

Correct independent suspension installation and alignment is essential to efficient towing performance of any trailer or caravan. Installing and aligning the trailer or caravans' independent suspension correctly will ensure minimal tyre wear and optimal towing, ultimately resulting in more comfortable, cost-effective, and safer towing.

INSTALLATION REQUIREMENTS

For correct installation, two cross members are required to give support to the independent suspension. These cross members should be aligned with the front and rear members of the independent suspension's top arm. The independent suspension is welded to these two cross members as per Figure 1 below.

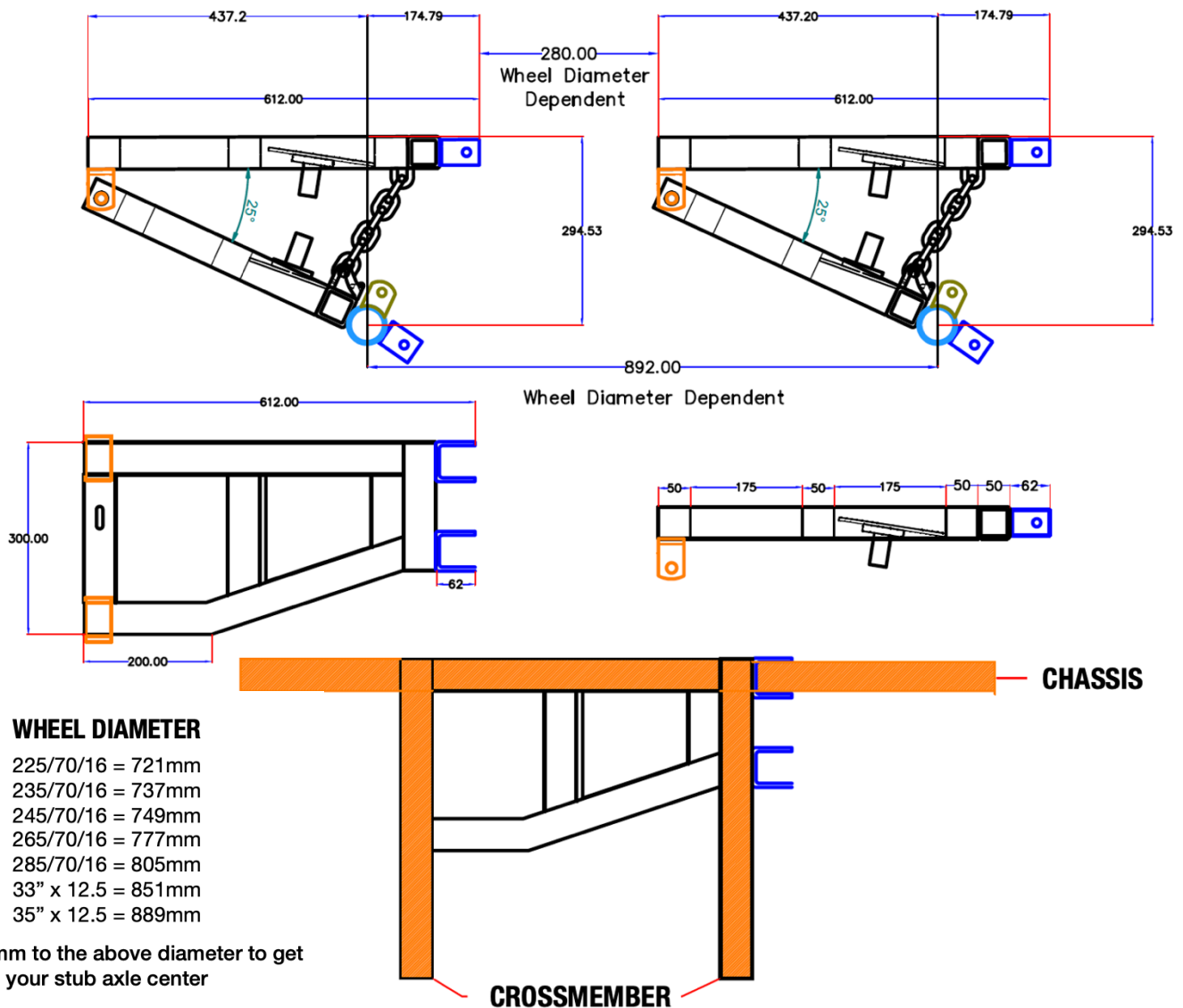


Figure 1

Suggested measurements for tandem installation are also indicated in Figure 1 above, depending on wheel diameter.

AXLE ALIGNMENT

The below procedure shows how to install and align the Couplemate Independent Suspension.

1. Raise the trailer/caravan chassis into the air such that there is enough clearance to install the independent suspension frames.
2. Manoeuvre the independent suspension into position for installation. The wheel or hub centre should sit approximately 57-60% along the bed of the trailer from the front (See figure 2). A cross member should sit parallel and in line with the front member of the independent suspension. A cross member should also sit parallel and in line with the rear member of the independent suspension (See figure 3). The outer member of the independent suspension should sit parallel with the outer chassis rail (see figure 4). The suspension frames can be temporarily clamped to the chassis rail or cross members using G clamps or the like.

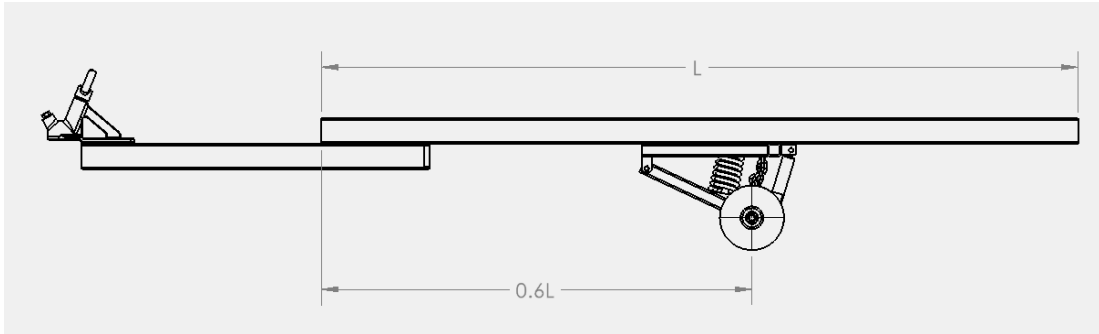


Figure 2

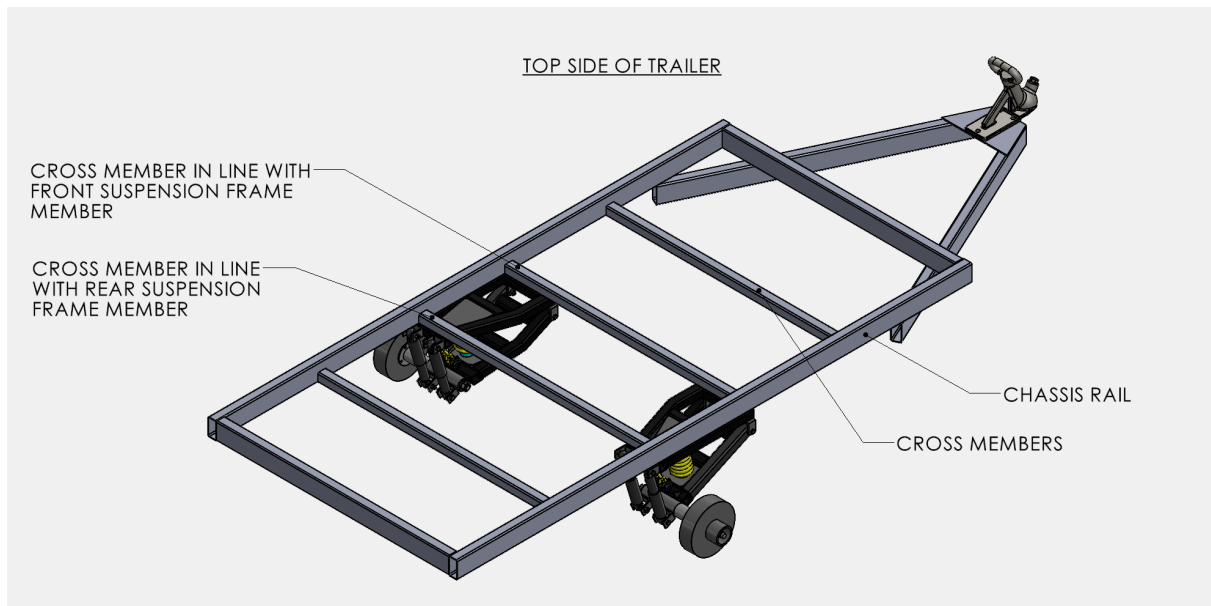


Figure 3

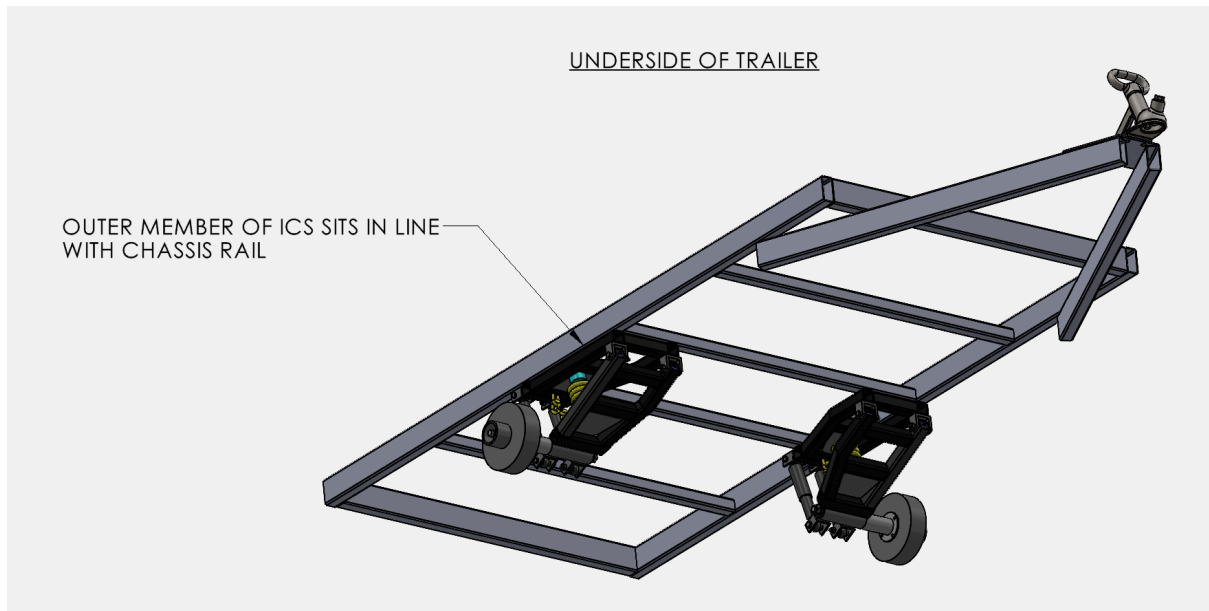


Figure 4

3. Once the suspension frames are temporarily fixed to the trailer chassis, alignment can begin. Attach a device to locate the center of the coupling (this could be a weight attached to a string which is tied through the adjustment screw of the coupling). This will be the primary measurement point.
4. Refer to Figure 5. Measure distance L and M to obtain the distance from the center of the coupling to the tip of the axle or drum. This measurement must be accurate – ensure no droop in the tape measure and do not use elastic string.
- 5.

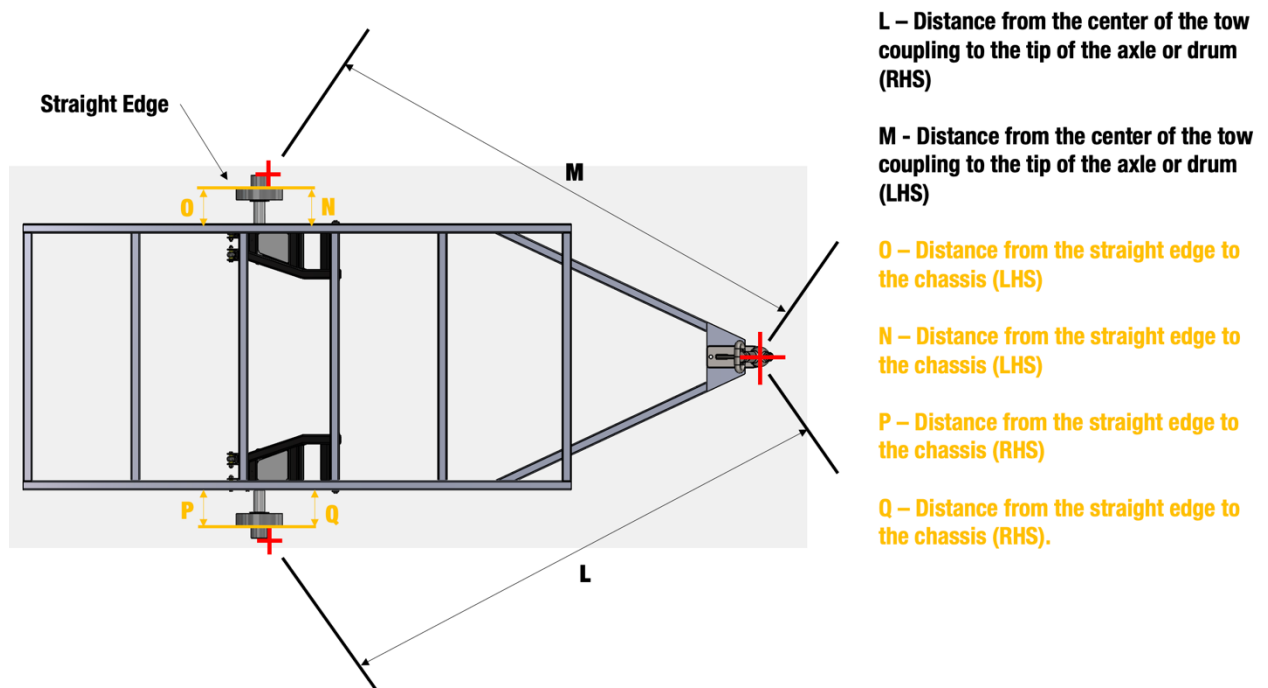


Figure 5

6. If distance M is within 4mm of distance L, move onto step 6. If distance M is 4mm greater or less than distance L, manoeuvre the independent suspension frames back and forth such that L and M are within 4mm of each other. Ensure that the independent suspension frames still align with the cross members of the trailer – this will be a welding point. Ensure that the suspension still sits approximately 57%-60% along the trailer from the front.

7. Place a straight edge along the face of the drum/brake. This straight edge should be at least 1m long. Measure distance O and N. If O and N are within 1mm of each other, continue onto step 7. Otherwise, Manoeuvre the independent suspension frames such that O and N are within 1mm of each other. Do the same with measurements P and Q. If the suspension was moved in step 6, repeat step 5 to check that L and M are still within 4mm of each other.
8. Setting the toe-in. Refer to Figure 6. Using the straight edges, measure distance R and S. Manoeuvre the independent suspensions such that distance S is 3mm shorter than distance R. During this process, both the independent suspensions should be moved the same amount to achieve the 3mm difference. This is to ensure the toe-in is set equally on both left and right sides.

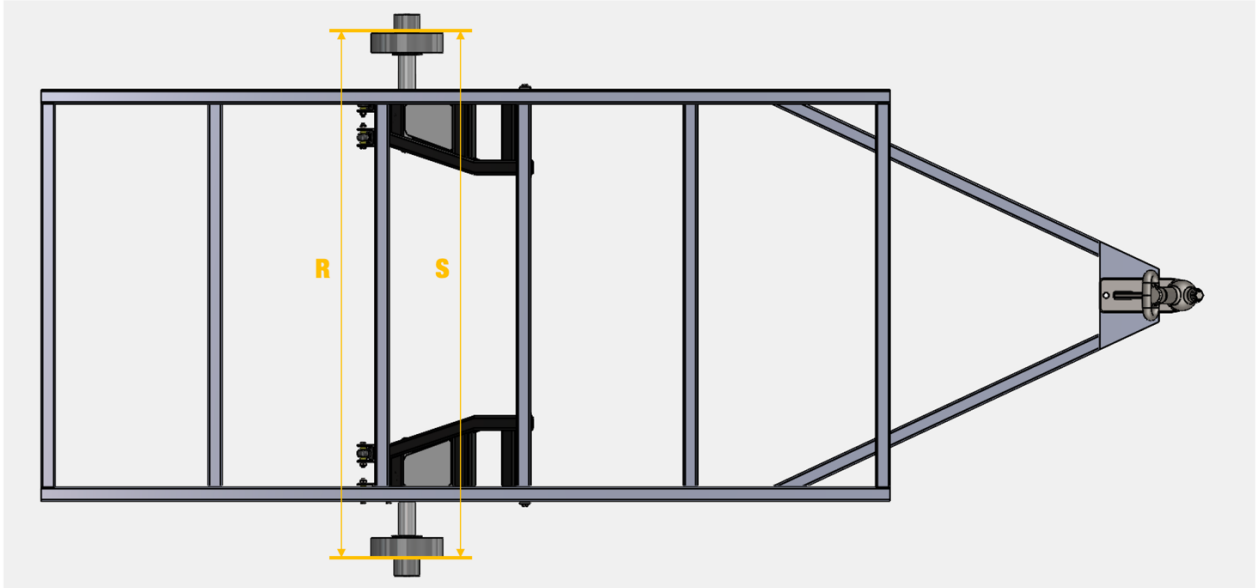


Figure 6

9. Weld along the chassis rail, and along the cross members a shown in Figure 7 and 8.

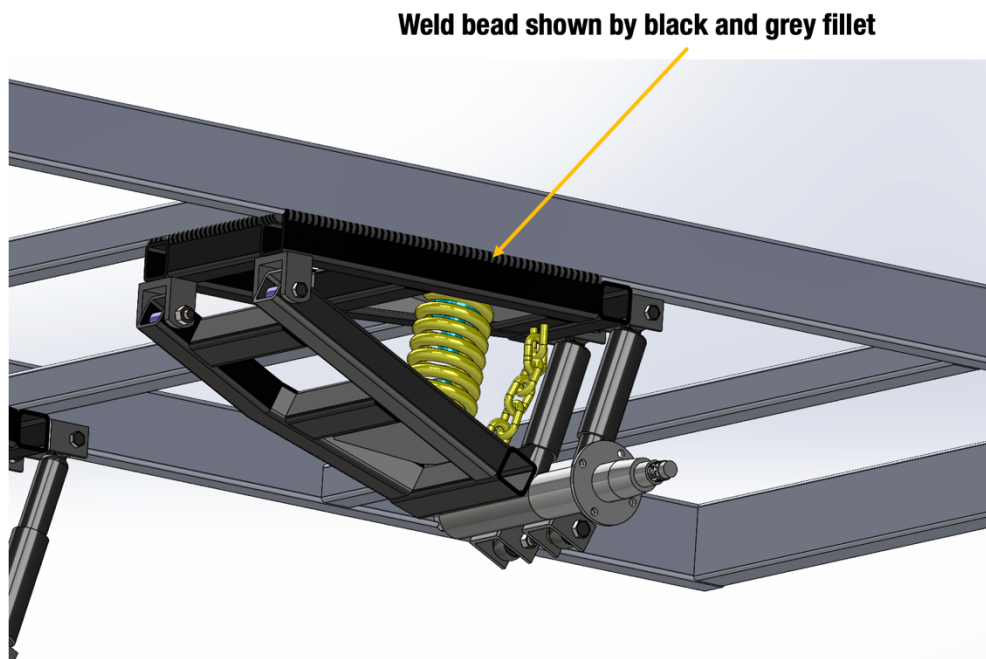


Figure 7

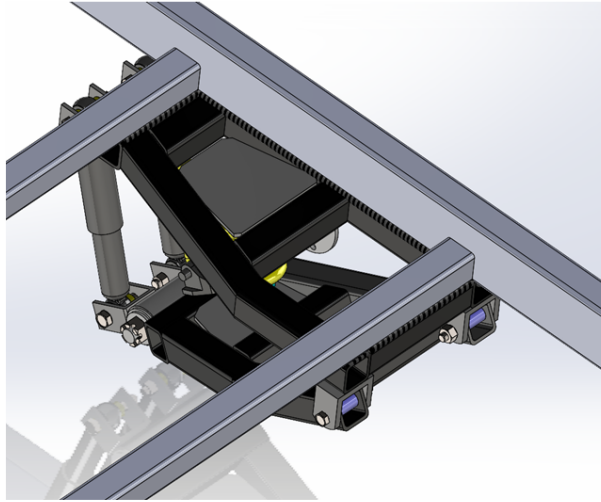


Figure 8

Important Note: If the independent suspension frames cannot be aligned to meet the criteria of distances L M N O P Q R S, likely the trailer chassis is considerably out of square. Consider checking the squareness of the trailer chassis.

Axle Alignment for a Tandem Axle Setup

The same procedure applies to installing an ICS tandem setup. The only difference will be the position in Figure 2. The centre of the axle group should sit at approximately 57%-60% along the bed of the trailer from the front. Extra cross members are likely needed to be welded to the trailer chassis to attach the independent suspension frames to. Do the above steps one axle group at a time.

RIDE HEIGHTS

The Couplmate Independent Coil Suspension runs approximately 5.5" (139.7mm) higher than a standard spring and beam trailer leaf spring suspension. Couplmate offer three options for ride heights which operate at the following estimated measurements:

	BOTTOM OF FRAME TO CENTRE OF WHEEL	
STANDARD/STRAIGHT	270mm	245mm
OVERLAY	210mm	175mm
4" DROP	170mm	135mm
	Unladen	Laden

100mm should be allowed from the top of the wheel to the base of the mudguard.