Brake System Adjustment & Maintenance for Overcentre Brake Lever

1. On level ground and with the brake lever in the off position, ensure that the security/transit key is fitted in place in the brakelink shoulder bolt. (If the security/transit key is unavailable for a trailer already in service an M10x1.5 bolt will suffice if it is long enough to prevent the brake lever from going overcentre.) This will prevent the use of the brake lever and lock out the pre-charged spring whilst the transmission system is being serviced.

2. Jack the trailer off the ground sufficiently to allow free movement of the wheels. If crawling under the trailer to maintain the system, ensure that the whole trailer is securely chocked. It may not be wise to rely on jacks alone.

3. Where the transmission rod and brake cables are already connected take tension out of the system by winding back the nuts on the rod behind the balance bar. It is now possible to begin the set-up procedure starting with the wheel brakes. These can be adjusted by means of an M10, M12 or M14 bolt (dependent on brake type) at the rear of the brake backplate.

4. Rotate each wheel in the forward direction of travel whilst tightening the bolt until the wheel locks. Then gradually release the tension on the adjuster by winding back the bolt until the wheel can rotate (forwards) with just slight resistance. (This is best judged with the wheel and tyre fitted to the drum.) The adjuster bolt may need to be tapped with a soft hammer to centralise the components and ensure that there is no stiction in the mechanism.

   Having repeated this procedure with each brake ensure that the brake cables are fitted to the rear of each brake backplate.

5. If not already connected, connect the sheathed brake cables to the anchor plate at the axle using the nut provided. Connect the inner cables to the balance bars using two plain nuts to act as a lock at the font of the balance bar. Ensure that this assembly is now parallel to the axle or cross member.

6. If not already connected, connect the rear end of the transmission brake rod to the balance bar at the axle, by use of two plain nuts behind the balance bar. Then ensure that the front of the brake rod is connected to the clevis on the bottom of the coupling brakelink, locking it with a further nut.

7. By further adjustment of the brake rod nuts behind the balance bar, ensure that any slack is taken out of the system, but without pre-loading the brakes. (Check this by rotating each wheel in the forward direction.)

8. Now that the brakes and coupling are connected via the transmission rod, and the system tensioned, it is safe to remove the security/transit key (or M10 bolt) from the shoulder bolt. Apply the brake lever firmly and positively. By attempting to rotate the wheels in the forward direction, check that the brakes are in fact operating. If it is possible to rotate the wheels in the forward direction, it will be necessary to check the transmission again to ensure that all the slack has been taken out of the system. If it seems that the brake lever has not been able to travel fully overcentre, it will be necessary to add a little more play in the system by reducing slightly the tension on the brake rod, adjusting the nuts at the rear of the balance bar.

9. Once satisfied with the brake operation in forward mode, with the brake lever applied, now rotate the wheels in the backward direction simulating the reversing action of the trailer. As each wheel is turned backwards, you should note the rearward movement of the brake lever as the reservoir of power in the pre-charged spring takes up the slack when the reversing shoe slides backwards on its carrier and then reapplies. This action should occur once on the rearward turn of each wheel. If not recheck all brake and rod adjustments from the start.

10. Having made the necessary adjustments, ensure that all nuts and other fasteners are locked off if applicable. The trailer can now be returned to the ground in preparation for the road test.

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Bedding In & Testing Procedure

1. Fully apply the brake lever five or six times and then check the tension on the rods and cables. This procedure may have found some isolated stiction in the system that is now free. Readjust the system in accordance with the above instructions if necessary.

2. Road test – ensure that any testing carried out on public or private roads is done taking due account of other road users.

   a. Drive in a straight line at 20/25 mph; apply the brakes gradually and firmly to produce a smooth stop. Observe the behaviour of the trailer during braking. (This may be more easily done by a passenger in the towing vehicle.) If the trailer is pulling to one side under braking or the wheels are locking up on one side the system MUST be checked and reset before proceeding. Once smooth straight line braking is achieved at this speed, proceed to 'b'.

   b. Drive in a straight line at 35/40mph (assuming speed limits allow) and apply the brakes firmly and steadily without locking up the trailer wheels. Once again, observe the behaviour and handling of the trailer under braking and, as 'a' readjust the system if braking is not even on both sides.

   c. Finally drive at 50mph (if speed limits allow) and apply the brakes to reduce speed to 30mph, accelerating back to 50mph. If you are satisfied that the trailer is braking evenly and steadily, repeat the manoeuvre three or four times.

PLEASE NOTE: All braking has been gradual and sympathetic to the system. Aggressive and violent braking should be avoided during these procedures in order to safely judge the braking performance and obtain optimum bedding in of the brake linings. The linings will wear, improving in performance as they take on the contours of the drum. They will also generate heat that in turn will optimise the coefficient of friction on the linings and provide improved braking performance as they "bed-in". Dependent on the type of driving style used the brakes may not achieve optimum efficiency either in overrun or on the brake lever for 500 miles. Stop/start driving will bed the brakes in more quickly than motorway driving where the brakes are hardly used.

IMPORTANT: During the bedding in process the properties at the surface of the lining change. Until the brakes are bedded in according to this recommended procedure, there is a possibility that the brake shoes may adhere to the brake drum surface when parked with the handbrake lever in the "on" position. Since the introduction of asbestos free brake linings this has been found to occur with ALL makes of lining material. It is therefore recommended that if the trailer is to be parked for extended periods or in damp or humid conditions, the wheels are chocked and handbrake lever released. In addition, it is also good practice, if reversing the trailer in to position, to draw the trailer forward slightly. This ensures that the brake shoes have returned to their normal running position.

In the event of the shoes adhering to the drum it will be necessary to release them using the following procedure:-

1. Turn the adjuster bolt anticlockwise by approximately half a turn.
2. Tap the bottom of the backplate using a soft faced or wooden mallet.
3. If the brake shoes have not released jack up the trailer in accordance with paragraph 2 (page 1).
4. Remove wheel assembly.
5. Tap brake drum with mallet.
6. Once the brake shoes have released, readjust the brake.

Please note that there may be corrosion within the drum that has been a contributory factor to the brake linings sticking. It is recommended as good practice to therefore remove the drums and clean them before the trailer is once again parked. Frequent use of the overrun brakes should ensure that the drum surface remains free of corrosion.

Brakes should be readjusted as often as is necessary. There is no set time or distance limit. Users should check the slack in the system before each journey and readjust accordingly. The simplest way to check the slack on most systems is to push the bottom of the coupling brakelink forward. Most couplings have 90 or 100mm of travel through the drawtube (connecting rod) and damper, thus the top of the brakelink would also move up to 90 or 100mm. However, if the movement is more than half of that, i.e. 45 or 50mm, it is recommended that the brakes are readjusted.

A service should also be performed on the braking system at regular intervals. The timing of this may depend on the use of the trailer, in terms of distance and driving style. Trailers that are for occasional use only should also be checked to ensure that no parts have seized. During these service checks the drums should be removed and the brakes checked for damage and wear. Linings should be replaced if there is less than 2mm lining thickness left on the shoe. This should ensure that the linings do not wear out before the next service.

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