



Ifor Williams Trailers Ltd.

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Serial No:

USER'S HANDBOOK

These instructions are provided to help you to get the best possible service from your trailer. To ensure that the trailer is used safely, we strongly recommend that the instructions are read by all users and all the recommendations followed.

Misuse may invalidate warranty

IMPORTANT

If you sell your trailer, please pass this book on to the new owner.

THE FOLLOWING POINTS ARE MOST IMPORTANT TO ENSURE SAFE TOWING OF ANY TRAILER

- Use an approved towing bracket and coupling ball/jaw on the towing vehicle.
- Always follow any recommendations for maximum trailer weights given in your towing vehicle's handbook.
- Never exceed the maximum gross weight shown on the trailer plate.
- Never exceed the recommended towing speeds.
- Check tyre pressures before every journey. Correct pressures are shown on a label on the side of the trailer.
- Check wheel bolts after first 25 miles of service and subsequently before every journey. (See page 10 for wheel bolt tightening details)
- Check lighting equipment before every journey.
- Always make use of the breakaway cable.
- Always leave the handbrake on or chock the wheels when the trailer is parked. When parking the trailer for extended periods, it is advisable to chock the wheels and release the handbrake to avoid the possibility of the brake shoes adhering to the brake drum surface.
- With the trailer coupled to the towing vehicle, the bed of the trailer should be level. It is recommended, therefore, that provision be made on the towing bracket for adjustments to be carried out to the towing ball height to allow for various conditions of loading.
- Never exceed the maximum nose weight shown on the coupling. It is advisable to distribute the load to achieve a nose weight of between 50% and 75% of the maximum. The load should be distributed as evenly as possible across the trailer floor. Compact, heavy items should be positioned centrally, directly above or slightly forward of the axle (single axle trailers)/central line between the axles (twin axle trailers).

Coupling maximum nose weights – KF13, KF27, KFG27 & KRV20 - 100kg
KFG35 - 150kg

- Except in emergencies, **never unhitch a loaded trailer**. If unavoidable, take great care to ensure that the jockey wheel is securely clamped and the handbrake is fully applied. If the trailer is on a slope, chock the wheels as an added precaution.
- Always tie down securely or restrain effectively all loads and carry out regular checks on the condition of the load during the journey.

Used correctly and sensibly and maintained to this handbook, your trailer should give many years of safe and reliable service. If you are in doubt about any of the instructions, please contact your distributor or our Customer Care Department.

If additional equipment is to be fitted to the trailer which involves any welding, drilling or any structural modifications to the trailer, approval should be obtained from our Customer Care Department before commencing work.

If you have purchased your trailer secondhand, please complete this form and return it to
for Williams Trailers Ltd., Cynwyd, Conwen, Clwyd LL21 0LB. This will enable us to
contact you in the event of a recall, and to assist the police in returning your trailer to you
in the event that it is stolen.



Trailer Serial Number: _____
 Model: _____
 New Owner: _____
 Address: _____

 Tel. No: _____



Trailer Serial Number: _____
 Model: _____
 New Owner: _____
 Address: _____

 Tel. No: _____



Trailer Serial Number: _____
 Model: _____
 New Owner: _____
 Address: _____

 Tel. No: _____

TRANSPORTING LIVESTOCK

When transporting livestock, full use should be made of partitions to ensure that the animals are not thrown about by the motion of the vehicle. This is one of the provisions of the Transit of Animals (Road & Rail) Order 1975 (S.I. No. 1024) for the protection of animals during transit, but also it is most important for the safe towing of the trailer.

Cross divisions are available for all livestock trailers. They are not provided with the trailer as standard as customers' requirements vary considerably depending on the type of stock to be carried. However, the trailers are provided with receivers as standard to accept the cross divisions at intervals along the trailer.

Maximum pen lengths permitted by the order

Sheep, pigs, goats	3.1m	10'2"
Calves	2.5m	8'2"
Cattle	3.7m	12'1 1/2"

If a part load is carried, pens may need to be smaller.

Non-slip floors are standard on all livestock trailers. However, the Order states that new straw bedding (or similar) must be used if calves or pigs are carried.

Horses

Straw or similar bedding should also be used in horsebox trailers to improve comfort and footing when the floor is wet.

NOTE: The above references to the Transit of Animals Order are not intended to be definitive legal interpretations. If you are in any doubt about the requirements of the Order, advice can be obtained from your local Animal Health Inspector (County Council Trading Standards Department).

TOWING SPEEDS

All trailers are fitted with wheels, tyres and braking systems that comply with the UK Construction and Use Regulations. The maximum speed limit under the regulations is 60mph. However, we strongly recommend that speeds are reduced when transporting livestock or any unevenly distributed load.

NOTE: The 60mph limit is allowed on motorways and unrestricted dual carriageways only. On other unrestricted roads the limit is 50mph.

Transporting livestock in the DP120G trailer

It is recommended that when transporting livestock in the DP120G, speed should not exceed 25mph.

BREAKAWAY CABLE

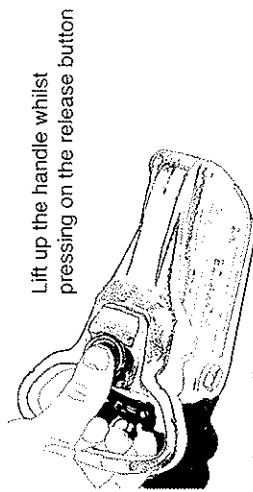
The breakaway cable is designed to operate the handbrake if the trailer becomes detached from the towing vehicle. It will then detach itself by the spring ring opening out. After use, the cable and spring ring should be replaced to ensure correct future operation.

COUPLING INSTRUCTIONS

Whenever possible, both trailer and towing vehicle should be on level ground.

50mm Ball Couplings

- 1 Check the condition of the breakaway cable. If frayed or kinked, replace before using trailer.
- 2 Check that the ball is clean, and the coupling head cup is well greased.
- 3 Ensure that the trailer handbrake is fully applied.
- 4 Ensure that the jockey wheel clamp handle is tight and, by turning the jockey wheel jack handle, raise the coupling to a height greater than that of the coupling ball.
- 5 Reverse the towing vehicle up to the trailer so that the coupling head is directly over the towing ball. Fully apply the towing vehicle handbrake.
- 6 Attach the breakaway cable to the towing vehicle.
- 7 The practice of wrapping the cable around the stem of the coupling ball is not recommended. It is better to fit a suitable eye bracket to the towing bracket for the purpose.
- 8 Press the release button on the coupling head and lift the handle. Lower the coupling head by means of the jockey wheel jack handle until the coupling head is in place over the towing vehicle ball, and release the handle.



Lift up the handle whilst pressing on the release button

Coupling and uncoupling

- 8 Test that the ball is engaged by attempting to lift the coupling off the ball with the jockey wheel.
- 9 Retract the jockey wheel, taking care that the wheel is wound up fully and positioned well clear of the brake linkage as follows:
Before releasing the clamp, wind up the wheel until the forks are tight against the stem. Release the clamp, lift the stem and tighten the clamp with the wheel facing forward and in contact with the inside of the drawbar channel.
- 10 Attach the electrical plug and check that all the lights are operating correctly.
- 11 Release the trailer handbrake.

Tyres

Tyre pressure stickers will be found on the side of the trailer.

Tyres must be maintained at the pressures indicated on the sticker. Under-inflation will adversely affect handling and fuel consumption and will lead to premature wear. If seriously under-inflated, a tyre will overheat and fail very rapidly.

When renewing tyres, always ensure that you purchase a tyre of the same size and load/speed index rating. This will be found on the sidewall of the tyre. E.g. 6.70-13C 95/93L. Different makes or models of tyres of the same size can have widely differing load/speed index ratings and inflation pressures. Use of a tyre with a lower rating can be dangerous. If in doubt, ask a tyre distributor or our Customer Care department.

The tyres fitted to the following trailer models do not currently have suitable equivalents.

DO NOT REPLACE WITH LOWER RATED TYRES

LT-series Low Loading Trailers and GP74GTA "Mini-Plant"

Avon 145R10C 8 P.R. "Europe Van" Load/speed index 82/80M

TT105G and GP106GM "Maxi-Plant"

Michelin 155/70R12 XCX Load/speed index 104/102J

Avon 155/70R12C "Trailer 12-70"

DP120G, LM-series, CT166G

Avon 195/50R13C "Trailer 13-50"

The maximum gross weight figure given on the trailer plate is always equal to or less than the approved maximum load for the tyres multiplied by the number of tyres on the trailer. In some cases this includes a bonus load which is allowed for trailer use up to 60 mph. Other maximum load figures are marked on some tyres. These do not apply to the UK or Europe and should be disregarded.

Tyre Repairs

Punctures should be inspected and repaired by a specialist tyre distributor. Do not fit tubes to tubeless tyres as this can lead to a "blow out" in the event of a further puncture. If the tyre is too severely damaged for a repair to be carried out the tyre should be replaced.

Security

Your trailer is security marked, but as an added means of assisting the police in making a positive identification we recommend that you mark the trailer with your postcode or another unique mark. Horsebox trailers are also fitted with Datatag electronic tags for use with Police scanner systems.

If you wish to protect your trailer with a coupling lock or other security device your distributor will be pleased to advise you of the various devices which are available.

Guarantee Registration Card

It is important that the registration card is completed and returned without delay, not only to ensure that the guarantee is validated, but also so that we can assist the police in returning your trailer to you should it be stolen. Also, it allows us to contact you without delay in the event of a recall.

We reserve the right to change and improve specifications without prior notice.

Whilst every effort has been made to ensure the accuracy of these instructions, they are intended only as a guide to the user.

General Lubrication

Spring bolts and sliding bolts on sheep deck drop leaf, cross divisions, centre partitions and general duty trailer tailboards should be greased monthly.

HB505R, HB510R & HB401R

Floors

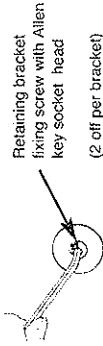
The rubber mats should be removed and an inspection made for kicking damage over the rear floor area at regular intervals. As a guide, we recommend a monthly check where the trailer is in use daily.

Interior Lamps

Do not obstruct the interior lamp with hay racks, clothing, etc. (The lamp will overheat and may become a fire risk.)

Quick Release Breast Bars / Breaching Bars

The breast bars and breaching bars can be removed from outside the trailer by removing the retaining bracket fixing screws using the Allen key provided. This allows a distressed horse to be unloaded without the need to remove the retaining hooks inside the trailer.



Galvanized Finish

As part of the normal ageing process, galvanized surfaces form an outer layer of oxide. This protects the reactive zinc and underlying steel from further corrosion. The appearance of the surface ranges from bright silver to dull grey. Exposure to road salt can change the appearance of newly galvanized surfaces to grey or black with white or grey deposits. This does not affect the protective properties of the finish.

Loading Skids

- Extreme care should be exercised when using loading skids.
- Carry out loading and unloading on level, firm ground.
- Always use the prop stands provided.
- Have an assistant on hand to guide you.
- Ensure that the skids are positioned correctly, with the lower ends on firm, level ground, parallel with the trailer and in line with the centre of the tyres of the vehicle to be loaded/unloaded and that the skid top angles are in contact with the trailer rear cross member over their full width.
- Your assistant should keep well clear during loading/unloading.
- Take your time and constantly check that the vehicle is correctly positioned.
- For loading vehicles under their own power, the ladder type skids are more suitable, whereas winching will normally be easier with the flat type.

Eye Coupling

- 1 Check the condition of the breakaway cable. If frayed or kinked, replace before using trailer.
- 2 Release the jockey wheel clamp and drop the wheel to the ground.
- 3 Clean the towing eye and jaw and apply grease to the pin and eye.
- 4 Ensure that the trailer handbrake is fully applied.
- 5 Tighten the jockey wheel clamp handle and, by turning the jockey wheel jack handle, raise the coupling eye to the height of the towing jaw opening.
- 6 Remove the safety clip or release the safety catch on the towing jaw and remove the pin.*
- 7 Reverse the towing vehicle up to the trailer so that the coupling eye is in position between the towing jaw. Apply the towing vehicle handbrake.
- 8 Replace the pin and safety clip.*
- 9 Attach the breakaway cable to the towing vehicle.
- 10 The practice of wrapping the cable around the towing pin is not recommended. It is better to fit a suitable eye bracket to the towing bracket for the purpose.
Retract the jockey wheel, taking care that the wheel is wound up fully and positioned well clear of the brake linkage as follows:
Before releasing the clamp, wind up the wheel until the forks are tight against the stem. Release the clamp, lift the stem and tighten the clamp with the wheel facing forward and in contact with the inside of the drawbar channel.
- 11 Attach the lighting plug and check that all lights are operating correctly.
- 12 Release the trailer handbrake.

***NOTE:** Safety devices on towing jaws vary depending upon the manufacturer. The manufacturer's instructions should be followed to ensure correct operation.

REVERSING

All trailers are fitted with auto-reverse braking systems. Manual reverse catches are available as optional extras for use in particularly adverse conditions, eg. reversing up a slippery incline, where the slight drag present in the auto-reverse brakes may otherwise cause the wheels to lock.

PARKING

Trailer on level ground or facing downhill:

- 1 Fully apply the towing vehicle and trailer handbrakes.
- 2 Remove the lighting plug and stow in a safe position.
- 3 Release jockey wheel clamp and lower the jockey wheel to the ground.
- 4 Firmly re-tighten clamp by hand.
- 5 Uncouple the trailer using the jockey wheel to raise the coupling free of the coupling ball. (For eye couplings, remove the pin from the towing jaw following the towing jaw manufacturer's instructions.)
- 6 Detach the breakaway cable.

Trailer facing uphill:

- 1 Apply the towing vehicle and trailer handbrakes.
- 2 Return to the towing vehicle and release the handbrake. The trailer should roll back a few inches as the handbrake applies the brakes, overriding the auto-reverse system.
- 3 Re-apply the towing vehicle handbrake.
- 4 Check the trailer handbrake is fully applied.
- 5 Remove the lighting plug.
- 6 Lower the jockey wheel and clamp securely.
- 7 Uncouple the trailer using the jockey wheel to raise the coupling free of the ball. (For eye couplings, remove the pin from the towing jaw following the towing jaw manufacturer's instructions.)
- 8 Detach the breakaway cable.

IMPORTANT – Never detach the breakaway cable before uncoupling the trailer.

Note: When parking the trailer for extended periods, it is advisable to chock the wheels and release the handbrake to avoid the possibility of the brake shoes adhering to the brake drum surface.

Wheel bearing adjustment

The unitized wheel bearings do not require adjustment. However, if the hubs are removed for any reason, a new axle end nut must be fitted every alternate time, tightened to a torque of 350Nm/260ft lb and locked as shown above.

Overrun Coupling Unit and Jockey Wheel

The general condition of the overrun coupling unit and jockey wheel should be checked monthly. Any damaged or worn parts should be replaced immediately.

Lubricate the wheel spindle and screw thread every 6 months.

To minimize wear on your towing ball and coupling head, clean out the cup in the coupling head monthly and apply new grease.

Service as follows every 3000 miles or 6 months, whichever is the sooner:–

- Thoroughly examine all moving parts for wear and correct functioning.
- Grease the drawtube bearings by means of the grease nipples.
- Clean and grease bearing parts and pivot pins.
- Ensure correct functioning of all pivot pins and levers and oil monthly.

Drawtube Reaction Test

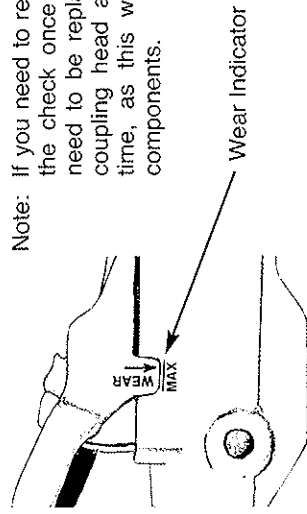
Fully apply the handbrake lever. Push the coupling head as far back into the housing as possible. (It will move slowly under steady pressure.) On release, the coupling head should slide gradually forward under the pressure of the gas-filled shock absorber. If it either fails to return to the forward position or returns immediately, contact your authorized distributor for advice.

Checking the coupling head for excessive wear

With the coupling disconnected from the tow ball, observe the position of the wear indicator lug relative to the "MAX" line. Then, with the coupling attached to the tow ball, re-check the position of the lug (see diagram). The gap between the base of the lug and the "MAX" line should be greater. If it is unchanged, excessive wear has taken place on the coupling head, the coupling ball, or both.

If this is the case, make a further check using a new 50mm ball.

If the gap is still unchanged the coupling head is excessively worn and should be replaced. However, if the gap is greater, your original 50mm ball should be replaced.

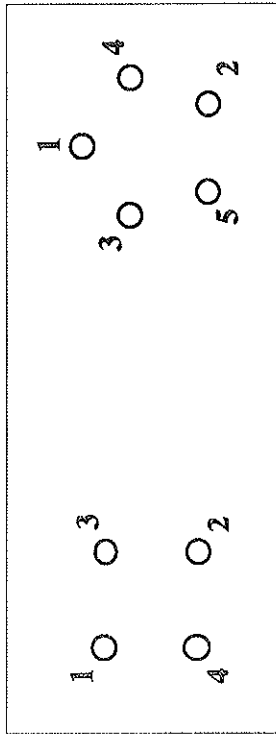


Note: If you need to replace your coupling head, carry out the check once more, as your tow ball may also need to be replaced. It is recommended that the coupling head and ball are replaced at the same time, as this will extend the service life of both components.

FITTING WHEELS

- Ensure wheel bolt threads and wheel seating surfaces are clean and dry.
- Place wheel over locating rim on the hub.
- Tighten each bolt slightly and then tighten to the torque figure given below, following the sequence shown in the diagrams.

				Socket size
4xM12	65 lb ft	88 Nm	9 kgm	19mm A/F
5xM14	81 lb ft	110 Nm	11 kgm	19mm A/F



Wheel bolts should be checked after first 25 miles of service and subsequently before every journey.

BRAKE CABLES

To ensure smooth operation of the brakes and to reduce the possibility of premature brake wear, it is recommended that the brake cables are replaced every 6000 miles or 12 months (whichever is the sooner) at the same time as the brakes are checked.

The cables can be replaced without removing the hubs. See above under "Replacement of Brake Shoes" (paragraph 7).

LUBRICATION AND GENERAL MAINTENANCE

Wheel hubs – No lubrication necessary. The bearings are sealed for life.

Do not attempt to disassemble unitized bearings.
Damaged or missing hub caps should be replaced as soon as possible.

Leaf springs/spring hangers – No lubrication is necessary.

Check the tightness of the self-locking nuts on the U-bolts every 1000 miles or 2 months.*

Brake linkage – All moving parts should be greased or oiled monthly.

SERVICE & MAINTENANCE

BRAKE ADJUSTMENT

Note: Failure to adjust brakes regularly will lead to premature failure of the damper in the overrun unit.

Brake adjustment should be checked after the first 100 miles and subsequently every 1000 miles or 2 months (whichever is the sooner) as follows:—

- 1 Jack up the trailer and support the axles on suitable stands so that all wheels are clear of the ground.
- 2 Release the handbrake fully ensuring that the coupling head is fully extended and that the brake rod is not applying tension to the brake cables by slackening the nut at the rear of the brake rod.
- 3 Adjust each wheel brake as follows:—

Note: During brake adjustment, the drum must only be turned in the direction of forward rotation.

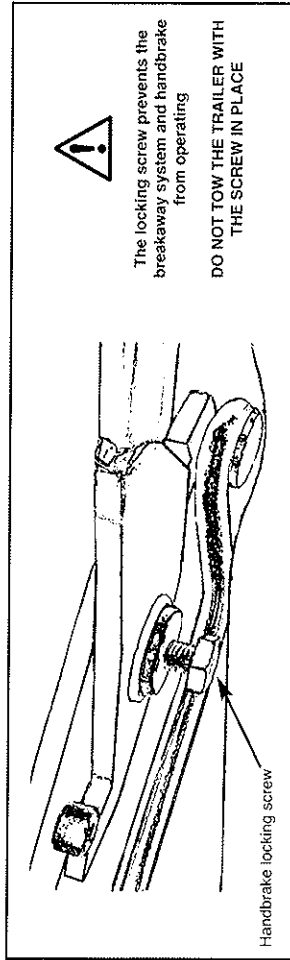
Do not use excessive force during adjustment.

- i Using a spanner/socket (17mm A/F for the 200x50 brake, 19mm A/F for the 250x40 brake), turn the hexagonal adjuster bolt on the rear of the brake in a clockwise direction until the brake is firmly applied.
- ii Slacken the adjuster until the wheel turns freely in the forward direction.
- iii Apply the handbrake two or three times to ensure that the brake shoes are centralized on the drum.
- 4 Adjust the brake linkage as follows:—
 - i Adjust the nuts on the bowden cables so that the compensator is parallel with the axle.
 - ii Adjust the brake rod at the rear nut so that there is no clearance between the overrun lever and the drawshaft (at the rear of the overrun/coupling unit).
Do not overtighten or the brakes will be applied.
 - iii Apply the handbrake.
 - iv Turn each wheel in the reverse direction until it locks to test adjustment. All brakes should lock firmly as the handbrake overrides the auto-reverse mechanism. If they do not lock, adjustment is too slack.
 - v Release the handbrake and tighten the locknuts.
 - vi Couple the trailer to towing vehicle and reverse the trailer. If the brakes lock, the brake rod has been overtightened. Re-adjust the brake rod.

BRAKE MAINTENANCE

Important Note: On KF27, KFG27 & KFG35 couplings the handbrake mechanism comprises an over-centre lever and a powerful compression spring.
To prevent the unrestrained handbrake from springing up, the lever must be disabled in the off position before any part of the braking system is dismantled. This can be achieved by lashing the lever down or using the locking screw provided.

The screw is inserted into the handbrake base as shown in the illustration. Ensure that it is removed after the linkage is re-assembled, otherwise neither the handbrake nor the breakaway cable will operate. The KF13 coupling does not have this facility as the handbrake rises at slow rate. However, it is recommended that the handbrake is lashed down before the linkage is dismantled.



Brake lining conditions should be checked every 3000 miles or 6 months. This can be carried out as follows without removing the brake drum:

Remove the two plastic bungs from the rear of each brake and visually check the thickness of the lining, replacing the bungs after checking. If the thickness is less than 1.5mm the linings should be replaced.

REMOVAL OF BRAKE DRUM AND REPLACEMENT OF BRAKE SHOES

This work must not be carried out unless a suitable torque wrench is available. (The torque required for re-fitting the axle end nut is 350Nm/260lb/ft.)

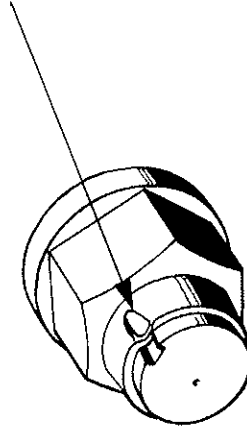
- 1 Jack up the trailer and remove the wheel.
- 2 Release handbrake and tie down the lever or use the handbrake locking screw.
- 3 Remove the hub cap.
- 4 Remove the axle end stake nut.
- 5 Slide the hub/drum off the end of the axle. A suitable hub puller may be required.
- 6 Check the condition of the braking area of the drum. If any deep score marks are visible on the drum surface, the drum should be replaced.
Clean the inside of the drum with a damp cloth. **DO NOT CLEAN WITH AN AIR LINE, AS INHALATION OF DUST COULD BE HARMFUL.** (Though brake linings are now asbestos-free, irritation may still result.)
- 7 Replace the brake shoes as follows:--
 - a. Unscrew the brake adjuster until the shoe ends are resting on the housing.
 - b. Detach the brake cable by pulling the outer cable clear of the cable shroud "shell" on the rear of the brake unit, removing the loose half of the shell and unhooking the cable.
 - c. Remove the brake shoe retainer spring from the centre of the top brake shoe by compressing the spring to release it from the slot in the backplate. (There is no retainer spring on the lower brake shoe.)

- d. Using a suitable lever or screwdriver, lift the forward end of the top brake shoe away from the adjuster and slide the shoe in a rearward direction until it is free. Remove the two brake shoes together with the expander assembly and springs. The lower wedge will drop out of the adjuster assembly. Retain this safely for re-fitting.
- e. Remove the two springs from the top shoe and fit them to the new shoe to ensure that they are correctly re-fitted.
- f. Attach the rear spring to the lower shoe, place the expander assembly in position between the shoes, bring the forward ends of the shoes together and fit the forward spring.

Note: On the 250x40 brake, the lower hook on the rear spring must pass completely through the carrier.

- g. Place the brake shoes together with the expander assembly into position on the backplate, replace the lower wedge and position the forward end of the lower shoe in the adjuster.
- h. Lever the top shoe into position using a large screwdriver.
- i. Fit the retainer spring to the top shoe.
- j. Attach the brake cable.

- 8 Apply a light smear of grease to the thread and bearing face of the axle end nut.
- 9 Slide the brake drum onto the axle.
- 10 Fit the axle end nut and tighten to a torque of 350Nm/260lb/ft.
- 11 Stake the nut collar into one side of the stub axle groove as shown:



- At the next removal, the opposite groove should be used and following that, a new nut will be required.
- 12 Replace the hub cap.
 - 13 Replace the wheel.
 - 14 Adjust the brakes.

SPREADLEVER BRAKES

▲ PRIOR TO CARRYING OUT THESE TASKS PLEASE REFER TO PRECAUTIONS ▲

REPLACING BRAKE ASSEMBLY COMPLETE

It is recommended that the brake assemblies are replaced in axle sets.

1. Follow the procedure for Replacing Brake Shoes items (1) to (7) inclusive taking due note of the introductory warnings.
2. The brake assemblies are handed, check the new assembly against the one fitted noting the position of the brake cable attachment. Remove the four bolts securing the backplate to the axle, remove the old assembly and fit the new one in accordance with the torque figures specified in the trailer manufacturer's handbook.
3. Continue with the procedure for Replacing Brake Shoes commencing at item (18).
4. Follow the Adjustment procedure below.

REPLACING BRAKE SHOES

Place the trailer on stands with all wheels free. **WARNING!** The handbrake should be released and the handbrake locking bolt fitted. See Fig. D. 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 lever operating. It is recommended that the brake shoes are replaced in axle sets.

1. Remove the wheels.
2. Remove the hub cap.
3. 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.
4. Remove the axle nut, this may be a castellated nut retained with a split pin or alternatively it may be a locknut.
5. Remove the brake drum (hub outer may be required) taking care not to displace the bearings. **WARNING!** Avoid inhaling brake dust. Don't use an airline to clean the drum. Carefully remove the dust using a small brush.

FIG. D



FIG. E

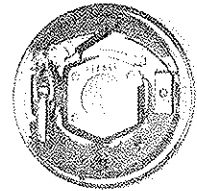
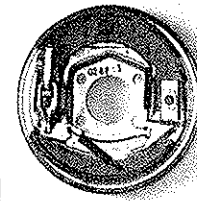


FIG. F



6. Check the condition of the brake drum, replace the drum if deep score-marks are visible.
7. 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.
8. **NOTE:** Reverse 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. See Fig. E (left hand) and F (right hand) for reference to Knott 200x50 brake (others similar).
9. With care and using a suitable lever, lift sliding shoe carrier away from expander. Extract expander and retain. **NOTE:** Auto adjust assemblies are supplied complete.
10. Remove brake shoe retaining spring taking care to retain the spring. Keep plate or pin at the rear of the backplate where fitted.
11. Lift off whole brake shoe assembly from backplate. Take care not to lose the two adjuster wedges.
12. Examine the components and springs, replace any damaged parts. Clean the mechanism and ensure that all parts are free to move. **NOTE:** Do not lubricate.
13. Re-fit springs to new shoes.
14. Locate shoes onto the backplate and position onto the adjuster wedges or cam block.
15. Re-fit retaining springs.

16. Locate expander into position on fixed shoe.
17. With care, and using a suitable lever, position the expander between the shoes and release the lever.
18. Attach brake cable and refit the half shell. **NOTE:** Always replace the brake cables if they show sign of wear, stiffness, damage or fraying.
19. Re-fit the drum and bearing. **CAUTION!** Refer to the axle manufacturer or trailer manufacturer's instruction. Replace the split pin or lock nut dependent on which type of nut is used. Generally speaking if a split pin and castellated nut is fitted the axle nut must be adjusted to allow the correct bearing clearance. When the locknut is used it is normally tightened to a pre-determined torque.
20. Refit the hub cap.
21. Repeat the procedure on the other drum(s).
22. Replace wheels securing wheel nuts, as specified in the trailer manufacturer's handbook.
23. Follow the adjustment procedure below.

ADJUSTMENT

NOTE: When adjusting the brake drum only turn the wheel in the direction of forward rotation. This procedure applies to the initial setting of both manual and auto adjust brakes and to regular adjustment of manual adjust brakes.

Ensure that the coupling drawtube is fully extended and that there is no tension in the brake rod or cables. Ensure free movement of the overrun lever (brake rod clevis).

1. 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.
2. Turn the nut on the brake rod until the nut is in contact with the compensator. **CAUTION!** Do not over-tighten as this will cause the brakes to drag and overheat.
3. **WARNING!** Double check that everything has been re-assembled with all lasteners 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.
4. 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 wheel fails to lock there is too much slack in the system. Observe free movement of the handbrake lever.
5. 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.
6. Operate handbrake and leave on. Lower the trailer to the floor and recheck the torque of the wheel nuts.
7. Please note the brakes will not be 100% effective until the new linings have bedded in.
8. The brake adjustment should be rechecked after a short journey. **WARNING!** The drums may be hot.

PROP STAND / JOCKEY BRACKET

▲ PRIOR TO CARRYING OUT THESE TASKS PLEASE REFER TO PRECAUTIONS ▲

REPLACING BRACKET

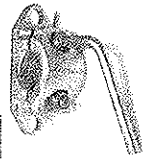
Support the trailer adjacent to the stand bracket, leaving a clear working area around the bracket mounting.

1. Remove the jockey wheel or prop-stand from the bracket and inspect it for damage.
2. Remove the fasteners securing the bracket, noting the orientation of the clamping mechanism. See Figs. G & H.
3. Fit the new bracket with the correct bolts.
4. Trial fit the jockey wheel or prop-stand to ensure that it clamps securely. **WARNING!** Do not allow any weight to be placed on the support until adjustment is completed and you are confident that the parts clamp properly.

FIG. G



FIG. H



ADJUSTMENT

Split Clamp Only- Adjust the locking nut so that there is the same clearance at both sides of the clamp body when the clamp handle is tightened. **WARNING!** If the two halves of the body touch the assembly will not support the weight when lightened.

BOWDEN CABLE

▲ PRIOR TO CARRYING OUT THESE TASKS PLEASE REFER TO PRECAUTIONS ▲

REMOVAL & REPLACEMENT OF BOWDEN CABLE

Place the trailer on stands with all wheels free.

WARNING! The handbrake should be released and the handbrake locking bolt fitted. See Fig. D. 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 lever operating.

1. Undo the locknut on the brake rod (front to rear) adjacent to the compensator. Slacken the second nut on the brake rod.
2. Remove the nut from the cable inner and the nut retaining the outer to the bracket. Take note of any washers and orientation of domed nuts. Remove the half shell from the backplate and detach brake cable. Withdraw the cable assembly.
3. Attach the new brake cable to the expander in the hub and refit the half shell.
4. Thread the new cable into position, secure the outer with its nut and thread the nut on the inner 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.

5. Follow the adjustment procedure under SPREADLEVER BRAKES starting at item 2.

BREAKAWAY CABLE

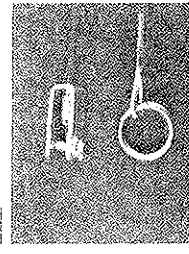
▲ PRIOR TO CARRYING OUT THESE TASKS PLEASE REFER TO PRECAUTIONS ▲

REMOVAL

It is important to ensure that the handbrake lever is prevented from operating. **WARNING!** The handbrake should be released and the handbrake locking bolt fitted. See Fig. D. 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 lever operating.

1. Remove the existing cable from any guides taking note of the route.
2. Where a coil fitting is used on the handbrake use pliers and screwdriver to prise the coils of the retention ring apart and remove the ring from the handbrake lever. See Fig. I.
3. Where a clevis and pin fitting is used on the handbrake remove the split pin and withdraw the clevis pin. See Fig. I.

FIG. I



REFITTING

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

Note that the two different styles are interchangeable providing that the complete cable and fittings are changed.

1. For the coil fitting use pliers and screwdriver to prise the coils apart and fit the ring to the handbrake lever. Check that the cable is free to move on the ring.
2. For the clevis fitting insert the clevis pin and retain it with the split pin provided.
3. In all cases thread the cable through the guides.

OPERATION

1. Ensure that the cable passes through the guides provided. This is important to ensure that the cable operates under the widest range of circumstances.
2. Check that there is no damage or fraying prior to use.
3. Secure the cable to a suitable point on the low vehicle, refer to the vehicle or low bar manufacturer's specifications for the location.
4. Ensure that the cable is not pulled tight during articulation of the trailer and remains clear of the ground.

COUPLING HEADS / TOWING EYES / BELLOWS

▲ PRIOR TO CARRYING OUT THESE TASKS PLEASE REFER TO PRECAUTIONS ▲

REPLACING COUPLING HEADS / TOWING EYES

Prior to proceeding it is essential to confirm the condition of the damper. Carry 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 draw tube is impossible to compress, compresses with just spring force and no damping resistance, or the extension is very rapid the damper must be replaced by carefully following the DAMPERS instructions. If completely satisfied that the damper is in good condition proceed as follows:

1. Follow the procedure for DAMPERS up to and including point (4).
2. If you have been able to remove the coupling head / eye as instructed in DAMPERS point (4) go straight to instruction (5) below, otherwise continue.
3. The damper will now be retained between the front coupling / eye bolt and the rear damper bracket. It is now necessary to remove the damper without destroying it. **WARNING!** Proceed with extreme caution. The most efficient method is to remove the rear damper mounting bracket but depending upon the coupling there may still be tension in the damper.
4. Place a lever against the rear damper in such a manner that once the mounting bracket bolts are removed the tension can be released slowly. Take the tension and remove the mounting bracket bolts, release the tension in the damper.
5. Inspect the shaft for damage, dress burrs and clean any dirt as the new coupling will be a close fit on the shaft.
6. If a new bellows is to be fitted cut the tie-wrap and discard the old one, fit the new and secure with a tie-wrap.
7. Trial fit the new coupling, it should slide into place without any undue force. DO NOT hammer the coupling into place, this can damage the coupling itself or the over-run mechanism. If it proves to be tight remove it, and thoroughly clean the shaft, inspecting for burrs.
8. 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 in the table below. Fit the plastic nut covers. Where the damper has been removed ensure that the coupling head rear bolt passes through the hole in the damper body. **NOTE.** If you have any doubts about the condition of the damper a new one must be fitted.
9. If the damper has been released the rear mounting bracket will need to be re-fitted. This means that the damper needs to be compressed such that the bolts can be located. **WARNING!** Proceed with extreme caution. Compress the damper with the lever and secure the mounting bracket bolts, as shown in Fig. C.
10. Re-fit the bellows with the coupling / eye horizontal taking care not to tear or damage the material.

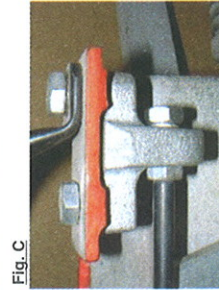


Fig. C

Where the replacement coupling / eye is a different part to the original:

1. Always ensure that the corresponding length bolts are used.
2. Always ensure that the compatible bellows is used.
3. Always ensure that the hole sizes in the coupling and draw-bar tube match and that the correct sized bolts are employed.

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.

TORQUE SETTINGS

M12 grade	10.9 bolt	100Nm
M12 grade	8.8 bolt	70Nm
	M14 grade	10.9 bolt
		125Nm

DAMPERS

▲ PRIOR TO CARRYING OUT THESE TASKS PLEASE REFER TO PRECAUTIONS ▲

SAFE REMOVAL AND DISPOSAL OF DAMPERS

The dampers assembled within overrun couplings are pressurised. During assembly the damper is preloaded and compressed in order that the coupling operates correctly. Care must therefore also be exercised when working on, handling and disposing of the coupling / damper. This is especially important if any damage or misuse of the coupling has occurred. 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.

REMOVAL

1. Pull back the bellows from the coupling / eye to expose the two securing bolts, see Fig. A.
2. Undo the self locking nut from the rear bolt of the coupling / eye, as shown in Fig. A.
3. Remove the rear bolt - force may be required as the damper may still be preloaded. Raise the coupling / eye operating handle in order to fully remove the bolt if needed.

4. When the rear bolt is removed the damper will move forward to rest upon the front bolt. **NOTE.** In some 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 in the following manner: Undo the self locking nut from the front bolt, extract the bolt and remove the head. Replace both bolts in drawtube and finger-tighten the nuts. Knock out the retaining pin and remove the rear bolt, this will allow the damper to move forward and contact the front bolt. This position is shown in Fig. B, on the cut away photograph.



Fig. A

5. From underneath, through the bolt hole in the drawtube, drill a 3mm diameter hole into damper body to a depth of 8mm. **WARNING!** 1. Observe normal safety procedures for the use of hand tools. 2. Wear safety glasses. 3. Do not lie immediately underneath the bolt hole when drilling. 4. When the drill penetrates the damper body gas will be allowed to escape.

6. The pressure in the damper should now have been discharged. Remove the self locking nut on the front bolt of the coupling head. Remove the bolt and the coupling head. If the bolt is difficult to remove it indicates that there is still residual force in the damper and so section (5) above should be repeated.

7. Remove the rear damper bracket retaining bolts. Also remove the nuts and spring washer from the rear of the damper, as shown in Fig. C, on the cut away photograph.

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

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

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

REPLACEMENT

1. Fit the rear damper mounting to the new damper, see Fig. C, and slide the damper loosely into position.
2. Follow the procedure for COUPLING HEADS / TOWING EYES / BELLOWS, section (5) onwards.

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.

MAINTENANCE & SERVICING INFORMATION

(SEE ALSO KF089 FOR ADDITIONAL PROCEDURES)

For Coupling Heads / Towing Eyes, Dampers, Spreadlever Brakes, Prop Stand / Jockey Bracket, Bowden Cable, & Breakaway Cable

PRECAUTIONS

The correct assembly and adjustment of all equipment is critical to the safe operation of the trailer. Therefore the procedures must only be carried out by competent persons. If you have any doubts about your ability to complete the procedure, we recommend this task is performed by your local service centre. You are advised to wear suitable protective equipment such as safety glasses, gloves and face mask. In addition be aware of the hazards associated with handling workshop materials such as chemicals, oils and greases which may be flammable and can prove to be irritants.

It is recommended that the opportunity is taken to inspect associated items for wear or damage and replace if necessary, they can be obtained through your local stockist.

All procedures should be carried out with the trailer on level ground with either the parking brake applied or wheel chocks front and rear. In addition the drawbar should be supported with the trailer horizontal. Where required consult your trailer handbook for the recommended jacking points and positions for stands.

The components are used in a wide variety of trailers and reference to the trailer manufacturer's manual must always be made for procedures and data relevant to the particular unit.

The instructions relate to:

1. ALL Knott-Avonride Ltd overrun couplings including KFG 13, 20, 27, 30, 35, KF 7.5, 13, 17, 20, 27, and KR7.5, 13, 17, 20, 27, 30.
2. Spreadlever brakes 160 x 35, 200 x 50, 203.2 x 40, 250 x 40, 300 x 60
3. Prop stand brackets Ø35, Ø42 and Ø48.

We have used "Plain English" descriptions throughout this text. If you are unsure of the meaning, if the procedure is unclear or you require any further information please use the following contact details:-

Europa House, Second Avenue
 Speller Site
 Caerau
 Maesteg
 Burton Upon Trent
 Staffordshire
 DE14 2WF
 CF34 0AQ

T : +44 (0) 1283 531541
 T : +44 (0) 1656 739111
 sales@knottuk.com

IF IN DOUBT ASK

USE ONLY KNOTT ORIGINAL REPLACEMENT PARTS

The text includes guidance to assist in the safe execution of the procedures:

WARNING!
CAUTION!
NOTE.

Risk of Injury.
 Risk of damage to equipment.
 Safety requirement.

KF088G



BATTERY

TT3621, TT3017 & TT2515 (electric pump)

The battery fitted is completely maintenance free (apart from charging) When working on or near the battery, observe the following safety precautions:



EXPLOSIVE GAS



DO NOT SMOKE. AVOID CONTACT WITH SPARKS OR FLAMES



CONTAINS SULPHURIC ACID



AVOID SKIN & EYE CONTACT

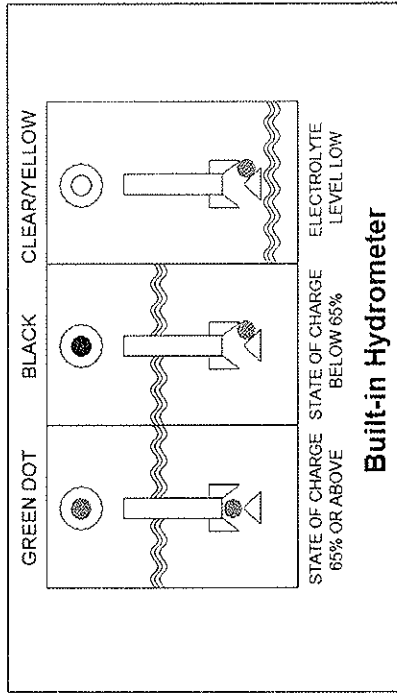
“MAGIC EYE” ‘State of battery’ indicator

(automatic built in hydrometer)

Colour:

- Green
- Black
- Yellow / Clear

- Satisfactory state of charge > 65%
- Battery requires charging < 65%
- Electrolyte level low *



* When the electrolyte level becomes low, do not use the battery and also check the electrical circuit of the system. The battery must be replaced via the manufacturer or their agent as shown on the enclosed manufacturer's leaflet.

The battery is warranted by the manufacturer against defects in materials or workmanship for one year - the full details of which are shown on the accompanying leaflet.

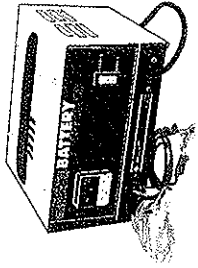
BATTERY (continued)

Battery Charging

Battery Charger Selection:

A nominal 12 volt charger rated as follows, is required to maintain the battery at optimum performance.

Battery capacity in Ampere hours	Charger size Rating in Amperes
102Ah(as fitted)	10 to 15A or 20A



The selection of the correct charger rating for your battery size is important to reduce the risk of premature battery failure:

A charger which is under-sized will not fully recharge the battery.

This will result in a steady reduction of the available battery capacity, the inability of the battery to complete a normal service cycle, and eventually irreversible damage leading to battery failure.

A charger that is over-sized can, under certain circumstances, lead to potential hazardous situations (a: formation of an explosive gaseous mixture and b: acid spillage - leading to unchargeable dry cells and exposed acidic fluids), and early battery failure.

Battery Health

Whilst batteries which are not fully charged may still give reasonable performance, the effect of never allowing the batteries to be completely recharged will be a gradual reduction in performance and reduced battery life.

Main hydraulic pressure supply hose connector

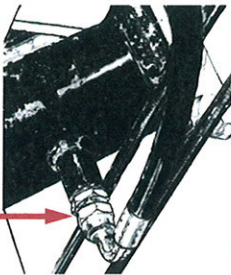


Fig. 15

HYDRAULIC SYSTEM MAINTENANCE

1. Wipe all external surfaces of the pump and reservoir tank to remove dirt, dust and oil residue.
2. Inspect unit for leaks and rectify as necessary.
3. Clean reservoir filler cap, remove and renew if cap and / or seal is damaged. Check oil level and replenish with clean hydraulic oil.* This should preferably be carried out with actuator (and thus the body ram) at minimum stroke, i.e. with the trailer body down. The oil should be approximately 25mm (1") from the top of the reservoir tank when full.
4. Fully replace the hydraulic oil at intervals depending upon the severity of the duty and environment conditions:
Very dirty, dusty and damp: 6 months to 1 year.
Otherwise, in more favourable conditions: Approx. 2 yearly.

Draining the Tank

With the body fully lowered, remove the main pressure supply hose from the ram (fig 15) and dip into a suitably sized and positioned container or oil drum. Switch on the electrical operating system (or operate the manual pump) to pump the oil into the container. Continue until the oil flow virtually ceases.

DO NOT RUN THE PUMP FOR LONGER THAN IS NECESSARY WHEN THE TANK IS APPROACHING EMPTY



Filling the Tank

Use clean, filtered oil of the correct grade. Use a filter unit with a filtration level of 25 microns (25 µm) or better.
Use only clean jugs and funnels.

CONTAMINATION OF HYDRAULIC OIL ACCOUNTS FOR THE VAST MAJORITY OF HYDRAULIC SYSTEM FAILURES

Connect the hose to the ram but do not tighten.

Fill the tank to the level mark.

Bleed the system by operating the motor briefly (or operate the manual pump) whilst observing the release of air from the hose connection on the ram. As soon as there is no sign of air escaping, tighten the connector. Check the oil level and top up if necessary.

* Recommended oil Specification for the Hydraulic Power Pack:

SHELL TELLUS 37 or its equivalent for temperatures between -18°C and +70°C.

This should cover most normal applications.

See pages 11 & 12 for alternative oils and viscosity graph.



LOADING SKIDS (Where fitted)

Removing skids

The skids are stowed under the trailer body and are removed from the rear of the trailer. It is strongly recommended that any lifting or positioning of the skids is carried out by two persons. (Each skid weighs approximately 40kg).

1. Lift the spring ring and withdraw the linchpin. Lift the handle to release the skid retainer clamp (fig 11).
2. Move the handle to the left to remove the right skid or to the right to remove the left skid (fig 12).
3. Lift the rear of the skid and slide out slightly (fig 13).
4. Slide the skid out. It is prevented from sliding all the way out by a stop. Lift the front end of the skid clear of the stop and slide out slowly.
5. Hook the skid onto the skid bar in the required position (fig 14).

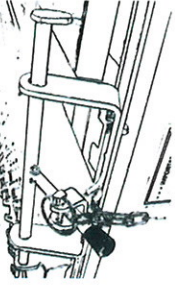


Fig. 11

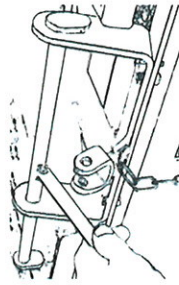


Fig. 12

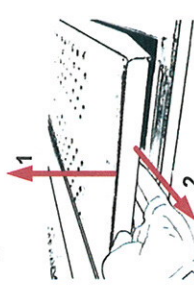


Fig. 13

Replacing skids

1. Ensure that the skid retainer clamp handle is positioned on the opposite side to the skid you are replacing and slide the skid back into place. To prevent injury, keep fingers and hands clear of the underside of the skid before the skid reaches the stowage position.
2. When both skids are in place, slide the clamp handle to the central position, locate in the receiver bracket and replace the linchpin as shown in fig 11.

Use of loading skids

Extreme care should be exercised when using loading skids

- Carry out loading and unloading on level, firm ground.
- Always use the prop stands provided.
- Have an assistant on hand to guide you.
- Ensure that the skids are positioned correctly, with the lower ends on firm, level ground, parallel with the trailer and in line with the centre of the tyres of the vehicle to be loaded/unloaded and that the skid top angles are in contact with the trailer rear cross-member over their full width.
- Your assistant should keep well clear during loading/unloading.
- Take your time and constantly check that the vehicle is correctly positioned.

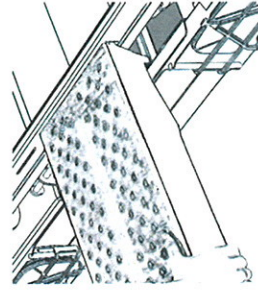


Fig. 14

TIPPING THE TRAILER BODY (continued)

TT2515M (Manual Pump)

The tipping system comprises a manually operated hydraulic pump to operate the lifting ram (fig 10).

Operation

Check that the release valve is closed. After checking that the rear of the trailer is clear, operate the manual pump lever to tip the trailer body.

It may be necessary to move the trailer forward before the full load has been released to avoid the load coming in contact with the rear of the trailer. Lower the body slightly to hold the load back before moving the trailer forward.

To lower the body, check that the area between the body and chassis is clear of obstructions and open the release valve slowly. Control the rate of descent by opening and closing the valve as required.

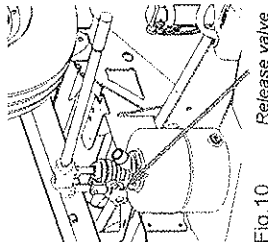


Fig. 10

Release valve

HYDRAULIC SYSTEM MAINTENANCE (Continued)

HYDRAULIC OIL RECOMMENDATIONS

Mineral oil with a viscosity range from 6 to 450 centistokes at normal working temperature. The following oils are recommended for use at temperatures between -20°C and +60°C.

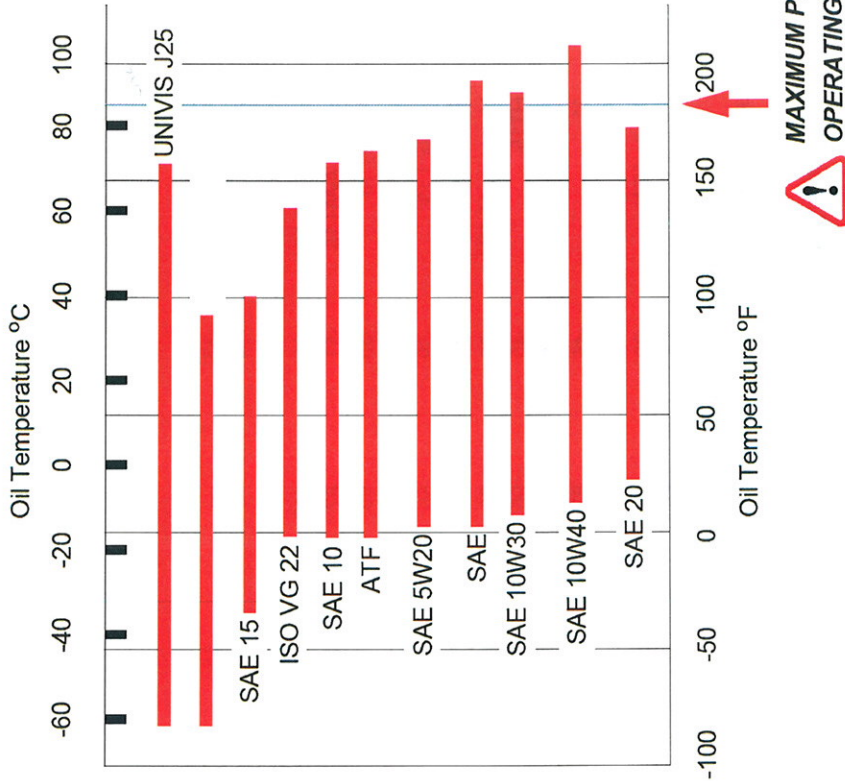
Supplier	Grade	Pour Point °C	Viscosity in Centistokes @0°C	Viscosity in Centistokes @40°C
B.P.Trading	HLP 32	-33	---	15
	HP 32	-54	---	15
Burmah Castrol	Hyspin VG 15	-39	117	15
	Hyspin AWS 15	-39	117	15
	Hyspin AWH 15	-51	82	15
Esso	Nuto H 15	-35	95	14
	Nuto HP 15	-35	95	14
	Univis J 13	-59	50	15
ELF Sternol	Albatross	-40	77	15
Gulf Oil	Harmony 15 AW	-30	93	14
Lorco	HT15	-40	90	14
	FVT 15	-40	85	14
Mobile Oil	11	-45	87	17
Shell UK Oil	Tellus T 15	-51	75	15
Total Oil GB	Azolla 15 N	-30	100	15
	Equivis VG15	-51	82	15

Where the temperature is constantly below -10°C, please consult your oil supplier.

See page 12 for oil temperature graph.



HYDRAULIC SYSTEM MAINTENANCE (Continued)



Oil viscosity

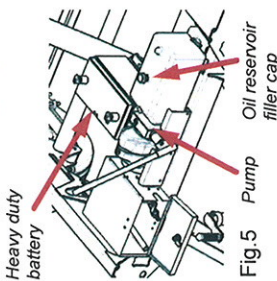
Temperature limits are based on maximum viscosity of 1000 centistokes (5000 SSU) and Minimum viscosity of 15 centistokes (80 SSU)



TIPPING THE TRAILER BODY (continued)

Operation of the electric pump system

The tipping system comprises an electro-hydraulic pump powered by an on-board heavy duty 12V battery to operate a lifting ram (fig 5). The pump is operated from a remote control switch pad on a detachable lead. (fig 6) An isolator switch with removable key is also provided, housed in the lockable electrical enclosure along with the remote control connector socket (fig 7).



Connect the remote control lead to the socket, insert the key into the isolator switch and turn clockwise through 90 degrees to switch on.

After checking that the rear of the trailer is clear, operate the 'up arrow' button on the remote control to tip the trailer body.

During normal operation the 'Green' LED lamp on the remote control will be lit. If the 'Red' LED lamp lights it will indicate that the battery charge is low - i.e. below 9V. See also page 8 - battery indicators.

As the load starts to move, release the button and operate again in short bursts to release the load slowly. It may be necessary to move the trailer forward before the full load has been released to avoid the load coming in contact with the rear of the trailer. Lower the body slightly to hold the load back before moving the trailer forward.

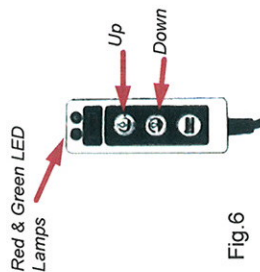


Fig. 6

To lower the body, operate the 'down arrow' button until the body is in the required position. To return the trailer bed to the horizontal position, check that the area between the body and chassis is clear of obstructions and lower fully. To ensure that the body cannot be accidentally raised, switch off the isolator, remove the key and store it in the key storage hole provided in the bracket adjacent to the switch.

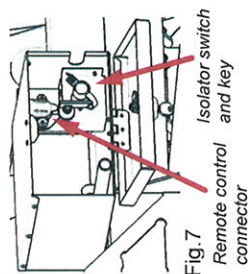


Fig. 7

Manual Operation (back-up system to the electrical pump)
Release the manual operating handle from behind the door of the electrical enclosure (Fig.8).

Check that the manual release valve is closed (Fig.9). After checking that the rear of the trailer is clear, operate the manual pump lever to tip the trailer body.

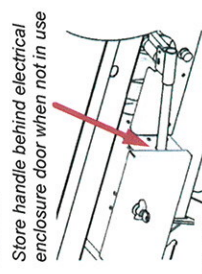


Fig. 8

To lower the body, check that the area between the body and chassis is clear of obstructions then open the manual release valve. Store the pump handle behind door of the electrical enclosure when not in use.

* Users should note that the remote control unit supplied is generally splash-proof, although it is not fully waterproof. It should never be submerged and should be stored in the electrical enclosure when not in use to avoid damage and possible erratic operation.

If a control unit has been accidentally submerged or is otherwise damaged it should be taken out of service until it can be fully checked or ideally replaced with a new unit.

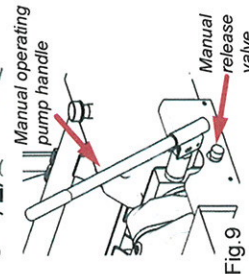


Fig. 9

LOADING & UNLOADING

The trailer should be positioned on flat, level ground.

Except in emergencies, loading and unloading should be carried out with the trailer attached to the towing vehicle. If for any reason you have to do so with the trailer detached, take great care to ensure that the jockey wheel is securely clamped and the handbrake is fully applied before proceeding.

If the trailer is fitted with prop-stands (optional) these should be lowered and securely clamped (see section on use of loading skids for details). If the trailer is on soft ground it may be necessary to provide additional support under the jockey wheel to prevent it from sinking into the ground.

USE OF THE SAFETY PROP

DO NOT ENTER, LEAN INTO OR REACH INTO THE AREA UNDER THE RAISED BODY UNLESS THE PROP IS LOCKED IN THE SAFETY POSITION AS SHOWN:-

Fig. 1 prop in safety position

Fig. 2 prop in safety position (chassis end)

Fig. 3 prop fixed under body in transport position

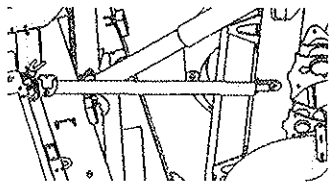


Fig. 1

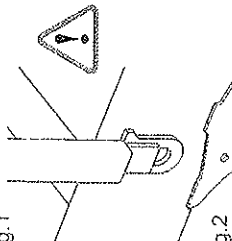


Fig. 2

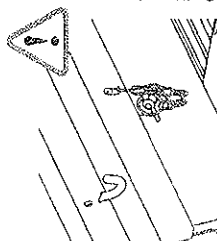


Fig. 3

TIPPING THE TRAILER BODY

DO NOT LEAVE THE TRAILER UNATTENDED WITH THE BODY RAISED UNLESS THE SAFETY PROP IS IN PLACE.

It is recommended that new users practice operating the tipping mechanism with the trailer empty to ensure familiarity with the controls.

The trailer should be positioned on flat, level ground.

Keep the area around the trailer clear during the tipping operation either with the help of an assistant or using road cones.

Standing to the left hand side of the rear of the trailer, pull the lever to the left then back to release the lever from its retainer then lower the lever to release the tailboard. (Fig. 4)

If the tailboard is to be dropped down rather than hinged from the top then **Do NOT** release the lever. Unclick and lift out the retaining pins from the gudgeon forks then pull the tailboard back and down. Take care when tipping with the tailboard down as it will touch the ground as the body is tipped. Tipping further will damage the tailboard. Also note that when the tailboard is down the rear lamps and reflectors will be obscured.

IN SUCH SITUATIONS ON PUBLIC ROADS, A WARNING TRIANGLE OR OTHER SUCH DEVICE MUST BE USED TO WARN OTHERS OF THE PRESENCE OF THE VEHICLE ON THE ROAD.

Any such device used must be in accordance with national requirements for use on the road.

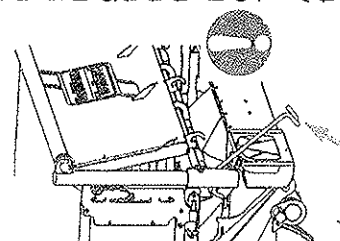


Fig. 4

TYRES

Tyres must be maintained at the pressures indicated below. Under-inflation will adversely affect handling and fuel consumption and will lead to premature wear. If seriously under-inflated, a tyre will overheat and fail very rapidly.

When renewing tyres, always ensure that you purchase a tyre of the same size and load/speed index rating. Different makes or models of tyres of the same size can have widely differing load/speed index ratings and inflation pressures. Using tyres with a lower rating can be dangerous. If in doubt, ask a tyre distributor or our technical department.

Tyre Fitments

	Load /Speed Index	Pressure (Cold)
TT2515 & TT2515M		
165R13C 8PR	94/92N	65psi / 4.5 bar
155/70R12	104/102N	90psi / 6.2 bar
TT3017 & TT3621		
195/60R12	104/102N	95psi / 6.5 bar
185/70R13C	106/104N	87psi / 6.0 bar

The maximum gross weight figure given on the trailer plate is always equal to or less than the approved maximum load for the tyres at 60mph multiplied by the number of tyres on the trailer. Other maximum load figures are marked on some tyres. These do not apply to the UK or Europe and should be disregarded.

Tyre Repairs

Punctures should be inspected and repaired by a specialist tyre distributor. Do not fit tubes to tubeless tyres as this can lead to a "blow out" in the event of a further puncture. If the tyre is too severely damaged for a repair to be carried out the tyre must be replaced.

**NOTES****GALVANIZED FINISH**

Galvanized coatings should not be considered as aesthetic or cosmetic finishes. They are present as barriers to prevent corrosion of steel components and also afford a great deal of sacrificial protection should small, localised surface damage occur.

The hot-dip galvanising process produces a coating which is bonded metallurgically to the steel: a unique feature in coating processes. It is the most widely used method of protection against corrosion and has the added benefit of giving excellent wear resistance.

During the initial months of exposure of a galvanized coating to the atmosphere, the outer surface weathers by reacting with oxygen, moisture and carbon dioxide in the atmosphere, converting the original shiny surface colour to a matt dull grey protective coating. During this period it is particularly important that any deposits of corrosive substances such as road salt, fertilizer and slurry are removed by immediate washing. This will allow the galvanized coating to dry out, encouraging the development and retention of the protective coating. Failure to do so will lead to discolouration and unsightly staining of the surfaces.

Once formed, the weathered galvanized coating should provide protection against corrosion throughout the trailers life.

WASHING

Regular washing with a solution of water and mild detergent such as car wash will help to prolong the surface finish of plated and painted components.

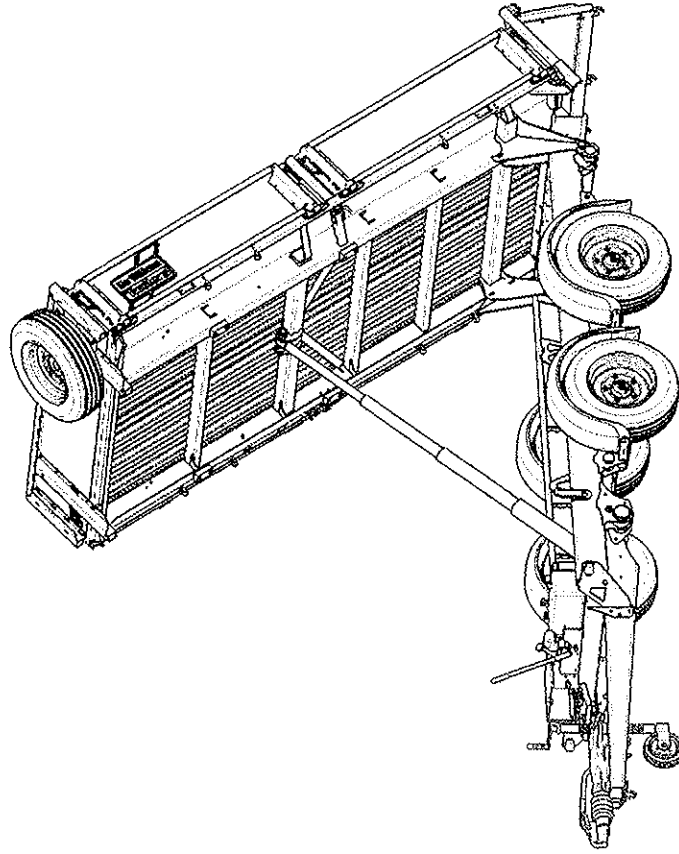
This is particularly important if the trailer is used on salt-treated roads, in coastal areas, is heavily soiled or is used to carry corrosive substances such as fertilizers. In these cases, the trailer should be thoroughly washed down after each use.

If using a pressure washer, care should be taken to avoid training the high pressure spray onto electrical components or decals for extended periods or at close range.



SPECIFICATIONS

	TT2515M	TT2515	TT3017	TT3621
Maximum Gross Weight (trailer and load)	2700 kg	2700 kg	3500 kg	3500 kg
Unladen Weight (trailer complete with standard equipment)	686 kg	726 kg	870 kg	990 kg



TT3017

LEGAL NOTICE

Whilst every care is taken to ensure that the information in this manual is correct, no liability can be accepted for any loss damage or injury caused by any errors in, or omissions from, the information given.



FMT3224



EC DECLARATION OF CONFORMITY

with regard to the Machinery Directive.

Ifor Williams Trailers Ltd.
Cynwyd,
Corwen,
Denbighshire,
LL21 0LB,
United Kingdom.

Declare that as compiler of the technical file, and manufacturer of the tipping system fitted on trailers:-

Make: Ifor Williams
Models: TT2515, TT3017, TT3621
Serial Nos. 600000 onwards

That the machine conforms to the requirements of the Machinery Directive 2006/42EC.

The machine complies with, or is designed and constructed so far as is possible taking into account the state of the art, to comply with the relevant essential health and safety requirements.

Place: Cynwyd.
Date: 2nd April, 2012.

Signed by: Richard Bull
Group Operations Manager,
Ifor Williams Trailers Ltd.

C95030 Issue 5: April 2012

OPERATOR MANUAL

TIPPING TRAILERS

TT2515M, TT2515, TT3017 & TT3621

These instructions are provided to help you to get the best possible service from your trailer. To ensure that the trailer is used safely, we strongly recommend that the instructions are read by all users and all the recommendations followed. This also applies to the enclosed user's manual.

Misuse may invalidate warranty

Please enter the following information for your own records:

Trailer Model:

Serial Number:

Drawbar Security Number:

Coupling Security Key No.:

In addition to this booklet, the following items should be in the document bag:

1. One route card (with trailer serial number and specification)
2. One Guarantee Registration Card (unless the distributor completed the card for you)
3. One Ifor Williams Trailers sticker
4. One leaflet - battery details & warranty (Optional fitting)

Guarantee Registration Card

It is important that the Guarantee Registration Card supplied with the trailer is completed and returned without delay, not only to ensure that the guarantee is validated, but also to enable us to assist the police in returning your trailer to you should it be stolen. It also allows us to contact you in the event of a recall.

IMPORTANT

If you sell your trailer, please pass on this booklet and the main user's manual to the new owner.



**BRITAIN'S LEADING TRAILER
MANUFACTURER**



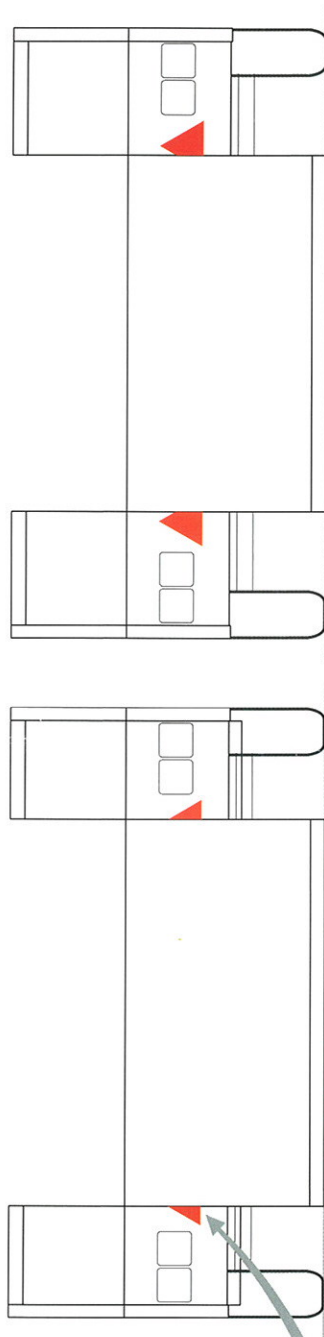
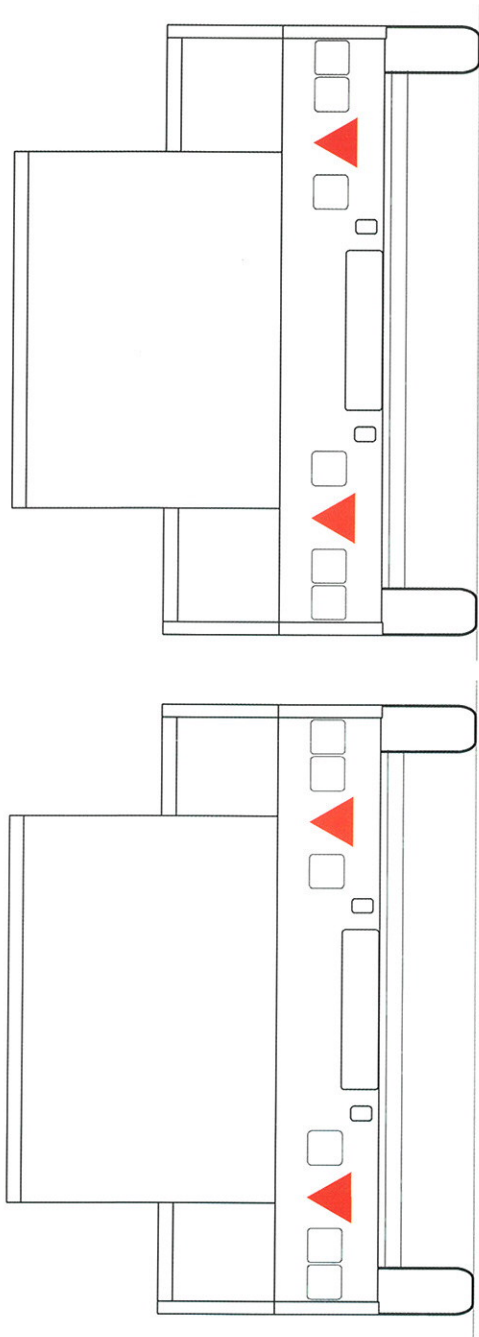
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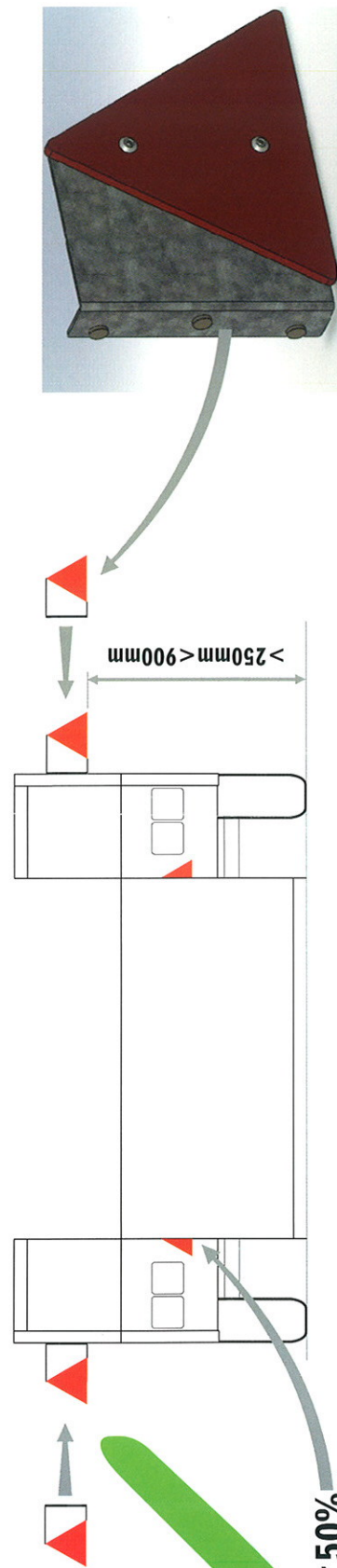
Whilst every care is taken to ensure that the information in this manual is correct, no liability can be accepted for any loss, damage or injury caused by any errors in, or omissions from, the information given.

Ifor Williams Trailers Ltd., Cynwyd, Conwen, Denbighshire, LL21 0LB, UK
Tel. 01490 412626 Fax 01490 412770 email: care@iwt.co.uk www.iwt.co.uk

MSW



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