

Universal Valve Company Inc

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1975-FA34 (Air Tower Troubleshooting Manual)

Overview

This manual has been arranged as a tool for diagnosing, and repairing Free Air Universal Air Towers. Please read closely to identify the components that are in your Universal Air Tower.

Technical Support

When calling for technical support please have the serial number of the machine and model number on hand.

Modular Internal Chassis

The modular Internal Chassis holds all components, including the compressor, allowing for easy maintenance. Before removing the chassis turn off all power to the unit. Use a volt meter to ensure all power is off. To Remove the frame unscrew the four mounting bolts located in the bottom front of the inside of the cabinet and disconnect the wires. The complete modular frame with all components can be sent back to the factory, making repairs easier for you.

Troubleshooting

WARNING

DO NOT attempt to service or repair this unit unless ALL ELECTRICAL POWER HAS BEEN DISCONNECTED.

FAILURE TO OBSERVE THIS SAFETY PRECAUTION MAY RESULT IN FATAL ELECTRICAL SHOCK OR PROPERTY DAMAGE.

CHECK ELECTRICAL COMPONENTS/SWITCHES

1. Push the front push button.
2. If the compressor comes on then see compressor section of this manual.
3. If the unit does not come on then see Electrical section of this manual.

CHECKING COMPRESSOR

1. Check the compressor output with an air gauge that has a known accuracy.
2. If compressor output is below required output or if the compressor operates intermittently then see the compressor section of this manual.

Electrical Section

Reset On/Off Switch

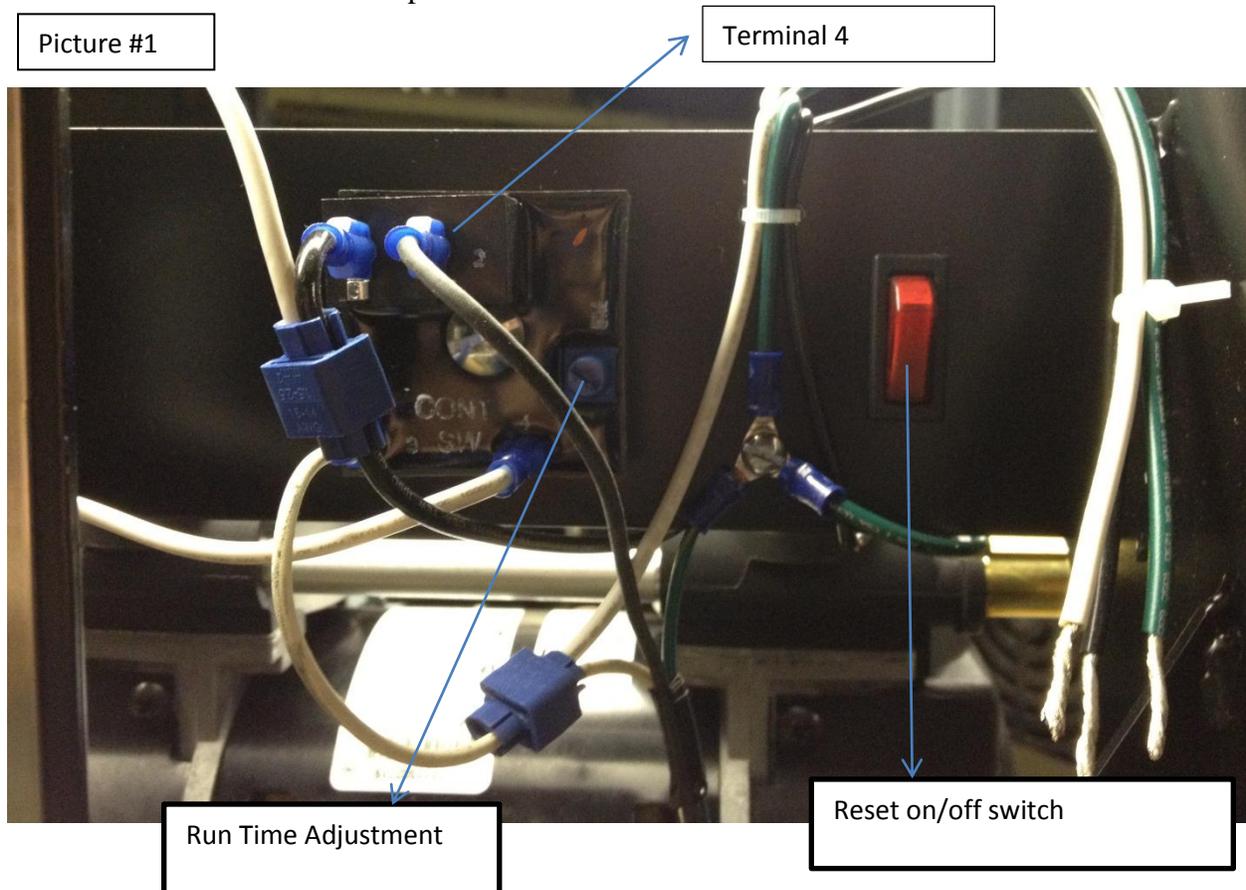
All Universal Air Towers are equipped with an on/off switch. This switch (see Picture 1) is located on the upper right hand side of the unit if you are looking at the unit from the front. Try pushing the button in front of the unit. If the unit starts test the flow output from the compressor. If the unit does not start test the continuity of the switch when the switch is in the up position. If there is no continuity then the switch needs to be replaced. The replacement part number is 1975-3.

Push Button

The push button needs to be tested for continuity. Depress the button and test continuity on the electrical contacts of the switch. If there is no continuity the button must be replaced. The replacement part for the button is 1975-16 .

Timer

All Universal Air towers are equipped with a solid state timer that has a variable time set resistor. The run time is preset at the factory but also can be field adjusted for the desired run time. To adjust the run time turn the blue knob (see picture 1) clockwise to increase the run time. The blue knob only turns about 180 degrees if you force the knob past the 180 degrees of rotation the timer will break and must be replaced.



To make sure that the timer is working properly push the pushbutton switch at the front of the unit. There should now be voltage on terminal 4 in picture 1. If there is no voltage in terminal 4 then the timer needs to be replaced. The part number for the timer is 1975-15-A .

Abbreviated Electrical Troubleshooting

- Unit will not start
- No power – Check to make sure breakers are not tripped. Reset breaker and test.
- Pushbutton Failure – Test for continuity with pushbutton depressed. If there is no continuity replace pushbutton.
- Inadequate power supply – Check voltage and circuit for 120 volts at the Timer. Restore power.
- Timer failure – Activate the timer by pushing the pushbutton Check voltage at terminal 4 in Picture 1.
- Compressor Failure – hook compressor directly to power. If the compressor runs then timer or pushbutton is bad. If the compressor does not run replace or repair compressor.

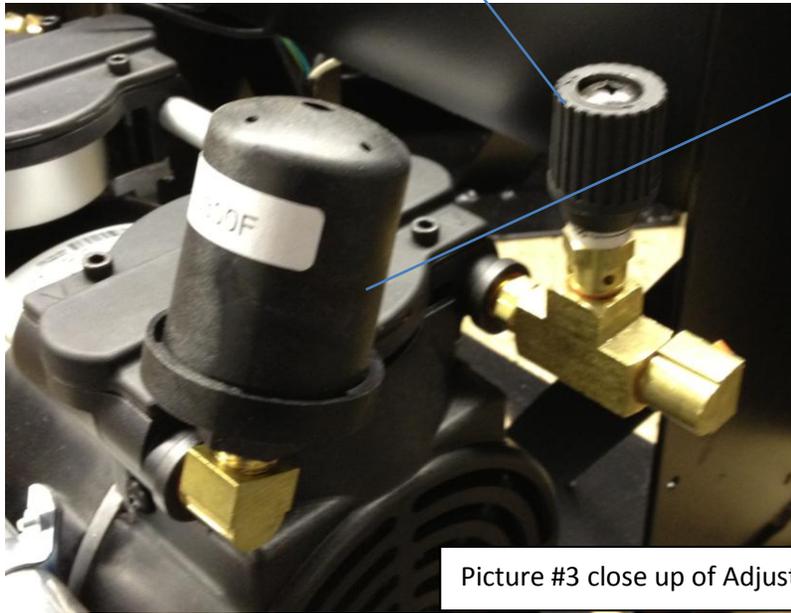
Compressor Section

- No air pressure – Chuck is frozen remove chuck and restart. Air should flow freely from hose. Replace chuck with a new chuck. If this was not the problem then check for a failed or improperly adjusted pressure relief valve. Universal's air towers come with a pressure relief valve and pressure regulator for long compressor life. The Pressure regulator is on the left side of the outlet for the compressor where the air hose is connected. (see picture 3) Turn the black knob clock wise to increase pressure. If this does not correct the situation then check the other pressure relief valve located on the right side of the unit (see picture 2). Only a small amount of air should be coming out of this one. If a large amount is coming out replace pressure relief.
- Low air pressure – Check to ensure that all fittings are tight and not leaking. If fittings are leaking retighten. Check pressure regulator for proper pressure settings.
- Low air pressure – Check to ensure that filter is not dirty. If filter is dirty replace filter.
- Low air pressure – Worn air compressor ensure that the compressor is putting out at least 50 PSI. If not rebuild or replace compressor.
- Compressor runs intermittently – Compressor overheating check compressor fan and check for blocked vents. Replace fan and clear vents.
- Compressor runs intermittently - Check power supply to ensure correct power is coming into unit.



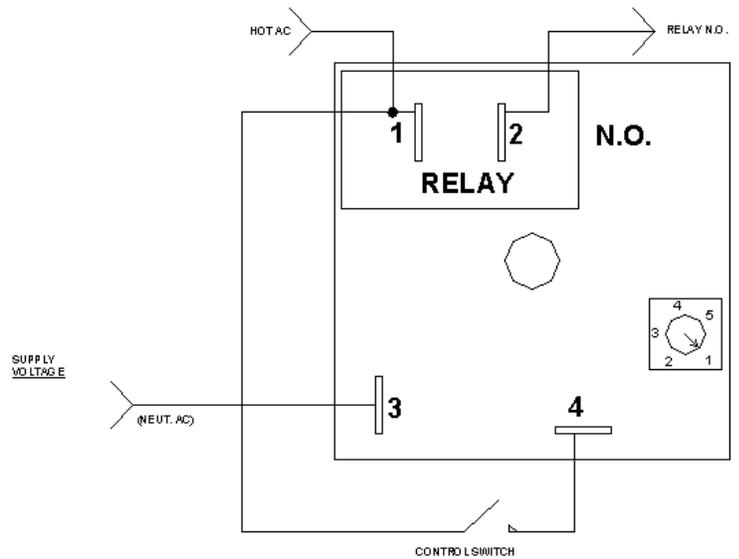
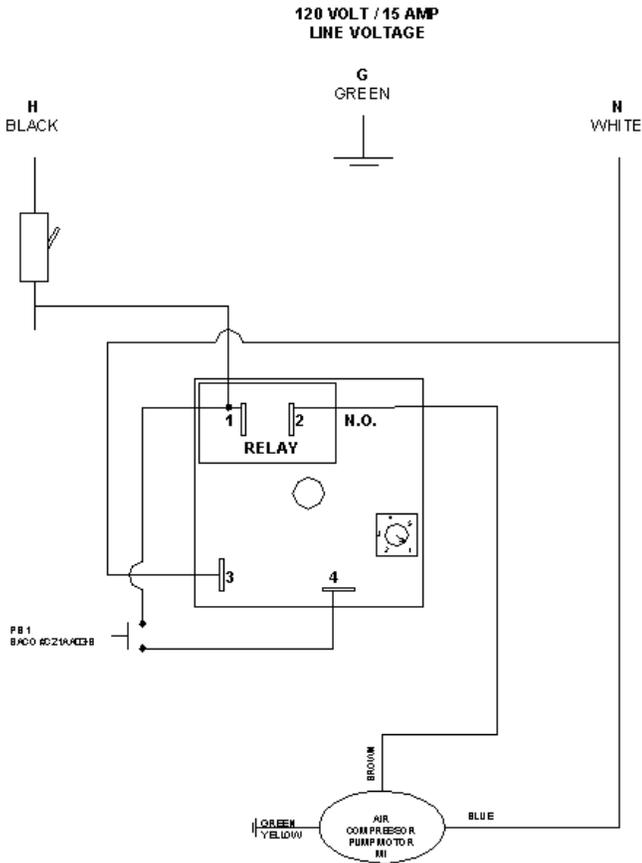
Adjustable Pressure Regulator Valve

Air Filter



Picture #3 close up of Adjustable Pressure Regulator Valve

Wiring Schematics



Replacement Parts List

Part Number	Description
1975-3	On/off switch
1975-15-A	Timer Delay Relay
1975-16	Push Button
1975-17	Lock w/ Keys
1975-18	Push Button Face Plate
1975-19	25ft x 3/8 Air Hose
1975-20	Tire Inflator gauge Chuck Assembly
1975-21	Stainless Steel Hose Bracket
1975-37	Air Pressure Relief Valve
1975-29	Brass Pipe Tee
1975-HDPOST	Heavy Duty White Painted Post
1975-COMPR-G	Air Compressor
1975-FACHASSIS-G	Internal Chassis Assembly includes all Internals