



Sedan Range

DATE 5/96

12-07

SERVICE

## TECHNICAL BULLETIN

### Inconsistent Brake Pedal Return – Repair Procedure

MODEL 1995 MY  
Sedan Range  
VIN 720001-748415

#### ISSUE:

Some 1995 MY Sedan Range vehicles within the above VIN range may exhibit inconsistent return of the brake pedal. This condition may be caused by interference between the brake pedal bushings and the pivot pin/pedal box or by weak brake booster spring pressure.

If this problem exists, it can be resolved by inspecting and greasing the pivot pin, and if necessary, installing a revised brake booster with a higher rate return spring.

#### ACTION:

After verifying a customer complaint of brake pedal sticking on a 1995 MY Sedan Range vehicle within the above VIN range, proceed as follows:

1. Inspect the brake pedal pivot pin for wear and check its dimensions (page 2). Grease and reinstall, or replace, if out of specification.
2. If the pedal still sticks, install a revised brake booster unit (page 3).

**NOTE:** On vehicles within the VIN range 720001 to 738129, it will also be necessary to replace the pedal box since the revised brake booster will not fit the existing pedal box.

This bulletin covers the removal and installation of the brake pedal pivot pin, the brake booster and the removal and replacement of the pedal box.

## INSPECTING BRAKE PEDAL PIVOT PIN

1. Apply the parking brake and select the Park position.
2. Remove the retaining nut and washer from the brake pedal pivot pin

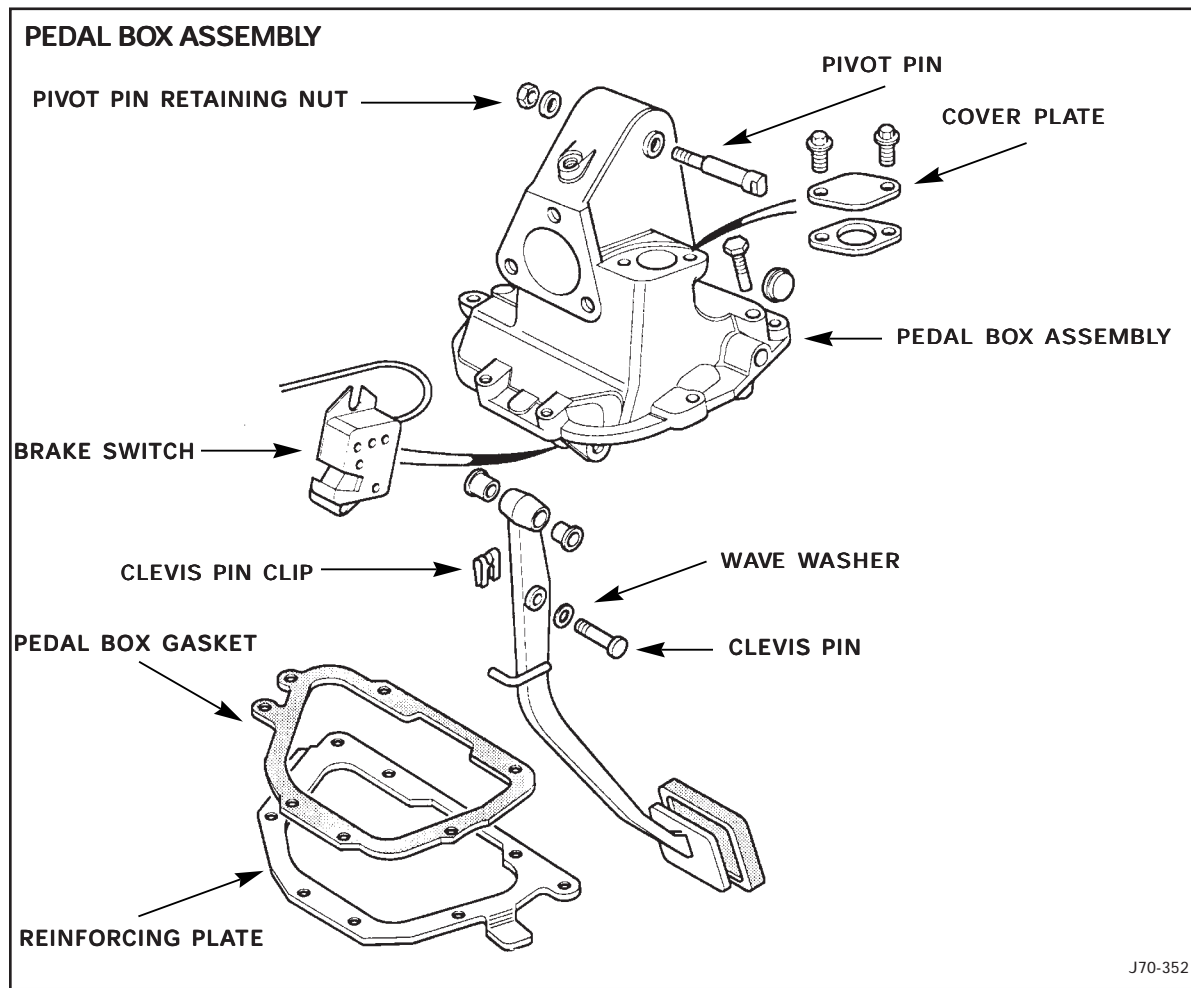


ILLUSTRATION 1

(Illustration 1).

3. Partly remove the pivot pin from the pedal box and insert a 10 mm pin in the pivot pin hole to keep the brake pedal in place.
4. Clean and inspect the pivot pin for signs of scuffing, scoring, or wear. If any marks are present, discard pin.
5. If the pin passes a visual inspection, check the length and diameter of the plain part only (between the shoulder of the head and the shoulder of the thread.) Discard the pin if it does not meet the following dimensions.

Use a vernier caliper to check that the length is 1.648 to 1.658 inches (41.86 to 42.11 mm)

Use a micrometer to check that the diameter is 0.4988 to 0.4996 inches (12.67 to 12.69 mm)

6. Grease the serviceable/new pin and insert it in the pedal box while removing the 10 mm pin. Push the pivot pin in fully which may require moving the brake pedal to ensure that the pivot pin seats fully.
7. Install the washer and torque the retaining nut to  $14.749 \pm 2.21$  lb. ft.
8. Check the brake pedal for full and free movement. If the pedal still sticks, replace the brake booster.

#### REPLACING BRAKE BOOSTER

1. Remove the left side engine compartment cover.
2. Remove the passenger side underdash liner. Reposition the passenger footwell duct for access.
3. Disconnect the in-car temperature sensor connector.
4. Reposition the vehicle harness connector from the passenger footwell clip. Remove the passenger footwell duct.
5. Drain the radiator to lower the coolant level sufficiently to allow removal of the heater valve without a large loss of coolant (Sections 4.1.4 or 4.2.4 in the XJ6-XJ12 Vehicle Service Manual).
6. Move the heater bypass hose aside.
7. Reposition the water valve/pump connectors from the mounting bracket and disconnect the water valve connector.
8. Disconnect the water valve return hose.
9. Cut and remove the tie-strap securing the valve/pump harness to the hose.
10. Disconnect the pump to valve hose.
11. Remove the heater water valve.
12. Disconnect the connector of the low fluid level sensor on the brake master cylinder reservoir.
13. Disconnect and reposition the vacuum pipe elbow from the brake booster.
14. After placing a rag under the brake master cylinder, disconnect the brake lines from the master cylinder. Install blanking plugs on the master cylinder and pipes.
15. Remove and discard the rag.
16. Disconnect the throttle inner cable from the pedal grommet, then disconnect the throttle inner/outer cable from the pedal box and set it aside.
17. Disconnect and reposition the connector of the brake warning light switch.
18. Remove the pedal box mounting nuts.
19. Reposition the connector mounting bracket from the pedal box studs.

20. Remove the pedal box and brake booster and master cylinder as an assembly and place it on a bench. Remove and discard the pedal box to body gasket. Clean the gasket faces.
21. Empty the reservoir of residual brake fluid into a waste oil container.
22. Place the pedal box on a clean workbench and wipe the reservoir clean.
23. Remove the grommets from the access hole for the brake pedal clevis pin.
24. Remove the clevis pin (Illustration 1) from the brake pedal and master cylinder pushrod fork. Retain the clip and wave washer.
25. Remove the grommet from the access hole for the upper nut that secures the booster to the pedal box.
26. Remove the pivot pin for the brake pedal (Illustration 1).
27. Reposition the brake pedal for access to the brake booster's upper securing nut.

**NOTE:** The pedal is still connected to the pushrod fork.

28. Remove the nuts securing the brake booster to the pedal box.
29. Remove the brake pedal from the pedal box.
30. Remove and discard the brake booster gasket from the pedal box. Clean the mating surface and all components.
31. Remove the master cylinder from the brake booster.
32. Replace the sealing ring on the brake master cylinder with a new ring.
33. Install the master cylinder on the new modified brake booster ensuring that the booster pushrod enters the master cylinder piston bore.
34. Grease the forked end of the brake booster pushrod and the brake pedal pivots. Place a new gasket on the new brake booster.

**NOTE:** A new pedal box is required on vehicles within the VIN range 720001 and 738129 to allow installation of the modified brake booster. If the vehicle is above VIN 738129, proceed to step 52 (skip 35 through 51).

35. Remove the brake/cruise control switch (Illustration 1).

36. After removing the wire rod (Illustration 2), remove the pivot pins for the throttle pedal and the throttle bellcrank from the pedal box.

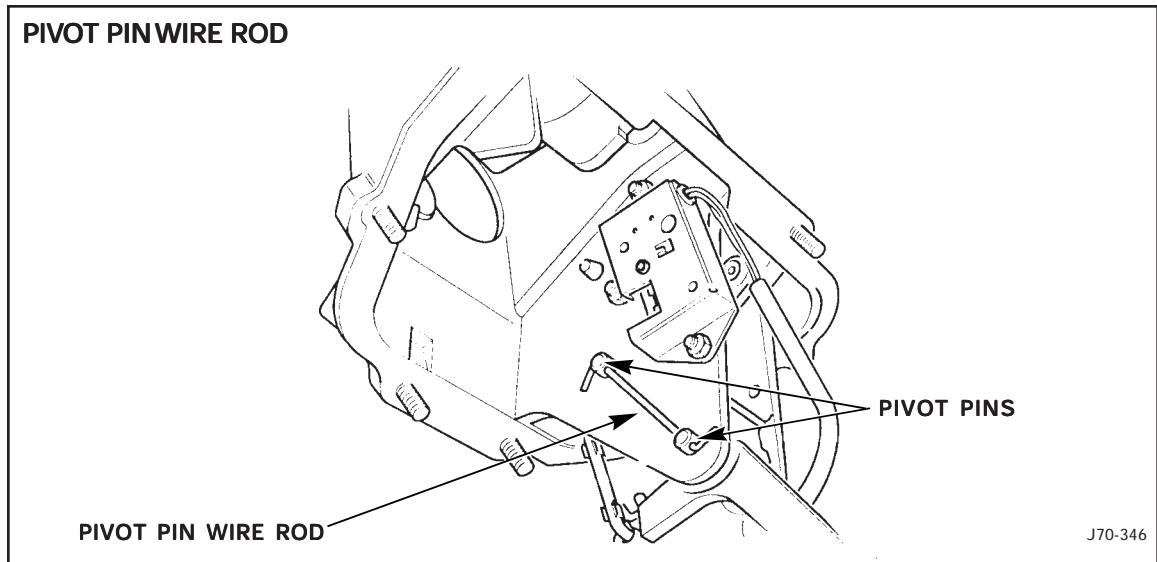


ILLUSTRATION 2

37. Remove the throttle pedal and bellcrank assembly, including the linkage rod (Illustration 3), clips and return spring.
38. Depress the throttle stop retaining ears (Illustration 3). Note that these may break off or become damaged. Remove the throttle pedal stop from the pedal box and discard.

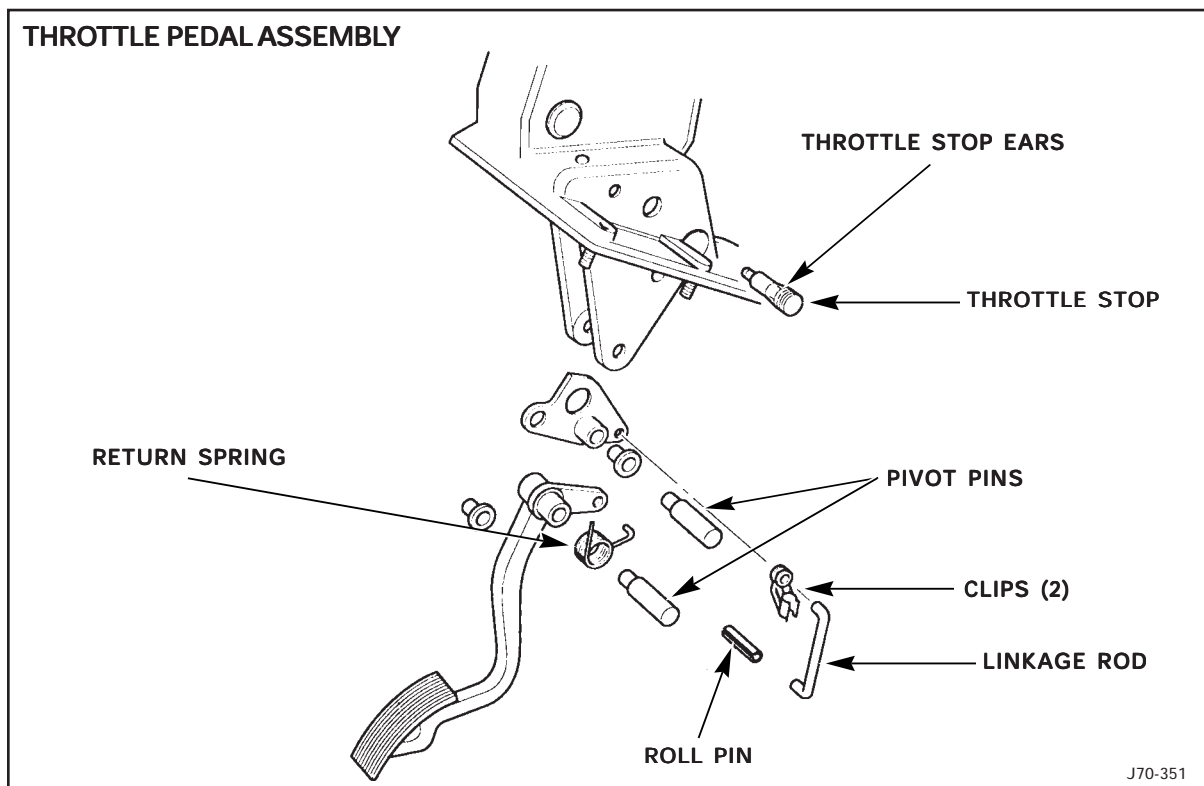


ILLUSTRATION 3

39. Use a hammer and pin punch to drive out the throttle pedal return spring roll pin from the pedal box (Illustration 3). Remove the rubber plug from the pedal box.
40. Remove the clutch master cylinder opening cover plate and discard the gasket. Remove the mounting studs from the pedal box.
41. Remove the instramounts for the heater valve support from the pedal box. Discard the pedal box.
42. Clean all the components removed from the old pedal box.
43. Install the instramounts for the heater valve support bracket on the new pedal box.
44. Install the mounting studs removed from the old pedal box into the new pedal box.
45. Install the cover plate with a new gasket over the opening for the clutch master cylinder.
46. Insert the rubber sealing plug in the new pedal box.
47. Use a hammer to drive in the roll pin for the throttle pedal return spring.
48. Apply a suitable waterproof sealer around the flanged head of a new throttle stop (Illustration 4) and install the stop in the new pedal box.

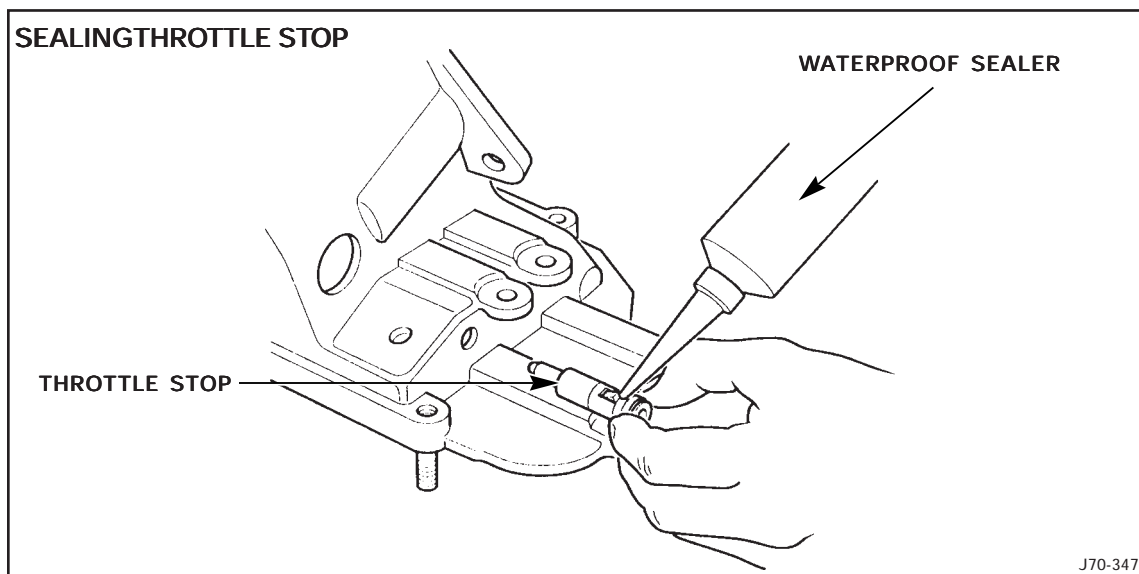


ILLUSTRATION 4

49. Grease the throttle pedal and bellcrank assembly and position them with the linkage and return spring in the pedal box. Insert the pivot pins and secure them with a new wire locking rod (Illustration 2).
50. Install the brake light/cruise control switch in the pedal box.
51. Insert the brake pedal in the new pedal box.

52. Insert the brake booster and master cylinder assembly in the pedal box using care to correctly align the booster pushrod fork over the brake pedal. Install the mounting nuts.
53. Align the brake pedal with the pedal pivot holes and install the brake pedal pivot pin. Torque the pivot pin securing nut to  $14.8 \pm 2.2$  lb. ft. ( $20 \pm 3$  Nm).
54. Insert the grommet into the access hole for the brake booster to pedal box securing nut.
55. Install the wave washer on the booster clevis pin. Grease the clevis pin.
56. Secure the booster pushrod fork to the pedal with the clevis pin.
57. Install the grommets in the access holes for the brake pedal clevis pin.
58. Push and hold the brake pedal, reposition the brake switch ratchet arm to its widest position. Then, release the brake pedal to reset the ratchet arm.
59. Remove the backing paper from the new pedal box gasket and position the gasket on the new pedal box.
60. Install the pedal box, booster and master cylinder assembly into the body opening, using care that no wires or pipes are trapped. Ensure that the body reinforcing plate (Illustration 1) is in place.
61. Reposition the connector mounting bracket on the pedal box studs.
62. Install the nuts securing the pedal box to the body.
63. Reconnect the brake switch connector and secure it to the mounting bracket.
64. Reconnect the throttle inner/outer cable to the pedal box.
65. Connect the throttle cable to the pedal grommet.
66. Adjust the out throttle cable or adjust the traction control primary outer cable.
67. Place a rag under the union nuts of the brake lines leading to the brake master cylinder.
68. Reconnect the brake lines to the brake master cylinder. Remove and discard the rag.
69. Reconnect the in-car temperature sensor connector.
70. Reinstall the passenger footwell duct and the dash liner.
71. Raise the vehicle on a suitable lift.
72. Bleed the brake system (refer to section 12 in the XJ6-XJ12 Vehicle Service Manual.)
73. Lower the vehicle.
74. Reinstall the left side cover.
75. Ensure that the complaint is repaired.

## PARTS INFORMATION:

<u>DESCRIPTION</u>	<u>PART NUMBER</u>	<u>QTY</u>
Brake booster	JLM 12188	1
Pedal box	MNA 5372BC	1
Pedal pivot pin	CBC 4681	1

## WARRANTY INFORMATION:

<u>FAULT</u>	<u>R.O.</u>	<u>DESCRIPTION</u>	<u>TIME</u>
<u>CODE</u>	<u>NUMBER</u>		<u>ALLOWANCE</u>
HD CB HV	70.50.17	Replace Brake booster	2.60 hrs.
	70.91.14	Replace booster & pedal box	3.10 hrs.