TECHNICAL INSTRUCTIONS

FOR

SAFETY RECALL CSJ

REAR LOWER SUSPENSION ARM No.1

2006 – EARLY 2011 MODEL YEAR RAV4

Complete CSJ Technical Video Supplement

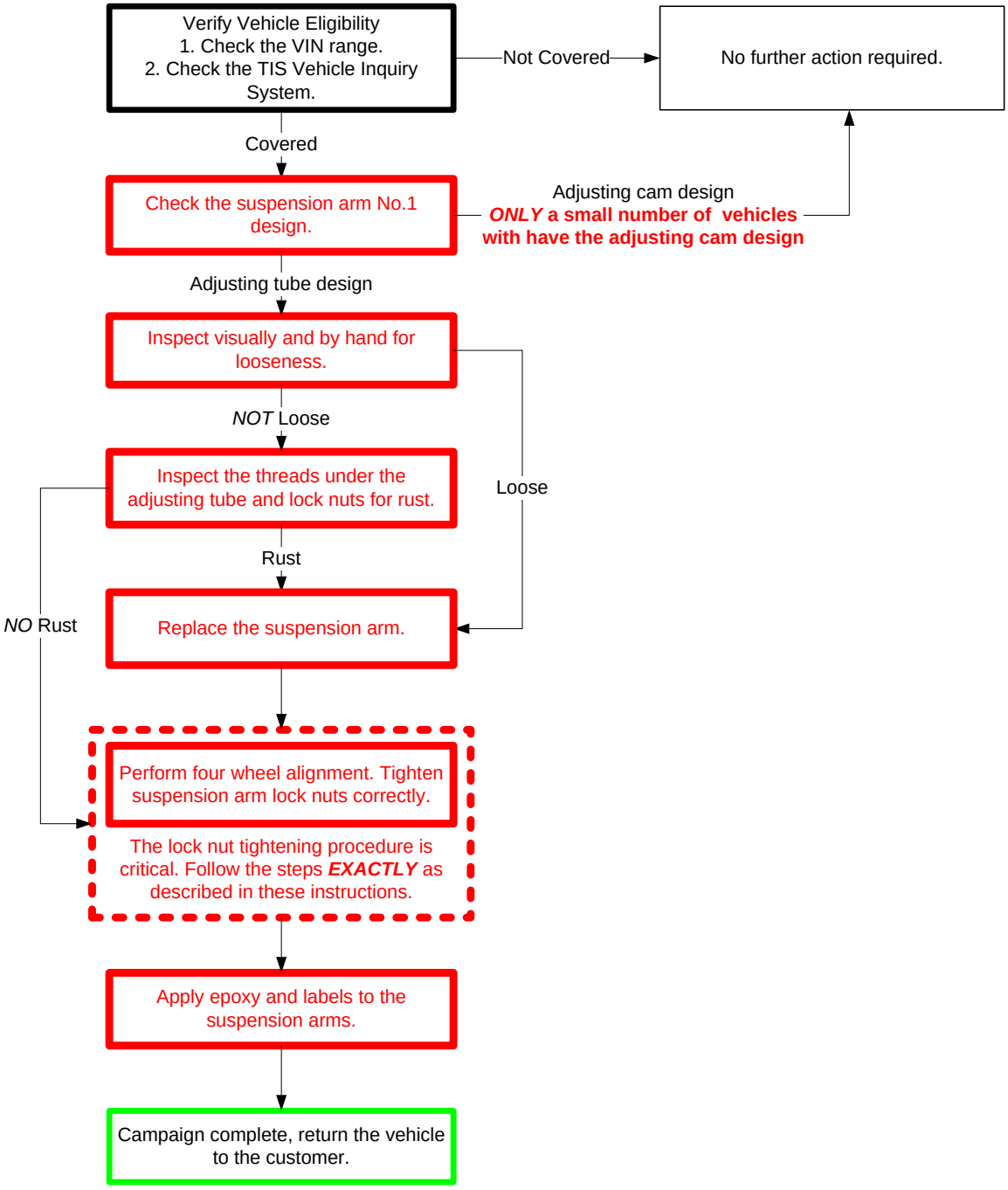
ONLY TECHNICIANS WHO HAVE COMPLETED TRAINING COURSES SC13A, SC13C, AND HAVE THE FOLLOWING LEVEL OF CERTIFICATION CAN PERFORM THIS REPAIR:

- **CHASSIS EXPERT TECHNICIANS**
- **MASTER TECHNICIANS**
- **MASTER DIAGNOSTIC TECHNICIANS**

As of 8/27/13 the Remedy instructions are only applicable to the following regions: Boston

Refer to the Dealer Letter for anticipated remedy dates for all remaining regions

I. OPERATION FLOW CHART



II. BACKGROUND

Video supplement: Introduction

Safety Recall C0J involved inspecting the right and left Rear Suspension Lower Arm No. 1 (“arm”) for looseness. Based upon this inspection, it may have been necessary to replace the arm(s).

TMS received reports from dealers indicating that some vehicles experienced symptoms of the recalled condition after being inspected or repaired. Upon investigation, it was discovered that some inspections were not adequate and portions of the repair procedure may not have been performed correctly.

Based upon this information, Toyota will be re-notifying all owners covered by Safety Recall C0J. The notification will apologize to customers and inform them that their vehicles may ***not*** have been inspected or repaired correctly. The letter will request the customer to return to the dealership for a revised inspection and remedy procedure. The revised inspection and remedy will be performed at **No Charge.**

III. PREPARATION

A. PARTS

Part Number	Part Description	Quantity
00289-SW1KT-DS	Epoxy Kit	1
*The kit above includes the following parts.		
–	50ml Epoxy Cartridge	1
–	Mixing Nozzle	1
–	Caution Labels	2

All vehicles will require this epoxy kit.

Part Number	Part Description	Quantity
04002-22142	Rear Suspension Arm No.1 Kit*	1
*The kit above includes the following parts.		
48710-0R010	Rear Lower Suspension Arm No.1	1
90179-12027	Nut	1

This part will be replaced based upon inspection, follow these instructions for details.

B. TOOLS & EQUIPMENT

- Standard hand tools
- Torque wrench
- 22mm crowfoot
- 4 Wheel alignment machine

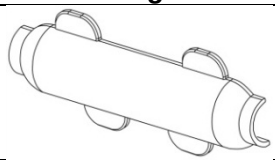
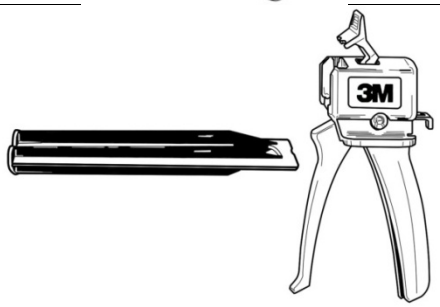
C. MATERIALS

- FIPG 00295-00103 – Needed if voids are found in the epoxy, follow these instructions for details
- Frekote Lifft Mold Release 00289-HKLMR-DS – This material is only currently available in case quantity (12 cans/case), one can will cover approximately 75 vehicles

SST – This is an essential special service tool that the dealership should have.

Part Number	Part Name	Quantity
09960-20010	Ball Joint Puller Set	1

CAMPAIGN TOOLS – These tools are provided to the dealership. These tools are necessary when performing this repair.

Image	Name	Quantity
	Epoxy Mold Set	4 halves / 2 complete molds
	Epoxy Applicator	1

NOTE: These tools *CANNOT* be ordered through the parts or tools system. There is a very limited supply of tools, but if additional tools are needed, contact your regional representative.

IV. IDENTIFICATION OF AFFECTED VEHICLES

A. COVERED VIN RANGE

WMI	Year	VDS Range	
		VDS	Range
2T3	2009	BF31V	W001119-W024119
2T3	2009	BF32V	W001207-W024120
2T3	2009	BF33V	W001117-W024117
2T3	2009	BF34V	W003775-W021681
2T3	2009	BF35V	W001421-W024111
2T3	2009	BK31V	W001143-W013774
2T3	2009	BK32V	W001142-W013693
2T3	2009	BK33V	W001162-W013773
2T3	2009	BK34V	W001688-W010762
2T3	2009	BK35V	W002139-W013749
2T3	2009	ZF31V	W001050-W016880
2T3	2009	ZF32V	W001048-W016874
2T3	2009	ZF33V	W001049-W016918
2T3	2009	ZF34V	W003810-W012950
2T3	2009	ZF35V	W001625-W016916
2T3	2009	ZK31V	W001081-W003645
2T3	2009	ZK32V	W001149-W003642
2T3	2009	ZK33V	W001076-W003644
2T3	2009	ZK34V	W001670-W002621
2T3	2009	ZK35V	W001965-W003631
2T3	2010	BF4DV	W022899-W082387
2T3	2010	BK4DV	W013775-W036881
2T3	2010	DF4DV	W024130-W082385
2T3	2010	DK4DV	W013776-W036900
2T3	2010	EF4DV	W024745-W069582
2T3	2010	EK4DV	W014634-W036700
2T3	2010	JF4DV	W024129-W082307
2T3	2010	JK4DV	W013811-W036888
2T3	2010	KF4DV	W016950-W052601
2T3	2010	KK4DV	W003824-W008864
2T3	2010	RF4DV	W022777-W082383
2T3	2010	RK4DV	W013813-W036821
2T3	2010	WF4DV	W016936-W052514
2T3	2010	WK4DV	W003659-W008863
2T3	2010	XF4DV	W018112-W052094
2T3	2010	XK4DV	W003701-W006779
2T3	2010	YF4DV	W016920-W052604
2T3	2010	YK4DV	W003435-W008860
2T3	2010	ZF4DV	W016923-W052607
2T3	2010	ZK4DV	W003652-W008861
2T3	2011	BF4DV	W077612-W082793
2T3	2011	BK4DV	W036909-W037018
2T3	2011	DF4DV	W082411-W082788
2T3	2011	DK4DV	W036901-W037033
2T3	2011	JF4DV	W082409-W082756
2T3	2011	JK4DV	W037020-W037025
2T3	2011	KF4DV	W052688-W052839
2T3	2011	RF4DV	W082407-W082781
2T3	2011	RK4DV	W036971-W036988
2T3	2011	WF4DV	W050399-W052858
2T3	2011	WK4DV	W008866-W008877
2T3	2011	YF4DV	W052611-W052872
2T3	2011	YK4DV	W008867-W008880

WMI	Year	VDS Range	
		VDS	Range
2T3	2011	ZF4DV	W052609-W052873
2T3	2011	ZK4DV	W008870-W008870
JTM	2006	BD31V	5000052-6022606
JTM	2006	BD32V	5000029-6022607
JTM	2006	BD33V	5000087-6022596
JTM	2006	BD34V	5000058-5051164
JTM	2006	BD35V	5000031-5051248
JTM	2006	BK31V	5000008-6010002
JTM	2006	BK32V	5000011-6010006
JTM	2006	BK33V	5000022-6009992
JTM	2006	BK34V	5000028-5012673
JTM	2006	BK35V	5000010-5012694
JTM	2006	ZD31V	5000027-6020783
JTM	2006	ZD32V	5000006-6020798
JTM	2006	ZD33V	5000019-6020842
JTM	2006	ZD34V	5000025-5032507
JTM	2006	ZD35V	5000005-5032573
JTM	2006	ZK31V	5000007-6003129
JTM	2006	ZK32V	5000005-6003131
JTM	2006	ZK33V	5000011-6003132
JTM	2006	ZK34V	5000004-5005681
JTM	2006	ZK35V	5000060-5005684
JTM	2007	BD31V	5051303-6054728
JTM	2007	BD32V	5051315-6054737
JTM	2007	BD33V	5051301-6054736
JTM	2007	BD34V	5052182-5124068
JTM	2007	BD35V	5051278-5124278
JTM	2007	BK31V	5012706-6028074
JTM	2007	BK32V	5012016-6028066
JTM	2007	BK33V	5012697-6028069
JTM	2007	BK34V	5012752-5040742
JTM	2007	BK35V	5012701-5040698
JTM	2007	ZD31V	5031315-6052970
JTM	2007	ZD32V	5031131-6052984
JTM	2007	ZD33V	5032593-6052993
JTM	2007	ZD34V	5032641-5077858
JTM	2007	ZD35V	5032630-5077997
JTM	2007	ZK31V	5005691-6010016
JTM	2007	ZK32V	5005392-6010013
JTM	2007	ZK33V	5005699-6010017
JTM	2007	ZK34V	5005692-5016122
JTM	2007	ZK35V	5005728-5016021
JTM	2008	BD31V	5122515-6089730
JTM	2008	BD32V	5124567-6089718
JTM	2008	BD33V	5124318-6089729
JTM	2008	BD34V	5124315-5215683
JTM	2008	BD35V	5124310-5215906
JTM	2008	BK31V	5040755-6050078
JTM	2008	BK32V	5039902-6050082
JTM	2008	BK33V	5040768-6050066
JTM	2008	BK34V	5040763-5071435
JTM	2008	BK35V	5040804-5071479
JTM	2008	ZD31V	5078027-6081056

COVERED VIN RANGE CONTINUED…

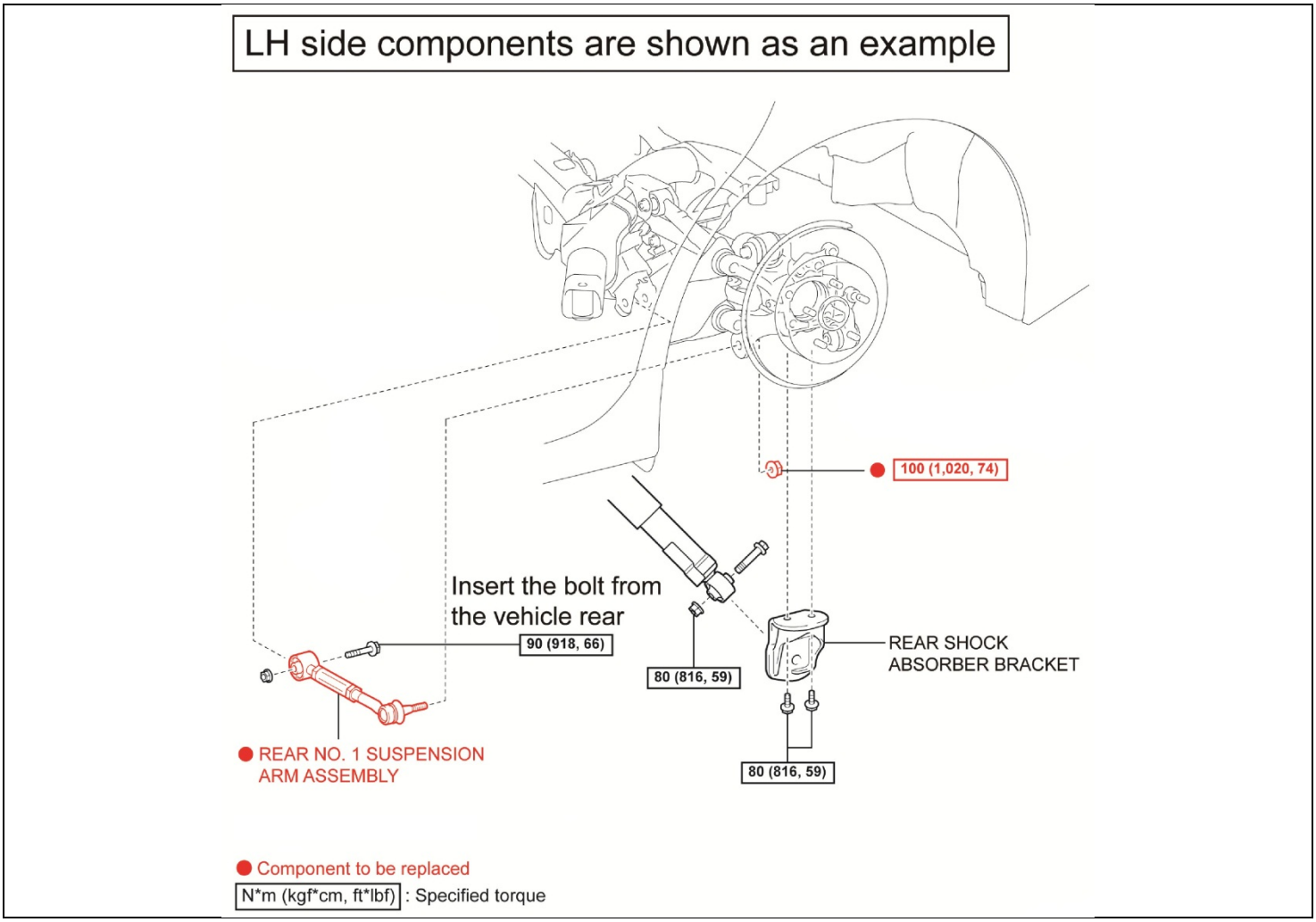
WMI	Year	VDS Range	
		VDS	Range
JTM	2008	ZD32V	5078035-6081048
JTM	2008	ZD33V	5076662-6081084
JTM	2008	ZD34V	5078041-5117037
JTM	2008	ZD35V	5078033-5117144
JTM	2008	ZK31V	5015779-6016058
JTM	2008	ZK32V	5016141-6016055
JTM	2008	ZK33V	5016138-6016053
JTM	2008	ZK34V	5016157-5024038
JTM	2008	ZK35V	5016148-5024022
JTM	2009	BF31V	5000104-D021298
JTM	2009	BF32V	5000105-D021282
JTM	2009	BF33V	5000109-D021303
JTM	2009	BF34V	5000106-5011765
JTM	2009	BF35V	5000103-5017199
JTM	2009	BK31V	5070458-D010236
JTM	2009	BK32V	5057953-D010128
JTM	2009	BK33V	5057681-D010235
JTM	2009	BK34V	5071496-5084167
JTM	2009	BK35V	5071507-5084172
JTM	2009	ZF31V	5000103-D015503
JTM	2009	ZF32V	5000110-D015507
JTM	2009	ZF33V	5000105-D015511
JTM	2009	ZF34V	5000120-5014170
JTM	2009	ZF35V	5000104-5014232
JTM	2009	ZK31V	5023836-D003176
JTM	2009	ZK32V	5023823-D003174
JTM	2009	ZK33V	5024054-D003135
JTM	2009	ZK34V	5024061-5026106
JTM	2009	ZK35V	5024071-5025801
JTM	2010	BF4DV	5017206-D039942
JTM	2010	BK4DV	5084190-D017766
JTM	2010	DF4DV	5017212-D039591

WMI	Year	VDS Range	
		VDS	Range
JTM	2010	DK4DV	5084192-D017767
JTM	2010	EF4DV	5021182-5033749
JTM	2010	EK4DV	5084606-5096973
JTM	2010	JF4DV	5017209-5037237
JTM	2010	JK4DV	5084196-5098439
JTM	2010	KF4DV	5014245-5032167
JTM	2010	KK4DV	5026161-5027285
JTM	2010	RF4DV	5017208-D039590
JTM	2010	RK4DV	5084203-D017704
JTM	2010	WF4DV	5014246-D028128
JTM	2010	WK4DV	5026116-D004794
JTM	2010	XF4DV	5016939-5031934
JTM	2010	XK4DV	5026233-5027247
JTM	2010	YF4DV	5013774-D029440
JTM	2010	YK4DV	5026113-D004796
JTM	2010	ZF4DV	5014243-D029469
JTM	2010	ZK4DV	5026110-D004788
JTM	2011	BF4DV	5037250-5037816
JTM	2011	DF4DV	5037541-D039852
JTM	2011	EF4DV	5037428-5037474
JTM	2011	JF4DV	5036972-5037773
JTM	2011	KF4DV	5032171-5032615
JTM	2011	KK4DV	5027374-5027382
JTM	2011	RF4DV	5037253-5037813
JTM	2011	RK4DV	5098183-5098978
JTM	2011	WF4DV	5032170-5032622
JTM	2011	WK4DV	5027373-5027384
JTM	2011	XF4DV	5032183-5032209
JTM	2011	YF4DV	5032383-5032596
JTM	2011	YK4DV	5027377-D004797
JTM	2011	ZF4DV	5032172-D029470
JTM	2011	ZK4DV	5027376-D004782

NOTE:

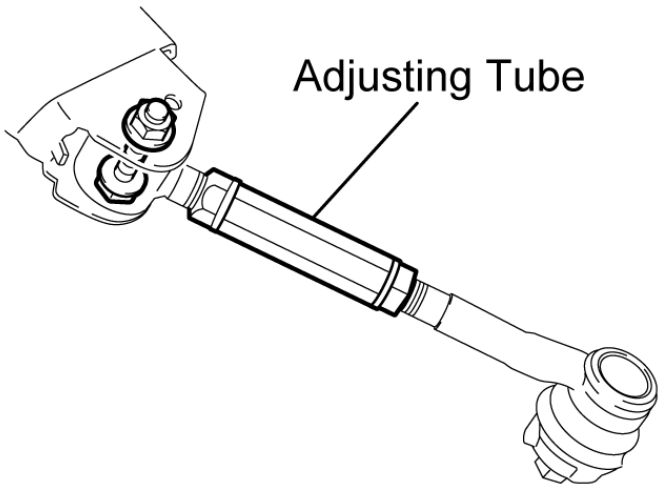
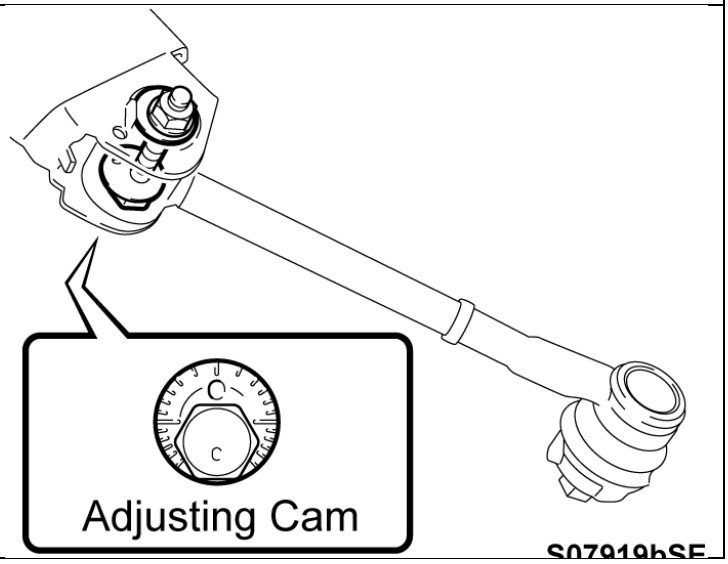
- Check the TIS Vehicle Inquiry System to confirm the VIN is involved in this Safety Recall, and that the campaign has not already been completed prior to dealer shipment or by another dealer.
- TMS warranty will not reimburse dealers for repairs conducted on vehicles that are not affected or were completed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

V. COMPONENTS



VI. REAR LOWER SUSPENSION ARM No.1 INSPECTION

1. CHECK THE SUSPENSION ARM DESIGN

ADJUSTING *TUBE* DESIGN	ADJUSTING *CAM* DESIGN
	

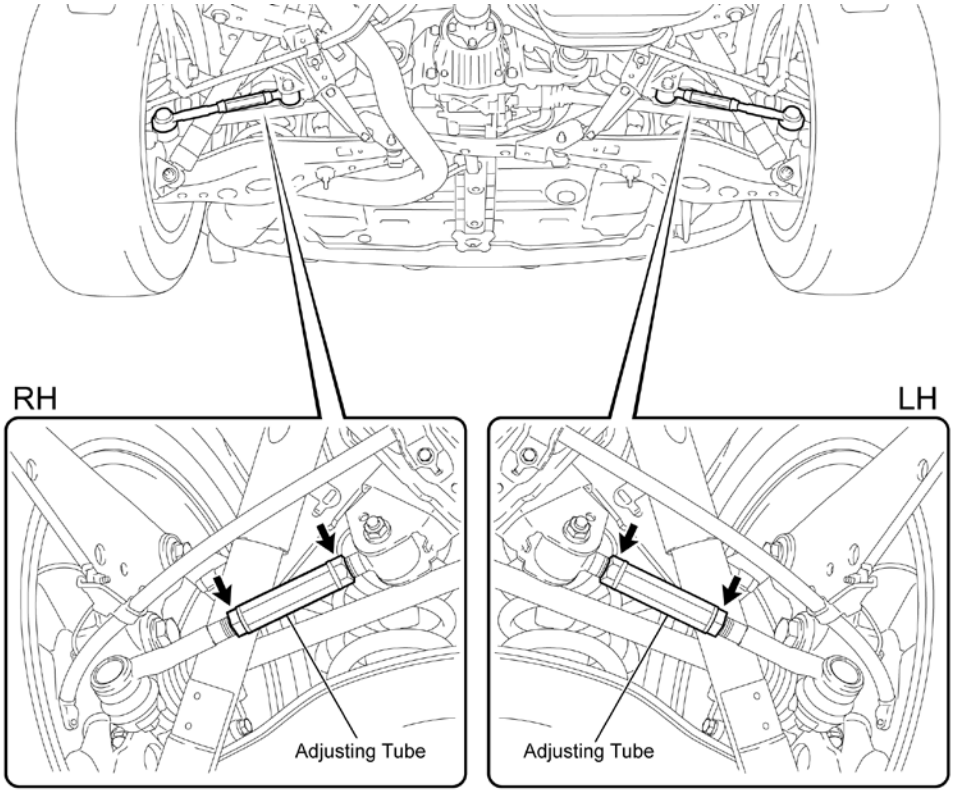
ARM DESIGN	ACTION REQUIRED
Adjusting ***Tube***	Proceed to **STEP 2. CHECK FOR LOOSENESS VISUALLY AND BY HAND**
Adjusting ***Cam***	No further action required. Campaign complete.

- **Replace the suspension arm(s) if:**
  - **Looseness is found.**
  - **A gap is visible between the lock nut(s) and adjusting tube.**
- **The arm(s) that do not exhibit the above conditions *MUST* also be inspected for rust.**

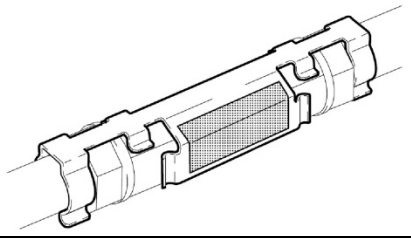
Video supplement: Suspension Arm Inspection steps

2. CHECK FOR LOOSENESS VISUALLY AND BY HAND

a) Check visually and by hand to determine if any looseness is seen or felt in the suspension arm lock nuts or adjusting tube. Check the LH and RH arms.

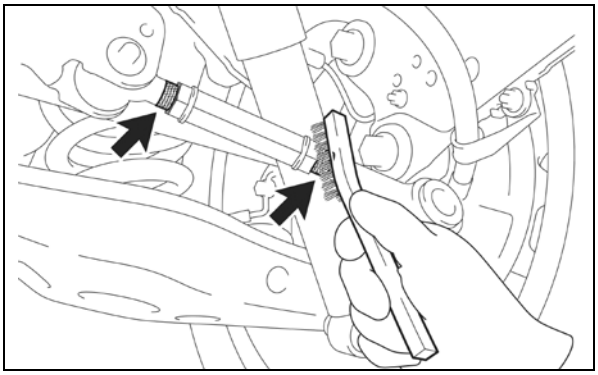


NOTE: If recall C0J was previously performed and suspension arm clips are installed, remove and discard the clips.



b) Inspect for a gap between the lock nuts and the adjusting tube.

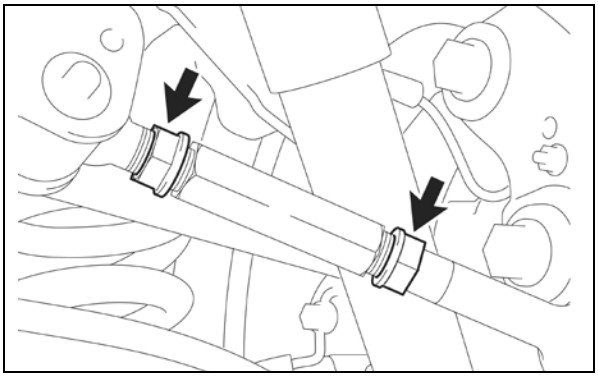
CONDITION	ACTION REQUIRED
Loose ***OR*** Gap	Replace the suspension arm(s) with looseness ***OR*** if a gap is found between the lock nut(s) and adjusting tube. Refer to **TIS** for instructions on suspension arm replacement. **NOTE:** • **To prevent stress on the new suspension arm bushing, apply a load to the suspension system to confirm the suspension arm bushing is aligned correctly when tightening by confirming that rear suspension arm No.1 is level with the ground.** • **Suspension arm adjustment and tightening procedure is critical. After replacing the arm, refer to SECTION VII. in these instructions for this procedure.**
NOT Loose ***AND*** ***NO*** Gap	Proceed to **STEP 3. CHECK THE SUSPENSION ARM THREADS FOR RUST**



3. CHECK THE SUSPENSION ARM THREADS FOR RUST

a) Brush the exposed threads if there is excessive buildup or rust on the threads.

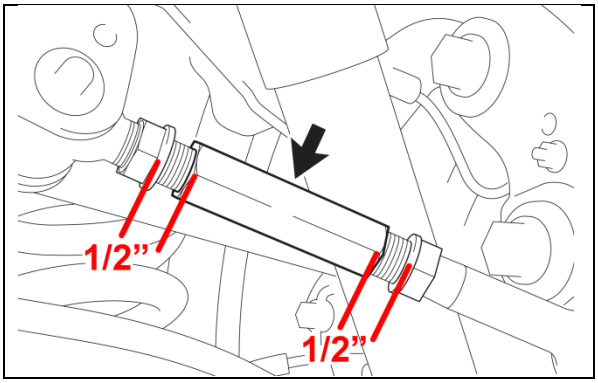
NOTE: Brushing the threads will ease the loosening of the nuts.



b) Hold the adjusting tube steady and loosen each lock nut to expose 1/8” (3mm) of threads.

NOTE: It takes approximately 2 complete revolutions of the nut to expose 1/8” of threads

If either nut is seized or extremely tight, the arm should be replaced. *DO NOT* apply heat in an attempt to loosen the arm.



c) Rotate the adjusting tube to expose an additional 3/8” (10mm) of threads.

NOTE: To prevent the arm from binding when rotating, hold the ball joint side with locking pliers.

If the adjusting tube is seized or extremely tight, the arm should be replaced. *DO NOT* apply heat in an attempt to loosen the arm.

There should now be 1/2” (12mm) of threads exposed on both sides of the adjusting tube.

d) Use a flashlight to inspect the newly exposed threads for ***RED RUST***.

In order to perform a thorough inspection, it is *CRITICAL* to use a flashlight when inspecting for rust.

CONDITION	ACTION REQUIRED
Obvious red rust 	Replace the suspension arm(s) that exhibit any of the three conditions to the left. Refer to **TIS** for instructions on suspension arm replacement. **NOTE:** • **To prevent stress on the new suspension arm bushing, apply a load to the suspension system to confirm the suspension arm bushing is aligned correctly when tightening by confirming that rear suspension arm No.1 is level with the ground.** • **Suspension arm adjustment and tightening procedure is critical. After replacing the arm, refer to SECTION VII. in these instructions for this procedure.**
Small amount of red rust 	
Red rust and white residue 	

INSPECTION CONDITIONS CONTINUED ON NEXT PAGE

d) Inspection conditions continued.

In order to perform a thorough inspection, it is *CRITICAL* to use a flashlight when inspecting for rust.

CONDITION	ACTION REQUIRED
White residue ***ONLY*** 	Temporarily tighten the arm back to the original condition. Confirm the inspection is performed on both arms then proceed to vehicle alignment. **NOTE: Suspension arm adjustment and tightening procedure is critical. Refer to SECTION VII. in these instructions for this procedure.**
NO Red Rust and ***NO*** White Residue 	

VII. SUSPENSION ARM ADJUSTMENT AND LOCK NUT TIGHTENING

Video Supplement: Suspension Arm Adjustment and Lock Nut Tightening steps

1. JOUNCE THE REAR OF THE VEHICLE

a) Due to the pressure applied to the rear suspension system during inspection, it is ***CRITICAL*** to jounce the rear of the vehicle to resettle the suspension prior to vehicle alignment.

2. PERFORM FOUR WHEEL ALIGNMENT

a) Perform alignment using an alignment machine.

b) Test drive the vehicle to confirm the alignment.

STOP

- **Holding the adjusting steady tube is *CRITICAL* when tightening the lock nuts, if the adjusting tube is not held steady the lock nuts may become loose.**
- **The alignment *MUST* be performed by the same technician performing the recall. Only one person should perform the entire recall on each vehicle.**
- **The tightening procedure for these lock nuts is critical, failure to tighten them in the correct order could cause them to become loose.**

VITAL STEPS

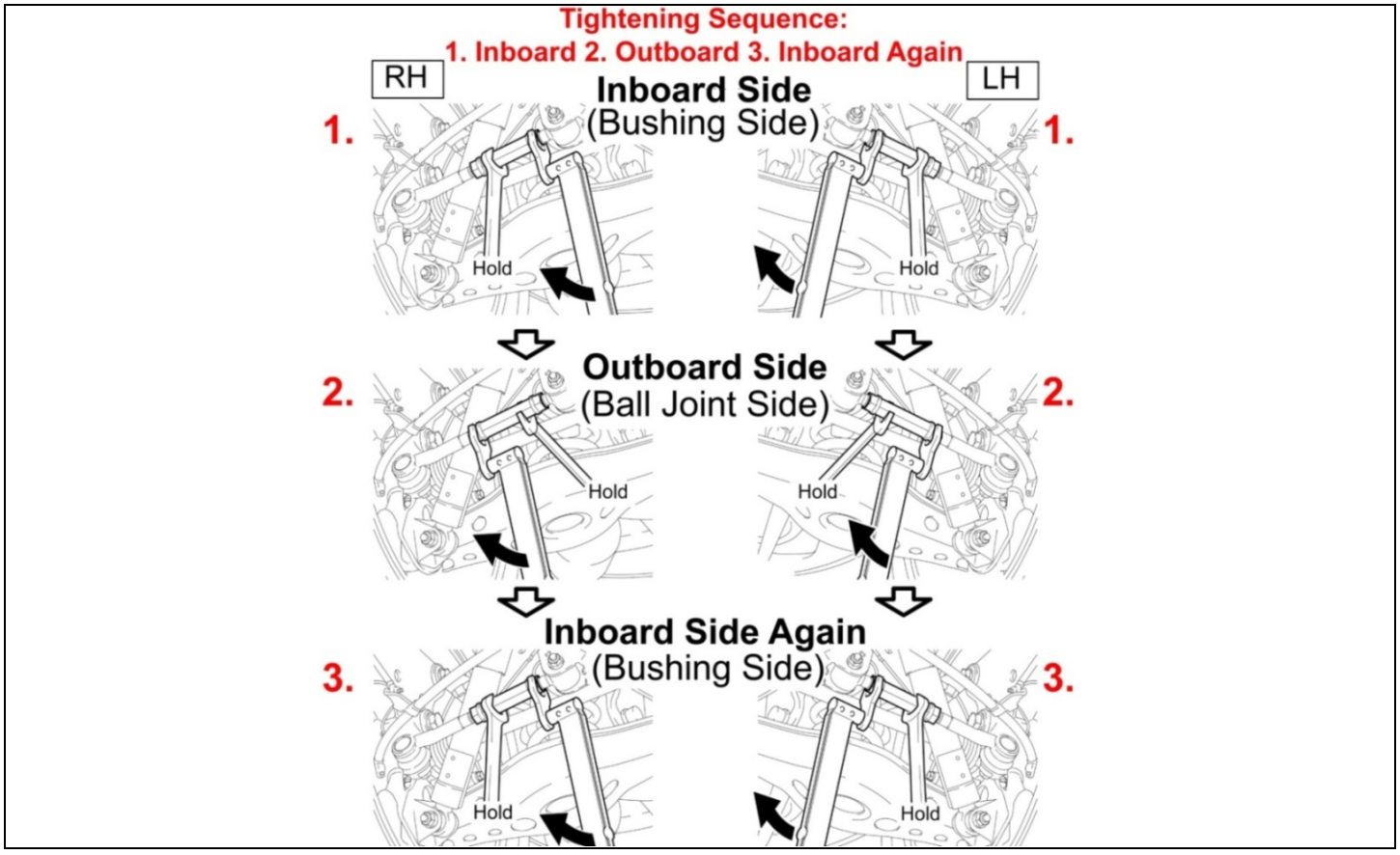
3. TIGHTEN THE LOCK NUTS EXACTLY AS DESCRIBED BELOW

Use a 22mm combination wrench and a 22mm crowfoot attached to a torque wrench
Tightening Sequence: 1. Inboard 2. Outboard 3. Inboard Again
Torque: 41ft. lbf (56N·m)

a) Tighten the inboard lock nut. ***Hold the adjusting tube steady*** and tighten the ***inboard lock nut*** to the specified torque.

b) Tighten the outboard lock nut. ***Hold the adjusting tube steady*** and tighten the ***outboard lock nut*** to the specified torque.

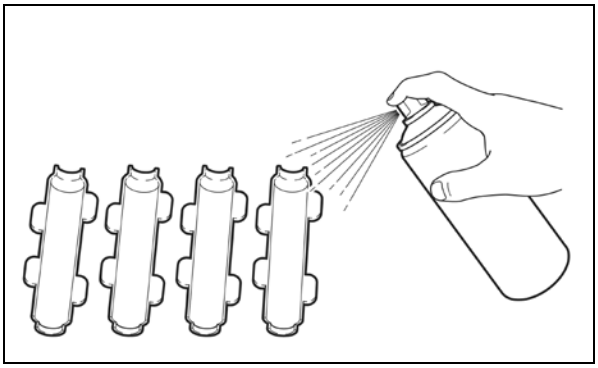
c) Tighten the inboard lock nut again. ***Hold the adjusting tube steady*** and tighten the ***inboard lock nut*** to the specified torque.



VIII. SUSPENSION ARM EPOXY APPLICATION

[Video Supplement: Epoxy Application steps]

STOP **Confirm the thread inspection, vehicle alignment, and lock nut tightening have all been performed correctly before proceeding.**



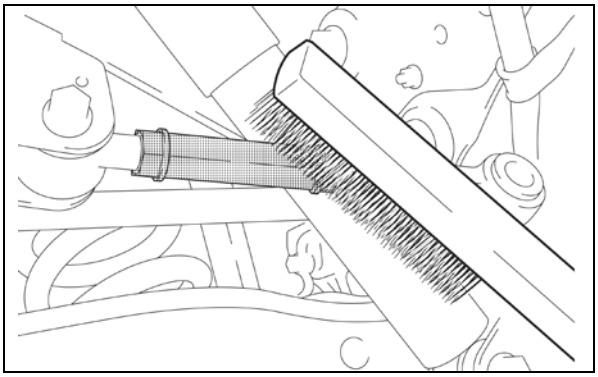
1. PREPARE THE EPOXY MOLDS

a) Confirm there is no dried epoxy or debris in the molds.

b) Apply two light coats of the mold release to the molds.

c) Once the mold release has dried, there should not be wet pools in the molds.

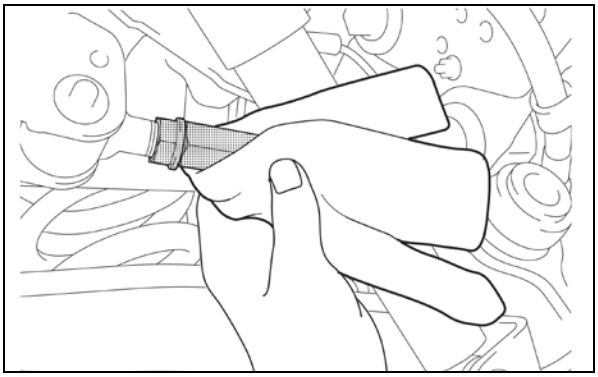
NOTE: The mold release will set and be ready for epoxy application after 60 seconds.



2. CLEAN THE SUSPENSION ARM

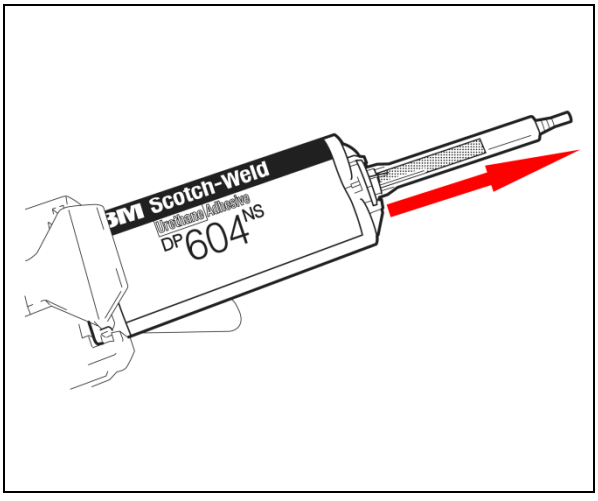
a) Clean the area of the arm where the epoxy will be applied.

b) Use a steel bristle brush to remove any rust buildup and flaking that may be present on the arm.



c) Use a rag and brake clean to finish cleaning the arm.

STOP **Cleaning the exterior surface, even on a new arm, is *CRITICAL* to confirm the epoxy adheres properly.**



3. FILL THE MOLDS WITH EPOXY

a) Assemble the applicator by following the instructions included in the applicator box.

b) Install the epoxy cartridge in the applicator.

c) Install the mixing nozzle to the cartridge.

d) Start by squeezing the handle to pre-fill the mixing tube until the epoxy reaches the end of the nozzle, then stop squeezing.

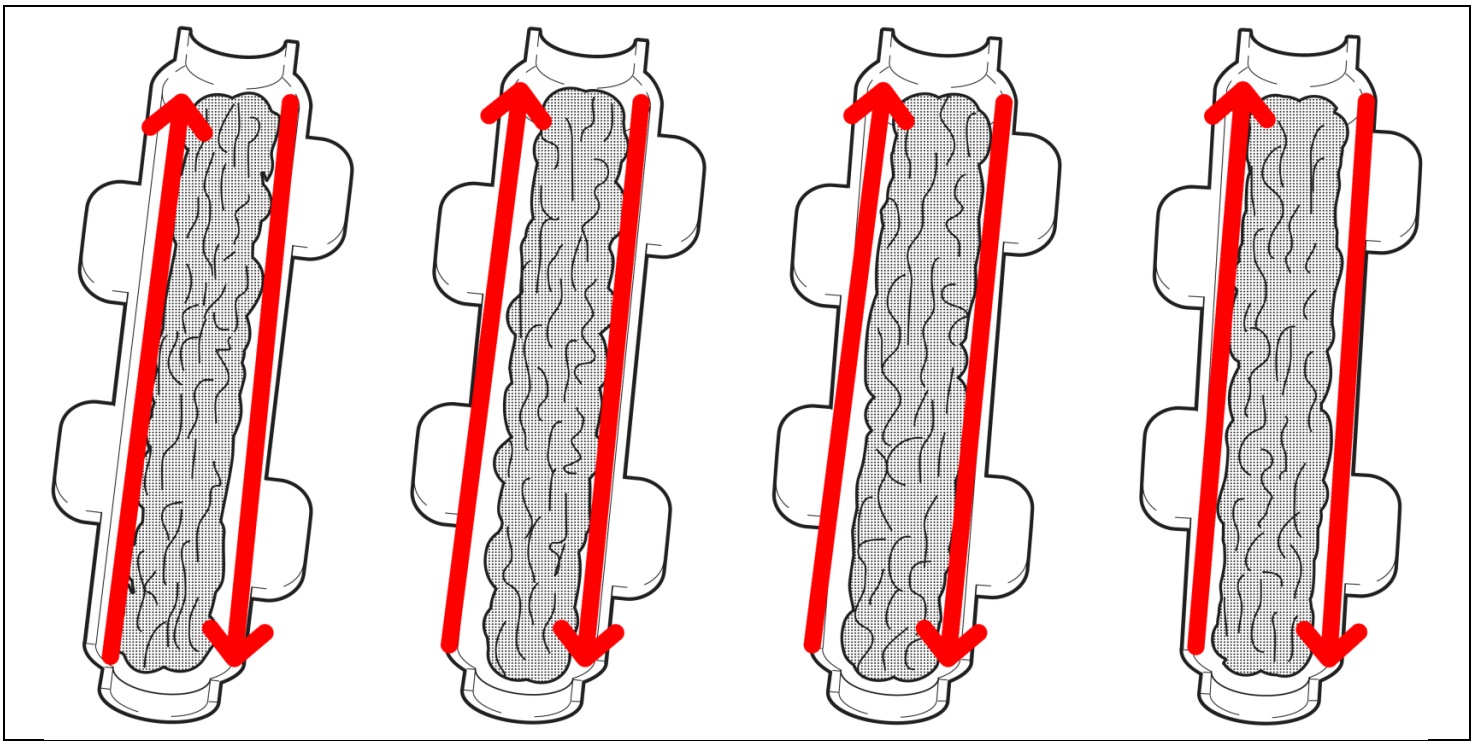
STOP **Pre-filling the mixing nozzle is critical to ensure the molds are each filled with even amounts of epoxy in the following steps.**

NOTE: Confirm the one-to-one ratio plunger is installed in the applicator.

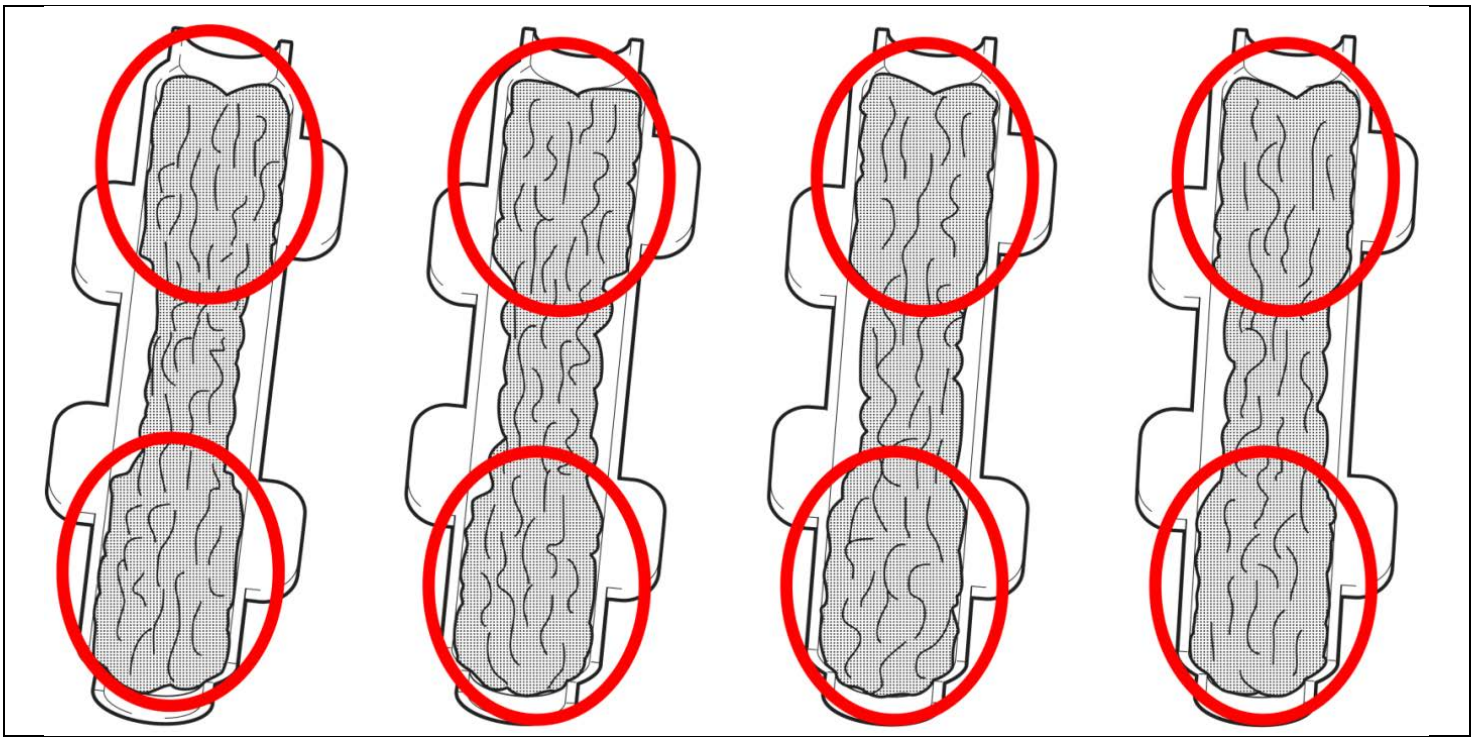
4. FILL THE MOLDS WITH EPOXY

- **One complete epoxy cartridge should be used for every 2 suspension arms.**
- **There are approximately 12 full squeezes of epoxy in each cartridge.**
- **Follow these steps exactly as described so there are no voids in the epoxy when installed on the suspension arm.**

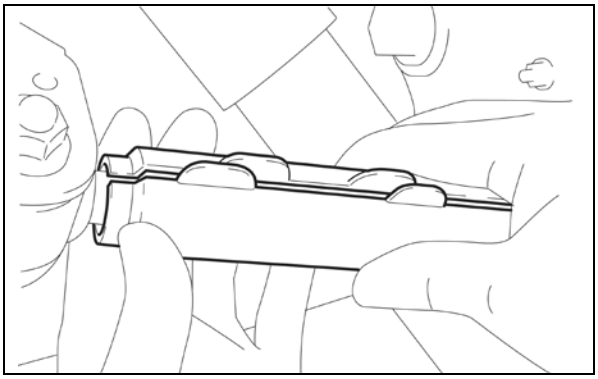
a) Apply two full squeezes of the epoxy along the length of each mold. (eight total squeezes)



b) Apply the remaining 3-4 squeezes evenly in the upper and lower thirds of the molds.



- **It is important that the epoxy is filled evenly between the four mold halves.**
- **If the molds have an uneven amount of epoxy, pair the mold with the least amount of epoxy and the one with the most epoxy together to avoid creating voids in the epoxy once it sets.**

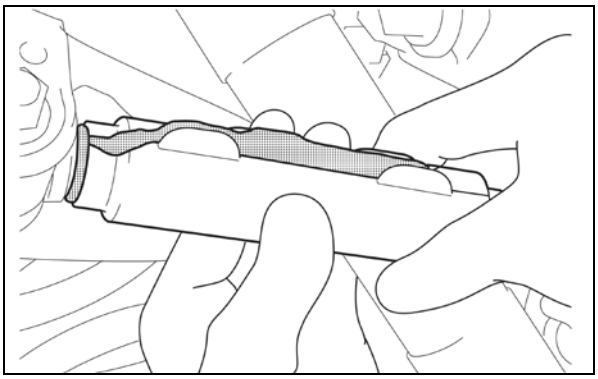


5. INSTALL THE MOLDS ON THE SUSPENSION ARMS

a) Confirm the molds are centered over the adjusting tube and lock nuts, then place them on the arm.

b) Press the mold halves together and confirm the edges of the mold halves are aligned with each other.

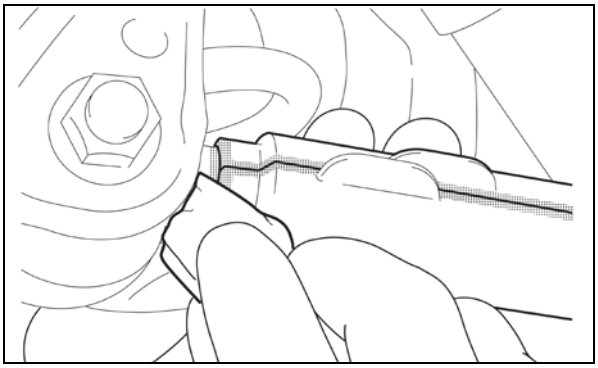
The mold should be installed within 5 minutes of dispensing the epoxy to ensure the epoxy adheres properly.



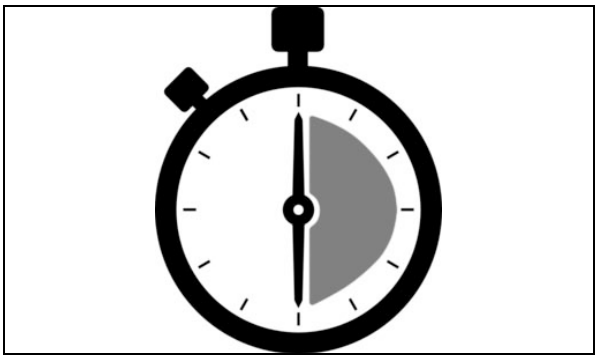
c) The epoxy should be forced out evenly along the parting lines to indicate a good fill.

d) There is ***NO NEED*** to wipe the epoxy along the parting lines, it can be trimmed easily once it has set.

NOTE: There is no need to clamp the molds, the epoxy will hold the molds in place.



e) Confirm the epoxy at the ends of the mold is clean and smooth.

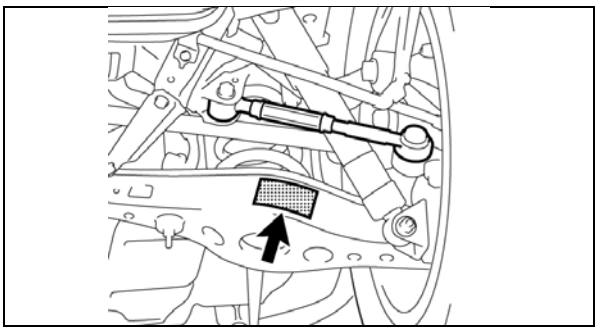


6. ALLOW THE EPOXY TO SET

a) Allow the epoxy to set for 30 minutes.

NOTE:

- **The set time is temperature dependent, it may take longer in cold temperatures.**
- **Heat *SHOULD NOT* be applied to speed the set time.**

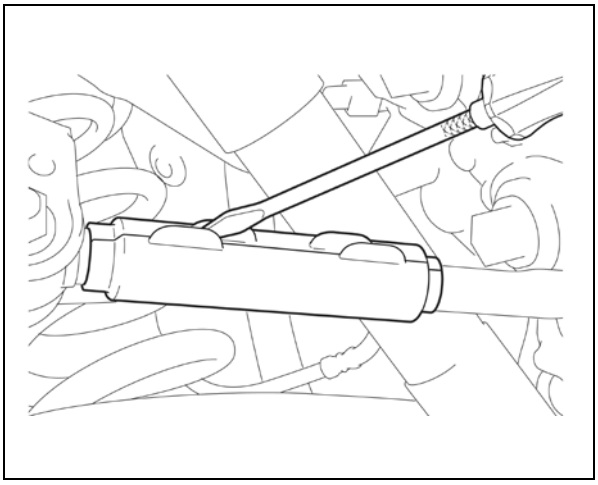


7. REMOVE THE CAUTION LABELS FROM SUSPENSION ARM No.2

a) Remove the labels from the front and back sides of suspension arm No.2.

NOTE:

- **This step only needs to be performed if recall C0J was previously performed and caution labels are installed.**
- **It may be necessary to heat the labels with a heat gun to ease the removal process.**



8. REMOVE THE MOLDS

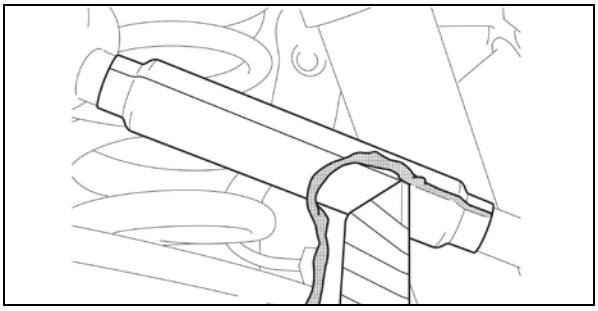
a) If temperatures are cold, confirm the epoxy has set by touching it prior to removing the molds.

b) After the epoxy has set for a minimum of 30 minutes, the molds can be removed.

c) Use a screwdriver on the mold tabs to remove the molds.

STOP

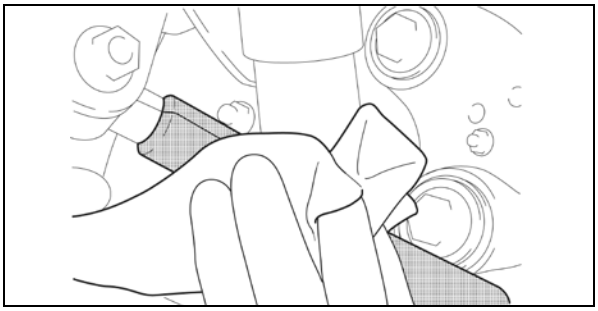
- ***DO NOT* remove the molds early or the epoxy may be damaged.**
- ***DO NOT* twist the molds during removal, this may deform the epoxy.**
- **It is normal for the epoxy to still be flexible, the epoxy will continue to cure over the next 6-8 hours.**



9. TRIM AND CLEAN THE EPOXY

a) Trim the excess epoxy from the parting lines using a razor.

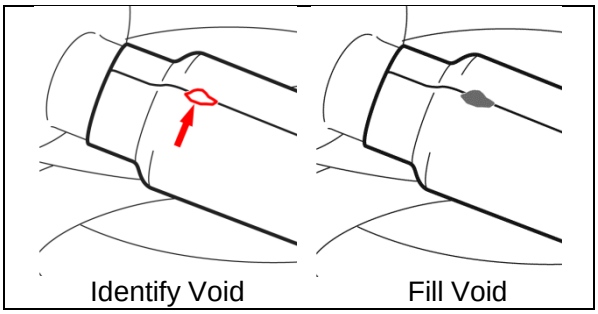
NOTE: The excess epoxy MUST be trimmed to confirm the caution label adheres properly.



b) Wipe the epoxy clean using a shop cloth to remove any remaining mold release.

STOP

***DO NOT* use brake clean on the epoxy.**



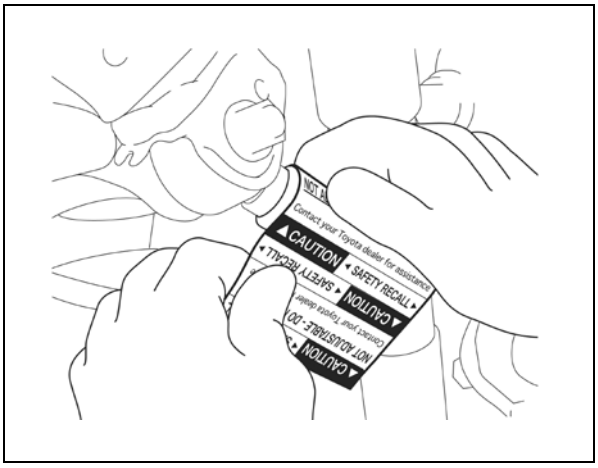
10. INSPECT FOR VOIDS

a) Inspect the epoxy for any voids that expose the arm.

b) If any voids are identified, fill with FIPG.

STOP

There should not be any voids that expose the arm if the molds are filled with epoxy correctly.



11. APPLY CAUTION LABEL

a) Wrap the caution label around the epoxy.

NOTE: The label is designed to overlap over itself by approximately 3/8".

12. REMOVE THE OWNER'S MANUAL SUPPLEMENT

a) Remove and discard the owner's manual supplement located in the glove box.

NOTE: This step only needs to be performed if recall C0J was previously performed and owner's manual supplement can be found in the glove box.

13. CAMPAIGN COMPLETE

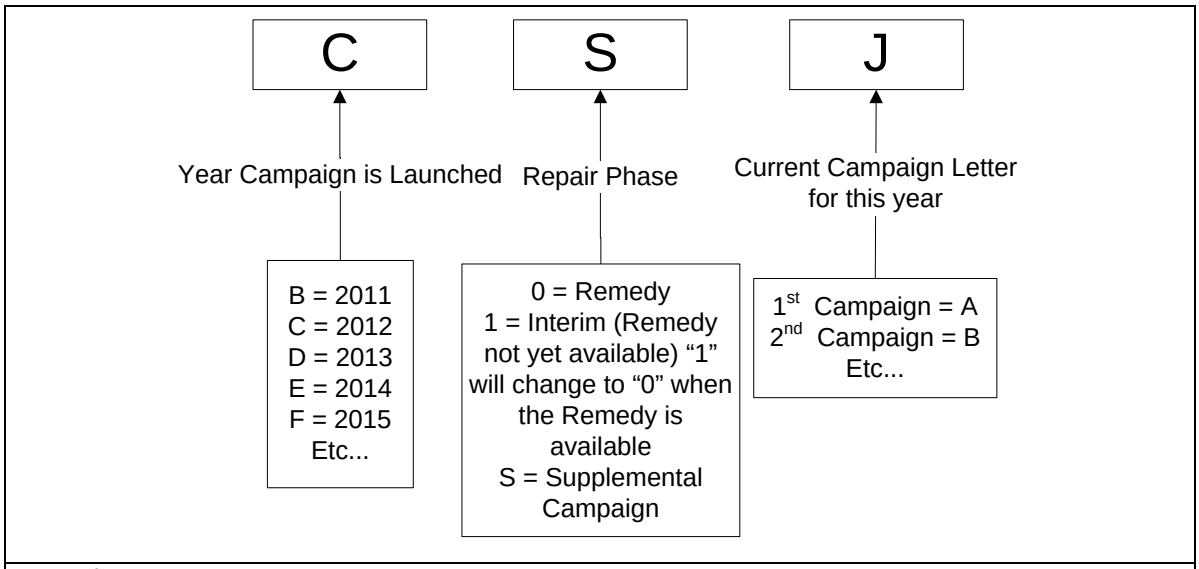
◄ VERIFY REPAIR QUALITY ►

- **Confirm *ALL* inspection steps are followed *EXACTLY* as described in these instructions**
- **Confirm the lock nut tightening procedure is followed *EXACTLY* as described in these instructions if the arm is being replaced**
- **Confirm vehicle alignment is correct prior to applying epoxy to the arm**
- **Confirm the epoxy is applied correctly and that the caution label is installed**

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

IX. APPENDIX

A. CAMPAIGN DESIGNATION DECODER



Examples:
A0D = Launched in 2010, Remedy Phase, 4th Campaign Launched in 2010
B1M = Launched in 2011, Interim Phase, 13th Campaign Launched in 2011
CSJ = Supplemental Campaign for 9th Campaign Launched in 2012

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.***