

5.9 RDCKA FAULT DIAGNOSIS PROCEDURE

The following describes an effective procedure for tracing an electrical fault in an RDCKA air compressor which has been wired using a genuine ARB wiring loom - ARB#180405.

For a full wiring loom diagram refer to Air Locker Service & Parts Manual - Section 5.8

All steps must be performed in the order listed here for an accurate assessment.

NOTE: Before attempting to troubleshoot a malfunctioning compressor, always make sure that the compressor manifold has been de-pressurized, all connections have been made according to the wiring diagram, the vehicle's ignition is in the accessory power position, and that the isolating switch has been turned 'ON'.

NOTE: The 'battery voltage' referred to below should be approximately 12V in the case of the RDCKA and 24V in the case of the RDCKA24.

STEP

1 Using a multimeter, check the voltage at the battery terminals to make sure the battery is working and is fully charged.

Did each battery measure at least 11.5 volts?

YES Proceed to STEP 2.

NO Insufficient battery voltage. Recharge or replace the battery.

2 Disconnect the compressor motor from the wiring loom at the connector plug. Run a wire directly from the negative terminal of the first or only battery to the BLACK wire of the compressor motor. Momentarily connect a wire from the positive terminal of the second or only battery to the RED wire of the compressor motor.

Did the compressor activate when the wires were connected?

YES Remove the extra wires and reconnect the compressor motor plug. Proceed to STEP 3.

NO Internal compressor problem. Contact ARB for assistance.

3 Remove the fuse from the fuse socket in the compressor wiring loom. Using a multimeter, check the continuity (resistance) across the 2 contacts of the fuse.

Did the resistance measure less than 1 Ohm?

YES Proceed to STEP 4.

NO Blown fuse. Replace with a new 30A fuse of same type.

4 Using a multimeter, check for battery voltage at both of the contacts in the fuse socket.

Was battery voltage detected at one of the two contacts?

YES Reconnect the fuse into the socket. Proceed to STEP 5.

NO Wiring fault between the positive battery terminal and the fuse socket. Check the wire connection at the battery terminal and/or replace the wiring and/or fuse socket.

5 Using a multimeter, check for battery voltage at the SOLID RED wire at the relay block (i.e., the wire leading directly from the fuse).

Was battery voltage detected?

YES Proceed to STEP 6.

NO Wiring fault between the fuse and the relay. Replace wiring and/or fuse socket.

6 Using a multimeter, check for battery voltage at the RED/YELLOW wire connected to terminal #2 of the compressor isolating switch. (i.e., the wire leading from the vehicle's accessory power.)

Was battery voltage detected?

YES Proceed to STEP 7.

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NO Wire has not been connected correctly or accessory power has not been turned on. Attach RED/YELLOW wire to live accessory power.

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STEP

7 Using a multimeter, check for approximately 12V at the SOLID RED wire connected to terminal #3 of the compressor isolating switch. (while still connected)

Was approximately 12V detected?

YES Proceed to STEP 8.

NO Switch fault or switch not turned 'ON'. Replace switch or toggle switch to 'ON' position.

8 Using a multimeter, check for approximately 12V at the SOLID RED wire connected to the pressure switch attached to the compressor tank.

Was approximately 12V detected?

YES Proceed to STEP 9.

NO Wiring fault between the isolating switch and the pressure switch. Replace wiring.

9 Using a multimeter, check for approximately 12V at the DARK BLUE wire connected to the pressure switch attached to the compressor tank. (while still connected)

Was approximately 12V detected?

YES Proceed to STEP 10.

NO Pressure switch fault or tank not de-pressurized. Replace pressure switch or drain tank.

10 Using a multimeter, check for approximately 12V at the DARK BLUE wire at the relay block. (i.e., the wire leading directly from the pressure switch)

Was approximately 12V detected?

YES Proceed to STEP 11.

NO Wiring fault between pressure switch and relay block. Replace wiring.

11 Disconnect the relay from the relay block. Using a multimeter, check the continuity between the SOLID BLACK wire at the relay block and the negative terminal of second or only battery.

Did the resistance measure less than 1 Ohm?

YES Reconnect the relay to the relay block. Proceed to STEP 12.

NO Wiring fault in the ground wire between the battery and the relay block. Replace wiring.

12 Using a multimeter, pierce the RED/WHITE wire connected to the relay block and check for battery voltage while the relay is still connected.

Was battery voltage detected?

YES Proceed to STEP 13.

NO Relay fault. Replace with a new 40A relay of the same type.

13 Disconnect the compressor motor from the wiring loom at the connector plug. Using a multimeter, check for battery voltage at the RED/WHITE wire on the loom side of the plug.

Was battery voltage detected?

YES Proceed to STEP 14.

NO Wiring fault between the relay and the compressor motor connector. Replace wiring.

14 Using a multimeter, check the continuity (resistance) between the SOLID BLACK wire on the loom side of the plug (not on the compressor side) and the negative terminal of the first or only battery.

Did the resistance measure less than 1 Ohm?

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YES Intermittent fault or internal compressor problem. Contact ARB.

NO Wiring fault in the ground wire between the battery and the compressor motor. Replace wiring.