CHAPMAN

GT900 / GT920

Instructions & Service Record Book

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Introduction

THIS MANUAL MUST BE HANDED TO THE OPERATOR BEFORE USE. THE OPERATOR MUST UNDERSTAND FULLY THE CONTENT OF THIS HANDBOOK BEFORE USING THE IMPLEMENT FOR THE FIRST TIME. IF THE IMPLEMENT IS RESOLD, THIS MANUAL MUST ACCOMPANY THE MACHINE.

NOTE: The information contained in this manual is correct at the time of going to press. However, in the course of development, changes in specification are inevitable. Should you find the information given differs from your machine, please contact Chapman Machinery Ltd direct for advice. Use only Chapman Genuine Service Parts on Chapman Machinery and Machines.

Important Safety Information

- Do not operate this implement unless you have studied this manual in full
- Only use this implement for its designated task - improper use is both highly dangerous and potentially damaging to machine components
- Both operators & maintenance fitters should be familiar with the implement and fully aware of dangers surrounding improper use or incorrect repairs
- Before starting, carry out a visual check on the trailer & towing vehicle as regards to functionality, road safety & accident prevention, paying particular attention to safety critical items such as lighting, tyres and brakes.
- Even when using the implement correctly, accidents & component failures can occur. It is imperative that nobody stand within the danger area to reduce unnecessary risk. If working near roads, buildings or animals, special attention must be taken to ensure safety.
- Never wear loose clothing which could get caught in rotating equipment
- Never carry passengers on the towing unit or implement
- Do not stand near the implement when operating
- Damaged or missing safety decals must be replaced immediately
- Before undertaking any servicing, ensure the implement is suitably supported and the keys to the powering unit are removed.

Transportation Safety

- When transporting, especially over rough ground, reduce speed to prevent damage to the implement.
- Ensure the implement is securely attached to the vehicle.
- This trailer is road legal, so can be towed on public highways. The towing vehicle must also comply with local highway regulations.

Product Description

The GT900/920 Gig Rowing Trailers are designed for the transportation of a Cornish Pilot Gig Boat. It's fully IVA tested and approved and comes complete with wide road tyres and a front jockey wheel for easy movement on sand.

The GT900 is the single axle model, and the GT920 is the twin axle model. Both models feature the same design, tyre size and capacity.

The GT900/920 is fully galvanised for durability and comes with full LED lighting with side markers and sealed electronics. Complete with 4 fixed keel rollers, 4 height adjustable keel rollers and 2 adjustable front bow blocks.

These trailers should only be used to perform tasks for which they were designed - use of the implement for any other function may be both dangerous to persons and potentially damaging to components. Use of the implement beyond the stated usage may invalidate any applicable warranty, as well as being potential in breach of applicable safety regulations.

Identification

Each machine is fitted with a serial plate (shown below), typically attached to the right-hand side (when viewed from the rear) of the upper front face of the machine. The serial plate details the following:

1. **Model**
2. **Date of Manufacture (DOM)**
3. **Serial Number**
4. **Mass**

When enquiring regarding spares or additional equipment, ensure you have

this information to hand.

Attachment

Before attachment, ALWAYS ensure the following:

- All safety guards & decals are in good working order and correctly fitted
- Lubrication points have been lubricated as per scheduled maintenance period
- The tyres are free of damage and inflated to the correct pressure
- Electrical connections are free of dirt and moisture

NOTE: This machine is designed to attach to the towing vehicle through a 50mm diameter ball hitch.

1. Reverse the towing vehicle up to the machine.
2. Attach the machine onto the towing vehicle's coupling. Raise jockey wheel and secure in the upper position. On some vehicles the jockey wheel can collide with the rear of the towing vehicle over rough terrain – if this is the case remove the jockey wheel from the clamp before using on such terrain.
3. Release the parking brake.

Machine Operation

Loading

1. Load in a safe manner and do not overfill trailer based on operating limits of towing vehicle and trailer.
2. Loads must be evenly supported and weight evenly distributed across the trailer.
3. Ensure load is suitable secured with restraint equipment (as applicable) before moving off.
4. Test lighting and break-away cable for correct operation and fitment before moving off.

Unloading

1. Make sure the unloading area is safe and clear prior to unloading.
2. Unload the trailer evenly to prevent risk of damage to the trailer, towing vehicle or risk overturning.

Operating Limits

Minimum / Maximum Temperature	-40°C / +55°C
Trailer Weight	538kg/578kg (GT900/GT920)
Maximum Load Capacity	762kg/722kg (GT900/GT920)
Maximum Gross Trailer Weight	1300kg
Maximum Speed	95km/h (60mph)*

*Local highway speed limitations may differ, ensure speed is within highway limits for the jurisdiction the trailer is being towed within

Caution / Warning Decals

If your implement does not contain all the decals shown below, please contact your equipment supplier for replacement decals before use.

Note: All decals must be present and visible. It is imperative that these are replaced if damaged to prevent potential harm to users.

1. WARNING - Read operators manual before handling this machine. Observe instructions and safety rules when operating	

Galvanised Finish

Immediately following production, a galvanised coating normally reacts with the atmosphere and forms a very thin zinc oxide / hydroxide layer. Over time, this convers to a uniform dull grey zinc carbonate film.

During the period of use, the trailer chassis can become contaminated with mud, rainwater spray and road salts. These may remain in contact with the coating for long periods and conversion to the zinc carbonate may not take place.

Under conditions where the galvanised surface is unable to dry out, a white powdery deposit of zinc hydroxide may build up on the surface. Formation of these deposits (known as wet storage stain) can also result in localised dark staining and discolouration in the areas affected. Discolouration of this nature is not related to the galvanising process itself or the quality of the galvanising coating produced.

To minimise this effect, new trailers should be washed regularly to remove any accumulated grime and road salt, and stored in a dry, well ventilated area. This will become less important after the first few months as the protective layer forms on the surface. However, we would still recommend regular washing and storage in a dry, well ventilated area to prolong the life of the trailer.

Tyres

Tyres should be maintained at the recommended pressure shown below:

Journey/Wanda 195 / 50 / R13 8 ply 2.20 Bar (32 psi)

When replacing tyres ensure the same size and load rating are used. Punctures should be inspected and repaired by a suitably qualified distributor – not all punctures can be repaired and in some cases the tyre may need to be replaced.

Wheel Nuts

Wheel nuts /studs should be checked daily for tightness and if required torqued to **90Nm (66 lb-ft).**

Parts Manuals

Parts Manuals are not supplied as part of this operator's manual. Parts manuals are available from your Chapman dealer or can be downloaded from the Chapman website (www.chapman.co.uk) Parts drawings and manuals are located in the Support – Manuals section.

Maintenance

All maintenance, cleaning and repair operations must be performed with the machine suitably supported and in a safe environment. If the body is raised, it is essential that it is suitably propped before working between the body and chassis.

Maintenance Schedule

Task	Daily	Monthly	Annually
Check tyres	■	■	■
Check wheel nuts	■	■	■
Check lighting function	■	■	■
Check condition & grease axle pivots		■	■
Check condition of wheel bearings			■
Wash chassis, repair chassis damage as necessary			■

Storage

The GT900 & GT920 should always be stored under cover to prolong the life of the trailer. It is advisable to wash the trailer before storage, allowing to dry naturally in the sun (if possible), prior to storing under cover in a dry, well ventilated area.

Accident Prevention When Undertaking Maintenance

Implements should only be maintained by suitable qualified or experienced personnel, who have read the implement manual and are aware of the inherent dangers with machinery. Suitable personal protective equipment (PPE) should be worn for the planned task(s).

All maintenance, cleaning and repair operations must be performed with the machine suitably supported and in a safe environment. If the body is raised, then it is essential that it is suitably propped before working between the body and chassis.

Accident Prevention Travelling on or Operating Along Highways

Applicable local road traffic regulations must be observed when using or transporting the implement on roads, paths or public spaces. Both the implement and the prime mover must be in good order & roadworthy.

Observe the maximum permissible with for road transport and if necessary for rear lights, marker boards and/or flashing beacons. Adjust driving speed to the local conditions, taking extra care when turning to avoid implement swing or damage.

Storage

Store under cover in a dry, ventilated area. Store away from direct sunlight, sources of excess heat or cold, and protected from windblown rain or areas of excessive humidity.

Prior to storage, it is advisable that the machine be first cleaned thoroughly and fully lubricated as per the maintenance schedule. Any servicing and maintenance should be undertaken prior to storage, and any worn components replaced beforehand.

STORE UNDER COVER ONLY. GREASE AND SERVICE PRIOR TO EXTENDED STORAGE

Machine Disposal

Disposal of this machine and any of its component parts must be performed in a responsible and inoffensive manner respecting all current laws relating to this subject. Materials forming this machine that must undergo differentiated division and disposal are:

- Steel
- Rubber
- Plastic

Maintenance Schedule

FOR COMMERCIAL USE, LOG RUN TIMES TO ENSURE MAINTENANCE IS CARRIED OUT AS PER THE SCHEDULE

After First 1 Hour

CHECK

- Check all nuts and bolt for tightness – retighten if required.
- Check wheel nut torque setting – tighten if required.

Every 8 hours (or daily, whichever occurs first)

CHECK

- Check all nuts and bolt for tightness – tighten if required.
- Check condition of break-away cable and handbrake operation– repair/replace as required
- Check condition and operation of lights – repair/replace as required

Every 500 hours (or annually, whichever occurs first)

CHECK

- Check all nuts and bolt for tightness – tighten if required.
- Check condition of break-away cable and handbrake operation – repair/replace as required
- Check condition of coupling head for wear and correct operation – repair/replace as required
- Check condition of brake cables, brake shows & brake drum, hubs and wheel bearings – repair/replace as required
- Check condition and operation of lights – repair/replace as required

LUBRICATE

- Lubricate coupling head as per manufacturer's instructions
- Lubricate Jockey wheel as per manufacturer's instructions

Maintenance Procedures

Jockey Wheel

1. Servicing

Service requirements for jockey wheels are limited to greasing the main threaded rod. To lubricate the thread:

- Wind open the jockey wheel until the top and bottom sections disengage.
- Apply grease generously over as much of the threaded section as can be reached.
- Grease the female thread in the bottom section.
- Grease will be carried throughout the length of the rod when the jockey wheel is next retracted.

2. Thrust Washer/Bearing

The thrust washer/bearing can be inspected if a problem is suspected.

Remove the handle from the upper section of the jockey wheel by driving out the roll pin that secures it. The threaded rod and thrust washer/bearing can then be withdrawn and greased.

NOTE: The handle and threaded rod are drilled together and must be re-assembled in the same relative position.

Thrust Bearing

3. Wheel

The wheel unit itself needs no lubrication.

If the plastic bush/bearing or tyre are damaged or worn, replace the wheel by removing the split pin which will release the axle.

4. Replacement

Jockey wheels are sold only as complete assemblies.

5. Problems

Bent Tube:
This is normally caused by forgetting to retract the jockey wheel before driving off, resulting in the wheel hitting the road and the lower tube (occasionally the upper) being bent. Look for obvious damage or signs of the inner section rubbing inside the upper. The unit is beyond repair and must be replaced.

Thread Damage:
The usual causes of failure are overloading and raising the jockey wheel under load to the point where the threaded rod disengages from the lower section.

WARNING! In extreme cases, the jockey wheel may collapse so keep clear of the trailer when checking this issue. Again, the unit is beyond repair and must be replaced.

Propstand & Jockey Bracket

1. Bracket Replacement

Support the trailer adjacent to the stand bracket leaving a clear working area around the bracket mounting. Remove the jockey wheel or propstand from the bracket and inspect it for damage.

Remove the fasteners securing the bracket, noting the orientation of the clamping mechanism. Fit the new bracket with the correct bolts. Test fit the jockey wheel or propstand to ensure that it clamps securely.

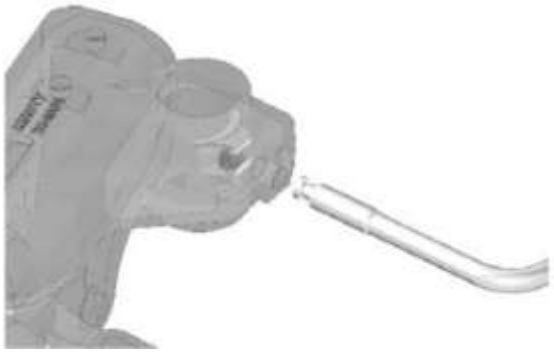
WARNING! DO NOT allow any weight to be placed on the support until adjustment is complete and you are confident that the parts clamp properly.

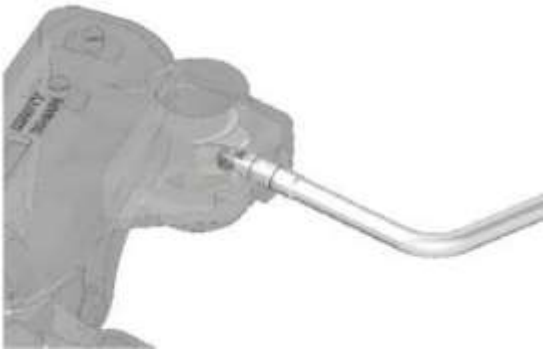
2. Jockey Wheel Clamp Handle & Pad

Screw the clamp handle into the jockey wheel clamp housing (located on the side of the coupling) until formed end protrudes through.

Locate keyway in clamp pad to the formed end of clamp handle. Unscrew clamp handle until pad is secure with the clamp housing.

NOTE. DO NOT attempt to remove the handle without first removing the pad.





Brakes

1. Brake Shoe Replacement

NOTE: It is recommended that brake shoes are replaced in axle sets.

Place the trailer on stands with all wheels free. (WARNING: The handbrake should be released and the handbrake locking bolt fitted).

Some couplings do not have provision for the locking bolt. In this case, or if a bolt cannot be used, the handbrake lever should be secured in the 'off' position to prevent the handbrake operating.
Remove the wheels and hub caps.

Slacken off the brake adjuster bolt until free. Some brake assemblies have a ratchet accessible through an aperture in the backplate instead of the bolt.

Remove the axle nut. This may be a castellated nut retained with a split pin or alternatively it may be a locknut.

Remove the brake drum (hub puller may be required) taking care not to displace the bearings.

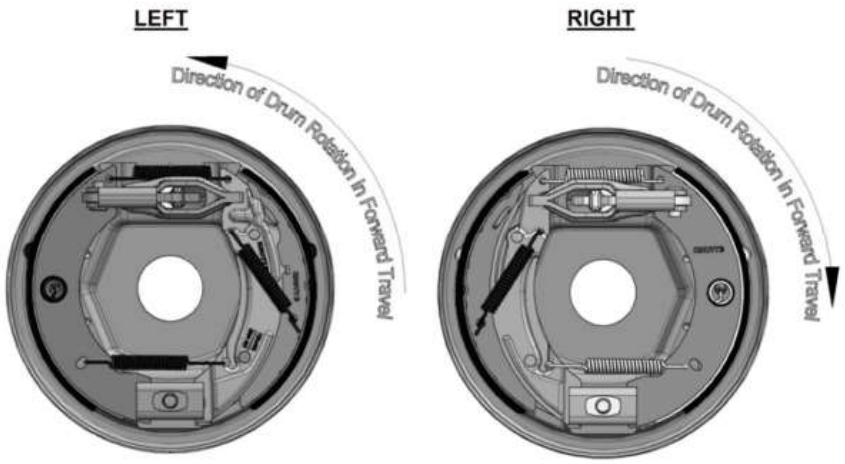
WARNING! Avoid inhaling brake dust. DO NOT use an airline to clean the drum. Carefully remove the dust with a brush.

Check the condition of the brake drum and replace the drum if deep score marks are available.

Undo the locknut on the brake rod (front to rear) adjacent to the compensator.

Slacken the second nut on the brake rod. Remove the half shell from the backplate and detach the brake cable.

NOTE. Record the orientation of the brake shoes and springs on the backplate to ensure that the new shoes and springs are replaced in the same position as the old. Left and right handbrake examples are illustrated below.



With care and using a suitable lever, lift the sliding shoe carrier away from the expander. Extract the expander and retain.

Remove the brake shoe retaining clip and take care to retain the spring. Keep plate or pin at the rear of the backplate if fitted.

Lift off the whole brake shoe assembly from the backplate. Take care not to lose the two adjuster wedges.

Examine the components and springs, replace any damaged parts.

Clean the mechanism and ensure that all parts are free to move.

Re-fit springs to the new shoes.

Locate shoes onto the backplate and position onto the adjuster wedge or cam block.

Re-fit retaining springs.

Locate expander into position on fixed shoe.

With care, and using a suitable lever, position the expander between the shoes and release the lever.

Attach brake cable and re-fit the half shell (always replace the brake cables if they show signs of wear, stiffness, damage or fraying).

Re-fit the drum, bearing and hub cap. Repeat this procedure on the other drum(s).

Replace securing wheel nuts.

2. Adjustment

NOTE. When adjusting the brake drum, only turn the wheel in the direction of forward rotation.

Ensure that the coupling drawtube is fully extended and that there is no tension in the brake rod or cables.

Turn each wheel in the direction of forward rotation.

Turn the brake adjuster bolt clockwise until some resistance is felt as the brake shoes begin to grip the drum, then slowly turn the brake adjuster bolt anticlockwise until the wheel begins to rotate freely again.
Alternatively, advance the adjuster using a screwdriver through the backplate hole until resistance is felt, then turn back by a few clicks until the wheel begins to rotate freely again.

Turn the nut on the brake rod until the nut is in contact with the compensator.

CAUTION! DO NOT overtighten as this will cause the brakes to drag and overheat.

WARNING! Double check that everything has been re-assembled with all fasteners secure. Remove the handbrake locking bolt and operate the handbrake several times to ensure that the compensators are seated.

Check the travel of the individual brake cables. This should be 2-5mm. If not, re-adjust the brake as appropriate.

With the handbrake engaged, turn each wheel in the reverse direction. They should turn a little and then lock as the auto-reverse mechanism operates.

NOTE. As each wheel is turned, there will be a rearward movement of the handbrake lever as the energy store operates. This action should occur once on the rearward turn of each wheel. If any wheels fail to lock, there is too much slack in the system.

Check the compensators are at 90° to the brake rod with the brakes applied in forward and reverse. Misalignment can be corrected through adjustment of the cable locking nuts. This is particularly important if a new cable has been fitted.

Operate the handbrake and leave on. Lower the trailer to the floor and recheck the torque of the wheel nuts.

NOTE. The brakes will not be 100% effective until the new linings have bedded in. The brake adjustment should be rechecked after a short journey.

WARNING! The drums may be hot.

Braking: Hints and Tips

1. Force to Enter Reverse Mode

There is a small ‘nib’ at the front of the ramp on the brake shoe intended to prevent the shoe inadvertently entering reverse mode. There needs to be enough slack in the system to allow the shoe to ride over this before fully entering auto-reverse mode. If the brakes are adjusted very tightly, this will not happen, and the brakes will stay on when reversing.

Slippery surfaces such as mud or wet grass sometimes do not provide enough friction to turn the wheels into reverse mode. The trailer will slide backwards rather than roll.

2. Residual Braking

The system is kept in auto-reverse mode by friction between the shoe and the brake drum, therefore there is always a small amount of

braking effect when reversing.

3. Handbrake Lever Moment

If the brakes enter reverse mode whilst the handbrake is on (e.g. when uncoupling while facing up a slope) the lever can move sharply and unexpectedly upwards under the force of the energy store spring. The trailer will also roll backwards a few inches as this happens. Allow room for this when parking.

4. Brakes Lock On

Under certain circumstances (e.g. uneven ground) twin axle trailers can sometimes lock their brakes and refuse to reverse. This is caused by two wheels entering auto-reverse mode while the other two are still in forward mode.

The compensator transmits only half the normal amount of slack to the coupling, which is then still able to all four brakes. There are two methods of dealing with this:

1. If possible, begin the reversing manoeuvre on adjacent level ground so that all wheels enter reverse mode simultaneously.
2. Manually turn the other two wheels backwards to engage auto-reverse mode.

5. Sticking Brakes

This is the most prevalent on new trailers stored with the handbrake on, especially during winter. For an immediate fix, tap the brake drum (not backplate) with a hammer. This works in most instances.

In the long term, chock the wheels and leave the handbrake off when storing the trailer, particularly if it is new and the weather tends to heavily dew.

NOTE. Trailers become far less prone to this condition after the brakes are bedded in. Some trailer owners drive so gently that the brakes never bed in. A solution can be achieved by loading the trailer securely and deliberately bedding them in with heavy use.

WARNING! Be careful not to endanger or inconvenience other road users with unexpected heavy braking.

Hubs, Seals & Bearings

PRIOR TO CARRYING OUT THESE TASKS, PLEASE REFER TO PRECAUTIONS

WARNING! Be aware that hub bearing failure in service results in catastrophic failure with a high possibility of the wheel becoming detached from the stub with obvious potential consequences. Always err on the side of caution and replace suspect components.

1. Hub / Drum Removal

Assess the condition of the bearing by rocking the road wheel to se if there is play in the bearing, then spin the wheel and listen for a rumbling sound which indicated pitting of the brakes.

Remove the wheels and hub cap. Slacken off the brake adjuster if needed.

Remove the grease cap by carefully prying progressively around the flange of the cap (High forces are needed, so ensure the trailer is stable).

Remove the brake drum (hub puller may be required and adjustment may need slackening) taking care not to displace the bearings.

Once the linings are exposed, take extreme care to avoid contaminating them and the friction face of the drum with grease as this will impair braking performance.

2. Bearing Inspection – Hubs with Separate Bearings

Wash grease and oil from the bearing with a suitable solvent; inspect each roller, inner and outer races. If any pitting, damage or corrosion is present, the bearing must be replaced.

Using a brass drift, carefully drive out the outer races working around the circumference.

Clean the hub and carefully tap in the new bearing outer races with a brass drift. Be sure they are sealed against the shoulders.

Grease the bearings and fit with a new seal. Force grease into the bearing between each roller; apply a light coat of grease to the bearing races. DO NOT overfill the cavity between the bearings – this is not necessary and can lead to grease leaking from the seals onto the brake linings.

Bearings should be lubricated every 12 months or every 12,000 miles, and we recommend using Shell Retinax EP2.

3. Seal Inspection & Replacement

Installations with separate bearings have a seal on the inside to retain grease. Whenever the hub is removed, inspect the seal to ensure it is not nicked, hasn't perished or torn, and is still capable of properly sealing the bearing cavity. If there is any question that the seal might be in poor condition, replace it. To replace the seal, pry it out of the hub with a screwdriver.

Tap the new seal into place using a clean wood block. Very lightly lubricate the seal face with grease.

4. Drum Inspections

Check the condition of the brake drum. Replace the drum and bearing if deep score marks are visible or the hub contact face is thinning.

5. Bearing Adjustment & Hub Replacement

If the hub has been removed or bearing adjustment is required, the following adjustment procedure must be followed.

After placing the hub, bearings, washers and castellated nut back on the axle spindle in reverse order (as detailed in the 'hub removal'), rotate the hub assembly slowly while tightening the axle nut to approximately 69nm.

Loosen the axle nut to remove the torque. DO NOT rotate the hub. Finger-tighten the axle nut until just snug.

Back the nut out slightly until the first constellation lines up with the split pin hole and insert the split pin (always use a new split pin, and bend over the split pin legs to secure the nut). The nut should be free to move with the only restraint being the split pin.

NOTE. After the first 1,000km wheel bearings should be checked for excessive end float.

6. Wheel Studs

Remove hub (as detailed above) and place on a flat surface with the studs showing up. Gently tap out the studs.

Invert the hub on a raised surface, allowing room for the new studs to be knocked through.

Align ribs on the new wheel studs with the grooves in the stud holes and gently tap in the studs using brass drift to protect them.

7. Wheel Nuts

Replace worn wheel nuts as necessary and tighten to the wheel manufacturers recommended torque (if in doubt, contact supplier).

Ball Couplings & Towing Eyes

PRIOR TO CARRYING OUT THESE TASKS, PLEASE REFER TO PRECAUTIONS

Prior to proceeding, it is essential to confirm the condition of the damper by carrying out a damper reaction test:

- Pull the handbrake lever on as far as possible.
- Push the ball coupling as far back into the overrunning hitch as it will go. This requires force to compress and should extend

smoothly when released.
- If the drawtube is impossible to compress, has a 'spongey' feel and no damping resistance, or the extension is rapid, the damper must be replaced.
- If completely satisfied that the damper is in good condition, then proceed.

1. Replacement

Pull back the bellow from the coupling head / eye to expose the two securing bolts.

Undo the self-locking nut from the rear bolt of the coupling / eye.

Remove the rear bolt – force may be required as the damper may still be preloaded. Raise the coupling operating handle to fully remove the bolt if needed.

When the rear bolt is removed the damper may move forward to rest upon the front bolt.

NOTE. In most instances a retaining pin is fitted (located between the bolt holes). This pin will hold the damper in its original position and will not need removing. Undo the self-locking nut from the front bolt, extract the bolt and remove the head. Replace both bolts in the drawtube and finger-tighten the nuts.

Inspect the drawtube shaft for damage, dress burrs and clean any dirt as the new coupling will be a close fit on the shaft.

If a new bellow is to be fitted, cut the tie-wrap and discard the old one. Fit the new and secure with a tie-wrap. Trial fit the new ball coupling or eye. It should slide into place without any undue force.

WARNING! DO NOT hammer the coupling into place, this can damage the coupling itself or the overrun mechanism. If it proves to be tight, remove it, thoroughly clean the shaft and inspect for burrs.

Fit the bolts, washers and secure with NEW locking nuts. DO NOT re-use the old nuts as this is safety critical. Torque to the figure specified in the relevant section of this manual. Fit the plastic nut covers.

Re-fit the bellows with the coupling / eye horizontal taking care not to tear or damage the material. Where the replacement coupling / eye is a different part to the original, always ensure that the:
- Corresponding length bolts are used.
- Compatible bellows are used.
- Hole sizes in the coupling and drawbar tube match and that the correct sized bolts are employed.

2. Adjustment

It is not necessary to make any adjustments. Simply rotate the coupling / eye to its limits to ensure that the natural position of the bellows is with the head horizontal.

Drawtubes

1. Removal

Follow the instructions for 'Dampers' taking due note of the introductory comments.

Once the damper is removed the brake rod can be disconnected from the lever which transmits the force from the drawtube to the brake rod. The transmission lever can now be rotated to allow the drawtube to be removed rearwards.

If the drawtube is bent it will prevent removal so the front portion must be sawn off and the remainder removed from the rear of the coupling housing. Once sawn, all burrs must be removed and care exercised to prevent swarf being trapped such that it will jam the mechanism.

Clean the bearing surfaces inside the housing.

2. Replacement

Lubricate the drawtube and insert it into the housing, ensuring that it is free to slide and that there is not excess clearance between the tube and bearing surfaces.

Fit the damper into the drawtube and slide loosely into position. Fit the damper mounting to the new damper. Re-fit bellows over the drawtube, place the coupling into position.

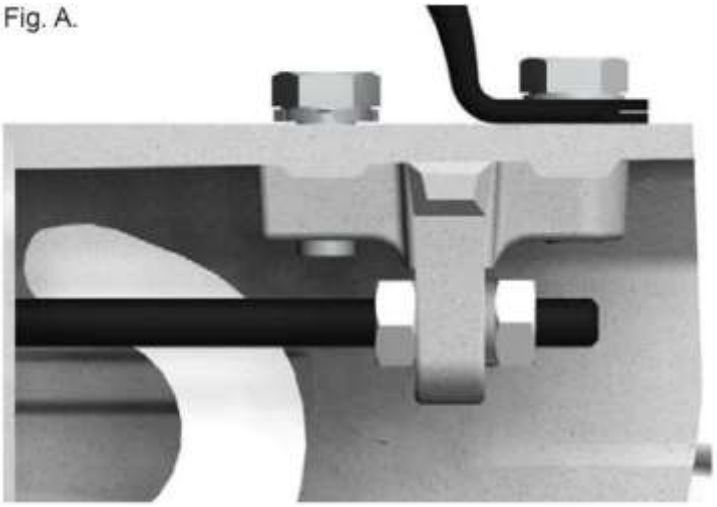
Fit the bolts, washers and secure with new locking nuts. DO NOT re-use the old nuts as this is safety critical. Torque to the figure specified in the relevant section of this manual.

Compress the damper and fit the rear mounting bracket bolts.

WARNING! Proceed with extreme caution. Compress the damper with a lever and secure the mounting bracket bolts as shown in Fig. A.

Reconnect the brake rod to the transmission lever.

Fig. A.



3. Adjustment

It is not necessary to make any adjustments, simply rotate the coupling/eye to its limits to ensure that the natural position of the bellows is with the head horizontal.

Lighting System Checks

The service consists of a functional check - if this identifies a fault then an initial visual check followed by a methodical series of tests will be needed.

1. Visual Inspection

7 Pin or 13 Pin Plug & Trailer to Vehicle Cable
Check for damage or deterioration. Plug electrodes are clean and not worn. Plug body and seal are not damaged.
Cable is not abraded or cracked, especially near the plug or where it is secured to the trailer. Open the plug and check the connections for corrosion or loose connections.

Junction Boxes
Check the junction box(es) for damage. Check that the lid is fitted securely, and seals are intact.

Fixed Wiring
Check for damage, cuts and cracks especially where the cable runs over metal edges or is flexed.

2. Fault Finding Strategies

These are simple systems and work logically. The difficulty sometimes lies in finding the answer quickly.

If a lamp is not working and the bulb proves to be functioning, then:
Check anything that has been disturbed recently.
Check areas known to be susceptible to damage or deterioration. Check things that are easy and quick.

Follow systems in a logical and thorough manner.

Earth faults are common, particularly on older towing vehicles and can repay investigation. If these do not yield a result, then follow the malfunctioning system through from one end to the other, omitting nothing. Be aware that the circuit may pass from one colour wire to another.
Do not assume that the trailer is always at fault. A great deal of time can often be saved by checking the wiring of the towing vehicle at an early stage.

3. Equipment

Lighting Board
A specialist fault finding device can be used to check the towing vehicle, but a simple lighting board makes a readily available substitute. Make sure it is wired correctly and double check it is still working before using as a checking aid. Use this to check the towing vehicle and as an emergency fi eld recovery replacement.

Multi Meter
The ranges required for trailer purposes are 12 (occasionally 24) volts DC (direct current) for detecting voltage and Resistance for checking continuity.

Test Lamp
A small 12 probe, one with a small crocodile clip. Attach the crocodile clip to earth (white lead) and use the probe to detect where a positive voltage is being supplied.

Extension Lead
A long extension lead with two crocodile clips to enable a multimeter or test lamp to be used between two remote points, e.g. between the 7-pin plug and the junction box or a rear lamp.

Lighting System Faults

1. Lamp Does Not Work

FAULT: One lamp doesn't work but the others work correctly:
Check the bulb
Ensure that it is the correct type, power and voltage bulb. Ensure that the correct contact on the base of the bulb is clean.
Frequently the filament can be seen to be damaged, but not all bulb faults are visible. Either replace it with a well-known bulb or put the suspect bulb into another lamp of a similar type. If the new bulb works or the fault follows the suspect bulb, then it is faulty.

Check the bulb holder
Corrosion: Cleaning with abrasive paper and a smear of grease can get the lamp working but if there are any doubts replace the lamp unit.
Bulb mounting: Make sure that the bulb retaining tags are not bent, broken or loose and hold the bulb securely against the contacts.

Check for power
Check that a voltage appears between the contact and bulb holder when the lamp is switched on. If there is no power, then go to the plug at the front of the trailer and check for voltage between live and the white earth cable. Follow the feed for that lamp back to the next connector or junction box and check for voltage again. Check leads coming into and out of each connector/junction box, all the way back to the lamp if necessary. Following a progression from the lamp to the power source will indicate in which connector or cable run the problem lies.

Check cabling
If the problem lies in a cable run, then identify if the problem is in the feed or ground wires. This can be done by continuity test or by substitution.
Check each crimp terminal. Check there is good contact between the crimp and the core and there is no insulation getting in the way. Cores sometimes break just inside the insulation.
If both terminals are good, then the fault lies with the wire. If there is no visual damage to indicate the location of the problem, the simplest solution is to replace the cable or add a supplementary cable.

2. Incorrect Lamp Comes On

FAULT: One lamp comes on instead of the other:
This is almost certainly a wiring error. Follow the cables from the lamp to the vehicle plug to find the mistake.

FAULT: Correct lamp on, others come on dimly:
An earth fault. The lamp being tested is trying to earth itself through the other lamps. Follow the earth from the lamp in question to find the

fault.

FAULT: Fuses blow in the towing vehicle:
Longer trailers with side marker lamps can draw more current from right and left side lamp circuits than the towing vehicle can supply. NB. Each 5-Watt bulb draws 0.4 amps over and above the requirements of the towing vehicle itself. Check the fuse capacity on the side lamp circuit. If this is inadequate install a bypass relay. More modern lighting systems use LEDs for side marker lamps, reducing the current consumption.

This problem can be caused by a live feed touching either the chassis or the white earth return wire.
DO NOT use a towing vehicle to test for this problem, use a multimeter to identify the fault. Use the resistance function of a multimeter to determine which wire has the fault. At the plug check each feed wire in turn against the white earth wire then against the chassis. Low or zero resistance will indicate which feed wire is contacting which return. Follow the feed wire through the system to locate the fault.

3. LED Lamps

There are significant issues with the use of LED lamps on trailers. Vehicle indicators to show that the trailer is connected may not work. Incompatibility of towing vehicle electronics can cause trailer lamps to show dim or pulsate. Specialist help should be sought in all cases where investigation of LED lamps is needed.

Bowden Cables

1. Removal and Replacement

Place the trailer on stands with all wheels free.

WARNING! The handbrake should be released and the handbrake locking bolt fitted.

Some older couplings have provision for a locking bolt. If a bolt cannot be used, the handbrake lever should be secured in the ‘off’ position to prevent the handbrake operating.

Undo the locknut on the brake rod (front to rear) adjacent to the compensator. Slacken the second nut on the brake rod.

NOTE. Take note of any washers and orientation of domed nuts.

Remove the half shell from the backplate and detach the brake cable. Withdraw the cable assembly.

Attach the new cable to the expander in the hub and refit the half shell.

Cable & Half Shells

Thread the new cable into position, secure the outer with its nut and thread the nut on the inside to approximately the position noted on the old cable.

NOTE. This procedure covers just the Bowden cable replacement; we would always recommend that a full brake adjustment is carried out including hub adjustment.

In 2012 fixed length (Pronto Fit) cables were introduced which have a domed mushroom head. These are used with a compensator with slotted pivot points to enable the cable to be assembled to the unit.

Single Balance Bar Tandem Balance Bar

Breakaway Cables & Secondary Couplings

1. Legal Requirement

The law requires all braked trailers built on or after 1st October 1982 (caravans, horse boxes, flatbed car trailers etc.) to be fitted with a safety device to provide protection in the event of the separation of the main coupling while in motion by applying the trailer brake. This device is described as a 'breakaway cable'. Its use is **mandatory** for braked trailers up to 3,500kg GVW.

2. Purpose of the Breakaway Cable

The breakaway cable applies the trailer's brakes should the main coupling device become parted from the towing vehicle.
If this happens the cable should be able to pull tight, without hindrance, engaging the trailer brakes and is designed to then break, allowing the trailer to come to a halt away from the towing vehicle.
An attachment point shall be incorporated by the towing bracket manufacturer for the attachment of either secondary couplings or devices necessary to enable the trailer to be stopped automatically in the event of separation of the main coupling (as per the requirements of UNECE Regulation 55).
Either:

Pass the cable through the attachment point and clip it back on itself.

Or

Attach the clip directly to the designated point.

Where a designated attachment point for the cable attachment has not been provided on the towbar, it is suggested that in the case of a fixed tow ball, the cable loops around the tow ball.
For removable type tow balls, **always** consult the manufacturer to determine if this method of attachment is acceptable.

3. Correct Procedure for Use

Regularly check the cable and clip for damage. If in doubt, contact your dealer or service agent.

Make sure the cable runs as straight as possible and goes through a cable guide underneath the trailer coupling.

Check to ensure once the cable is attached that:

- The cable cannot snag in use on the trailer coupling head, jockey wheel, or any accessory.
- There is sufficient slack in the cable to allow the towing vehicle and trailer to articulate fully without the cable becoming taut and applying the brakes.
- It cannot make contact with the ground; if left loose, the cable may scrape along the ground, damaging it and potentially causing it

to fail.

Breakaway cables are designed to function at pre-determined loads depending on the trailer's braking system characteristics. It is important that any replacement complies with the specification of the original cable.

4. Removal of Breakaway Cables

It is important that the handbrake lever is prevented from operating when replacing the cable.

WARNING! The handbrake should be released and the handbrake locking bolt fitted where possible.

Remove the existing cable from any guides taking note of the route. Remove the split pin and withdraw the clevis pin.

5. Re-fitting of Breakaway Cables

WARNING! Always use the correct replacement from the manufacturer as an incompatible cable may fail to operate the handbrake mechanism correctly.

Remove the split pin, washer and clevis pin from the replacement cable and retain.

Position the clevis so that it lines up with the hole in the handbrake, insert the clevis pin, fit the washer and split pin.

Ensure that the cable is re-routed through the guides provided. This is important to ensure that the cable operates under the widest range of circumstances.

Check that there is no damage or fraying prior to use.

6. Secondary Couplings

A 'Secondary Coupling' is a chain or cable that shall be fitted between an unbraked trailer and the towing vehicle and maintains the connection of the two in the event of separation of the primary coupling. This is a legal requirement for unbraked trailers - in the event of separation it should prevent the nose of the trailer from touching the ground and provides some residual steering of the trailer.

Handbrake Energy Store

1. Safe Removal

The handbrake energy store dampers fitted to overrun couplings are pressurised. During assembly the damper is preloaded and compressed in order that the coupling functions correctly. Care must therefore also be exercised when working on, handling and disposing of the energy store. Following this procedure will ensure that the damper is removed and disposed of safely.

WARNING! The handbrake should be released and the handbrake locking bolt fitted.

Some couplings do not have provision for the locking bolt. In this case or if a bolt cannot be used the handbrake lever should be secured in the 'off' position to prevent the handbrake operating.

With the handbrake secure in the released position, release the locking nut securing the brake rod to the overrun coupling transmission lever. Disconnect the brake rod from the transmission lever.
With the brake rod disconnected the handbrake and energy store are free to travel through the full range of motion. Pull the handbrake to its engaged position, make sure that the clevis of the transmission lever does not become trapped between the handbrake lever foot and the transmission lever.

NOTE. If the clevis becomes trapped between the handbrake and transmission lever the handbrake will be prevented from travelling through its full range of motion, which in turn means the energy store will still be preloaded resulting in the prevention of it being removed. Remove the E-clip by holding the connecting pin at the handbrake, then connecting pin can then be removed as well. Using a 17mm socket and spanner remove the nut securing the energy store to the mounting plate. The energy store can now be safely removed.

2. Replacement

One end of the energy store is slightly wider than the other. This end should be fitted to the handbrake fixing point, aligning the mounting holes.

Fit the smaller securing pin from the inside of the handbrake through the aligned mounting holes (this may require an E-clip to be fitted to one end first). Secure the pin in position with an E-clip.

At the other end of the energy store fit the anchor bolt to the energy store, fitting the smooth end of the bolt through the energy store mounting hole. Secure in position with an E-clip.

Raise the unsecured end of the energy store upwards to align the anchor bolt with the hole in the mounting plate. You may need to rotate the handbrake through its range to align the bolt and hole.

With the threaded end of the anchor bolt through the hole in the mounting plate, secure in position with the M10 locking nut. Torque tightens to 30Nm +0 / -3Nm.

With everything connected and secure, pull the handbrake lever to the 'off' position. Re-connect the brake rod to the clevis of the transmission lever, tightening off the lock nut against the clevis.

Check the brake adjustment.

Dampers

The dampers within overrun couplings are pressurised. During assembly the damper is preloaded and compressed in order that the coupling functions correctly. Care must be exercised when working on, handling and disposing of the damper. This is especially important if any damage or misuse of the coupling has occurred. Following this procedure will ensure that the damper is removed and disposed of safely.

WARNING! DO NOT position anything or stand immediately to the front or rear of the coupling assembly in case a damper fails during the process.

1. Safe Removal

Pull back the bellow from the coupling head / eye to expose the two securing bolts.

Undo the self-locking nut from the rear bolt of the coupling / eye, see Fig. A.

Fig. A.

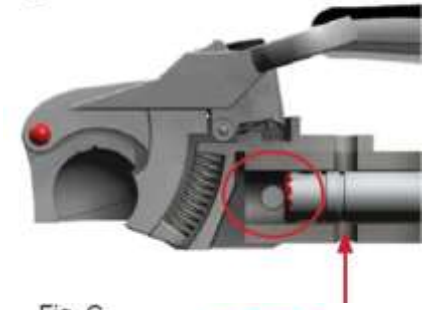
Remove the rear bolt - force may be required as the damper may still be preloaded.

Raise the coupling operating handle to fully remove the bolt if needed.

When the rear bolt is removed the damper may move forward to rest upon the front bolt.

NOTE. In most instances a retaining pin is fitted (located between the bolt holes). This pin will hold the damper in its original position and will therefore need to be removed. See Fig. B. on the cut away photograph.

Fig. B.

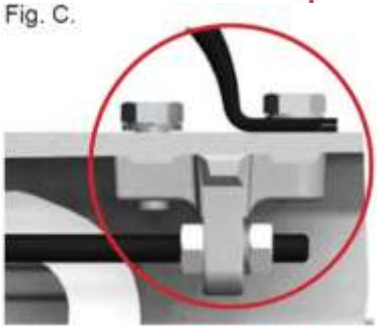


From underneath, through the bolt hole in the drawtube, drill a 3mm diameter hole into the damper body to a depth of approximately 8mm.

The pressure in the damper should now have been discharged. Remove the self-locking nut on the front bolt. If the bolt is still difficult to remove it could indicate that there is still residual force in the damper. In such cases, the safe removal procedure should be repeated
Remove the rear damper bracket retaining bolts. Also remove the nuts and spring washers from the rear of the damper. See Fig. C. on the cut away photograph.

The de-pressurised damper can now be removed by sliding the damper forward through the drawtube and be disposed of as per the instructions below.

Fig. C.



2. Replacement

Fit the rear damper mounting to the new damper (see Fig. C.) and slide the damper loosely into position. Follow procedure for ‘Ball Couplings & Towing Eyes’.

3. Disposal

WARNING! This operation should only be carried out if the gas pressure has been discharged.
Prior to disposing of the damper, it is recommended that the oil remaining in the damper is drained away and disposed of in an appropriate manner. This can be achieved by drilling a 3mm hole in the damper body 60mm from the rod end of the damper.

Avonride Head Lock

1. Head Lock Replacement

Operate the latch and lift the handle to expose the latch pin. Block in position.

Using a punch, drift the pin out. See Fig. A.

Fig. A.

Fig. B.

Lift the lock housing out. See Fig. B.

If the housing is not currently fitted with a lock remove the spring for re-use. Remove the washer and the plastic blanking plug and discard.

If the housing has a lock fitted remove the spring, centre screw, washer and actuator lever for re-use, followed by the lock barrel ring nut.

Fit the plastic cap cover to the new lock, insert lock into casting and secure with the ring nut. Fit the actuator lever with washer and centre screw and locate the spring.

Place the assembly into position on the coupling body, line up the pivot hole and gently drift in the pin.

Check all parts are secure. Check that the lock mechanism operates correctly and that the safety catch moves freely securing the handle.

Ball Couplings and Towing Eyes

Prior to proceeding it is essential to confirm the condition of the damper by carrying out a damper reaction test:

- Pull the handbrake lever on as far as possible.
- Push the ball coupling as far back into the overrunning hitch as it will go. This requires force to compress and should extend smoothly when released.
- If the drawtube is impossible to compress, has a “spongey” feel and no damping resistance, or the extension is rapid, the damper must be replaced.
- If completely satisfied that the damper is in good condition, then proceed.

1. Replacement

Pull back the bellow from the coupling head / eye to expose the two securing bolts. Undo the self-locking nut from the rear bolt of the coupling / eye.

Remove the rear bolt - force may be required as the damper may still be preloaded. Raise the coupling operating handle to fully remove the bolt if needed.

When the rear bolt is removed the damper may move forward to rest upon the front bolt.

NOTE. In most instances a retaining pin is fitted (located between the bolt holes). This pin will hold the damper in its original position and will not need removing. Undo the self-locking nut from the front bolt, extract the bolt and remove the head. Replace both bolts in the drawtube and finger-tighten the nuts.

Inspect the drawtube shaft for damage, dress burrs and clean any dirt as the new coupling will be a close fit on the shaft.

If a new bellow is to be fitted, cut the tie-wrap and discard the old one. Fit the new and secure with a tie-wrap. Trial fit the new ball coupling or eye. It should slide into place without any undue force.

WARNING! DO NOT hammer the coupling into place, this can damage the coupling itself or the overrun mechanism. If it proves to be tight,

remove it, thoroughly clean the shaft and inspect for burrs.

Fit the bolts, washers and secure with NEW locking nuts. DO NOT re-use the old nuts as this is safety critical. Torque to the figure specified in the relevant section of this manual. Fit the plastic nut covers.

Re-fit the bellows with the coupling / eye horizontal taking care not to tear or damage the material. Where the replacement coupling / eye is a different part to the original, always ensure that the:

- Corresponding length bolts are used.
- Compatible bellows are used.
- Hole sizes in the coupling and drawbar tube match and that the correct sized bolts are employed.

2. Adjustment

It is not necessary to make any adjustments. Simply rotate the coupling / eye to its limits to ensure that the natural position of the bellows is with the head horizontal.

Warranty

Limited Warranty (UK & Europe Only)

This warranty is only applicable for machinery sold or supplied into the United Kingdom or Europe; for USA/Canada, see the warranty detailed in the relevant section below.

Chapman Machinery Ltd (herein 'Chapman' or 'Chapman Machinery') warrants that the machine referred to in the Warranty Registration Form will be free from manufacturing defects for a period of 24 months from the date of sale. This warranty does not affect your statutory rights, but merely adds to them. Should you have a problem within 24 months from the date of sale please contact your original dealer, or Chapman Machinery's Service Department.

Any part found to be defective during this period will be replaced or repaired, at our discretion, by the dealer or an authorised Service Engineer.

Warranty Conditions

1. The Warranty Registration Form must be completed and returned to Chapman Machinery Ltd within 30 days of the date of sale

2. This warranty does not cover defects arising from fair wear and tear, wilful damage, negligence, misuse, abnormal working conditions, use in competition, failure to follow Chapman Machinery's instructions (oral or written, including all instructions and recommendation made in the Operator's Manual) or alteration or repair of the machinery without prior approval.

3. The machinery must have been serviced in accordance with the Operator's Manual, and the Service Log must have been kept up to date and made available to the dealer should service, repair or warranty work be undertaken.

4. This warranty does not cover claims in respect of wearing parts such as blades, flails, paintwork, tyres, belts, hydraulic hoses, bearings, bushes, linkage pins, top links, ball ends unless there is a manufacturing or material defect or the cost of normal servicing items such as oils and lubricants.

5. This warranty does not cover any expenses or losses incurred whilst the machinery is out of use for warranty repairs or parts replacement.

6. This warranty does not extend to parts, materials or equipment not manufactured by Chapman Machinery, for which the Buyer shall only be entitled to the benefit of any such warranty or guarantee given by themanufacturer to Chapman Machinery. Only genuine replacement parts will be allowable for warranty claims.

7. All parts replaced by Chapman Machinery under warranty become the property of Chapman Machinery and must be returned to Chapman Machinery if so requested. Such parts may only be disposed of after a warranty claim has been accepted and processed by Chapman Machinery.

8. Chapman Machinery is not liable under this warranty for any repairs carried out without Chapman Machinery's written consent or without Chapman Machinery being afforded a reasonable opportunity toinspect the machinery the subject of the warranty claim. Chapman Machinery's written consent must, therefore, be obtained before any repairs are carried out or parts replaced. Use of non-Chapman Machinery parts automatically invalidates the Chapman Warranty. Failed components must not be dismantled except as specifically authorised by Chapman Machinery and dismantling of any components without authorisation from Chapman Machinery will invalidate this warranty.

9. All warranty claims must be submitted to Chapman Machinery on Chapman Machinery Warranty Claim Forms within 30 days of completion of warrantywork.

10. Using the machine implies the knowledge and acceptance of these instructions and the limitations contained in this Manual.

Transfer of Warranty

The Chapman warranty be transferred to a subsequent owner of the machinery (for use within the UK only) for the balance of the warranty period subject to all of the stated warranty conditions and provided that the Change of Owner form is completed and sent to Chapman Machinery within 14 days of change of owner- ship.

Chapman Machinery Ltd retain the right to refuse transfer of warranty. Chapman Machinery reserves the right to make alterations and improvements to any machinery without notification and without obligation to do so.

[End of UK/EU Warranty Section]

DECLARATION OF CONFORMITY

EU: Machinery Directive 2006/42/EC
UK: Supply of Machinery (Safety) Regulations 2008

Manufacturer: Chapman Machinery Ltd, Hele Barton, Week St Mary, Holsworthy, Devon, EX22 6XR, UK

Product(s) covered:	GT900 / GT920 Gig Trailer
Serial Number:	Stated on Accompanying Invoice
Standards and Regulations Used:	Machinery Directive 2006/42/EC Supply of Machinery (Safety) Regulations 2008
Place of Issue:	United Kingdom
Name of Representative:	James Chapman
Position of Representative:	Director
Basis of Conformity Declaration:	Self Declaration by Manufacturer

Declaration:
I declare that as the authorised representative, the above information in relation to the supply / manufacture of this product, is in conformity with the stated standards and other related documents following the provisions of Machinery Directive 2006/42/EC directives [EU] and Supply of Machinery (Safety) Regulations 2008 [UK]

The products described above comply with the essential requirements of the directives specified.

Signed: 

Date: 25/04/2018

SERVICE RECORD BOOK

TRAILER MODEL	
SERIAL NUMBER	
YEAR OF MANUFACTURE	
RATED CAPACITY	
NUMBER OF AXLES	
AXLE TYPE	
COUPLING SIZE	
WHEEL SIZE	
TRAILER DIMENSIONS	

Chapman Machinery Ltd
Hele Barton, Week St Mary
Holsworthy EX22 6XR
01288 308149
sales@chapman.co.uk
www.chapman.co.uk

Date of Manufacture _____ Trailer quality fully assured by Chapman Machinery LTD Signed: _____	Date: _____

Date: _____	Date: _____
Date: _____	Date: _____
Date: _____	Date: _____
Date: _____	Date: _____