

BOOK 86 – A2/B2 CAR PREVENTIVE MAINTENANCE PROCEDURE

DATE ISSUED 12/01/2000

PROCEDURE NO. 10-14

REVISION DATE 07/05/2017

SIDE DOOR OPERATION, LOOSE, CHATTERING, BINDING OPEN/CLOSE TIMING

I. Preparations/Precautions

- A. Refer to Book 86, Volume 10, Chapter 4 for detailed instructions of making various door adjustments.
- B. Position door cutout/lock mechanism to the mid position, between LOCK and NORMAL to cut out electrical power to the Door operator.
- C. Door priority adjustments as follows: (1 being highest, 4 being lowest)
 - 1. Door guide blade engagement and alignment to threshold.
 - 2. Door panel clearance above threshold.
 - 3. Nose rubber alignment of mating door panels.
 - 4. Exterior weather seals.

If adjustment of a lower priority item causes a misalignment of a higher priority item, then the adjustment to the lower priority item should not be made.

II. Procedure

- A. Manually close and open each door several times to ensure doors are free and not rubbing or binding.
- B. Manually close and open each door leaf and confirm that leaf travels parallel to door threshold.
 - 1. The outboard bottom edge of the door must be a minimum of 1/16 inch (maximum 1/4 inch) clearance above threshold casting and bumpers throughout its travel.
 - 2. The door bottom edge should also travel parallel to the top of the threshold casting within 1/16 inch.
 - 3. Check that each door leaf travels true, not closing inward nor outward. The guide blade should be aligned to within 1/32 inch of contact with the stainless steel threshold bar throughout the length of door travel.
 - 4. Clearance from the bottom of the guide blade to the threshold slot should be set at 1/8 inch (maximum limit of 3/16 inch and minimum limit of 1/16 inch).
 - 5. Door should be aligned. Check gap along the leading edge nose rubbers for acceptable gap of 0 to 1/8 inch, so that nose rubbers mate vertically and are parallel within 1/8 inch.
- C. With door in near full closed position (door linkage not locked over center and guide blade not captured by the center rubber bumper), grasp the door along the center molding and exert alternating side to side (rocking) force. Excessive looseness at the top of the door is a possible indication of a loose door rail or hanger or worn bearings. At the bottom of the door, the door guide should move side to side freely about 1/16" indicating it is aligned with the threshold wear bar and not restricted by the rear bumper block.

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- D. With door in near full closed position (door linkage not locked over center), grasp the door along the center molding and exert alternating up and down force. Any appreciable movement of the door (in excess of 1/16 inch) indicates:
1. A loose door hanger.
 2. A loose rail assembly, or.
 3. A loose rail on the rail shaft assembly.
 4. Check the door rail and hangers as being secure and check the bearings for signs of failure.
- Note: The issue of whether noisy door hand bearings should be changed because they are noisy will depend on the door passing the functional and operational requirements listed in this procedure. If the door passes the functional and operational requirements, noisy bearings do not have to be changed. If the door is chattering, which is defined as operating with an irregularity that causes rapid intermittent noise and vibration and it is determined that the bearing(s) are causing the door to chatter, then the bearing(s) are to be changed.
- E. Verify that door linkage is secure and is not rubbing in the pocket. Check that extension rods have about equal spacing at either end, give or take 1 or 2 threads. Use a mirror to check for indication of linkage rubbing in the door pocket.
- F. Check that interior and exterior strip seals do not rub against door panel metal skin.
- G. Exterior car shell strip seals should be 1/4 to 1/8 inch continuous gap from the exterior door panel skin and should contact the trailing seal of the door edge when the doors are in a closed position. Check all door weather stripping for wear and being securely installed.
- H. Check that the bristles of the top doorway outboard brush seal contact the door skin to close the air gap.
- I. Check lateral play at bottom of door. Check that the gap between the door guide block and the rear bumper block is a minimum of 1/16 inch throughout door travel.
- J. Check door guide blade and threshold bumper blocks for wear and secureness.
- K. Close side doors. Push outward on the door panels and check bottom lateral movement. If movement exceeds 1/16 inch:
1. Open side doors.
 2. Adjust threshold center bumper block to 1/4 inch from the face of the wear bar.
 3. Cycle side doors open and closed several times to ensure smooth operation.
 4. Adjust center bumper block as necessary to ensure smooth operation of the side doors and minimal lateral movement.
- L. Return all door mechanisms to normal position after completion of checks. Activate doors several times to ensure proper operation and alignment free of any friction, binding, or chattering.

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- M. Power the door set to the closed position, verify the mechanical lock arm of both MLPSS mechanisms engage behind their respective door panel. The lock arms must engage behind the door panels without contacting the door panel.

- N. Check and verify door panel open and closing times. Using a stop watch and the door crew key switch, open doors and measure time to open of each panel. Correct panel opening time is 0.9 to 1.5 seconds. Close doors and measure time to close each panel. Correct panel closing time is 1.7 to 2.3 seconds. If timing is not within limits, have panels adjusted then recheck timing.