

TRANSIT HORDERN 6X2 SERVICING MANUAL.

Issue No 1

Dec 2000



INTRODUCTION

The Transit Hordern 6x2 Service Manual has been designed to give authorized 6x2 dealers a better understanding of the design features and servicing requirements of the Transit Hordern 6x2. Topics covered in this manual will lead you through routine servicing procedures as well as more major servicing procedures with the technical support required. If however you require any further technical support please contact - Transit Engineering - Ph. 03 9729 9433
- Fax. 03 9720 5465

TROUBLE SHOOTING

Squeaking in rear suspension- 1. There may be a lack of grease in the pivoting points of the beam. Refer to **Section 6**.

2. The bushes in the rear suspension may be worn.

Refer to **Section 5**.

Harsh ride characteristic- 1. The shock absorber may be set on the incorrect setting. The correct settings are shown below.

Powerdown shock absorber. – Regular.

Safari shock absorber. – Normal.

Ironman shock absorber . – Self adjusting.

2. The leaf spring or the coil spring may be worn to the extent that its ride characteristics have changed. Refer to **Section 8**.

3. In the case of high and heavy bodies, if they are not Fixed correctly to the chassis they may give a harsh ride characteristic.

Rear axle locking up- 1. The Load Sensing Valve may not be connected to the step bolt. Refer to **Section 6**.

2. The Load Sensing Valve may need adjusting to give the appropriate level of braking to the rear axle.

SECTION 1. – GENERAL SERVICING.

When a Transit Hordern 6x2 comes in for a routine service there are certain aspects of the 6x2 suspension that need to be checked/serviced. The following points list the area’s of attention and the required attention.

The following are required to be checked and tensioned at every scheduled service.

- Rear U-bolts. – Torque requirements. – 48 ft. lb. 64Nm.
- Step bolts. – Torque requirements. – 55 ft.lbs. 75Nm.
When greasing the step bolts you should pump them with grease until they make a cracking sound or you can see the grease come out of the bushes.
- Front beam bolts. – Torque requirements. – 20 ft. lb. 27Nm.
- Rear shocker bolts. – Torque requirements. – 60 ft. lb. 80Nm.
- Front shocker bolts. – Tension to Ford torque requirements.
- A general check of the brake lines (for tension and fluid leaks.) and all other bolts is also required during routine servicing.

SECTION 2. - JACK POSITIONING. Before moving onto the next procedure it is important that the vehicle be jacked up and supported under the chassis. **CAUTION**-Do not support the vehicle under any part of the suspension for this procedure. Refer to **Figure 1.** Once secure the wheels can be removed.

Figure 1.



SECTION 3. REAR AXLE REMOVAL.

NB. – If ABS is fitted to the vehicle the ABS lead will need to be disconnected from the rear axle.

3. -Standard axle design.

- Remove the rear shock absorbers from the vehicle.
- The calipers can be removed by undoing the two bolts that hold the calipers to the stub axle. The rotor can also be removed.
- Remove all four U-bolts from the rear axle, followed by the ½” bolt located through the axle.
- There are two welds on the rear of the beam and a shear block per side that will need to be ground away. **CAUTION**- If you have the materials available it is

best to replace the shear blocks when refitting. However if care is taken in this procedure you can salvage the shear blocks if need be.

- With the use of a heavy impact hammer the axle can now be knocked out of its seat.

SECTION 4 - BEAM REMOVAL.

4a. – Beam Removal with the Axle removed.

- Assuming that the vehicle is in the position shown in **Figure 1**.
- Place a jack under the centre of the drive axle spring. Remove the rear shackle off the spring. (NB- It is easier to attempt one side at a time during this procedure)
- Remove the Load Sensing Valve chain, which is connected to the step bolt on the LHS.
- Place another jack under the rear of the beam and jack the beam up approximately 5mm. Refer to **Figure 2**.

Figure 2.



- Remove the grease nipple and nut from the step bolt. The step bolt can now be knocked out using an aluminium/brass pin punch. NB. If fitted the gas tank may have to be lowered or removed to allow for the removal of the step bolt.
- Lower and remove both of the jacks.
- Remove the front beam bolt. The beam can now be removed. Refer to **Figure 3**.

Figure 3.

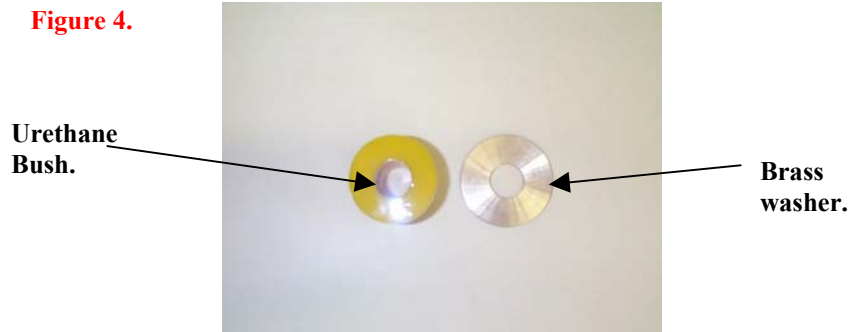


4b. – Beam Lowering with the Axle in place.

If bush replacement or coil spring replacement is necessary then it is not necessary to remove the axle. You can lower both beams at the same time by putting the jack in the centre of the rear axle, instead of on the rear of the beam.

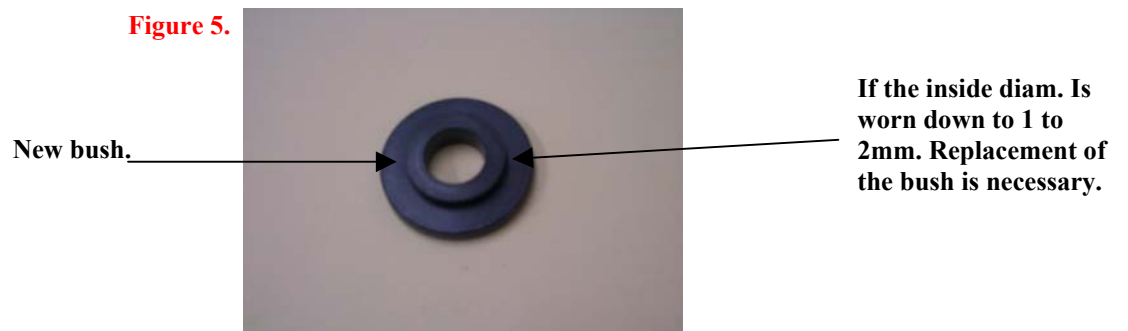
SECTION 5. – CHECKING AND REPLACING BUSHES.

5a. Urethane bushes and Brass washers.



The only way to determine how worn the pedestal bushes are: is to remove the step bolt and lower the beam enough to reveal the bushes. It is not uncommon for the brass washers to show signs of wear, use your own discretion to determine replacement of the washers. The front beam bushes can be checked by removing the front beam bolt then, lower the beam at the rear to reveal the bushes. The front beam bushes should wear the least.

5b. Vesconite bushes.



The best way of checking the bushes for wear is to remove them. It is not unusual for the vesconite bushes to be worn on the front and rear faces. Refer to **Figure 5** for wear limits.

5c. Bush/Brass washer replacement.

All beam bushes/washers can easily be replaced once the beam is removed from the vehicle or lowered out of the pedestal. Simply slide the old bushes out and replace them with new ones. It is important to pack the front beam bushes with grease (Especially on the face of the bush) before refitting the beam.

SECTION 6. – BEAM REFITTING.

- Slide the beam into place. Refer to **Figure 3**. Fit the front beam bolt into position. NB- Ensure that the front bushes have been greased. Refer to **Section 5c**.
- Using a jack on the very rear of the beam, jack the beam up to the pedestal. Refer to **Figure 2**. Using a podgey bar lever the pedestal out to allow bushes to slide into place as you jack the beam up. Refer to **Figure 6**.

Figure 6.



- Place another jack under the centre of the drive axle spring. Refer to **Figure 2**. Using both jacks maneuver the beam into position. After the beam is roughly in position, using a tube section or socket knock the bolt plus appropriate washers/bushes through the beam. Once the bolt has been knocked the whole way through you can place the washers/bushes on the outer side of the pedestal. **CAUTION**-The vesconite bushes (Refer to **Section 5b.**) Can **not** be **forced** into position. You must work the jacks to maneuver the beam to allow the bushes to slip into place. NB- The jack on the rear of the beam pushes the beam forward. The jack under the drive axle pushes the beam backward.
- The step bolts can now be tensioned to. -55 ft. lb. 75Nm.
- The front beam mounts can be tensioned to -20 ft. lb. 27Nm.
- The grease nipple and Load Sensing Valve chain (LHS only) can now be fitted
- Pump the step bolt with grease (preferably non-synthetic grease) until it makes a cracking sound or you see grease pushing past the bushes. Also put some grease on the pedestal slots. Refer to **Figure 7**.

Figure 7.



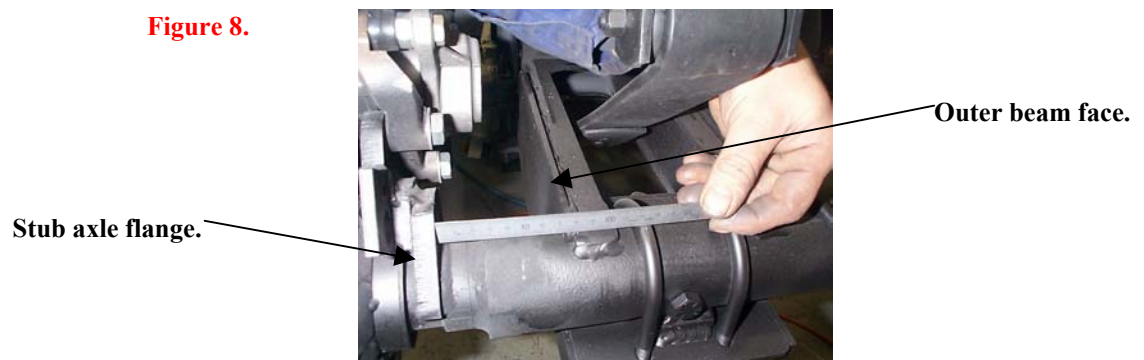
SECTION 7. – REAR AXLE FITTING.

- Refitting the axle correctly is crucial. Incorrect fitting of the axle will lead to bad vehicle tracking. Therefore accuracy in the following section is paramount. The procedure is most easily carried out with two people.

Standard axle fitting.

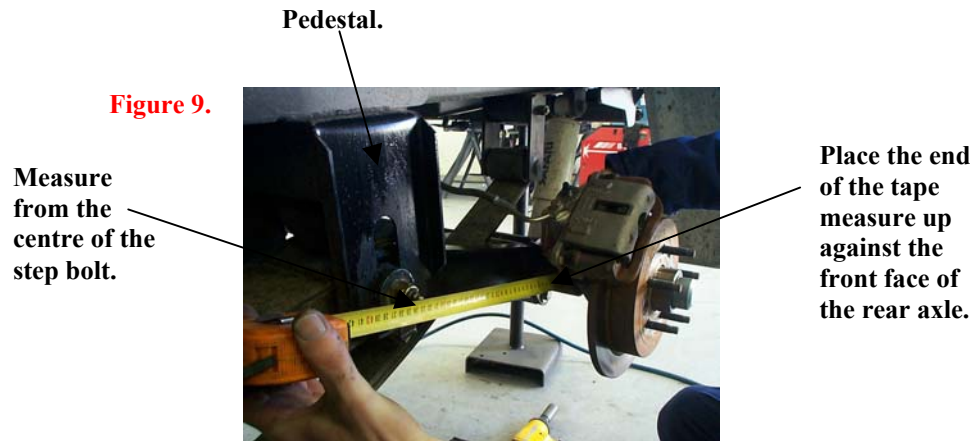
- With one person on either side of the vehicle lift the axle into position. Measure from the axle to the stub axle. Refer to **Figure 8**. **Ensure** that both sides are within **1mm** of each other.

Figure 8.



- Once the desired measurement has been met knock the axle as far forward as possible using a heavy impact hammer. NB- At this stage you are also required to line up the 1/2" hole with the beam block hole.
- Now you are required to take a measurement from the centre of the step bolt to the front face of the lazy axle. Refer to **Figure 9**. You may be required to knock the axle forward or backward to get an even measurement. (Same both sides.)

However remember to keep the axle as far forward as possible. You have a tolerance of **0.5 mm** in this procedure.



- After all desired measurements have been met you can weld the beam ends and shear blocks into position. NB-Before welding the axle **must** be heated by oxy/acetylene in order to help welds penetrate the axle. **CAUTION-** For any welding processes the battery must be disconnected.
- **CAUTION** – If for some reason you have not removed the brake rotors on the lazy axle at this stage you should do so now.
- After all of the required welds have been completed the ½” bolts and U-bolts can be refitted. **CAUTION** - It is important to complete welds before fitting bolts as the tension of the bolts may shift the axle if the welds aren't completed. Refer to **Section 1**. For Torque requirements.

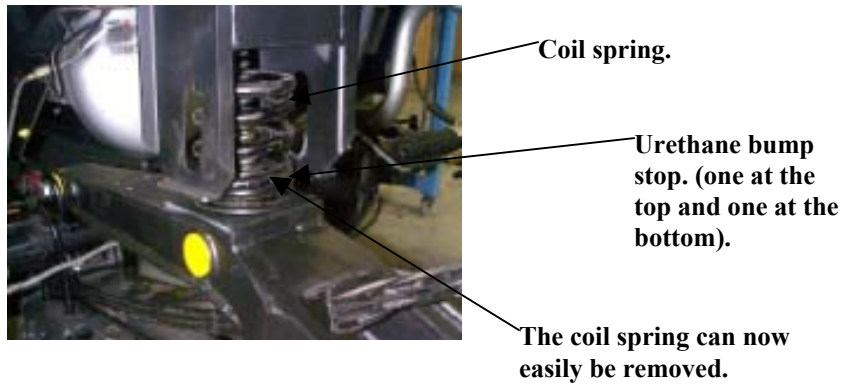
SECTION 8. – COIL SPRING SUSPENSION COMPONENT.

The introduction of the coil spring has been one of many advancements since the release of the Transit Hordern 6x2. This advancement in conjunction with the introduction of alternative shock absorbers has improved the ride quality considerably. If you have any questions regarding upgrades from our previous shock absorbers/load cell design please contact us. Refer to **Introduction**. NB. – The new components have been designed to replace the previous components with the minimum of effort.

If the coil spring or leaf spring cannot maintain relaxed ride height in an unladen situation (i.e.The step bolt is still near the top of the pedestal slot.) the removal of the springs may be required. NB - Before assuming component failure it is recommended that you research the normal load weight and position of the load put on the vehicle by the customer, as this may be in breach of the vehicles capacity.

- To remove the coil spring the beams will have to be dropped down out of the way. Remove both step bolts. Refer to **Section 4b**. **CAUTION-** Do not stretch the flexible brake hoses.

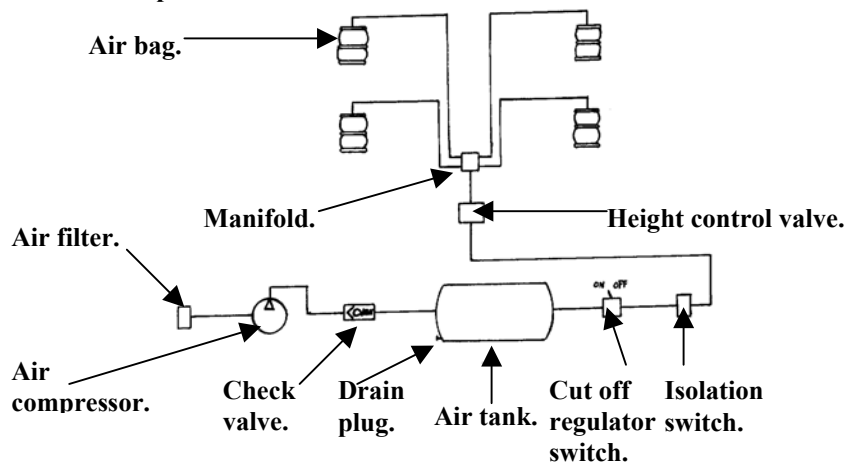
Figure 11.



SECTION 9. – AIR BAG SUSPENSION.

The Transit Hordern 6x2 Air bag suspension once setup is of reasonably low maintenance. The following section is designed to give you a basic understanding of the concept of an air bag suspension and the key area's for servicing.

Figure 12. Air suspension Schematic.



If the air tank has been completely drained it will take approximately 3 min for the compressor to reach full pressure and cut out. If however the compressor runs continuously or for an extended period, the following area's should be looked at.

The most obvious cause of the above is likely to be **air leaks**. The easiest way to locate any air leaks is to roughly locate the air leak by listening and determining where it is coming from. Once you have roughly located the air leak it is best to spray soapy water onto the fittings and hoses in the suspected area. The fitting or hose will bubble if there is an air leak.

The following are the most likely area's for an air leak to occur. Listed in order of likeliness of occurrence.

- Fittings – Air may leak past the threads on fittings.
- Hose-fitting joins. – Air may leak if the hose is not pushed into the fitting enough **or** if the fitting isn't tightened enough.
- Ruptured hoses. – This can occur if nylon air lines have rubbed on sharp edges.
- Air bag inspection. – If grit is allowed to build up between the top and bottom of the air bags, they will chafe, eventually wearing a hole in the bag. This should only occur if the air is turned off and the vehicle driven for long periods of time.

Due to the design of the air bag suspension the vehicle will maintain the same ride height whether it is laden or unladen. This characteristic is controlled by the H.C.V. (Height Control Valve.) If there are any problems with the height of the vehicle it may be due to the H.C.V. linkage. The linkage runs from the H.C.V. to the step bolt (RHS of the vehicle.) The linkage can easily be adjusted to give the desirable height. The recommended height is shown in **Figure 13**.

Figure 13.



**Desired gap
between the
step bolt and
the bottom of
the slot.
5mm-7mm.**