KLM 16700
-16717

Torsion Axle Air Ride Installation Instructions Tandem or Triple

Installation

1. Place the trailer on a level surface. Jack the trailer up around 8” and place jack stands under all four corners. It is also recommended to use the jacks on the front of the trailer to help support the trailer.
2. Using a tape measure, measure forward from the front axle around 24” somewhere on the bottom of the trailer. Use a center punch to mark this measurement. Make sure to do this on each side. You will need this mark later to ensure that the axles are in the same place once the air ride sub frame is installed. Remove the tires, cut the brake lines (if electric, if hydraulic unfasten them) and remove the axles.
3. If the axles were bolted to a mounting bracket, take a torch and cut off the factory hangers from the trailer frame. Use extreme caution not to start a fire. Wood floors, hay from horse trailers can start a fire very quickly from the sparks from a torch or plasma cutter.
4. Now, cut the brackets off the axle. Try and stay away from the tube around 1/4-3/8”. This will help keep the heat off the axle. A cut off wheel or hand saw works best, but if those are not available, when using a torch or plasma, make sure to spray lots of water on the axle tube to keep it cool.

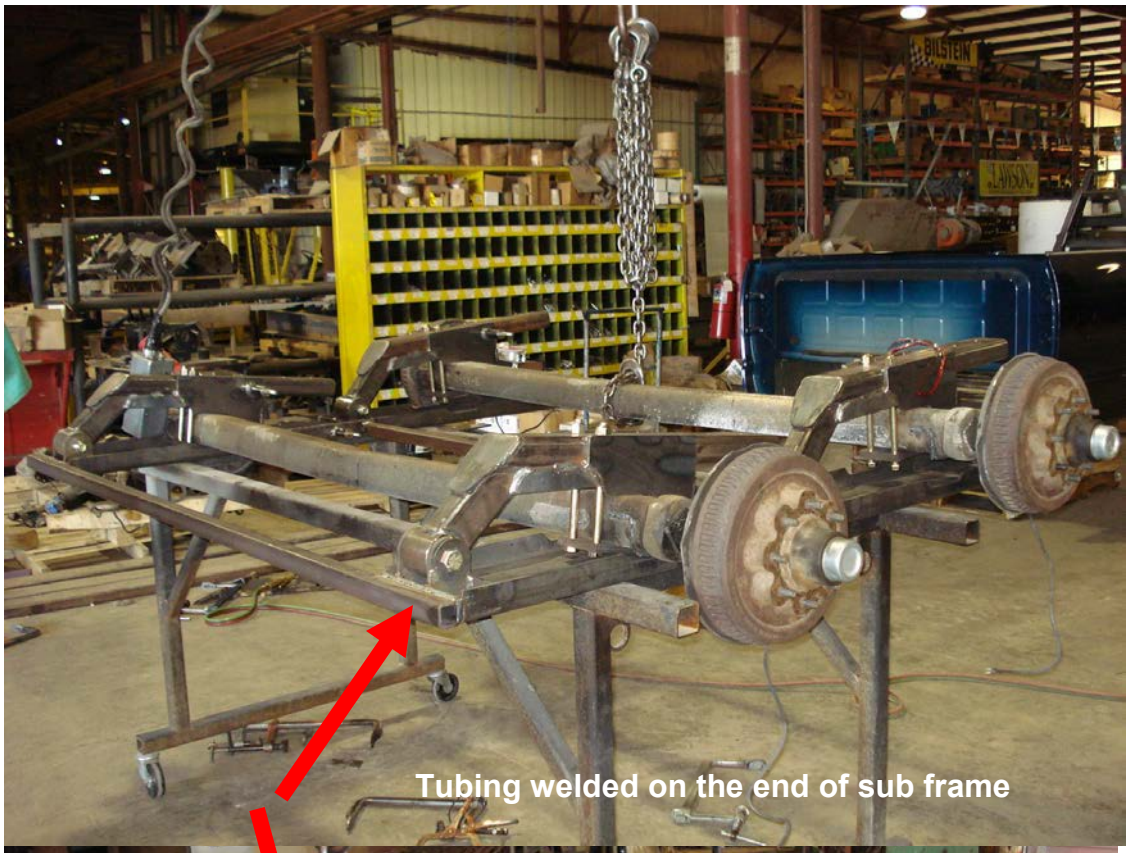
Old brackets cut off the axle

Make sure to keep cool when cutting

5. Locate the upper air ride framework. It works best to lay the framework on a set of saw horses. Measure the inside of the

axle “dog bones”. Also measure the trailer framework. Use these measurements to give you a starting point to know how far to lay the left and right framework apart. Next locate the swing arms. You can tell the difference between the right and left hand sides by placing the shock mounts towards the inside. The swing arms fasten into the upper framework mounts with the 7/8x5” bolts. The axles fasten into the swing arms with the 5/8x__” bolts. Do not tighten all these bolts until you have both axles (or three axles if it’s a triple) in place. Take a tape measure and measure from corner to corner to make sure your framework is square. It also works good to cut a couple of pieces of square tubing or angle iron and weld on the front and back sides of the upper air ride framework. This will keep things in line when taking the framework off the sawhorses, flipping it write side up and positioning it under the trailer.

6. Once you get the framework lined up, axles and swing arms tightened up you can install the air bags and shocks. Insert the air fittings in the air bags and fasten them into the upper framework with the 1/2” nuts and lock washers. Use the 3/8x__ bolts to fasten the bottom of the air bag to the swing arms. Use the 1/2” nuts and washers to install the shocks. NOTE: Make sure to use a couple of straps to collapse the air bags and hold the swing arms to the upper air bag framework. This will make turning the sub frame over much more manageable.

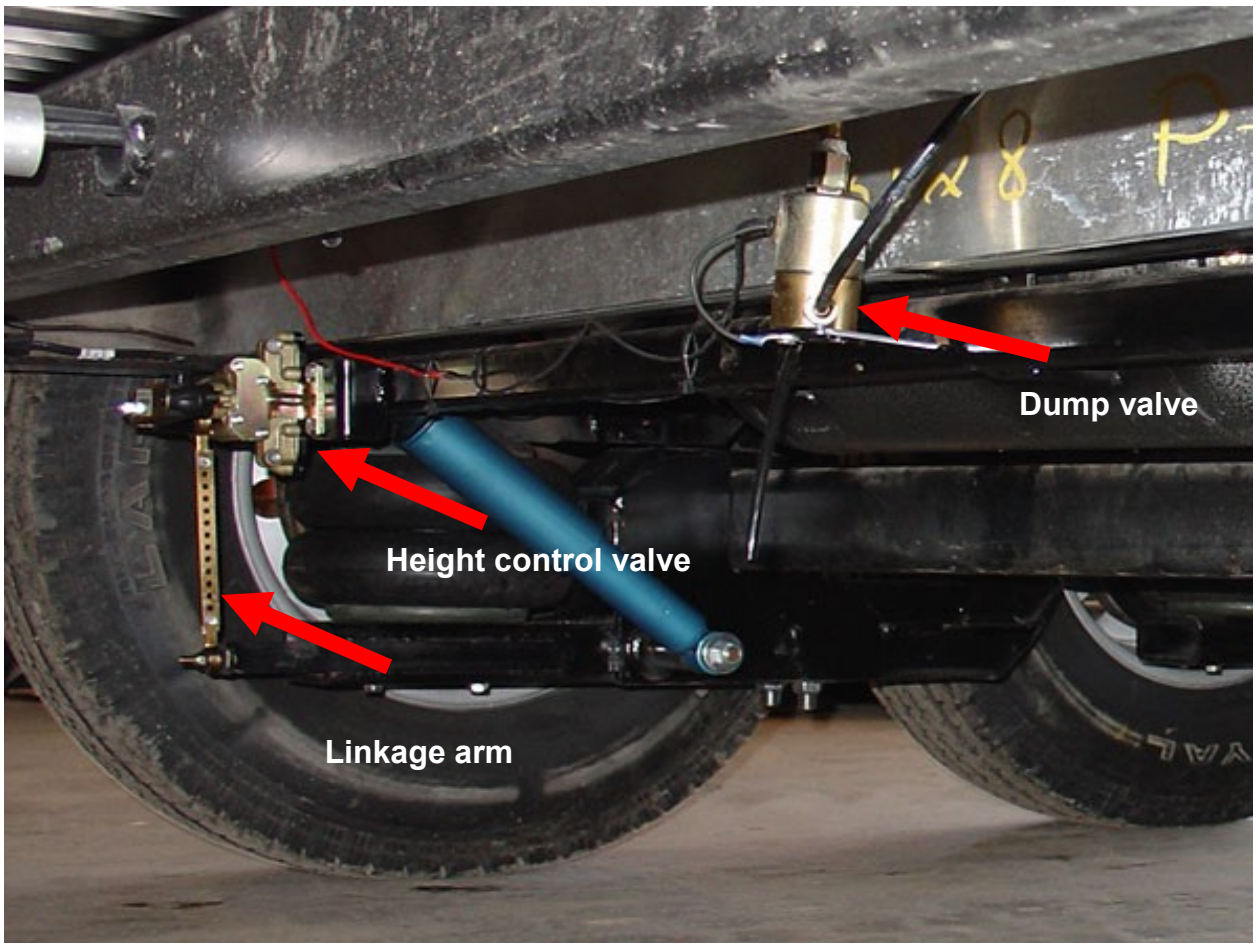


Tubing welded on the end of sub frame

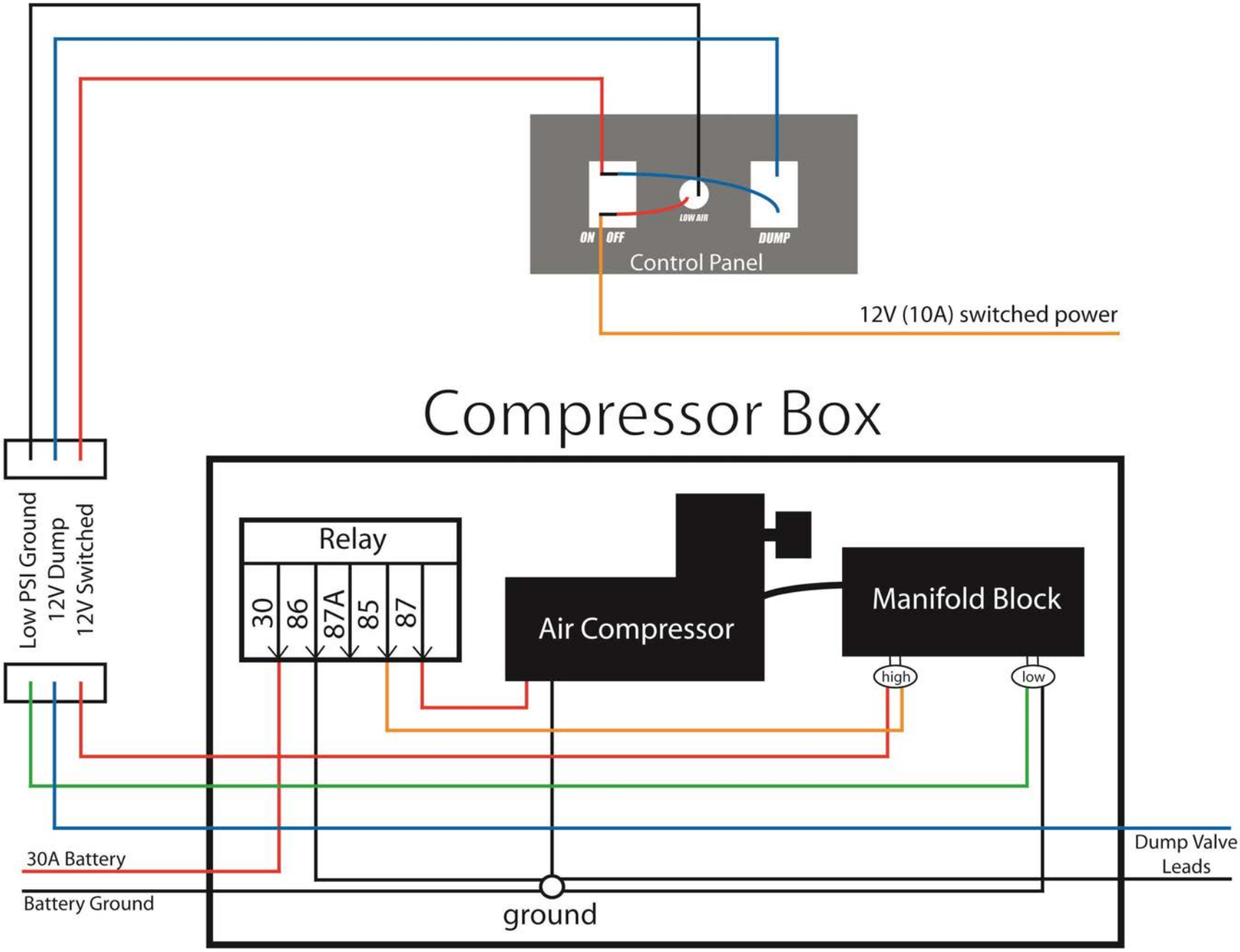
Completed sub frame ready for install

7. Slide the sub frame under the trailer. It is very important to center up the axles side to side as well as forward and back. Use the mark on the frame that you made before you removed the front axle to locate where the sub frame located in regards to the front axle placement. Once you get the sub frame in place weld the sub frame to the trailer frame. You don't have to weld it solid. Staggerd four to six inch welds are fine. If the trailer tires have been showing any type of unusual wear, we recommend dropping a plum bob off the front gooseneck, marking the spot on the floor and measuring from this spot to the corners of the front axle. This will make sure the axles are aligned correctly with the pull point of the trailer.

8. Reconnect the brake lines. Make sure that there is adequate slack in the wiring if the trailer uses electric brakes. If the trailer has hydraulic brakes, make sure there is additional slack in the rubber brake lines. The axle will have nearly 6 inches of travel from air bags deflated to topped out.
9. Locate the compressor box. It works well to mount this on one of the legs of the landing gear. You can make a steel bracket to weld to the landing gear and then bolt the box to the bracket. If you don't want to mount the compressor box there, you can bolt it on a storage compartment or to the front area of the trailer. Next locate the air tank. It can be mounted pretty much anywhere on the trailer.
10. Locate the control panel. The factory likes to mount it on the drivers side somewhere near the battery box so that the driver can have easy access to the dump valve when you get out of the truck. Use the wiring diagram to hook up the wires. We recommend turning off the system when the trailer is not in use. This will prevent the compressor from running the battery down when not in use.
11. Locate the height control valve. It works best to hook the height control valve to the rear axle on a tandom trailer and the middle axle on a triple. You will need to weld the upper bracket in place so that the height control valve arm does not hit the bottom of the floor when in the dump position. The bottom bracket (3/8x1" steel bent 90 degrees) will weld to the bottom swing arm. The linkage that goes between the height control lever and the lower bottom bracket will have to be trimmed to fit. Set the length of the linkage so that the air bag is 8" tall.



12. Locate the dump valve. This is can be mounted anywhere under the trailer near the height control valve. Either one of the black wires must be grounded so keep that in mind when mounting it. The other wire hooks into the red wire coming from the compressor box.
13. Use the diagram to wire up the rest of the compressor box


ON
OFF
LOW AIR
DUMP
Control Panel
12V (10A) switched power
Compressor Box
Low PSI Ground
12V Dump
12V Switched
Relay
30
86
87A
85
87
Air Compressor
Manifold Block
high
low
30A Battery
Battery Ground
ground
Dump Valve
Leads

Compressor Box Self-Leveling Kit Wiring Diagram
(shown with optional dump valve)