

COASTMAC

Owner's Maintenance & Service Manual



PLANT AND
MACHINERY TRAILERS



BOX TRAILERS



VEHICLE CARRIERS



FLAT TOP TRAILERS



TIPPER TRAILERS

Table of Contents

1.	SAFETY INFORMATION	4
1.1.	Safety Alert Symbols and Signal words	4
1.2.	Major Hazards	5
1.2.1.	Improper sizing of the trailer to the tow vehicle.	5
1.2.2.	Excessive travelling speed	5
1.2.3.	Failure to adjust driving behaviour when towing a trailer... ..	6
1.2.4.	Incorrect Loading.....	7
1.2.5.	Trailer not correctly coupled to the towing vehicle	7
1.2.6.	Proper use of safety chains	8
1.2.7.	Proper connection of Breakaway brake	8
1.2.8.	Matching Trailer coupling and ball.....	9
1.2.9.	Worn Tires, Loose wheel Nuts	9
1.2.10.	Weight and Load Distribution	11
1.2.11.	Shifting Cargo	13
1.2.12.	Inoperable Brakes or lights.....	13
1.2.13.	Hazards from Operations a Hydraulic Tipper Trailer	14
1.2.14.	Hazards from Modifying Your Trailer	16
1.2.15.	Trailer Towing Guide	16
1.2.16.	Safe Trailer Towing Guidelines.....	17
2.	COUPLING TO THE TOW VEHICLE	18
2.1.1.	Use an adequate tow vehicle	18
2.1.2.	Trailer information (VIN)	18
2.1.3.	Tow Vehicle	19
2.1.4.	Coupling and uncoupling the trailer.....	19
2.1.5.	Before coupling the trailer to the tow vehicle	21
2.1.6.	Connecting the Safety Chains.....	22
2.1.7.	Connecting the Electrical Cable.....	23
2.1.8.	Uncoupling the Trailer.....	23
2.1.9.	Operating the hand brake	23
3.	LOADING THE TRAILER	25
3.1.1.	Tow Bar Weight.....	26
4.	CHECKING THE TRAILER DURING & BEFORE EACH TOW	27
4.1.1.	Pre- Tow Check.....	27
4.1.2.	Make Regular Stops.....	27
4.1.3.	Retighten wheel nuts at first 100, 500 and every 1000 kilometre thereafter.....	27
5.	BREAKING-IN A NEW TRAILER	29
5.1.	Adjust Brakes shoes.....	29
5.2.	Retighten Wheel nuts at first 100km	29
5.3.	Tyre Pressure.....	29
5.4.	Check Hubs	30
5.5.	Galvanized parts.....	30
6.	INSPECTION, SERVICE & MAINTANANCE	31
6.1.	Inspection, Service & Maintenance Summary Charts.....	31

6.2. Bearing & Hub Service..... 32

7. TECHNICAL REFERENCE 34

7.1. TRAILER LIGHTING ELECTRICAL CONNECTION 34

7.2. Axle sizes & Bearing Numbers..... 35

7.3. Springs 36

7.4. Rocker Roller Springs..... 38

7.5. Parts required for mounting axles to the springs are: 38

1. SAFETY INFORMATION


1.1. Safety Alert Symbols and Signal words

This manual provides instructions for the operation and care of your Coastmac Trailer. The instructions of this manual must be followed to ensure the safety of persons and livestock, and satisfactory life of the trailer. Safety precautions to protect against injury or property damage must be followed at all times.


An owner's manual that provides general trailer information cannot cover all of the specific details necessary for the proper combination of every trailer, tow vehicle and hitch. Therefore, you must read, understand and follow the instructions given by the tow vehicle and towbar manufactures, as well as the instructions in this manual.


Our Trailers are built with components produced by various manufactures as such some items may have separate instruction manuals that must be followed.


Safety information in this manual is denoted by the safety alert

symbol: 

The level of risk is indicated by the following signal words.

 DANGER
DANGER- Hazards which will result in severe personal injury or death if the warning is ignored.

 WARNING
WARNING- hazards or unsafe practices which could result in severe personal injury or death if the warning is ignored.

 CAUTION
CAUTION- hazards or unsafe practices which could result in minor or moderate injury or death if the warning is ignored.

NOTICE
CAUTION- hazards or unsafe practices which could result in minor or moderate injury or death if the warning is ignored.

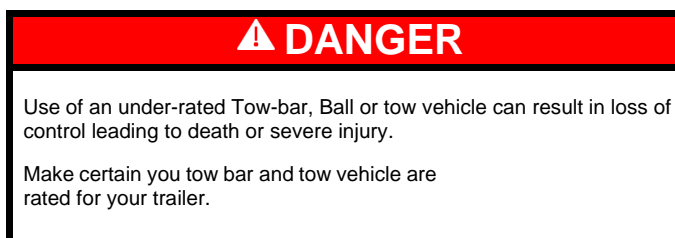
1.2. Major Hazards

Loss of control of the trailer or trailer tow vehicle combination can result in death or severe injury. The most common cause of loss of control of the trailer are:

- Improper sizing the trailer for the tow vehicle, or vice versa.
- Excessive Speed: Driving too fast for the conditions.
- Failure to adjust driving behaviour when towing a trailer.
- Overloading and/or improper weight distribution.
- Improper or miss-coupling the trailer to the tow ball.
- Safety chains not attached to the tow vehicle correctly.
- Improper braking and steering under sway conditions.
- Not maintaining proper tire pressure.
- Not keeping wheel nuts to the correct torque.

1.2.1. Improper sizing of the trailer to the tow vehicle.

Trailers that weigh too much for the towing vehicle can cause stability problem, which can lead to death or severe injury. Furthermore, the additional strain put on the engine drive chain and suspension may lead to serious vehicle maintenance problems. For these reasons the maximum towing capacity of your towing vehicle, in terms of maximum gross trailer weight (ATM) and maximum gross combined weight rating (GTM) can be found in the tow vehicles owner's manual.



1.2.2. Excessive travelling speed

With ideal road conditions the maximum recommended speed for safely towing a trailer is 100kph. If you drive too fast, the trailer is more likely to sway, thus increasing the possibility for loss of control.

⚠ WARNING

Driving too fast for conditions can result in loss of control and cause death or severe injury.

Adjust speed down when towing a trailer.

1.2.3. Failure to adjust driving behaviour when towing a trailer.

When towing a trailer, you will have decreased acceleration, increased stopping distance and increased turning radius **(WHICH MEANS YOU MUST MAKE WIDER TURNS TO KEEP FROM HITTING KURBS, VEHICALS AND ANTHING ELSE THAT IS INSIDE THE CORNER).**

Furthermore, the trailer will change the handling characteristics of your towing vehicle, making it more sensitive to steering inputs and more likely to be pushed around in windy conditions or when being passed by large vehicles. In addition, you will need a longer distance to pass due to slower acceleration and increased length.

With this in mind:

- Be alert for slippery conditions. You are more likely to be affected by slippery road surfaces when driving towing a trailer than driving without a trailer.
- Anticipate the trailer “swaying” Swaying can be caused by excessive steering, speed, wind gusts, improper weight distribution or by pressure wave created by passing trucks or busses.
- When encountering trailer sway, take your foot off the accelerator, and steer as little as possible to stay on the road. Use small “trim-like” steering adjustments. Do not attempt to steer out of the sway, you’ll only make it worse. Also, do not apply the tow vehicles brakes to correct the swaying. The application of the trailer brakes being applied will help straighten the trailer.
- Check rereview mirror frequently to observe the trailer and traffic.
- Use lower gear when driving down steep or long grades. Use the engine and transmission as a brake. Do not ride the brakes, as they can

overheat and become ineffective.

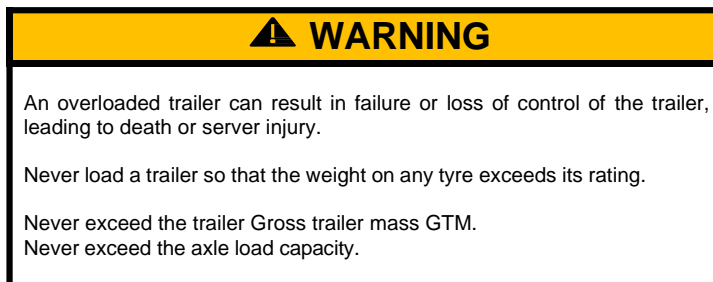
- Be aware of your trailer height, especially when approaching bridges, roofed areas and around trees.

1.2.4. Incorrect Loading

The total weight of the load you put in or on the trailer, plus the empty weight of the trailer itself must not exceed the trailers Gross Trailer Mass (GTM). This information can be found on the compliance plate that is fitted on the trailer, if this plate is not fitted you must weigh it on a commercial weigh bridge. In addition, you must distribute the load in the trailer such that the load on any axle does not exceed the gross axle weight rating.

An example with overload

A trailer type xxx has a design rating with 1350 kg. TheThe measurements are 205×122×40 cm., which gives a volume around 1 m³. If this trailer is loaded with sand the load will weigh approximately 1,500 kg.



1.2.5. Trailer not correctly coupled to the towing vehicle

It is critical that the trailer be securely coupled to the tow vehicle and that the safety chains are and or emergency breakaway line are correctly attached by using the correct size of rated D-Shackles. Uncoupling may result in death or severe injury to you and others.

WARNING

Coupling and tow bar selection are critical for safe towing.

Uncoupling can result in death or severe injury.

- Make sure the Coupling and ball are rated for the trailer
- Make sure the ball size matches the coupling.
- Check the ball for wear, corrosion and cracks before connecting the coupling.
- Make sure the safety latch on the coupling is all the way down.

WARNING

An improperly coupled trailer can result in death or server injury

Do not move the trailer until:

- The coupling is secured and locked
- The safety chains are secured to the towing vehicle and crossed over
- The trailer Jacks or Jockey wheel are full retracted (IF FITTED)

Do not tow the trailer on the road until:

- The brakes are check (If fitted)
- The breakaway switch is connected to the tow vehicle (If Fitted)
- The load is secured
- The Trailer lights are connected and checked.

1.2.6. Proper use of safety chains

Safety chains are provided so that the trailer is still connected if the trailer comes loose from the tow vehicle for any reason.

WARNING

Incorrect connection of the safety chains can result in loss of the trailer, leading to death or server injury if the trailer uncouples from the towing vehicle.


Chain Must:

- Fasten to the frame of the tow bar
- Cross chains over underneath the tow bar with minimum slack to permit turning and to hold the draw bar up, if the trailer comes loose.


1.2.7. Proper connection of Breakaway brake

If fitted with electric brakes rated over 2000kg, your trailer will be fitted with a breakaway brake system that can apply the brakes on your trailer, if your trailer comes loose from the towing vehicle for some reason. You will have separate a separate set of instructions for the

breakaway brake if your trailer is so equipped. The breakaway brake system, including the battery charge must be in good condition to be effective.

 WARNING
<p>An ineffective breakaway brake system can result in a runaway trailer, leading to death or severe injury if the coupling or ball fails.</p> <p>Test the function of the breakaway brake system before towing the trailer. Do not tow the trailer if the breakaway brake system is not working: Have it serviced or repaired.</p> <p>Connect the breakaway cable to the tow vehicle.</p> <p>NOT to the safety chains of the trailer.</p> <p>USE only rated shackles.</p>

1.2.8. Matching Trailer coupling and ball

 DANGER
<p>Use of an underrated coupling, tow ball or tow bar can result in loss of control leading to death or server injury.</p> <p>Make sure your coupling is correct attached to your towing vehicle.</p>


1.2.9. Worn Tires, Loose wheel Nuts

Just as with your tow vehicle, the trailer tyres, and wheels are important safety items. Therefore, it is essential to inspect the trailer tires before each tow.


If a tyre has a bald spot, bulge, cut or cracks, or is showing any cords, replace the tire before towing. If a tire has uneven tread wear.

Tyres with little tread will not provide adequate friction forces on wet roadways and can result in loss of control, leading to death or server injury.

Improper tyre pressure causes increased tyre wear and may reduce trailer stability, which can result in a tyre blow out or possible loss of control. Therefore, before each tow you must also check the tyre pressures. Remember, the proper tyre pressure is listed on the VIN Plate and should be checked when tyres are cold. Allow 3 hours cool-down after driving as much as 2 kilometres before checking tyre pressures.

 WARNING	
Improper tyre pressure may cause an unstable trailer, Blowout and loss of control may occur. Death or serious injury can occur.	
Make sure of proper tyre pressure before towing the trailer. Inflate tyres to the pressure indicated on the VIN plate label.	


The tightness of the wheel nuts is very important in keeping the wheels properly seated to the hub. Before each tow, check to make sure they are tightened to the proper torque.

 WARNING	
Metal creep between the wheel rim and nuts WILL CAUSE RIM TO LOSEN.	
Death or injury can occur if wheels come off.	
Tighten wheel nuts before each tow.	

The proper tightening sequence and tightness (torque) for wheel nuts is listed in the inspection service & maintenance chapter of this manual. Use of a calibrated torque wrench to tighten the wheel nuts.

Wheel nuts are also prone to loosen after first being fitted. When driving a new trailer check to make sure they are tightened to the proper torque after the first 100 kilometres, 1000 kilometres and every 2000 kilometre thereafter.

Failure to perform this check can result in a wheel parting from the trailer and a crash, leading to death or serious injury.

 WARNING	
Wheel nuts are prone to loosen after first assembled. Death or serious injury can result.	
Check wheel nuts for tightness on a new trailer at the first 100 kilometres, 1000 kilometres and every 2000 kilometre thereafter.	

⚠ WARNING

Inadequate torque on the wheel nuts can cause a wheel to part while towing. Death or serious injury can result.

Make sure wheel nuts are tightened before towing the trailer.

1.2.10. Weight and Load Distribution

Proper loading of your trailer is essential for your safety. Tyre, wheels, axles, suspension or structural failure can be caused by overloading.

⚠ WARNING

An overloaded trailer can result in a failure or in loss of control of the trailer, leading to death or serious injury.

Never load a trailer so that the weight on any tyre exceeds its rating.

Never exceed the Gross Trailer Mass (GTM)

Never exceed the axle gross load capacity.

Improper distribution of weight between the front and rear of the trailer can result in unstable trailer sway or adversely affect the handling of the tow vehicle. Trailer sway instability often occurs when the tongue weight is too low, while excessive tongue weight can destabilize the tow vehicle.

In Figure 1-1, the second column illustrates the recommended percentage of the total weight of the trailer, including its cargo (Gross Trailer Mass, GTM), that should be placed on the trailer coupling. For instance, a small box trailer with a loaded weight of 750 kg should ideally have between 6-10% of this weight (45-75 kg) on the coupling after loading. It is important to verify that none of the axles are overloaded during this process.

Coupling weight as a percentage of the loaded trailer weight	Percentage
Small Trailers	6-10% for small box trailers
Large Trailers	10-15% for larger tandem trailers

Coupling weight Chart – Figure 1-1

Uneven left or right load distribution can cause tyre, wheel, axle or structural failure. Be sure your trailer is evenly loaded on the left and right sides. Towing stability also depends on keeping the centre of gravity as low as possible.

 **WARNING**

An improperly distributed load can result in loss of control of the trailer and can lead to death or serious injury.


Proper coupling weight is essential for stable trailer handling.

Distribute the load evenly, right and left, to avoid tyre overload.

Keeping the centre of gravity low and centred is essential to minimize the risk of a tip-over.

1.2.11. Shifting Cargo

Since the trailer “ride’ can be bumpy and rough, you must secure your cargo so that it does not move while the trailer is being towed.


 WARNING
A moving load can result in failure, or to loss of control of the trailer, and can lead to death or serious injury.
You must tie down all loads with proper size fasteners, ropes, straps, etc. to prevent the load from moving while travelling.

1.2.12. Inoperable Brakes or lights

Be sure that the brakes (if equipped) and all lights on your trailer are functioning properly before towing your trailer. Electric brakes and lights on a trailer are controlled via a connection to the tow vehicle, generally with a 7-pin electrical plug. Check the trailer taillights, brake lights and left/right blinkers by having someone in the car to operate them while you look at the trailer lights.

If your trailer has electric brakes, your tow vehicle will have an electric brake controller that sends power to the brakes. (Can also be fitted to the trailer to give power to the brakes)

Before towing the trailer on the road, you must operate the brake controller while trying to pull the trailer in order to confirm that the electric brakes operate. While towing the trailer less than 10kph, manually operate the electric brake controller in the tow vehicle cab. You should feel the operation of the trailer brake.

 WARNING
Failure to connect the tow vehicle lighting and braking to the trailer will result in inoperable lights and brakes and can lead to a collision.
Check that all the trailer lights and brakes work before each tow.


If your trailer has Override Mechanical disc or Hydraulic drum brakes fitted you can check to see if they are operating by driving at 20kph and stopping suddenly you should feel the brakes come on.


1.2.13. Hazards from Operations a Hydraulic Tipper Trailer

The major hazards from operation of a tipper trailer are:

- Overloading
- Improper weight distribution; both side to side and front to back
- Climbing under a raised body
- Not using or improperly using of safety prop
- Modifying or altering hydraulic components
- Not dumping from a solid and level surface
- Not fully opening or removing the rear Door/Tailgate
- Jerking the trailer or hydraulics to loosen the load
- Trailer coming near or contacting power lines when body is raised
- Tipping with the trailer connected to the tow vehicle

The tow vehicle and trailer **MUST** be on a firm and level surface before raising the body. Raising the body while either the tow vehicle and/or trailer are on a soft or uneven surface may result in the tow vehicle and trailer overturning.

 WARNING
A soft and/or uneven surface may result in the tow vehicle and trailer tipping over when the body is raised.
Raise the body ONLY if the tow vehicle and trailer are both on a firm and level surface.

 WARNING
An overloaded trailer or improperly distributed load can result in death or serious injury.
An overloaded trailer can cause the hydraulic system to malfunction, resulting in the tipper body failing.
A load that is improperly distributed in the trailer can result in the trailer tipping over when the body is raised.

NEVER use an auxiliary device to help the hydraulic system raise the body.

Do not alter or substitute any hydraulic components on the trailer. The hydraulic system is designed with each component being compatible with the safe and reliable operation of the hydraulic system.

DANGER

NEVER alter or substitute any hydraulic system component. Death or serious injury may result.

An altered or component substituted hydraulic system may malfunction, resulting in the body falling without warning.

NEVER alter or substitute any hydraulic system component.

Verify that there are no overhead power lines near the trailer before raising the body. You can be electrocuted if the trailer comes near or contacts a power line.

WARNING

Risk of electrocution.

Tipper body coming near or contacting power lines may result in electrocution. Electrocution can occur without contact.

Be sure there are no overhead power lines over or near the trailer before raising the body.

The raised body **MUST** be supported by the body safety props before entering the area under the body for any reason. Empty the dump body before using safety props.

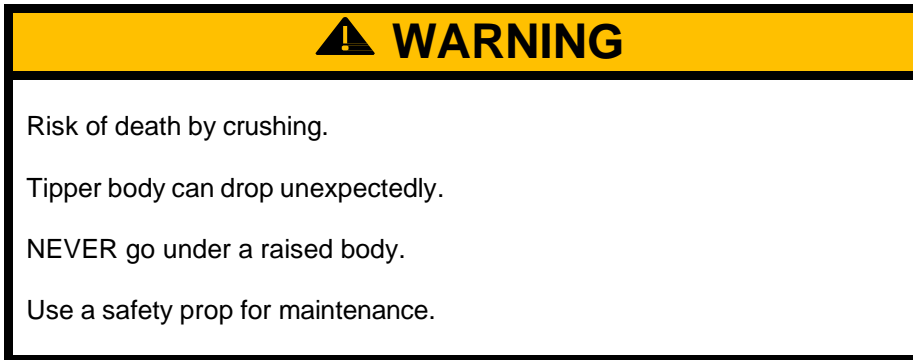
DANGER

Risk of death or serious injury

NEVER support a loaded tipper body by the safety prop.

Empty the load before using a safety prop.

NEVER enter the area under the tipper body unless the empty body is supported by a safety prop.



1.2.14. Hazards from Modifying Your Trailer

Essential safety items and structural integrity can be damaged by altering your trailer.

Before making any alteration to your trailer, contact Coastmac Pty Ltd. On 1300 418 146 and describe the alteration you are contemplating. Alteration of the trailer structure or modification of mechanical, electrical, hydraulic or other systems on your trailer must be performed only by qualified technicians who are familiar with the system installed on your trailer.

NOTE: Mudflaps are fitted by Coastmac on your trailer in accordance with (ADR) Australian Standards, by removing them you are not complying with the Australian road safety rules and you also may void your warranty.

1.2.15. Trailer Towing Guide

Driving a vehicle with a trailer is significantly different from driving without one. Acceleration, manoeuvrability, and braking are all reduced when towing a trailer. It takes longer to reach speed, requires more space to turn and pass, and demands greater distance to stop. You'll need to adjust to the different feel and handling of the tow vehicle with a loaded trailer. Due to these differences, the risks of hazards and injury are greater when towing. It is your responsibility to maintain control of both your vehicle and trailer and to manage any damage if control is lost.

Similar to learning to drive, practice in an area with little or no traffic to get accustomed to towing. Before starting, ensure you follow all instructions for inspection, testing, loading, and coupling the trailer. Adjust your mirrors so you can see both the trailer and the area behind it.

Begin by driving slowly, around 10 KPH, and turn the wheel to understand how the tow vehicle and trailer combination responds. Practice making right and left-hand turns, observing in your side mirrors how the trailer follows the tow vehicle. Remember, turning with a trailer attached requires more space.

Stop the vehicle a few times from speeds no greater than 15 KPH. If your trailer is equipped with brakes, experiment with different combinations of trailer/electric brakes and tow vehicle brakes. Observe the effect when only the trailer brakes are used. When properly adjusted, the trailer brakes should engage just before the tow vehicle brakes.

Backing up a tow vehicle with a trailer attached requires practice and patience. Before reversing, exit the tow vehicle and check behind the trailer to ensure there are no obstacles. A useful technique is to place your hands at the bottom of the steering wheel. While in reverse, think of your hands as being on the top of the wheel. Moving your hands to the right (counter-clockwise, as you would when turning left while moving forward) will move the rear of the trailer to the right. Conversely, moving your hands to the left (clockwise) will move the trailer to the left while backing up. To straighten the vehicle, either pull forward or turn the steering wheel in the opposite direction.

1.2.16.Safe Trailer Towing Guidelines

- Re-check the load tie downs to make sure the load will not sift during towing.
- Before towing check the coupling, safety chains, hand brake, tyres, wheels and lights.
- Check the wheel nuts for tightness.
- If fitted with electric brakes, adjust the brake controller to engage the trailer brakes before the tow vehicle brakes.
- Use your mirrors to verify that you have to change lanes.
- Use your indicators well in advance.
- Allow plenty of stopping distance
- Do not drive so fast that the trailer begins to sway due to speed. Never drive faster than 100kph.
- Allow plenty of room for passing. A rule of thumb is that the passing distance with the trailer is 4 times the passing distance without the trailer.
- Use lower gears for climbing and descending grades.
- Do not ride the brakes while descending grades, they may get so hot that they stop working.
- Do not brake while in a curve unless it is necessary, instead slow down before the curve and power through the curve, this way the towing vehicle remains in charge.
- Do not apply the brakes to correct extreme trailer swaying.
- Make regular stops, about once each hour to confirm that:
 - The coupling is secured to the ball and is locked over
 - Electrical connections are made
 - There is enough slack on the safety chains
 - The tyres are not visibly low on pressure
 - The load is all secure
- Inspect spring and axle bolts also U-bolts for any movement or loosening.

2. COUPLING TO THE TOW VEHICLE

This manual provides instructions for the operation and care of a Coastmac Trailer. The instructions in this manual must be followed to ensure safety and satisfactory life of the trailer.

Safety precautions to protect against injury or property damage must be followed. This section of the manual is organized into the following subsections:

- Using an adequate tow vehicle
- Trailer Information (VIN)
- Coupling the trailer to the tow vehicle
- Loading the trailer
- Checking the trailer for safety before each tow
- Synchronising the brakes
- Uncoupling the trailer

2.1.1. Use an adequate tow vehicle

If you have a tow vehicle, know your vehicle tow rating and make certain the trailer's rated capacity is less than or equal to the towing vehicle's rated towing capacity.

2.1.2. Trailer information (VIN)

The trailer VIN plate and compliance plate located on the Draw bar left hand side, as in figure 1.

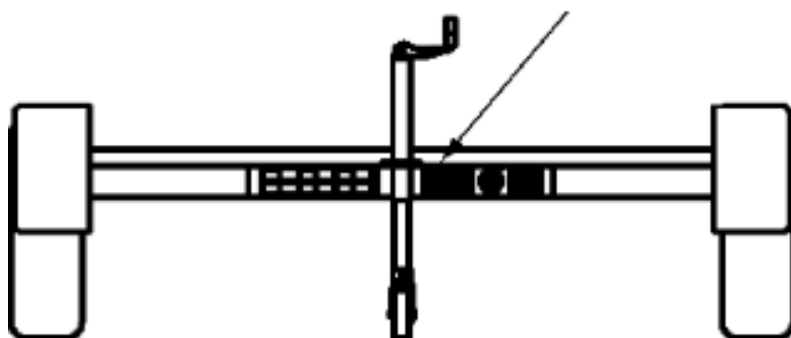
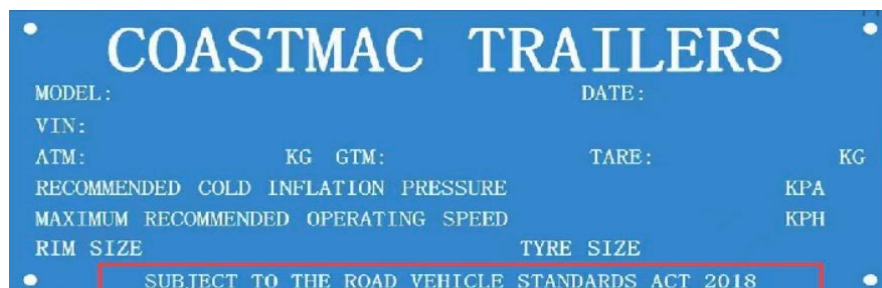


Figure 1

The trailer compliance plate contains the following information.

- **Manufacture:** Name of the manufacture
- **Trailer Model:** Type of Trailer
- **Date of Manufacture:** (Day/Month/Year)
- **ATM:** Aggregate Trailer Mass
- **GTM:** Gross Trailer Mass
- **VIN:** Vehicle Identification Number
- **RIM SIZE:** Rim size
- **TYRE SIZE:** Tyres sizes 18575lt etc:
- **TARE: (GTM):** Weight of the empty trailer
- **TYRE PRESURE:** 50 PS1= 345 KPA
- **SPEED:** Maximum towing speed



2.1.3. Tow Vehicle

When purchasing a new or second-hand vehicle to tow your trailer, ask the vehicle dealer for advice on how to outfit the towing vehicle. Discuss the following information with the dealer.

Overall carrying and towing capacity of the vehicle: Vehicle manufactures will provide you with the maximum towing capacities of their models.

Towing Hitch: The tow bar attached to your tow vehicle must have a capacity equal or greater than the load rating of the trailer you intend to tow. The Tow bar capacity must also be matched to the tow vehicles capacity.

Brake Controller: The brake controller is part of the tow vehicle and is essential in the operation of the electric brakes on the trailer (if installed). If your trailer has electric it requires a brake controller be installed at the driver's position. The brake controller is not the same as the safety breakaway brake system that is installed on the trailer if over 2000kg rated.

2.1.4. Coupling and uncoupling the trailer

A secure coupling of the trailer to the vehicle is essential. A loss of coupling may result in death or serious injury. Therefore, you must understand and follow all of the instructions for coupling.

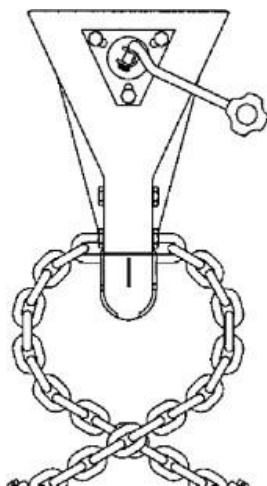
The following parts are involved in making a secure coupling between the trailer and tow vehicle.

Coupling: That part of the trailer connecting mechanism by which the connection is made to the tow bar.

Tow Bar & Tongue: That part of the trailer connecting including the ball support (Tongue) That extends and are attached to the tow bar of the towing vehicle.

Safety Chains: Safety chains are permanently attached to the trailer such that if the coupler connection comes loose, the safety chains can keep the trailer attached to the tow vehicle. With properly fitted safety chains, it is possible to keep the draw bar of the trailer digging into the road pavement, even if the coupling to the ball connection comes apart.

Criss cross the safety cross as in the figure below and be sure to use the correct rated shackles.



WARNING


Incorrect connection of the safety chains can result in loss of control of the trailer and tow vehicle, leading to death and or serious injury, if the trailer uncouples from the tow vehicle.

Chains Must:


- Fasten to the tow vehicle with rated shackles
- Cross underneath coupling and tow bar lounge with minimum slack to permit turning and to hold the draw bar up, if the trailer comes apart.

2.1.5. Before coupling the trailer to the tow vehicle


- Be sure the size and rating of the tow ball matches the coupling size and rating of the coupling. Balls and couplings are marked with their size and rating.

 WARNING
<p>Coupling to ball mismatch can result in uncoupling, leading to death or serious injury.</p> <p>Make sure the tow bar and ball are rated for the trailer coupling.</p> <p>Make sure the ball size matches the coupling.</p>

- Wipe the ball clean and inspect it visually and by feel for flat spots, cracks or pits.

 WARNING
<p>A worn, cracked or corroded coupling or ball can fall while towing and may result in death or serious injury.</p> <p>Check the coupling and ball for wear, corrosion and cracks before coupling the trailer.</p> <p>Replace worn, corroded or cracked parts before connecting to the tow vehicle.</p>

- Rock the ball to make sure it is tight to the tow bar, and visually check that the ball nut is solid against the lock washer and tow bar frame.
- Wipe the inside and outside of the coupling, clean and inspect for it visually for cracks and deformations; feel the inside of the coupling for worn spots and pits.

 WARNING
<p>A loose ball nut can result in uncoupling, leading to death or serious injury.</p> <p>Make sure the ball is tight on the tow bar tongue before coupling.</p>

- A trailer can be fitted with different types of couplings but most of them have some type of locking devise either on the top or the side.
-

- Open the coupling locking mechanism. Ball couplings have a locking mechanism with an internal moving piece (Ball Clamp) an outside with a latch. See figure 1 & 2
- In the open or unlatched position, the coupling is able to drop fully onto the ball. Lower the trailer coupling over the ball, then engage the locking mechanism to hold the coupling to the ball securely.
- Be sure the coupling is all the way on the ball and the locking mechanism is engaged. A properly engaged locking mechanism will allow the coupling to raise the rear of the tow vehicle.
- Using the trailer Jockey wheel or jack, test to see that you can raise the rear of the tow vehicle by 30mm after the coupling is locked to the townball.

If the coupling cannot be secured to the tow ball, do not tow the trailer.



Figure 1. 50mm coupling



Figure 2. 50mm Override Coupling

2.1.6. Connecting the Safety Chains

Visually inspect the safety chains and shackles for wear or damage. Replace worn or damaged safety chains before towing.

Fit the safety chains so that they are:

Criss-cross underneath the coupling so if the trailer uncouples, the safety chains can hold the draw bar up above the road. See figure 1-2

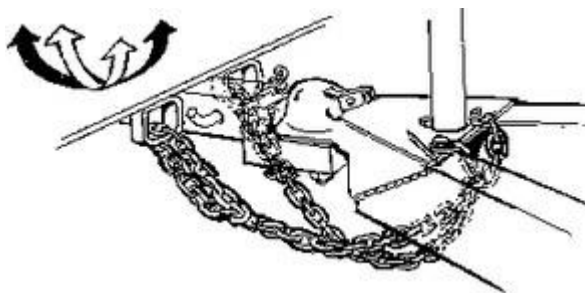


Figure-1

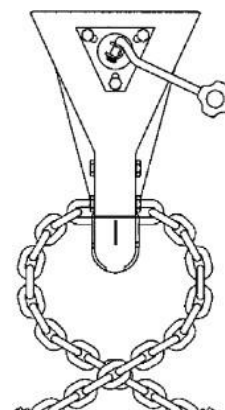
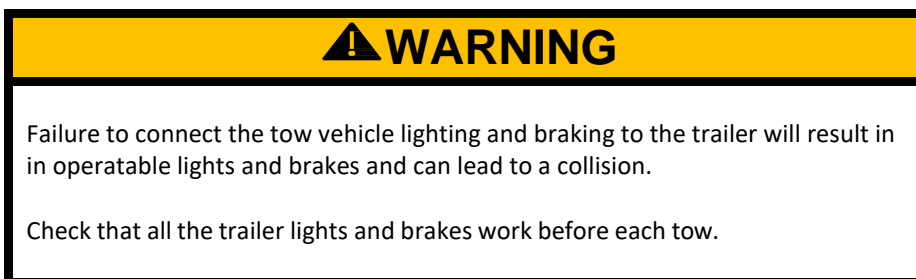


Figure-2

2.1.7. Connecting the Electrical Cable

Connect the trailer lights to the tow vehicles electrical system using the electrical connector (Plug)

- Check all lights for proper operation.
- Clearance and taillights (Turn on the tow vehicles headlights).
- Brake Lights (Step on the tow vehicle brake pedal)
- Indicator signals (Operate tow vehicle directional signal lever)
- If your trailer has electric brakes, check brakes for proper operation using the brake controller mounted in the cab.



2.1.8. Uncoupling the Trailer

Follow these steps to uncouple you trailer from the tow vehicle.

- Unbraked trailer - Chock trailer tyres to prevent the trailer from rolling, before jacking the trailer up.
- Braked Trailer – Engage handbrake to prevent the trailer from rolling, before jacking the trailer up.
- Disconnect the electrical connector
- Disconnect the safety chains from the tow vehicle
- Unlock the coupling, by pushing the looking mechanism in and lifting the coupling handle.

Either use the jockey wheel jack or lift the coupling

2.1.9. Operating the hand brake

All Coastmac trailers equipped with brakes have a hand brake, which should be used when the trailer is parked or stationary. However, for long-term parking, it is recommended not to use the hand brake, as it may cause the brakes to seize. Instead, chock the wheels to secure the trailer.

To activate the hand brake, pull the hand brake handle over the dead center, which tightens the brake cable and keeps the brake engaged.

Brake should be checked and adjusted regularly as loading and travel can loosen the tension on the cable. This can be done by unlocking the two nuts on the brake cable adjuster (see below picture).



Warning: If the hand brake is not fully in a vertical direction,



3. LOADING THE TRAILER

Improper loading causes many accidents and deaths. To safely load a trailer, you must consider:

- Overall load weight
- Load weight distribution
- Proper coupling weight
- Securing the load

To determine that you have loaded the trailer within its rating, you must consider the distribution of the weight, as well as the total weight of the trailer and its contents. The trailer axles carry most of the total weight of the trailer and its contents. GTM

The maximum weight of a trailer is specified as either its Aggregate Trailer Mass (ATM) or Gross Trailer Mass (GTM).

Aggregate Trailer Mass ATM is the combined weight of the trailer and its full load when it is not coupled to a tow vehicle.


Gross Trailer Mass (GTM) is the weight of the fully loaded trailer imposed on the trailer's axle when it is coupled to the tow vehicle

The remainder of the total weight is carried by the tow vehicle. It is essential for safe towing that the trailer draw bar, coupling and tow vehicle tow bar carry the proper amount of the loaded trailer weight, otherwise the trailer can develop an undesirable sway at towing speeds, or the rear of the towing vehicle can be overloaded. Also, the trailer draw bar can develop cracks either around the coupling or where it meets the chassis of the trailer.

The load distribution must be such that no component part of the trailer is loaded beyond its rating. This means you must consider the rating of the tyres wheels and axles. For tandem or tri-axle trailers, you must make sure that the front to rear load distribution does not result in overloading any axle.

Towing stability also depends on keeping the centre of gravity as low as possible. Load heavy items on the floor and over the axles. When loading additional items, be sure to maintain even side to side weight distribution and proper coupling weight. The total weight of the trailer and its contents must not exceed the total weight rating of the trailer.

Gross Trailer Mass (GTM)

 WARNING
An overloaded trailer can result in failure or loss of control of the trailer, leading to death or serious injury.
Never load a trailer so that the weight on any tyre exceeds its rating.
Never exceed the trailer Gross Trailer Mass (GTM)
Never exceed an axle gross weight rating.

3.1.1. Tow Bar Weight

It is critical to have a portion of the trailer load carried by the tow vehicle. That is the trailer draw bar must exert a downward force on the tow bar. This is necessary for two reasons. First, the proper amount of coupling weight is necessary for the tow vehicle to be able to maintain control of the vehicle/trailer system. If, for example the draw bar exerts an upward pull on the tow ball, instead of pushing down on it (because the trailer is overloaded behind its axles) the rear of the tow vehicle can lose traction or grip and cause loss of control. Also, even if there is some weight on the tow ball, but not enough weight the trailer can become unstable at high speeds. Remember the faster you go the more likely the trailer is to sway.

If, on the other hand there is too much weight on the tow ball, the tow vehicle is prone to jack-knife. Furthermore, the front wheels of the tow vehicle can be too lightly loaded and cause loss of steering control and traction.

In the following table is the rule of thumb of percentage of weight on the draw bar.

Coupling weight as a percentage of the loaded trailer weight	Percentage
Small Trailers	6-10% for small box trailers
Large Trailers	10-15% for larger tandem trailers

4. CHECKING THE TRAILER DURING & BEFORE EACH TOW

4.1.1. Pre- Tow Check

Before towing, double check all these items:

- Tyres, wheels and wheel nut tightness (torque) see chart below
- Tyre Pressure. Inflate tyres on trailer to the value indicated on the VIN plate
- Coupling secured and locked on the tow ball (see the “Coupling to Tow Vehicle” section of this manual)
- Safety chains properly attached to the tow vehicle. (see the “Coupling to Tow Vehicle” section of this manual)
- Test Tail stop and Indicators
- Cargo properly loaded, balanced and tied down. (See the “Loading of the trailer” of this manual)
- Doors and gates latched and secured

4.1.2. Make Regular Stops

After each 100 kilometres, or one hour if towing, stop and check the following items:

- Coupled secured
- Safety chains are fastened and not dragging
- Load secured
- Gates and doors secured
- Check tyres for signs of abnormal wear and loss of air pressure

4.1.3. Retighten wheel nuts at first 100, 500 and every 1000 kilometre thereafter.

Wheel nuts can sift and settle quickly after being first assembled, and must be checked after the first, 100 kilometres, 500 kilometres and every 1000 kilometre thereafter of driving. Failure to perform this check may result in a wheel coming loose from the trailer, causing a crash leading to death or serious injury. Refer to the Inspection, Service & Maintenance section for proper tightening sequence and torque value for the wheel nut bolts.

See Chart Below

⚠ WARNING

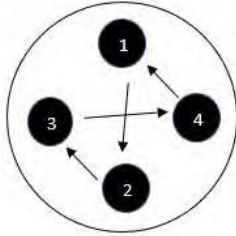
Wheel nuts are prone to loosen after being first assembled. Death or serious injury can result.

Check Wheel nuts for tightness on a new trailer, after re-mounting of a wheel at 100, 1000 and 2000 kilometres.

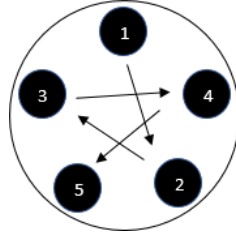
WHEEL NUT TORQUE & TIGHTENING PATTERN

- An impact / rattle gun if used, must only be used to “nip up” the wheel nuts (for speed) ·
- An impact gun should never be used to achieve the final wheel nut torque setting ·

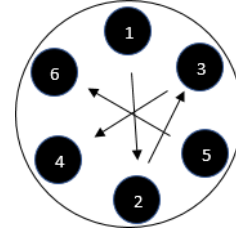
- The correct nut torque sequence for the wheel must be used, to correctly and centrally locate the wheel on the hub of the trailer .
- It is imperative that the final wheel nut torque must be achieved manually, using a properly calibrated, high quality torque wrench



4 Lug Tightening Pattern



5 Lug Tightening Pattern



6 Lug Tightening Pattern

Torque Setting Guide		
Wheel Stud	Foot Pounds	Newton Metres
1/2" studs	88.51 ft-lbs	120Nm
5/8" Studs	175 ft-lbs	237Nm

Most of our trailers have ½" stud so use 1320 Nm torque.

Important - Please Note:

- It is essential that wheel nuts should be re-torqued after an initial run-in period (pre-determined km's)
- We suggest the wheel nut tension should be re-checked after the first 100 km of operation

5. BREAKING-IN A NEW TRAILER

5.1. Adjust Brakes shoes

Brake shoes and drum experience a rapid initial wear. The brakes must be adjusted after the first 200 Kilometres of use, and each 4,000 kilometres thereafter. Most axles are fitted with brake shoes that must be manually adjusted. This must be done by an authorised dealer or mechanic or Coastmac Trailers.

If fitted with mechanical cable brakes this can be adjusted by Turing the turn buckle on the cable inwards.

5.2. Retighten Wheel nuts at first 100km

Wheel Nuts can sift and settle quickly after being first assembled, and must be checked after the first 100km, 500km and every 1000km. failure to perform this check may result in a wheel coming loose from the trailer.

5.3. Tyre Pressure

Check tyre pressure on all wheels of the trailer. Inflate to the value indicated on the VIN plate located on the left-hand side of the draw bar. Different types of tyres must have different tyre pressure to work optimally and not wear down too fast.

Tyre Pressure Chart by Load	
235/70R16	
Load Index	Tyre Pressure (Front/Rear)
Up to 600 kg	32 psi / 32 psi
601 - 800 kg	35 psi / 35 psi
801 - 1000 kg	38 psi / 38 psi
1001 - 1200 kg	40 psi / 40 psi
225/75R16	
Load Index	Tyre Pressure (Front/Rear)
Up to 600 kg	30 psi / 30 psi
601 - 800 kg	35 psi / 35 psi
801 - 1000 kg	38 psi / 38 psi
1001 - 1200 kg	40 psi / 40 psi
185R14	
Load Index	Tyre Pressure (Front/Rear)
Up to 400 kg	28 psi / 28 psi
401 - 600 kg	32 psi / 32 psi
601 - 800 kg	35 psi / 35 psi
801 - 1000 kg	38 psi / 38 psi
195R15	
Load Index	Tyre Pressure (Front/Rear)
Up to 400 kg	28 psi / 28 psi
401 - 600 kg	32 psi / 32 psi
601 - 800 kg	35 psi / 35 psi
801 - 1000 kg	38 psi / 38 psi

5.4. Check Hubs

Check Hubs after 1000k kilometres for excessive heat. Also push the wheel in and out to see if there is movement in the hub, if so this would need to be adjusted. Overtightening or too loose in the hub can cause bearing damage. Service is required regularly. See service chart below.

5.5. Galvanized parts

Galvanized parts must be "oxygnated" before the galvanization is an effective protector against rust. If the Galvanization turns 'matt' in colour this must not be mistaken with it being defective, in fact Galvanization is complete and most effective when the metal turns matt.

6. INSPECTION, SERVICE & MAINTANANCE

6.1. Inspection, Service & Maintenance Summary Charts

You must inspect, maintain and service you trailer regularly to insure reliable operation. Inspections can be performed by any person or persons but most service must be done by an authorised dealer or mechanic or by returning it to Coastmac Trailers.

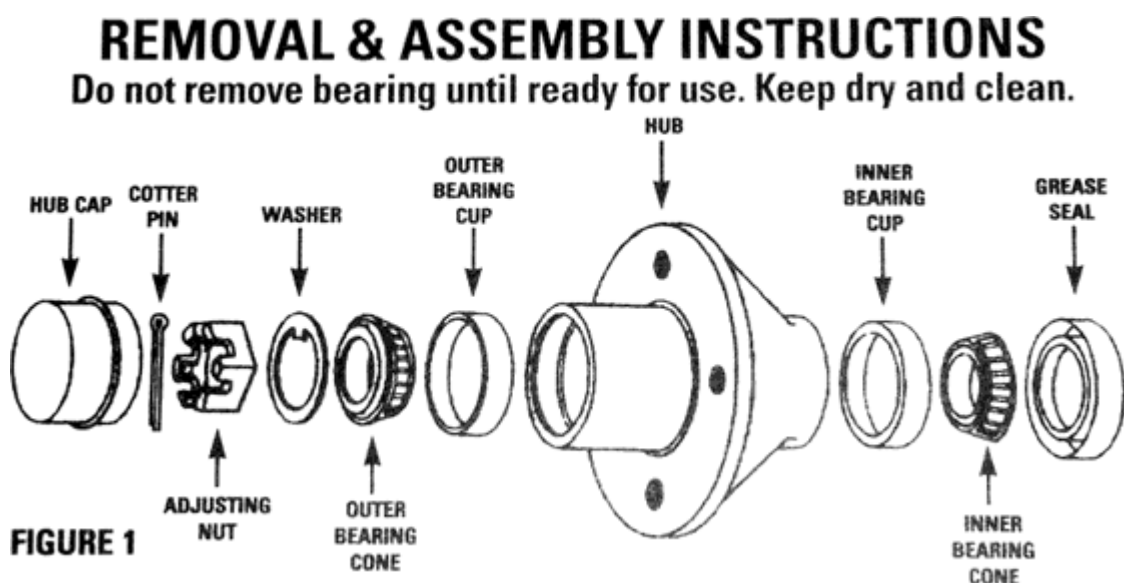
CoastmacTrailers Inspection Service Intervals						
Item	Service Required	Manual Section Reference	Service Interval			
			Before Each Use	Every 3 Months	Every 6 Months	Every Year
U-Bolts	Checked by Dealer		•			•
Breakaway Brakes	Check Operation					
Breakaway Battery	Fully charge, connection clean		•			
Breakaway Switch	Test Operation & Connection		•			
Brakes, all types	Check Operation		•			
Brake Shoes	Check operation			First 200km	4000km	thereafter
Brake Cable	Adjust to each load		•			
Brakes Hydraulic	Check fluid level & replenish. Check for leaks/ sticking.			•		
Master Cylinder	inspect for cracks, leaks, kinks.			12 months		•
Brake Lines	Verify operation/inspect			12 months		•
Lights	Check for proper operation		•			
Trailer Body	Wash to remove road grime & grease			•		
Trailer Chassis	Inspect Chassis & draw bar for cracks					•
Welds	Inspect all welds, repair as needed				•	
Tyres						
	Check Tyre Pressure when cold		•			
	Rotate tyres				•	
	Inspect treads & side walls			•		
Wheel Bearings Hubs						
	Check for free running & lubricant			•		
	Running in hubs			First 1000	kilometres	
	Service check re-grease or replace					•
Override coupling	Re- grease with Hub service					•
Cable brake adjustment			•	Depends on the load		
Axle, Spring & coupling Bolts						
	Check for tension			•		
	Inspect for crakes in the U-bolts			•		

6.2. Bearing & Hub Service

Disassemble, inspect and re-pack the wheel bearings every 12 months or 10,000 Kilometres, whichever occurs first.

If a trailer wheel bearing is immersed in water, it must be repacked after each immersion

If your trailer has not been used for an extended amount of time, have the bearings inspected and packed more frequently, at least every six months and prior to use.



- After Removing the grease cap, split pin castle nut & washer, remove the hub by pulling on the hub to slide off the axle shaft. NOTE, the outer bearing cone will come out but the outer bearing cups on both sides will stay in the hub as they are pressed on.
- The cups would need to be removed by a qualified person or mechanic.
- Replace bearings that have flat spots on the rollers, broken roller cages, rust or pitting. Always replace the bearings and cups in a set. The inner & outer bearings are to be replaced at the same time.
- Replace seals that have nicks, tears or wears.
- Lubricate the bearings with a high-quality EP-2 automotive wheel bearing grease.

Every time the wheel hub is removed, and the bearings are reassembled, follow the steps below to check the wheel bearings for free running and adjust.

- Turn the hub slowly, by hand while tightening the castle nut, until you can no longer turn the hub by hand.
- Loosen the castle nut just until you can turn it (the castle nut) by hand. Do not turn the hub while castle nut is loose.

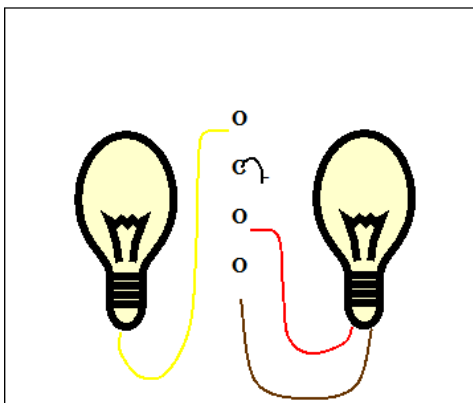
- Put a new cotter pin through the castle nut and axle.
- Check the adjustments. Both the hub and the castle nut should be able to move freely (the castle nut motion will be limited by the Split pin).

7. TECHNICAL REFERENCE

7.1. TRAILER LIGHTING ELECTRICAL CONNECTION

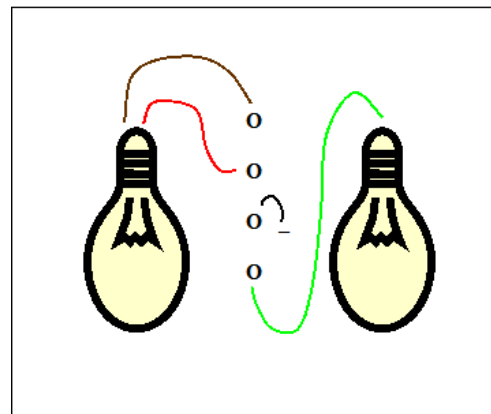
The electrical wiring on your CoastmacTrailer has been designed and built in accordance with the Australian Standards ADR that were in affect when the trailer was produced.

LEFT SIDE



YELLOW
WHITE
RED
BROWN

RIGHT SIDE



BROWN
RED
WHITE
GREEN

7 Pin Large Round Plug and Socket

PIN No.	CIRCUIT	COLOUR
1	Left-hand turn	Yellow
2	Reversing signal	Black
3	Earth return	White
4	Right-hand turn	Green
5	Service brakes	Blue
6	Stop lamps	Red
7	Rear lamps, clearance & side marker lamps	Brown




*Cable entry view

7 Pin Flat Plug and Socket

PIN No.	CIRCUIT	COLOUR
1	Left-hand turn	Yellow
2	Reversing signal	Black
3	Earth return	White
4	Right-hand turn	Green
5	Service brakes	Blue
6	Stop lamps	Red
7	Rear lamps, clearance & side marker lamps	Brown




*Cable entry view

7.2. Axle sizes & Bearing Numbers

40mm Square Axle - Standard Holden Bearing LM 45mm Square Axle - Slimline or Parallel Bearings 50mm Square Axle - Slimline or Parallel Bearings

LM Bearing Sets

	PART NUMBER	HOUSING DIAMETER NOMINAL	BEARING JOURNAL/SEAL JOURNAL DIAMETER NOMINAL
Inner Bearing	LM67048/10 (Holden Inner)	59.10 mm	31.75mm
Outer bearing	LM11949/10 (Holden outer)	45.20 mm	19.05mm
Grease seal	28550	59.10 mm	37.5mm
Grease cap		45.20 mm	N/A

Slimline Bearing Sets

	PART NUMBER	HOUSING DIAMETER NOMINAL	BEARING JOURNAL/SEAL JOURNAL DIAMETER NOMINAL
Inner earing	L68149/10 (Ford inner)	59.10 mm	35.00mm
Outer Bearing	LM12749/10 (Ford outer)	45.20 mm	22.00mm
Grease seal		59.10 mm	43.9mm
Grease cap		45.20 mm	N/A

Parallel Bearing Sets

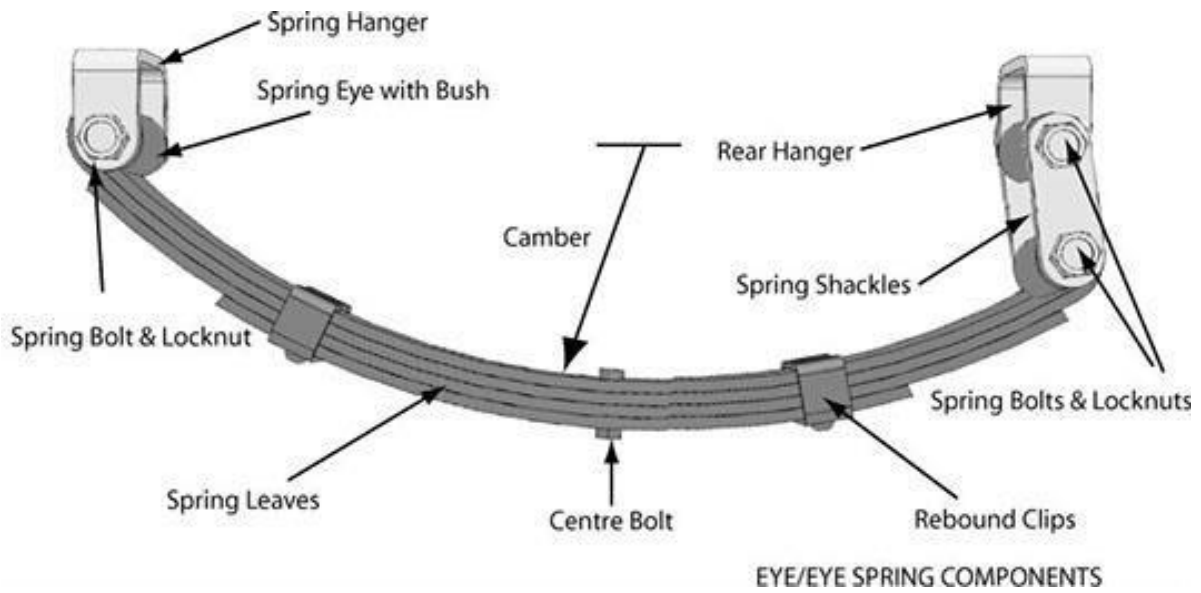
	PART NUMBER	HOUSING DIAMETER NOMINAL	BEARING JOURNAL/SEAL JOURNAL DIAMETER NOMINAL
Inner Bearing	L68149/10	59.10 mm	35.00mm
Outer Bearing	L68149/10	59.10 mm	35.00mm
Grease seal		59.10 mm	43.9mm
Grease cap		63.00mm	N/A

7.3. Springs

Coastmac uses a variety of springs depending on the type of trailer & load required, the most common springs used are:

7.1 Shackle Springs (Figure 1)

Shackle Springs are more commonly used on our Galvanized Trailers



(Figure 1)

7.4. Rocker Roller Springs

Rocker Roller springs are a load sharing suspension and are used standard on our galvanized trailers, Commercial Trailer, Industrial trailers, Tray top Trailers and all trailers that have a rating over 2000kg.

Rocker springs have wearing parts Roller bush that must be checked for wear, also Grease regularly on the grease nipple points in the centre rocker arm and roller bushes.



7.5. Parts required for mounting axles to the springs are:

There are different size U-bolts & Fish plates depending on the axle size as stated in section 7.2.

1. Axle Pads (*Figure 1*)
2. Fish Plates (*Figure 2*)
3. U-Bolts (*Figure 3*)
4. Nut Nylocks (*Figure 4*)



Figure 1



COASTMAC

COASTMAC PTY LTD – Warranty Terms & Conditions

*****Purchaser must check all wheel nuts between the first 50 – 100kms*****

One Year Frame Warranty

COASTMAC warrants that each trailer and its fabricated steel components, including the ball coupling to be free of structural or defects for a period of one year from the date of original purchase date. Tyres and tubes are excluded.

Three Month Warranty

COASTMAC warrants that the trailer LED lighting, U bolts, nuts, bolts, mechanical/electrical braking equipment, axles, wheel bearings, seals and all other wear parts for a period of 3 months from the original purchase date.

OBLIGATION – COASTMAC shall repair or replace within reasonable time any item covered under the warranties above by methods decided by COASTMAC staff. COASTMAC is under no obligation to collect a trailer or repair a trailer off site.

In ALL cases the owner must pay the cost of transporting the COASTMAC trailer, to and from Coastmac's premises. Freight and delivery costs are not included in the warranty and must be paid by the owner.

CONDITIONS – To make a claim under this warranty satisfactory proof of purchase must be given at the time of notification of any claim. This warranty is limited to structural defects in workmanship performed only by COASTMAC. Notification of any warranty issue must be given to COASTMAC within 24hrs of the issue occurring. COASTMAC must be given access to inspect the trailer at its factory at 334 South Western Hwy, Picton WA 6229. The trailer must not be used to carry a load until inspection is completed. Unless otherwise directed by COASTMAC all warranty repairs are to be completed by COASTMAC, at its address in Picton, WA. This warranty is valid to the original purchaser only and is not transferable to a third party.

NOT COVERED - This warranty is limited to exclude any claim relating to:

1. Tyres.
2. Jockey wheel.
3. Misuse of the trailer including but not limited to using the trailer with a load in excess of its structural capacity as designated on the compliance plate attached to the trailer.

4. Incidental and consequential damages or costs of any kind.
5. Failure to maintain the trailer.
6. Rust occurring on the trailer or any of its components e.g. axles, springs, couplings and/or
7. jockey wheel.
8. Any component fitted by COASTMAC that was not manufactured by COASTMAC (including but not limited to electric winches and hydraulic systems) that items are covered by the original
9. manufacturer's warranty and must be used in accordance with the original manufacturers guidelines.
10. The cosmetic appearance of the trailer including but not limited to galvanised surfaces and the paint becoming dull or faded.
11. Damage caused by alterations or modifications, fair wear and tear, accidents or off road use.

COASTMAC recommends that your trailer be serviced at least once a year, with brakes and bearings requiring six monthly service attention. Checks should be done on all your running gear regularly. Regular maintenance will lengthen the life of the trailer and keep the trailer in safe working operation