On-Spot bracket / Slack adjuster inspection procedure

The purpose of this procedure is to inspect the truck for possible interference between the On-Spot automatic tire chain mounting bracket and the brake slack adjuster.

1. This procedure requires two people to complete. One to operate the air brake treadle in the truck and one to inspect the rear brake slack adjusters.
2. Park the truck on a flat, level surface. Chock the truck so that it can not move and make it safe to work underneath. The truck should NOT be running during the inspection but the air brake system does need to be fully charged.
3. Locate the on-spot brackets and the rear cam brake slack adjusters.
4. Make sure that the person under the truck is completely clear of all moving brake parts.
5. Have the person in the cab release the parking brake and fully apply the service brake.
6. With the service brake applied, carefully inspect for the amount of clearance between the slack adjuster and the On-Spot bracket. There are two clearance numbers to be verified.
    a. The first is the clearance between the bracket and the slack adjuster components side to side perpendicular to its direction of travel. The minimum acceptable clearance is ¼ inch.
    b. The second is the clearance between the bracket and slack adjuster components in the direction of travel. The minimum acceptable clearance is ½ inch. This is to allow for additional slack adjuster travel as the brake pads wear.
7. If both of these clearances are acceptable, the truck can be left in service without immediate modification. The truck needs to be reinspected using this procedure at least once per week until it is repaired.
8. If either clearance is not acceptable, the truck should be removed from service until the following on-Spot bracket removal modification procedure is completed or until the brackets are replaced with new brackets.

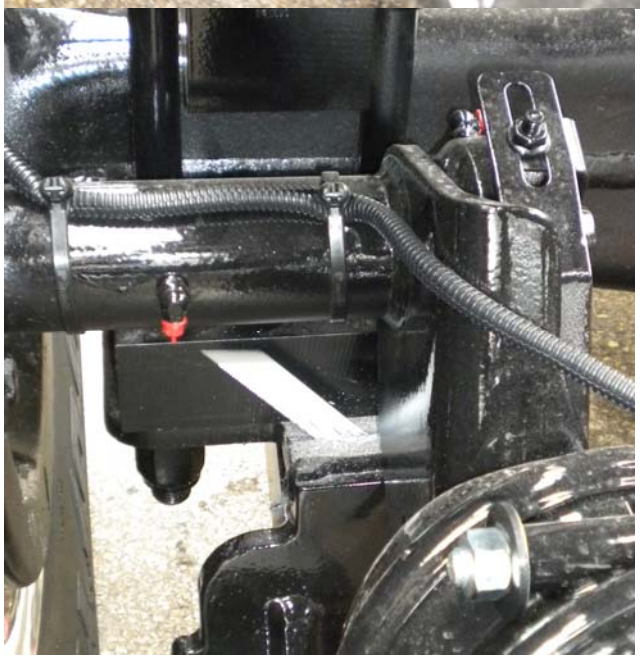
9. On-Spot bracket removal modification procedure

The purpose of this procedure is to remove the On-Spot chains and a portion of the bracket to ensure clearance for proper operation until new brackets can be installed if adequate clearance does not already exist.

1. Park the truck on a flat, level surface. Apply the parking brake and chock the truck so that it can not move and make it safe to work underneath. Follow all applicable safety rules for working under a truck and for working with power tools.
2. Disconnect the air supply to the On-Spot chain canister, cap or protect the open ends of the hose and fitting to prevent contamination and secure the hose so that it will not be damaged during truck operation.
3. Tag out the On-Spot chain switch in the cab so that the chains will not be engaged.

4. Remove or support the On-Spot system so that it will not fall when the bracket is cut.
5. Each bracket will be cut across the upper horizontal section just forward of the axle spacer and also cut across the gusset as shown by the white lines in this photo.

6. Using an electric reciprocating saw with a 6 inch metal cutting blade, cut through the bracket in both places from under the truck as shown. Have a second person oversee the operation to ensure that the saw does not cut or damage any other chassis components. Also have the second person adequately support the On-Spot system as it is being removed so that it is not damaged after the bracket it cut.



7. Clean up or cover any sharp edges on the raw cut brackets.
8. Store the On-Spot system for re-installation after new brackets are received.
9. Check and adjust the slack adjusters using the following procedure before returning the truck to service

Foundation Brake Operational Check and Troubleshooting

Note:
- Block wheels to prevent vehicle from rolling.
- Ensure system reservoir pressure is at 90-100 psi.
- Check that push rod is fully retracted; apply air to release spring brake.

North American Commercial Vehicle Safety Alliance (CVSA) Uniform Vehicle Inspection Criteria

The applied stroke of the brake should be checked per CVSA guidelines at 90-100 PSI reservoir pressure. **Applied stroke** should be at or less than the specified re-adjustment limits as follows:

Standard Clamp Type Brake Chamber

Type	Adjustment Limit	Type	Adjustment Limit
9	1-3/8"	24	1-3/4"
12	1-3/8"	30	2"
16	1-3/4"	36	2-1/4"
20	1-3/4"		

Long Stroke Type Brake Chamber

Type	Adjustment Limit	Type	Adjustment Limit
16L	2"	24LS	2-1/2"
20L	2"	30LS	2-1/2"
24L	2"		

NOTE: Long stroke chambers are identified with square air ports or port bosses and special trapezoid ID tags.

Free Stroke

Measuring the Free Stroke

Free stroke is the amount of movement of the adjuster arm required to move the brake shoes against the drum. With brakes released, measure from the face of the chamber to the center of the clevis pin “A” (fig. 13). Use a lever to move the brake adjuster until the brake shoes contact the drum “B” (fig. 13). The difference between the fully retracted and drum contact measurement “B”–“A” (fig. 13), is the free stroke. The free stroke range should fall between 3/8"–3/4".

Free Stroke Within Range

If the free stroke is good, but the applied stroke is too long, there is probably a problem with the foundation brake. Check the following and reference CVSA out-of-service criteria:

Component	Cause	Action
Brake drums	Cracked or out of round	Replace or check drum run out
Brake shoes	Shoe span out of spec	Refer to OEM specs and replace if necessary
Brake shoes	Uneven lining wear	Check spider concentricity
Brake shoes	Shoe pad missing	Remove & replace shoes
Brake shoes	Cracked shoes	Remove & replace shoes
Cam bushings	Excessive movement	Remove & replace cam bushings per OEM specs
Camshaft	Flat spots on cam head	Replace camshaft
Camshaft	Cracked/broken splines	Replace camshaft
Camshaft	Worn bearing journals	Replace camshaft
Chamber bracket	Broken/bent	Replace bracket
Clevis yoke and pin	Worn	Remove & replace
Return springs	Broken/stretched or missing	Remove & replace springs
Rollers	Flat spots, grooved pin/worn	Remove & replace roller and pin
Rollers	Wrong size	Remove & replace with correct parts
Spider anchor pins	Grooved or scored/worn	Replace spider or pins, as appropriate for OEM

Free Stroke Above the Range

If the free stroke is above the range and the applied stroke is too long, there is a problem with the foundation brake or the adjuster. Check the following:

Component	Cause	Action
Camshaft	Binding	Remove, replace, lubricate camshaft
Camshaft bushings	Excessive movement	Remove and replace cam bushings per OEM specs
Camshaft bushings	Binding shaft	Lubricate camshaft bushings or replace
Air chamber return springs	Broken, weak, missing	Replace chamber
Air chamber push rod	Binding on chamber housing	Check adjuster for proper shimming and air chamber position for proper adjuster arm length
Air system	Not exhausting completely	Check for cause of air problem and repair
Shoe return springs	Broken, weak, missing	Replace springs
Automatic brake adjuster	Unknown	Check automatic brake adjuster for proper installation. Refer to Installation Instructions on pages 4 & 5.
Automatic brake adjuster	Unknown	Refer to Automatic Brake Adjuster Checking Procedures and Operational Check on pages 9 & 10.

Free Stroke Below the Range

If the free stroke is less than 3/8", a dragging brake can occur. Check the following:

Component	Cause	Action
Wheel bearing	Out of adjustment	Readjust per OEM specs
Automatic brake adjuster	Unknown	Check automatic brake adjuster for proper control arm position. Refer to Installation Instructions on pages 4 & 5.
Automatic brake adjuster	Unknown	Refer to Automatic Brake Adjuster Checking Procedures and Operational Check on pages 9 & 10.

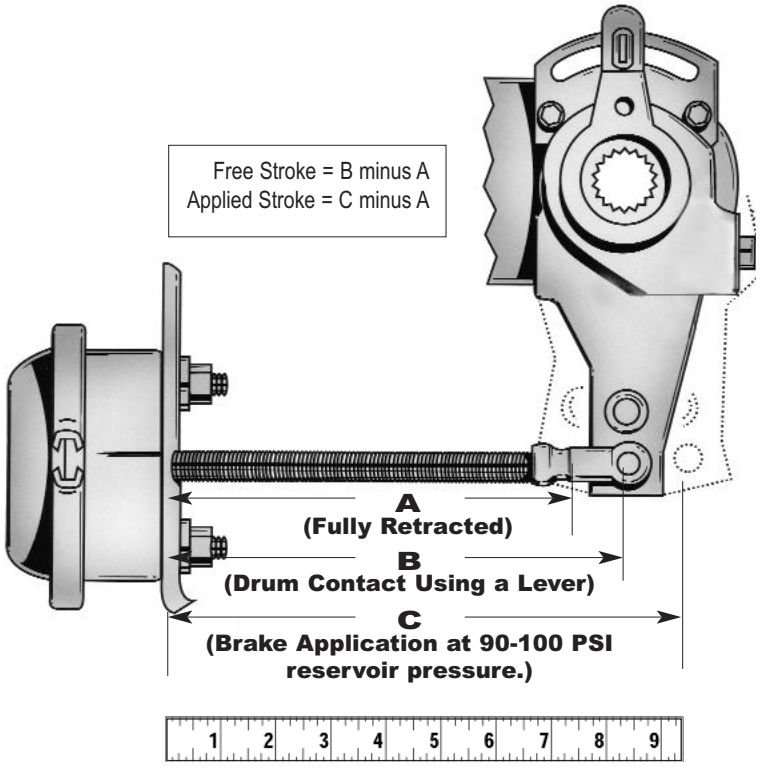


Figure 13
Stroke Measurements (taken from face of air chamber to center of clevis pin)