

Air Brakes – Routine Maintenance

For information purposes only - please refer to manufacturers guidelines for your specific unit.

Successful maintenance of the air brake system depends upon systematic inspection and repair at regular intervals. The length of these intervals depends upon the trailer operation and mileage.

Adjustments, inspections and minor repairs that can be performed by the operator are listed below. These procedures must include immediate replacement of all worn or damaged parts.

Reservoir Tank

The first requirement in an air brake system is clean air at proper pressure. The operator must open the drain cock on the underside of the reservoirs until all moisture has escaped.

Drainage should be done periodically to remove water and sludge from the system. This is especially important in cold weather to forestall freezing and obstruction of the lines and valves. Each tank must be drained completely to insure removal of condensation. After removing moisture, close the drain cock and inspect reservoirs for looseness or damage. Make sure all connections are tight and brake lines are properly supported.

NOTE: There must be a minimum of 80-psi air pressure in the air reservoir to open the brake protection valve and allow air to flow through the height control valve.

NOTE: A 5 to 10 second delay may occur before the height control valve will allow air to flow to or from the air springs.

Gladhands

Inspect gladhands to insure proper operation without obstructions. With the trailer connected to the truck tractor and air in the system, coat the gladhands and mounting with soapsuds to make sure there is no leakage. Be certain glad- hands seals are in good condition and not saturated with grease, oil or other foreign material. We

recommended annual replacement of gladhands seals.

Brake Tubing, Lines, Fittings & Hoses

Visually inspect brake lines and hoses for loose connections, chafing, cracks, breaks, cuts, bruises, broken-out sections and deterioration. Replace immediately upon first sign of the above. Exercise extreme caution when working or welding around nylon

tubing, if so equipped. It is recommended that tubing in areas where welding operations are performed be removed prior to welding operations and reinstalled after welding is completed. If tubing removal is not practical, the tubing must be shielded from welding sparks and/or heat damage.

Service and Spring Brake Chambers

Visually check air chamber clamp bands and mounting nuts for tightness. Torque chamber mounting nuts 75 to 100 ft. lb. Check chambers for damage or dents and sign of leaks.

CAUTION: Disassembly and repair of any spring brake is a dangerous and complex task that should not be undertaken by an inexperienced mechanic. Special tools and information are required if serious personal injury is to be avoided. Send these repairs to Palmer Leasing or an experienced mechanic.

Air Valves

Inspect all air valves for leaks. If excessive leakage is found, the valve must be repaired or replaced. We recommend that air valves be replaced when necessary with new or rebuilt valves. Palmer Leasing will replace valves at our facility.

Brake Lining

Inspect and check the brake lining thickness. Brake lining must be replaced if excessively worn or if coated with oil, grease, or foreign material.

Brake Drums

Inspect brake drums. Any accumulation of mud, dirt or rust on the drums should be removed. Any broken or cracked drums should be removed from service.

Anti-Lock Braking System

Meritor WABCO Easy-Stop (TM) Anti-lock Braking System (ABS) is installed on selected Palmer trailers. The system monitors wheel speed at all times and improves vehicle stability and control by reducing wheel lock during braking.

CAUTION:

ABS information is from Meritor Wabco and is specific to its products. If your trailer is equipped with another manufacturer's Anti-Lock braking system, please contact Palmer Leasing or the manufacturer of the braking system, for the instructions specific to that braking system.

Electronic Control Unit (ECU) Malfunction

In the event of an ECU malfunction, the ABS, in the affected wheels, is disabled. The affected wheels should continue to operate in a non-ABS braking mode, if the braking valve itself has not failed. The ABS should continue to operate on the wheels unaffected by the ECU malfunction.

Two ABS indicator lamps (one on the dash of the tractor and one on the side of the trailer) let the driver know the status of the system.

ABS Indicator Lamp

The ABS Indicator Lamp (amber) is located on the roadside (driver side), near the rear marker lamp (red). The lamp is identified with the letters **ABS**. This lamp indicates the status of the trailer ABS.

If the ABS lamp comes **ON** and stays **ON** when you apply the brakes to a moving vehicle, there is an ABS malfunction. It is normal for the lamp to come **ON** and go **OFF** to perform a bulb check, but it should not stay **ON** when the vehicle is moving above 4 mph. As with any safety system, it is important not to ignore this indicator. If the indicator lamp indicates a malfunction, the vehicle can be operated to complete the trip. However, it is important to have the vehicle serviced as soon as possible using the appropriate maintenance manual to ensure proper braking performance and to ensure that the benefits of ABS remain available to the driver.

Blink Codes: Blink codes are the number of times the ABS lamp blinks on and off. The number of blinks refers to the problem area. See Meritor Wabco Maintenance And Troubleshooting Manual for complete details.

Self-Adjusting Slack Adjuster

Operational Check

Functional operation of the slack adjuster can be performed on vehicle by:

1. Block wheels to prevent vehicle from rolling.
2. Check that the push rod is fully retracted, apply air to release spring brake.
3. Manually de-adjust brakes (turn adjustment hex counterclockwise) to create an excessive clearance condition. (A ratcheting sound will occur)
4. Make a full service brake application, on release and allow sufficient time for

brake to fully retract. During the brake release, observe rotation of the adjustment hex (attaching a wrench on the hex will make this rotation easier to see). This rotation indicates that the slack adjuster has determined an excessive clearance condition, and it is making an adjustment to compensate. On each subsequent brake release the amount of adjustment and pushrod travel will be reduced until the desired clearance is achieved.

5. Refer to the Slack Adjuster manufacture's literature for proper push-rod stroke.

NOTE: Refer to the Slack Adjuster manufacturer recommendations for complete

details on maintenance, inspection and trouble- shooting of this component.

Maintenance

During normal chassis lube, adjusters should be inspected for damage. Check anchor brackets to ensure that they are tight.

During reline, check the de-adjustment torque. Place a torque wrench on the 7/16" adjusting hex. Turn the torque wrench counterclockwise and check that the clutch does not slip at a torque less than 13 Ft. Lbs. A ratcheting sound will occur while backing off. If clutch slips at a lesser torque, the adjuster must be replaced.

Lubrication

The Self-Adjusting Slack Adjuster should be lubricated in conjunction with the lubrication prescribed for vehicle chassis. The lubrication interval should not, however, exceed 5,000 miles or 3 months. No special grease is required, however the use of molydisulphide loaded grease or oil is not recommended since it may lower friction capabilities in the adjusting clutch parts, and decrease automatic adjustment reliability.

Inspection

1. During normal lubrication intervals, visually inspect slack adjuster and anchor bracket for damage. Check that anchor bracket is tight and the control arm is in its "Full Release" position (refer to manufacturer literature).
2. Maintaining proper brake adjustment and brake balance cannot be accomplished by the slack adjuster alone. The condition of foundation brake components has a direct bearing on the effectiveness of brake adjustment; therefore, periodic inspection of these components is necessary.
 - a. Brake-chambers - Check that brake-chamber mounting bolts are tight and proper alignment is maintained to avoid interference between chamber pushrod and chamber housing. Verify that the brake chamber push-rod length is equal on opposing brake chambers of the same axle.
 - b. Camshaft Bushings - Optimum brake adjustment cannot be achieved when worn bushings are used.
 - c. Wheel bearing adjustment - Accurate wheel bearing pre-load is necessary to maintain proper alignment between the brake drum and brake shoes.

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