# Technical Service Bulletin

Mazda North American Operations Irvine, CA 92618-2922



Subject: 09-024/17 - DRIVER SEAT GRADUALLY MOVES DOWN BY ITSELF	Bulletin No.: 09-024/17
	Last Issued: 06/16/2017

# **BULLETIN NOTES**

This bulletin supersedes the previously issued bulletin(s) listed below. The changes are noted in Red text.

Previous TSBs:	Date(s) Issued:
09-006/15	02/13/15 and 06/02/15
09-019/14	03/12/14
09-010/13	04/10/13, 10/31/13 and 12/16/13

## APPLICABLE MODEL(S)/VINS

2013-2016 CX-5 vehicles without power seats with VINs lower than JM3KE\*\*\*\*\*921726 (produced before Dec. 21, 2016)

2014-2016 Mazda6 vehicles without power seats with VINs lower than JM1GJ\*\*\*\*\*488592 (produced before June 30, 2016)

2017 Mazda6 vehicles without power seats

# DESCRIPTION

Some vehicles (without power seats) may exhibit a driver seat that gradually moves down by itself. This concern may be caused when a load, which is applied to the seat during braking, exceeds a certain level that could impact the retaining mechanism of the seat lifter causing the seat to gradually move downward.

To eliminate this concern, the play in the lift mechanism gears has been reduced.

Customers having this concern should have their vehicle repaired using the following repair procedure.

## **REPAIR OUTLINE**

**NOTE:** By installing the modified seat lift unit, the symptom of driver's seat gradually moving down becomes less likely to occur compared with the original seat lift unit. However, it is impossible for even the modified seat lift unit to completely stop the seat moving down for all vehicle usage situations. As necessary, please explain this point to customer(s) referring to **"Explanation Material for Customers"** on the last page of this bulletin.

1. Verify the customer concern.

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**NOTE:** Ensure the customer is not bumping or touching the adjuster by mistake when entering or exiting the vehicle.

2. If the customer complaint has been confirmed, replace the driver seat lift unit with the newly established service parts kit according to the "SEAT LIFT UNIT (SERVICE PARTS KIT) REPLACEMENT PROCEDURE".

**NOTE:** Replace the following parts (specified as "Replacement Parts" in the Workshop Manual) with new ones:

- Front seat side cover clip
- Recliner knob (with lever type recliner knob)
- Lifter knob

## SEAT LIFT UNIT (SERVICE PARTS KIT) REPLACEMENT PROCEDURE:

3. Remove the driver seat adjuster unit according to the instructions on MS3 online or the Workshop Manual.

4. Disassemble the seat adjuster unit.

5. Replace the subject parts (A - D) with the parts in the Service Parts kit.

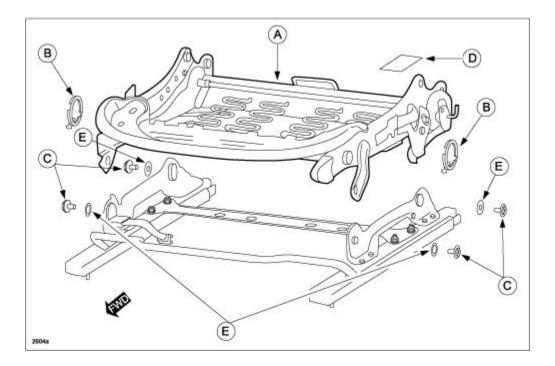
6. Re-install the driver seat adjuster unit according to the instructions on MS3 online or the Workshop Manual.

## Service Parts kit includes:

- (A) Seat Lift Unit
- (B) Balance Spring, Rear (2)
- (C) Torx T30 Bolt (4)
- (D) Black Tape

NOTE: Be sure to save and re-use all washers (E). New washers are NOT included in the Service Parts kit.

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# **REPAIR PROCEDURE**

1. Verify the customer concern.

**NOTE:** Ensure the customer is not bumping or touching the adjuster by mistake when entering or exiting the vehicle.

2. Remove the driver seat adjuster unit according to the instructions on MS3 online or the Workshop Manual section 09-13:

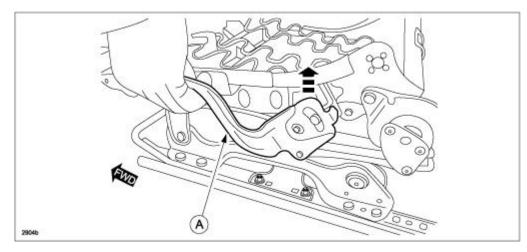
- Mazda6 FRONT SEAT CUSHION FRAME/ADJUSTER UNIT REMOVAL/INSTALLATION).
- CX-5 FRONT SEAT ADJUSTER UNIT REMOVAL/INSTALLATION DRIVER-SIDE (WITHOUT POWER SEAT SYSTEM)).

3. To prepare the driver seat adjuster unit for disassembly, place the unit on a clean table or work bench.

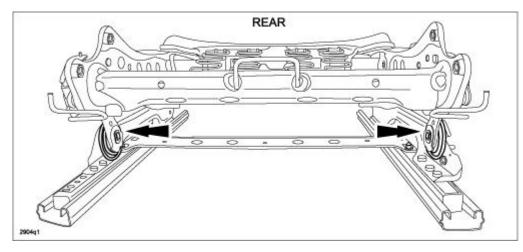
## DRIVER SEAT ADJUSTER UNIT DISASSEMBLY:

4. Lift the seat lift unit to the highest position using the lift lever (A).

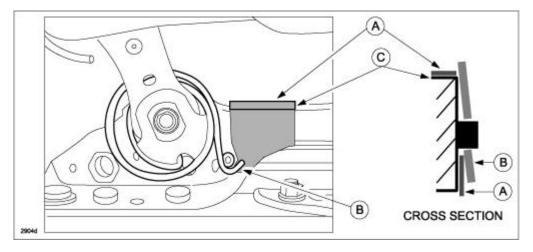
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5. Starting with the **REAR** of the seat adjuster unit (as shown below), attach a piece of masking tape onto the inner sides of the left and right sliders to avoid scratch damage during the repair.



NOTE: Attach the masking tape (A) under the balance spring hook (B) and over the top of the slider (C).

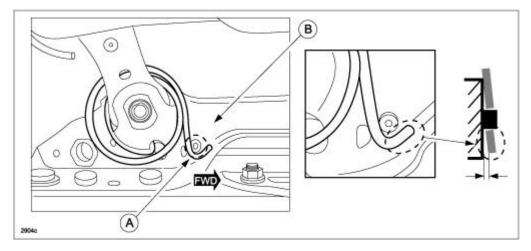


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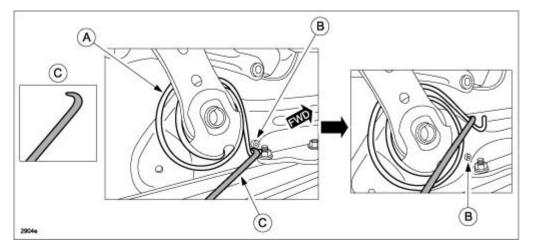
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6. Using a flat-blade screwdriver with masking tape on the tip, gently pry the balance spring hook (A) away from the slider surface (B).

WARNING: Be careful not to pinch your fingers.

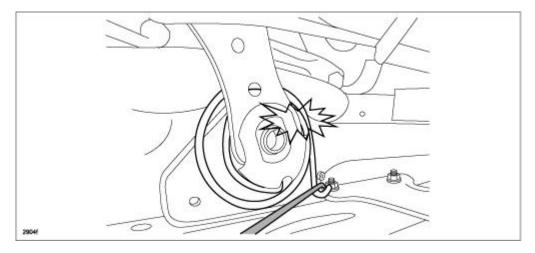


7. Release the rear balance spring (A) hook from the pin (B) using a tool with a hooked end (C) (as shown below) or with needle-nose pliers.

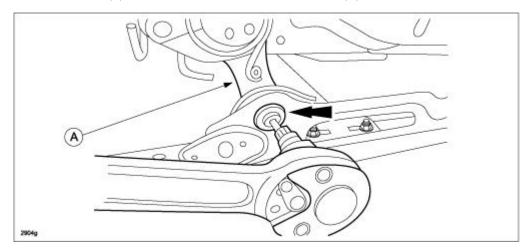


**WARNING:** The balance spring may jump out suddenly during removal, so keep your hands and face away from the balance spring to avoid injury.

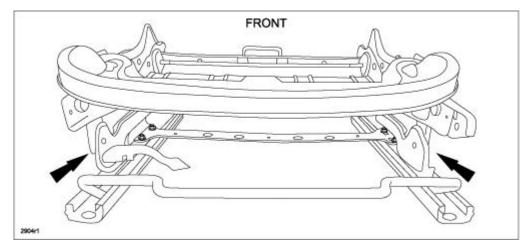
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8. Repeat Steps 3 - 4 on the opposite side rear balance spring.9. Remove four (4) Torx T30 bolts that secure each link (A).



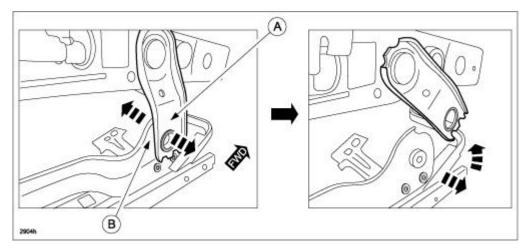
10. Move to the **FRONT** of the seat adjuster unit.



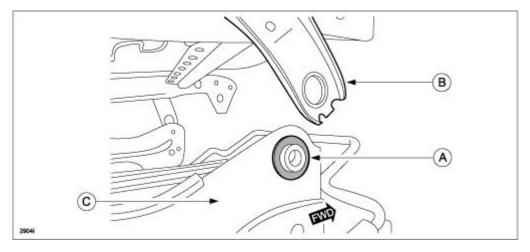
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11. Detach the inner link (A) from the slider (B) by gently bending the slider outward and the link inward.

CAUTION: DO NOT bend the slider too much as it may become deformed and cause improper operation.



**NOTE:** Depending on specific production date of the vehicle, some CX-5 models may have plastic washers (A) installed between the front link (B) and the slider (C). **ALWAYS BE SURE TO RE-USE THE PLASTIC WASHERS** when installing the new seat adjuster lift unit.

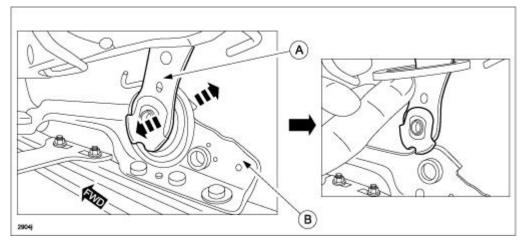


- 12. Repeat Step 8 to detach the opposite side inner link from the slider.
- 13. Move back to the **REAR** of the seat adjuster unit.

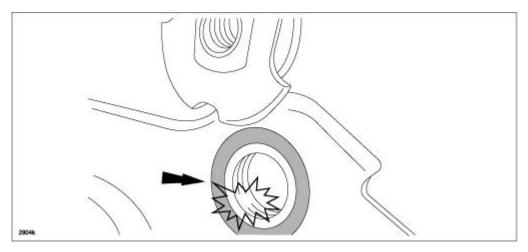
14. Detach the inner link (A) from the slider (B) by gently bending the slider outward and the link inward.

CAUTION: DO NOT bend the slider too much as it may become deformed and cause improper operation.

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CAUTION: DO NOT damage the bushing during link removal.



15. Repeat Step 11 to detach the opposite side inner link from the slider.

16. Proceed to "DRIVER SEAT ADJUSTER UNIT ASSEMBLY".

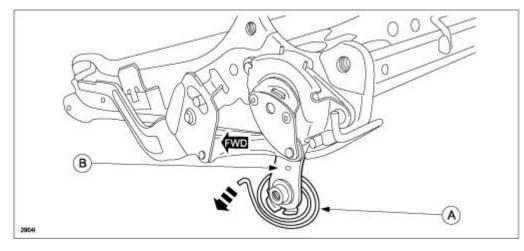
## DRIVER SEAT ADJUSTER UNIT ASSEMBLY:

1. Working from the **REAR** of the seat adjuster unit, place the new rear balance springs (A) around the left and right seat adjuster unit links (B).

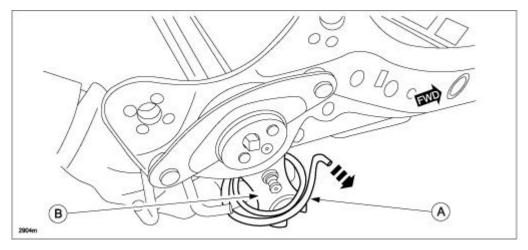
# **NOTE: IT IS VERY IMPORTANT TO CORRECTLY POSITION THE NEW REAR BALANCE SPRINGS** around the rear seat adjuster unit links before assembly.

NOTE: The end of each balance spring must be facing outward (as shown below). LEFT REAR:

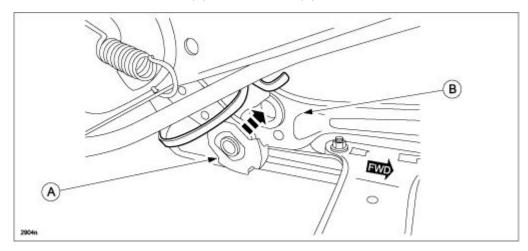
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**RIGHT REAR:** 

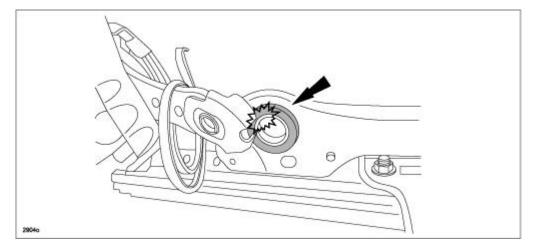


2. Rear-Outer: Install the link (A) onto the slider (B).

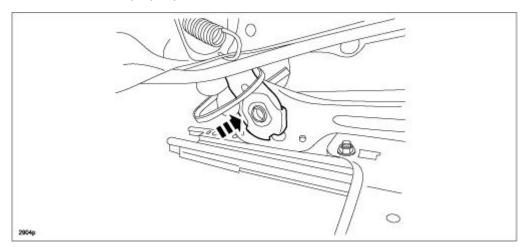


### CAUTION: DO NOT damage the bushing during link installation.

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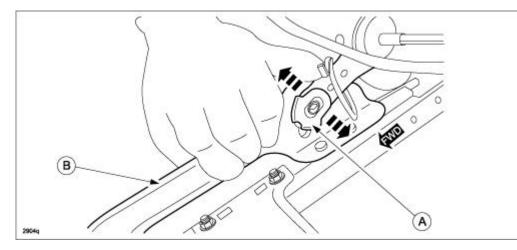


3. Push the link into proper position.



4. Rear-Inner: Install the link (A) onto the slider (B) while bending the slider outward and the link inward.

CAUTION: DO NOT bend the slider too much as it may become deformed and cause improper operation.

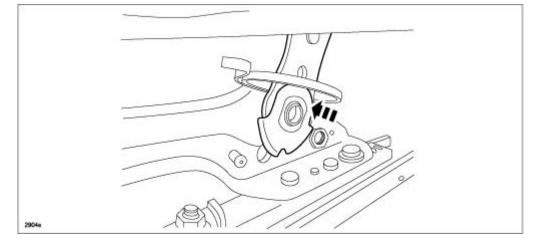


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NOTE: Verify that the rear balance spring (A) has been properly positioned around the link (B).

**CAUTION: DO NOT** damage the bushing during link installation.

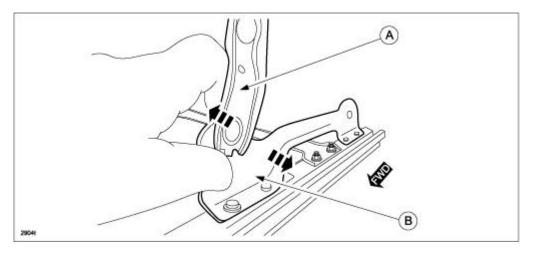
5. Push the link into proper position.



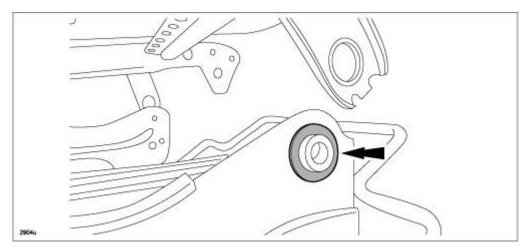
6. Front-Outer: Install the link (A) to the slider (B) while bending the slider inward and the link outward.

CAUTION: DO NOT bend the slider too much as it may become deformed and cause improper operation.

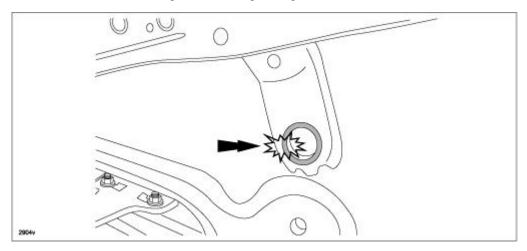
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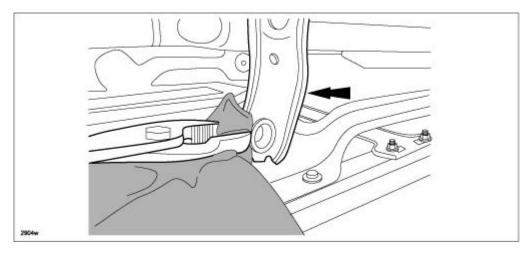


CAUTION: DO NOT damage the bushing during link installation.

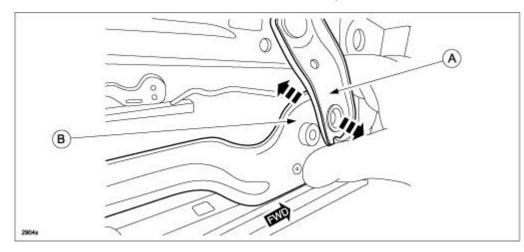


7. Install the link to the proper position using pliers and a shop rag.

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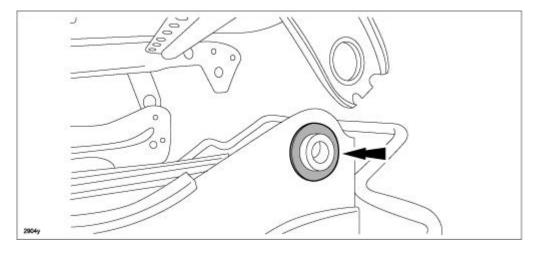


8. Front-Inner: Install the link (A) to the slider (B) while bending the slider inward and the link outward.

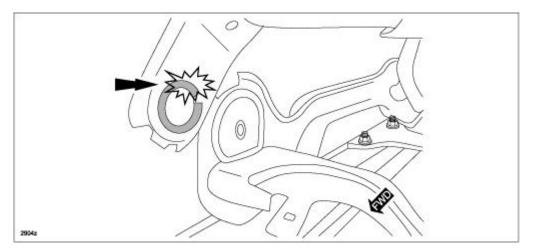


CAUTION: DO NOT bend the slider too much as it may become deformed and cause improper operation.

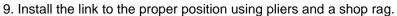
**NOTE:** Be sure to re-install the plastic washer if originally installed.

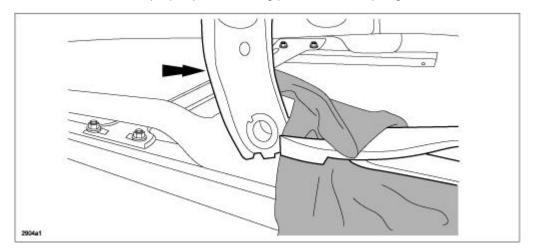


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**CAUTION: DO NOT** damage the bushing during link installation.



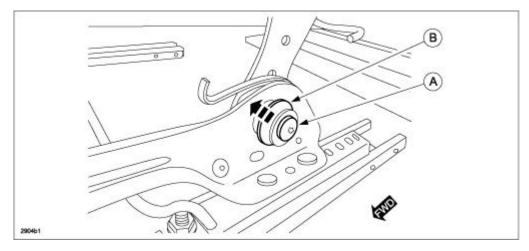


10. Tighten four (4) Torx T30 bolts to the specified torque.

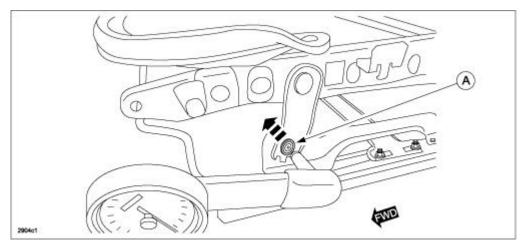
## Tightening Torque: (15.7 - 22.6 Nm)

**REAR:** Tighten bolt (A) with washer (B).

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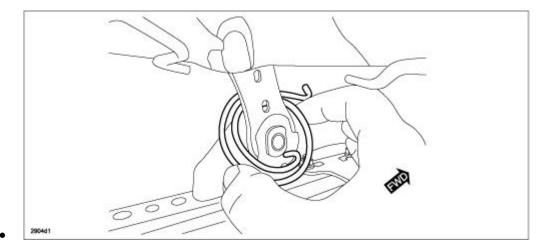
FRONT: Tighten bolt (A) without washer.



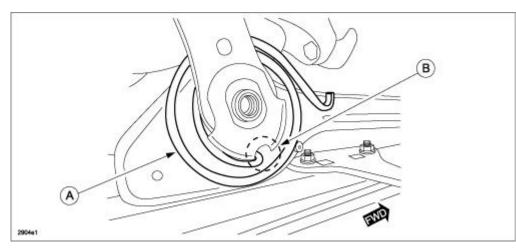
### NOTE:

- DO NOT pinch the spring between the link and slider while tightening the bolts.
- Verify that the spring moves freely after all the bolts have been tightened.

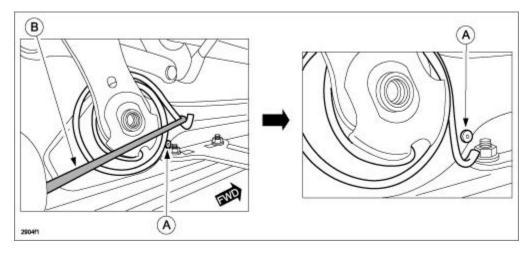
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11. **OUTER-SIDE:** Install the balance spring (A) by hooking the end of the spring into the opening (B).



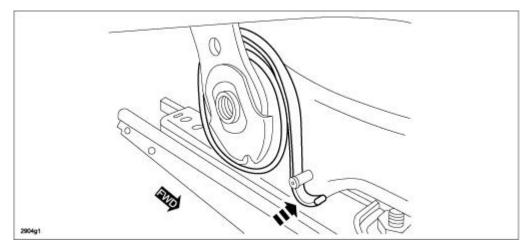
12. Hook the other end of the balance spring around the pin (A) using the hook tool (B) or with needle-nose pliers.



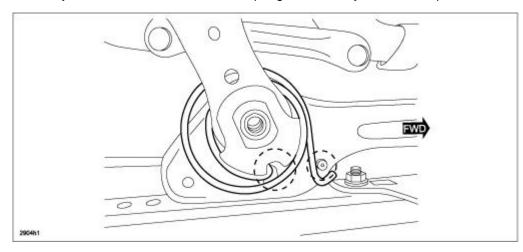
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13. Remove the masking tape from the slider.

14. Push the end of the balance spring inward until it contacts the slider.

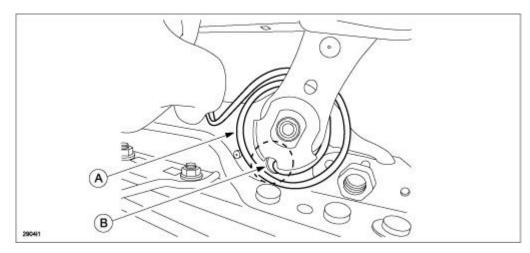


15. Verify that both ends of the balance spring are securely hooked into position.

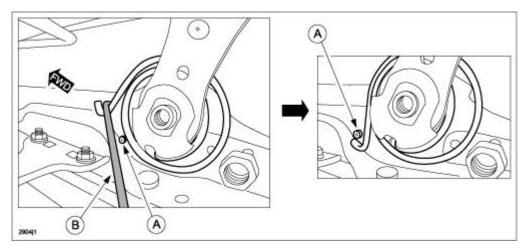


16. **INNER-SIDE:** Install the balance spring (A) by hooking the end of the spring into the opening (B).

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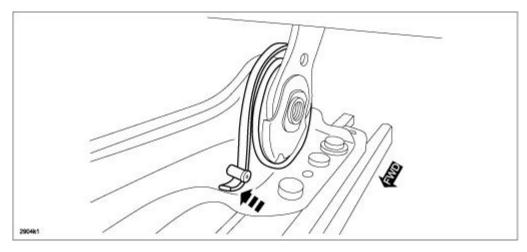


17. Hook the other end of the balance spring around the pin (A) using the hook tool (B) or with needle-nose pliers.

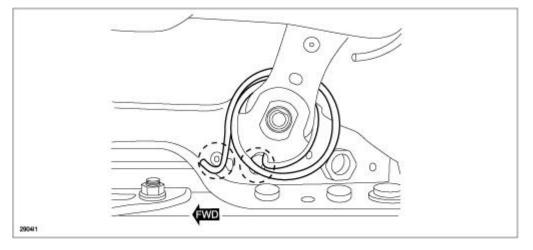


18. Remove the masking tape from the slider.

19. Push the end of the balance spring inward until it contacts the slider.

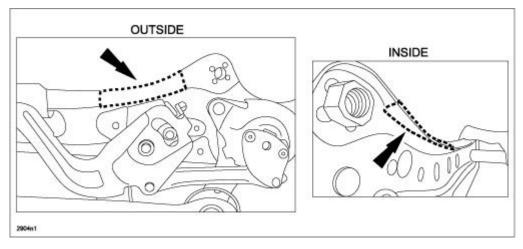


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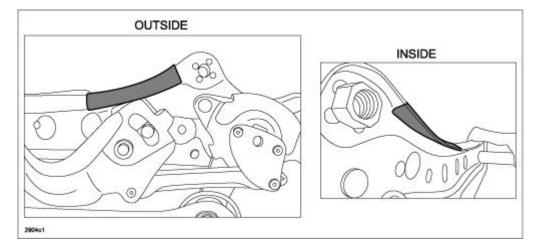


20. Verify that both ends of the balance spring are securely hooked into position.

21. Degrease the upper seat frame area with a clean shop rag.



22. After degreasing the upper seat frame area, attach the piece of black tape (from kit) as shown below.



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**NOTE:** When looking from the space between the seat cushion and the cover, the silver color of the seat lift frame is visible. By attaching the black tape to the upper frame, the silver color is covered up.

23. Install the front seat adjuster unit according to the instructions on MS3 online or the Workshop Manual (section 09-13:

- Mazda6 FRONT SEAT CUSHION FRAME/ADJUSTER UNIT REMOVAL/INSTALLATION).
- CX-5 FRONT SEAT ADJUSTER UNIT REMOVAL/INSTALLATION DRIVER-SIDE (WITHOUT POWER SEAT SYSTEM)).

24. Replace the front seat side cover clip, recliner knob (with lever type recliner knob) and the lifter knob with new parts.

25. Verify the repair.

MAZDA6			
Part Number	Description	Qty.	Notes
GHY3-88-H50	Driver Seat Adjuster Unit (LH)	1	Replaces part GHK2-88-H50*
KF61-88-1H5 -	Recliner knob (with lever type recliner	1	Poplacomont Darts
02	knob) (LH)		Replacement Parts
GHK2-88-28X -	Lifter knob (LH)	1	
02			
KD45-88-585	Front seat side cover clip	2	
CX-5			
Part Number	Description	Qty.	Notes
KFY1-88-H50	Driver Seat Adjuster Unit (LH)	1	Replaces part KF49-88-H50*
KEY5-88-H50	Driver Seat Adjuster Unit (LH)	1	Replaces part KD33-88-H50* and KD45-
			88-H50*
KF61-88-1H5 -	Recliner knob (with lever type recliner	1	Poplacomont Darts
02	knob) (LH)		Replacement Parts
KD45-88-857 -	Lifter knob (LH)	1	
02			
	Front seat side cover clip	2	

## PARTS INFORMATION

\* The driver seat adjuster unit parts listed in the table above are specific to the customer complaint (Driver Seat Gradually Moves Down By Itself) outlined in this service bulletin. When replacing the seat for any other reason, use the EPC to determine the correct seat part number(s).

# WARRANTY INFORMATION

## NOTE:

• This repair only applies to non-power seat system vehicles.

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- This warranty information applies only to verified customer complaints on vehicles eligible for warranty repair.
- This repair will be covered under Mazda's New Vehicle Limited Warranty term.
- Additional diagnostic time cannot be claimed for this repair.

Warranty Type	A
Symptom Code	89
Damage Code	97
Part Number Main Cause	(SEE PART(S) INFORMATION)
Quantity	1
Operation Number / Labor Hours	XXKBWXRX / 0.9 Hrs.
	•

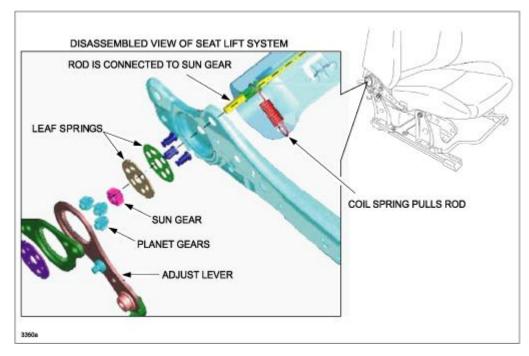
NOTE:

- This service bulletin does not apply to vehicles equipped with power seats.
- Enter "Replacement Part" numbers in Related Part Number column.

## **Explanation Material for Technicians:**

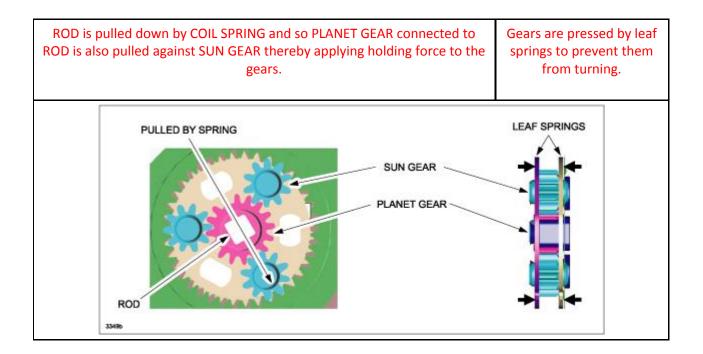
### Seat Lift Mechanism:

The seat lift mechanism consists of several gears and other parts as shown in the following disassembling view of seat lift system. When the adjust lever is operated, the gears rotate and the arm moves, changing the seat height.



# Under normal conditions, the sun and planet gears are held by the coil spring and the leaf springs (as shown below) so the gears do not rotate and change the seat height.

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## **Explanation Material for Customers:**

## Why does the seat move down by itself?

If an external force is applied to the gears through shock and/or vibration during sudden acceleration, deceleration, hard cornering, driving on rough road etc., the gears may skid and cause the seat to move down. If this symptom is repeated, the accumulated amount of seat movement becomes noticeable to the driver.

### Measures to prevent the seat moving down:

To prevent the gears from skidding, it is necessary to increase the holding force of the gears by increasing the spring force. However, if the holding force is too high, the operational force needed for the adjust lever increases as well.

### About the modified seat lift unit:

The holding force of the modified seat lift unit gears is set as high as possible, without negatively affecting the adjust lever operation.

By installing the modified seat lift unit, the occurance of the seat moving down is greatly reduced compared to the original seat lift unit. However, even with the modified seat lift unit, it may be difficult to completely prevent the symptom when the vehicle is driven under conditions that promote shock and/or vibration to the seat.

Adjust the seat height manually, even if the problem has occurred with the modified seat lift unit. For the best driving position, it is recommended to confirm the seat position and adjust it as necessary every time before driving.

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