

Trouble Shooting-02

RF12/24TCBSF-01- Controller

Gray metal box with enclosed compressor and timer 12 or 24 volt

Basic first steps and information:

Power cord wiring

- Black/Brown wire = ground (Be sure you have a good clean connection)
- White wire = battery power with 20 amp fuse
- Green wire = ignition power with 5 amp fuse
- Yellow wire (if used) = manual override with 5 amp fuse

Relay wiring

- 85 = Green wire - Battery power from timer N/O
- 86 = Blue wire - from pressure switch
- 87 = Orange wire - Power to compressor
- 30 = Orange or Red wire - Battery power
- 87a = Not used (center spade)

Timer notes

- Purge 6-60 sec. = seconds of time the fan will reverse
- Run 6-60 min. = minutes of normal run time

Note that the ignition power must be off for 20 seconds or more in order for the timer to start a new cycle. After the ignition has been off for 20 seconds and the ignition is turned to the on position, the compressor should begin to run.

If no air leaks are present the compressor will shut off at 95psi and hold the fan in the reverse position for 6 to 60 seconds as per timer sec. time.

Find the problem that fits your concern the best, and then go to the trouble shooting step that matches. All tests must be done after waiting 20 seconds or more with the ignition off, so that the timer can reset.

Trouble shooting list:

- A. Compressor does not run.
- B. Compressor runs but fan blades do not move or do not move to full reverse position.
- C. Compressor runs but little or no air pressure is coming from control box.
- D. Blades reverse but won't come back completely to the normal position.
- E. Fan does not cycle automatically.

A. Compressor does not run.

1. Check for power at fuses and for blown fuses.
2. Remove lid and check for broken or loose connections.
3. For further testing adjust timer. Turn "run" time (6-60 min) counter clockwise to stop, turn "purge" time (6-60 sec) clockwise to stop. This will give you 60 seconds of time to do most of the testing listed below. After the 60 seconds is up, be sure to turn off the ignition for 20 seconds or more before going to the next step.
4. Loosen the two nuts holding the compressor in place and roll the compressor so you can access the relay below the compressor.
5. Turn the ignition to the on position; check for power at the orange wire going to the compressor. Power yes = bad compressor. No power = go to next step.
6. Check the orange or red wire at the timer (battery power/com) and at the relay spade #30. There should be power at all times at both the timer and the relay.
7. Turn the ignition to the on position and check for power at the lower right corner of the timer (Fan/SOL). No power within the first 60 seconds of the ignition in the on position = bad timer. Power yes = go to next step.
8. Check spade #86 for ground. (put one end of test light on spade #86 the other on spade #30). If the test light does not light up replace solenoid/pressure switch assembly. If spade # 86 has good ground, go to step 9.
9. Check the relay, first lay a hand on the relay, and each time the ignition is put in the on position you should be able to hear or feel the relay engage, and also the orange wire to the compressor should get power at this time. No relay action = bad relay. You should get power to the orange wire on spade #87 going to the compressor. No power = bad relay. Power to a non-running compressor = bad compressor.

Note; after reassembling

- When rolling the compressor back into position, be sure to have space between the relay and the compressor.
- Reset the timer to desired settings. The factory settings are 30 sec and 30 min. By turning the adjusting screw half way from full clockwise or full counter clock wise, it very close to 30/30 factory setting.

B. Compressor runs but fan blades do not move or do not move to full reverse position

1. Disconnect the airline going to the fan at the outlet of the control box. Using compressed/shop air with a rubber tipped blow nozzle, send air to the fan. If the blades move to the full reverse position, see Problem C, "Compressor runs but little or no air pressure is coming from the outlet port".
2. If the blades don't move or move very little, check for air leaks in the line going to the fan hub.

C. Compressor runs but little or no air pressure is coming from the outlet port

1. Disconnect the airline going to the fan at the outlet of the control box. Take a short piece of 1/4 black plastic airline and insert it in the outlet of the control box. Connect a air pressure gauge (0 to 200 psi rating) to the line. Turn the ignition to the on position. If the compressor stays running but pressure remains under 80 psi, check for air leaks on the lines and fitting in control box. This can be done by using a spray bottle with soapy water. If no leaks are found, go to step two.
2. Move the line with the air gauge and connect directly to the compressor outlet. Turn the ignition to the on position. The compressor will stay running. If the gauge reads 105 psi or more go back to step one. If pressure stays below 80 psi replace the air compressor.

D. Blades reverse but won't come back completely to the normal position

1. Disconnect the airline going to the fan at the outlet of the control box. If compressor starts to run check timer for not cycling. Go to "problem E fan does not cycle automatically". If the blades come back to the normal position replace solenoid /pressure switch assembly. If blades do not come back go to step 2.
2. Disconnect the airline at the fan hub. If blades come back to the normal position, check for a kinked or damaged airline.

E. Fan does not cycle automatically

1. After the ignition has been off for 20 seconds and the ignition is turned to the on position, the compressor should begin to run and the fan blades should turn. If the compressor does not run go to "Problem A: Compressor does not run". If the compressor runs and the blades do turn, go to step 2.
2. Remove the lid, adjust timer; turn "run" time (6-60 min) counter clockwise to stop. Turn "purge" time (6-60 sec) clockwise to stop. Turn the ignition to the on position the compressor should run and shut off and maybe even cycle or run again, but the fan blades should stay in the reversed position for approximately 60 seconds. After the 60 seconds the blades should rotate back to the normal position. Wait for 6 to 8 minutes and the compressor should run again. If after 8 minutes the compressor does not run replace the 12/24V TIMER. If it runs go to step 3.
3. Repeat step 2 but wait for three complete cycles or more. If at any time the compressor does not run after the 6 to 8 eight minute wait time, replace the timer. If the compressor runs every 6 to 8 minutes, the timer is good.

Reset the timer to the desired settings. The factory settings are 30 sec and 30 min. By turning the screw half way from full clockwise or full counter clockwise it very close to the 30/30 factory setting.

12 volt parts list

215ADC38/12 - Compressor

VF415F11S01- 12 Volt Relay

RF12XXSX-XX - Solenoid /Pressure Switch Assembly

846E-MHWRF - 12/24 Volt Timer

24 volt parts list

215ADC38/24 – Compressor

87426 - 24V RELAY

RF24XXSX-XX Solenoid/Pressure Switch Assembly

846E-MHWRF - 12/24 Volt Timer

Reassembling notes if parts are replaced

- When rolling the compressor back into position, be sure to have space between the relay and the compressor.
- Reset the timer to the desired settings. Factory settings are 30 sec and 30 min. By turning the screw half way from full clockwise or full counter clockwise it very close to the 30/30 factory setting.