

# Troubleshooting Guide

## AiRGO AUTOMATIC TIRE INFLATION SYSTEM

Use this guide as an easy reference to trouble shooting your AiRGO Automatic Tire Inflation system.

The majority of the time a system LEAK is a simple fix and can be corrected without even removing the hub cap and hub oil.

Your AiRGO Tire Inflation System should be installed by a qualified AiRGO certified mechanic. If it was not, and the system has been giving you problems from the start, then you can assume the problem is a result of improper installation

### Parts Identification Guide

#### 1. The Control Unit:

**This unit consists of several components assembled together to make the Control Unit. A control unit consists of an on/off ball valve, regulator with a filter and automatic drain and an electrical pressure switch. These components are mounted on a mounting bracket and covered with a protective cover to protect from the elements. The Ball valve turns the air on or off from the system. The regulator sets the tire pressure. The Pressure switch monitors for leaks and turns the warning indicator on and off.**

#### 2. Axle Plug:

**This plug is installed in the end of the trailer spindle and seals (air and debris) from entering the axle tube from the hub area. Its purpose is to keep the axle air tight and transfers air from the axle tube to the Rotary Union. It consists of three components: An O-ring, a tolerance ring and the plug itself. It comes assembled from the factory and once installed and checked for leaks should never have to be removed.**

#### 3. Stator:

**The Stator is approximately 4inches long and has an O-ring seals inside one end and a filter on the other. It threads into the axle plug and makes a seal at the thread. It receives the Rotary Union delivery tube, seals it and transfers air through the tube to the Rotary Union. It is easily removed for repair or servicing.**

#### 4. The Rotary Union (RU):

**The RU is a cylindrical device that threads onto the center of the Hubcap. AiRGO offers two types of Rotary Unions both of which incorporate a proven mechanical seal for longevity and durability. It is silver in color and the venting system is what distinguishes the difference between the Blue, Gold and Platinum Series.**

## 5. The Hoses:

**The Hoses deliver air from the Rotary Union (RU) to the tires via the valve stem. They attach to the RU and have a check valve built into them at the valve stem area. This check valve allows air to flow in one direction (into the tires) and individually checks each tire independently so as not to effect the air pressure in the other tires.**

### **Troubleshooting a System leak**

Perform these simple steps before you dismantle the system. It is recommended you have a bottle of soapy water to spray on the fittings, connections etc, in order to find all the air leaks, including very small ones.

1. Make sure air is hooked up to trailer and the ball valve is in the on position: Also check to see if the Trailer air supply has enough pressure to meet the regulated pressure or cold tire pressure setting. Check glad hand and Truck compressor air gauge. When using either shop air or Truck air, make sure the pressure is more than the cold tire pressure recommendation.
2. Is the warning indicator light on or off? Check the red ball valve on the control unit to see if it is turned on. (If the ball valve is turned off, the warning light will stay on.)
3. Where is the leak coming from? Fittings, hose connections, Rotary Union relief valves, control unit components?
4. What is leaking; Air, Oil or both?

To determine the area where the leak is coming from, simply following these procedures:

**CAUTION: MAKE SURE THE SYSTEM IS TURNED OFF AND PRESSURED DOWN BEFORE SERVICING OR REMOVING ANYTHING RELATED TO THE AUTOMATIC TIRE INFLATION SYSTEM.**

**DO NOT PRESSURE DOWN THE SYSTEM UNTIL YOU HAVE IDENTIFIED THE LEAKING COMPONENT.**

**Keep system pressured up until you have isolated the problem area. Then turn off and pressure down to repair.**

1. Listen and look for a leak. Spray the axle fittings, airline connections and control unit fittings. If you see air bubbles coming from the fitting connections, follow Procedure A. If no leaks, go to step 2.
  - A. Remove leaking fitting and thread tape the threads and re-install using the torque specs called out in the installation manual. Re-check for leaks with the soapy water. If it still leaks, you will need to correct with a new fitting.

2. Soap all hose connections such as the hose connection on the valve stem or Rotary union; if leaking, hand tighten hose to make sure the connection is tight and sealing. If tight, remove hose and visually check the o-ring inside of the connections. If this o-ring is cut or damaged, replace hose.
  
3. The Rotary Union (RU) is the round device threaded into the center of the hub cap. If the RU has a black plastic dust cover that butts up to the hub cap face, it is the Gold Series, if it does not have a dust cover but rather two round relief valves on the face of the RU, it is the Blue or Platinum Series. Spray either one with soapy water; if leaks are coming from the dust cover or the relief valves follow procedures A-D.
  - A. If there is no air leak but only oil leaking from around the dust cover or around the hub cap Rotary seal, check the hub oil level, it may be too high. Make sure the RU is tight against the hub cap. If is tight and the oil level is correct (not too high) then shut system off, pressure down and remove RU by turning counterclockwise. Check RU to make sure it has an o-ring on the face surface where the RU and hubcap thread together.
  - B. If bubbles from the soapy water appear then you have an air leak in the hub area and you will need to determine which component is leaking. The bubbles can come from the dust cover on the Gold Series or the relief valves of the other Series.
  - C. The Gold or Platinum Series RU (if leaking) would show bubbles around the dust cover. Or the relief valves. To troubleshoot simply remove the RU by unthreading counterclockwise and once detached from the threads, pull deliver tube and RU housing out of the Stator located in the axle plug. Switch out the RU with a spare or one from a hub that is not leaking air. Assemble all components and pressure up. If the leak followed you to the other hub, you know the leak is in the RU. Replace RU with another and turn in for warranty. If the leak stays with the non leaking RU, then follow steps D below.
  - D. If the leak remains on the same hub, then it is the axle plug that is leaking. Turn system off and pressure down. There are three leak points within the axle plug; 1. The outer O-ring on the axle plug. 2. The thread of the Stator. 3. The inner O-ring in the Stator. More than likely the leak is coming from #3. Check to make sure the Stator is secured and tightened into the axle plug and is not leaking. If not leaking, remove the Stator with a 5/8<sup>th</sup> socket and check condition of the O-ring in Stator. If it is damaged or leaking replace Stator.

There is no need to remove the hubcap or hub oil to fix the Platinum Series unless you need to remove axle plug. The Gold series requires removal of the hubcap to repair the axle plug or stator.

## Troubleshooting Electrical

The only electrical requirement for the system is power to activate the pressure switch which turns on the warning indicator light. To troubleshoot this, first check to make sure the trailer has power from the truck or shop.

1. Once it is established that there is power to the trailer simply turn the red ball valve to the system to the off position. Once turned off the light should come on. If it does not turn on follow step A. and B.

A. Check all light connections for good solid contact

B. Make sure light is wired correctly to the seven-way connections as per the instruction manual. (The easiest way to check this is to make the sure the wiring is configured in a loop.)

It does not matter which lead from the light is <sup>+</sup>positive or <sup>-</sup>negative as long as it is looped from the pressure switch to the seven-way and then to the light. From the light back through the seven-way and back to the pressure switch.

In other words, the white wire from pressure switch should go to the seven-way box where it is butt connected directly to the white wire coming from the light.

The black wire should come from the pressure switch to the Blue pin (+) connection (or constant hot connection) in seven-way. And the black wire from the light should go to the center ground connection in the seven-way. This makes the connection through the seven-way and completes the loop.

C. If this is done correctly the light should be on when the ball valve is turned to the off position. If not, check wire with volt meter to make sure power is getting to light. If it is and the light is not on, then check bulb in light and replace if needed.

### If light Is On

A. Make sure system air is connected, then turn system red ball valve to the on position and listen for the air to fill the system. When the air movement stops, (audible) the light should turn off.

### If light Does Not Go Off

A. Wait for a few minutes while making sure there is enough air being generated by the truck or shop air to fill the system to its desired level, i.e., 120lbs of system pressure for 100 lbs cold tire setting pressure. (Note system could be filling a tire with a slow leak as well.)

If light is still on and no leak is detected and you are confident all the above procedures are correct, than reset the pressure switch as instructed below.

## **Resetting the Pressure Switch**

The pressure switch comes set for your cold tire pressure setting from the factory. If there is the need to reset, go to step A, B, C, below.

- A. Remove rubber environmental plug located between the two wire connections on pressure switch. Use an Allen wrench to turn the setting switch clockwise to turn light "ON" and counterclockwise to turn light "OFF"
- B. As the light goes off, stop and create a leak by loosening several of the hose connections at the Rotary Union fittings and let them bleed air from the system until the light comes on. (This could take up to a minute and will need to have several fittings leaking.)
- C. When the light turns on, tighten the hose to the fittings and within a minute the light will go off. Cycle this several times to make sure it is operating as desired and replace environmental plug.