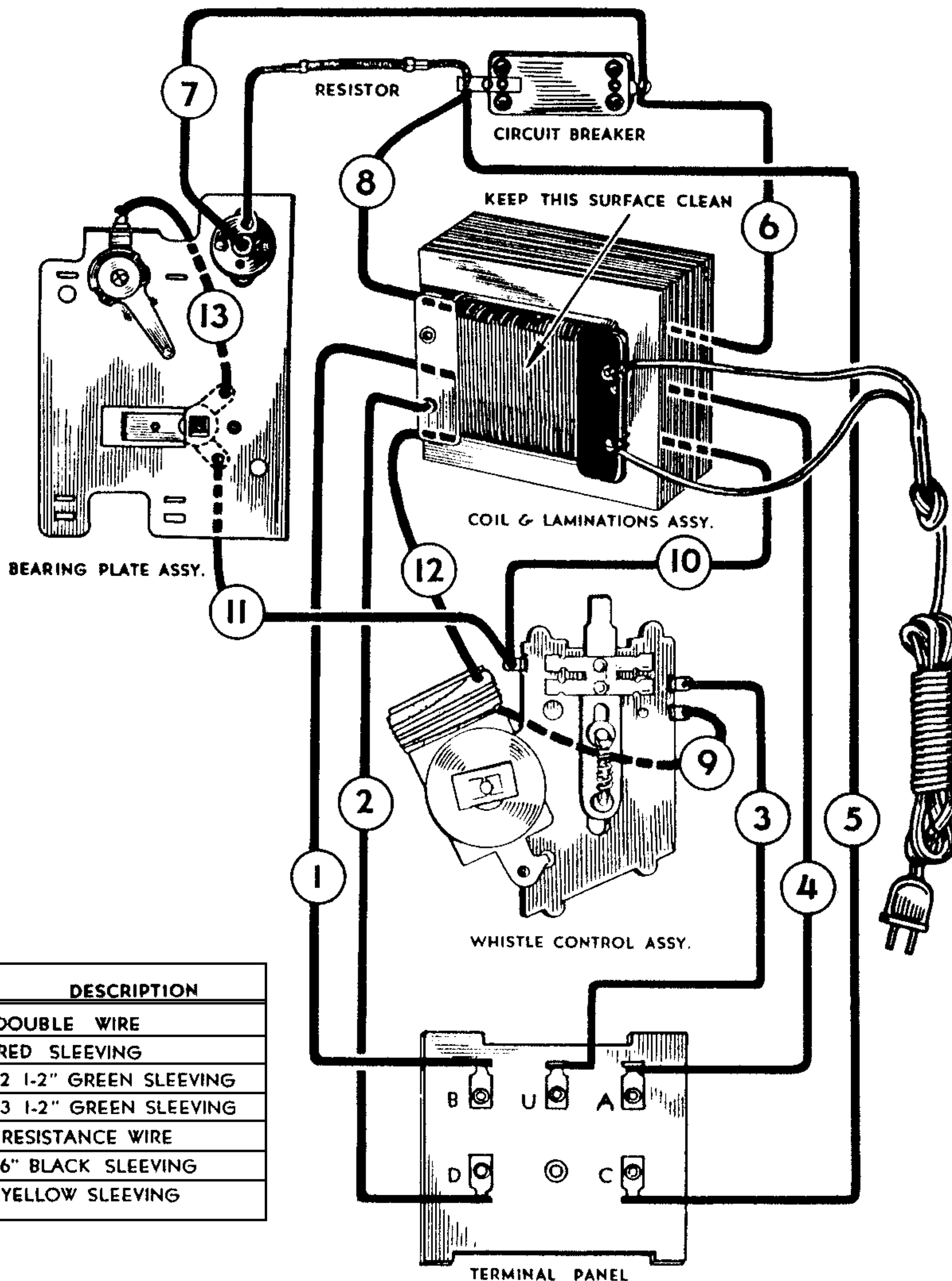
TYPE	POWER LINE RATING		NOMINAL OUTPUT VOLTAGES			
	Volts	Cycles	V1	V2a	V2b	V3
RW	115	60	9.9	2.8	6.1	5.4
RWM	125	50 or higher	6.0	1.7	8.0	5.4
RWM250	220-250	50 or higher	6.0	1.7	8.0	5.4 *

\* These voltages are obtained with 250 volt input

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## PICTORIAL WIRING DIAGRAM OF TRANSFORMERS TYPES "RW" "RWM" and "RW250"



LEAD NO.	DESCRIPTION
1	DOUBLE WIRE
4	RED SLEEVING
6	2 1-2" GREEN SLEEVING
8	3 1-2" GREEN SLEEVING
9	RESISTANCE WIRE
10	6" BLACK SLEEVING
12	YELLOW SLEEVING

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## REPLACEMENT PARTS FOR TRANSFORMERS "RW" "RWM" and "RW250"

NAMEPLATE  
RW-23  
RWM-23  
RW250-5  
\$.40

BLACK PUSH BUTTON S-24  
RED PUSH BUTTON S-25  
\$.05

RED JEWEL CAP  
RW-27  
\$.15

SHEET METAL SCREW  
4 X 9-16"  
\$.02

RIVET  
264E-26  
\$.02

CIRCUIT BREAKER  
R-88  
\$1.00

TRANSFORMER CASE  
S-50  
\$2.00

BOTTOM & FRAME ASSY.  
RW-16  
\$1.50

3 1-2" YELLOW SLEEVING  
S-42  
\$.05

SHEET METAL SCREW  
NO. 6 X 7-16"  
\$.02

TRANSFORMER COIL  
RW-3  
RWM-3  
RW250-3  
\$4.50

3" BLACK SLEEVING  
RW-13  
\$.05

6" BLACK SLEEVING  
RW-14  
\$.10

3 1-2" GREEN SLEEVING  
S-48  
\$.05

5 1-2" RED SLEEVING  
RW-12  
\$.05

COIL & LAMINATIONS ASSY.  
RW-2  
RW250-2  
RWM-2  
\$6.00

NOTE; RWM Coils are identified by yellow marking on bottom. RW250 Coils are identified by red marking on bottom.

2 1-2" GREEN SLEEVING  
RW-52  
\$.05

BINDING POST NUT  
T-160  
\$.05

BINDING POST  
T-159  
\$.05

SOLDER LUG  
W-10  
\$.05

RESISTOR  
RW-50  
\$.35

ALTERNATE PART  
RW-53

CONTROL HANDLE BLACK  
RW-24  
\$.40

CORD & PLUG  
B-292  
\$.60

TERMINAL PLATE ASSY.  
RW-10  
\$.75

TERMINAL PLATE ASSY.  
RWM-9  
\$.75

Note: Transformer Case, S-50, does not include the nameplate or the rivets

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