

INSPECTION, TEST AND ADJUSTMENT PROCEDURE for ELLCON-NATIONAL 6600 SERIES ARM TYPE EMPTY LOAD DEVICE

The following tests are to be performed on tangent, level track, and in conjunction with the latest revision of the *AAR Code of Air Brake System Tests for Freight Equipment*, Standard S-486. The following tests and adjustments, if necessary, can be performed on an empty car only.

INSPECTION

Before proceeding with testing of empty load equipment, the following inspection should be performed:

- 1) Ensure that sensor arm is not damaged or bent. Move arm down manually to confirm appropriate contact location on side frame. Check for excessive side play – adjusting screw should not be outside of the effective side frame width.
- 2) Inspect adjusting screw for any damage, and check that lock nuts are locked into place. (Older models used a plastic adjusting screw with one or two jam nut(s).)
- 3) Install a brake cylinder pressure gauge.

If any of the above parts, or any other empty load equipment, is damaged, contact ELLCON-NATIONAL for replacement parts.

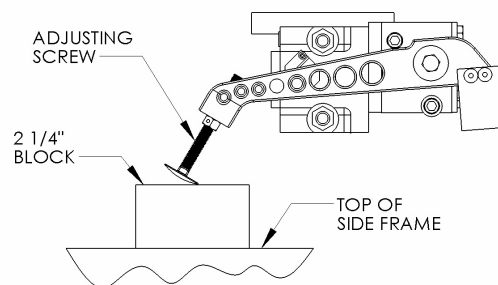


FIGURE NO. 1
SENSOR VALVE

LOADED CAR TEST (EMPTY CAR)

- 1) With car on level tangent track, place a 2 1/4" thick test block on side frame. Pull down sensor arm until bottom of adjusting screw contacts top of test block. Then release arm without disturbing test block.
- 2) With brake system charged to 90 psi, make a 30 psi reduction with single car test device or automated test device. Sensor arm should move down, with bottom of adjusting screw contacting top of test block (see Figure 1).
- 3) With brakes still applied, check to see that indicator stem **is not** protruding from Part No. 31800, Proportional Valve, indicating that empty load valve is in loaded mode (see Figure 2). Record brake cylinder pressure.
- 4) Release brakes by placing single car test device handle into position no. 1, or using automated test device. Sensor arm should retract upward toward its released position. The brake cylinder piston should retract and air should exhaust from the retaining valve only.

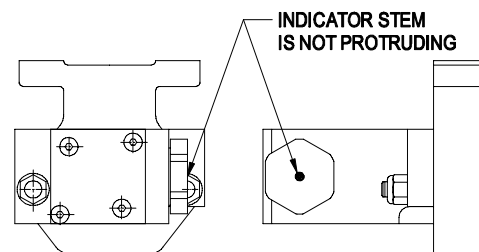


FIGURE NO. 2
PROPORTIONAL VALVE

EMPTY CAR TEST (EMPTY CAR)

- 1) Remove 2 1/4" thick test block and with brake system charged to 90 psi, allow brake pipe to vent to 0 psi using position no. 5 of single car test device or equivalent with automated test device.
- 2) Sensor arm should move down; and bottom of adjusting screw may, or may not, contact side frame. With brakes applied, check to see that indicator stem is protruding from part no. 31800, Proportional Valve (see Figure 3). Brake cylinder pressure must also be at least 20 psi lower than final full service pressure noted in Loaded Car Test, Step 3.
- 3) Release brakes by pulling the handle of the brake cylinder rod for 3 seconds, and note that sensor arm retracts upward and indicator stem also retracts to its released position. (Also, note that brake cylinder piston fully releases.)

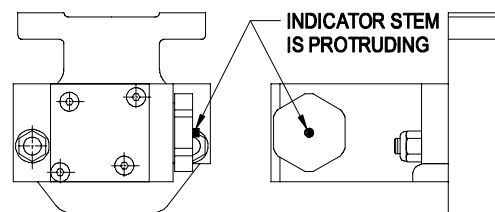


FIGURE NO. 3
PROPORTIONAL VALVE

LOADED CAR TEST (LOADED CAR)

Note: Loaded car cannot be checked for an empty car condition.

- 1) Make a 30 psi reduction with single car test device or automated test device. Sensor arm should move down, with bottom of adjusting screw contacting side frame.
- 2) With brakes applied, check to see that indicator stem **is not** protruding from Part No. 31800, Proportional Valve, indicating that empty load valve is in loaded mode (see Figure 2).
- 3) Release brakes by pulling handle of brake cylinder rod for 3 seconds, and note that sensor arm retracts upward and brake cylinder piston is fully released.

NOTE: If empty load equipment does not pass any above tests, please see following instructions for proper empty load adjustment. (Setup can only be performed on an empty car.)

SET-UP PROCEDURE for 6600 SERIES EMPTY LOAD DEVICE

The following procedure should be used if empty load equipment did not pass previous empty load test, or if a replacement Model 6600 Empty Load Valve has been applied:

- 1) Using a 1/4" Allen Wrench, remove one of the 1/4" pipe plugs from sensor valve, and save it for later replacement (see Figure 4).
- 2) Loosen lock nuts. Rotate steel adjusting screw (could be plastic screw on older models) downward to its extreme limit (see Figure 5).
- 3) Place an adjusting block on side frame directly below contact point of adjusting screw. Select block thickness to be equal to 1/5 of spring deflection, between light and loaded car, or as stenciled on car. If empty load truck deflection is not known, and there is no car stencil, a 7/16" thick block should be used.
- 4) Make a 30 psi reduction with single car test device or automated test device. With brakes applied, rotate adjusting screw upward until a slight blow of air is obtained at pipe plug hole. After adjusting screw is set, apply small amount of Blue Loctite (No. 242) or equal to threads, then using lock nuts, lock adjusting screw in place – making sure it does not turn in process (see Figure 6).
- 5) Release brakes by placing single car test device into position no. 1 or using automated test device. Sensor arm should retract upward toward its released position.
- 6) Replace 1/4" pipe plug, using a pipe thread sealant, and set brakes by making a 30 psi reduction. Coat pipe plug with soapsuds to detect leakage. Also, check to see that indicator stem **is** protruding from Part No. 31800, Proportional Valve (see Figure 3). Release brakes and note that sensor arm retracts upward and indicator stem also retracts to its released position. (Also, note that brake cylinder piston fully releases.)
- 7) Place a 2-1/4" thick block on side frame, and make a 30 psi reduction – making sure adjusting screw **is** contacting top of block and, also, making sure indicator stem **is not** protruding from Part No. 31800, Proportional Valve (see Figure 2). Release brakes, using single car, or automated test device, noting that sensor arm retracts upward to its released position.
- 8) Perform Empty Load Test as required in *AAR Code of Air Brake System Tests for Freight Equipment*, Standard S-486.

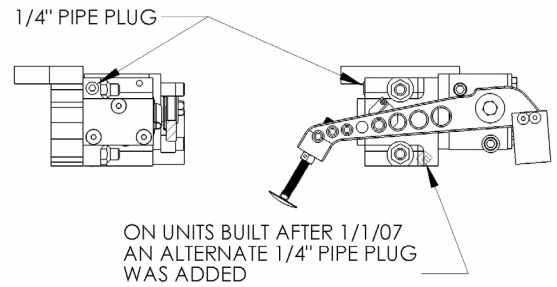


FIGURE NO. 4
SENSOR VALVE

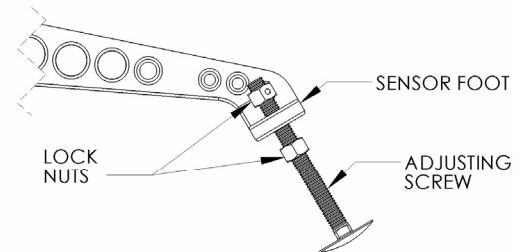


FIGURE NO. 5
SENSOR ARM

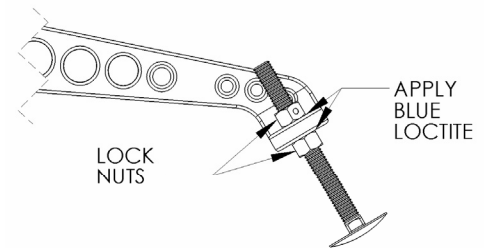


FIGURE NO. 6
SENSOR ARM

Any questions, contact ELLCON-NATIONAL, INC.
Telephone: 864/277-5000 * Fax: 864/277-5207
50 Beechtree Boulevard, Post Office Box 9377
Greenville, South Carolina 29604-9377