

## OPERATION OF DB-808 NOTCHING RELAY

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Page 43 shows the simplified control connections of the DB-808 notching relay.

### NORMAL OPERATION

Assuming the main controller is advanced to the first position and motor current thru the series coil of the relay is sufficient for armature "X" to be attracted to pole-piece "T" holding contacts "U" open, in which case the "off" magnet valve will not be energized until the motor current decreases to a value that allows contacts "U" to close. Current will then flow thru wires, 1, 1A, 1B, and 1C as indicated by the single arrows, advancing the motor controller toward the second point. As wire 1A leaves its segment, wire 2C makes contact energizing the circuit, indicated by double arrows, passing thru the holding, lifting the "off" magnet valve coils. This latter circuit insures; the controller advancing to the next point regardless of whether contacts "U" are open or closed. The lifting coil aids the series coil to insure positive operation of armature X.

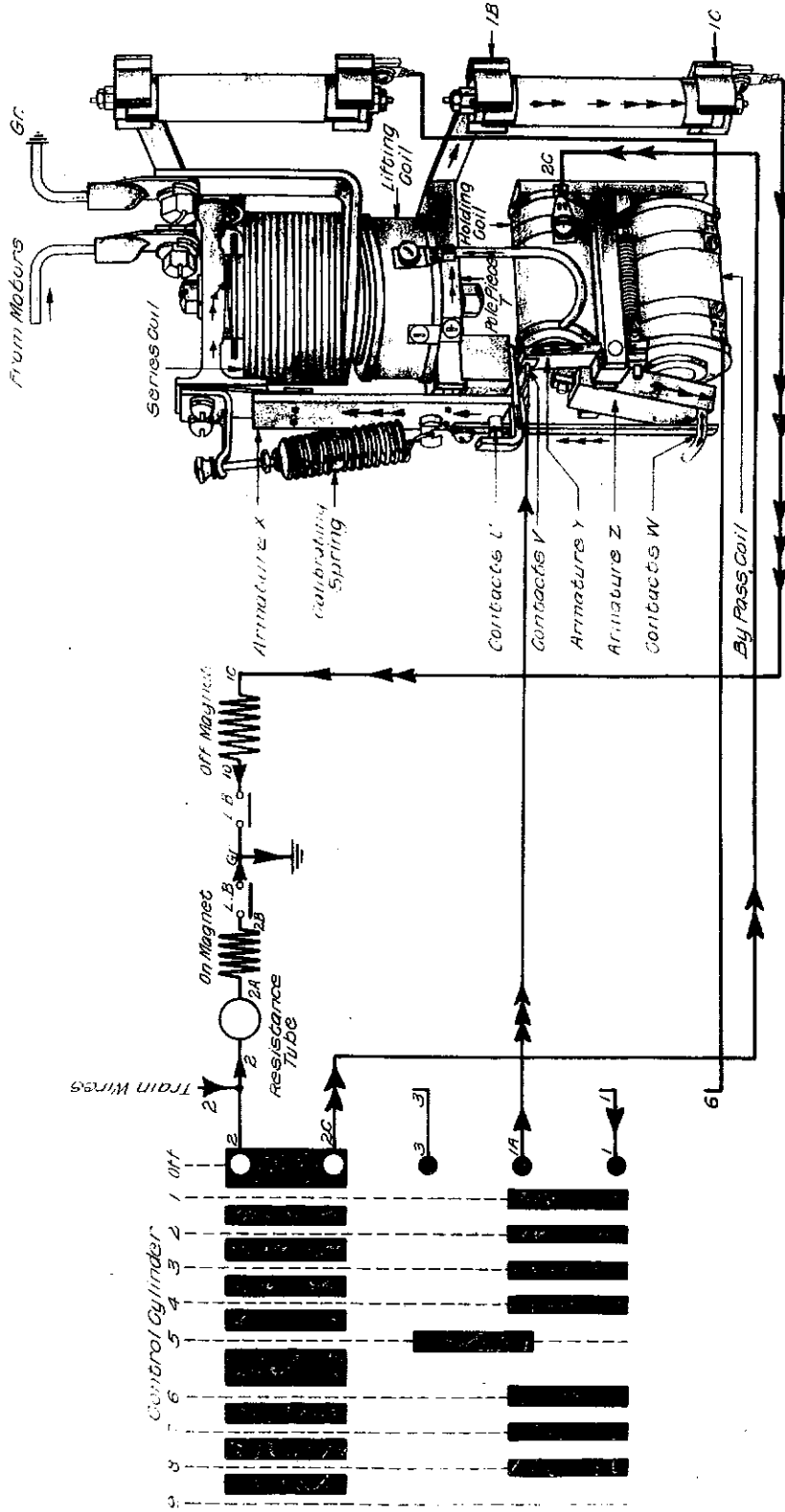
### EMERGENCY OPERATION

When it is desired to accelerate the car at a higher current than the relay setting, it may be done by energizing wire #6 with the advance lever. The motor controller will advance one point each time the #6 wire is energized.

This emergency operation is accomplished by the bypass coil attracting armature Z and closing contacts W. Then current will flow through wire 1A, contacts V, W, and the "off" magnet coil, as indicated by the three arrows, advancing the motor controller even though contacts "U" remain open. As the master controller advances wire 2C is energized, armature "Y" is attracted by the holding coil, opening contacts "V".

The magnetic circuits of the bypass and holding coils are so arranged that the magnetic leakage from the bypass circuit will maintain the holding coil armature "Y" in a closed position but is not sufficient to close it. By this means contacts "V" are held open as long as the #6 wire and bypass coil are energized and the controller prevented from advancing more than one point.

To advance the motor controller another point wire 6 must be de-energized by releasing the advance lever, then armature "Z" and "Y" will return to their open positions. By again energizing wire 6, another point on the controller will be obtained. Thus, any point on the control can be held by use of the advance lever.



TYPE DB-808 RELAY (CONTROL CONNECTIONS)  
INDEX F-4532

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