



Technical Bulletin

Adjustment Procedures for Drum Brakes on Meritor Trailer Axles

Important Information

Meritor automatic slack adjusters (ASAs) should not need to be manually adjusted in service. If the chamber push rod clevis is installed correctly, the ASAs should not have to be adjusted to correct excessive push rod stroke. The excessive stroke may be an indication that a problem exists with the foundation brake, ASA, brake actuator or other system components.

Meritor recommends troubleshooting the problem, replacing suspect components and then confirming proper brake operation prior to returning the vehicle into service.

In the event that a manual adjustment must be made (although not a common practice), a service appointment and full foundation brake, ASA, and other system component inspection should be conducted as soon as possible to ensure integrity of the overall brake system.

For Meritor brake adjustment, refer to the brake adjustment tables in this technical bulletin. For non-Meritor brake adjusters, refer to the brake manufacturer's service procedures.

Park the vehicle on a level surface. Block the wheels to prevent the vehicle from moving. Support the vehicle with safety stands. Do not work under a vehicle supported only by jacks. Jacks can slip or fall over. Serious personal injury and damage to components can result.

Before you service a spring chamber, carefully follow the manufacturer's instructions to compress and lock the spring to completely release the brake. Verify that no air pressure remains in the service chamber before you proceed. Sudden release of compressed air can cause serious personal injury and damage to components.

You must disengage a pull pawl before rotating the manual adjusting nut, or you will damage the pawl teeth. A damaged pawl will not allow the slack adjuster to automatically adjust brake clearance. Replace damaged pawls before putting the vehicle in service.

Hazard Alert Messages

Read and observe all Warning and Caution hazard alert messages in this publication. They provide information that can help prevent serious personal injury, damage to components, or both.

ASBESTOS AND NON-ASBESTOS FIBERS WARNING

Some brake linings contain asbestos fibers, a cancer and lung disease hazard. Some brake linings contain non-asbestos fibers, whose long-term effects to health are unknown. You must use caution when you handle both asbestos and non-asbestos materials.

WARNING

To prevent serious eye injury, always wear safe eye protection when you perform vehicle maintenance and service.

How to Obtain Additional Maintenance, Service and Product Information

Refer to Maintenance Manual 4, Cam Brakes and Automatic Slack Adjusters; Maintenance Manual 14, Trailer Axles; and Parts Catalog PB-8857, Brake, Trailer Axle and Wheel Attaching Parts. To obtain these publications, visit Literature on Demand at meritor.com.

How an Automatic Slack Adjuster Works

When you install an automatic slack adjuster, you set the brake chamber stroke measurement, which is the correct shoe-to-drum clearance. When linings wear, this clearance increases, and the air chamber push rod must travel farther to apply the brakes.

When this happens, the slack adjuster will automatically adjust during the return stroke to maintain the correct shoe-to-drum clearance. If the air brake chamber push rod stroke is within limits during operation, no adjustment occurs.

Adjustment

Measure Free Stroke

When you perform preventive maintenance procedures on an in-service brake, check both the free stroke and adjusted chamber stroke. Refer to the procedures in this section.

Free stroke sets the clearance between the linings and drum. The in-service free stroke may be slightly longer than 0.5-0.625-inch (12.7-15.9 mm) specified in this procedure. This is acceptable if the adjusted chamber stroke is within the limits shown in Table A and Table B. If partial rotational contact is present at 0.625-inch (15.9 mm) free stroke, the drum may need remounting.

1. Disengage a pull pawl. Use a screwdriver or tool to pry the pull pawl at least 1/32-inch (0.8 mm) to disengage the teeth.
2. Use a wrench to turn the adjusting nut COUNTERCLOCKWISE until the brake shoes contact the drum. Figure 1. Then back off the adjusting nut in the opposite direction 1/2 turn for drum brakes.

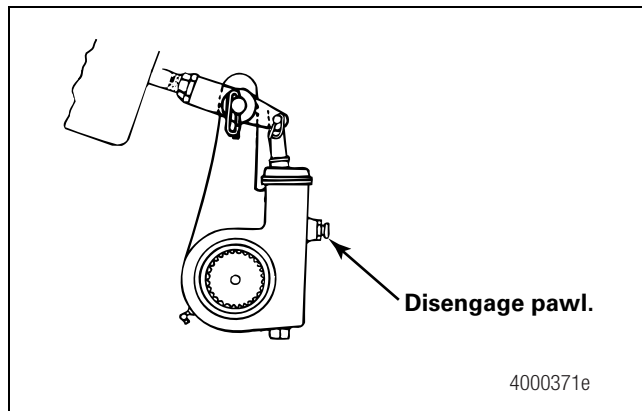


Figure 1

3. Measure the distance from the center of the large clevis pin to the bottom of the air chamber while the brake is released. The measurement you obtain is X in Figure 2.

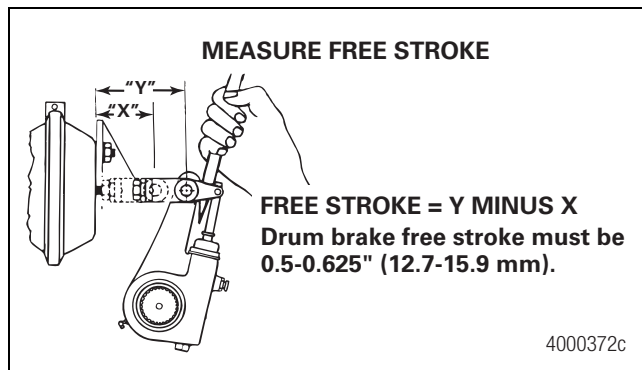


Figure 2

4. Use a pry bar to move the slack adjuster and position the linings against the drum, brakes applied. Measure the same distance again while the brakes are applied. The measurement you obtain is Y in Figure 2.

CAUTION

Do not set free stroke shorter than 0.5-0.625-inch (12.7-15.9 mm) for drum brakes. If the measurement is too short, linings can drag. Damage to components can result.

5. Subtract X from Y to obtain the in-service free stroke. The measurement must be 0.5-0.625-inch (12.7-15.9 mm) for drum brakes. Figure 2.
- **If the free stroke measurement is not within specification:** Turn the adjusting nut 1/8 turn in the direction shown in Figure 3 and check the free stroke again. Continue to measure and adjust the stroke until the measurement is within specification.

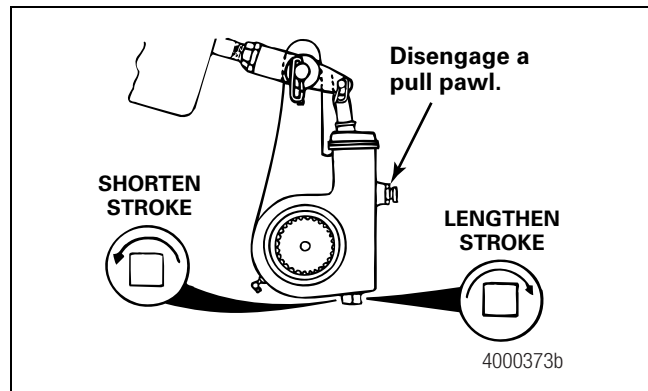


Figure 3

6. Re-engage the pull pawl by removing the screwdriver or tool. The pull pawl will re-engage automatically.
7. If the brakes have spring chambers, carefully release the springs. Test the vehicle before you return it to service.

Commercial Vehicle Safety Alliance (CVSA) Guidelines

Measure Push Rod Travel or Adjusted Chamber Stroke

Use the following procedure to check in-service push rod travel or adjusted chamber stroke on truck and tractor brakes.

1. The engine must be OFF. If the brake has a spring chamber, follow the manufacturer's instructions to release the spring. Verify that no air pressure remains in the service section of the chamber.

2. Verify that pressure is 90-100 psi (621-689 kPa) in the air tanks. Determine the size and type of brake chambers on the vehicle.
3. With the brakes released, mark the push rod where it exits the chamber. Measure and record the distance. Have another person apply and hold the brakes on full application. Figure 4. Hold the ruler parallel to the push rod and measure as carefully as possible. A measurement error can affect CVSA re-adjustment limits. CVSA states that "any brake 1/4-inch or more past the re-adjustment limit, or any two brakes less than 1/4-inch beyond the re-adjustment limit, will be cause for rejection."

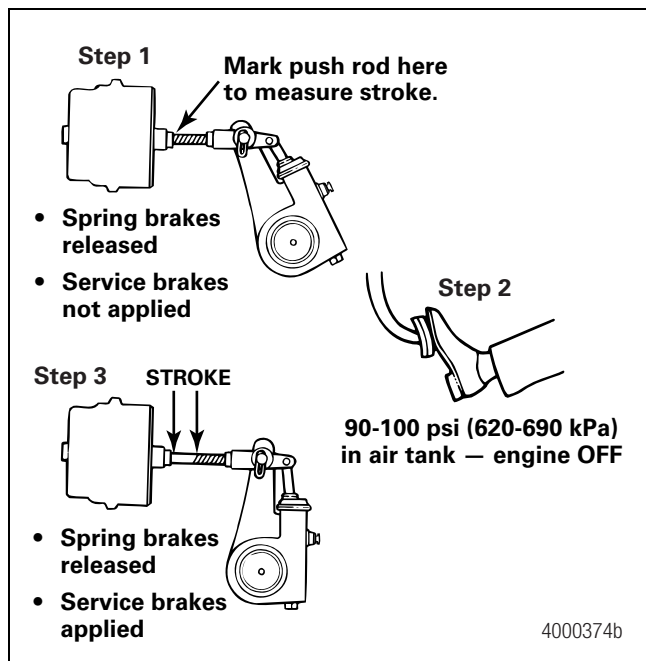


Figure 4

4. Measure the push rod travel or adjusted chamber stroke from where the push rod exits the brake chamber to your mark on the push rod. Measure and record the distance. Figure 4.
5. Subtract the measurement you recorded in Step 3 from the measurement you recorded in Step 4. The difference is the push rod travel or adjusted chamber stroke.

6. Refer to Table A or Table B to verify that the stroke length is correct for the size and type of air chambers on the vehicle.
 - If the adjusted chamber stroke is greater than the maximum stroke shown in Table A or Table B: Diagnose and correct the problem.

Table A: Standard-Stroke Clamp-Type Brake Chamber Data

Type	Outside Diameter (inches)	Brake Adjustment Limit (inches)
24	7-7/32	1-3/4
30	8-3/32	2
36	9	2-1/4

Table B: Long-Stroke Clamp-Type Brake Chamber Data

Type	Outside Diameter (inches)	Brake Adjustment Limit (inches)
20	6-25/32	2.0
24	7-7/32	2.0
24*	7-7/32	2.5
30	8-3/32	2.5

* For 3" maximum stroke type 24 chambers.

Alternate Method to Measure Push Rod Travel or Adjusted Chamber Stroke

Use the CVSA procedure, except in Steps 3 and 4, measure the distance from the bottom of the air chamber to the center of the large clevis pin on each of the brakes.

CVSA North American Out-of-Service Criteria Reference Tables

Information contained in Table A and Table B is for reference only. Consult the CVSA Out-of-Service Criteria Handbook for North American Standards, Appendix A. Visit their website at <http://64.35.82.7/> to obtain the handbook.



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Printed in USA

TP-1538
Issued 03-15
(16579)