



SPECIALIST MANUFACTURER

## TRAILER DETAILS

SIZE :  
MODEL :  
VIN.NO : 6FL112233J1000  
TYRE SIZE :  
WHEEL TYPE :  
COLOUR :  
REGO.NO :

### REPLACEMENT BEARING KIT INCLUDING SEAL:

- |  |   |
|--|---|
| <input type="checkbox"/> BK1-PT1160 (LM)     | <input type="checkbox"/> BK5-2TP (2-2½ TNE)   |
| <input type="checkbox"/> BK3-PT1170 (SL)     | <input type="checkbox"/> BK1-1165 (LM Marine) |
| <input type="checkbox"/> BK3A-160T (P/Shaft) | <input type="checkbox"/> BK3-1175 (SL Marine) |
| <input type="checkbox"/> BK2-12T (Composite) | <input type="checkbox"/> BK3B-12E (Dexter)    |
| <input type="checkbox"/> ROGERS 'S' CAM      | <input type="checkbox"/> BK5-2TA (AL-KO)      |

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## TRAILER INFORMATION BOOKLET

**This booklet contains important information.  
Please read carefully.**

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# TOWING TRAILERS

## THE TOWING VEHICLE.

Vehicles must be suited to the trailer. Vehicle manufacturers usually indicate in the owner's manuals the maximum weight and other features of trailers appropriate for the vehicle. These limits should not be exceeded.

### **Towing vehicles must be properly equipped with:**

- \*Towbars and couplings of a suitable type and capacity.
- \*Electrical sockets for lighting.
- \*Brake connectors if the trailer is fitted with power or electric brakes.

### **Additionally:**

- \*Extra mirrors may be needed for the towing vehicle if towing a large trailer.
- \*For vehicles with automatic transmission, an extra transmission oil cooler may be needed.
- \*Some vehicles require structural reinforcement and/or special suspension and transmission options and load distributing devices to be able to tow heavier trailers.

## TOW BAR

A properly designed and fitted towbar is essential for towing. The rated capacity of the towbar and coupling should not be exceeded.

**The towbar should be clearly and permanently marked with its:-**

- \*Maximum rated capacity.
- \*Make and model of the vehicle it is intended for or the manufacturer's part number.
- \*Manufacturer's name or trade mark.

This is compulsory for vehicles built after 1<sup>st</sup> January 1992. The exception is where the towbar is a permanent part of the vehicle.

Towbars must not protrude dangerously when there is no trailer connected.

- \*Rear number plates and lights must not be obscured by the towbar when there is no trailer connected

## LOAD EQUALISERS

Load equalisers can be used when towing large caravans/trailers.

**Features of load equalisers:**

- \*Help the vehicle retain normal suspension height and effective steering control.
- \*Transfer some of the weight from the towbar to the front and rear suspension of the vehicle.

As load equalisers may overload the towbar and its components, check with the towbar manufacturer for advice before use.

## THE TRAILER

Trailers must be a suitable size and type for their intended tasks. They must be built to meet the standards for registration.

## TRAILER CARRYING CAPACITY

Each Trailer Factory trailer is fitted with a manufacturer's vehicle compliance plate. This plate is located on the drawbar of the trailer.

The plate states all of the trailer information required by law, including trailer model, tyre information and pressure, carrying capacity, etc. It is important to ensure you have more than enough capacity for the intended use. Failure to do so may result in trailer failure and void warranty.

## TOWING RATIO REQUIRMENT

**The loaded mass of the trailer must not exceed the lesser of:**

- \*Rated capacity of the towbar and tow coupling.
- \*Maximum towing capacity of the vehicle.
- \*Maximum carrying capacity of the trailer.
- \*Maximum rated carrying capacity of the tyres.

**If the vehicle manufacturer has not specified the maximum towing mass, the maximum towing mass is:**

- \*One and a half times the un-laden mass of the towing vehicle provided that the trailer is fitted with brakes which are connected and in working order: or
- \*The un-laden mass of the towing vehicle if the trailer does not require brakes. (Trailer must not exceed 750kg gross without brakes)

Vehicles with a manufacturer's gross combination mass (GCM) more than 4.5 tonne may tow in accordance with the above requirements. The GCM is the gross combination mass of the car and loaded trailer.

## BRAKING SYSTEM

The minimum braking system for a trailer depends on the type of trailer; its weight and the weight of the vehicle.

\*0-750kg loaded weight – no brakes required.

\*751-2000kg loaded weight – braking on both wheels on at least one axle, -over ride brakes are permitted.

\*2001-4500kg loaded weight – braking on all wheels and an automatic breakaway system in case the trailer becomes detached from the vehicle.

Brakes must be operable from the drivers seating position.

## TOWING COUPLING

**All couplings:**

\*Must be strong enough to take the weight of a fully loaded trailer.

\*Should be marked with the manufacturer's name or trade mark and rated capacity.

\*Must be equipped with a positive locking mechanism. The locking mechanism must be able to be released regardless of the angle of the trailer to the towing vehicle.

## SAFETY CHAINS

\*Trailers of ATM up to 2.5 tonnes must have at least one safety chain.

\*Trailers of ATM over 2.5 tonnes must have two safety chains.

**To prevent the front end of the drawbar from hitting the ground if the coupling is disconnected, safety chains must be:**

\*As short as is practicable and connected to the towing vehicle.

\*Crossed over if two chains are fitted.

## THE DRIVER

Towing a trailer puts additional responsibilities on a driver and requires more knowledge and skill than normal driving.

**Drivers need to make sure they understand the general principles of driving with a trailer before attempting to tow in traffic or at highway speeds,**

**For Example:-**

- Allowance must be made for the extra length and width of trailers and their tendency to "cut-in" on corners and curves.
- Greater stopping distances must be allowed.
- Brakes should never be applied more than very lightly when cornering or travelling around a curve, particularly when the road may be wet or slippery.
- Reversing with a trailer can be quite difficult and it takes practice to be able to do it. With large trailers it is a good idea to always have an outside observer watching the rear.
- Wind, road roughness and passing vehicles all influence a trailer's effect on the ride and handling of the combination.
- Trailers tend to jerk the back of the tow vehicle around and can cause sway.(snaking).
- If a trailer starts to sway, the tow vehicle's brakes should not be applied, except as an absolute last resort. If the trailer's brakes can be operated independently they should be applied gently, otherwise a steady speed or slight acceleration should be held if possible until the sway stops.
- Pull over and adjust load (see loading trailer)

**Some other points to note that can help in driving safely with a trailer attached are;**

- It is more stressful than normal driving and more likely to cause fatigue.
- On long trips more rest stops and shorter travelling days should be planned.
- Care must be taken not to hold up following traffic unnecessarily.
- As trailers reduce the towing vehicle's performance, much greater care is needed when overtaking.
- Longer distances must be allowed for joining a traffic stream and when braking.
- A bigger gap must be left between you and the rear of vehicles ahead to allow both for the reduced braking ability and for overtaking vehicles to rejoin the left lane.
- Sudden lane changes and changes of direction must be avoided to minimise the chances of causing sway.
- Drivers need to look even further ahead than usual to be able to anticipate what the traffic and road conditions will require of them.
- Accelerator, brake and steering must be operated smoothly and gently at all times, and unnecessary movements of the steering wheel must be avoided, because of the ease with which sway can occur.
- A lower gear should be engaged when travelling downhill to increase vehicle control and reduce strain on brakes.
- With large trailers fuel consumption increases very noticeably at higher speed (above 90km/h for most light vehicles)



**COUPLING AND UNCOUPLING YOUR TRAILER:**

A. Always attempt to select level ground. If this is not possible use the handbrake (if brakes are fitted) or use a second person to help you, as the weight of your trailer may exceed the strength you have to control it. Always reverse as close as possible to the trailer.

**B. WARNING:**

Avoid wheeling the trailer to the vehicle with the jockey wheel as they are only designed for moving the trailer very short distances.

C. Keep small children and your feet away from jockey wheels, as failure to do so may cause injury.

D. Quick release coupling – fit the coupling to the tow ball ensuring that the safety latch is locked down. The safety latch, also doubles as a locking device for fitting a padlock.

E. Make sure the coupling socket and ball are the correct matching size to go together properly or if not a ball coupling, that all the parts fit and function properly

**F. WARNING:**

This safety catch must be in the locked down position for travelling.

If supplied, fit 'R' clip to secure safety catch.

**SAFETY CATCH**

LOCKED



UNLOCKED



G. Remove jockey wheel from the jockey wheel clamp on the drawbar of the trailer (do not simply wind it to the up position as it will surely vibrate down) or if fitted with swing up jockey wheel rotate to its horizontal position.

H. Fit safety chain(s), if two safety chains are fitted, these should be crossed when attached to the towing vehicle to provide better directional control of the trailer and to assist in preventing the front of the drawbar from contacting the road if the coupling become disconnected.

I. Connect the electrics by plugging the male trailer electrical plug into the car socket (normally located near tow tongue) Check all lights on the trailer are operating correctly.

J. Check tyre pressure for correct inflation.

K. Where over-ride brakes are fitted to a trailer, the coupling has a 'reversing latch' fitted between the coupling head and the body. This latch must be in the off (out) position when towing, and in the on (in) position for reversing. The reason for this is to prevent the brakes engaging whilst reversing if a restriction is encountered. Eg: Trailer wheels pushing against a kerb.

### REVERSE LATCH

REVERSING



FORWARD



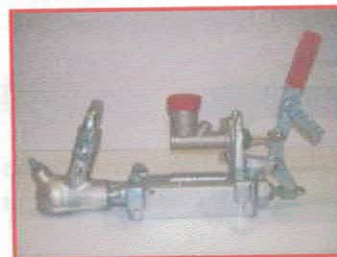
If the trailer has electric or vacuum operated brakes, check their initial operating adjustments in accordance with the manufacturer's instructions.

Make 1 or 2 test stops from low speed to confirm that the trailer brakes operate properly

### **WARNING:**

**Release park brake lever if fitted.**

OFF

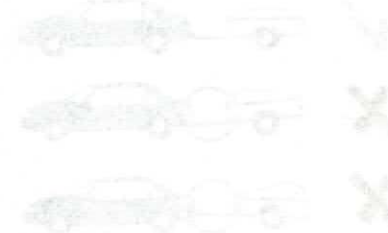


ON



L. Uncoupling your trailer is basically the reverse of the above procedures, but remember to secure your trailer before leaving it. Chock the wheels and engage the mechanical hand brake. (If fitted)

**DO NOT USE** the park lever on hydraulic over ride brakes for permanent parking.  
see page 31



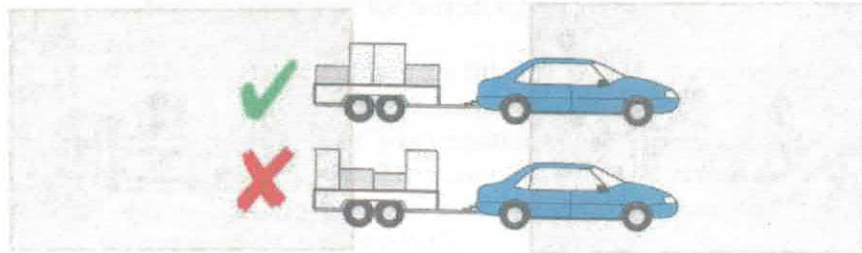
## LOADING TRAILERS

It is important that trailers are not overloaded and that loads are properly secured to or contained within the trailer.

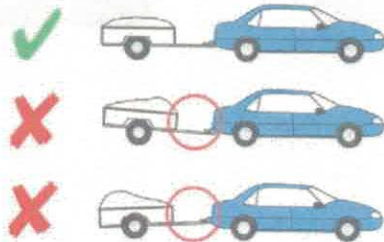
\*A load must not project more than 150mm beyond the trailers width or be more than 2.5m overall width, whichever is less.

\*Overall length of the vehicle and trailer combination including its load must not be more than 19m.

\*To reduce sway, heavy loads should be concentrated towards the centre of the trailer.



\*Loads should be kept as low and as close as possible to the axle or axles with about 60 per cent of the total weight forward of the centre of the axle or axles. As a general rule about 5-10 per cent of the total mass of the trailer plus load should be supported by the vehicle through the coupling. The trailer drawbar should be level or slightly 'nose down'.



## ON THE MOVE



Soon after commencing each day's travel with the trailer, stop and check:

1. The coupling and safety chains, to ensure these are still properly fastened.
2. The brakes and wheel bearings, to confirm that these are not overheating.
3. Check handbrake is released.
4. The lighting, to see that all lamps are still working
5. The tyres, to confirm they are still inflated correctly and are not rubbing on the mudguards, suspension trailer body etc.

### NOTE:

The correct pressure for your tyres is listed on the compliance plate at the front of your trailer.

6. The security of any load, doors, hatches, covers etc.
7. The above checks should be repeated every 2-3 hours, or at least at every stop.

## ROADWORTHINESS

All trailers must be properly maintained and roadworthy.

Before towing the general fitness of the trailer should be checked, paying particular attention to:-

- Lamps
- Brakes
- Drawbar
- Coupling
- Wheel bearings
- Suspension
- Wheels and tyres.

Tyres on trailers must be of the same type and size, in good condition and inflated to the same pressure to minimise the chances of trailer sway. (snaking), and the other hazards tyres can cause.

## JOCKEY WHEELS

If your trailer is fitted with a jockey wheel do not expect too much from it. It is designed only to help manoeuvre your trailer onto your vehicle. Do not use it for moving long distances. If it is possible, reverse your vehicle to the trailer. If you must wheel the trailer any distance, lower the jockey wheel into its lowest position. This is a safer option if something does fail. Always tighten the jockey wheel into its correct slot on the clamp, or lock pins in position on quick release bracket. This will prevent a sudden accidental drop. Always be extremely wary of winding the jockey wheel too high, it becomes unstable.

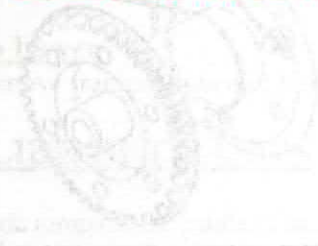
**Inspect your jockey wheel regularly and replace if damaged.**

## WINCH (If fitted)

Do not overload your winch or use it for any other purpose that was not intended. Familiarise yourself with the operation of your winch, especially the release and engagement of the pawl. Do not attempt to wind your winch backward with the pawl engaged. Inspect your winch for wear of the cable or strapping regularly and replace if worn or damaged. If you have a multi speed winch fitted, make sure you lock the pawl in position before changing speed.

After your trailer is loaded always use chains or ratchet straps to secure your load,

**Do not use winch for securing load.**





## **BRAKE WINCH**

**(if fitted)**

For raising and lowering ramps

**Lowering:-** Remove transport pin. Turn the crank anti clockwise to lower the load. The automatic brake prevents the handle from kicking back.

**Stopping** – The ramp can be stopped in any position by simply letting go of the handle.

**Lifting** – Turn the handle clockwise.

**Caution** – Keep at least three full turns of cable on the reel.

Do not let anyone stand under ramps when operating winch.

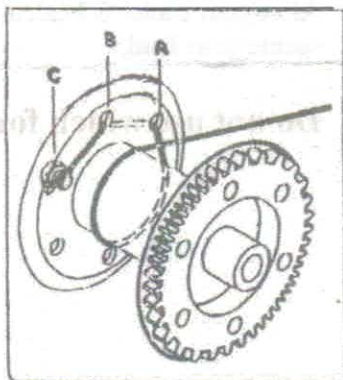
**Maintenance** – The winch has been fully lubricated at the factory, but for continued smooth performance and increased life, occasionally grease gears, reel shaft and handle threads.

**Caution** – Do not oil or grease the brake mechanism.

Inspect regularly the cable and fittings for wear and tear.

### **Replacing Cable:-**

- 1 Thread the lock nut into hole “c”. Do not tighten until cable has been threaded.
- 2 Thread the cable through holes from “a” to “b” and through the threaded portion of the lock nut on the inner drum.
- 3 Completely tighten the lock nut set into hole “c” of the inner drum.



## **MACHINERY/MOWER TRAILER WITH:- TILTING DECK (SHOCKER TILT)** (If fitted)

### **Unload**

- A. Lower ramp if fitted
- B. Remove tie downs.
- C. Slide-out front tilt lock pin.
- D. Slowly drive machine/mower off deck

Deck will automatically tilt as weight transfers to the rear of the trailer.  
Continue driving unit off until clear of deck.

**NOTE:-** Deck will stay in tilted position. If trailer is to be moved without machine being reloaded, place weight on front of trailer and replace tilt lock pin. Raise ramps if fitted and secure.

### **Re-Loading**

Drive/reverse machine/mower up ramp (deck) slowly until in parked position (deck of trailer has lowered to transport position) Fit lock pin. Fit the tie downs etc.

**NOTE:-** If trailer was moved since unloading, slide out release pin must be placed in the out position and trailer deck tilted.

Periodically spray locking pin assembly with spray lubricant (eg:INOX MX3)

## **FOLD UP RAMPS (MANUAL)** (If fitted)

### **To Lower**

Remove transport pin and lower ramp to ground. Lower stabiliser legs if fitted.

## **SLIDE OUT RAMPS** (If fitted)

Slide ramps from cradle (1 at a time) and secure to deck. Lower stabiliser legs if fitted.

**DO NOT ATTEMPT TO LOAD/UNLOAD IF THE TRAILER IS NOT ATTACHED TO TOWING VEHICLE.**



## ALKO OR DURATORQUE INDEPENDENT RUBBER SUSPENSION AXLE

(if fitted)

The independent rubber suspension axle requires no maintenance other than checking mounting bolts and will provide years of reliable and uninterrupted service.

(Abuse such as overloading or impact will greatly reduce axle life)

Brakes and hub/drum assemblies must be serviced according to the maintenance schedule

## ELECTRIC BREAKAWAY SYSTEM

(if fitted)

Electric breakaway systems are fitted to trailers 2000kg to 4500kg, and are designed to hold the brakes on for at least 15mins if the trailer becomes disconnected from the towing vehicle.

Maintenance of this system is extremely important and should be checked for sound operation before each and every trip.

- Inspect connections.
- Check switch is functioning correctly (pull clip out of switch – brakes should lock on – replace clip immediately)
- Check battery charge (press button on battery box) if undercharged – recharge and check battery condition.
- Check charge connections from tow vehicle.

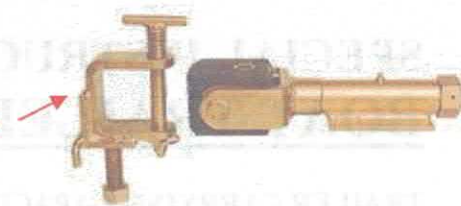
## **WARNING:-**

Never use the breakaway switch as a park brake (battery will flatten and brakes will become disengaged)

## TREG COUPLING

(if fitted)

“U-Bracket”



To attach coupling to tow vehicle:-

- Bolt 'u' bracket to tow vehicle (in place of tow ball)
- Position poly block into 'u' bracket
- Place spring pin through 'u' bracket and poly block (make sure spring is fitted on top of pin)
- Push down on spring pin and place lynch pin into hole at bottom of spring pin. (release pressure on spring pin and ensure spring pin moves up to put pressure on lynch pin)

## CARAC COUPLING

(if fitted)

To attach coupling to tow vehicle:-

- Ensure tow ball is 50mm
- Pull out safety clip and secure behind plate
- Lift handle and lower coupling onto ball
- Lower handle and release safety clip, allowing pin to engage handle.
- Fold safety clip down (clip will fit around plate)
- Padlock may now be fitted if you choose to. (optional)



# SPECIAL INSTRUCTIONS FOR BOAT TRAILERS

## TRAILER CARRYING CAPACITY

Each Trailer Factory trailer is fitted with a manufacturers vehicle compliance plate. This plate is located on the drawbar of the trailer.

This plate states all of the trailer information required by law, including trailer model, tyre information and pressure, carrying capacity etc. It is important to make sure you have more than enough capacity for the intended use, eg:- boat motor accessories and gear.

Failure to do so may result in trailer failure and void warranty

## FITTING YOUR BOAT TO THE TRAILER

### Aluminium and fibreglass boats.

The boat should sit hard on all keel rollers, with the side skids positioned as far out from the keel as possible, then adjusted up to take the minimum amount of weight to steady the boat.

**Note:-** If there is too much weight being carried by the hull, the boat will be harder to launch off the trailer. Adjust the winch post and winch alignment after all other adjustments have been made.

**Note:** Some boats do not have a keel, in which case wobble rollers or longer skids may be required. **DO NOT** rest an un-keeled boat on keel rollers.

## WEIGHT DISTRIBUTION

The weight distribution of the boat and trailer should be such that approximately 60% of the boats weight should be positioned on the front half of the trailer and 40% percent on the rear, bearing in mind, the limits of your towbar's weight capacity.

## LAUNCHING YOUR BOAT

Following are suggestions only on launching, retrieving and loading your boat at the ramp.

For the courtesy of others and to prevent rushing, prepare your boat for launching away from the ramp.

**Note:-** Do not undo the safety chain or winch strap on level ground and then reverse down the ramp, the slightest jerk while reversing could launch your boat onto the ramp well short of the water.

Even though you may have had a boat before, each boat trailer and ramp combination launches and loads differently.

Do not allow any person to ride in the boat when it is moving on the trailer.

The launching and retrieval should be carried out by two persons.

## PRE-LAUNCH

- \* Before submersing your trailer into the water, always allow the bearings to cool down even if fitted with bearing buddies.
- \* Check the boat to ensure no damage was done by the trip.
- \* Fit all drain plugs securely.
- \* Raise engine so as not to come in contact with the ramp or submerged object.
- \* Attach a line to the bow and stern of the boat, so the boat can not drift away after launching and it can be easily manoeuvred to docking area.
- \* Make sure the winch is properly attached to the bow and locked in position, remove transom tie downs and bow safety chain.
- \* Visually inspect the launch ramp for hazards such as a steep drop off, slippery area and sharp objects.

## LAUNCHING

- \* Back your trailer down the ramp until there is adequate buoyancy.

- \* Remove locking pin on tilt trailers.
- \* Hold the winch handle firmly, release the winch lock and begin unwinding the winch strap.
- \* Unwind it slowly and carefully making sure your hand does not slide off.

**Note:-** If your hand slips, do not attempt to stop a free winding winch by grabbing the spinning handle, as injury may be caused.

- \* Once the boat is free from the trailer, tie it to the dock or mooring, tilt trailer back down (if a tilt trailer) and remove your vehicle and trailer from the ramp and park.

**Note:-** Do not reverse down the ramp at excessive speed then slam the brakes on to launch your boat. This is a dangerous practice and it puts excessive strain on the equipment.

## RETRIEVAL

Be careful the first few times you retrieve your boat, until you become familiar with your trailer. Even if you are an experienced boatie, this trailer may not be familiar to you, therefore please take extra care during the first few retrievals.

- \* The steps for removing your boat from the water are basically the reverse of those taken to launch it.
  - \* Keep in mind certain conditions may exist during retrieval that did not exist during launching. As you approach the ramp, take special care to note such factors as:-
    - \*Change in wind direction and/or speed.
    - \*Change in current and/or tide.
    - \*Increase in boating traffic
    - \*Visibility
- Unload the boat away from the launch ramp.  
Manoeuvre the boat carefully to the submerged trailer, and raise the engine  
Winch the boat onto the trailer and secure it.  
Drive the trailer with the boat aboard, carefully out of, and away from the ramp before preparing the boat and trailer for the trip home.  
Remove all drain plugs and secure motor etc, and connect all tie downs.

- Visually check the entire unit for any problems before towing!
- If trailer has a tilt drawbar, check lock pin has been returned to lock position.

**Note:-** If any problems arise when pulling from the ramp, stop and address these problems before continuing.

## BOAT TIE DOWNS

### BOW

- \*Ensure the bow safety chain is connected correctly after the boat is in the final position.
- \*Ideally, the safety chain should be equipped with a turn buckle in order to keep the chain in tension.
- \*Safety chains with too much slack have a much greater chance of failing if the winch lock or cable fails whilst travelling.

**Note:-** It is illegal and dangerous to tow your boat with only the winch holding it in place.

### STERN

The stern of your boat must be tied down firmly, this keeps the boat securely attached to the trailer in the event of an accident, sharp swerving or, braking to avoid an accident or bad road condition.

The Trailer Factory recommends ratchet tie downs and not cambuckle straps.

### WINCH

Do not use the winch to stop your boat from rolling off by locking the winch pawls into gear whilst the winch is moving. This will result in extensive

damage to the winch. Use a safety rope tied to the boat. Regularly inspect the winch for wear of the cable or strapping and replace if worn or damaged.

If using a multi speed winch, make sure you lock the pawl in position before changing speed. Remove and stow loose winch handle when not in use.

**CAUTION:- Do not allow children to operate winch.**

## OVERALL BOAT RAMP TIPS

\*Only use designated boat ramps and launching areas.

\*Launch and retrieve is a simple process. Try not to over complicate things as it will only lead to frustration and panic. Patience and preparation are the key.

\*Visit the ramp prior to launch and watch for any unofficial procedures that many individual ramps have. Familiarise yourself with the ramp slope and water depth.

\*A 'test' run on a quieter weekday is a great idea for newcomers. You will feel less pressured and more relaxed if there is no one waiting whilst you conduct your first launch.

\*Be patient and offer assistance to anyone having difficulty at the ramp. The same applies if you are new to the ramp or are not sure of the procedure – ask someone.

\*Take extreme care when reversing. Ensure there is no one behind you. Make sure the brake is on and the car is in gear once the trailer is in position.

\*Don't cause unnecessary delay to others waiting in line.

\*Always work with your crew to make launching and retrieval a smooth and efficient process.

\*Be well prepared and know your launching/retrieving routine. A checklist will help you proceed quickly through each task without forgetting something important.

## TRAILER MAINTENANCE & STORAGE

It is very important to properly care for your trailer. With proper care your Trailer Factory trailer should give you many years of service. EACH TIME

**YOU HAVE FINISHED BOATING IT IS IMPORTANT THAT YOU WASH THE ENTIRE TRAILER AS SOON AS POSSIBLE WITH A DETERGENT SOAP.** Salt water especially deteriorates certain metals over time and with proper care you can possibly eliminate this process. You must lubricate all fittings to prevent rust and seizure. If brakes are fitted lubricate all moving parts and spray discs and callipers with anti corrosion protectant (fish oil or anti corrosion lanolin lubricant are good products to use).

If your boat is going to be stored on the trailer for long periods at a time, it is important to store it properly. To avoid damage from the sun and weather, cover the boat with a tarp. Remove weight from the trailer wheels by putting stands or timber blocks under the drawbar and all 4 corners of the trailer frame.

## BRACKETS & FITTINGS

Check all brackets, fittings, trailer frame, etc periodically for looseness, rusting, cracking or any signs of deterioration. Replace any questionable items before using the trailer. If signs of rust show, clean with an appropriate product and spray with a galvanising spray. If an item flakes with rust, replace it before using the trailer.

## WHEEL BEARINGS

Because boat trailer wheels are submersed when launching your boat, it is recommended that you service your bearings more frequently than listed in the maintenance schedule.

We recommend boat trailer wheel bearings are checked before every trip. It is highly recommended that a spare set of bearings and seal (and the tools to fit them) are carried at all times, especially if planning a long trip away from major towns.

"Milky" grease is a sign it has been contaminated by water. If this happens repack all bearings.

**Note:-** For bearing and bearing buddy maintenance, refer to maintenance section of this book.

## GALVANISING

New galvanised trailers weather naturally and the shiny silver becomes dull grey, a protective coating forms that is very resistant to corrosion and the only maintenance required is washing after each use. However when the galvanised coating is new it is very vulnerable to surface corrosion from road salt and other acids, this makes the surface rough with what looks like black or white deposits. This does not damage the protection, but can look unsightly. The only way to avoid this is to wash the new trailer after every trip.

**REMEMBER YOUR TRAILER ACTS AS THE CRADLE FOR YOUR PRIDE AND JOY. SO GIVE THE TRAILER AS MUCH ATTENTION AS THE BOAT.**

## GENERAL MAINTENANCE

The service & maintenance procedures in general are as follows:

- Check tyres for wear and pressure - Daily.
- Check spare wheel is secure and inflated to correct pressure
- Check wheel nuts are tight.

**Important – new trailers should have wheel nuts and bearing end play checked at 20km & 100km.**

### WARNING

Do not attempt to repair or modify the trailer without the aid of a qualified technician.

- Check coupling bolts
- Check spring bolts and 'U' bolts
- Check brake fluid level. If low check for leaks. Top up **300km**
- Adjust brakes

**EVERY 1000km or 6 months (whichever is sooner)**

- Check wheel bearings for adjustment and repack with suitable wheel bearing grease.
- Check brake shoes/disc pads for wear.
- Check brake lines
- Check magnets (electric brakes)

## MAINTENANCE continued.....

- Check wiring
- Adjust hydraulic drum brakes if fitted
- Adjust mechanical drum brakes if fitted
- Adjust electric drum brakes if fitted
- Adjust mechanical disc brakes if fitted
- Check jockey wheel
- Grease over ride coupling if fitted
- Grease load sharing suspension if fitted
- Grease off road springs if fitted
- Spray tailgate hinges with rust inhibitor
- Spray turn catches with rust inhibitor

## MAINTENANCE & SERVICE PREPARATION

The service & maintenance procedures are provided for use by qualified and competent technicians. Do not attempt to service, repair or work on brakes, axles, suspension or couplings unless you have appropriate mechanical knowledge and skills. You must understand all procedures and instructions before you begin to work on a unit. Some procedures require the use of special tools for safe and correct service. Failure to use special tools when required can cause damage to equipment and components. Lack of proper training, failure to follow proper procedures or not using proper tools or safety equipment, can result in damage to your property, serious personal injury, or loss of life.

### **WARNING:-**

**Do not work under a trailer supported only by jacks or jockey wheels. Use additional auxiliary stands. Jacks or jockey wheels could fail, resulting in damage to your property, serious personal injury or loss of life**

## BEARING & SEAL REPLACEMENT INSTRUCTIONS WITH STANDARD SEAL

### TO REMOVE BEARINGS

- a) Jack up the trailer
- b) Place on stands
- c) Remove wheel
- d) Remove grease cap
- e) Remove split pin, slotted nut
- f) Remove hub/drum
- g) Remove old cones and seal from hub and discard
- h) Using a suitable drift, drive the two bearing cups out of the hub.
- i) Remove old grease and wash hub in cleaning fluid.
- j) Check the hub/drum for damage and check the threads on the end of the axle and nut for damage.
- k) Ensure both the hubs and axle stubs are clean and dry.
- l) Fit cups to hub/drum by tapping down evenly into hub using a suitable drift until bedded completely into hub/drum.  
(Note:- **Never** fit new cones to old cups)
- m) Pack both bearing cones with wheel bearing grease and place the inner (large) bearing cone in the hub aperture.
- n) Place the grease seal over the inner bearing with the flat side outer most and using a clean block tap the seal down evenly into the rear of the hub leaving it flush with the outer face of the hub boss..
- o) Pack the aperture in the hub about half full of grease and carefully place the hub over the axle taking care not to damage the seal. Insert the inner bearing into its position in the hub and secure with the flat washer and slotted nut.
- p) Tighten the slotted nut until a slight binding of the hubs is felt, back off the nut until the hub runs free **but there is no free play**. There will be a slight drag from the grease seal.
- q) Fit the split pin into its position and fold its long side up over the end of the stub axle and the short side against the side of the nut.
- r) Apply a good smear of grease to the inside of the grease cap and tap into place.

## BEARING & SEAL REPLACEMENT INSTRUCTIONS WITH MULTI SEAL (2 PIECE BOAT)

### TO REMOVE BEARINGS

- a) Jack up the trailer
- b) Place on stands
- c) Remove wheel
- d) Remove grease cap
- e) Remove split pin, slotted nut
- f) Remove hub/drum
- g) Remove old cones and seal from hub and discard
- h) Using a suitable drift, drive the two bearing cups out of the hub.
- i) Remove old grease and wash hub in cleaning fluid.
- j) Check the hub/drum for damage and check the threads on the end of the axle and nut for damage.
- k) Ensure both the hubs and axle stubs are clean and dry.
- l) Fit cups to hub/drum by tapping down evenly into hub using a suitable drift until bedded completely into hub/drum.  
(Note:- **Never** fit new cones to old cups)
- m) Pack both bearing cones with wheel bearing grease and place the inner (large) bearing cone in the hub aperture.
- n) Tap the wear ring into the inner bearing bore until its flange is seated against the hub. Apply a light smear of grease to the surface of the wear ring to lubricate the seal.
- o) Slide the seal half way onto its seat, the seal will be a tight fit and some effort is required. The large diameter of the seal faces away from the hub.
- p) Pack the aperture in the hub about half full of grease and carefully place the hub over the axle taking care not to damage the seal.. Insert the inner bearing into its position in the hub and secure with the flat washer and slotted nut
- q) When placing hub onto the axle, ensure the seal sits correctly onto the wear ring, as the hub is pushed home, the seal will slide into its correct position. ..



- r) Insert the outer bearing into its position in the hub and secure with the flat washer and slotted nut
- s) Tighten the slotted nut until a slight binding of the hubs is felt, back off the nut until the hub runs free **but there is no free play**. There will be a slight drag from the from the grease seal.
- t) Fit the split pin into its position and fold its long side up over the end of the stub axle and the short side against the side of the nut.
- u) Apply a good smear of grease to the inside of the grease cap and tap into place

## **BEARING BUDDIES**

### **(if fitted)**

Check periodically that the centre of the bearing buddy (piston) floats. If required add grease until piston is pushed about half way to its limit.

**Caution** – Do not over grease or the rear seal may be pushed out of the hub.

### **To re-install after bearing or brake maintenance –**

1. Remove old grease and clean bearing buddy
2. Pack the hub bore and the bearing buddy with new grease before re-installing.
3. Place a small block of timber over the bearing buddy, and tap on the timber with a hammer until bearing buddy is sealed firmly in the front hub bore.
4. Fill the bearing buddy with grease through the nipple until the piston is pushed about halfway to its limit.

**Caution** – Do not over grease or the rear seal may be pushed out of the hub.

## **BRAKE COUPLING ADJUSTMENT**

### **A. HYDRAULIC OVERRIDE COUPLING**

Adjust clearance between adjusting bolt on bottom of park brake lever and end of main shaft. This is achieved by gently pushing lever forward until all free play is taken up. Adjust bolt to give 5mm clearance. **Note:** ensure lever is not pushed forward so as to apply the brakes when making this adjustment. Only free play is to be taken up.

Once adjusted ensure all bolts and nuts are tight and there are no fluid leaks.

**Note:** Bolt & Nyloc nut on end of piston rod of master cylinder must only be tightened until one thread protrudes from end of Nyloc nut.

THE HAND BRAKE FACILITY ON THIS COUPLING IS DESIGNED FOR USE WHILE MANOEUVRING THE TRAILER. FOR PERMANENT OR LONG TERM PARKING THE TRAILER WHEELS SHOULD BE CHOCKED.

### **B. BRAKE CABLE ON MECHANICAL DRUM BRAKES & MECHANICAL DISC BRAKES**

The mechanical brake system is operated via a cable from the override coupling. Continual manual adjustment of the cable is necessary via the adjuster located on the park brake lever. Inspection must be made at regular intervals to ensure the cable is adjusted correctly. This type of brake will not function if the cable is too slack, and will continually operate every time you hit a bump in the road if the cable is too tight. The correct adjustment is to allow for approx. 10mm of travel in the actuation lever at the rear of the coupling before you can feel the brakes starting to grip. When you run out of adjustment on the screw, return it to its fully in position and then take up any slack on the cable at each connecting point at the wheels, then re-adjust the adjuster as per above.

## **WARNING:**

To obtain the correct adjustment on the cable, the trailer must be in the **laden condition**. If this instruction is not adhered to, the brakes may self engage as the load is put onto the trailer.

Failure to adjust the cable tension in this manner will, through suspension movement on both independent suspension and beam axle with leaf springs, cause the brakes to partially actuate and excessive heating of the brakes will occur. Prolonged use, if incorrectly adjusted will result in deterioration of brake performance until eventual brake failure.

**Remember:** - With cable brakes, the ability to help stop the trailer is directly related to how well the cable is adjusted

## **C. PARK BRAKE CABLE ADJUSTMENT ON ELECTRIC BRAKES**

In the **laden** condition it is imperative that the park brake lever engages and secures the brakes in, it's recommended, 5<sup>th</sup> or 6<sup>th</sup> notch of the coupling from the tow ball end – not closer.

Failure to adjust the cable tension in this manner will, through suspension movement on both independent suspension and beam axle with leaf springs, cause the brake shoes to partially actuate and excessive heating of the brake and drums to occur. Prolonged use, if incorrectly adjusted, will cause initially the back (secondary shoe) to overheat to the extent of disintegration of the brake lining and will result in the deterioration of brake performance until eventual brake failure

## **D. 9" HYDRAULIC DRUM BRAKES**

### **ADJUSTMENT**

Brakes should be adjusted after the first 300km and at 1000km intervals, or as use and performance requires. The brakes can be adjusted in the following manner:-

- 1- Jack up the trailer. Place on stands.
- 2- Hydraulic drum brakes have 2 adjusters at the rear of the backing plate (one for each brake shoe). Turn both adjusters to the right to lock drum up (this centralises the brake shoes)
- 3- Turn one adjuster ½ turn to the left.
- 4- Turn the other adjuster slowly to the left until the wheel just turns freely.
- 5- Return to the first adjuster, tighten fully to the right, then turn slowly to the left until the wheel just turns freely.
- 6- Repeat procedure on the other wheels.
- 7- Check the fluid level in the master cylinder, top up if necessary.
- 8- Adjust clearance on coupling (as per brake coupling adjustment, Section A – Page 31).

### **TROJAN HYDRAULIC DISCS BRAKE PAD REPLACEMENT INSTRUCTIONS**

#### **SERVICING:-**

To check for pad wear, jack up trailer and place on stands remove road wheel and examine lining thickness at each end of the caliper housing, also through the inspection hole of the housing. Fit new pad assemblies in axle sets, when the lining has worn to a thickness of .75mm (.030") at the thinnest point.

## FITTING NEW PAD ASSEMBLIES:-

### Removal:

- 1- Jack up the trailer, place on stands and remove wheels.
- 2- Remove the two set screws securing the caliper to the axle mount. The housing can now be lifted from over the yoke and disc. Hang caliper from suspension with wire hook. **Do not** allow brake hose to take the weight of the caliper.
- 3- Check the guide pins for freedom of movement also the condition of the rubber boots.
- 4- If the guide pins cannot be moved freely by hand, these should be removed and cleaned. Also renew the boots if they are found to be in a deteriorated condition.

### Assembly:

- 5- Before refitting the guide pins to the anchor plate they are to be lubricated with silicone grease. It is **essential** that grease be non mineral oil based or rubber swell will result if incorrect grease is used.
- 6- Press the piston by hand evenly into the bore of the housing until the piston is fully bottomed. During this operation brake fluid will be displaced and this should be discharged into a container via a bleed screw.
- 7- Fit the new pads into the caliper ensuring that:-
  - a) The pads are correctly located with the small lugs at each end fitting into the milled slots in the caliper body.
  - b) That the pad linings are facing each other.
- 8- Holding the pads in place and apart with fingers, lower the caliper over the disc and align the threaded holes in the anchor plate of the caliper with those of the axle yoke.
- 9- Using a suitable bonding agent ("Loctite" or similar) on the threads, screw the set screws complete with the starloc washers, positioned between the head of the set screw and axle yoke into the caliper anchor plate.

- 10- It is most important that a torque setting of 45ft/lb be applied to each of the set screws.
- 11- Depress the brake lever on the coupling several times to actuate the piston to bring the pad assemblies into position against the disc. Check the fluid level in the master cylinder supply tank, top up if necessary.
- 12- Adjust clearance on coupling (as per brake coupling adjustment Section A- Page 31).

**NOTE:-** Hydraulic discs will automatically adjust themselves as the pads wear down.

# HYDRAULIC DRUM & DISC BRAKES

## FAULT FINDING

SYMPTON	POSSIBLE CAUSE	REMEDY
Brakes fail to operate	Incorrectly adjusted master cylinder no or low fluid in reservoir.	Adjust master cylinder, push rod to correct clearance. Top up reservoir and bleed the system.
	Worn shoes or pads, incorrectly adjusted shoes	Replace worn linings, or pads and adjust (Drum brakes only)
	Pistons in wheel cylinders or calipers seized.	Strip cylinders or calipers and fit new seals.
	Damaged hydraulic line or hose	Repair or replace damaged section
Brakes not releasing cylinder (one side only)	Faulty caliper or wheel cylinder.	Overhaul calliper/wheel
	Damaged hydraulic line to one wheel	Repair or replace damaged line.
	Mounting plate damaged or out of line.	Repair or replace damaged components.
Brakes not releasing (both sides)	Incorrect master cylinder adjustment.	Adjust push rod to correct clearance.
	Master cylinder seized.	Repair or replace master cyl.
	Both calliper pistons or wheel cylinders seized.	Replace or repair components
Coupling bangs excessively when stopping/pulling away	Main shaft spring broken. Spring retaining circlip missing or rusted out.	Replace main spring Replace circlip
	Incorrectly adjusted anti rattle screw.	Adjust or replace damaged or missing components

# HYDRAULIC BRAKES = DRUM & DISC BLEEDING PROCEDURE

## BLEEDING THE HYDRAULIC SYSTEM.

Bleeding the hydraulic system is not a routine maintenance operation and will only be necessary when some portion of the equipment has been disconnected or brake fluid drained off, thereby allowing air to enter the system.

- 1- To bleed the brakes you will need an assistant to pump the brake lever, a supply of new brake fluid, an empty jar or bottle, a clean plastic tube which will fit over the bleeder nipple screw.
- 2- Fill the master cylinder reservoir with clean hydraulic brake fluid and maintain the reservoir at least 1/3 full throughout the entire bleeding operation.
- 3- Raise the trailer and set it securely on jack stands.
- 4- Remove the bleeder screw cap from the wheel cylinder or caliper assembly that is being bled.  
**NOTE: Always start with the cylinder farthest from the master cylinder.**
- 5- Attach one end of the clear plastic tube to the bleeder screw nipple and place the other end in the glass or plastic jar submerged in small amount of clean brake fluid.
- 6- Loosen the bleed screw slightly, then tighten it to the point where it is snug yet easily loosened.
- 7- Have the assistant pump the brake lever several times and hold it in the fully depressed position.
- 8- With pressure on the brake lever, open the bleeder screw approximately one half turn. As the brake fluid is flowing through, hold the brake lever in the fully depressed position until the bleeder nipple is tightened, release brake lever.
- 9- Repeat above procedure until no air bubbles are visible in the brake fluid flowing through the tube. **Be sure to check the brake fluid level in the master cylinder reservoir while performing the bleeding operation.**
- 10- Fully tighten the bleeder screw, remove the plastic tube and install the bleeder screw cap.

- 11- Follow the same procedure to bleed the other wheel cylinders or caliper assemblies.
- 12- Check the brake fluid level in the master cylinder and top up to the level mark on the cylinder, replace cap. Road test and check for proper brake operation.

**CAUTION:-** Never crawl under your trailer whilst it is resting on trailer jack

## MECHANICAL DISCS

### **BRAKE PAD REPLACEMENT INSTRUCTIONS**

#### Servicing:-

To check for pad wear, remove wheel and examine lining thickness at each end of the caliper housing and through the inspection hole of the housing. Fit new pad assemblies in axle sets when the lining has worn to a thickness of .75mm (.030") at the thinnest point.

#### Fitting new pad assemblies:-

- 1- Jack up the trailer, place on stands and remove wheels.
- 2- Disconnect the brake cable from the brake arms.
- 3- Remove the 2 set screws securing the caliper to the axle mount. The caliper can now be removed.
- 4- Check slide bushes for freedom of movement and wear.

#### Assembly:-

- 5- Fit new pads into caliper ensuring that (a) the pads are correctly located with the small lugs at each end fitting into the milled slots in the caliper body (b) that the pad linings are facing each other.
- 6- Holding the pads in place and apart with fingers, lower the caliper over the disc and align the threaded holes in the anchor plate with those of the caliper

- 7- Using a suitable bonding agent (loctite or similar) on the threads screw the bolts complete with starloc washers, positioned between the head of the bolt and caliper slide bush.
- 8- Torque bolts to 45 ft / lb.
- 9- Adjust "adjusting" bolt at rear of caliper until very slight resistance is felt. Tighten lock nut.
- 10- Refit cables and adjust (as per brake coupling adjustment Section B-Page 31).

**CAUTION:-** Never crawl under your trailer whilst it is resting on trailer jack

### 9" MECHANICAL/DRUM BRAKE

#### Adjustment

Brakes should be adjusted after the first 300km and at 1000km intervals, or as use and performance requires. The brakes should be adjusted in the following manner.

- 1- Jack up a wheel and check that it rotates freely.
- 2- Turn single adjusting bolt at bottom of backing plate to the right until pressure of the lining against the drum makes the wheel very difficult to turn.
- 3- Now, turn adjusting bolt in the opposite direction until wheel just turns freely.

**NOTE:-** As you turn the adjuster it rides up on a cam, be sure to 'go over' the cam with each turn.

- 4- Repeat procedure on other wheel(s).
- 5- Adjust cable (as per brake coupling adjustment Section B-Page 31).

**CAUTION:** Never crawl under your trailer whilst it is resting on trailer jack.

## MECHANICAL DRUM & DISC BRAKES

### FAULT FINDING

SYMPTON	POSSIBLE CAUSE	REMEDY
Brakes fail to operate	Incorrectly adjusted cable adjuster	Adjust cable as per instructions.
	Incorrectly adjusted Shoes or pads	Adjust at backing plate / caliper
	Slides seized (calipers) Adjuster seized (drum brakes) Worn shoes or pads.	Free up or replace slide bushes. Free up or replace adjuster. Replace worn linings or pads
	Incorrectly adjusted shoes/pads	Adjust.
Brakes not releasing (One side only)	Seized slide bushes (caliper) Seized adjuster (drum brakes) Mounting plate damaged or out of line.	Free up or replace Repair or replace
Brakes not releasing (Both sides)	Incorrect cable adjustment	Adjust cable correctly.
Coupling bangs Excessively when Stopping/rolling away	Main shaft spring broken Incorrectly adjusted anti rattle screw	Replace main spring Adjust or replace damaged or Missing components

## ELECTRIC BRAKES

### HOW ELECTRIC BRAKES OPERATE

Trailer electric brakes are basically the same as hydraulic brakes. The major difference is the hydraulic system uses hydraulic pressure to expand the brake shoes, whilst electric brakes use an electric current.

When the electrical circuit is complete, (by use of an in car brake controller and the tow vehicles brake pedal) high capacity electromagnets are energized and attracted to the armature surface on the brake drum. Due to the rotation of the drum, the electromagnets move the magnet lever arm in the same direction. This movement causes the actuating block to push the primary brake shoe against the drum. The force of the primary shoe in turn pushes the secondary brake shoe in contact with the drum.

### BRAKE ADJUSTMENT

Brakes should be adjusted after the first 300km and at 1000km intervals, or as use and performance requires. The brakes can be adjusted in the following manner:-

- 1- Jack up the wheel and check that it rotates freely.
- 2- Remove the adjusting hole cover from the adjusting slot on the bottom of the backing plate.
- 3- With a screwdriver or a standard adjusting tool, rotate the star wheel of the adjusting link by moving the tool "down" to expand and tighten the brake shoes out until the pressure of the linings against the drum stops the wheel from turning.
- 4- Now rotate the star wheel in the opposite direction by moving the tool up 8 to 12 clicks. The wheel should turn freely.  
**NOTE:-** A slight scraping noise will be heard, this is the magnet rubbing on the face of the drum and is normal.
- 5- Replace adjusting hole cover and lower the wheel to the ground.
- 6- Repeat the above procedure for the other brakes.
- 7- If fitted, adjust park brake cable (as per brake coupling adjustment Section C-Page 32).

**CAUTION:-**Never crawl under your trailer whilst it is resting on trailer jack.

## If trailer is fitted with drop axles, the following process must be followed to adjust brakes.

- 1- Jack up a wheel and check that it rotates freely.
- 2- Remove the wheel from the drum and find a 5/8" hole in the front of the drum.
- 3- By turning the drum, locate this hole to the bottom of the assembly.
- 4- Using a torch or lead light to see through the hold, move the drum slightly until the star wheel can be located.
- 5- With a screwdriver or a standard adjusting tool place through hole to rotate the star wheel of the adjusting link by moving the tool "up" to expand and tighten the brake shoes out until the pressure of the lining against the drum makes it very hard to move the star wheel.
- 6- Remove the adjuster and check drum cannot be moved, then using the adjuster again, turn the star wheel in the opposite direction by moving the tool down 8 to 12 clicks. Remove the tool and turn the drum. It should turn freely.  
**NOTE:-** A slight scraping noise will be heard, this is the magnet rubbing on the face of the drum and is normal.
- 7- Replace wheel and tighten wheel nuts.  
**RECHECK WHEEL NUTS AT 20km AND 100km..**
- 8- Repeat above procedure for the other brakes.
- 9- If fitted, adjust park brake cable (as per brake coupling Section C- Page 32)

**CAUTION:-** Never crawl under your trailer whilst it is resting on trailer jack..

## REPLACING THE BRAKE SHOES AND MAGNET

Brakes must be inspected and serviced at regular intervals (refer general maintenance Page 25) or as use and performance requires. Magnets and shoes must be changed when they are worn or scored thereby preventing adequate vehicle braking.

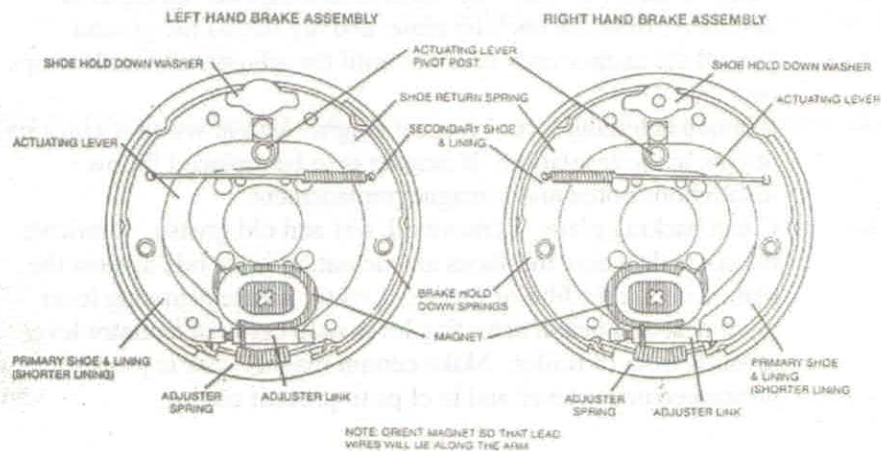
### SHOE AND LININGS

A look at the linings will tell if they are useable. Replacement is necessary if the lining is worn thin (1/16" or less) or contaminated with oil or grease, it is important to replace both shoes on each brake and both brakes on the same axle. Check shoe return and adjusting springs for stretch or deformation and replace if deformed or stretched.

Complete shoe assemblies **MUST** be used for replacement when linings are worn out. Shoes can be replaced as follows:-

- 1- With hub and drum removed and brake exposed, the shoe return springs and the hold down washer are removed first. This removal will be facilitated if spring pliers are available. (Be careful not to deform spring end with pliers.)
- 2- The two shoe hold down springs or spring clips and pins are then removed.
- 3- Remove the two shoes with adjuster and adjuster spring as an assembly, from the backing plate, and lay flat on the ground.
- 4- Spread the anchor ends of shoes until the adjuster assembly drops out.
- 5- Remove actuating lever. Inspect magnet lead in wire for cracking or cuts in the insulation. If magnet is to be replaced follow instructions noted under magnet replacement.
- 6- Clean backing plate. Remove oil, dirt and old grease. Lubricate the six pads where the shoes and actuating lever ride against the plate with a light film of grease. Lightly grease actuating lever pivot post and install actuating lever with curve of actuator lever towards front of trailer. Make certain magnet wire is properly positioned under lever and in clips to prevent cutting.

7. Dismantle adjuster, clean off old grease. Relubricate the threads and reassemble the adjuster. Moly-grease or any other good general purpose grease should be used.
8. Install the adjuster spring with the primary and secondary shoes. Then spread the shoes apart and install the actuator assembly. The star wheel end of the adjuster should be in line with the slot in the backing plate.
9. This assembly should then be properly positioned on the backing plate and the hold down spring or spring clip and pin installed in each shoe. The primary shoe should be on forward side of the backing plate facing front of trailer with the curve of the actuator arm lying under the web of this shoe
10. Install the shoe, hold down washer and the secondary shoe return spring first, then the primary return spring. Move actuating lever to actuate shoes – movement should be smooth and shoes should return to proper position.
11. Before refitting drums, grease the wheel bearings, then mount drums and adjust bearings per instructions under bearing maintenance. Page 28
12. Repeat above procedure to the other brakes.
13. Proper breaking-in of new brake lining is essential to brake performance. This can be accomplished by performing 15-20 slow and easy brake stops from 60km per hour down to 30km per hour.



## BRAKE DRUM MAINTENANCE

Remove drums and inspect for heavy scoring. If drum is scored or worn more than .020" oversized, or has run out exceeding .015", the drum should be machined. If scoring or other wear is greater than .090", replace the drum.

The hub/drum has a machined inner surface against which the magnet operates. This is the armature surface. If this surface is badly scored or worn unevenly, it should be replaced to a 120 microinch finish, by removing not more than 1/32" material. If this surface is refaced, new magnets will have to be installed.

The armature face must be refaced whenever new magnets are installed to assure proper contact of the magnet with the armature face. Most brake service centre's can do this procedure.

### MAXIMUM REBORE DIAMETER

Brake drum size	10"	12"
Max. drum diameter	10.090"	12.090"

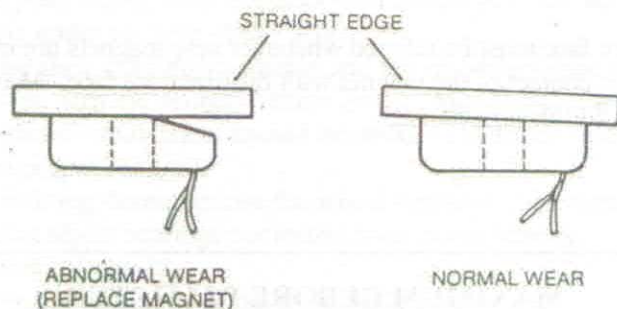
**NOTE:-** It is important to protect the wheel bearing bores from metallic chips which result from the drum boring or armature facing operations. Make certain the wheel bearing cavities are clean and free from contamination before reinstalling bearings and seals. Allowing contaminants to be present in the wheel bearing bores will lead to premature wheel bearing failure.



## MAGNET CHECK & REPLACEMENT

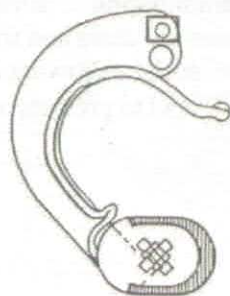
If the magnet face is worn unevenly or abnormally as checked by laying a straight edge along the face over the length of the magnet, or if the magnet coil has opened up or shorted out, the magnets on both left and right hand brake on an axle must be replaced.

It is recommended that the armature surface be refaced when replacing magnets. (see brake drum section)

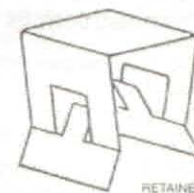


### TO REMOVE:

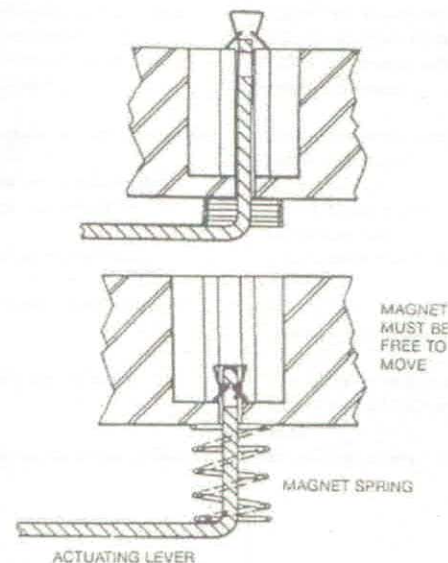
1. Note the routing of the magnet lead wire along with the bottom of the actuating lever before removing it, so that the lead wires of the replacement magnet can be properly routed to keep them from being damaged by brake operation.
2. Disconnect the magnet wire from connections to the axle cross wires.



3. Remove the strain relief bushing from the back of the backing plate and pull magnet wire through the hold and out of the clip on the retractor spring.
4. Push magnet down until it bottoms against the actuating lever and remove the magnet retainer clip. If it is one of the old wire retainers, use needle nose pliers. If it is the snap-on spring type, pop it off with a screw driver and discard it.



5. Mount new magnet on the actuating lever and install new retainer clip and spring. Push magnet down against spring on the actuation lever and then push retainer clip down until it snaps in place with the two small fingers locking in the hole in the actuating lever.



6. Make certain magnet is free to move without any binding.
7. Route wires through clip on the retractor spring and through hole in the backing plate.
8. Install strain relief bushing, allowing enough slack in the wire for the swing of the actuating lever.
9. Inspect wire position to assure it will not be pinched or cut during normal brake operation.
10. Reconnect wires to the axle cross wires.
11. Before mounting drums grease the bearings then mount drums and adjust bearings per instructions under bearing maintenance. Page 28

## TROUBLE SHOOTING – ELECTRIC BRAKES

COMPLAINT	POSSIBLE CAUSE	REPAIR PROCEDURE
NO BRAKES	<p>Open circuit</p> <p>Improperly wired or Inoperative controller</p> <p>Poor brake adjustment</p> <p>Selective resistor defective</p> <p>Worn or defective magnet</p> <p>Short circuit</p>	<p>Check for broken wires, loose connections</p> <p>Improper grounding, faulty connector plug, between car and trailer etc.</p> <p>Rewire controller, check controller operation.</p> <p>Adjust brakes.</p> <p>Check resistor for loose connections</p> <p>Replace magnet(s)</p> <p>Check electrical circuit.</p>
INTERMITTENT OR SURGING BRAKES	<p>Out of round drums</p> <p>Inadequate trailer ground</p> <p>Broken magnet lead wires</p> <p>Loose wheel bearings</p>	<p>Machine or replace drums..</p> <p>Check for proper grounding. (NOTE: a ground through the trailer hitch is inadequate)</p> <p>Bench check magnets and replace, if necessary.</p> <p>Check and adjust bearings.</p>
WEAK BRAKES	<p>Loose connections</p> <p>Inadequate trailer ground</p> <p>Short circuit</p> <p>Selective resistor setting incorrect</p> <p>Worn or defective magnets.</p> <p>Poor brake adjustment</p> <p>Bent backing plate</p> <p>Contaminated lining</p> <p>Excessive load on trailer</p> <p>Using trailer brakes only</p> <p>Inadequate gauge of wire</p>	<p>Check that all connections are clean and tight.</p> <p>Check for proper grounding.</p> <p>Check electrical circuit</p> <p>Check for proper setting to avoid too much resistance.</p> <p>Replace magnets (magnet power gets better with wear)</p> <p>Adjust brakes</p> <p>Check backing plate flange</p> <p>Correct, if necessary.</p> <p>Check and replace badly contaminated linings.</p> <p>Check to be sure trailer is not under braked. Also be sure to have brakes on every axle</p> <p>Use of trailer brakes only can cause early fade or loss of friction due to excessive heat</p> <p>See wiring recommendations..</p>

## TROUBLE SHOOTING – ELECTRIC BRAKES

COMPLAINT	POSSIBLE CAUSE	REPAIR PROCEDURE
<b>GRABBING OR LOCKING BRAKES</b>	Flanges improperly installed	Check flange location Refer to axle manufacturer.
	Contaminated lining	Check and replace badly contaminated linings.
	Controller not modulating	Disconnect red wire on controller. Road test for braking modulation If modulation is okay, check the red wire, bench test controller and replace if necessary.
	No selective resistor	A selective resistor is required when brakes have greater power than is necessary for the weight on the axle. Install selective resistor when necessary.
	Weak or broken springs	Check for weak or broken springs, replace if necessary
<b>DRAGGING BRAKES</b>	Brakes incorrectly adjusted Electrical defect in controller	Check brake adjustment. Repair or replace controller.
	Flanges improperly installed	Check flange location Refer to axle manufacturer
	Badly corroded brake assembly	Check brake assemblies for corrosion Check to be sure magnet levers operate freely. Clean and lubricate brake assemblies.
	Weak or broken springs	Check for weak or broken springs, replace if necessary.
<b>NOISY BRAKES</b>	Lining excessively worn Weak or broken springs	Check and replace if necessary Check for weak or broken springs, replace if necessary.
	Flange improperly located, bent backing plates Contaminated lining	Check and repair if necessary Check and replace badly contaminated linings.
	Improper bearing adjustment.	Check and adjust bearings. Check for worn or damaged bearing, replace if necessary
	Brakes incorrectly adjusted	Check brake adjustment

## SECURITY DEVICES



# TRAILER WARRANTY

A 12 month warranty is provided on all trailers covering materials and workmanship.

## NOT COVERED UNDER WARRANTY

- a. Claims arising or resulting from misuse, negligence, alteration, accidental damage or failure to perform recommended maintenance services.
- b. Replacement of wear and tear items such as bearings, brake pads, linings, etc.
- c. Second hand wheels and tyres
- d. Galvanizing on components such as springs, axles and other moving parts.
- e. On boat trailers, correct roller adjustment and set up alignment of the boat to the trailer is the responsibility of the purchaser.

**NOTE:-** Under no circumstances will any warranty claim be paid without prior authorisation from The Trailer Factory (Aust) Pty Ltd

The Trailer Factory (Aust) Pty Ltd will make the final decision regarding repair or replacement.

The Trailer Factory (Aust) Pty Ltd does not accept liability for any accident, either to the owner or to a third party, directly or indirectly involved, or for any property damage that may have occurred.

It is the owner's responsibility to return the trailer to The Trailer Factory Pty Ltd or to an authorised Trailer Factory dealer for approved warranty work.

## **WARNING**

Leaving rubbish, **ESPECIALLY** grass in your trailer may lead to the rapid deterioration of the paint work.

This practice will not be covered under warranty.

## PLEASE NOTE

It is the purchasers responsibility to fit:-

- A. Electric brake controller to tow vehicle if trailer is fitted with electric brakes.
- B. A charge wire to the vehicle plug if an electric breakaway system is fitted and/or trailers fitted with a 12 volt car battery e.g.:- Electrical/hydraulic tippers or electric winches as used for ramp/car carriers etc.

We hope this guide will answer questions that may arise from your new **Trailer Factory** Trailer. Even though we have listed most of the important items there are many other questions that may arise. Please contact your dealer or The Trailer Factory for assistance with any further questions.