SPREADLEVER BRAKES

PRIOR TO CARRYING OUT THESE TASKS PLEASE REFER TO PRECAUTIONS

REPLACING BRAKE ASSEMBLY COMPLETE

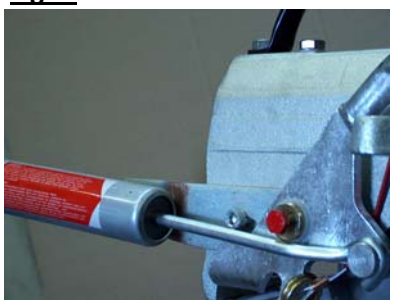
It is recommended that the brake assemblies are replaced in axle sets.

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.

Fig. A



See Fig. A. 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.

Fig. B



5. Remove the brake drum (hub puller 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.
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 brake cable.
8. **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. See Fig. B (left hand) and C (right hand) for reference to Knott 200x50 brake (others similar).

Fig. C



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

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

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 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.
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.
5. Check the compensators are at 90º 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.

THE BRAKE ADJUSTMENT SHOULD BE RECHECKED AFTER A SHORT JOURNEY.
WARNING! THE DRUMS MAY BE HOT.

BRAKING – HINTS & TIPS

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FORCE REQUIRED 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.

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.

HANDBRAKE LEVER MOVEMENT

If the brakes enter reverse mode while 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.

BRAKES LOCK ON

Under certain circumstances e.g. on 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 apply all four brakes. There are two methods of dealing with this:

a: If possible, begin the reversing manoeuvre on adjacent level ground so that all wheels enter reverse mode simultaneously.

b: Manually turn the other two wheels backwards to engage auto-reverse mode

STICKING BRAKES

Cause not yet fully understood. Most prevalent on new trailers stored with the handbrake on, especially during the winter.

For an immediate fix, tap the brake drum (not the backplate) with a hammer. This works in most instances.

In the long term, instruct the user to chock the wheels and leave the handbrake off when leaving the trailer, particularly if it is new and the weather tends to heavy dew.

Trailers become far less prone to this complaint after the brakes are bedded in. Some trailer owners (horsebox users in particular) drive so gently that the brakes never bed in. A solution can be achieved by loading the trailer securely and deliberately bedding them by heavy use. Be careful not to endanger or inconvenience other road users with unexpected heavy braking.

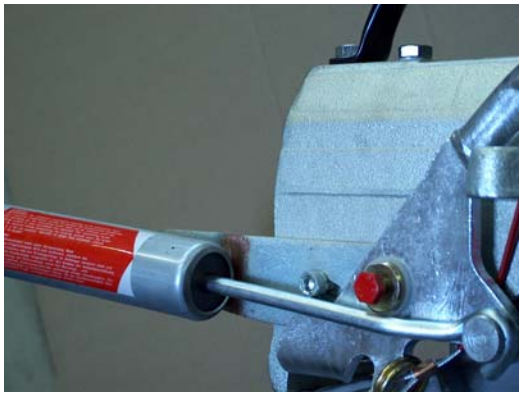
BOWDEN CABLE

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.

Fig. A



See Fig. A. 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.

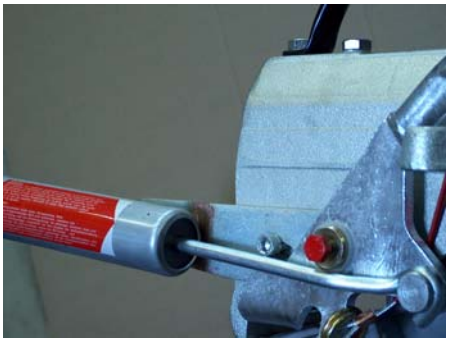
BREAKAWAY CABLE

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. A. 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.

Fig. A



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.B.
3. Where a clevis and pin fitting is used on the handbrake remove the split pin and withdraw the clevis pin. See Fig.B.

REFITTING

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

Fig. B



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 tow vehicle, refer to the vehicle or tow bar manufacturers specifications for the location.
4. Ensure that the cable is not pulled tight during articulation of the trailer and remains clear of the ground.