# HORNBLASTERS

## Nathan AirChime K3 Train Horn Kit Installation Manual

# HornBlasters

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## K3 Train Horn Kit Installation Guide

### Before Getting Started

Read over the entire instruction guide before you begin your installation.

#### Kit Contents:

- Nathan AirChime K3 Train Horn
- ViAir 400C Air Compressor Pump
- ViAir Weather-proof Pressure Switch
- Firestone 5 Gallon 7 Port Air Tank
- Electric Solenoid Valve
- Fittings, Air Line, Wiring Kit, Replacement Air Filters

**IMPORTANT:** This complete train horn kit uses 12 volt DC components. Only install this kit with a 12 volt DC power source.

### Important Safety Instructions

#### CAUTION: To prevent the risk of electrical shock or electrocution:

- Do not disassemble any electrical components of this horn kit (air compressor, air valve, pressure switch). Do not attempt repairs or modifications of any component. Please refer to qualified service agencies for all service and repairs.
- Do not operate any component where it can fall or be submerged into water or any kind of liquid.
- Do not reach for any component that has fallen or been submerged into water or any kind of liquid.
- Use the included components with 12 volt DC systems only.
- Do not leave the air system unattended during use.

#### WARNING: To prevent injury:

- Never allow children to operate the compressor or air horn. Use close supervision when operating this equipment near children.
- The air compressor will become very HOT during and immediately after operation. Do not touch any part of this compressor with your bare hands during or immediately after use.
- Do not use this product near open flames or explosive materials or where aerosol products are being used.
- Do not operate this product where oxygen is being administered.
- Do not pump anything other than atmospheric air.
- Never use this product while sleepy or drowsy.
- Do not use any tools or attachments with the supplied air source unit without first determining maximum air pressure for that tool or attachment.
- Never point any air nozzle or air sprayer toward another person or any part of your body.
- The included air compressor is equipped with an automatic reset thermal protector and can automatically restart after the thermal protector resets. Always cut off power source when thermal protector becomes activated.
- Use only in well ventilated areas.
- Do not sound the air horn(s) in close proximity to another person's or your own ear(s).
- Do not fill the included air tank above 150 PSI. Doing so may result in death or serious injury.

#### Safety During Installation

- Disconnect the ground of your battery before beginning your installation.
- Use eye protection when operating drills.
- Take your time and do not rush your installation.

# Installing Your Train Horn Kit

## Planning Your Installation

This is the most important step in your installation.

- Plan out the location of each component before starting your installation.
- Make sure you have enough air line and wire to install the system before beginning the installation.
- Make sure mounting locations are secure and void of debris.
- Try to keep the supply wire to the compressor as short as possible. Wires lose voltage over distance therefore shorter wires will result in better performance.
- Mount your air compressor in a location that is as cool as possible and away from heat sources. This will make your compressor run cooler and last longer.
- Your air compressor must be mounted upright or horizontally but never upside down to allow the compressor to cool properly. To increase performance make sure the compressor is mounted upright.
- Your air compressor should be mounted above the tank. Failure to mount the unit in this position will allow any condensation buildup to drain back in to the compressor and foul its components.
- Teflon tape or a locking compound should be used on every fitting in your air system to prevent air leaks.
- Air valves can be mounted in every direction but are recommended to be mounted vertically with the pilot housing above the valve body.
- Use the supplied 12 gauge wire or thicker (lower gauge #) wire to power your air compressor.

## Recommended Tools

- 9/16” Wrench (1/4 NPT Fittings)
- 7/8” Wrench (1/2 NPT Fittings)
- 8mm Wrench or Socket (Air Compressor Mounting)
- 16mm Wrench (Metric 1/4 NPT Fittings)
- 22mm Wrench (Metric 1/2 NPT Fittings)
- Drill
- Wire Cutter/Stripper
- Tubing Cutter/Razor
- Eye Protection

## I. Installing Your Nathan AirChime Train Horn

Locate an area for your horns that is dry and free from debris. The horns can be mounted in any direction and still be heard from all around. The horns should not be mounted where they will be completely submerged or will receive any kind of impact. Horns may be mounted directly to your vehicle, on a medium such as sheet metal or any sort of custom bracket. Note that air line will be running to the center of the horn manifold.

1. Location a secure, dry, safe position for your horns.
2. Install your custom bracket. We recommend welding a piece of sheet metal.
3. Drill holes in your bracket to align with the AirChime manifold.
4. Secure the horn on to the bracket.

## II. Installing Your Air Compressor Pump

Locate a flat and secure installation area that will remain free of dust, dirt and debris (your compressors performance is directly affected by air quality). Try to keep the distance of the unit from the battery to a minimum to keep your compressor running at maximum performance.

1. Disconnect the ground cable from the vehicle’s battery.
2. Position the unit in the desired location and secure it using the supplied mounting hardware (8mm).
3. Remove the orange plug in the compressor’s inlet and install the remotely mountable air intake assembly. Using the included 3/8” OD air line and fittings you may relocate the air filter up to six feet away from the air compressor.

## III. Installing Your Air Tank

Locate a secure area close to your air compressor to mount your air tank. The leader hose of the compressor should be able to reach an available port on the air tank with some slack.

1. Position the tank in its desired location and secure it using standard mounting hardware.

## IV. Installing Your Air Tubing & Air Valve

Before cutting any air tubing make sure to double check your measurements. We recommend cutting your lengths with at least an extra inch per line just to be safe. The Push-To-Connect compression fittings are reusable but reuse should be kept to a minimum to avoid damage. When threading any fittings make sure to use Teflon tape or lock-tight to prevent air leaks.
The air valve may be mounted in any direction but it is preferred that it is mounted vertically.

**IMPORTANT**: Do not rotate or remove the inline check valve in the compressor's leader hose. Doing so will damage its seals and will result in damage to your air compressor and voiding of your warranty.
**IMPORTANT**: Do not make any kinks in your air line. Doing so will disrupt air flow and is irreversible.

**Air Compressor to Tank:**

[Air Compressor] » [1/4" Leader Hose] » [1/2 to 1/4 NPT Reducer Bushing] » [1/2 NPT F Port] » [Air Tank]

1. Locate a free 1/2 NPT port on your air tank and install a 1/2 to 1/4 NPT reducer bushing using Teflon tape across the threads.
2. Carefully connect the air compressor leader hose to reducer bushing using Teflon tape on the threading. When installing the leader hose DO NOT move the inline check valve located just above the swivel fitting.
3. Locate a secure location to mount the leader hose using the bracket provided. Avoid locations where the leader hose may become tangled with wires and other hoses.
    a. When mounting the bracket drill a hole with a 3/16" drill bit and push the self-anchoring hose bracket into the hole. Route the leader hose through the hose bracket and secure by pressing the bracket clamp into the locker position.

**Pressure Switch in to Tank:**

[Air Tank] » [1/2 NPT to 1/8 NPT Reducer Bushing] » [Pressure Switch Unit]

1. Install the 1/2 to 1/8 NPT reducing bushing into an available port on the air tank using Teflon tape on the threading.
2. Install the pressure switch unit into the reducer bushing again using Teflon tape on the threading.

**Air Horns to Tank:**

[Air Tank] » [1/2 to 1/2 NPT Nipple] » [Air Valve] » [1/2" Push-To-Connect Fitting » [1/2" Air Line] » [1/2" Push-To-Connect Fitting] » [K3 Manifold]

1. Plan out the fittings' placement out before you begin and make sure you understand the correct order.
2. Make sure that your tank is empty of air and that the compressor is not running during installation.
3. Start off by installing the 1/2 to 1/2 NPT nipple fitting in to the side of your air tank using Teflon tape or a locking compound on its threads.
4. Next install the 1/2" air valve on to exposed side of the 1/2 to 1/2 NPT nipple using Teflon tape or a locking compound again. Make sure that the arrow on the valve points from the tank outwards towards where you will connect your horns. The tank side of the valve should be marked Inlet, the other Outlet.
5. Next install Push-To-Connect fittings in the open side of your valve and in the horn manifold again using Teflon tape or a locking compound on the threads.
6. Now you can run air line from your horn manifold to the air tank and cut the length required. Make sure the cut end is flat and the cut is completely perpendicular to the tubing length.
7. Install the air line carefully between the horns and the air valve making sure not to damage the Push-To-Connect fittings.

**Drain Cock in Tank:**

1. Install the drain cock in the 1/4 NPT port on your air tank. If the drain cock has compound on its threads it is unnecessary to use Teflon tape on the threads.

**Extra Ports in Tank:**

1. Install the supplied three 1/2 NPT plugs in the remaining 1/2 NPT ports using Teflon tape on the threads.

## V. Wiring Your Valve & Air Compressor

Your train horn kit will use two completely independent circuits. One circuit will connect your horn trigger (push-button intermittent switch, or toggled factory button) to your electric solenoid valve. The other circuit will connect your accessory trigger (ignition wire, accessory wire) to your air source kit.

**Valve Wiring Flow Chart (Circuit 1)**

[Horn Trigger] » [Air Valve] » [Ground]

**Air Source Wiring Flow Chart (Circuit 2)**

[Accessory Trigger] » [(Small Red) Pressure Switch (Black)] » [Ground]
[12V DC Source] » [Inline Fuse] » [(Large Red) Pressure Switch (White)] » [(Red) Air Compressor (Black)] » [Ground]

**Circuit 1**

1. Begin by wiring your horn trigger.
    a. If you are intending to use your factory horn switch, start by locating the load wire of the horn button (positive when horn button is depressed in a standard vehicle) and wiring it to the included toggle switch (any side).
    b. If you are going to use a push button switch (intermittent toggle switch) wire a fused (5A) wire from any 12 volt source desired (battery) to your switch (any side).
2. Next wire your switch to any pole (red preferred) of your air valve.
3. Wire the other side (black preferred) of the air valve to ground.
4. Test your circuit by activating your trigger and listening for a quiet “click” sound from the valve.

**Circuit 2**

1. Locate an accessory line in your vehicle
2. Wire your accessory line to your pressure switch using the small red wire (Trigger).
3. Ground your pressure switch using the small back wire (Ground).
4. Locate an accessory line or other 12 volt DC source that is capable of a 26 amp load.
5. Wire this line using an inline fuse (30A) to your pressure switch using the large red wire (12V DC Source).
6. Connect the pressure switch to the air compressor using the large white wire (Load) from the pressure switch and the red wire (12V DC Source) from the air compressor.
7. Ground the other side of your air compressor (black wire) to ground.
8. Your air compressor system will now turn on automatically when power is on (key is in “Accessory” or “On” position and automatically turn itself off upon reaching destination.

## You’re Done!

It’s time to test your horns! Send in your install photos for a chance to be featured on our website and don’t forget to check out www.TrainHornForums.com, the largest train horn community on the internet!

# Maintenance & Tips

Disconnect electrical components and drain your air system before performing maintenance.

## General Air Horn System Maintenance

- Your Nathan AirChime K-Series horns require very little maintenance. After years of use, however, they may need to be rebuilt. Rebuilding these horns requires installing new diaphragms, O-rings and deep cleaning.
- Check your air horns for debris when appropriate and at least once a month and clean when necessary.
- Drain your air system at least once a month to remove any condensation buildup on the inside of your air tank.
- Make sure your air compressor is clean and free from debris at all times.
- Periodically change your two stage air filter on your compressor.

## Tips

- Make sure your engine is running when your air compressors are in use to insure proper voltage and prevent damage to your system.
- Do not run your compressor above its maximum rated working pressure. Doing so will not only void your warranty but may also damage your compressor.
- The air horns are pre-tuned to a locomotive chord and to their loudest possible tone. Do not adjust the tuning screw on the horns. Doing so will void your warranty and may damage the horns if maladjusted.
- The bells of your AirChime horn are reversible and can be unbolted and turned around for multidirectional signaling.

# Troubleshooting

| Problem | Possible Cause(s) | Corrective Action |
|---|---|---|
| Air horn will not sound. | 1. No pressure in air tank.<br>2. No power or toggle switch in 'Off' position.<br>3. Blown fuse.<br>4. Loose connections or bad ground in air valve circuit (circuit 1). | 1. Check that air tank is pressurized.<br>2. Make sure all toggle switches are on.<br>3. Disconnect electrical components and replace fuse.<br>4. Check that all electrical circuits are secure and not corroded. |
| Horn tone changes when sounded. | 1. A bell was not secured properly after performing routine maintenance.<br>2. Low air pressure in tank.<br>3. O-rings are worn between horn bells and manifold. | 1. If you have performed maintenance make sure bells are seated flush and new O-rings were installed.<br>2. Allow your air system to refill before use.<br>3. Replace O-rings and reseat horns. |
| Excessive moisture in horn or safety discharge. | 1. Excessive water in air tank.<br>2. Compressor is exposed to high humidity. | 1. Depressurize tank using safety, then drain tank. Tilt the tank to drain moisture and drain more frequently.<br>2. Move the compressor to an area with less humidity. |
| Compressor will not run. | 1. No power or toggle switch in 'Off' position.<br>2. Blown fuse.<br>3. Motor overheat.<br>4. Faulty pressure switch. | 1. Make sure all toggle switches are on.<br>2. Disconnect compressor from power and replace fuse (20A).<br>3. Let compressor cool off for about 30 minutes for thermal overload switch to reset.<br>4. Replace pressure switch. |
| Thermal overload protector cuts out repeatedly. | 1. Lack of proper ventilation/ambient temperature too high.<br>2. Compressor valves failed. | 1. Move compressor to a well ventilated area or an area with a lower ambient temperature.<br>2. Replace air compressor. |
| Excessive knocking or rattling. | 1. Loose mounting bolts.<br>2. Worn bearing on eccentric or motor shaft.<br>3. Cylinder or piston ring is worn. | 1. Tighten bolts.<br>2. Replace compressor.<br>3. Replace compressor. |
| Tank pressure drops when compressor shuts off. | 1. Loose drain cock.<br>2. Air valve or check valve is leaking.<br>3. Loose connections.<br>4. Defective safety valve. | 1. Tighten drain cock.<br>2. Replace air valve or check valve.<br>3. Check all air connections with soap and water solution and tighten as necessary.<br>4. Replace safety valve. |
| Compressor runs continuously and air flow lower than normal. | 1. Excessive air usage.<br>2. Loose connections.<br>3. Worn piston ring or inlet valve.<br>4. Clogged air filter element. | 1. Decrease air usage.<br>2. Check all connections with soap and water solution and tighten as necessary.<br>3. Replace compressor.<br>4. Replace air filter element. |
| Compressor runs continuously causing safety valve (if equipped) to open. | 1. Faulty pressure switch.<br>2. Defective safety valve. | 1. Replace pressure switch.<br>2. Replace safety valve. |

# Photograph & Media Submission Guidelines

Send in your installation photographs and any other media for a chance to be featured on our website!

## General Photograph Submission Guidelines

- Please submit clean, concise photographs. Make sure your subject is clearly visible and in focus.
- You may submit any digital image format either via email at media@hornblasters.com, or via digital media (CD, DVD, etc).
- Make sure to include some kind of personal information with your submission. We would love to be able to contact you and thank you.

## Installation Gallery Submission Guidelines

- Please take at least one photo of each of the major components of your installation (horns, compressor, tank, valve, switches, etc).
- Don't forget to send us some shots of your vehicle too! If we can't tell what the install is on, we probably won't post it.
- Include as much installation information as possible.
    - Who installed the system and when was it installed?
    - How long did it take?
    - What are the year, model, and style of your vehicle?
    - If you took your system to a shop, would you recommend the shop to others?
    - Do you have any comments or tips about the installation?
    - Anything else you want to tell us. We appreciate your feedback!
- Optionally include a little personal information:
    - Your name (if you would like your full name to be displayed, you have to let us know!)
    - Your State or Country, or even city/town if you would like. (This'll give you better visibility.)
    - How old were you when you had this kit installed?
- Remember, the more photos the better! We'll only pick out the best ones to post.

## General Video Submission Guidelines

- We accept all kinds of media. Please provide us with the highest quality media to prevent video degradation.
- We can read all formats of video. We recommend using either the default your camera records with; or if you are compressing the video, we recommend using AVI containers and Xvid, Divx, or an MPEG codec. We recommend against using any kind of Windows Media*, Real Media*, or Apple QuickTime* formats.
- You may submit any digital image format either via email at media@hornblasters.com, or via digital media (CD, DVD, etc).
- Make sure to include some kind of personal information with your submission. We would love to be able to contact you and thank you!

*Windows, Windows Media, Real, Real Media, Apple, and QuickTime are all registered trademarks and copyright of their respective owners.

# Get Involved In The Train Horn Community

No matter what your take is on your new train horn kit it's always good to have someone to share your stories with. TrainHornForums.com is the largest train horn community online and provides a place to share photos of your ride, post videos, catch up with other train horn and HornBlasters fans, meet other train horn enthusiasts, or even find help with a complicated question.
Go online to www.TrainHornForums.com and sign up today!

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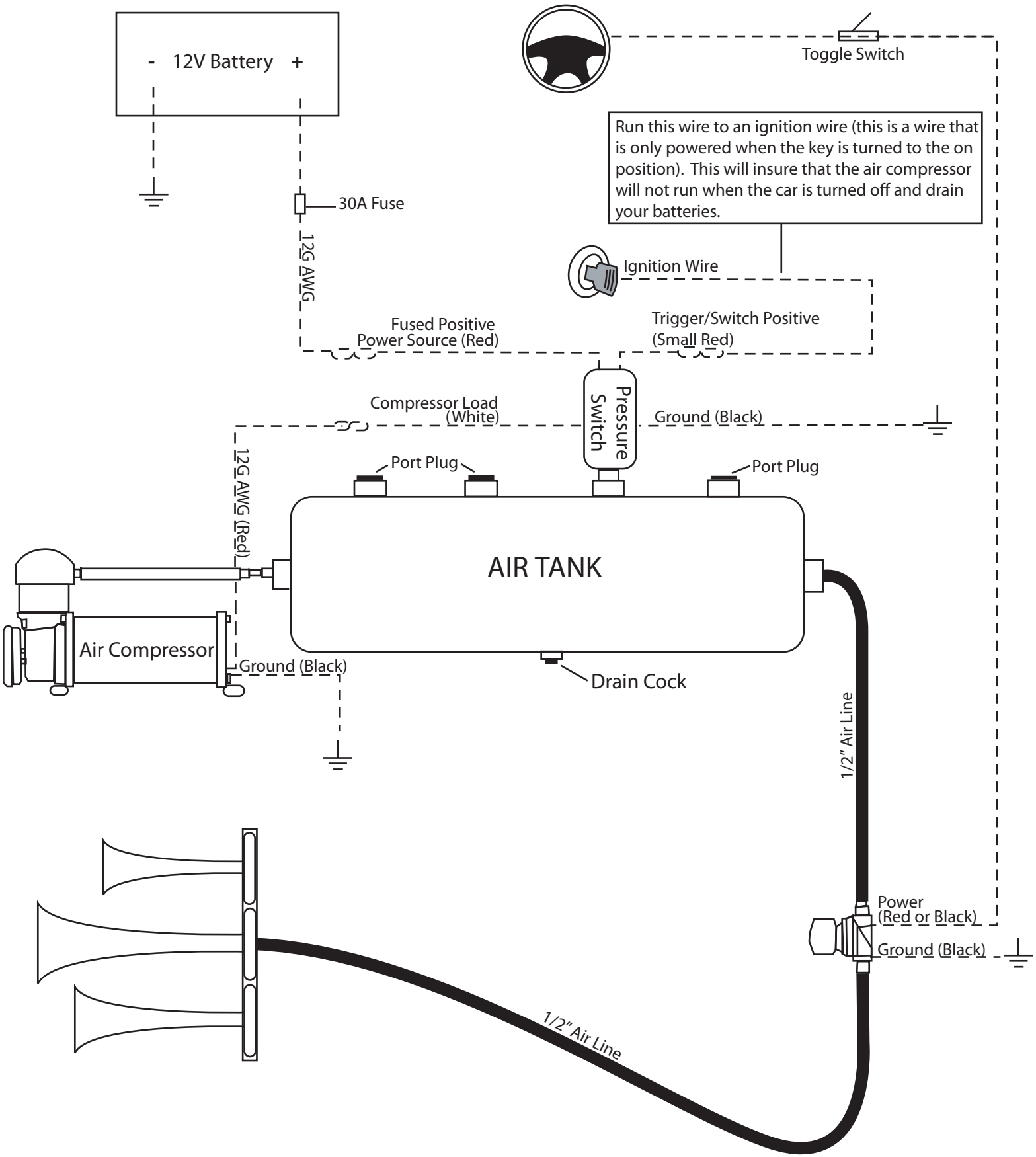
## 5 Gallon Nathan AirChime K3 Installation Diagram





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