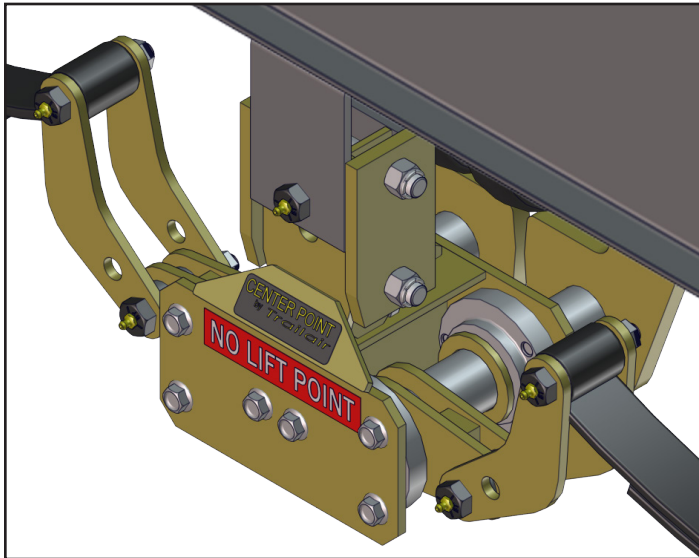




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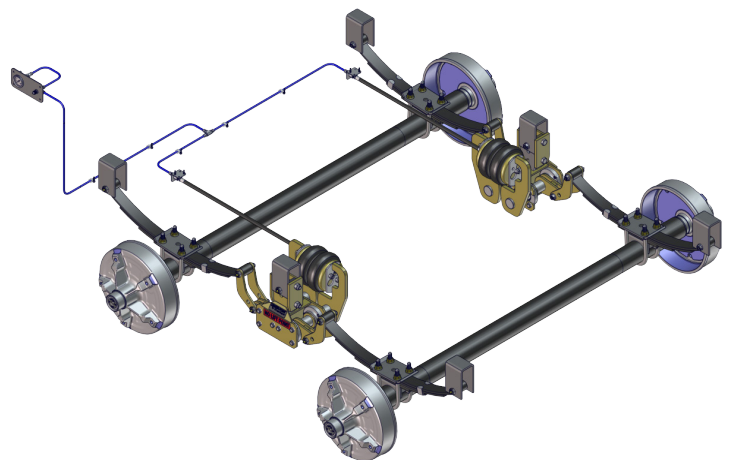
**Center Point® Tandem
Axle Equalizer by Trailair®**
Installation and Owner's Manual
(For Aftermarket Application)



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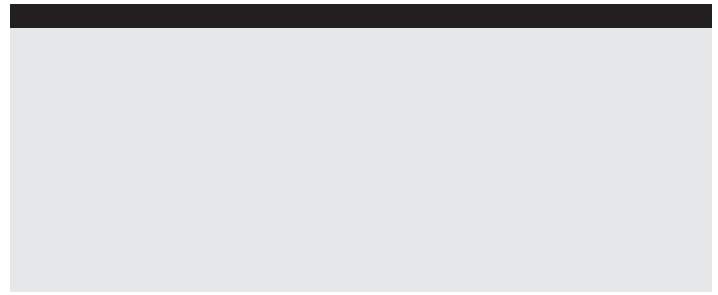
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Introduction

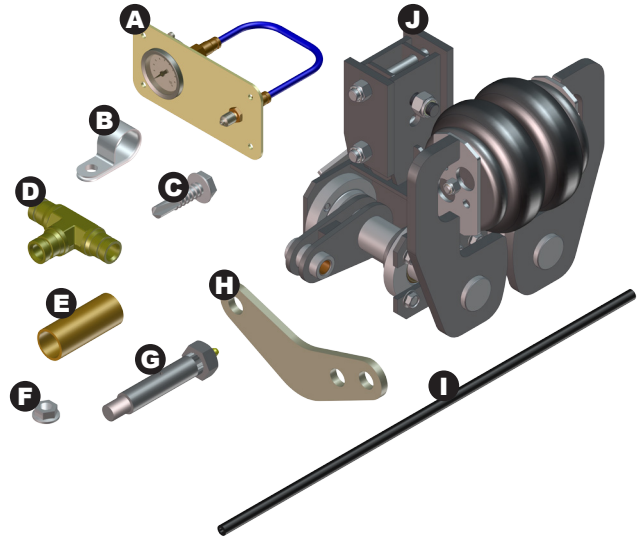
Over 85 percent of all semi tractors on the road today have some kind of air ride suspension. Shouldn't your towable RV have the same kind of ride? The answer is YES, and now you can do it affordably with the Center Point Air Ride Suspension System.

Our Center Point suspension system absorbs impact caused by road shock and provides a smoother ride and optimum brake efficiency. It's easy to install and dramatically improves passenger comfort and reduces side-to-side trailer sway.

Quick Facts

- Airbag absorbs road shock and vibrations from both axles simultaneously and without delay.
- Dampens road shock more effectively than torsion axles.
- Protects your RV and cargo by absorbing road shock.
- Dramatically improves braking distance in panic stops.
- Improves the overall ride and reduces driver fatigue.
- Retrofits to current suspension.

Parts List



Letter	Part#	Description	Qty
A	167545	Center Point Air Kit	1
B	133684	1/2" Wire Clip	6
C	157460	Self Tapping Screw	12
D	156470	1/4" Tee Fitting	1
E	126171	Bronze Bushing	8
F	122103	Flange Nut	14
G	126238	Wet Bolt	14
H	143937	Shackle	8
I	156471	Air Hose	1
J	155967	Center Point Sub-Assembly	2



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Preparation

1. For a standard installation, the coach must also come equipped with the standard center hanger shape. The hanger may vary in dimension but it must be sized for a 1 3/4" leaf spring width, be at least 2.5" from the equalizer hole to the top of the hanger and be 3" wide or wider.

NOTE: If the coach is not equipped with this style hanger, you may be able to do a non-standard installation (see corresponding section) or you may have to remove the old hanger from the frame and install a standard center hanger.

2. After safely raising the coach to a level that ensures the tires are off the ground, properly position jack stands to support the coach (**Fig. 1**).

⚠ WARNING

ENSURE THAT ANY POINTS OF CONTACT FOR THE STANDS DO NOT RESULT IN DAMAGE TO ANY PANELS OR LINES UNDER THE COACH. IMPROPER RAISING OR LOWERING OF THE COACH COULD RESULT IN DEATH, SERIOUS INJURY, OR DAMAGE TO THE COACH.

3. Remove the tires and wheels from the coach. The suspension should be free from any loads, except its own weight at this point. Place another set of jack stands under the axles, very close to the u-bolt plates. This will provide support to the axles and ensure that they do not swing down during disassembly of the shackle components.

NOTE: Allowing the axles to drop could result in damage to the wiring for the electric brakes.

4. With the coach properly raised on jack stands and the axles properly supported by additional jack stands, remove the two shackle nuts (**Fig. 2A**) on the shackle at the rear of the front spring.

NOTE: The bolts are pressed into the shackle plate and should not turn. However, use a properly sized boxed end wrench to ensure the bolts do not turn during the disassembly of the nuts.

5. Once the nuts and the plate retained by the nuts are removed, slide the opposite side shackle plate out, with the bolts still pressed into the plate. After removing the front spring's shackle at the equalizer, repeat the process for the shackle that mates the rear spring to the equalizer. Also, remove the nut on the cross bolt for the equalizer (**Fig. 2B**). Again, the bolt may be pressed into the frame hanger and should not be allowed to rotate. Then remove the equalizer.

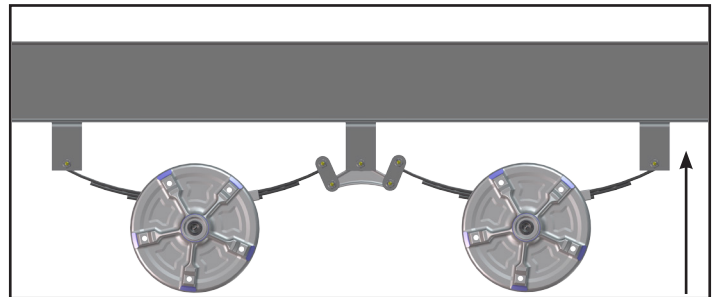


Fig.1

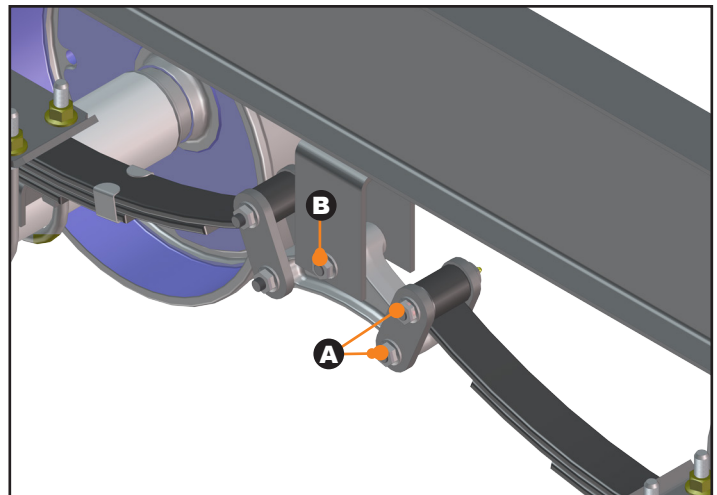


Fig.2



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NOTE: LCI recommends replacing the old bushings in the leaf spring eyes before installing the center point system. Eight (8) replacement bushings are provided by LCI, (4) for each side.

6. Before installing the Center Point system, it is necessary to prepare the sub-assembly for installation. Place the Center Point sub-assembly on a flat, hard surface.

7. There are a wide variety of equalizers being used throughout the industry. Due to the fact there are so many, it is normally necessary to replace the original shackles with longer ones. LCI provides 2 sets of shackle plates (4 plates each) that offer two different length settings as well as (14) replacement shackle bolts and (14) flanged nuts. If the original shackle measures between 3" and 4", use the short set of holes on the replacement shackles (**Fig. 3**). If the original shackle measures longer than 4", use the longer set of holes on the bracket (**Fig. 3**).

8. Starting on the left side of the assembly, dry fit one of the provided shackles onto the front of the sub-assembly's cross-shaft shackle links (**Fig. 4**).

9. Insert the provided wet bolts through the shackle and the cross shaft shackle links. Fit the back shackle onto the assembly and finger tighten the flange nut onto the wet bolt. Repeat this preparation process on the right side of the sub-assembly.

10. The sub-assembly is now prepared for installation. Place the Center Point sub-assembly on a floor jack. It is suggested that a floor jack support the Center Point sub-assembly during this operation. The floor jack allows mobility, along with an ease of slowly raising the Center Point sub-assembly into position to install the retaining cross bolt into the frame hanger.

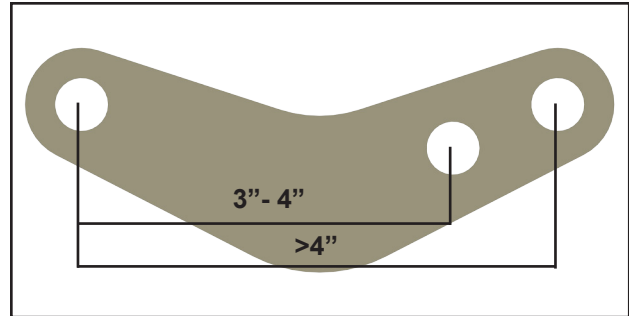


Fig.3

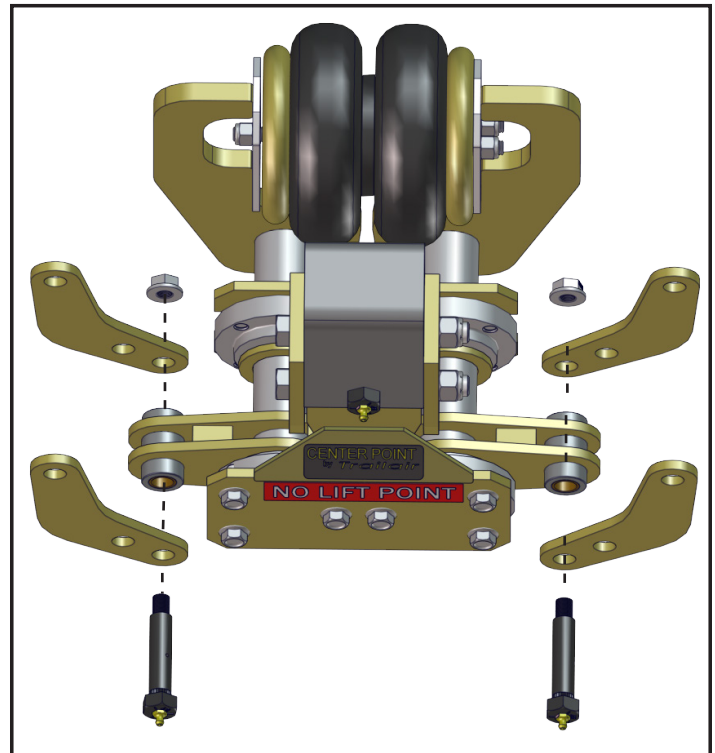


Fig.4



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Installation

Standard Hanger Installation

1. Raise the sub-assembly to the frame hanger (Fig. 5) and insert the cross shaft bolt (Fig. 6A).

NOTE: When inserting the cross shaft bolt, make certain that the sub-assembly air bags do not rub against the I-Beam or any part of the frame.

NOTE: Do not remove the jack until the sub-assembly is fully installed onto the frame.

NOTE: Installation may be made easier by jacking up the respective axle in order to relieve pressure and to make it easier to manipulate the leaf springs.

2. Thread the provided wet bolts through the top end of the shackle, through the leaf spring eyelet and through the back shackle. When the bolts slide easily in the shackle link, install the nuts to retain the shackle assembly (Fig. 6B).

3. Tighten the side clamping plates (Fig. 6C) on both sides of the hanger and sub-assembly.

4. Repeat this process on the other spring. After securing all shackle nuts and bolts to proper torque levels (30-50 ft-lbs), the opposite side of the coach is ready for the same procedures.

5. Repeat the operations above to install the opposite side.

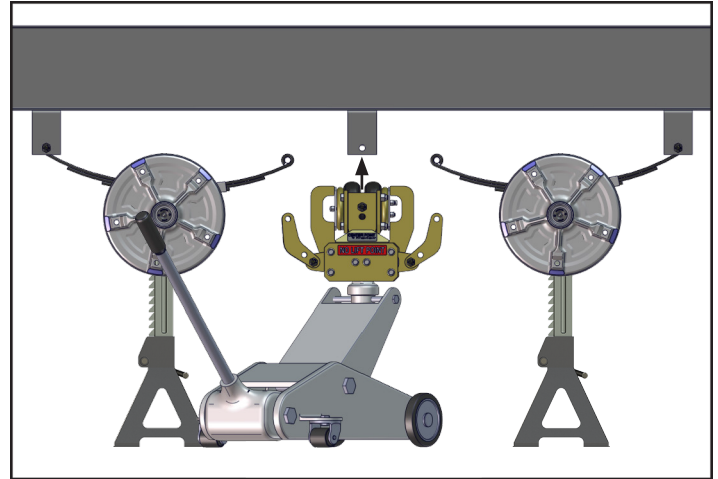


Fig.5

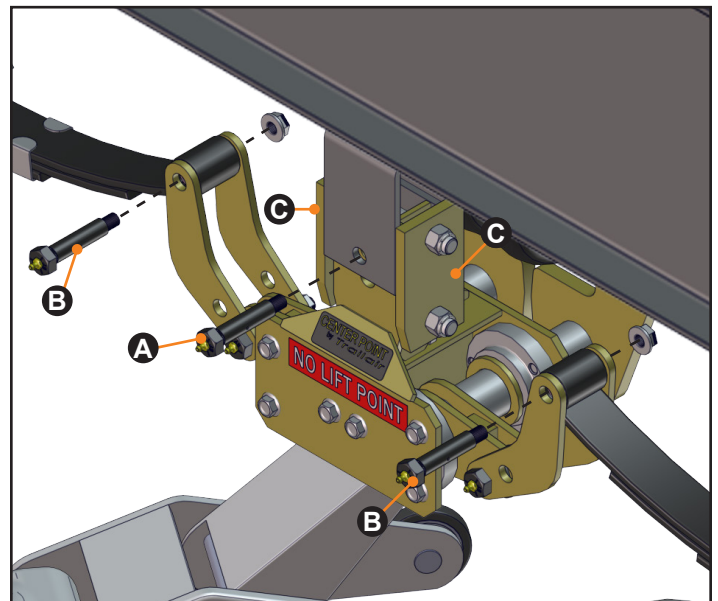


Fig.6



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Non-Standard Installation

In specific cases where the side clamping plates cannot be used with a non-standard size center hanger, an alternative mounting may be possible. The Center Point 2 sub-unit is designed with two crossholes in the tower to give Center Point an additional inch in height adjustment. Both holes can be used for mounting cross bolts (although not needed in a standard installation). If the Center Point 2 sub-unit will fit inside the hanger, and the hanger is tall enough, the sub-unit may be mounted without the side clamping plates if (2) crossbolts are used instead of (1).

NOTE: An additional pair of $\frac{9}{16}$ " x 12 x 3" grade 8 bolts with nylock nuts will be needed.

NOTE: The additional hole in the center hanger of the coach frame will need to be drilled and will correspond with the secondary adjustment hole (**Fig. 7**).

1. Once the Center Point sub-assembly is properly positioned and the mounting holes are aligned, install the retaining cross bolts (**Fig. 7A**) provided on the tower of each sub-unit. This bolt will have to be inserted from the outside inward.

NOTE: The air spring on the Center Point sub-assembly prevents this bolt from being inserted from the inside side of the coach.

2. You may now tighten both the retaining plate bolts and the cross bolt. Torque these bolts to 30-50 ft/pounds.

NOTE: If either the side clamping plates or the (2) crossbolt method cannot be used because of the size and/or shape of the center hanger, it is recommended that the frame hanger first be changed to the standard size hanger.

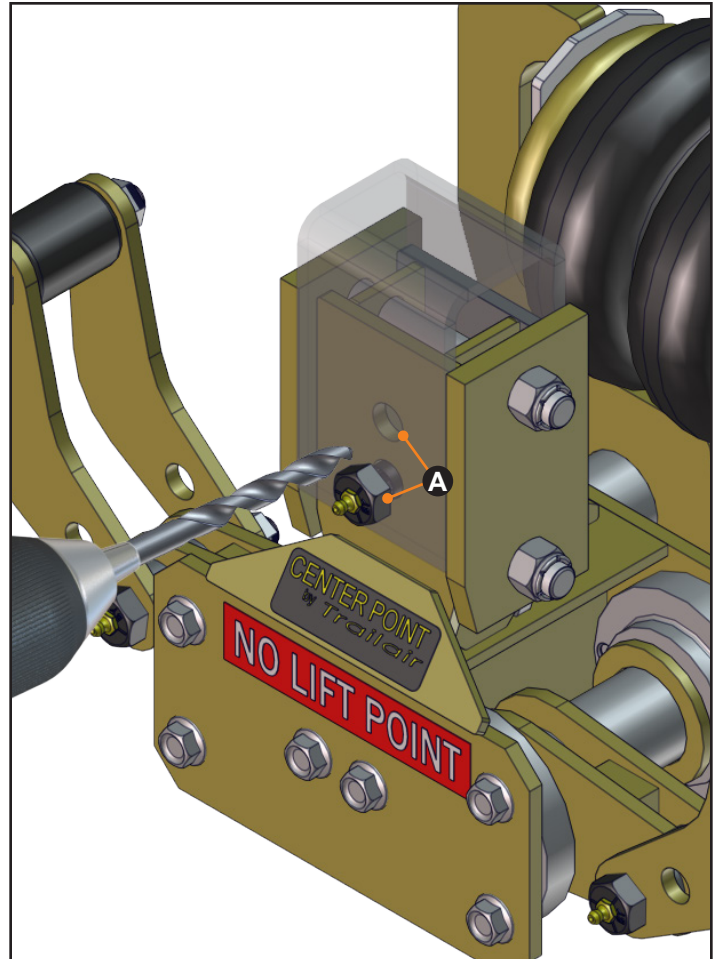


Fig.7



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Plumbing

Once both Center Point sub-assemblies are installed onto the frame, the air supply lines must be routed. Before planning the air hose routing and placement, verify there are sufficient clearances for the air springs. The air springs already have the air hoses installed and only the loose ends need secured.

1. In order to ensure there is sufficient slack in the air hose, the clip placement is critical. The air spring will cycle forward and aft as much as 5" during the operation of the suspension in its reaction to extreme road conditions. Therefore, the clip must be secured on the frame with enough slack to allow the necessary movement. It must also be located so that the hose does not contact the air spring or any other moving parts of the suspension. There are (4) self-drilling, self-tapping screws provided to attach the clip, (2) per clip.

2. After choosing a sufficient location for the clips, use the self-tapping screws provided to attach the clip to the I-beam.

3. After carefully considering the placement and routing of the air lines to the desired location of the air gauge panel, the poly air lines may be installed. To assist in routing the poly air lines, there are (6) nylon clips, self-drilling/self-tapping screws and wire ties provided. A union tee is supplied for joining the two air lines under the crossmember of the coach. Please refer to **(Fig. 8)** and **(Fig. 9)** for air line supply routing guidelines.

NOTE: All air lines are DOT approved air brake quality suitable for commercial industry applications. The poly air lines must be cut square and true in order for these fittings to function properly and retain air pressure.

⚠ WARNING

DO NOT DRILL THROUGH ANY PANELS UNDER THE COACH UNTIL ASSURING THERE IS NOTHING THAT WILL BE DAMAGED.

NOTE: There are holding tanks, water lines and possibly gas lines all mounted within the frame rails of a coach.

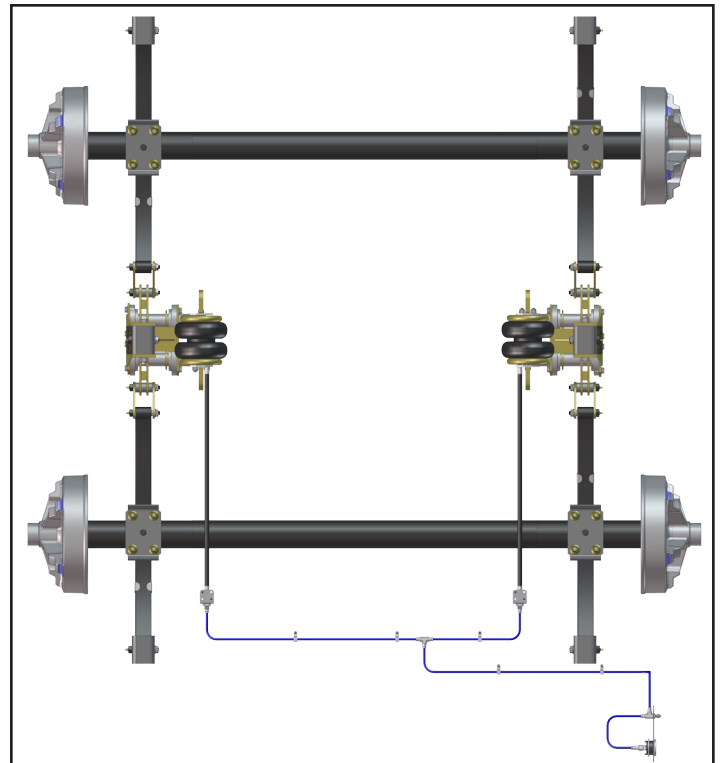


Fig.8

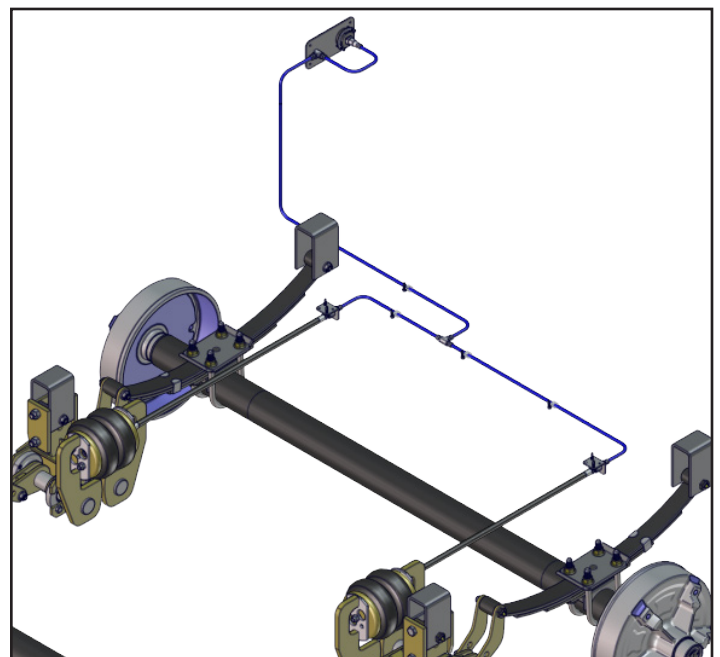


Fig.9



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Panel Application

The choice of the location of the air gauge panel is up to the owner/dealer/installer. LCI makes no recommendations other than to place it where it will not inhibit the operation of the system and will provide an opportunity to visually check the system pressure easily. External mounting is the preferred method of LCI, however, the owner may prefer mounting within a compartment. The assembly consists of the panel mount plate, the air pressure gauge with female connector, and the access fill valve.

1. Carefully check to ensure there are no obstacles or any components that may incur damage while cutting holes, routing the poly air lines or mounting the panel mount plate.
2. Determine the location of the assembly and, with a suitable tool, cut a $4\frac{1}{2}'' \times 1\frac{3}{4}''$ opening for the air gauge and the fill valve (**Fig. 10**).
3. Place the assembly into the opening, level and square the assembly, and mark the four hole locations to mount the panel.
4. 4. Install the assembly using (4) self-tapping screws through the holes in the panel.

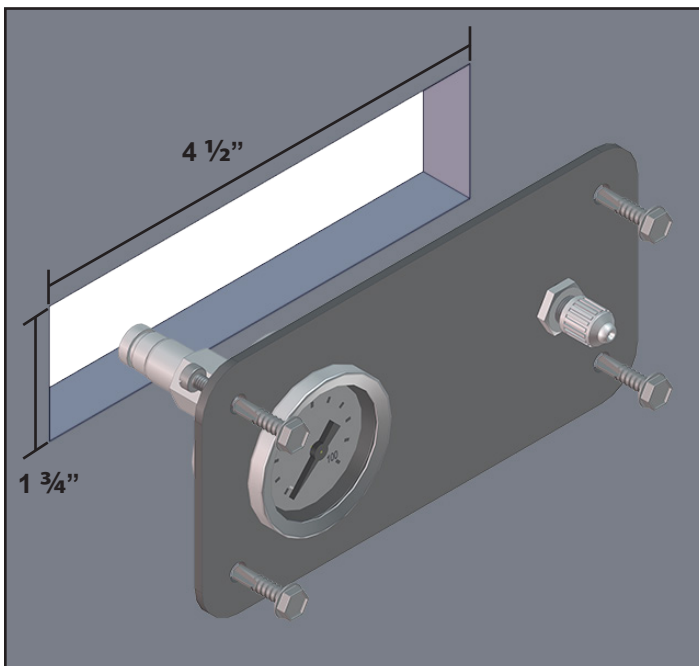


Fig.10

NOTE: Air pressure levels should be 5 psi per 1,000 pounds of coach weight at 70 degrees ambient temperature. This will vary according to individual personal belongings and effects that the owner wishes to place in the coach.

NOTE: The easiest way to determine proper air pressure needed is to inflate until plates are parallel, or there is 5" between them (**Fig. 11**).

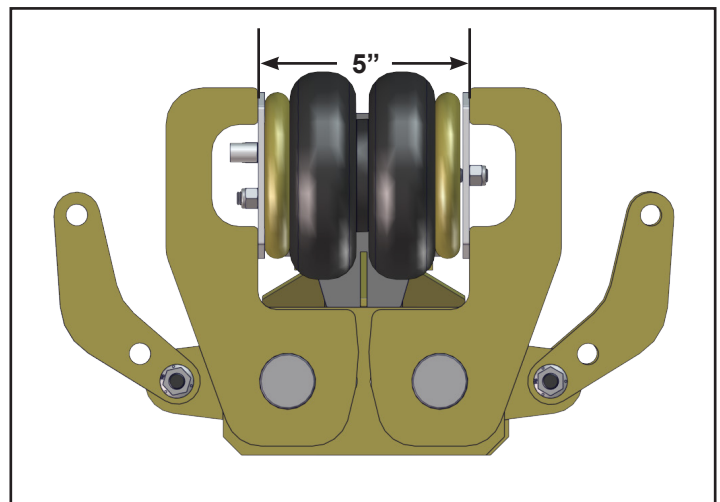


Fig.11

NOTE: Once a satisfactory air pressure (yielding a compliant ride for the coach) is established, the air pressure gauge will allow quick and easy verification of operating pressure levels. Always make sure the fill valve cap is secure so that the seal in the cap will function properly and assist in sealing the system. Keep in mind that three natural factors will affect the air pressure in a self-contained air system.

NOTE: The following conditions will cause the air pressure reading in the gauge to fluctuate more than 2-3 psi up or down from the conditions the coach is set at upon installation:

- A. A change in altitude of 3,000 to 4,000 feet or more.
- B. A change in temperature of 50 degrees or more.
- C. 500 pounds or more of weight differential.



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What does that mean? If one or more of these conditions change for a prolonged period after the initial installation, an adjustment to the air pressure may be required. If these are temporary fluctuations, changes in the air pressure are most likely not needed.

NOTE: Once the coach is moved, the air spring may return to a position other than centered. This is not abnormal. It only illustrates the fact that the axles are reacting to torque of acceleration, deceleration or turning input. The only way to return to an absolute centered position of the air spring is to lift the coach and allow the axles to seek a neutral condition, having no residual torque input.