

Fitting Instructions for Air Bag Load Assist Kit

LA31 – Next Gen Raptor



Make sure your work area is safe and that you do not get under a car that is not properly supported by jack stands etc. With this kit there should be no need to remove wheel or any suspension component except the bump stop.

Read these instructions prior to commencing and learn the tricks the easy way before you need to undo your work.

Air Bag assembly

- **The rings on the bags do rotate and you will need to align the top and bottom brackets by rotating the rings to ensure there is no twist in the air bag.** With very loose bolts securing each of the top and bottom end plate brackets, it is easiest to rotate the rings by twisting the brackets while there is virtually no clamping pressure. Raptor is close but not quite at 90 degrees.
- There are 6 bolts and washers which clamp the bag rings to the end plates. Do NOT tighten 1 bolt all the way up and then the next as the bags won't sit straight inside the rings. Start by doing every second bolt to finger tight, then the alternate bolts. Then tighten the first 3 to semi tight, then the alternate 3, then tighten each set 2-3 more times, alternating so even pressure is applied as you go. The rubber of the bag acts just like an O'Ring and should never leak when tight enough. No sealant, lube or anything is needed to seal the ends of the bags.
- Once tightened any curves or waves in the end of the bags are flattened out and do not cause leaks.
- Most kits come with the air fittings already seated into the end plates. If you need to fit air fittings a sealant is needed, despite there being what appears to be a white or grey thread seal on the fitting. We recommend liquid sealant as bits of plumbers tape eventually make its way to valves and create leaks.
- When cutting air lines, make sure you do not squash the air line in the process. You must not use side cutters, pliers or scissors. The best cutting device is the hose cutter we provided for free. Make sure ends are straight 90 degrees.
- The best way to check for leaks is submerge air bag with bracket assembly in water (refer to trouble shooting below) – doing this now before fitting to car can save a lot of time later when looking for a leak.

Fitting brackets to vehicle – do ONE side at a time.

1. There is no need to undo any suspension or separate any brake lines. Start by removing just the wheels to give you better access.
2. On both sides unbolt the brake line mount from chassis – this is just one 10mm bolt per side and do not separate or undo the brake line itself – you are just repositioning it. With the brackets supplied resecure the brake line using the same factory bolt and bolt hole – flat one goes on passenger side and folded one goes on driver side. There are locating bolts in our new parts that you will see just slide into the old chassis hole and that's just to stop the part rotating later.
3. Mount the lower brackets to the bags and do those bolts up as tight as you can by hand (20 Nm) with short 11mm spanner. Leave the top mounts loose so you can rotate the mounts and align the brackets in position then later do top bolts up tight
4. The top bracket clamps around the chassis. The air line fitting will be facing the back of the vehicle. You will need to unclip the brake line off the chassis to get the bracket up into place.
5. The square top hat bracket sits over the top of the chassis.
6. Make sure the brake and fuel lines are clear of clamping bolts. We have supplied our generic Line Protection kit so you can sleeve a line with rubber hose to protect lines from rubbing. Once protected by the sleeve clip brake line back into place.
7. There is a Z shaped mount on the axle with a loom clipped to it – about where the bolts go for the lower mount. Unclip the loom from that mount and gently tap that mount flat against the axle with a hammer. That way it is still there and can be used again later if you ever removed the kit. After you finish the lower bolts cable tie the loom to our bolt in that same position making sure all of the loom is happy.
8. The bottom brackets are V shaped and clamp around the axle using the bolts supplied same way as the top.
9. With the suspension at normal ride height make sure the lower mount is rotated on the axle such that it points straight at the top mount and the bag looks like it is sitting in a straight line. Do up both clamping bolts by alternating so they each have the same pressure so the bottom plate is not biased to one bolt more than the other. Because the under side of the axle is braced and slightly tapers down towards the diff the bolts and lower bracket piece will have a slight lean to them and that's normal.

It is the fitters and ultimately the owners responsibility to ensure there is no rubbing of tyres, air bags, brake or fuel lines etc.

Trouble shooting

You should not have leaks and can expect air to remain in the bags for a few weeks without refilling. It is near impossible to find a leak if it takes more than 3 days to leak out and only replacing fittings or refitting bags until the leak stops can solve such slow leaks. But if you have a bag that deflates in say less than 2 days then we stand a good chance of finding the leak.

The easiest but less successful method is temporarily pump up the bags until compressor will pump no more and spray soapy water on all air fittings including Schrader valve, end plates etc. It could take a few minutes for a small bubble to appear.

The most successful method of finding a leak requires more work and we suggest new instalts to do this step before fitting to car to save removing the kit afterwards. Inflate a bag and bracket assembly on the bench until it no longer expands any further. Submerge it all in a bucket of water including the air line and Schrader valve and any leak no matter how slow will present itself as a bubble.

Most common fault is the end plate bolts not being tight enough. Tighten them to 20 Nm or as tight as you can go with a 6" spanner (11mm) but tighten when there is no air in the bag. We use grade 8 Hi Tensile bolts so you will not break them with a spanner.

Other areas to check for leaks is the thread where the fitting goes into the end plate, where the hose goes into the air fittings or the Schrader valve. It is super rare that bag itself leaks. If bubbles appear between ring and inside edge of bag that is because the end bolts are not tight enough – and not the bag itself.

By the way AAA Suspension use 6mm air hose and all threads are BSP type.

The air fitting in the end plate is in the same location on every kit and even as it overlaps the rubber of the bag still works fine and even if the fitting protrudes through the end plate it still does not present a problem.

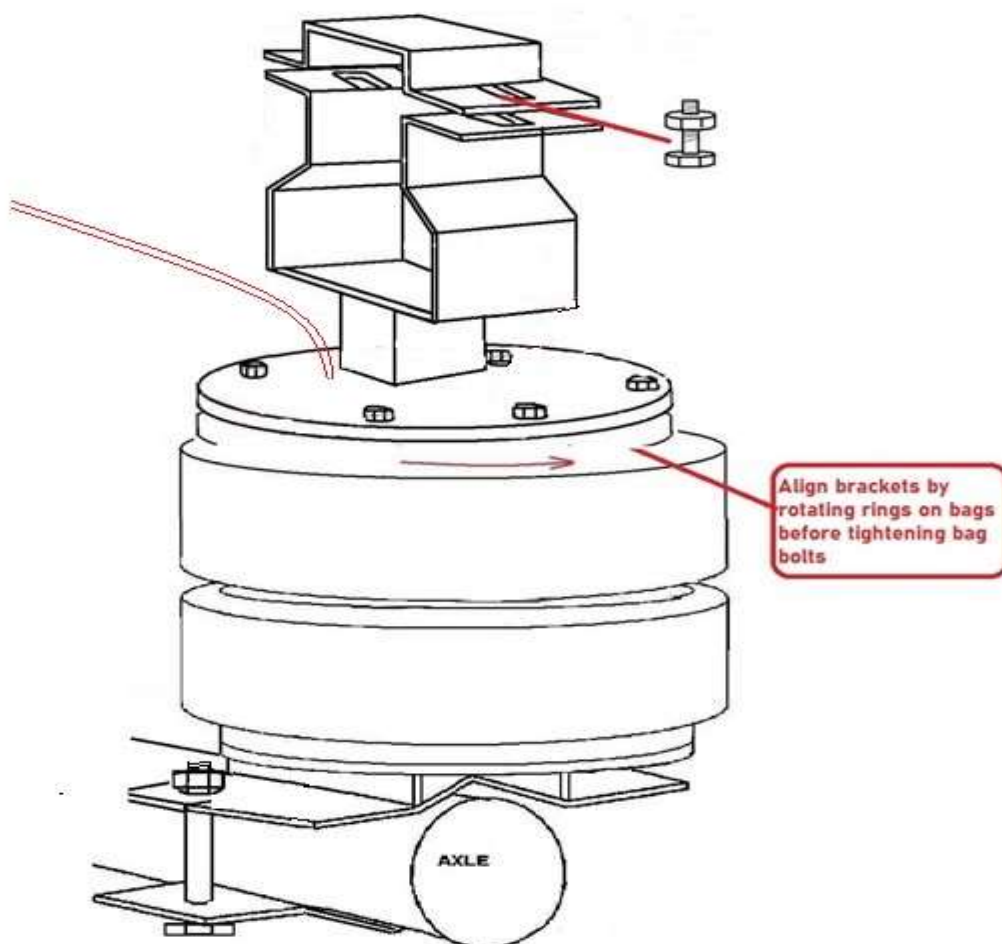
The air bags and brackets in this kit are built to be super strong. Do not risk damaging your vehicle by overloading it and running the bags at extreme pressures – just because the bags are up for it doesn't make it their fault. As a rule of thumb, we suggest not running the bags with any more air than you run in your tyres. If the bags still bag with 50 psi then you are overloaded and it's best you let them sag or better still remove some of the load.

Do not exceed your vehicle's GVM (Gross Vehicle Mass). Your GVM will be detailed on your vehicle compliance plate. Know your limits with regard to loads carried or towed. If you remain within your load limits, drive at a safe speed for the conditions and run your air bags at an ideal working pressure below 50 psi you will have trouble free travelling.

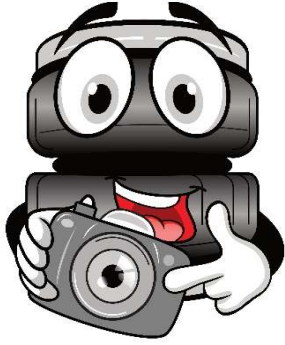
The good thing about air bag suspension is you can just keep adding more air to suit your preferred ride height and loads carried. Typically a good working pressure is 25 to 45 psi per bag. When unloaded you may run the bags empty but about 5 psi will cushion your bump stop and offer a bit of added stability to your handling.

AAA kit come with a 10 year new for old parts replacement warranty on bags, brackets and air fittings. Electronic components come with a 12 month warranty. Keep a copy of your invoice or online purchase so you can show us later when you purchased your kit.

Warranties are parts replacement only and exclude postage, labour, incidental cost or damage, corrosion or damage caused by external influences such as road hazards, heat, chemicals, salt or fuel spills.



The brackets in this kit are proudly made by us here in Australia.



One thing we really struggle with is obtaining photos of our kits out in the real world. If you can send us some pics of your kit fitted and maybe some pics of your vehicle carrying a load with and without air in your bags to demonstrate their effectiveness, we certainly would appreciate that.

And you know we also just like seeing all the varied places and applications our bags are used.

Please email all pics to support@aaasuspension.com.au

Feel free to call me at any time for support – 1300 396 892.

Thanks,

AAA Suspension

