

**INSTALLER: Please leave  
this manual in unit  
for owner.**



***Auto Reset Valve***

***OWNERS MANUAL***



**Headwind  
Solutions Ltd.**

1.844.304.7277

[www.headwindsolutions.ca](http://www.headwindsolutions.ca)

# **CONGRATULATIONS ON YOUR PURCHASE OF THE SHOCKER POSITIVE AIR SHUTOFF SYSTEM**

## **WHAT IS IT?**

The Shocker PASS is a solenoid actuated air supply shut-off system. It cuts off the air supply to the engine when initiated resulting in shutdown when exposed to fuel charged atmosphere.

## **WHY YOU NEED IT!**

For anyone who works in or around unburnt hydrocarbons or owns a diesel engine, the SHOCKER POSITIVE AIR SHUTOFF SYSTEM is a necessity. If there is a gas leak i.e. natural gas or propane your diesel engine will rev until it explodes, even if you turn the key off. A diesel engine does not require electricity or spark to run. As a result, it will burn the fuel in the atmosphere indefinitely. The only way to stop this is to shut off the air supply.

## **WHY CHOOSE OUR VALVE?**

- One piece billet aluminum body
- In-cab military style switch with lockout guard or test/trip pad.
- Solid state relay controlled.
- Enclosed torsion actuation spring.
- Single ¼ turn reset knob or auto-reset option.
- Stringent quality control; each unit is hand tested.
- Complete installation manual with each kit.
- Liability insurance up to \$10,000,000.
- Made in Alberta, Canada.
- Two year parts warranty.

## **WHERE DO YOU NEED IT?**

- Bulk fluid transportation
- Oilfield maintenance equipment
- Rental equipment
- Power generation equipment
- Landscape equipment
- Marine engines
- Landfill equipment
- Mining
- Emergency vehicles
- Airport support equipment
- Portable welders
- Pipeline equipment
- Cranes
- Fuel haulers
- ...and much more!

## **HOW TO OPERATE**

### **Manual Electric System**

- Activate switch on dash.
- Valve will trip and stay closed for 17 seconds and then automatically open.

### **RPM controlled automatic shutoff**

- With engine idling, push test button on control unit. Raise engine RPM until valve trips (should be 50% of original set). Valve will trip. Valve will trip and remain closed until Rev Limiter sees 0 rpm for 17 seconds, then automatically reopen.
- Turning key off will disable rpm pulse, making the system manual activation if your pulse source is taken from an OEM source.

**See trouble shooting guide starting on page 7 if system does not function as indicated.**

**DOES THIS SYSTEM REQUIRE MAINTENANCE? **Yes****

### **Visual Inspection**

- Check unit for cleanliness:
  - clean unit regularly.
  - remove debris, mud, ice, etc. from mechanical portion of valve.
- Check wiring for chafing or cut wires; repair if necessary. Check for corrosion at connection points.

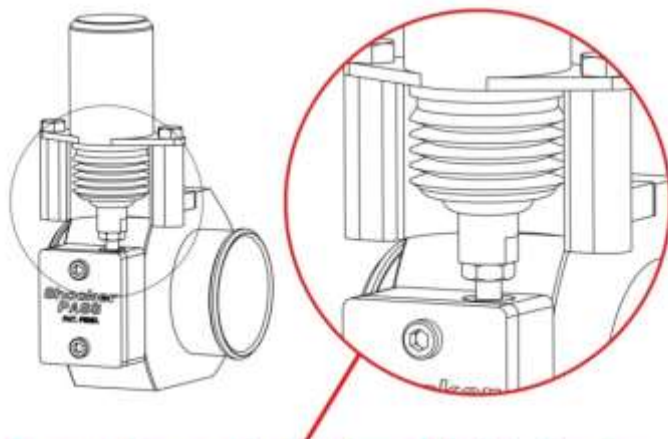
- Check boot on solenoid for cracks and tears; replace if needed.
- Check hoses for cracks and holes, replace if required.
- Manually activate valve by pushing the solenoid in. Valve should close; if not see trouble shooting.

If all of the above is good then test system by tripping the manual switch. Valve should then trip and will automatically reset after 17 seconds. If valve doesn't trip on first attempt do not try again. Refer to trouble shooting guide.

**THIS SHOULD BE DONE EVERY 30 DAYS MINIMUM**

**NOTE: Recommended maintenance procedure; trip valve manually every 30 days to ensure optimal valve performance.**

**FAILURE TO DO SO MAY VOID WARRANTY**



Ensure this area is kept free of debris allowing free movement of solenoid boot and shaft.



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## **TROUBLE SHOOTING GUIDE**

### **VALVE DOES NOT ACTIVATE:**

- Valve didn't activate after first try.
- **DON'T TRY TO ACTIVATE VALVE AGAIN.**
- Check valve for any debris around rack shaft and solenoid boot. (illustration page 6)
- Make sure boot is not damaged and solenoid not filled with contamination; if so, replace boot and clean out debris.
- If clear of debris, with valve in the open position, push upward on base of solenoid.
- Plunger on solenoid should compress and close valve with little effort and spring back to open position after releasing.
- If solenoid is still not cycling, test solenoid for resistance (in OHMs). The OHMs information is on page 8.
- If you need help, please call Headwind Solutions and ask for Tech Support.

Trombetta	24 Volt	Woodward	24 Volt
White to Black	.9 to 1.1 ohms		.9 to 1.1 ohms
Red to Black	46 to 56 ohms		46 to 57ohms
Trombetta	12 Volt	Woodward	12 Volt
White to black	.3 to.4 ohms		.3 to.4 ohms
Red to Black	9.8 to12 ohms		9.8 to 12 ohms

- If resistance is out of above specified parameters, replace coil.
- If resistance levels are within spec you need to look for wiring issues or possible box failure.
- Check wiring.
- **Must be minimum 14ga. Wire : Refer to chart on page 11**
- Make sure all connections are tight.
- Check for corrosion at connectors; if present replace connector with shrink type connector.
- Check for chafed wires causing shorts & repair.
- Ensure all connections are soldered and heat shrink tubing is used.
- With multi-meter test for pulse power going to solenoid from control box. When system is activated you will not read full voltage, you will



notice quick power bumps! This indicates that control box output is good.

**SOLENOID MOVES BUT VALVE DOES NOT CLOSE:**

- This can be caused by lack of use. Cycle valve at least once every 30 days to help prevent issues.
- Loosen clamps and remove unit from hoses.
- Spray lubricant in throat of valve at shaft pivot points, work valve manually back and forth. This may require several applications until valve moves freely.
- Wipe excessive lubricant out of throat.
- Watch for pinch points.
- If the above does not work please call tech support.

**SOLENOID TRIPS, VALVE CLOSSES BUT DOES NOT OPEN:**

- This can be a sign of valve not being cycled at least once every 30 days.
- Buildup of dirt, wax, or soot can build up on valve plate seating surface inside valve body causing plate to stick.
- Remove valve body from unit.
- Apply a spray lubricant where valve plate seating is located.

- Cycle valve manually, opening and closing approximately 20 times.
- Valve should now open and close with little effort.
- Wipe out leftover residue.
- Reinstall valve in unit.
- Cycle valve at least once every 30 days to help prevent buildup from forming at plate seating surface.

**WHISTLING NOISE- Boost leak**

- Check clamps for proper tightness /springs should be almost fully collapsed.
- If whistling persists remove hoses, clean inside mating surfaces. Reinstall clamps ¼ turn from original and tighten.

**REV LIMITER RANDOM SHUTDOWNS**

**Please call Headwind Solutions:**

**Toll Free: 1-844-304-7277 or Office: 780-672-2775**

**DISCLAIMER:** It is the responsibility of the Owner/Operator to ensure that the **SHOCKER Positive Air Shutoff System** is working as intended. Refer to OH&S, Local energy regulators and on site safe work permits.

# **IMPORTANT**

To ensure proper solenoid operation, the total connecting wire length for both leads combined must not exceed the recommended maximum lengths indicated in the Wire Size Table below:

## **WIRE SIZE RECOMMENDATION TABLE**

Maximum lead length of all leads total (in feet)

	<b>Wire Gauge/Size</b>				
	<b><u>14GA</u></b>	<b><u>12GA</u></b>	<b><u>10GA</u></b>	<b><u>8GA</u></b>	<b><u>6GA</u></b>
<b><u>12 VDC</u></b>	9.5	15	24	38	60
<b><u>24 VDC</u></b>	38	60	96	150	240

**14 GA MINIMUM WIRE MUST BE USED  
THROUGHOUT THE INSTALLATION**

Check our website for troubleshooting videos and tips.

[www.headwindsolutions.ca](http://www.headwindsolutions.ca)



**Very Important!  
Always mount box  
in upright position as pictured.**



**Create a drip loop as per good wiring  
practices to ensure any moisture travels to  
the bottom of the loop and not into the box .**



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# NOTES:

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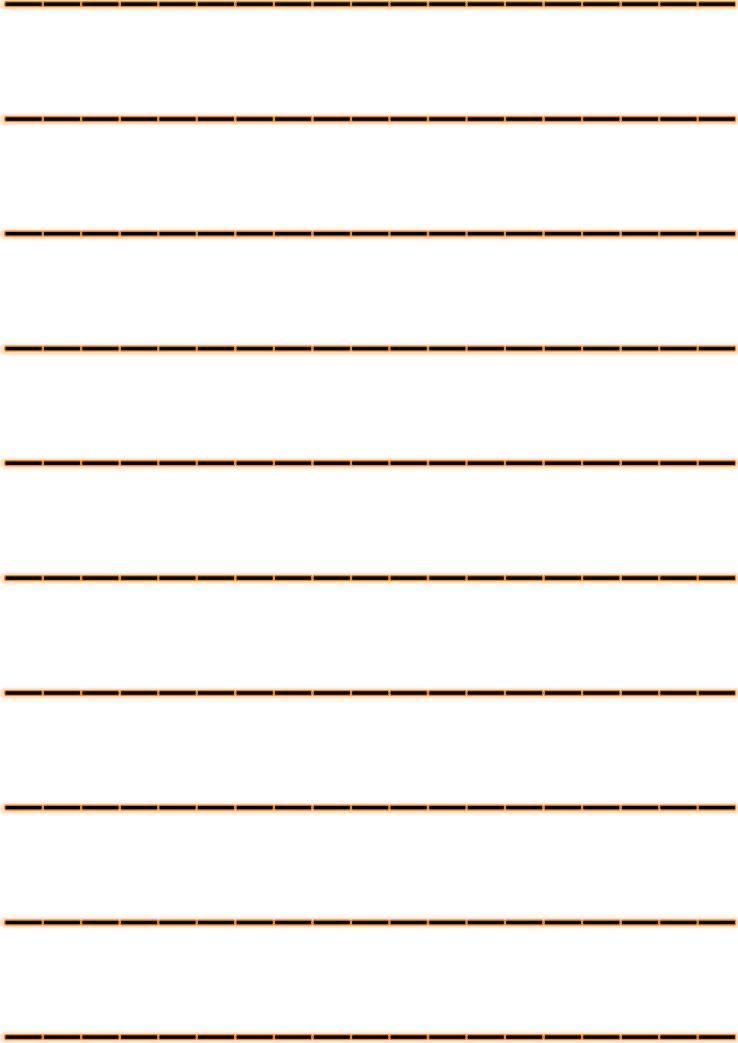
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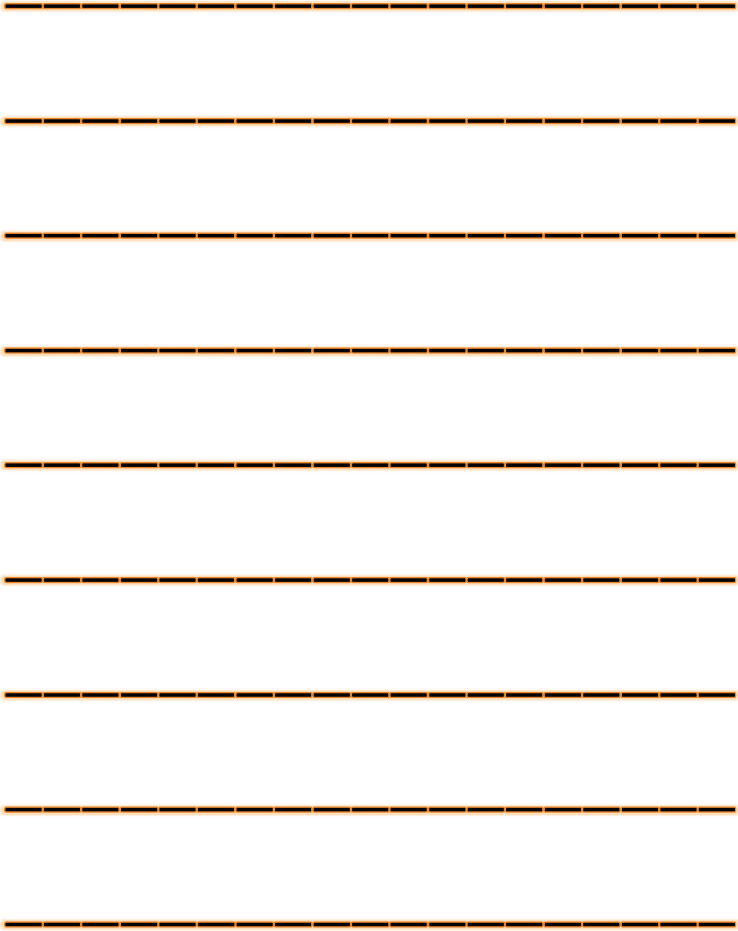
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THANK YOU FOR CHOOSING SHOCKER PRODUCTS

**MANUFACTURED IN ALBERTA.**

**100% CANADIAN MADE**



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Solutions Ltd.**

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