NOVA BUS

# RECALL CAMPAIGN CR3601E

| | |
|---|---|
| **REFERENCE:** | Nova Bus Manuals |
| **SECTION:** | 03 : Wipers/washers, windshield |
| **RS Nº:** | MQR 7621-1027 |
| **EFFECTIVE IN PROD.:** | L944 (2016FE) |
| **TC RECALL Nº:** | 2016-104 |
| **NHTSA RECALL Nº:** | 16v-135 |

**APPLICATION DEADLINE:** N/A
**CLAIM REFERENCE NUMBER:** SR-3601E

| | |
|---|---|
| **SUBJECT:** | Doga windshield wiper system |
| **JUSTIFICATION:** | Windshield wiper idler arm pin might strip. |

| LEVEL | DESCRIPTION | DIRECT CHARGES | | TIME |
|---|---|---|---|---|
| | | LABOUR | MATERIAL | |
| 1 | Replace the linkage assembly. | Nova Bus | Nova Bus | 3h |
| 2 | – | – | – | – |

## MATERIAL

| QTY | PART Nº | REV. | DESCRIPTION | REPLACES PART N° |
|---|---|---|---|---|
| **LEVEL 1** | | | | |
| 1 | N8904047 | NR | Welded wiper linkage kit | N45530 |
| | | | | |
| **LEVEL 2** | | | | |
| – | – | – | – | – |

Materials will be available within 112 days. To order, please contact Prevost Parts by phone at 1-800-771-6682, by fax at 1-888-668-2555 or by email at prevostparts.commandes@volvo.com. Specify document number, quantity of parts required and shipping address.

## DISPOSAL OF PARTS

| REMOVED PARTS ARE: | DISCARDED * | RETAINED | * Dispose of the unused parts and the defective parts in accordance with local environmental standards in effect. |
|---|---|---|---|
| | Yes | – | |

## REVISION HISTORY

| REV. | DATE | CHANGE DESCRIPTION | WRITTEN BY |
|---|---|---|---|
| NR | 2016AV18 | Initial release | André Pelletier |

**APPROVED BY:** Daniel Theriault

Digitally signed by Daniel Theriault
DN: cn=Daniel Theriault, o=Nova Bus, ou, email=daniel.theriault@volvo.com, c=CA
Date: 2016.04.18 15:56:29 -04'00'

| CLIENT | ORDER | ROAD NUMBER | | VIN (2NVY/4RKY...) | | QTY |
|---|---|---|---|---|---|---|
| | | FROM | TO | FROM | TO | |
| Austin - CMTA - Texas | L704 | 5051 | 5068 | L82J7E4500471 | L82J2E4500488 | 18 |
| Brampton - Ontario | L789 | — | — | L82J4E3001216 | L82J1E3001223 | 8 |
| Brampton - Ontario | L816 | — | — | L82J3E3001224 | L82J9E3001230 | 7 |
| Chicago Transit Authority - CTA - Illinois | L811 | 7902 | 7949 | L82J6E4500509 | L82J6E4500526 | 48 |
| Chicago Transit Authority - CTA - Illinois | L837 | 7950 | 7999 | L82J6E4500655 | L82J1E4500708 | 50 |
| CT Transit - Connecticut | L814 | 1462 | 1473 | S92LXE4500717 | S92L4E4500728 | 12 |
| CT Transit - Connecticut | L815 | 1426 | 1426 | S92L0E4500709 | S92L0E4500712 | 4 |
| Fredericton - New Brunswick | L812 | — | — | L82J4E3001202 | L82J4E3001202 | 1 |
| LYNX - Florida | L785 | — | — | S92L6E4500505 | S92L8E4500506 | 2 |
| MTD - Santa Barbara, California | L730 | — | — | S92J8E4500567 | S92J1E4500569 | 3 |
| Red Deer - Alberta | L772 | 1106 | 1108 | L82J2E3001120 | L82J6E3001122 | 3 |
| Regina - Saskatchewan | L807 | 671 | 685 | L82J8E3001137 | L82J2E3001151 | 15 |
| Saskatoon - Saskatchewan | L831 | 1401 | 1405 | L82J7E3001307 | L82J9E3001311 | 5 |
| SEPTA - Pennsylvania | L749 | 7327 | 7354 | S92Y7D4500409 | S92L2E4500470 | 28 |
| SEPTA - Pennsylvania | L741 | — | — | S92L4E4500504 | S92L4E4500504 | 1 |
| SEPTA - Pennsylvania | L743 | — | — | S92L1E4500489 | S92L2E4500503 | 15 |
| SEPTA - Pennsylvania | L744 | — | — | L82L7E4500570 | L82LXE4500661 | 89 |
| St. John's - Newfoundland | L808 | 1415 | 1419 | L82J4E3001152 | L82J1E3001156 | 5 |
| Thunder Bay - Ontario | L806 | — | — | L82J6E3001170 | L82J8E3001171 | 2 |
| Toronto Transit Commission - TTC - Ontario | L738 | 9022 | 9026 | S92JXD3001115 | S92J7D3001119 | 5 |
| Toronto Transit Commission - TTC - Ontario | L777 | 9027 | 9152 | S92J7E3001123 | S92J6E3001372 | 126 |
| University of Alabama - Alabama | L787 | — | — | L82J2E4500507 | L82J4E4500508 | 2 |

**WARNING**

**Follow your internal safety procedures. Before starting any work on the vehicle, make sure the vehicle is completely and securely stationary.**

# PROCEDURE FOR LINKAGE REPLACEMENT

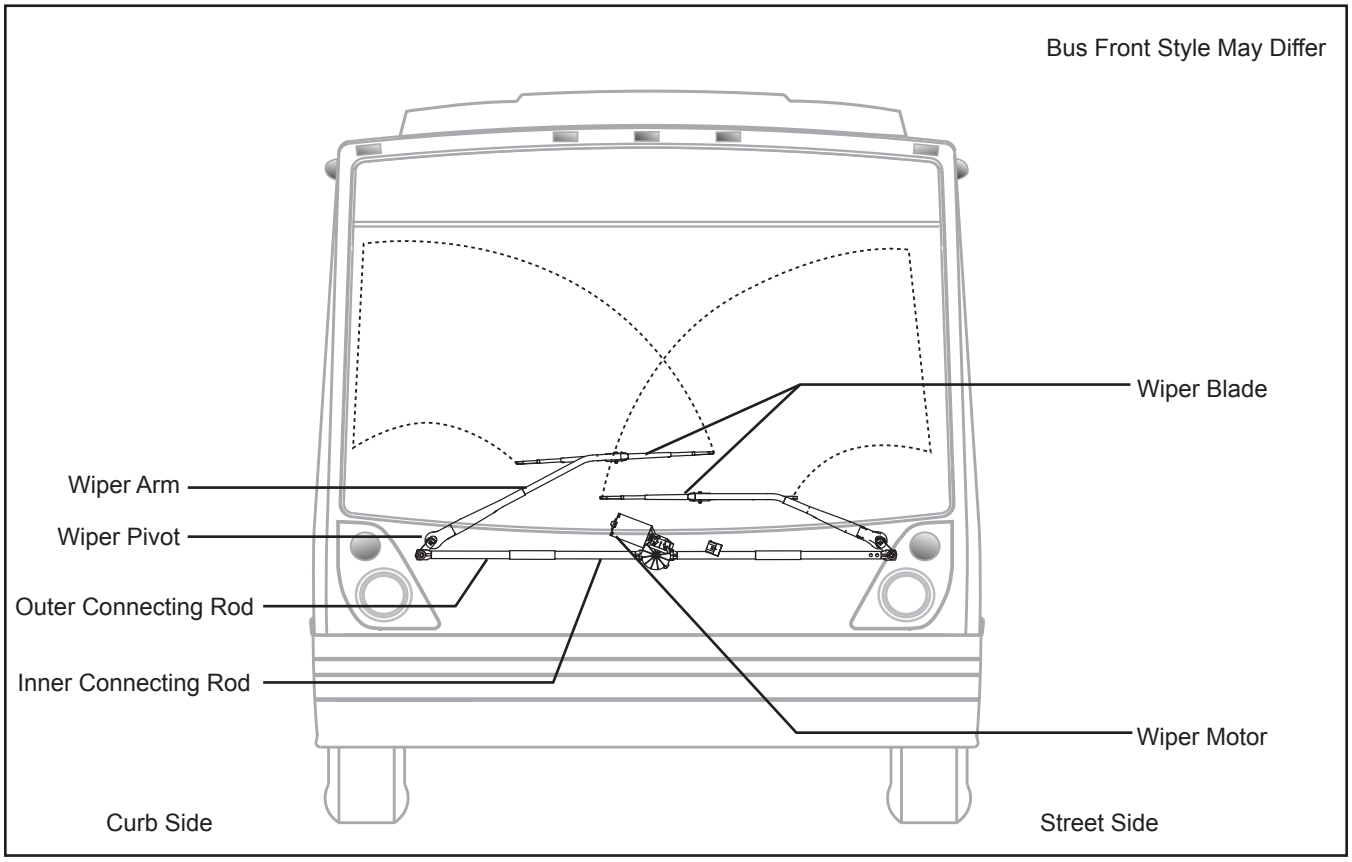


*Figure 1 - Windshield Wiper System*

1.1. Ensure the replacement linkage has a green dot. See Figure 2. This is to identify that the linkage is welded on the back side, which is difficult to see after installation.

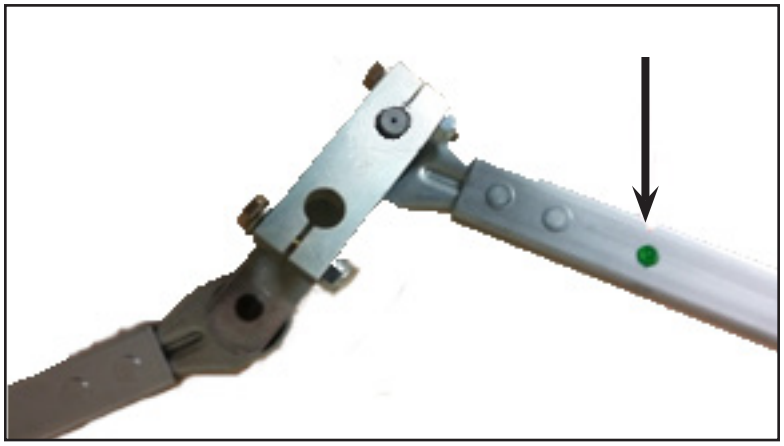

*Figure 2 - Confirm Linkage Has a Green Dot*

1.2. To make sure the wiper system is parked correctly, activate the wipers at low speed and, as soon as they reach maximum position, turn the switch OFF to deactivate the wipers. The system will return the wipers to park position.

**CAUTION**

**Place the battery disconnect switch in the OFF position and lock it out. There is a risk of serious injury if the motor is powered and it detects that the system is not in the park position: it can activate automatically to a full cycle, even if there no demand.**

**NOTE**

**Retain hardware removed during the procedure for later reinstallation.**

1.3. Remove driver handrail.

1.4. To acces the wiper system on the street side, remove driver foot shields and the farebox (if necessary). For the curb side, remove the acces panel under the dash.

1.5. Install tape on the inside face of the windshield to mark the wiper blade positions. See Figure 3.

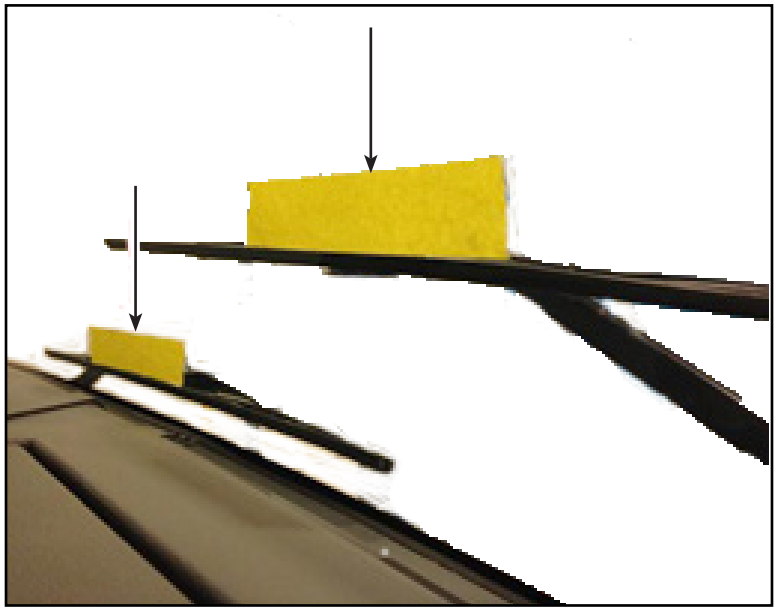

*Figure 3 - Put Two Pieces of Tape Inside the Vehicle*

1.6. Tape the wiper blades on the windshield to maintain their position. See Figure 4.

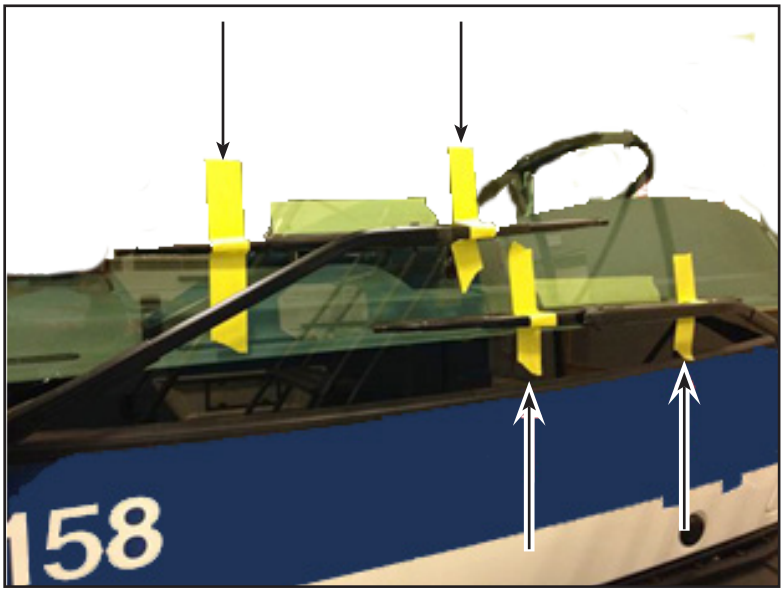


*Figure 4 - Tape the Wiper Blades*

1.7. Before removing the original linkage assembly, make a mark at the joint on each side of the 4 bolts. In order to facilitate the repositionning of the new linkage assembly. See Figure 5. Typical for curb and street sides.

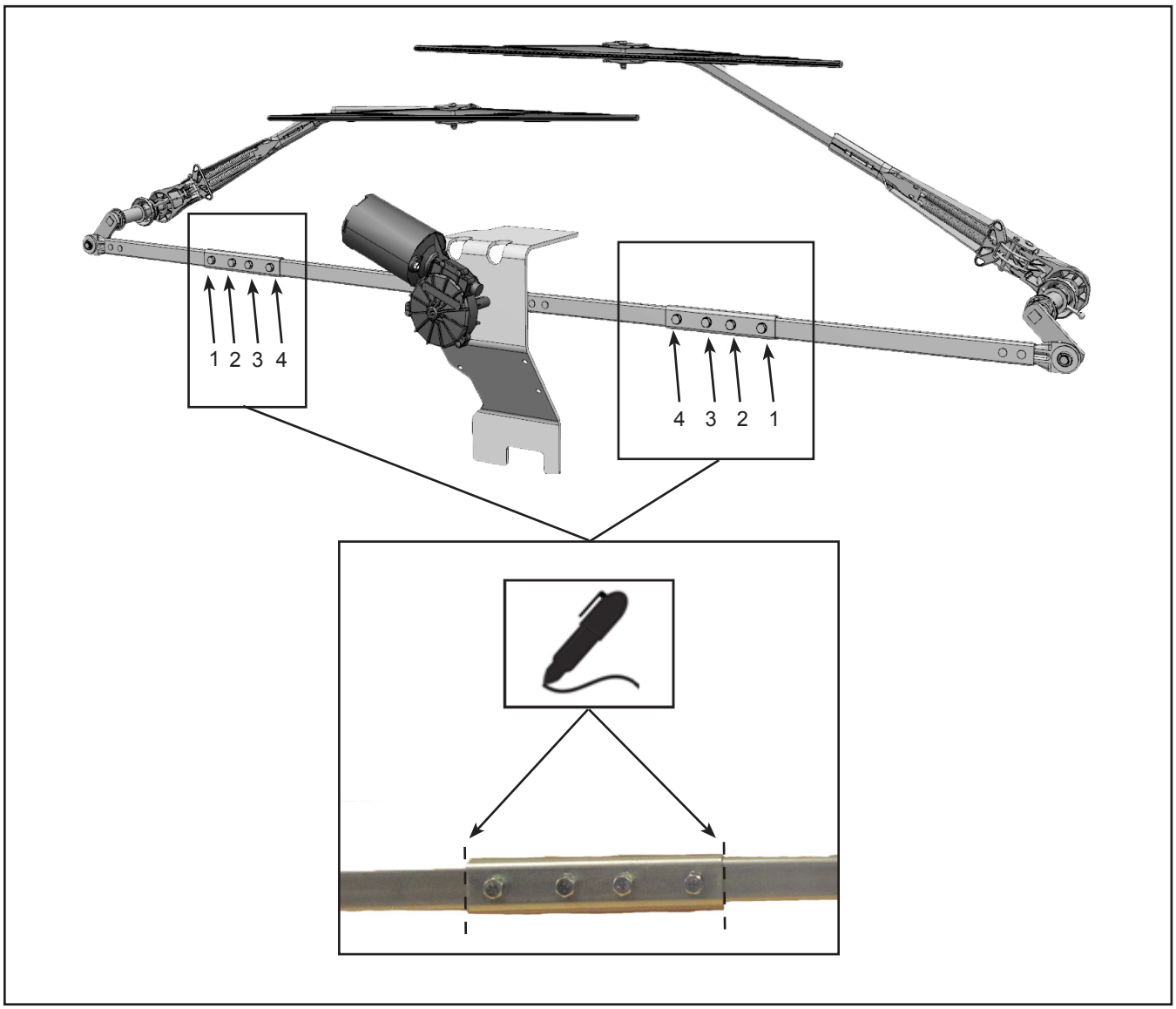


*Figure 5 - Make Marks on the Linkage*
*(Typical for Curb and Street Sides)*

1.8. Remove bolts #3 and #4, then loosen bolts #2. Leave bolts #1 tight on both sides. See Figure 5 for the bolt positions.

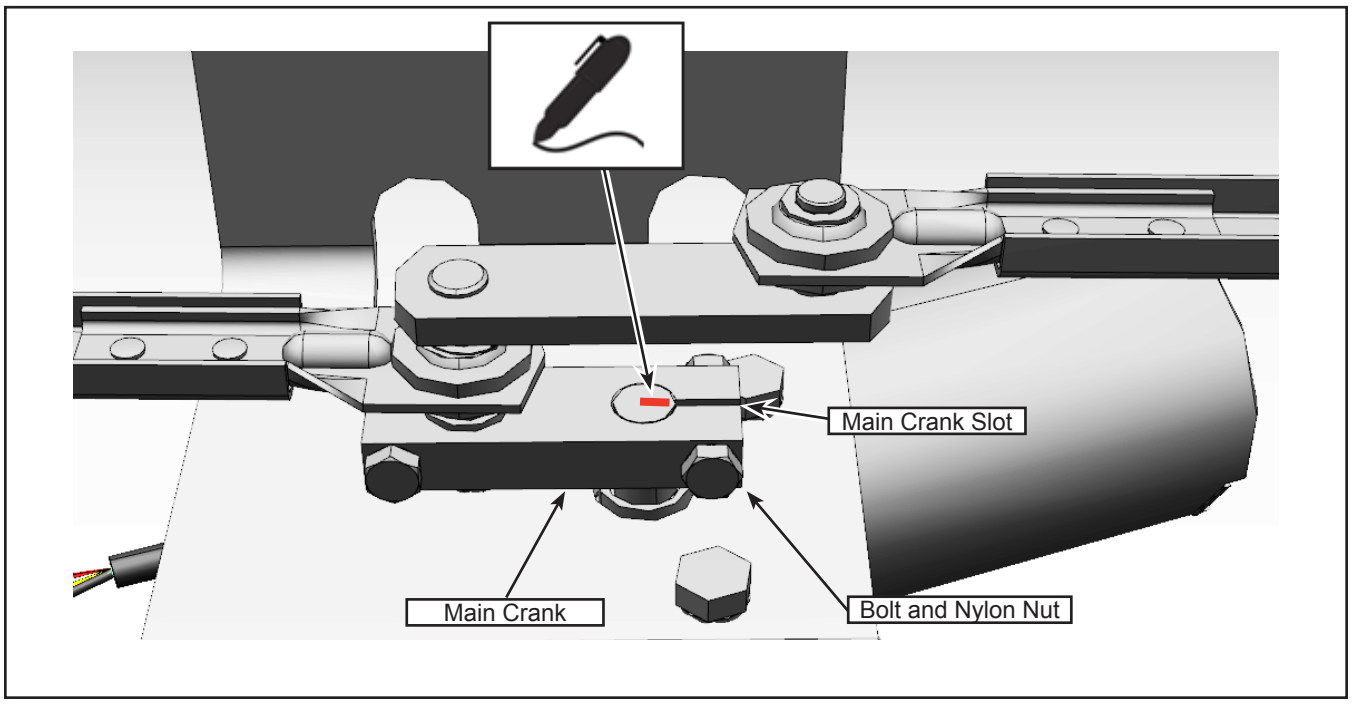


*Figure 6 - Mark the Position on the Shaft and Remove the Main Crank*

1.9. Make a mark on the motor shaft to identify the position of the slot of the main crank. See Figure 6.

1.10. Remove the bolt and nylon nut from the main crank. See Figure 6.

1.11. Slide the main crank off the motor shaft and remove the linkage assembly.

**NOTE**

**If necessary, insert a flat screwdriver in the main crank slot to open it slightly. Be careful not to rotate the motor shaft.**

1.12. Measure and record the dimensions according to the marks made at step 1.7: dimension "A" for street side and "B" for curb side. Transfer these dimensions to the new linkage. See Figure 7.

1.13. Install the new linkage by inserting the new inner rods to both sides of the original outer connecting rods.

1.14. Place bolts #3 and #4 on both sides with the serrated washers, but leave them loose for now.

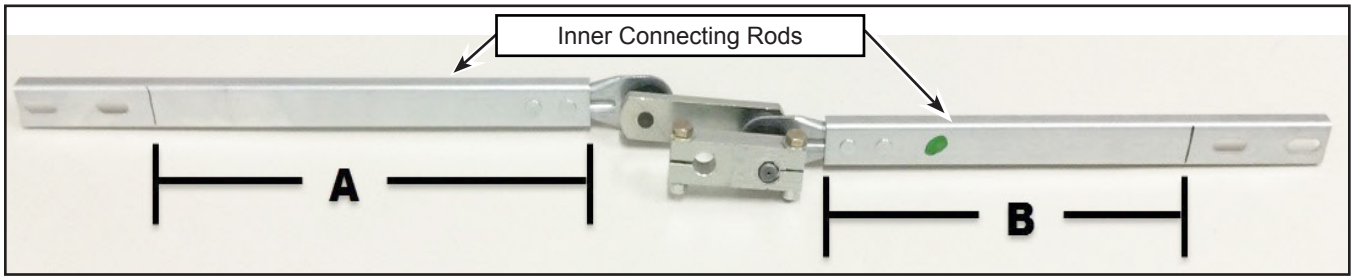


*Figure 7 - Transfer Dimensions A and B to the New Linkage Assembly*

1.15. Slide the main crank onto the motor shaft splines. The main crank must be horizontal ±3°. Make sure to align the mark made at step 1.9 with the slot on the main crank. See Figure 8.

1.16. Reposition as needed to obtain the correct spline fit.

1.17. Set the connecting rods on both sides according to the previously made marks and tighten the eight bolts to 24.5 ±2.5 N·m.

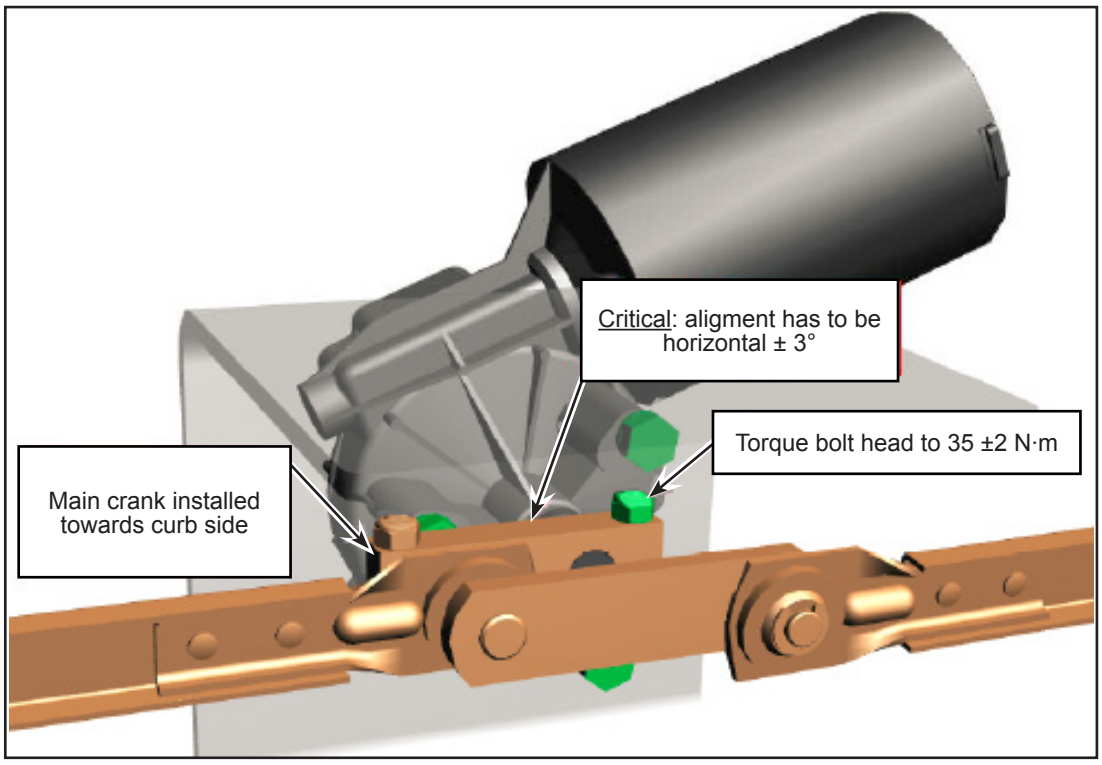


*Figure 8 - Install the Main Crank*

1.18. Torque the main crank bolt head on the motor shaft to 35 ±2 N·m. Apply anti-tamper seal. See Figure 8.
1.19. Remove tape on the wiper blades. Refer to Figure 4.
1.20. Unlock the battery switch and turn it to the ON position.

**NOTE**

**The rods on both sides should be the same length as the originals. Performing that step before torquing the main crank bolt will prevent the motor from rotating.**

1.21. Confirm that the entire mechanism is secure and free from any possible interference during movement.

## WIPER POSITION VALIDATION

1.22. Validate there is no free rotation at the wiper pivots.
1.23. Activate the wiper system and let it park as described in step 1.2.
1.24. Validate that the wiper blades lines up with the tape put inside the windshield, as seen in Figure 3, step 1.5. The blades should not have a negative angle.
1.25. If validation conditions are met, remove tape on the inside of the windshield and reinstall all the parts removed.
1.26. If validation conditions are not met, proceed to the **WIPER ADJUSTMENT PROCEDURE.**

## WIPER ADJUSTMENT PROCEDURE

1.27. Lift the curb side wiper arm and install the Doga tool (yellow) to keep the arm straight. See Figure 9.

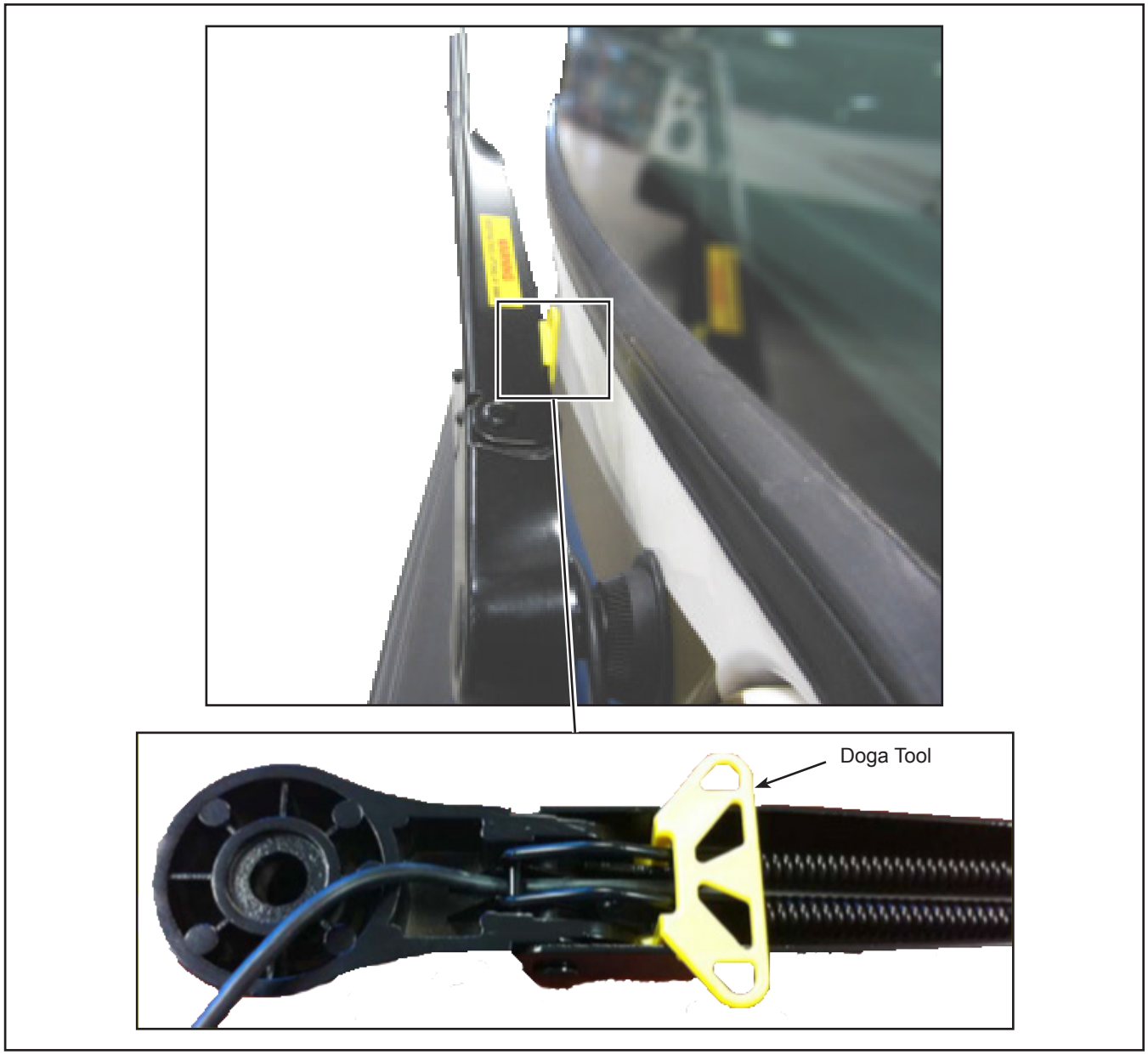


*Figure 9 - Install the Doga Tool*

1.28. Loosen the pivot nut by a few threads. See Figure 10.

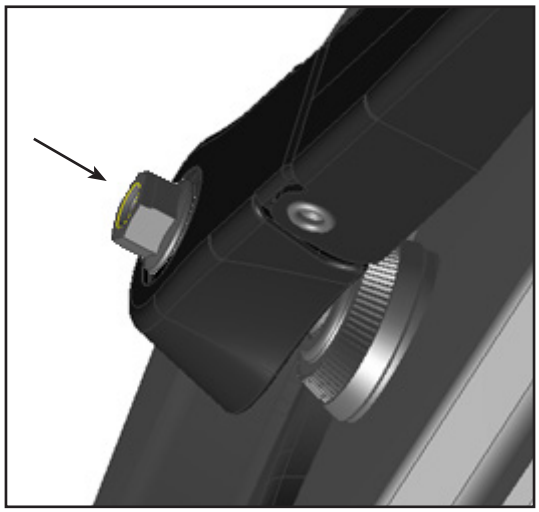

*Figure 10 - Loosen the Pivot Nut*

1.29. Use an extractor tool to pull the wiper arm away. See Figure 11.

*Figure 11 - Pull the Wiper Away*

1.30. Adjust the curb side wiper arm up or down as required. At installation, the angle should be 1° for the wiper blade on the curb side, see Figure 12, and 2° on the street side.

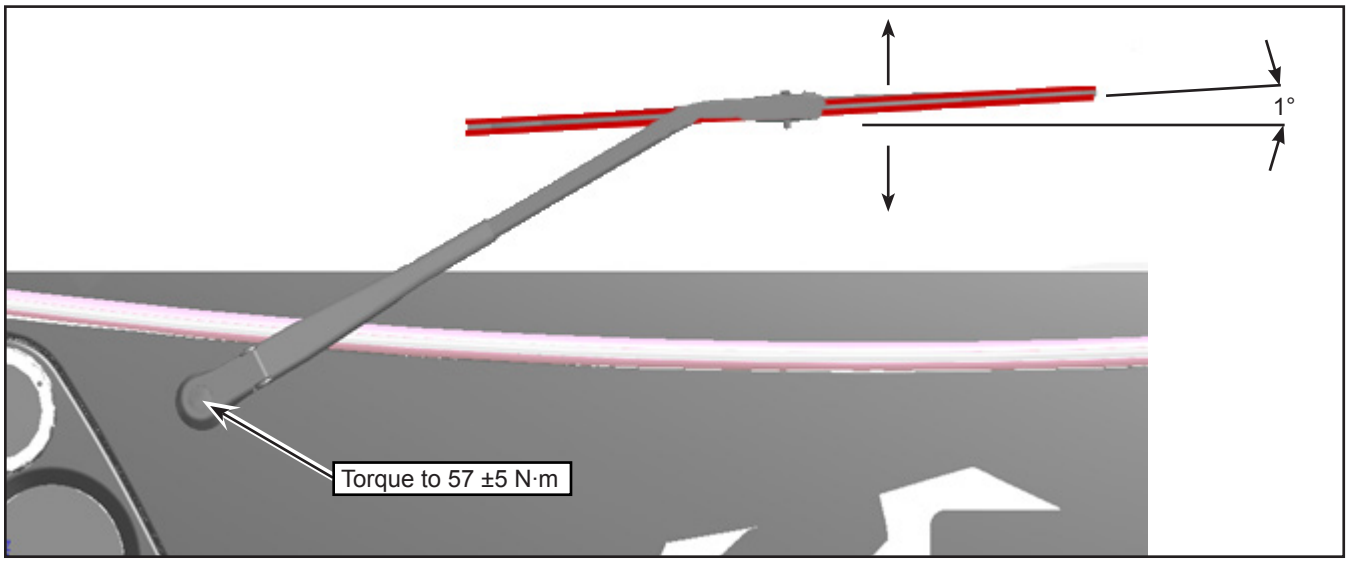


*Figure 12 - Adjust the Wiper Arm*

1.31. Remove the Doga tool.

1.32. Maintain the wiper arm in place while torquing at 57 ±5 N·m. See Figure 13.

1.33. Activate the wiper system and let it park as described in step 1.2.

1.34. Validate that the wiper blades lines up with the tape put inside the windshield, as seen in Figure 3, step 1.5.

1.35. The wiper on the street side should go back to horizontal, 0°, and the wiper on the curb side should be at 1°. They should not have a negative angle.

1.36. Repeat **WIPER ADJUSTMENT PROCEDURE** if necessary.

1.37. If validation conditions are met, remove tape on the inside of the windshield and reinstall all the parts removed for access. ❖