



Sequence of operation and troubleshooting of operation of Overspeed Protection Valves with Trombetta 12VDC or 24VDC actuators.

Major component & functions as per our Wiring Schematic 03-15-99:

1. Manual Toggle switch supplies a current to auxiliary terminal on trombetta thermal module in the manual mode.
2. White wire from trombetta thermal module to solenoid is pulling circuit.
3. Red wire from trombetta thermal module to solenoid is holding circuit.
4. Black wire from trombetta thermal module to solenoid is ground.
5. When equipped with speed switch, terminal #6 of speed switch serves same purpose as item #1 (manual toggle switch) to supply power to auxiliary terminal on trombetta thermal relay in the automatic mode.

Preliminary Checks

1. Check for solid ground at 'ground' terminal of Trombetta S500-A5 relay module. (Attach one lead of test light to 'ground' terminal, and touch test end of test light to a known power source. - i.e.: battery)
2. Check for constant power at 'hot' terminal of Trombetta S500-A5 relay module. (Attach one lead of test light to 'hot' terminal, and touch test end of test light to known solid ground. i.e. – battery)
3. Check for power at 'aux' terminal of Trombetta S500-A5 relay module when manual switch is engaged. (Attach one lead of test light to 'aux' terminal, and touch test end of test light to known solid ground. i.e. – battery) Have an assistant operate manual toggle switch – power should be present when toggle switch is engaged, no power should be present when toggle switch is disengaged.
4. Red, white & black terminals of Trombetta S500-A5 relay module should not show power when manual toggle switch is disengaged.
5. White terminal of Trombetta S500-A5 relay module should only show momentary power (approx. 0.6 of a second) when toggle switch is engaged.
6. Red terminal of Trombetta S500-A5 relay module should only show power when toggle switch is engaged.
7. Black terminal of Trombetta S500-A5 relay module should be ground only

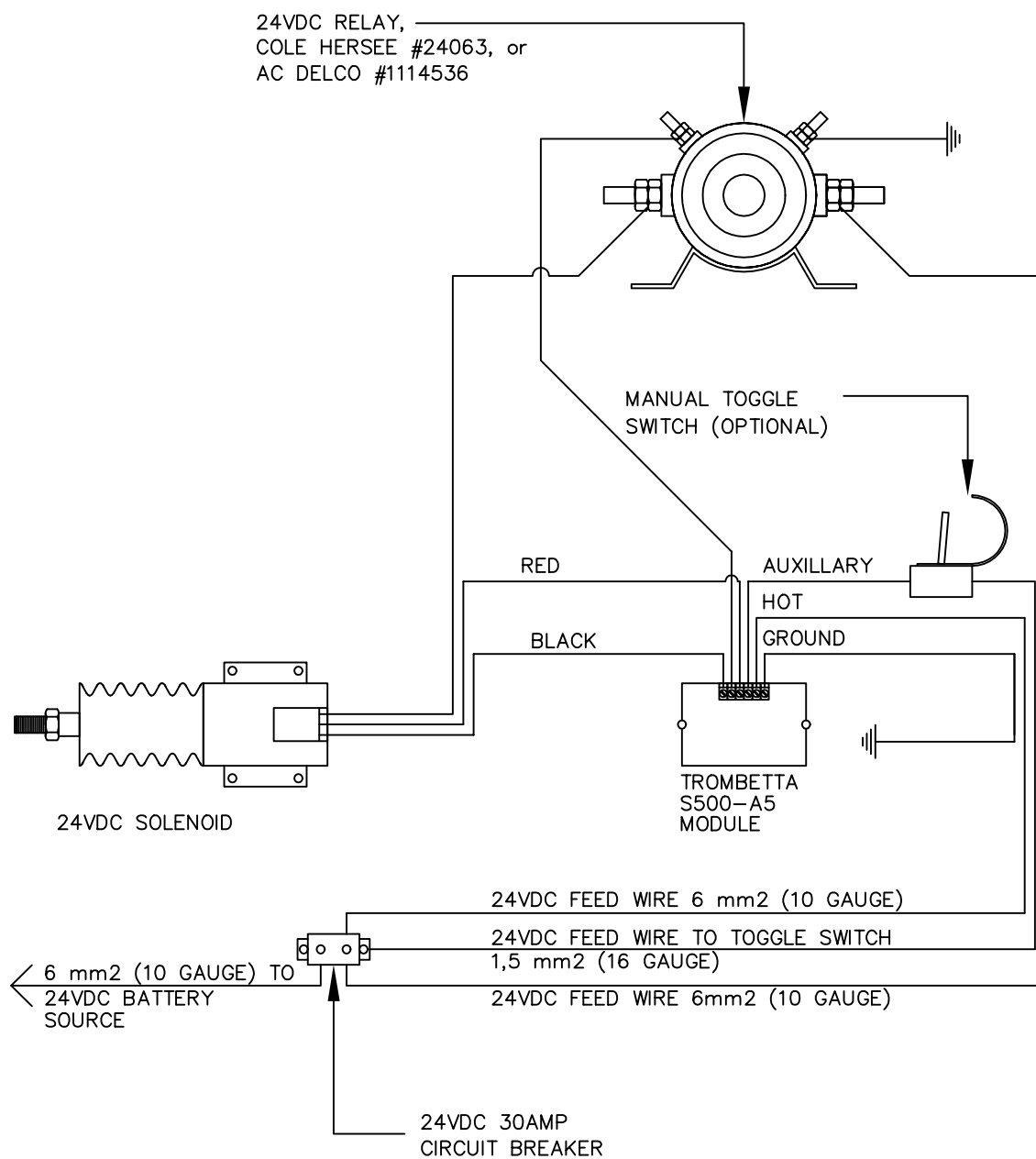
To check system in manual mode:

1. With engine not running, operate manual toggle switch.
 - a. Solenoid should close and remain closed -- pulling circuit pulls in solenoid (current is present for 0.4 – 0.6 seconds only), thermal relay in trombetta module then disconnects pulling circuit and connects holding circuit.
 - b. Solenoid does not operate at all -- Trombetta relay may be malfunctioning. As per preliminary checks above, check for momentary power on white terminal and constant power on red terminal. If either momentary power or constant power are missing, the trombetta relay must be replaced. If both terminals receive power properly, solenoid must be replaced.
 - c. Solenoid closes and re-opens -- Trombetta relay pulling circuit operates but holding circuit does not. Trombetta thermal relay must be replaced. Solenoid may also be defective. Refer to preliminary checks above for further tests.


To check system in automatic mode: (when equipped)

1. With engine running, push in and hold in test button on speed switch. This reduces engine Overspeed RPM to 2/3 of actual setting. At 2/3 engine Overspeed RPM indicator light on speed switch will illuminate and circuit between terminal #7 & #6 will close internally and sequence of operation will begin as in paragraphs 1-a,b,& c in manual mode.
2. If indicator light does not illuminate, check for AC current from alternator or magnetic pick-up to terminal #4.
3. If engine RPM is too high or too low from required setting, adjust RPM setting screws.
4. Assure that after pushing test button, that test button is fully released before concluding that system is properly functioning (we have found that test button may stick in "depressed test" position which will not allow the speed switch to operate at full engine RPM).

Wiring Diagram for 24 Volt Solenoid Actuator



Quant.	Part No.	Description
1	ROD1510-04	Electric Toggle Switch c/w Thumbguard & Decal
1	ROD1641-12A	BoschS500-A5 Module
1	ROD1641-24	24V D.C. Solenoid Actuator
1	ROD1510-09	Circuit Breaker
1	ROD1641-24A	24V D.C. Solenoid Relay

			
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