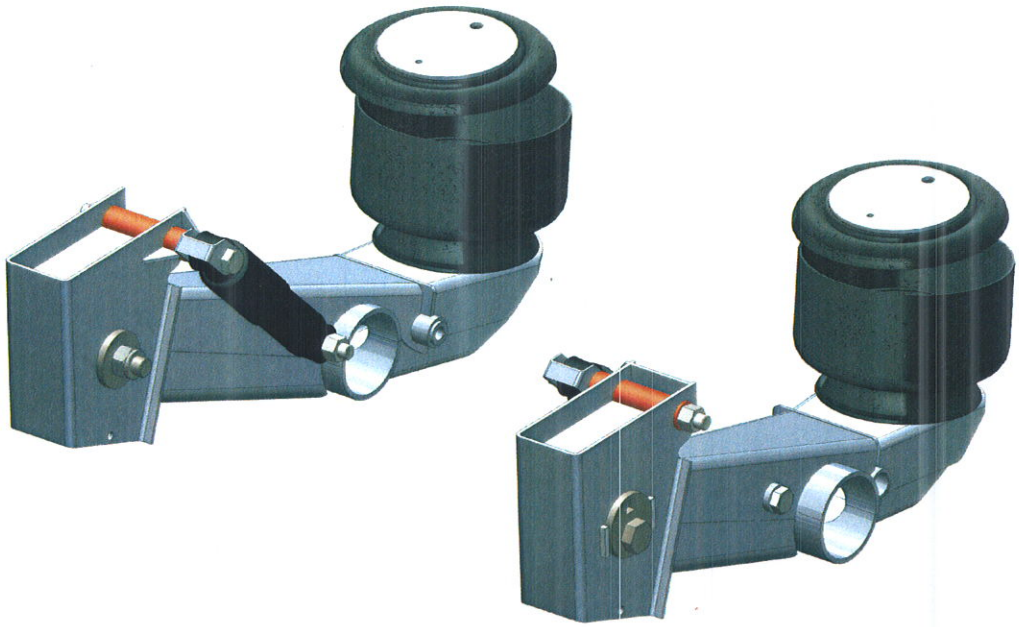
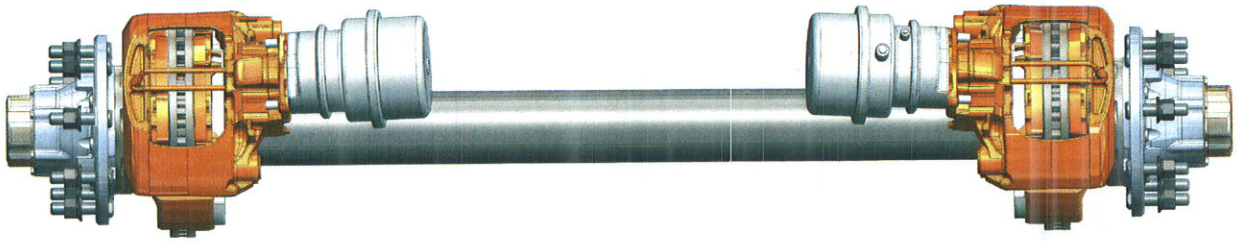
# SERVICE MANUAL

## TMC PAN 19 DISC BRAKE AXLES & LMV SUPSENSION FITED TO TMC TRAILERS





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TMC Australia's policy is one of continuous development, we therefore reserve the right to change or modify the specifications without notification.

**We Engineer Quality and Performance**

## TMC LMV series AIR SUSPENSION SERVICE INSTRUCTIONS.

### Recommended Service Schedule.

**On Delivery or at 500 km.**
Check all torque settings of all fasteners.

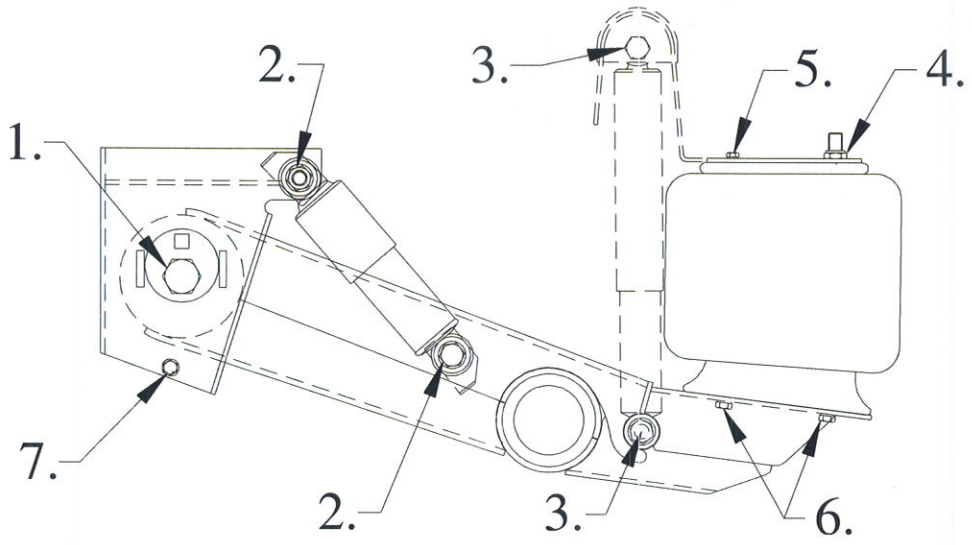
**Every 25,000km or Quarterly.**
Check all torque settings of all fasteners and inspect for visual damage and wear.
Repair and replace parts as necessary.

**Every 100,000 km or Annually.**
Check all torque settings of all fasteners and inspect for visual damage and wear.
Check all suspension bushings for wear and deterioration, replace or repair as necessary.
Check all suspension hangers and trailing arms for wear and deterioration, replace or repair as necessary.
Carry out a visual inspection of the suspension for wear and damage, repair or replace any worn or damaged parts as necessary.
Check the axle alignment and readjust as necessary. Axle alignment must be checked whenever severe kerb contact, or accidental damage occurs or the pivot bushes are replaced.

**Note:** TMC's range of "LMV" and "LMVS suspensions" and TN trailer axle combinations are generally designed for operating on clean paved roads. Although occasional use on graded or gravel roads is acceptable, for equipment that is regularly used "off-road" or "off-highway" TMC recommends that service intervals should be halved. In extremely severe operating conditions, weekly and in certain cases even daily inspections of the equipment may be required to ensure safe and correct operation of the suspension and axle combination.

### Recommended Torque Settings.

| | | |
|---|---|---|
| 1. | **Pivot bolt:** | **- 1100 Nm. (M30)** |
| 2. | **Shock Absorber bolt M24:** | **- 400 Nm. (M24)** |
| | **Shock Absorber bolt M20:** | **- 300 Nm. (M20)** |
| 3. | **Shock Absorber bolt M20:** | **- 300 Nm. (M20)** |
| 4. | **Top Airbag mount nyloc nut:** | **- 70 Nm. (3/4" UNF)** |
| 5. | **Top airbag mount bolt:** | **- 35 Nm. (3/8" UNC)** |
| 6. | **Bottom airbag mount bolts:** | **- 35 Nm. (1/2" UNC)** |
| 7. | **Front hanger spacer bolts:** | **- 70 Nm (M12)** |



## TMC LMV Air Suspension Installation Instructions.

The TMC LMV air suspension can be installed using normal workshop equipment, no specialised tools or equipment is required for the air suspensions installation.

The air suspension is supplied normally as an assembly with the front suspension hangers fitted to the trailing suspension arm , the suspension pivot bushes fully installed but not torqued, the trailing suspension arm seats fully welded to the trailer axle at the correct suspension centres. Although the front pivot bolts will be tensioned during assembly it is important that they be re tensioned after final suspension axle alignment and prior to delivery.
The order of assembly of the air suspension onto the trailer frame is not critical, but positioning the various suspension hangers and other air suspension brackets correctly is very important. A general arrangement layout drawing is supplied with every air suspension module, additional copies are available on request from TMC Australia.

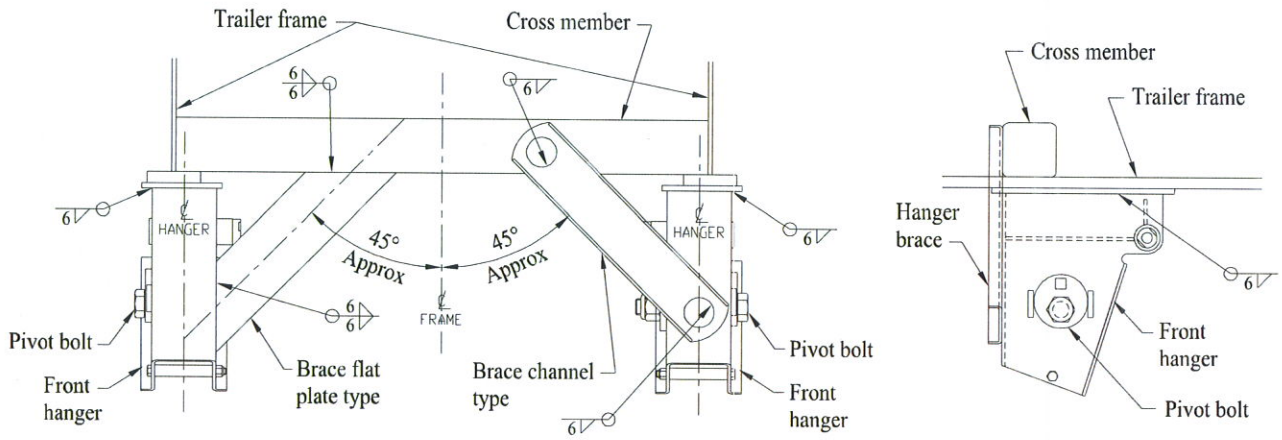
### Recommended Installation Procedure.

Position two of the front suspension hangers onto the trailers frame. It is important to check with the air suspensions general arrangement drawing for the suspensions correct dimensional layout to ensure that the trailer axles required location in the trailer is correct. Ensure that the hangers are fitted square to the frame and located in line longitudinally and transversely. All dimensions longitudinal, transverse and diagonal are to be within 2mm maximum variation. Position the other front suspension hangers onto the trailers frame (in the case of tandem and tri axle suspension installations), ensuring that all the dimensions are held to within the 2mm maximum variation.

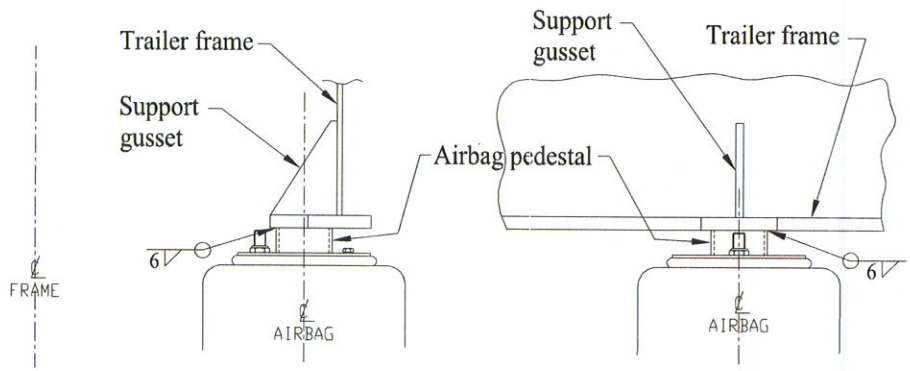
Tack weld all the suspension hangers and brackets in position. It is important to recheck the positioning of all the suspension hangers and brackets to comply with the suspensions general arrangement drawings dimensions for the suspension and that they are held to within the 2mm maximum variation before final welding of any of the suspension hangers.

All welding between the suspension hangers and the trailer frame is to be done using either low hydrogen electrodes or an approved equivalent MIG process.
**Fully weld all around the top of each suspension hanger in a 6mm continuous fillet weld.**

After installation of all the air suspension hangers it is recommended that all the front hangers are fitted with either a channel, angle or flat plate type of cross bracing between the front suspension hanger and a chassis cross member. Fully weld around the ends of the cross bracing onto the front suspension hanger and onto the trailers cross member. The air bag pedestals should also be supported by a full cross member brace. The airbag top support bracket may have to be cut or modified to be able to be attached to the trailers frame.




Typical Front Suspension Hanger Brace Arrangement




Mounting of Airbag Pedestal to Frame.

## Final Assembly.

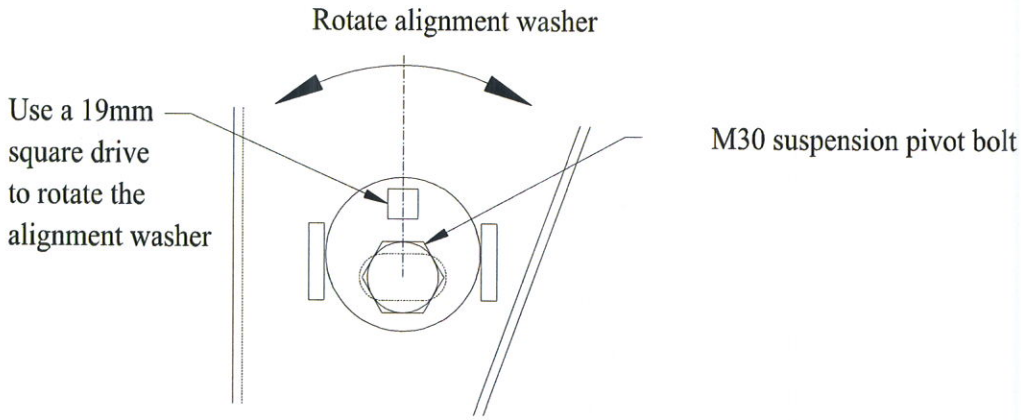
The suspensions airbags have to be installed onto the ends of the air suspensions trailing suspension arm and onto the air suspensions top airbag pedestals. The airbags can be fitted firstly to the top airbag pedestal using the ¾" Unf nyloc nut and 3/8" Unc stud. The airbag can then be bolted onto the suspension trailing arm using the ½" Unc bolts. Ensure all the bolts and fasteners are correctly tightened as per the recommended torque settings.

If the orientation of the top and bottom bolts/fasteners on the airbag does not align with the bolt holes in the suspensions trailing arm and top airbag pedestal then the orientation can be changed by using the following procedure.
In the base of the airbag loosen the lock nut, it may be necessary to break the seal between the rubber airbags bellows and the airbag piston so that the airbags base can be rotated to achieve alignment between the top and bottom airbags attachment bolt holes. Once the two sets of bolt holes are correctly aligned with the air suspensions attachment areas, re tighten the lock nut in the airbags piston. The airbag can them be installed into the air suspension.

## Axle Alignment and Adjustment Procedure.

Measure from the centre of the kingpin to a centre point on each end of the front trailer axle. Adjust the alignment as needed by rotating the collars on the front hanger on the air suspension's front pivot bolt to achieve the correct alignment. The front pivot bolts must be loosened off so that the front pivot bolts can move backwards or forwards in the front suspension hangers when the alignment collars are rotated. It is recommended that the alignment collars are rotated equally on each side of the suspension forwards or backwards to achieve the correct axle alignment.
Then align the remaining axles off the front trailer axle by rotating the alignment collars as described above on each axle until the axle centres on both sides of the trailer are equal.
It is also possible to do the axle alignment using a laser or optical aligning device designed for axle alignment if available.

**Important:** After the axle alignment is completed, tighten the front pivot bolt (M30) according to the torque settings chart.




Important: Loosen the M30 suspension pivot bolt before attempting to align the suspension.
Retighten all bolts after alignment is completed.