

**CUSTOMER INFORMATION SHEET – NO. 07**

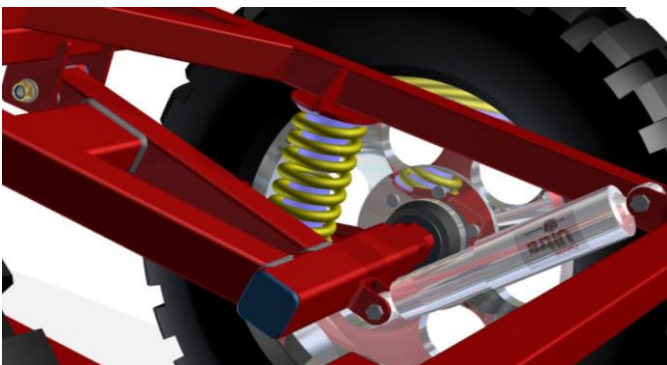
## **CRUISEMASTER™ XT COIL - INDEPENDENT SUSPENSION SYSTEMS**

### **1 WHY INDEPENDENT SUSPENSIONS?**

Beam axles have passed the test of time and are generally a good workhorse. However, you don't see them any more on cars. Why is this?

The first reason is geometry. That is the path the wheel takes as it moves up and down on the suspension. A traditional axle does not allow the wheel/tyre to travel in a manner that allows the tyre to follow the road surface. One side influences the other introducing problems such as bump steer. Handling, tyre wear and braking becomes compromised.

Secondly, the large unsprung weight of the axle has high inertia not allowing it to follow road undulations easily putting excessive loads into the chassis. The weight itself often reduces payload. Thirdly, the axle reduces ground clearance in the centre of the vehicle and may restrict the fitting of ancillaries such as water tanks.



### **2 CRUISEMASTER™ COIL**

The CruiseMaster™ XT Coil independent suspension system is the latest addition to the CruiseMaster™ range of independent suspension systems. It has been designed to give excellent ride characteristics utilising a design registered polyurethane bump stop which doubles as a spring locator and provides a secondary spring rate which comes into play under higher loads. The new lighter, yet stronger, Gen 5 'A' frame with Polyurethane low friction bushes is perfectly suited to this suspension system.

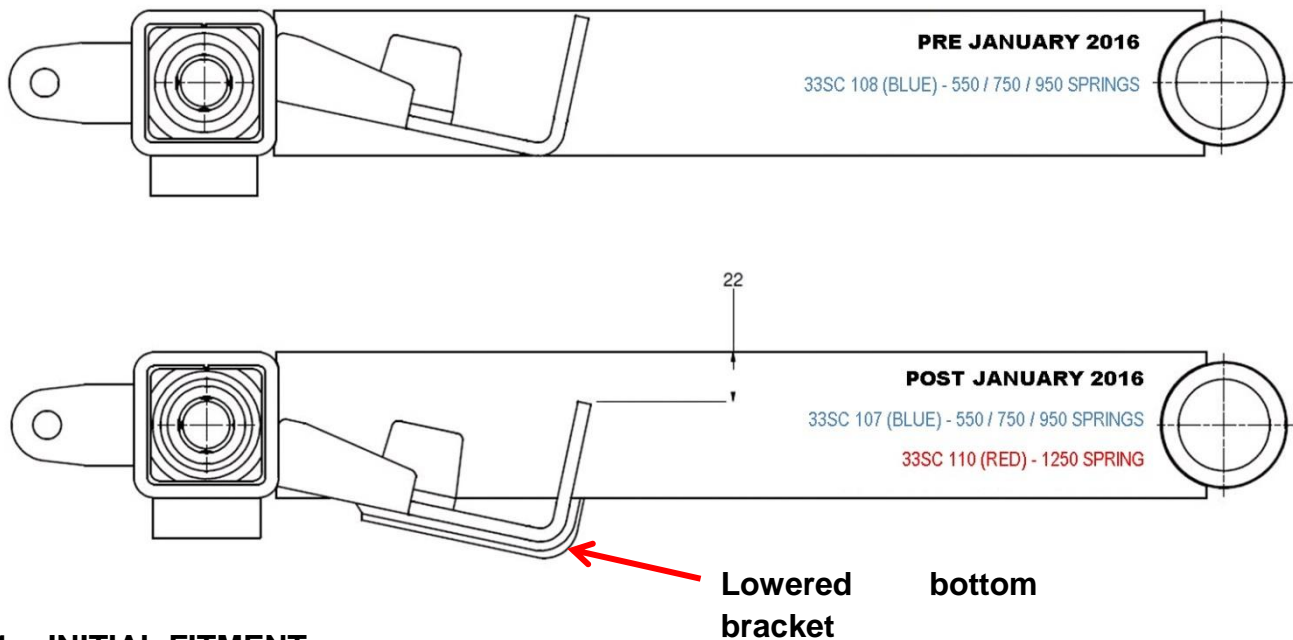
CruiseMaster™ XT Coil is available in a number of interchangeable spring configurations so that the suspension can be tuned to the trailer or caravans mass.

The heavy duty CruiseMaster™ shock absorbers will ensure wheel movement is controlled at all times and provides superior damping control in both bump and rebound directions.

- Low maintenance polyurethane bushes/steel sleeves in all moving parts
- Independent A-frame reduces unsprung weight

- Drop axle option
- Single and tandem configurations
- Easy fitment
- Optional 12in Marinised electric brakes with 2.5t VT stub axles
- Optional SA5 finish or black powder coat on 'a' frames to reduce corrosion
- Toe & camber adjustment

### 3 STANDARD AND X-HD FRAME CONFIGURATIONS



### 4 INITIAL FITMENT

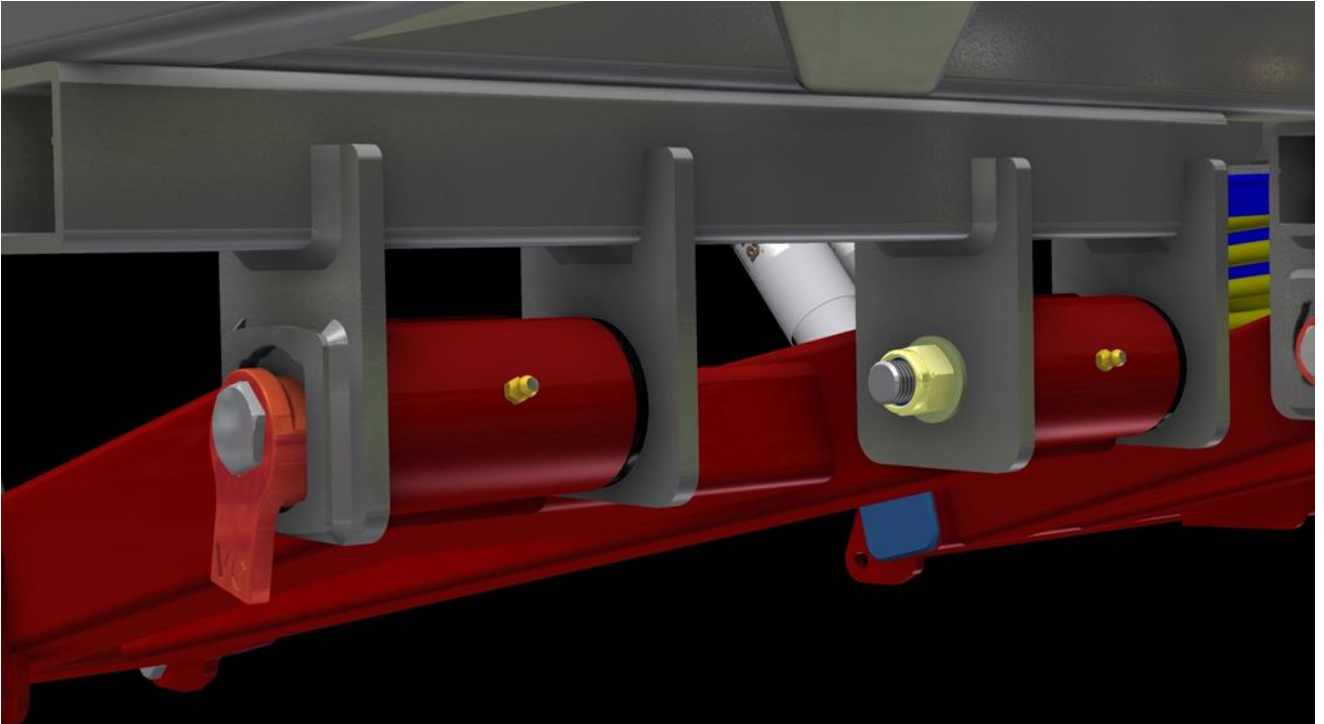
Cruisemaster™ suspensions must be fitted in accordance with Cruisemaster™ Engineering Design recommendations. These are usually in the form of installation drawings and will normally be supplied with any kit. Copies of these are available upon request.

### 5 MAINTENANCE AND OPERATION

Please refer to **Customer Information Sheet No. 12 – General Maintenance**

The suspension fitted has been selected according to the vehicle manufacturers recommended Aggregate Trailer Mass (ATM) which can be found on the vehicles compliance plate. It is important that these figures are not exceeded.

## 6 CRUISEMASTER™ INDEPENDENT HINGE



- Improved round bush and machined housing
- Increased surface area
- Bore and flange grease grooves
- Pre-set positive camber (0.5° +ve)
- Toe & camber adjustment of approx 1.4°
- Increased material thickness of hinge plates

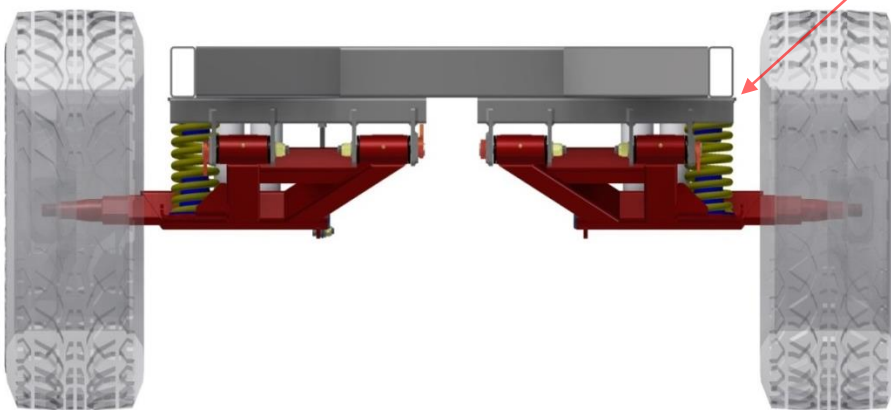
**For initial A-Frame fitment, position adjuster levers as follows:**

- Toe-in: Lever pointing downwards
- Camber: Lever pointing forward/backward

**Adjusting:**

- With hinge bolts fastened firm (not tight), set toe-in as required
- Set camber as required, ensuring that toe-in is not altered
- Fasten bolts to recommended torque setting

Position the hinge assembly with toe-in adjuster (horizontal slot) towards the outside.



**7 TOE AND CAMBER ADJUSTMENT (CM-XT)**

**7.1 General**

- The toe and camber adjuster levers are used to adjust wheel alignment and are located on the hinge assembly.
- The adjuster levers also improve bolt retention and ensure that, when correctly fitted, the hinge bolts are securely fixed within the hinge assembly.
- The outer “wheel side” adjuster is used for toe-in/out adjustment and the inner for camber adjustment.



**7.2 Installation Procedure**

This procedure describes recommended fitment of the adjustment lever and fasteners only and does not describe general fitment of suspension A-Frames.

1. Place bolt through adjuster lever locating bolt head into hex recess in lever.
2. Align frame assembly with hinge slot and insert bolt/adjuster, ensuring round end of adjuster locates within U-bracket on hinge.
3. Fit Nylon Insert nut to bolt but do not tighten as yet.
4. Check wheel alignment in both toe and camber directions (see below) and if necessary adjust by rotating the lever using an open ended spanner or the special VC spanner.
5. Fasten the Nylon Insert nut (always use new nuts) whilst holding the adjuster lever, ensuring it does not rotate from the adjusted position.
6. Torque Nylon Insert nut to 190N.m using a suitable torque wrench whilst holding the adjuster lever if required.



*Hold adjuster with spanner whilst tightening Nylon Insert nut*



*Torque Nylon Insert nut to 190N.m (140lbf.ft)*

### 7.3 Wheel Alignment Procedure

1. Place the trailer/caravan on a smooth level surface and, if possible, at typical operating load.
2. Move the trailer backwards and forwards to eliminate any twist in the wheels.
3. Run a straight edge across the face of the tyre (watch for surface irregularities) then measure the distance from the straight edge to the chassis rail. Do this in front and behind the tyre. Record these two measurements. (A jig can be made up to take measurements straight from the wheel)



*It is also possible to measure alignment directly from the brake drum/disc face to the chassis rail. However, this does not take into account the effect of load on the suspension and may be more prone to measurement errors.*

4. A single axle or front axle on a tandem should be adjusted to have 2 - 3mm toe-in. That is, the measurement taken in front of the tyre should be 2 - 3mm less than the rear measurement.

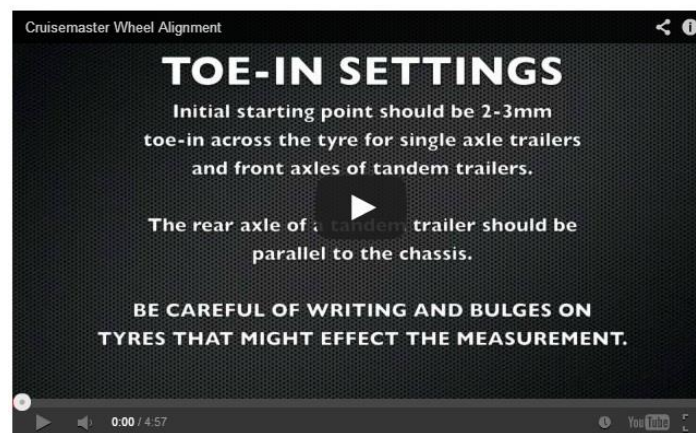


5. Rear wheels on a tandem should measure parallel from the chassis rail, so the two measurements should be equal.
6. When setting the wheel camber, we recommend to use a digital spirit level on the rim and to set the camber at 0° to 0.5° negative to the vertical for all wheels. (Negative camber is where the top of the wheel is leaning in towards to trailer)



*Exact measurements will depend on the type and loading configurations. However, experience has shown that the figures given are a good starting point. Modifications to these figures may need to be made to suit individual installations.*

7. If adjustments need to be made, loosen all hinge bolts (and U-Bolts on leaf suspensions) and adjust by rotating the adjuster lever using an open ended spanner.
8. Check measurement again and repeat adjustment until correct.
9. Fasten all hinge bolts to the prescribed torque as detailed above, whilst ensuring that the adjuster lever does not move from the set position.
10. If correct toe/camber adjustment cannot be achieved (insufficient adjustment or earlier models without adjustment facility), special offset bushes and/or spindles can be used to gain additional adjustment. Please contact us for further information.



*For information on factors affecting tyre wear, see Customer Information Sheet 23 – Prolonging Tyre Life, or visit the Information section of our website at [www.cruisemaster.com.au](http://www.cruisemaster.com.au)*

*For a detailed video on how to perform a wheel alignment on Cruisemaster Independent Suspension systems, follow the links from our website at [www.cruisemaster.com.au](http://www.cruisemaster.com.au)*