

# HVAC Servo Motor Malfunction

**Service Category** Vehicle Interior

**Section** Heating/Air Conditioning

**Market** USA

Toyota Supports  
ASE Certification 

## Applicability

| YEAR(S)     | MODEL(S)      | ADDITIONAL INFORMATION |
|-------------|---------------|------------------------|
| 2018 - 2019 | LS500, LS500H |                        |

## Introduction

Some 2018 – 2019 model year LS 500 and LS 500h vehicles may exhibit one or more of the following HVAC conditions:

- Uneven temperature or air flow between the vents.
- Little or no air flow from the vent(s).
- Improper MODE control function.

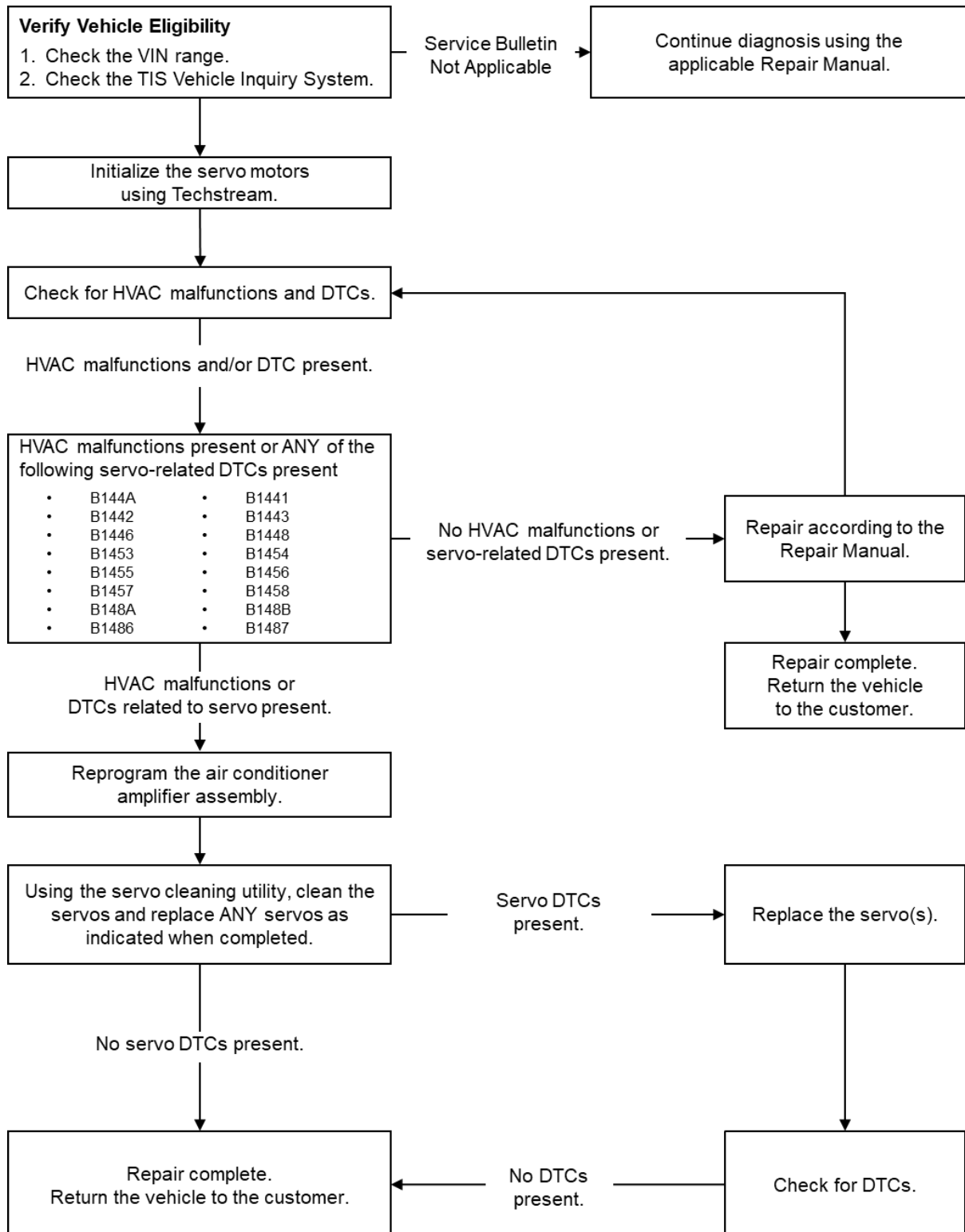
Additionally, some vehicles may store one or more of the following HVAC servo Diagnostic Trouble Codes (DTCs):

- B144A – Air Outlet DEF Damper Control Servo Motor Circuit
- B1441 – Air Mix Damper Control Servo Motor Circuit (Passenger Side)
- B1442 – Air Inlet Damper Control Servo Motor Circuit
- B1443 – Air Outlet Damper Control Servo Motor Circuit
- B1446 – Air Mix Damper Control Servo Motor Circuit (Driver Side)
- B1448 – Passenger Side FACE Servo Motor Circuit
- B1453 – Air Outlet Damper Cool Control Servo Motor Circuit (Driver Side)
- B1454 – Outlet Damper Cool Control Servo Motor Circuit (Passenger Side)
- B1455 – Air Outlet Damper FOOT/DEF Control Servo Motor Circuit (Driver Side)
- B1456 – Air Outlet Damper FOOT/DEF Control Servo Motor Circuit (Passenger Side)
- B1457 – Driver Side Air Outlet Damper Control Servo Motor Circuit
- B1458 – Air Outlet Damper Control Servo Motor Circuit  
(Passenger Side Front A/C Rear Air Flow)
- B148A – Air Outlet Rear FOOT Damper Control Servo Motor Circuit (Driver Side)
- B148B – Air Outlet Rear FOOT Damper Control Servo Motor Circuit (Passenger Side)
- B1486 – Driver Side Air Outlet Damper Control Servo Motor Circuit
- B1487 – Air Outlet Damper Control Servo Motor Circuit  
(Passenger Side Front A/C Air Flow)

Follow the procedures in this bulletin to address these conditions.

# HVAC Servo Motor Malfunction

## Operation Flowchart



## HVAC Servo Motor Malfunction

### Production Change Information

This bulletin applies to vehicles produced **BEFORE** the Production Change Effective VINs shown below.

| MODEL  | PLANT  | DRIVETRAIN | PRODUCTION CHANGE EFFECTIVE VIN |
|--------|--------|------------|---------------------------------|
| LS500  | Tahara | 2WD        | JTHB51FF#K5010414               |
|        |        |            | JTHB5LFF#K5010414               |
|        |        | AWD        | JTHC51FF#K5007452               |
|        |        |            | JTHC5LFF#K5007452               |
| LS500H |        | 2WD        | JTHBY1FF#L5008212               |
|        |        |            | JTHBYLFF#L5008212               |
|        |        | AWD        | JTHCY1FF#L5001691               |
|        |        |            | JTHCYLFF#L5001691               |

### Warranty Information

**Table 1. Inspection and Reprogramming**

| OP CODE | MODEL   | DESCRIPTION                       | TIME | OFP         | T1 | T2 |
|---------|---------|-----------------------------------|------|-------------|----|----|
| AC2031  | LS 500  | Reprogram and Redistribute Grease | 0.7  | 88650-***** | 72 | 41 |
|         | LS 500h |                                   | 0.7  |             |    |    |

\*Warranty claim MUST be submitted with the correct 10-digit OFP. Choose the correct OFP for the vehicle being repaired by searching Air Conditioning, Amplifier (88650) and Servo Sub-assy, Damper (87106) in the Electronic Parts Catalog using the VIN filter.

## HVAC Servo Motor Malfunction

### Warranty Information (continued)

**Table 2. Reprogram, Redistribution of Grease, and Servo Replacement From the Air Conditioning Unit Removed From the Vehicle**

| OP CODE | MODEL   | DESCRIPTION                                                                                      | TIME | OFP          | T1 | T2 |
|---------|---------|--------------------------------------------------------------------------------------------------|------|--------------|----|----|
| AC2032  | LS 500  | Reprogram and Redistribute Grease, Air Conditioner Box Removal, and R & R One Servo / Module     | 7.4  | 87106-#####* | 72 | 41 |
|         | LS 500h |                                                                                                  | 8.0  |              |    |    |
| AC2033  | LS 500  | Reprogram and Redistribute Grease, Air Conditioner Box Removal, and R & R Two Servos / Modules   | 7.5  |              |    |    |
|         | LS 500h |                                                                                                  | 8.1  |              |    |    |
| AC2034  | LS 500  | Reprogram and Redistribute Grease, Air Conditioner Box Removal, and R & R Three Servos / Modules | 7.6  |              |    |    |
|         | LS 500h |                                                                                                  | 8.2  |              |    |    |
| AC2035  | LS 500  | Reprogram and Redistribute Grease, Air Conditioner Box Removal, and R & R Four Servos / Modules  | 7.7  |              |    |    |
|         | LS 500h |                                                                                                  | 8.3  |              |    |    |
| AC2036  | LS 500  | Reprogram and Redistribute Grease, Air Conditioner Box Removal, and R & R Five Servos / Modules  | 7.8  |              |    |    |
|         | LS 500h |                                                                                                  | 8.4  |              |    |    |
| AC2037  | LS 500  | Reprogram and Redistribute Grease, Air Conditioner Box Removal, and R & R Six Servos / Modules   | 7.9  |              |    |    |
|         | LS 500h |                                                                                                  | 8.5  |              |    |    |
| AC2038  | LS 500  | Reprogram and Redistribute Grease Air Conditioner Box Removal, and R & R Seven Servos / Modules  | 8.0  |              |    |    |
|         | LS 500h |                                                                                                  | 8.6  |              |    |    |
| AC2039  | LS 500  | Reprogram and Redistribute Grease, Air Conditioner Box Removal, and R & R Eight Servos / Modules | 8.1  |              |    |    |
|         | LS 500h |                                                                                                  | 8.7  |              |    |    |

\*Warranty claim MUST be submitted with the correct 10-digit OFP. Choose the correct OFP for the vehicle being repaired by searching Air Conditioning, Amplifier (88650) and Servo Sub-assy, Damper (87106) in the Electronic Parts Catalog using the VIN filter.

#### APPLICABLE WARRANTY

- This repair is covered under the Lexus Basic Warranty. This warranty is in effect for 48 months or 50,000 miles, whichever occurs first, from the vehicle's in-service date.
- Warranty application is limited to occurrence of the specified condition described in this bulletin.

## HVAC Servo Motor Malfunction

### Parts Information

| SERVO NAME / DTC                                                                               | PART NO.    | PART NAME                                               | QTY   | NOTES                                   |
|------------------------------------------------------------------------------------------------|-------------|---------------------------------------------------------|-------|-----------------------------------------|
| Air Outlet DEF Damper Control Servo Motor Circuit / B144A                                      | 87106-11090 | Damper Servo Sub-assy, Air Conditioning Radiator, No. 3 | 0 – 1 | Two / Four Zone Type                    |
| Air Mix Damper Control Servo Motor Circuit (Passenger Side) / B1441                            | 87106-50700 | Damper Servo Sub-assy, Air Conditioning Radiator, No. 4 | 0 – 1 | Two Zone Type (Two Servo Module)        |
| Air Outlet Damper Cool Control Servo Motor Circuit (Passenger Side) / B1454                    |             |                                                         |       |                                         |
| Air Mix Damper Control Servo Motor Circuit (Passenger Side) / B1441                            | 87106-50720 | Damper Servo Sub-assy, Air Conditioning Radiator, No. 4 | 0 – 1 | Four Zone Type (Three Servo Module)     |
| Air Outlet Damper Cool Control Servo Motor Circuit (Passenger Side) / B1454                    |             |                                                         |       |                                         |
| Air Outlet Damper Control Servo Motor Circuit (Passenger Side Front A/C Rear Air Flow) / B1458 |             |                                                         |       |                                         |
| Air Inlet Damper Control Servo Motor Circuit / B1442                                           | 87106-50760 | Damper Servo Sub-assy, Blower, No. 1                    | 0 – 1 | Two / Four Zone Type                    |
| Air Outlet Damper Control Servo Motor Circuit / B1443                                          | 87106-11060 | Damper Servo Sub-assy, Air Conditioning Radiator, No. 1 | 0 – 1 | Two & Four Zone Type (Two Servo Module) |
| Air Outlet Damper FOOT/DEF Control Servo Motor Circuit (Driver Side) / B1455                   |             |                                                         |       |                                         |
| Air Mix Damper Control Servo Motor Circuit (Driver Side) / 1446                                | 87106-11010 | Damper Servo Sub-assy, Air Conditioning Radiator, No. 2 | 0 – 1 | Two Zone Type (Two Servo Module)        |
| Air Outlet Damper Cool Control Servo Motor Circuit (Driver Side) / B1453                       |             |                                                         |       |                                         |
| Air Mix Damper Control Servo Motor Circuit (Driver Side) / 1446                                | 87106-50710 | Damper Servo Sub-assy, Air Conditioning Radiator, No. 2 | 0 – 1 | Four Zone Type (Three Servo Module)     |
| Air Outlet Damper Cool Control Servo Motor Circuit (Driver Side) / B1453                       |             |                                                         |       |                                         |

## HVAC Servo Motor Malfunction

### Parts Information (continued)

| SERVO NAME / DTC                                                                               | PART NO.    | PART NAME                                               | QTY   | NOTES                               |
|------------------------------------------------------------------------------------------------|-------------|---------------------------------------------------------|-------|-------------------------------------|
| Driver Side Air Outlet Damper Control Servo Motor Circuit / B1457                              | 87106-50710 | Damper Servo Sub-assy, Air Conditioning Radiator, No. 2 | 0 – 1 | Four Zone Type (Three Servo Module) |
| Passenger Side FACE Servo Motor Circuit / B1448                                                | 87106-50730 | Damper Servo Sub-assy, Air Conditioning Radiator, No. 6 | 0 – 1 | Four Zone Type (Two Servo Module)   |
| Air Outlet Damper FOOT/DEF Control Servo Motor Circuit (Passenger Side) / B1456                |             |                                                         |       |                                     |
| Air Outlet Rear FOOT Damper Control Servo Motor Circuit (Driver Side) / B148A                  | 87106-50610 | Damper Servo Sub-assy, Air Conditioning Radiator, No. 5 | 0 – 1 | Two Zone Type (One Servo)           |
| Air Outlet Rear FOOT Damper Control Servo Motor Circuit (Driver Side) / B148A                  | 87106-50670 | Damper Servo Sub-assy, Air Conditioning Radiator, No. 5 | 0 – 1 | Four Zone Type (Two Servo Module)   |
| Air Outlet Rear FOOT Damper Control Servo Motor Circuit (Passenger Side) / B148B               |             |                                                         |       |                                     |
| Driver Side Air Outlet Damper Control Servo Motor Circuit / B1486                              | 87020-50040 | Damper Assy, Heater Air                                 | 0 – 1 | Four Zone Type (Two Servo Module)   |
| Air Outlet Damper Control Servo Motor Circuit (Passenger Side Front A/C Rear Air Flow) / B1487 |             |                                                         |       |                                     |

## HVAC Servo Motor Malfunction

### Required Tools & Equipment

| SPECIAL SERVICE TOOLS (SST)       | PART NUMBER                    | QTY |
|-----------------------------------|--------------------------------|-----|
| Plastic Pry Tool Kit*             | <a href="#">00002-06020-02</a> | 1   |
| DCA-8000 Battery Diagnostic Tool* | <a href="#">DCA-8000P T</a>    | 1   |

\*Essential SST.

#### NOTE

Additional SSTs may be ordered by calling 1-800-933-8335.

| REQUIRED TOOLS & MATERIAL     | Supplier | PART NUMBER  | QTY |
|-------------------------------|----------|--------------|-----|
| Techstream ADVi*              | ADE      | TSADVUNIT    | 1   |
| Techstream 2.0                |          | TS2UNIT      |     |
| Techstream Lite               |          | TSLITEPDLR01 |     |
| Techstream Lite (Green Cable) |          | TSLP2DLR01   |     |
| Robinair R1234YF A/C Machine  |          | ROB118150008 | 1   |

\*Essential SST.

#### NOTE

- Only ONE of the Techstream units listed above is required.
- Software version 17.00.011 or later is required.
- Additional Techstream units may be ordered by calling Approved Dealer Equipment (ADE) at 1-800-368-6787.

### Calibration Information

| MODEL           | MODEL YEAR | CALIBRATION ID |                              |
|-----------------|------------|----------------|------------------------------|
|                 |            | PREVIOUS       | NEW                          |
| LS 500, LS 500h | 2018       | 8865F5001001   | <a href="#">8865F5005001</a> |
|                 |            | 8865F5002004   |                              |
|                 | 2019       | 8865F5002102   | <a href="#">8865F5006001</a> |

## HVAC Servo Motor Malfunction

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### Confirmation Procedure

1. Confirm the condition exists.

Does the vehicle exhibit one or more of the following conditions?

- Uneven temperature or air flow between the vents.
- Little or no air flow from the vent(s).
- Improper MODE control function.
- **YES** — Continue to the Flash Reprogramming Procedure section.
- **NO** — Continue to step 2.

2. Using Techstream, check for the following stored DTCs:

- B144A – Air Outlet DEF Damper Control Servo Motor Circuit
- B1441 – Air Mix Damper Control Servo Motor Circuit (Passenger Side)
- B1442 – Air Inlet Damper Control Servo Motor Circuit
- B1443 – Air Outlet Damper Control Servo Motor Circuit
- B1446 – Air Mix Damper Control Servo Motor Circuit (Driver Side)
- B1448 – Passenger Side FACE Servo Motor Circuit
- B1453 – Air Outlet Damper Cool Control Servo Motor Circuit (Driver Side)
- B1454 – Air Outlet Damper Cool Control Servo Motor Circuit (Passenger Side)
- B1455 – Air Outlet Damper FOOT/DEF Control Servo Motor Circuit (Driver Side)
- B1456 – Air Outlet Damper FOOT/DEF Control Servo Motor Circuit (Passenger Side)
- B1457 – Driver Side Air Outlet Damper Control Servo Motor Circuit
- B1458 – Air Outlet Damper Control Servo Motor Circuit  
(Passenger Side Front A/C Rear Air Flow)
- B148A – Air Outlet Rear FOOT Damper Control Servo Motor Circuit (Driver Side)
- B148B – Air Outlet Rear FOOT Damper Control Servo Motor Circuit (Passenger Side)
- B1486 – Driver Side Air Outlet Damper Control Servo Motor Circuit
- B1487 – Air Outlet Damper Control Servo Motor Circuit  
(Passenger Side Front A/C Rear Air Flow)

Are ANY of the DTCs listed above present?

- **YES** — Continue to the Flash Reprogramming Procedure section.
- **NO** — This bulletin does NOT apply. Continue diagnosis using the applicable Repair Manual.

## HVAC Servo Motor Malfunction

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### Flash Reprogramming Procedure

1. Flash Reprogram the air conditioning amplifier assembly.

**NOTE**

The air conditioning amplifier flash reprogram is only performed one time if the air conditioning amplifier has NOT been flash reprogrammed previously.

Follow the procedure outlined in [L-SB-0001-18](#), *Techstream ECU Flash Reprogramming Procedure*, and flash the air conditioning amplifier with the NEW calibration file update.

**NOTICE**

- Damage to the air conditioning amplifier may occur if the correct battery charge mode setting is NOT used.
- Power Supply Mode is used to maintain battery voltage at 13.5V while flash reprogramming.
- For details on how to use the battery diagnostic tool, refer to the [DCA-8000 Battery Diagnostic Tool Instruction Manual](#) located in *TIS – Diagnostics – Tools & Equipment – Battery Diagnostics*.

## HVAC Servo Motor Malfunction

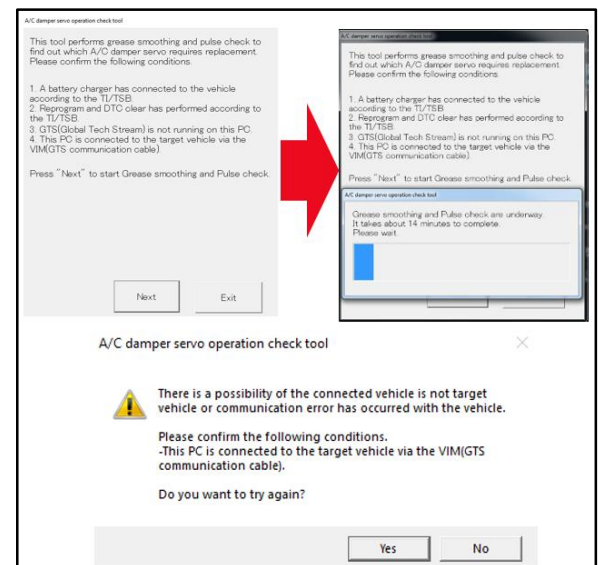
### Servo Cleaning Procedure

1. Continue with the battery diagnostic tool connected using the “Power Supply Mode” ONLY.
2. Confirm flash reprogramming of the air conditioning amplifier is complete.
3. BEFORE using the AC damper servo operation check tool, manually set the front and rear air conditioning to the following settings:
  - MODE – Face
  - Temperature – Max Cold
  - Air Inlet – Recirculation
4. Select the following link to download the AC damper servo operation check tool onto the Techstream desktop: [AC damper servo operation check tool download](#).
5. Confirm the ignition is in the IG-ON position and the Techstream unit is connected to the DLC3 connector.
6. Confirm NO other programs on the Techstream unit are currently communicating with the vehicle.
7. Double-click on the AC damper servo operation check tool from the Techstream desktop.
8. Click on NEXT to start the AC damper servo operation check tool and the progress bar will show. It will take between 8 – 14 minutes to complete the cleaning process depending on the condition of the servos. The completion rate of the progress bar will show between 50% – 100%.

#### NOTE

If the connection between Techstream and the vehicle is interrupted during the cleaning process, the error message in Figure 1 will also display. To reconnect, turn OFF the Techstream unit and disconnect it from the DLC3 connector, reconnect Techstream and confirm connections, and turn ON the Techstream unit and restart the cleaning process.

Figure 1.



## HVAC Servo Motor Malfunction

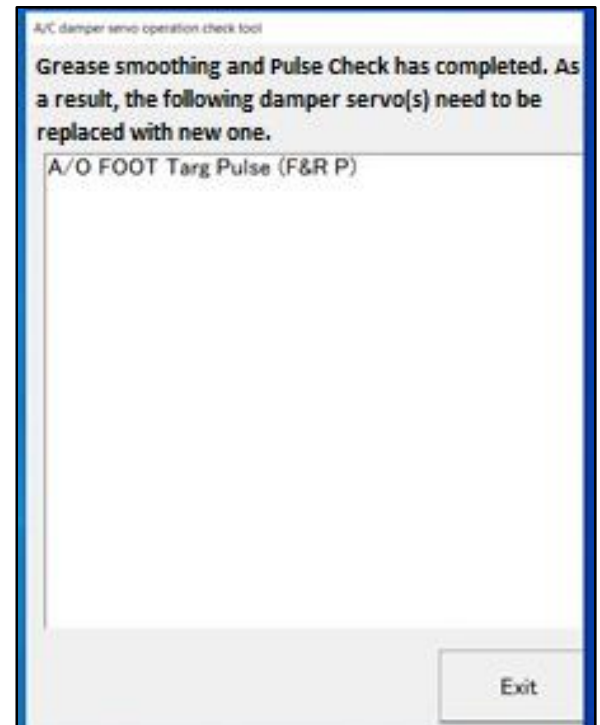
### Servo Cleaning Procedure (continued)

9. When the cleaning process is complete, the DTC check result screen shown below will be displayed. If ANY DTC description is output, the servo related to it will require replacement.

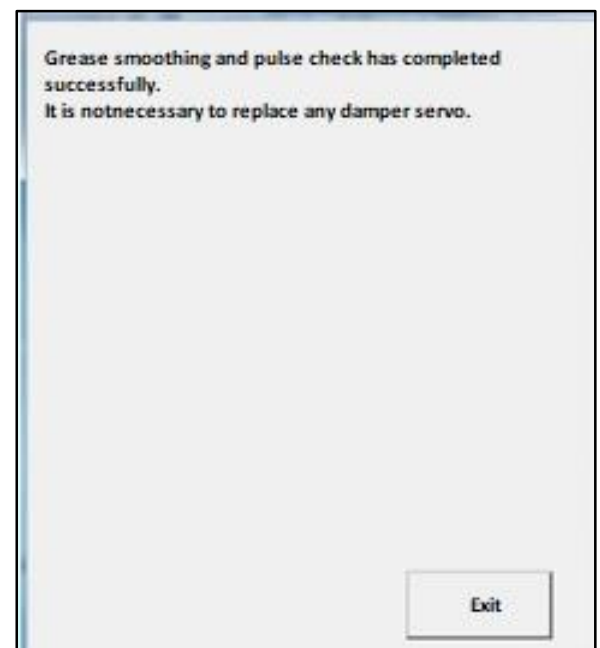
Are ANY DTC descriptions output?

- **YES** — Check the DTC description and the Servo Location Guide, and replace the appropriate servo according to the displayed DTC description (Figure 2).
- **NO** — Complete steps 10 – 11 to complete the repair and return the vehicle to the customer (Figure 3).

**Figure 2.**



**Figure 3.**



## HVAC Servo Motor Malfunction

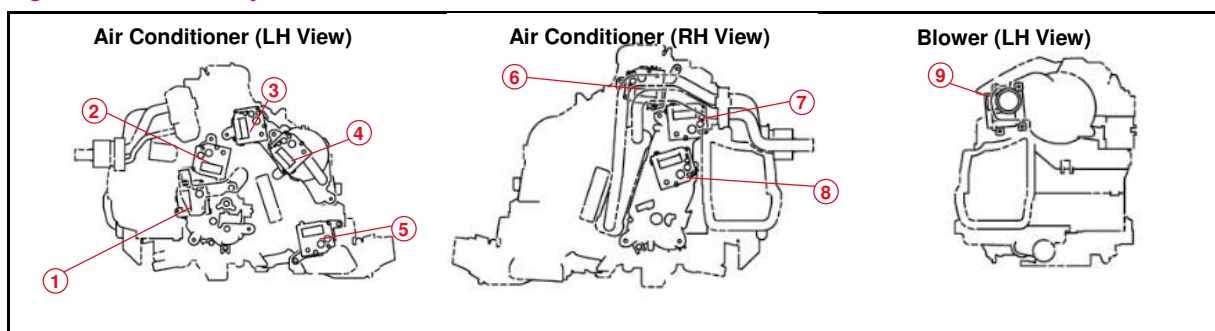
### Servo Cleaning Procedure (continued)

10. The Servo Cleaning Operation is complete. Turn OFF the ignition and click “EXIT.”
11. Turn OFF and disconnect the DCA-8000 battery diagnostic tool from the battery.

### Servo Location Guide (Two and Four Zone HVAC Systems)

If there were any DTC descriptions output after step 9 in the Servo Cleaning Procedure, replace the servos(s) per the replacement steps below for the appropriate servo requiring replacement.

**Figure 4. Two Zone System**

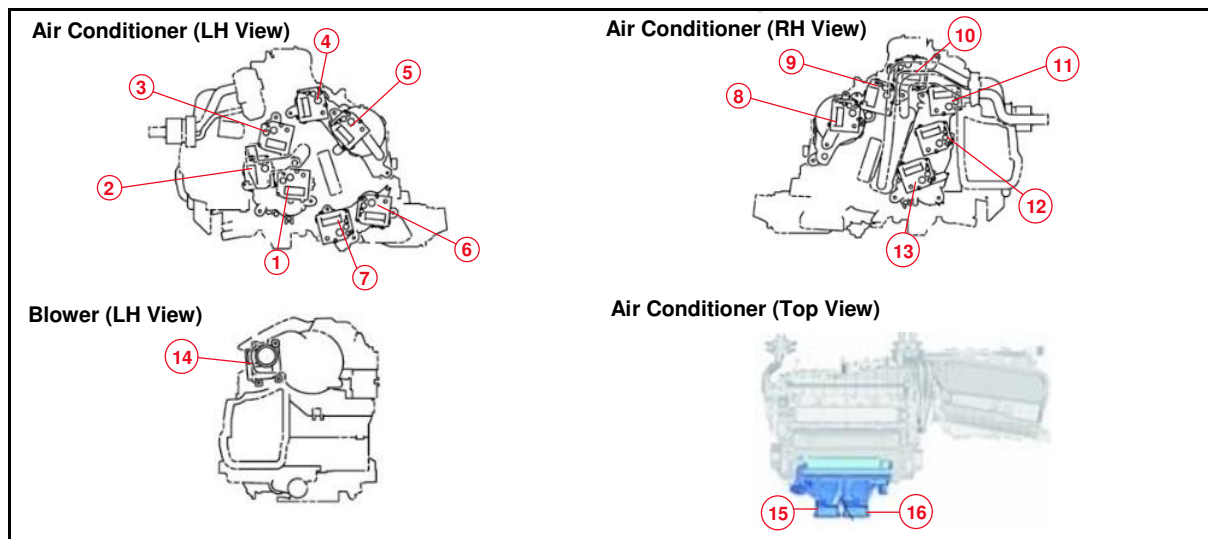


| SERVO LOCATION | AC DAMPER OPERATION CHECK TOOL DTC DESCRIPTION OUTPUT | RELATED DTC(S) | SERVO PART NO. | SERVO/MODULE CONFIGURATION |
|----------------|-------------------------------------------------------|----------------|----------------|----------------------------|
| 1              | Air Mix Servo Targ Pulse (D)                          | B1446 / B1453  | 87106-11010    | Two Servos / One Module    |
| 2              | Cool A/M Servo Targ Pls (D)                           |                |                |                            |
| 3              | A/O FACE Targ Pulse (D)                               | B1443 / B1455  | 87106-11060    |                            |
| 4              | A/O FOOT/DEF Targ Pulse (D)                           |                |                |                            |
| 5              | Air Outlet Servo Pls (F&R D)                          | B148A          | 87106-50610    | One Servo                  |
| 6              | A/O Damper DEF Pos (D side)                           | B144A          | 87106-11090    |                            |
| 7              | Cool A/M Servo Targ Pls (P)                           | B1441 / B1454  | 87106-50700    | Two Servos / One Module    |
| 8              | Air Mix Servo Targ Pulse (P)                          |                |                |                            |
| 9              | Air Inlet Damper Targ Pulse                           | B1442          | 87106-50760    | One Servo                  |

## HVAC Servo Motor Malfunction

### Servo Location Guide (Two and Four Zone HVAC Systems) (continued)

**Figure 5. Four Zone System**



| SERVO LOCATION | AC DAMPER OPERATION CHECK TOOL DTC DESCRIPTION OUTPUT | RELATED DTC(S)        | SERVO PART NO. | SERVO/MODULE CONFIGURATION          |
|----------------|-------------------------------------------------------|-----------------------|----------------|-------------------------------------|
| 1              | Air Mix Servo Targ Pulse (D)                          | B1446 / B1453 / B1457 | 87106-50710    | Three Servos / One Module           |
| 2              | Air Mix Servo Targ Pls (F & R D)                      |                       |                |                                     |
| 3              | Cool A/M Servo Targ Pls (D)                           |                       |                |                                     |
| 4              | A/O FACE Targ Pulse (D)                               | B1443 / B1455         | 87106-11060    | Two Servos / One Module             |
| 5              | A/O FOOT/DEF Targ Pulse (D)                           |                       |                |                                     |
| 6              | A/O FOOT Targ Pulse (F & R P)                         | B148A / B148B         | 87106-50670    |                                     |
| 7              | A/O FOOT Targ Pulse (F & R D)                         |                       |                |                                     |
| 8              | A/O FOOT/DEF Targ Pulse (P)                           | B1448 / B1456         | 87106-50730    |                                     |
| 9              | A/O FACE Targ Pulse (P)                               |                       |                |                                     |
| 10             | A/O Damper DEF Pos (D side)                           | B144A                 | 87106-11090    | One Servo                           |
| 11             | Cool A/M Servo Targ Pls (P)                           | B1441 / B1454 / B1458 | 87106-50720    | Three Servos / One Module           |
| 12             | Air Mix Servo Targ Pulse (P)                          |                       |                |                                     |
| 13             | Air Mix Servo Targ Pls (F & R P)                      |                       |                |                                     |
| 14             | Air Inlet Damper Targ Pulse                           | B1442                 | 87106-50760    | One Servo                           |
| 15             | Air Outlet Servo Pls (F & R D)                        | B1486 / B1487         | 87106-50040    | One Servo / Heater Air Damper Assy. |
| 16             | Air Outlet Servo Pulse (F & R P)                      |                       |                |                                     |

## HVAC Servo Motor Malfunction

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### Damper Servo Sub-assembly Replacement Procedure

1. Does the vehicle exhibit the following DTC?
  - B1442 – Air Inlet Damper Control Servo Motor Circuit
  - **YES** — Continue to step 2.
  - **NO** — Go to step 7.
  
2. Remove the blower unit from the vehicle.  
Refer to TIS, applicable model and model year Repair Manual:
  - [2018](#) / [2019](#) LS 500:  
*Vehicle Interior – Heating/Air Conditioning – “Heating / Air Conditioning: Blower Unit: Removal”*
  - [2018](#) / [2019](#) LS 500h:  
*Vehicle Interior – Heating/Air Conditioning – “Heating / Air Conditioning: Blower Unit: Removal”*
  
3. Replace the air inlet damper control servo motor circuit.  
Refer to TIS, applicable model and model year Repair Manual:
  - [2018](#) / [2019](#) LS 500:  
*Vehicle Interior – Heating/Air Conditioning – “Heating / Air Conditioning: Blower Unit: Disassembly”*
  - [2018](#) / [2019](#) LS 500h:  
*Vehicle Interior – Heating/Air Conditioning – “Heating / Air Conditioning: Blower Unit: Disassembly”*
  
4. Reassemble the blower unit.  
Refer to TIS, applicable model and model year Repair Manual:
  - [2018](#) / [2019](#) LS 500:  
*Vehicle Interior – Heating/Air Conditioning – “Heating / Air Conditioning: Blower Unit: Reassembly”*
  - [2018](#) / [2019](#) LS 500h:  
*Vehicle Interior – Heating/Air Conditioning – “Heating / Air Conditioning: Blower Unit: Reassembly”*

## HVAC Servo Motor Malfunction

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### Damper Servo Sub-assembly Replacement Procedure (continued)

5. Reinstall the blower unit onto the vehicle.  
Refer to TIS, applicable model and model year Repair Manual:
  - [2018](#) / [2019](#) LS 500:  
*Vehicle Interior – Heating/Air Conditioning – “Heating / Air Conditioning: Blower Unit: Installation”*
  - [2018](#) / [2019](#) LS 500h:  
*Vehicle Interior – Heating/Air Conditioning – “Heating / Air Conditioning: Blower: Installation”*
6. If ALL faulty servos have been replaced, go to the Completion Procedure section to initialize and check servo operation.
7. Does the vehicle exhibit one or more of the following DTC(s)?
  - B144A – Air Outlet DEF Damper Control Servo Motor Circuit
  - B1441 – Air Mix Damper Control Servo Motor Circuit (Passenger Side)
  - B1443 – Air Outlet Damper Control Servo Motor Circuit
  - B1446 – Mix Damper Control Servo Motor Circuit (Driver Side)
  - B1448 – Passenger Side FACE Servo Motor Circuit
  - B1453 – Air Outlet Damper Cool Control Servo Motor Circuit (Driver Side)
  - B1454 – Air Outlet Damper Cool Control Servo Motor Circuit (Passenger Side)
  - B1455 – Air Outlet Damper FOOT/DEF Control Servo Motor Circuit (Driver Side)
  - B1456 – Air Outlet Damper FOOT/DEF Control Servo Motor Circuit (Passenger Side)
  - B1457 – Driver Side Air Outlet Damper Control Servo Motor Circuit
  - B1458 – Air Outlet Damper Control Servo Motor Circuit (Passenger Side Front A/C Rear Air Flow)
  - B148A – Air Outlet Rear FOOT Damper Control Servo Motor Circuit (Driver Side)
  - B148B – Air Outlet Rear FOOT Damper Control Servo Motor Circuit (Passenger Side)
  - B1486 – Driver Side Air Outlet Damper Control Servo Motor Circuit
  - B1487 – Air Outlet Damper Control Servo Motor Circuit (Passenger Side Front A/C Rear Air Flow)
  - **YES** — Continue to step 8.
  - **NO** — Go to the Completion Procedure section.

## HVAC Servo Motor Malfunction

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### Damper Servo Sub-assembly Replacement Procedure (continued)

8. Remove the air conditioning radiator assembly.  
Refer to TIS, applicable model and model year Repair Manual:
  - [2018](#) / [2019](#) LS 500:  
*Vehicle Interior – Heating/Air Conditioning – “Heating / Air Conditioning: Front Air Conditioning Unit: Removal”*
  - [2018](#) / [2019](#) LS 500h:  
*Vehicle Interior – Heating/Air Conditioning – “Heating / Air Conditioning: Front Air Conditioning Unit: Removal”*
9. Replace the faulty servo(s).  
Refer to TIS, applicable model and model year Repair Manual:
  - [2018](#) / [2019](#) LS 500:  
*Interior – Heating/Air Conditioning – “Heating / Air Conditioning: Front Air Conditioning Unit: Disassembly”*
  - [2018](#) / [2019](#) LS 500h:  
*Interior – Heating/Air Conditioning – “Heating / Air Conditioning: Front Air Conditioning Unit: Disassembly”*
10. Reassemble the air conditioning radiator assembly.  
Refer to TIS, applicable model and model year Repair Manual:
  - [2018](#) / [2019](#) LS 500:  
*Vehicle Interior – Heating/Air Conditioning – “Heating / Air Conditioning: Front Air Conditioning Unit: Reassembly”*
  - [2018](#) / [2019](#) LS 500h:  
*Vehicle Interior – Heating/Air Conditioning – “Heating / Air Conditioning: Front Air Conditioning Unit: Reassembly”*
11. Reinstall the air conditioning radiator assembly.  
Refer to TIS, applicable model and model year Repair Manual:
  - [2018](#) / [2019](#) LS 500:  
*Vehicle Interior – Heating/Air Conditioning – “Heating / Air Conditioning: Front Air Conditioning Unit: Installation”*
  - [2018](#) / [2019](#) LS 500h:  
*Interior – Heating/Air Conditioning – “Heating / Air Conditioning: Front Air Conditioning Unit: Installation”*
12. If ALL faulty servos have been replaced, continue to the Completion Procedure section to initialize and check servo operation.

## HVAC Servo Motor Malfunction

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### Completion Procedure

1. Initialize the servo(s).

Refer to TIS, applicable model and model year Repair Manual:

- [2018](#) / [2019](#) LS 500:  
*Vehicle Interior – Heating/Air Conditioning* – “Heating / Air Conditioning: Air Conditioning System: Initialization”
- [2018](#) / [2019](#) LS 500h:  
*Vehicle Interior – Heating/Air Conditioning* – “Heating / Air Conditioning: Air Conditioning System: Initialization”

2. Check for DTCs.
3. If the servo(s) does(do) NOT function correctly, replace it(them).
4. Restore the vehicle back to its assembled condition.
5. Confirm the condition no longer exists.