



Toyota Motor Sales, U.S.A., Inc.  
19001 South Western Avenue, S207  
Torrance, CA 90509-2991

TMS-NTC-12256  
November 6, 2012

Recall Management Division  
National Highway Traffic Safety Administration  
1200 New Jersey Avenue, SE  
Washington, DC 20590

Re: Toyota Safety Recall 12V-491 – Updated Remedy Instructions

To whom it may concern,

Please find attached updated Remedy Instructions for Toyota Safety Recall 12V-491 on the following Toyota vehicles:

| Model Year           | Model         |
|----------------------|---------------|
| Certain 2007 to 2008 | Yaris         |
| Certain 2007 to 2009 | RAV4          |
|                      | Tundra        |
|                      | Camry         |
|                      | Camry Hybrid  |
| Certain 2008 to 2009 | Scion xD      |
|                      | Scion xB      |
|                      | Sequoia       |
| Certain 2008         | Highlander    |
|                      | Highlander HV |
| Certain 2009         | Corolla       |
|                      | Matrix        |

If you have any questions regarding this matter, please contact me at (310) 468-5316.

Sincerely,

Quality Compliance Assistant Manager

Attachments:

- Toyota 12V-491 (COM) Updated Remedy Instructions

**TECHNICAL INSTRUCTIONS**  
**FOR**  
**SAFETY RECALL C0M**  
**POWER WINDOW MASTER SWITCH**  
**CERTAIN**  
**2007 – 2009 MODEL YEAR CAMRY**  
**2007 – 2009 MODEL YEAR CAMRY HYBRID**  
**2009 MODEL YEAR COROLLA**  
**2008 MODEL YEAR HIGHLANDER**  
**2008 MODEL YEAR HIGHLANDER HV**  
**2009 MODEL YEAR MATRIX**  
**2007 – 2009 MODEL YEAR RAV4**  
**2008 – 2009 MODEL YEAR SCION xB**  
**2008 – 2009 MODEL YEAR SCION xD**  
**2008 – 2009 MODEL YEAR SEQUOIA**  
**2007 – 2009 MODEL YEAR TUNDRA**  
**2007 – 2008 MODEL YEAR YARIS**

***UPDATED NOVEMBER 2, 2012***

**TECHNICAL INSTRUCTION UPDATE NOTICE:**

**Updated 11/2/12**

- The campaign tools section has been updated ([SECTION II](#))

**Updated 10/30/12**

- The training survey link has been removed and the cover page has been updated ([Cover Page](#))

**Updated 10/29/12**

- Switch alignment and resistance check procedure has been updated ([SECTION VII, STEP B, 3, a-d](#))
- Resistance inspection in training video has been updated

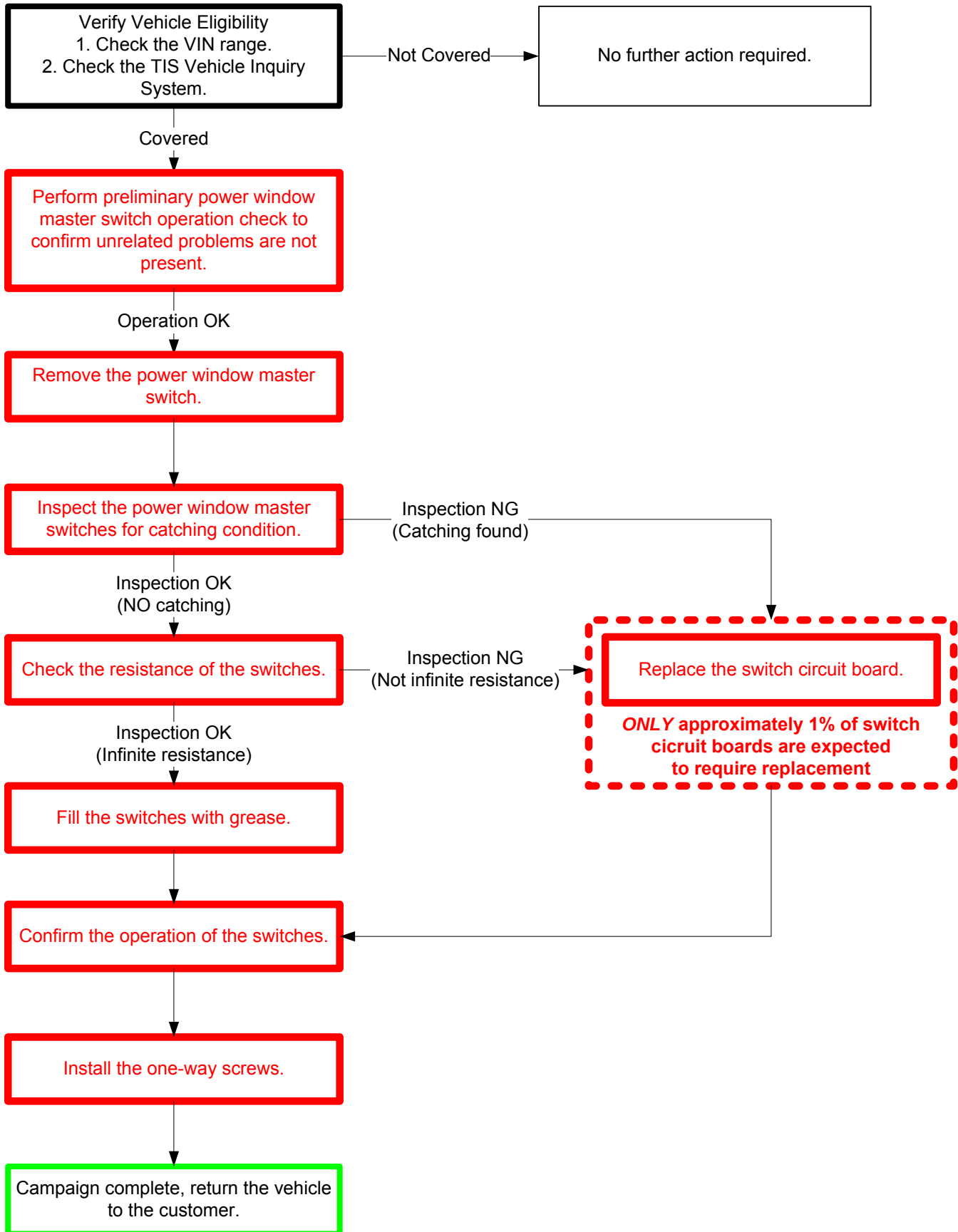
**Updated 10/11/12**

- The training survey link is now available ([Cover Page](#))

Previous versions of these Technical Instructions should be discarded.

**[Complete C0M Technical Video Supplement](#)**

## I. OPERATION FLOW CHART



# I. IDENTIFICATION OF AFFECTED VEHICLES

## A. COVERED VIN RANGE

| Model         | WMI | Year | VDS Range |                 |
|---------------|-----|------|-----------|-----------------|
|               |     |      | VDS       | Range           |
| Camry         | 4T1 | 2007 | BE46K     | U066571-U730108 |
|               |     |      | BK46K     | U018373-U560047 |
|               |     | 2008 | BE46K     | U171709-U793305 |
|               |     |      | BK46K     | U040415-U576879 |
|               |     | 2009 | BE46K     | U260017-U916091 |
|               |     |      | BK46K     | U073252-U596246 |
|               | 4T4 | 2007 | BE46K     | R001003-R011624 |
|               |     |      | BE46K     | X002811-X002812 |
|               |     | 2008 | BE46K     | R001816-R047779 |
|               |     | 2009 | BE46K     | R027105-R130839 |
|               | JTN | 2007 | BE46K     | 3050498-3129796 |
|               |     |      | BK46K     | 3012775-3031526 |
|               |     | 2008 | BE46K     | 3128414-3149926 |
|               |     |      | BK46K     | 3031540-3037065 |
|               |     | 2009 | BE46K     | 3149226-3177501 |
|               |     |      | BK46K     | 3037071-3042686 |
| Camry HV      | 4T1 | 2007 | BB46K     | U001024-U030790 |
|               |     | 2008 | BB46K     | U024787-U062522 |
|               |     | 2009 | BB46K     | U061175-U104043 |
|               | JTN | 2007 | BB46K     | 3023220-3044808 |
|               |     | 2008 | BB46K     | 3044111-3049003 |
|               |     | 2009 | BB46K     | 3048659-3050713 |
| Corolla       | 1NX | 2009 | BE40E     | Z001001-Z150950 |
|               |     |      | BU40E     | Z001006-Z150927 |
|               | 2T1 | 2009 | BE40E     | C001043-C029965 |
|               |     |      | BU40E     | C001054-C171436 |
|               | JTD | 2009 | BL40E     | 9017731-9066331 |
|               |     |      |           |                 |
| Highlander    | JTE | 2008 | DS41A     | 2000129-2067229 |
|               |     |      | DS42A     | 2000130-2067224 |
|               |     |      | DS43A     | 2000132-2067220 |
|               |     |      | DS44A     | 2000303-2064340 |
|               |     |      | ES41A     | 2000181-2108000 |
|               |     |      | ES42A     | 2000172-2108004 |
|               |     |      | ES43A     | 2000180-2107997 |
|               |     |      |           |                 |
| Highlander HV | JTE | 2008 | EW41A     | 2000281-2024716 |
|               |     |      | EW44A     | 2000141-2024720 |
| Matrix        | 2T1 | 2009 | GE40E     | C001023-C005534 |
|               |     |      | KE40E     | C001042-C029970 |
|               |     |      | KU40E     | C001057-C171450 |
|               |     |      | LE40E     | C001017-C011462 |

| Model | WMI | Year | VDS Range |                 |
|-------|-----|------|-----------|-----------------|
|       |     |      | VDS       | Range           |
| RAV4  | JTM | 2007 | BD31V     | 5056402-5124254 |
|       |     |      |           | 6023959-6054728 |
|       |     |      | BD32V     | 5056354-5124285 |
|       |     |      |           | 6023973-6054737 |
|       |     |      | BD33V     | 5056382-5124308 |
|       |     |      |           | 6023918-6054736 |
|       |     |      | BD34V     | 5058065-5124068 |
|       |     |      | BD35V     | 5056396-5124278 |
|       |     |      | BK31V     | 5014657-5040741 |
|       |     |      |           | 6011310-6028074 |
|       |     |      | BK32V     | 5014697-5040743 |
|       |     |      |           | 6010911-6028066 |
|       |     |      | BK33V     | 5014718-5040747 |
|       |     |      |           | 6011203-6028069 |
|       |     |      | BK34V     | 5014721-5040742 |
|       |     |      | BK35V     | 5014734-5040698 |
|       |     |      | ZD31V     | 5035501-5077936 |
|       |     |      |           | 6022998-6052970 |
|       |     |      | ZD32V     | 5035510-5077984 |
|       |     |      |           | 6022999-6052984 |
|       |     |      | ZD33V     | 5035485-5078025 |
|       |     |      |           | 6022781-6052993 |
|       |     |      | ZD34V     | 5035513-5077858 |
|       |     |      | ZD35V     | 5035556-5077997 |
|       |     |      | ZK31V     | 5006520-5016136 |
|       |     |      |           | 6003643-6010016 |
|       |     |      | ZK32V     | 5006534-5016123 |
|       |     |      |           | 6003647-6010013 |
|       |     |      | ZK33V     | 5006529-5016137 |
|       |     |      |           | 6003637-6010017 |
|       |     |      | ZK34V     | 5006540-5016122 |
|       |     |      | ZK35V     | 5006521-5016021 |
|       |     | 2008 | BD31V     | 5122515-5215886 |
|       |     |      |           | 6054747-6089713 |
|       |     |      | BD32V     | 5124567-5215884 |
|       |     |      |           | 6054743-6089718 |
|       |     |      | BD33V     | 5124318-5215896 |
|       |     |      |           | 6054075-6089725 |
|       |     |      | BD34V     | 5124315-5215683 |

**COVERED VIN RANGE CONTINUED...**

| Model | WMI | Year | VDS Range |                 |
|-------|-----|------|-----------|-----------------|
|       |     |      | VDS       | Range           |
| RAV4  | JTM | 2008 | BD35V     | 5124310-5215906 |
|       |     |      | BK31V     | 5040755-5071468 |
|       |     |      |           | 6028076-6050078 |
|       |     |      | BK32V     | 5039902-5071462 |
|       |     |      |           | 6028075-6050080 |
|       |     |      | BK33V     | 5040768-5071418 |
|       |     |      |           | 6028079-6050066 |
|       |     |      | BK34V     | 5040763-5071435 |
|       |     |      | BK35V     | 5040804-5071472 |
|       |     |      | ZD31V     | 5078027-5117091 |
|       |     |      |           | 6052994-6081056 |
|       |     |      | ZD32V     | 5078035-5117086 |
|       |     |      |           | 6052998-6081048 |
|       |     |      | ZD33V     | 5076662-5117118 |
|       |     |      |           | 6052995-6081081 |
|       |     |      | ZD34V     | 5078041-5117037 |
|       |     |      | ZD35V     | 5078033-5117108 |
|       |     |      | ZK31V     | 5015779-5024041 |
|       |     |      |           | 6010018-6016056 |
|       |     |      | ZK32V     | 5016141-5024036 |
|       |     |      |           | 6010023-6016055 |
|       |     |      | ZK33V     | 5016138-5024037 |
|       |     |      |           | 6010021-6016053 |
|       |     |      | ZK34V     | 5016157-5024038 |
|       |     |      | ZK35V     | 5016148-5024022 |
|       | 2T3 | 2009 | BF31V     | W001119-W002100 |
|       |     |      | BF32V     | W001207-W002433 |
|       |     |      | BF33V     | W001117-W002428 |
|       |     |      | BF35V     | W001421-W002357 |
|       |     |      | BK31V     | W001143-W001937 |
|       |     |      | BK32V     | W001142-W001728 |
|       |     |      | BK33V     | W001162-W002146 |
|       |     |      | BK34V     | W001688-W001688 |
|       |     |      | BK35V     | W002139-W002160 |
|       |     |      | ZF31V     | W001050-W001589 |
|       |     |      | ZF32V     | W001048-W001626 |
|       |     |      | ZF33V     | W001049-W002099 |
|       |     |      | ZF35V     | W001625-W001625 |
|       |     |      | ZK31V     | W001081-W001565 |
|       |     |      | ZK32V     | W001149-W001327 |
|       |     |      | ZK33V     | W001076-W002103 |

| Model   | WMI | Year | VDS Range |                 |
|---------|-----|------|-----------|-----------------|
|         |     |      | VDS       | Range           |
| Sequoia | 5TD | 2008 | BT64A     | S000014-S000239 |
|         |     |      | BY64A     | S000047-S023589 |
|         |     |      | BY67A     | S000042-S023596 |
|         |     |      | BY68A     | S000034-S023597 |
|         |     |      | ZT64A     | S000014-S000384 |
|         |     |      | ZY64A     | S000010-S015402 |
|         |     |      | ZY67A     | S000012-S015400 |
|         |     |      | ZY68A     | S000013-S015401 |
|         |     | 2009 | BT64A     | S000244-S000361 |
|         |     |      | BW68A     | S023606-S023606 |
|         |     |      | BY64A     | S023711-S023711 |
|         |     |      | BY67A     | S023609-S023773 |
|         |     |      | BY68A     | S023616-S023729 |
|         |     |      | ZY67A     | S015919-S015919 |
|         |     |      | ZY68A     | S015426-S015838 |
| Tundra  | 5TB | 2007 | BT541     | S449772-S458203 |
|         |     |      | BT581     | S449768-S458119 |
|         |     |      | BV541     | S449818-S490980 |
|         |     |      | BV581     | S449815-S490940 |
|         |     |      | DT541     | S452172-S458112 |
|         |     |      | DT581     | S451402-S457120 |
|         |     |      | DV541     | S454929-S490979 |
|         |     |      | DV581     | S454922-S490970 |
|         |     |      | ET541     | S451522-S457443 |
|         |     |      | ET581     | S452313-S457105 |
|         |     |      | EV541     | S453235-S473183 |
|         |     |      | EV581     | S452114-S473116 |
|         |     |      | RT541     | S449776-S457554 |
|         |     |      | RT581     | S449772-S457346 |
|         |     |      | RU541     | S449764-S451516 |
|         |     |      | RV541     | S449790-S473197 |
|         |     |      | RV581     | S449792-S473167 |
|         |     | 2008 | BT541     | S458128-S465088 |
|         |     |      | BT581     | S460039-S463353 |
|         |     |      | BV541     | S489753-S524241 |
|         |     |      | BV581     | S490994-S524168 |
|         |     |      | DT541     | S458232-S465032 |
|         |     |      | DT581     | S458211-S465038 |
|         |     |      | DV541     | S490988-S524251 |
|         |     |      | DV581     | S490274-S524192 |
|         |     |      | ET541     | S457566-S461702 |

**COVERED VIN RANGE CONTINUED...**

| Model  | WMI | Year | VDS Range |                 |
|--------|-----|------|-----------|-----------------|
|        |     |      | VDS       | Range           |
| Tundra | 5TB | 2008 | ET581     | S460063-S460135 |
|        |     |      | EV541     | S473215-S483286 |
|        |     |      | EV581     | S472420-S483281 |
|        |     |      | RT541     | S457555-S461703 |
|        |     |      | RT581     | S457567-S459791 |
|        |     |      | RV541     | S473199-S483282 |
|        |     |      | RV581     | S473206-S483264 |
|        | 5TF | 2007 | BT541     | X001509-X010233 |
|        |     |      | BT581     | X001504-X009214 |
|        |     |      | BV541     | X002493-X032595 |
|        |     |      | BV581     | X002480-X032589 |
|        |     |      | CT541     | X001009-X002214 |
|        |     |      | CV541     | X001185-X005181 |
|        |     |      | DT541     | X009296-X009985 |
|        |     |      | DT581     | X009401-X009401 |
|        |     |      | DV541     | X023882-X032593 |
|        |     |      | DV581     | X022843-X032590 |
|        |     |      | ET541     | X015154-X016078 |
|        |     |      | ET581     | X015222-X015222 |
|        |     |      | EV541     | X025255-X032800 |
|        |     |      | EV581     | X025031-X032788 |
|        |     |      | JT521     | X001258-X002235 |
|        |     |      | JU521     | X001130-X003335 |
|        |     |      | JV521     | X001122-X002393 |
|        |     |      | KT521     | X001022-X002147 |
|        |     |      | KV521     | X001133-X002462 |
|        |     |      | LT521     | X001572-X015878 |
|        |     |      | LU521     | X001203-X006726 |
|        |     |      | LV521     | X003495-X032752 |
|        |     |      | MT521     | X001506-X010227 |
|        |     |      | MV521     | X002603-X032585 |
|        |     |      | RT541     | X001571-X016317 |
|        |     |      | RT581     | X001570-X016043 |
|        |     |      | RU541     | X001200-X006742 |
|        |     |      | RV541     | X003586-X032799 |
|        |     |      | RV581     | X003587-X032785 |
|        |     |      | ST541     | X001106-X002069 |
|        |     |      | SV541     | X001063-X004748 |

| Model  | WMI | Year | VDS Range |                 |
|--------|-----|------|-----------|-----------------|
|        |     |      | VDS       | Range           |
| Tundra | 5TF | 2008 | BT541     | X010234-X014584 |
|        |     |      | BT581     | X010659-X013869 |
|        |     |      | BV541     | X032597-X083158 |
|        |     |      | BV581     | X032603-X083120 |
|        |     |      | CT541     | X002218-X002439 |
|        |     |      | CV541     | X005183-X008862 |
|        |     |      | DT541     | X010580-X013787 |
|        |     |      | DT581     | X012554-X012753 |
|        |     |      | DV541     | X032596-X083159 |
|        |     |      | DV581     | X032602-X083167 |
|        |     |      | ET541     | X016320-X027282 |
|        |     |      | ET581     | X022981-X026381 |
|        |     |      | EV541     | X032809-X069738 |
|        |     |      | EV581     | X032801-X069597 |
|        |     |      | JT521     | X002236-X002401 |
|        |     |      | JU521     | X003384-X004115 |
|        |     |      | JV521     | X002395-X003232 |
|        |     |      | KT521     | X002148-X002358 |
|        |     |      | KV521     | X002463-X003358 |
|        |     |      | LT521     | X016321-X027288 |
|        |     |      | LU521     | X007760-X017472 |
|        |     |      | LV521     | X032804-X069666 |
|        |     |      | MT521     | X010370-X014582 |
|        |     |      | MV521     | X032626-X083124 |
|        |     |      | RT541     | X016318-X027320 |
|        |     |      | RT581     | X017618-X020071 |
|        |     |      | RU541     | X006743-X017473 |
|        |     |      | RV541     | X032802-X069735 |
|        |     |      | RV581     | X032846-X069669 |
|        |     |      | ST541     | X002070-X002160 |
|        |     |      | SV541     | X004749-X006281 |
|        |     | 2009 | BT541     | X014611-X014966 |
|        |     |      | BV541     | X083229-X085745 |
|        |     |      | BV581     | X083255-X085205 |
|        |     |      | BW541     | X083226-X085748 |
|        |     |      | BW581     | X083224-X085672 |
|        |     |      | CT541     | X002440-X002440 |
|        |     |      | CV541     | X008872-X009002 |

**COVERED VIN RANGE CONTINUED...**

| Model    | WMI | Year | VDS Range |                 |
|----------|-----|------|-----------|-----------------|
|          |     |      | VDS       | Range           |
| Tundra   | 5TF | 2009 | CW541     | X008870-X009000 |
|          |     |      | DT541     | X014616-X014879 |
|          |     |      | DV541     | X083242-X085696 |
|          |     |      | DV581     | X083244-X085489 |
|          |     |      | DW541     | X083227-X085752 |
|          |     |      | DW581     | X083217-X085729 |
|          |     |      | EV541     | X069830-X070508 |
|          |     |      | EV581     | X069778-X070336 |
|          |     |      | JU521     | X004142-X004142 |
|          |     |      | JV521     | X003234-X003239 |
|          |     |      | KT521     | X002369-X002369 |
|          |     |      | KV521     | X003364-X003392 |
|          |     |      | KW521     | X003384-X003384 |
|          |     |      | LT521     | X027997-X028115 |
|          |     |      | LU521     | X017782-X017782 |
|          |     |      | MT521     | X014876-X014876 |
|          |     |      | MV521     | X085497-X085573 |
|          |     |      | MW521     | X084767-X084767 |
|          |     |      | RT541     | X027383-X028213 |
|          |     |      | RU541     | X017498-X018231 |
|          |     |      | RV541     | X069772-X070512 |
|          |     |      | RV581     | X070033-X070247 |
|          |     |      | ST541     | X002171-X002173 |
|          |     |      | SV541     | X006283-X006304 |
| Scion xB | JTL | 2008 | KE50E     | 1000136-1060718 |
|          |     | 2009 | KE50E     | 1060079-1077653 |
| Scion xD | JTK | 2008 | KU104     | J000125-J032918 |
|          |     | 2009 | KU104     | J032919-J034568 |
| Yaris    | JTD | 2007 | BT903     | 1079117-1187591 |
|          |     |      |           | 4000006-4003638 |
|          |     |      | BT923     | 1079440-1187658 |
|          |     |      |           | 4000004-4003639 |
|          |     | 2008 | JT903     | 5071988-5138688 |
|          |     |      | JT923     | 5071865-5138773 |
|          |     |      | BT903     | 1187667-1297180 |
|          |     |      |           | 4003685-4041333 |
|          |     |      | BT923     | 1187685-1297181 |
|          |     |      |           | 4003647-4041340 |
|          |     |      | JT903     | 5127500-5218402 |
|          |     |      | JT923     | 5136244-5218428 |

**NOTE:**

- Check the TIS Vehicle Inquiry System to confirm the VIN is involved in this Safety Recall, and that the campaign has not already been completed prior to dealer shipment or by another dealer.
- TMS warranty will not reimburse dealers for repairs conducted on vehicles that are not affected or were completed by another dealer.

## II. PREPARATION

### A. PARTS

**The large majority of vehicles will require these parts (approximately 99%).**

| Part Number | Part Description | Quantity | Note                       |
|-------------|------------------|----------|----------------------------|
| 04002-18242 | Grease*          | 1        | –                          |
| 04002-18342 | One-Way Screw**  | 3        | With power rear windows    |
|             |                  | 2        | Without power rear windows |

\*Approximately 0.5 to 0.9 ml is needed per vehicle (One tube contains 50 ml)

\*\*The one-way screw is a quantity pack that contains 75 screws, each PWMS will use 2 or 3 screws

**Only a small number of vehicles (approximately less than 1%) will require the replacement of the window switch circuit board. Follow the inspection process in these instructions to determine if replacement is necessary. If it is identified that a window switch circuit board requires replacement, use the following website to identify the part needed. Due to the part number complexities, this website has been created to assist with parts identification. <http://c0m-lookup.imagespm.info>**

### B. TOOLS & EQUIPMENT

- Standard hand tools
- DVOM
- Molding removal set
- Protective tape

**Campaign Tools** – These tools are provided to the dealership.

| Part Number                                                                                                                                                                                                           | Part Name   | Quantity |             |           |          |   |         |   |   |         |   |   |        |   |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|----------|-------------|-----------|----------|---|---------|---|---|---------|---|---|--------|---|
| –                                                                                                                                                                                                                     | Syringe Set | 1        |             |           |          |   |         |   |   |         |   |   |        |   |
| <table><tr><th>Part Number</th><th>Part Name</th><th>Quantity</th></tr><tr><td>–</td><td>Syringe</td><td>2</td></tr><tr><td>–</td><td>Adapter</td><td>1</td></tr><tr><td>–</td><td>Nozzle</td><td>2</td></tr></table> |             |          | Part Number | Part Name | Quantity | – | Syringe | 2 | – | Adapter | 1 | – | Nozzle | 2 |
| Part Number                                                                                                                                                                                                           | Part Name   | Quantity |             |           |          |   |         |   |   |         |   |   |        |   |
| –                                                                                                                                                                                                                     | Syringe     | 2        |             |           |          |   |         |   |   |         |   |   |        |   |
| –                                                                                                                                                                                                                     | Adapter     | 1        |             |           |          |   |         |   |   |         |   |   |        |   |
| –                                                                                                                                                                                                                     | Nozzle      | 2        |             |           |          |   |         |   |   |         |   |   |        |   |

**NOTE:** These tools **CANNOT** be ordered through the parts system. If additional tools are needed, contact your regional representative.

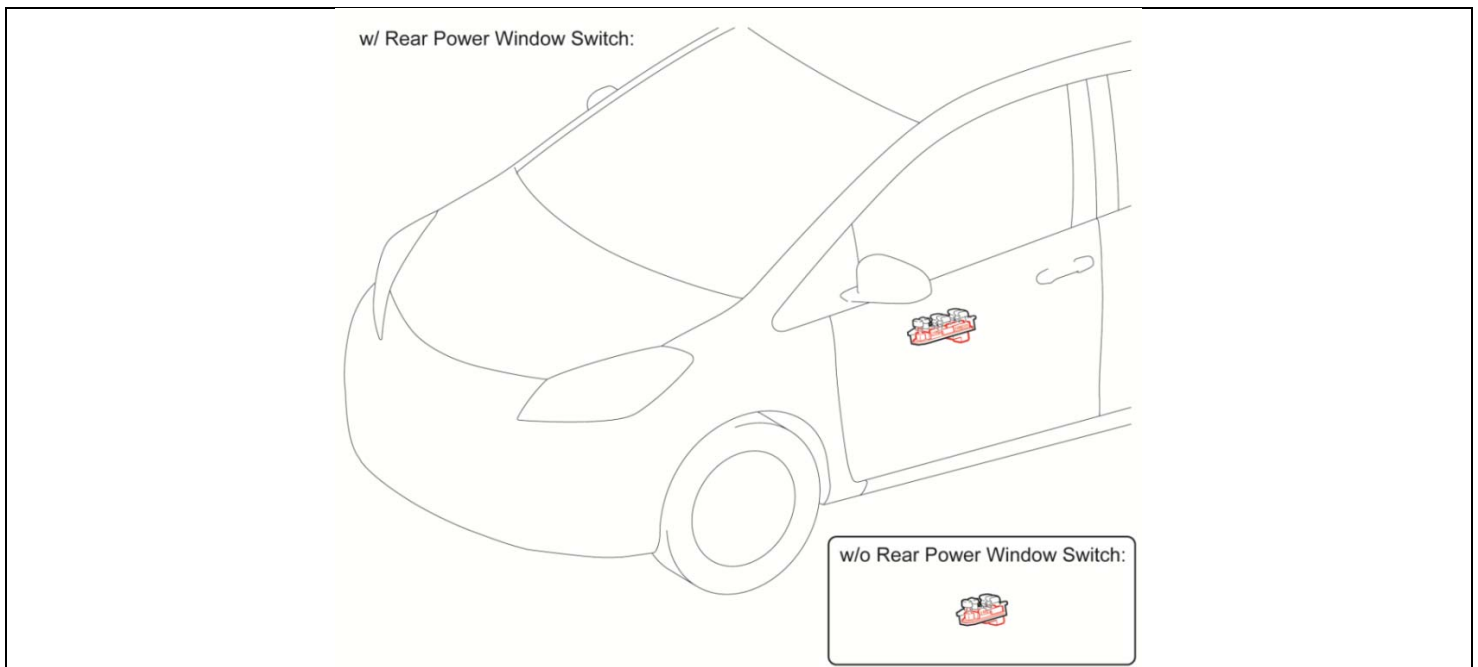
## III. BACKGROUND

The sliding electrical contact module in the driver's side Power Window Master Switch (PWMS) may experience a “notchy” or sticking feeling during operation.

If commercially available lubricants are applied to the switch in an attempt to address the “notchy” or sticky feel, melting or smoking of the switch assembly could occur. Under some circumstances, this could lead to a fire.



## IV. COMPONENTS



## V. PRELIMINARY POWER WINDOW MASTER SWITCH OPERATION CHECK

### 1. CHECK THE FOLLOWING OPERATIONS OF THE POWER WINDOW MASTER SWITCH

- Lock and unlock switch operation.
- Up and down operation for each window.
- Auto function of AUTO switch(s).
- Window lock switch operation.
- Illumination of 'AUTO' on auto switches (headlights must be on to confirm this)

### 2. IF ANY OF THE ABOVE OPERATIONS DO NOT PERFORM CORRECTLY, DIAGNOSE AND REPAIR AS OUTLINED IN THE REPAIR MANUAL.

**NOTE:** If an issue is found in a component other than the PWMS, the repair of that component *WILL NOT* be covered under this campaign.

## VI. POWER WINDOW MASTER SWITCH REMOVAL

### 1. REMOVE THE POWER WINDOW MASTER SWITCH AS OUTLINED IN THE REPAIR MANUAL ON TIS

- [CAMRY](#)
- [CAMRY HYBRID](#)
- [COROLLA](#)
- [HIGHLANDER](#)
- [HIGHLANDER HV](#)
- [MATRIX](#)
- [RAV4](#)
- [SCION xB](#)
- [SCION xD](#)
- [SEQUOIA](#)
- [TUNDRA](#)
- [YARIS LIFTBACK](#)
- [YARIS SEDAN](#)

#### NOTE:

- To prevent the window from moving unexpectedly, open and close the door after turning the ignition off to stop power-window key-off operation.
- Apply protective tape to interior panels to avoid damage.

## VII. POWER WINDOW MASTER SWITCH INSPECTION

### [Video Supplement: Introduction & Switch Catching Inspection steps](#)

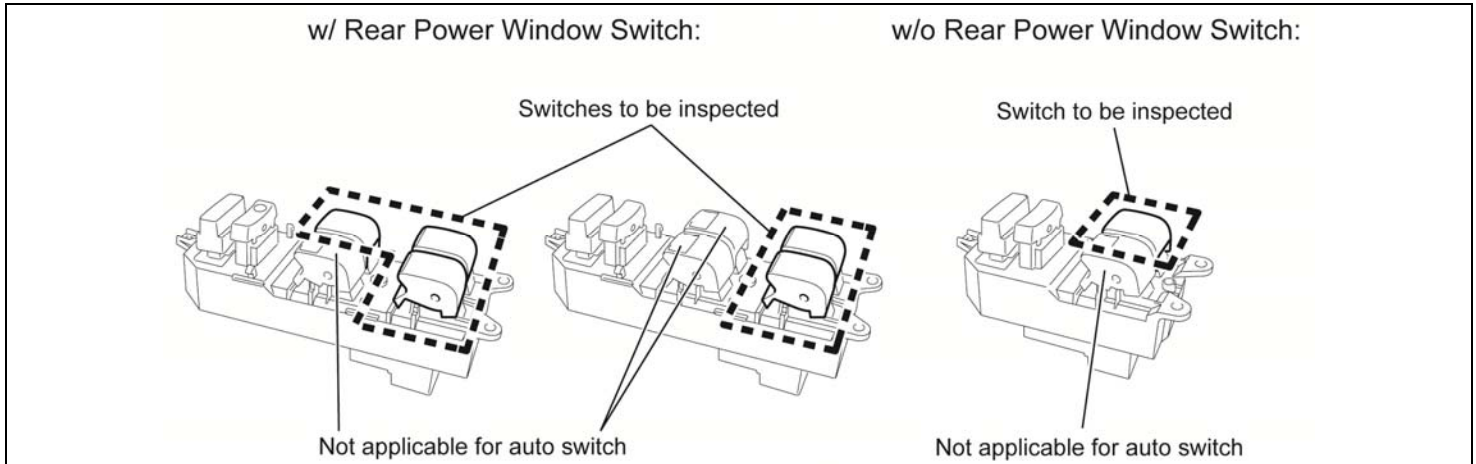


If at any time during the inspection process, the power window master switch assembly is found to have heat damage, you **MUST** replace the assembly. A very small number of vehicles will require PWMS replacement. Refer to the parts catalog for part number information. There is **NO NEED** to apply grease to the new switch assembly.

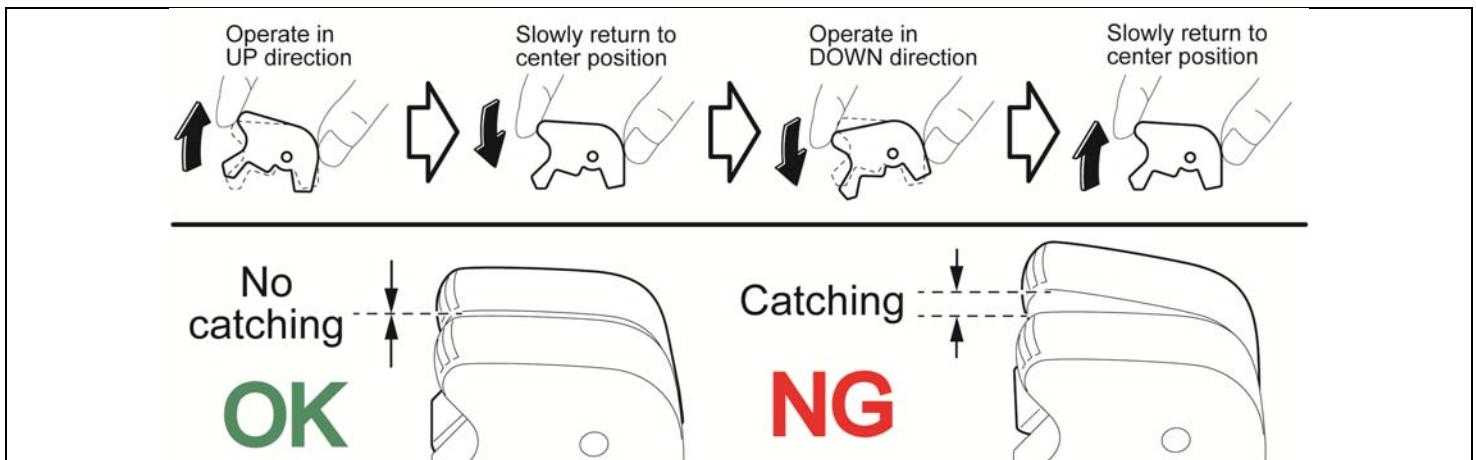
#### A. CHECK THE SWITCHES FOR CATCHING CONDITION

- a) Check all switches that do not have the AUTO function.

**NOTE: The AUTO switch is of a different design; therefore, no inspection is necessary.**



- b) Operate each switch in the up direction, then slowly return the switch using two fingers.  
c) Operate each switch in the down direction, then slowly return the switch using two fingers.

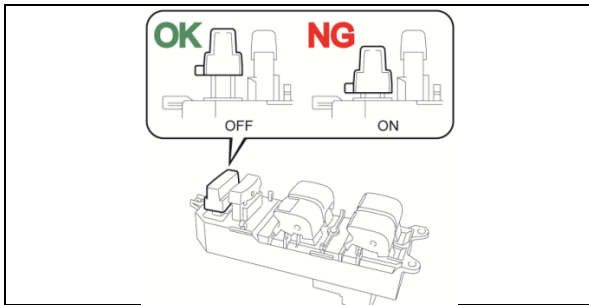


- **ALL** switches that **ARE NOT AUTO** **MUST** be inspected.
- The switches **MUST** be operated slowly, otherwise the catching cannot be noticed.
- The switches **MUST** be operated with two fingers, otherwise the catching cannot be noticed.
- The switches may feel unsmooth, this **DOES NOT** mean the switch is NG.
- Only a small number of vehicles (approximately less than 1%) will require the replacement of this part.

| CONDITION                                 | ACTION REQUIRED                                                                                                                                                                                                                                                                                                                           |
|-------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>NONE</b> of the switches are catching. | Proceed to <b>STEP B. CHECK THE RESISTANCE OF THE SWITCHES</b>                                                                                                                                                                                                                                                                            |
| One or more of the switches are catching. | Replace the power window master switch circuit board.<br>Proceed to <b>STEP B, 1-2</b> for switch disassembly instructions.<br><b>NOTE:</b> <ul style="list-style-type: none"><li>• Mark the NG circuit board with an 'X' so that it is not reused.</li><li>• There is <b>NO NEED</b> to apply grease to the new circuit board.</li></ul> |

## B. CHECK THE RESISTANCE OF THE SWITCHES

### Video Supplement: Switch Resistance Inspection steps



#### 1. REMOVE THE WINDOW LOCK BUTTON

- Turn the window lock switch to the OFF position.
- Pull the button up to remove it from the switch assembly.



- Removing the lock button while it is turned ON may damage the switch.
- To prevent damage, **DO NOT** use tools.

#### 2. REMOVE THE SWITCH CIRCUIT BOARD

- Remove the screws.
- Lift the switch board straight up to remove it.

**NOTE:** There are 3 screws for switches with power rear windows, 2 screws for switches without power rear windows.



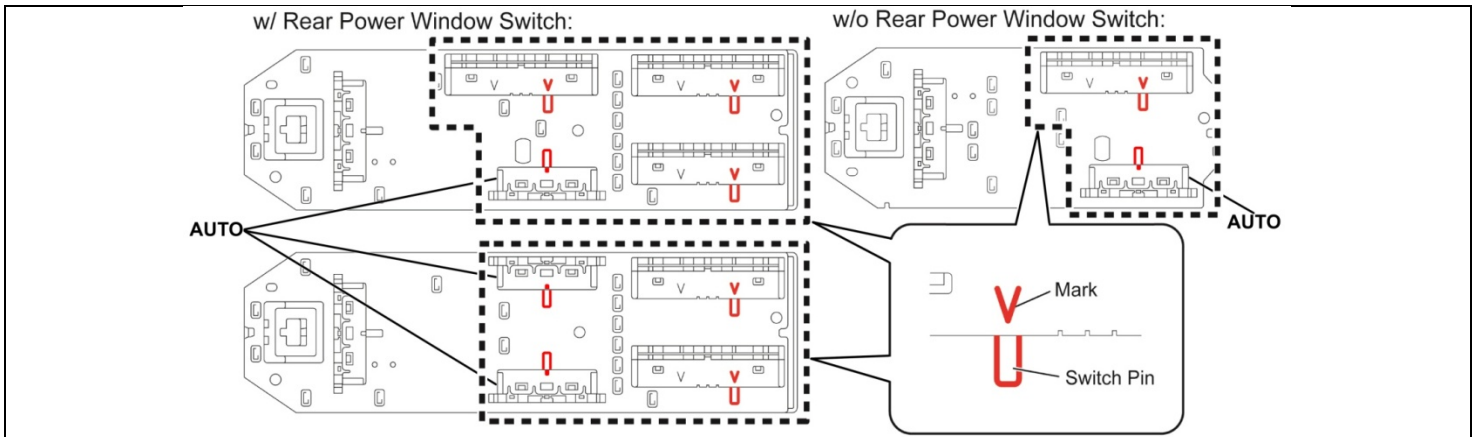
- If the circuit board is being replaced due to a catching condition found in STEP A, proceed to SECTION X. SWITCH REASSEMBLY.
- DO NOT** reuse the screws that have been removed, new one-way screws **MUST** be used.

#### 3. POSITION THE SWITCHES

- Align each switch pin with the 'V' mark on all switches that do not have AUTO function.
- Align the switch pin with the center line on all AUTO function switches.



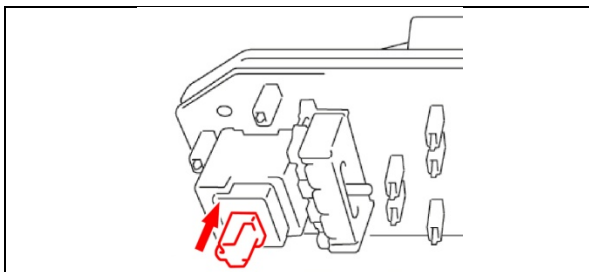
- If the AUTO switches are not aligned correctly, the readings may be inaccurate.
- The switches **MUST** be in this position when checking the resistance. This is the OFF position, if the switch is in any other position, the reading will be incorrect.
- ALL** switches that **ARE NOT** AUTO **MUST** be checked.



- Push the window lock button so that it is in the down position.



- If the window lock button is not in the down position, the readings may be inaccurate.

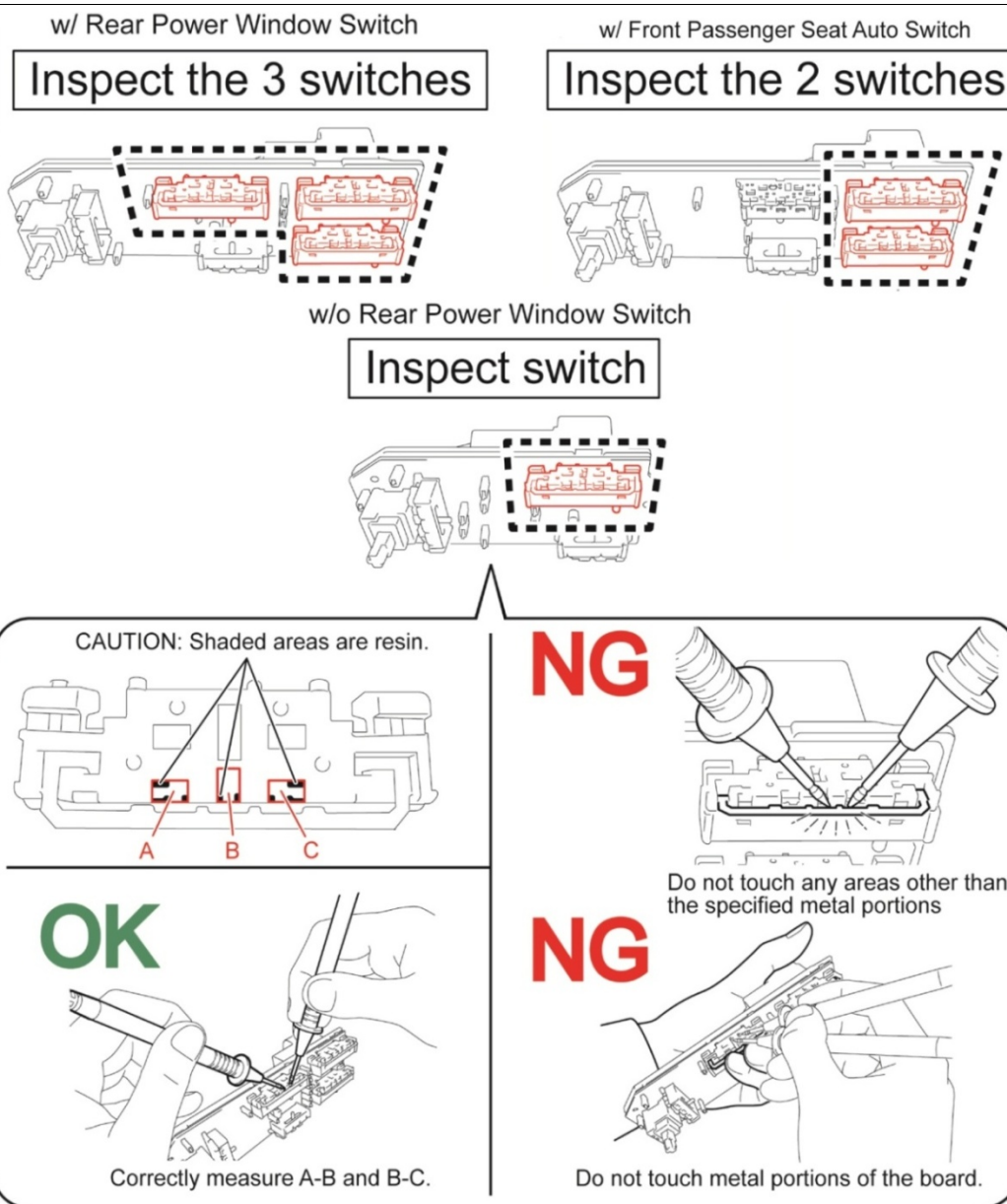


#### 4. CHECK THE RESISTANCE OF THE SWITCHES

- Perform the ZERO calibration function on the DVOM.
- Measure the resistance between points A-B and points B-C.



- If the the ZERO calibration function is not performed, the readings may be inaccurate.
- Set the DVOM to the maximum resistance range.
- DO NOT** touch any metal other than points A, B, C on the circuit board when checking resistance.
- The points being checked are small, confirm the probes are contacting the correct points.
- ALL** switches that **ARE NOT AUTO** **MUST** be checked.



| CONDITION                                             | ACTION REQUIRED                                                                                                                                                                                                                                                                                                     |
|-------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Resistance value for <b>ALL</b> switches is infinite. | Fill the switches with grease.<br>Proceed to <b>SECTION IX. GREASE APPLICATION</b>                                                                                                                                                                                                                                  |
| One or more resistance value <b>IS NOT</b> infinite.  | Replace the power window master switch circuit board.<br>Proceed to <b>SECTION X SWITCH REASSEMBLY</b><br><b>NOTE:</b> <ul style="list-style-type: none"> <li>Mark the NG circuit board with an 'X' so that it is not reused.</li> <li>There is <b>NO NEED</b> to apply grease to the new circuit board.</li> </ul> |

## VIII. GREASE APPLICATION

### [Video Supplement: Grease Application steps](#)



- Approximately 0.5 to 0.9 ml of grease will be needed for each circuit board assembly.
- One tube contains 50 ml of grease and will remedy approximately 50 vehicles.

#### A. PREPARE THE SYRINGE

##### 1. FILL THE SYRINGE WITH GREASE

- a) With the cap on, shake the tube of grease to confirm the grease is at the mouth of the tube.

##### NOTE:

- Air bubbles in the grease will make filling the syringe and greasing the switches difficult.
- Wear safety glasses when filling the switches with grease.

- b) Attach the adapter to the tube of grease.

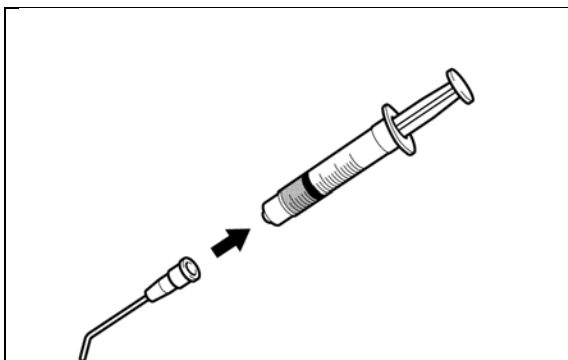
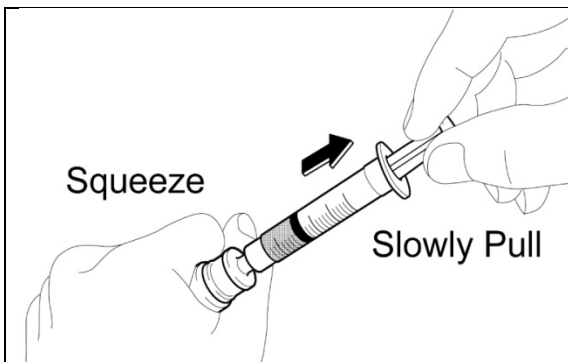
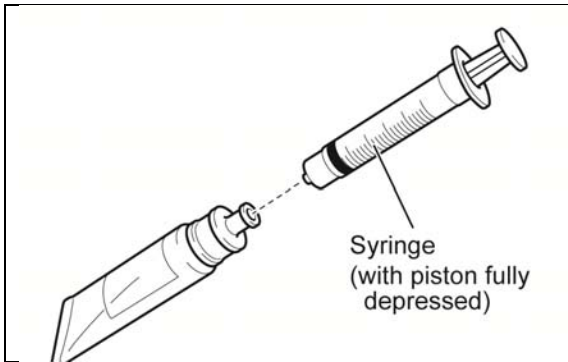
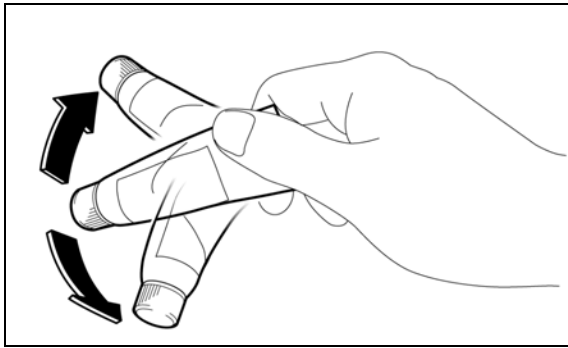
- c) Screw the syringe onto the adapter.

**NOTE: Confirm the plunger is depressed prior to screwing it to the adapter.**

- d) Gently squeeze the tube while pulling up on the plunger to fill the syringe.

**NOTE: Each circuit board assembly will require 0.5 to 0.9 ml of grease.**

- e) Remove the syringe from the adapter and screw on the nozzle.





## B. FILL THE SWITCHES WITH GREASE



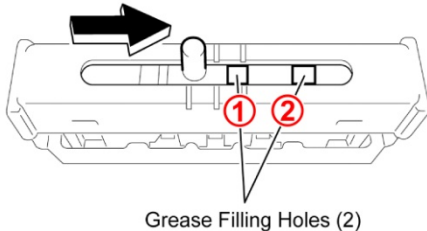
- **ALL switches that ARE NOT AUTO MUST be greased.**
- **Approximately 0.5 to 0.9 ml of grease will be needed for each circuit board assembly.**
- **Confirm a previously diagnosed NG circuit board is not being used.**

**GREASING PROCEDURE OVERVIEW** (for full details, follow steps 1 - 4 below)

Slide switch pins forward→Fill hole 1→Fill hole 2

Slide switch pins rearward→Fill hole 3→Fill hole 4

Fully Slide to Front



Grease Filling Holes (2)

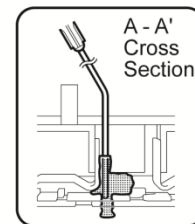
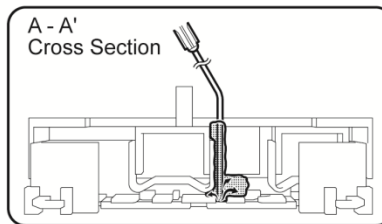
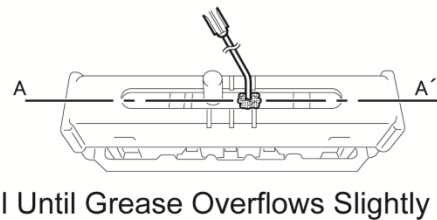
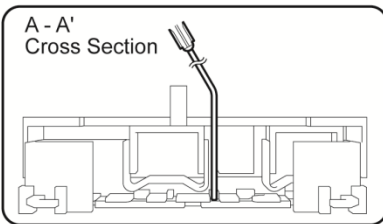
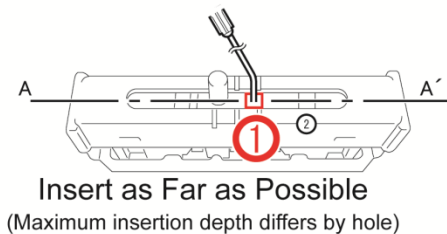
### 1. POSITION THE SWITCHES

- Slide the switch pins all the way to the front.

### 2. FILL THE SWITCHES

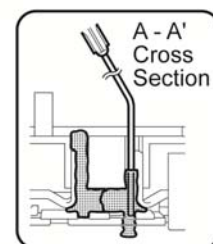
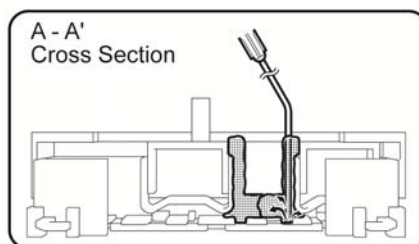
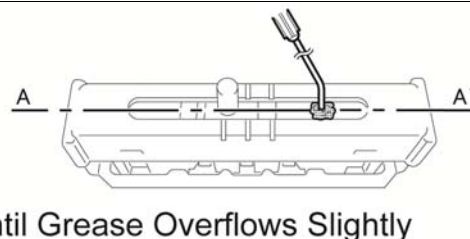
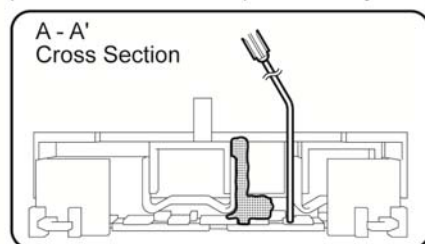
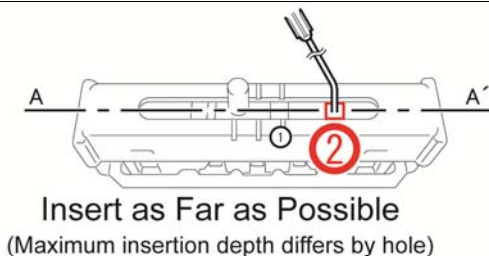
- Insert the nozzle in hole 1 as far as it will go and fill the hole with grease.
- Fill the switch until the grease begins to slightly overflow.

**NOTE: The grease may overflow through the back side of the switch, this is acceptable.**

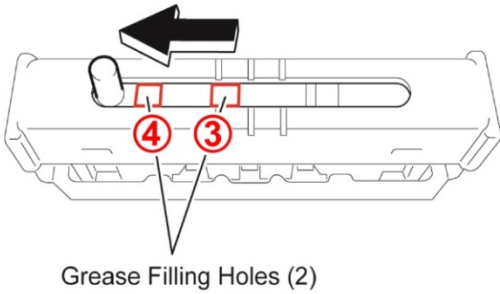


- Insert the nozzle in hole 2 as far as it will go and fill the hole with grease.
- Fill the switch until the grease begins to slightly overflow.

**NOTE: The grease may overflow through the back side of the switch, this is acceptable.**



## Fully Slide to Rear



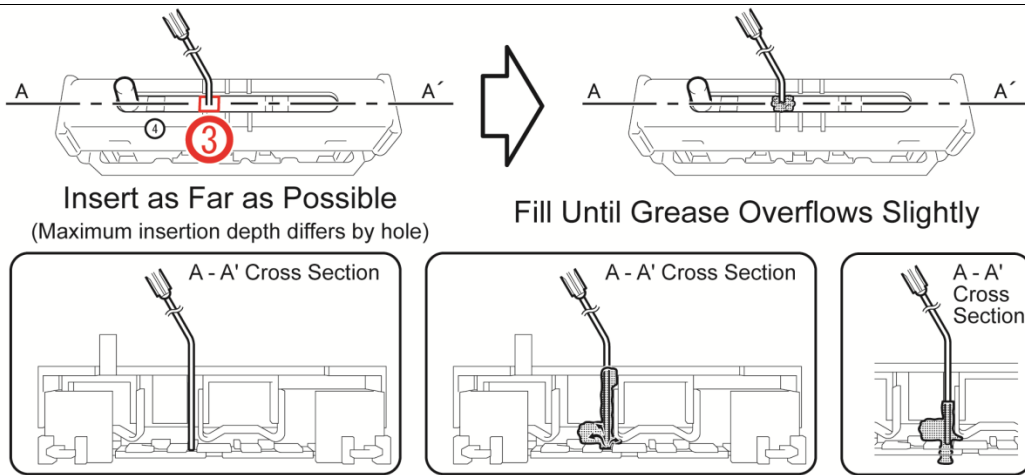
### 3. REPOSITION THE SWITCHES

- Slide the switch pins all the way to the rear.

### 4. FILL THE SWITCHES AGAIN

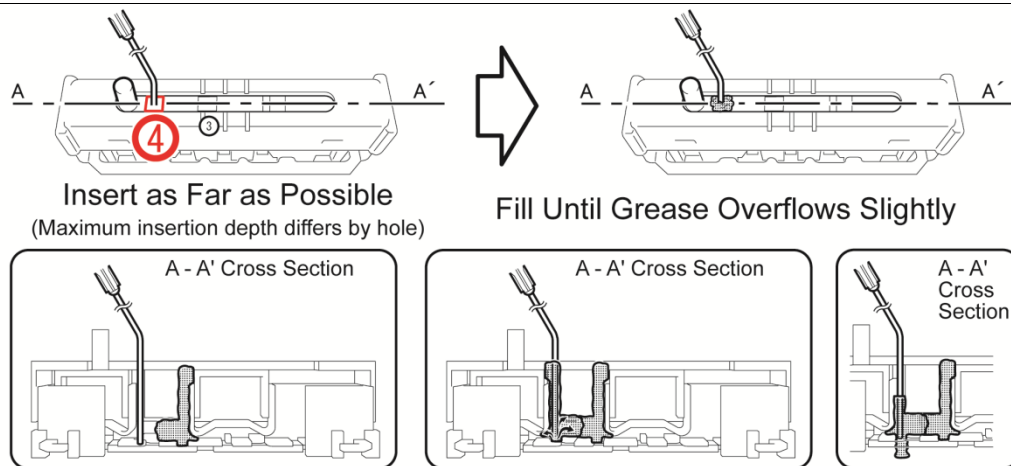
- Insert the nozzle in hole 3 as far as it will go and fill the hole with grease.
- Fill the switch until the grease begins to slightly overflow.

**NOTE: The grease may overflow through the back side of the switch, this is acceptable.**



- Insert the nozzle in hole 4 as far as it will go and fill the hole with grease.
- Fill the switch until the grease begins to slightly overflow.

**NOTE: The grease may overflow through the back side of the switch, this is acceptable.**



- **ALL switches that ARE NOT AUTO MUST be greased.**
- **Wipe up any excess grease from the switches.**

### 5. STORE THE SYRINGE SET TO BE REUSED ON FUTURE VEHICLES

- Store the syringe set in a location free from dust and debris.

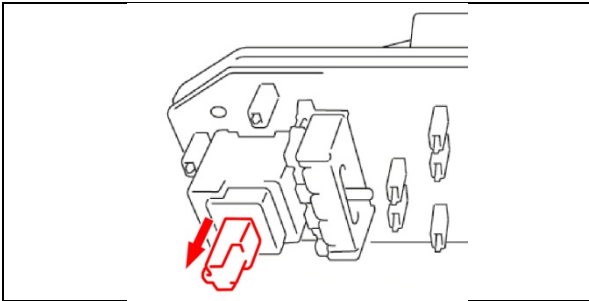
## IX. SWITCH REASSEMBLY

### Video Supplement: PWMS Reassembly steps



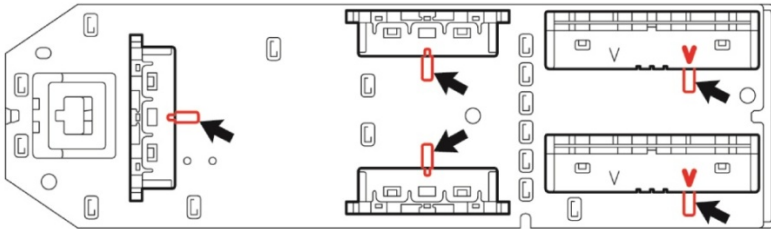
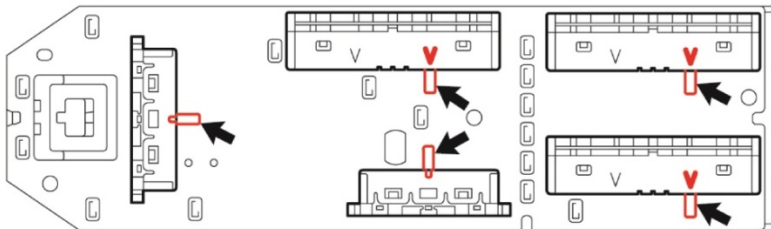
- Complete this section if grease application has been completed or if the circuit board is being replaced.
- If the switch pins are not aligned, the switches will not operate correctly after reassembly.

#### 1. POSITION THE SWITCHES



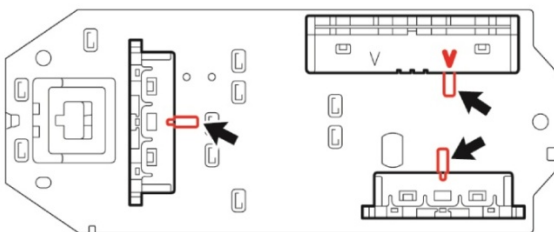
- Place the window lock button in the up position.
- Align all switch pins with the marks as shown in the illustration below.

PWMS (w/AUTO driver and power rear windows)

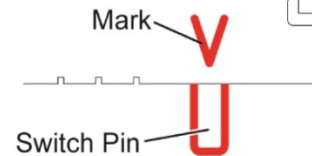


PWMS (w/AUTO driver and passenger and power rear windows)

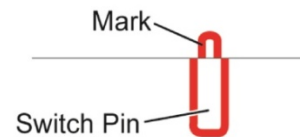
PWMS (w/AUTO driver and w/o power rear windows)



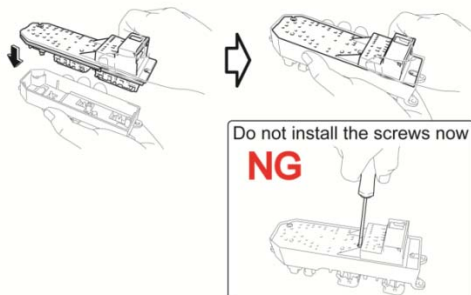
Manual switch:



Auto/Lock switch:



Insert directly downwards



#### 2. INSERT THE CIRCUIT BOARD TO THE SWITCH CASE

- Carefully position the circuit board in the switch case to avoid misaligning the switch pins.



- **DO NOT** install the screws to secure the circuit board until completing the operation checks.
- **DO NOT** use the original screws.

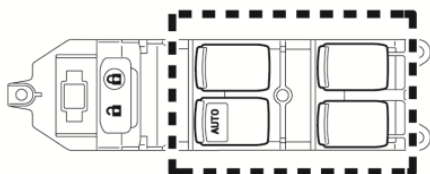


### 3. CONFIRM THE OPERATION OF THE SWITCHES

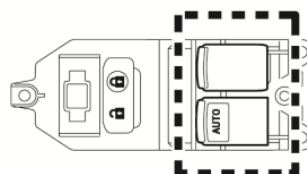
- a) While holding the circuit board in the switch case, check the operation of the switches. The movement up/down and lock/unlock position should be equal in both directions.

#### Window Switch

w/ Rear Power Window Switch:

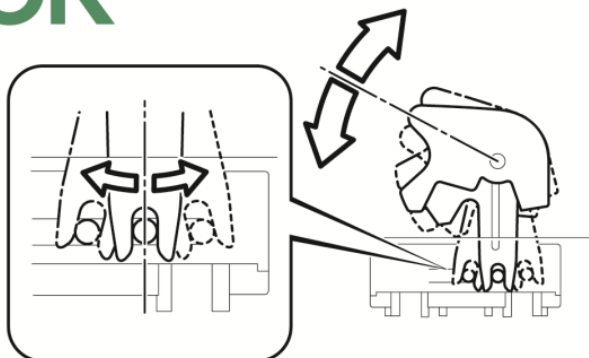


w/o Rear Power Window Switch:



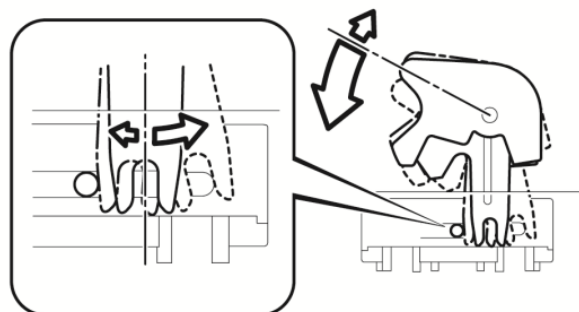
**OK**

Same Movement Amount



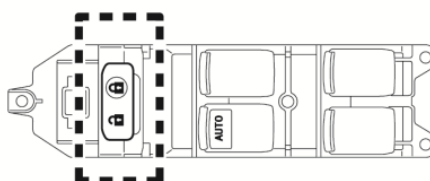
**NG**

Movement Amount is Different

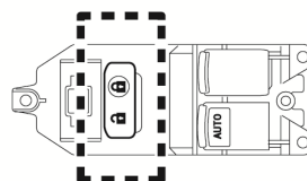


#### Door Control Switch

w/ Rear Power Window Switch:

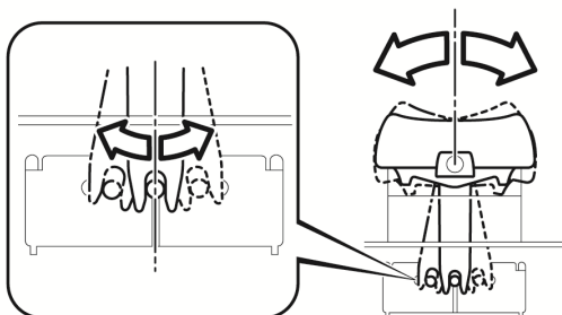


w/o Rear Power Window Switch:



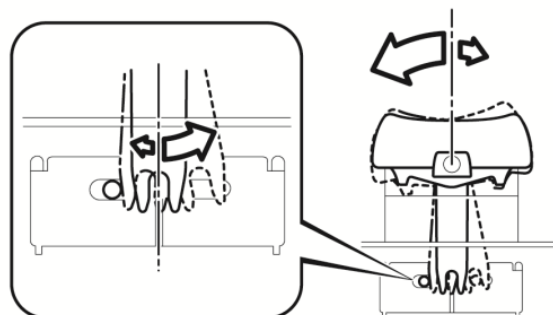
**OK**

Same Movement Amount

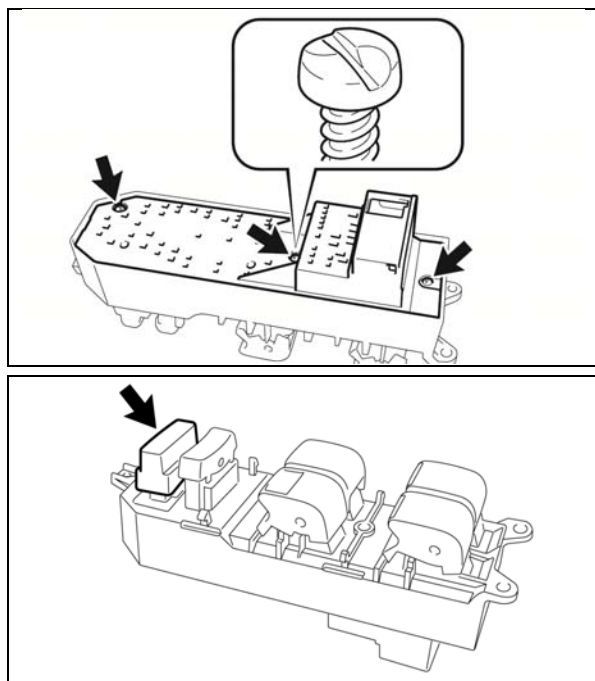


**NG**

Movement Amount is Different



| CONDITION                                           | ACTION REQUIRED                                                                                    |
|-----------------------------------------------------|----------------------------------------------------------------------------------------------------|
| Movement is equal in <b>ALL</b> switches.           | The circuit board is positioned correctly.<br>Proceed to <b>STEP 4. INSTALL THE ONE-WAY SCREWS</b> |
| Movement in one or more switch <b>IS NOT</b> equal. | One or more switch pin is misaligned.<br>Repeat <b>STEPS 1-3</b>                                   |



**DO NOT** install the screws to secure the circuit board until completing the operation checks.

#### 4. INSTALL THE ONE-WAY SCREWS

- a) Install the one-way screws.

**NOTE:** There are 3 screws for switches with power rear windows, 2 screws for switches without power rear windows.

#### 5. INSTALL THE WINDOW LOCK BUTTON

- a) Press the lock button firmly until a snap is heard.

## X. POWER WINDOW MASTER SWITCH INSTALLATION

### 1. INSTALL THE POWER WINDOW MASTER SWITCH AS OUTLINED IN THE REPAIR MANUAL ON TIS

- [CAMRY](#)
- [CAMRY HYBRID](#)
- [COROLLA](#)
- [HIGHLANDER](#)
- [HIGHLANDER HV](#)
- [MATRIX](#)
- [RAV4](#)
- [SCION xB](#)
- [SCION xD](#)
- [SEQUOIA](#)
- [TUNDRA](#)
- [YARIS LIFTBACK](#)
- [YARIS SEDAN](#)

## XI. POWER WINDOW MASTER SWITCH OPERATION CHECK

### 1. CHECK THE FOLLOWING OPERATIONS OF THE POWER WINDOW MASTER SWITCH

- a) Lock and unlock switch operation.
- b) Up and down operation for each window.
- c) Auto-up and auto-down operation of auto switch(s).
- d) Window lock switch operation.
- e) Illumination of 'AUTO' on auto switches (headlights must be on to confirm this)

**NOTE:** System initialization is not necessary.

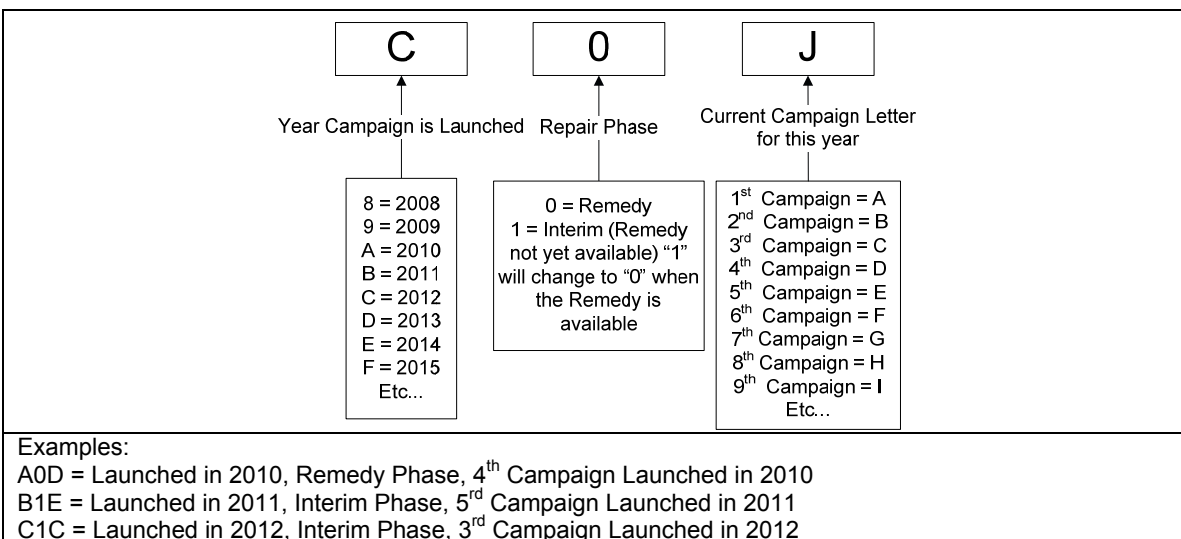
## ◀ VERIFY REPAIR QUALITY ▶

- Confirm **ALL** inspection steps are followed **EXACTLY** as described in these instructions
- Confirm the grease is applied as described in these instructions
- Confirm the switch assembly operates correctly before installing the one-way screws
- Confirm new one-way screws are installed when reassembling the switch assembly

If you have any questions regarding this update, please contact your regional representative.

## XII. APPENDIX

### A. CAMPAIGN DESIGNATION DECODER



### B. CAMPAIGN PARTS DISPOSAL

As required by Federal Regulations, please make sure all campaign parts (original parts) removed from the vehicle are disposed of in a manner in which they will not be reused, ***unless requested for parts recovery return.***