TECHNICAL INSTRUCTIONS

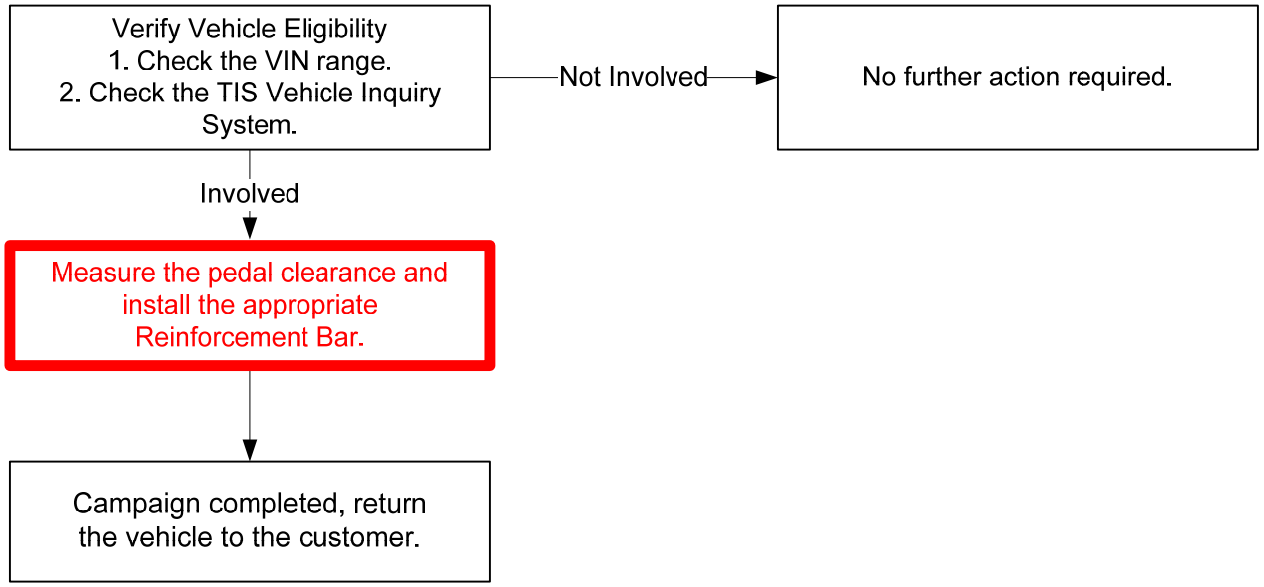
FOR

SAFETY RECALL A0A

CTS ACCELERATOR PEDAL REINFORCEMENT BAR INSTALLATION

2005 – 2010 Model Year Avalon
2007 – 2010 Model Year Camry
2009 – 2010 Model Year Corolla
2010 Model Year Highlander
2009 – 2010 Model Year Matrix
2009 – 2010 Model Year Rav4
2008 – 2010 Model Year Sequoia
2007 – 2010 Model Year Tundra

I. OPERATION FLOW CHART



II. IDENTIFICATION OF AFFECTED VEHICLES

A. AFFECTED VIN RANGE

MODEL	WMI	MY	VDS	START - FINISH
AVALON	4T1	2005	BK36B	U001003 - U062426
		2006	BK36B	U042154 - U167717
		2007	BK36B	U149048 - U253880
		2008	BK36B	U209130 - U324241
		2009	BK36B	U305357 - U351925
		2010	BK3DB	U351302 - U367444

AVALON UIO: 330,000

MODEL	WMI	MY	VDS	START - FINISH
COROLLA	1NX	2009	BE40E	Z001001 - Z163790
			BU40E	Z001002 - Z165305
		2010	BE4EE	Z165306 - Z333282
			BU4EE	Z165312 - Z337444
	2T1	2009	BE40E	C001043 - C030479
			BU40E	C001054 - C191051
		2010	BE4EE	C030504 - C039875
			BU4EE	C185955 - C348040

COROLLA UIO: 490,000

MODEL	WMI	MY	VDS	START - FINISH
CAMRY*	4T1	2007	BE46K	U001001 - U195222
				U504376 - U729526
			BK46K	U001003 - U054581
		2008	BE46K	U171709 - U263248
				U730123 - U791444
			BK46K	U040415 - U073251
		2009	BE46K	U260017 - U416640
			BK46K	U073252 - U098189
		2010	BF3EK	U001002 - U112408
			BK3EK	U091136 - U116162
	4T4	2007	BE46K	R001003 - R011624
		2008	BE46K	R001816 - R047779
		2009	BE46K	R027105 - R139848
		2010	BF3EK	R001023 - R085180

CAMRY UIO: 786,000

**Camry Hybrid vehicles are equipped with an accelerator pedal that is of a different design and produced by a different supplier. Therefore, it does not require the installation of an accelerator pedal reinforcement bar.*

MODEL	WMI	MY	VDS	START - FINISH
HIGHLANDER*	5TD	2010	BK3EH	S001052 - S013868
			DK3EH	S001067 - S013863
			EK3EH	S001051 - S008434
			JK3EH	S005002 - S013869
			KK3EH	S003272 - S008683
			XK3EH	S001026 - S005688
			YK3EH	S001030 - S008686
			ZA3EH	S001019 - S003107
			ZK3EH	S001020 - S008685

HIGHLANDER UIO: 20,000

**Highlander Hybrid vehicles are equipped with an accelerator pedal that is of a different design and produced by a different supplier. Therefore, it does not require the installation of an accelerator pedal reinforcement bar.*

MODEL	WMI	MY	VDS	START - FINISH
SEQUOIA	5TD	2008	BT64A	S000014 - S000239
			BY64A	S000047 - S023603
			BY67A	S000042 - S023596
			BY68A	S000034 - S023597
			ZT64A	S000014 - S000384
			ZY64A	S000010 - S015402
			ZY67A	S000012 - S015400
			ZY68A	S000013 - S015401
		2009	BT64A	S000244 - S001152
			BW68A	S023606 - S023606
			BY64A	S023711 - S023868
			BY67A	S023609 - S023857
			BY68A	S023616 - S023856
			ZT64A	S000438 - S000953
			ZY64A	S019566 - S020863
			ZY67A	S015919 - S015919
			ZY68A	S015426 - S021051
		2010	BM5G1	S001002 - S001225
			BW5G1	S023880 - S032694
			BY5G1	S023869 - S032719
			DW5G1	S023878 - S032718
			DY5G1	S023870 - S032709
			JW5G1	S023876 - S032713
			JY5G1	S023871 - S032708
			KM5G1	S001417 - S001458
			KY5G1	S022514 - S027553
			YY5G1	S022511 - S027563
			ZM5G1	S001034 - S002051
			ZY5G1	S022519 - S027561
			ZY67A	S020526 - S020527

SEQUOIA UIO: 50,000

MODEL	WMI	MY	VDS	START - FINISH
MATRIX	2T1	2009	GE40E	C001023 - C005748
			KE40E	C001042 - C030591
			KU40E	C001057 - C191049
			LE40E	C001017 - C011935
		2010	KE4EE	C030606 - C039888
			KU4EE	C191054 - C348047
			LE4EE	C011822 - C016115
			ME4EE	C005690 - C006299

MATRIX UIO: 75,000

MODEL	WMI	MY	VDS	START - FINISH
RAV4	2T3	2009	BF31V	W001119 - W024119
			BF32V	W001207 - W024120
			BF33V	W001117 - W024117
			BF34V	W003775 - W021681
			BF35V	W001421 - W024111
			BK31V	W001143 - W013774
			BK32V	W001142 - W013693
			BK33V	W001162 - W013773
			BK34V	W001688 - W010762
			BK35V	W002139 - W013749
			ZF31V	W001050 - W016880
			ZF32V	W001048 - W016874
			ZF33V	W001049 - W016918
			ZF34V	W003810 - W012950
			ZF35V	W001625 - W016916
			ZK31V	W001081 - W003645
			ZK32V	W001149 - W003642
			ZK33V	W001076 - W003644
			ZK34V	W001670 - W002621
			ZK35V	W001965 - W003631
		2010	BF4DV	W022899 - W038726
			BK4DV	W013775 - W020737
			DF4DV	W024130 - W038723
			DK4DV	W013776 - W020732
			EF4DV	W024745 - W035186
			EK4DV	W014634 - W020625
			JF4DV	W024129 - W038700
			JK4DV	W013811 - W020629
			KF4DV	W016950 - W027204
			KK4DV	W003824 - W005660
			RF4DV	W022777 - W038716
			RK4DV	W013813 - W020685
			WF4DV	W016936 - W027202
			WK4DV	W003659 - W005669
			XF4DV	W018112 - W025585
			XK4DV	W003701 - W005572
			YF4DV	W016920 - W027201
			YK4DV	W003435 - W005673
			ZF4DV	W016923 - W027211
			ZK4DV	W003652 - W005662

RAV4 UIO: 53,000

MODEL	WMI	MY	VDS	START - FINISH
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

MODEL	WMI	MY	VDS	START - FINISH
TUNDRA	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 - X016115
			LU521	X001203 - X006726
			LV521	X003495 - X032768
			MT521	X001506 - X010227
			MV521	X002485 - X032585
			RT541	X001571 - X016317
			RT581	X001570 - X016043
			RU541	X001200 - X006742
			RV541	X003586 - X032799
			RV581	X003587 - X032785
			ST541	X001106 - X002069
			SV541	X001063 - X004748

MODEL	WMI	MY	VDS	START - FINISH
TUNDRA	5TB	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
			ET581	S460063 - S460135
			EV541	S473215 - S483286
			EV581	S472420 - S483281
			RT541	S457555 - S461703
			RT581	S457567 - S459791
			RV541	S473199 - S483282
			RV581	S473206 - S483264

MODEL	WMI	MY	VDS	START - FINISH
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	X003336 - X004115
			JV521	X002395 - X003232
			KT521	X002148 - X002358
			KV521	X002463 - X003358
			LT521	X016321 - X027335
			LU521	X006748 - X017477
			LV521	X032804 - X069666
			MT521	X010235 - X014590
			MV521	X032626 - X083124
			RT541	X016318 - X027320
			RT581	X017618 - X020071
			RU541	X006743 - X017473
			RV541	X032802 - X069735
			RV581	X032846 - X069669
			ST541	X002070 - X002160
			SV541	X004749 - X006281

MODEL	WMI	MY	VDS	START - FINISH
TUNDRA	5TF	2009	BT541	X014611 - X015672
			BV541	X083229 - X094475
			BV581	X083255 - X092224
			BW541	X083226 - X094474
			BW581	X083224 - X094470
			CT541	X002440 - X002442
			CV541	X008872 - X009340
			CW541	X008870 - X009343
			DT541	X014616 - X015546
			DV541	X083242 - X094456
			DV581	X083244 - X094356
			DW541	X083227 - X094471
			DW581	X083217 - X094450
			ET541	X028344 - X028907
			EV541	X069830 - X073898
			EV581	X069778 - X073903
			JU521	X004131 - X004208
			JV521	X003234 - X003256
			KT521	X002362 - X002376
			KV521	X003364 - X003503
			KW521	X003384 - X003510
			LT521	X027997 - X029309
			LU521	X017497 - X020451
			LV521	X070510 - X073112
			MT521	X014876 - X015419
			MV521	X085497 - X094424
			MW521	X084767 - X094316
			RT541	X027383 - X029316
			RU541	X017498 - X020454
			RV541	X069772 - X073904
			RV581	X070033 - X073900
			ST541	X002171 - X002179
			SV541	X006283 - X006375

MODEL	WMI	MY	VDS	START - FINISH
TUNDRA	5TF	2010	BM5F1	X002356 - X008641
			BW5F1	X093050 - X129078
			BY5F1	X093061 - X129101
			CM5F1	X001001 - X001185
			CW5F1	X009335 - X010458
			CY5F1	X009336 - X010456
			DM5F1	X001019 - X009218
			DW5F1	X093128 - X129132
			DY5F1	X094480 - X129135
			EM5F1	X001006 - X012942
			EY5F1	X073303 - X088236
			FM5F1	X001806 - X012029
			FY5F1	X073300 - X088204
			HM5F1	X002336 - X008496
			HW5F1	X093038 - X129151
			HY5F1	X093142 - X129092
			JM5F1	X001002 - X001115
			JU5F1	X004209 - X004491
			JY5F1	X003257 - X003304
			KM5F1	X001001 - X001247
			KW5F1	X003513 - X004076
			KY5F1	X003514 - X004079
			LM5F1	X001026 - X012850
			LU5F1	X020324 - X022890
			LY5F1	X074019 - X087829
			MM5F1	X001020 - X009023
			MW5F1	X094824 - X128358
			MY5F1	X093123 - X127999
			RM5F1	X001008 - X012961
			RU5F1	X020455 - X022894
			RY5F1	X073343 - X088224
			SM5F1	X004749 - X012442
			SY5F1	X073306 - X088151
			TM5F1	X001001 - X001152
			TY5F1	X006373 - X006786
			UM5F1	X001021 - X009228
			UW5F1	X093055 - X129131
			UY5F1	X094485 - X129140

TUNDRA UIO: 426,000

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.

III. PREPARATION

A. PARTS

Reinforcement Bar*			
Part Number	**Thickness**	**Dealer QUP**	**Estimated Repair Volume**
78112-07010	1.4	1 bag (10pcs)	Low
78112-07020	1.6	1 bag (10pcs)	Low
78112-07030	1.8	1 bag (10pcs)	High
78112-07040	2.0	1 bag (10pcs)	High
78112-07050	2.3	1 bag (10pcs)	High
78112-07060	2.6	1 bag (10pcs)	Medium
78112-07070	2.9	1 bag (10pcs)	Medium

*Dealerships will be sent a minimum of 1 bag of each of the 7 Reinforcement Bar part numbers.
**Only 1 Reinforcement bar is used per vehicle.

B. TOOLS & MATERIALS

- Standard hand tools
- Torque wrench
- Tape (electrical, masking)
- Metric Feeler Gauge

IV. BACKGROUND

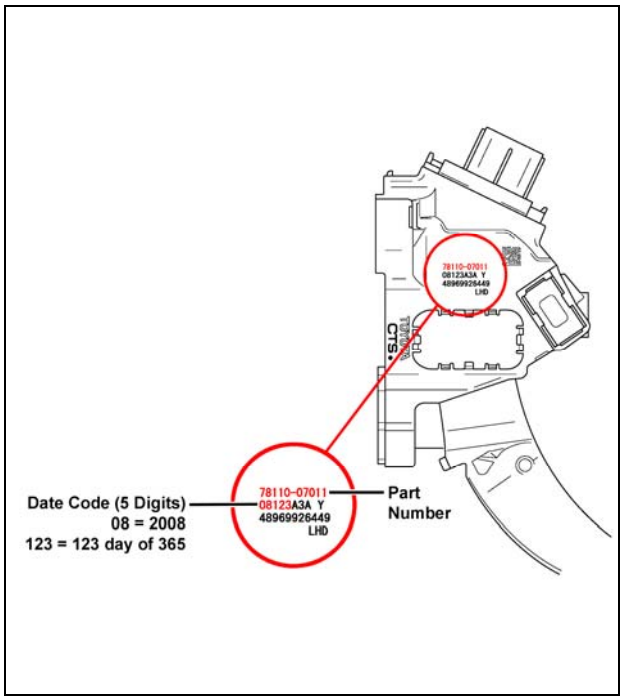
There is a possibility that certain accelerator pedal mechanisms may, in rare instances, mechanically stick in a partially depressed position or return slowly to the idle position.
Over time, some accelerator pedal mechanisms may become worn. As a result of this wear combined with certain operating and environmental conditions, friction in the mechanism may increase and intermittently result in the accelerator pedal being hard to depress, slow to return or, in the worst case, stick in a partially open position.

V. WORK PROCEDURE

ACCELERATOR PEDAL HANDLING NOTES:

- **DO NOT drop: DO NOT reuse an accelerator pedal that has been dropped.**
- **Avoid vibration and shock.**

CLICK HERE TO WATCH THE VIDEO BEFORE BEGINNING THE WORK PROCEDURE



1. CONFIRM ACCELERATOR PEDAL PART NUMBER AND MANUFACTURE DATE CODE

a) Verify the part number and manufacture date code according to the information found on the pedal.

Applicable Part Numbers	OK Date Code
78110-0C011	10018 & Later
78110-0R020	10018 & Later
78110-07011	10016 & Later
78110-08010	10015 & Later
78110-0C010	All NG
78110-07010	All NG

For OK Date Code:

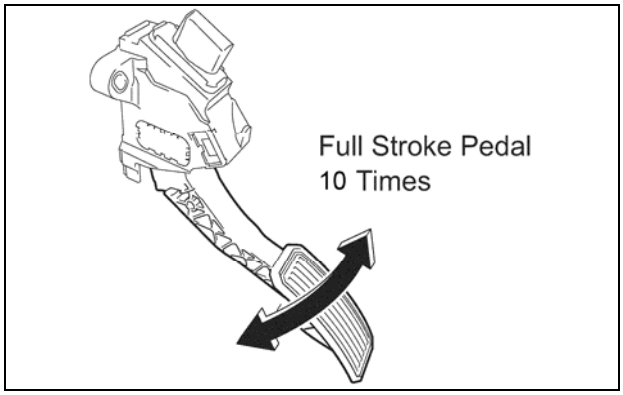
- Vehicle is not involved, no further action required.
- Return vehicle to customer.

For NG Date Code:

- If the date code is a - smaller number/earlier date - than what is listed on the table above: Continue with these Technical Instructions.

2. DISCONNECT THE NEGATIVE BATTERY CABLE - ALL MODELS

a) To prevent airbag and seat belt pretensioner activation on the following models, disconnect the negative battery cable and wait 90 seconds.



3. PUMP ACCELERATOR PEDAL ASSEMBLY

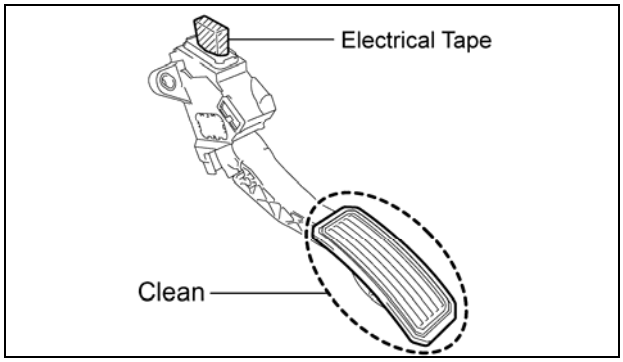
a) Pump the accelerator pedal at least 10 times in a full stroke.

NOTE:
This step is to ensure an accurate measurement when checking the clearance between the stopper and the housing.

4. REMOVE THE ACCELERATOR PEDAL ASSEMBLY

a) Disconnect the accelerator pedal electrical connector.
b) Remove the 2 bolts OR 2 nuts depending on model.

NOTE: For additional information on accelerator pedal removal, please refer to TIS.

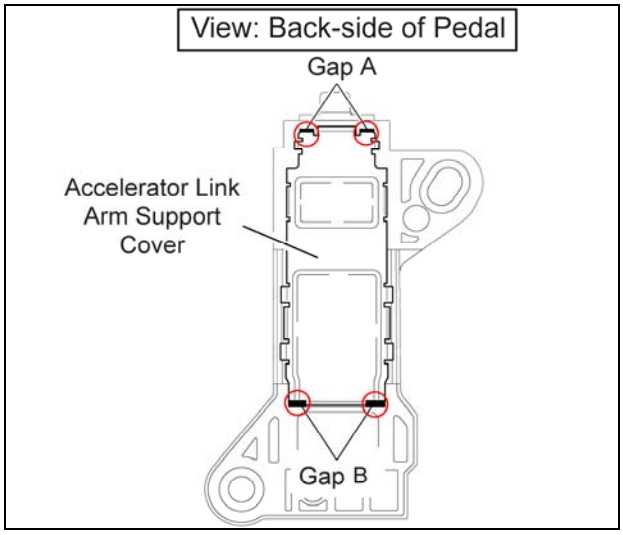


5. PROTECT CONNECTOR

Click here to watch the video to supplement steps (5-6)

a) Tape the electrical connector using UL listed electrical tape.
b) Clean the area indicated.

NOTE:
Do not use compressed air to clean; this may force dirt and debris into the sensor area.

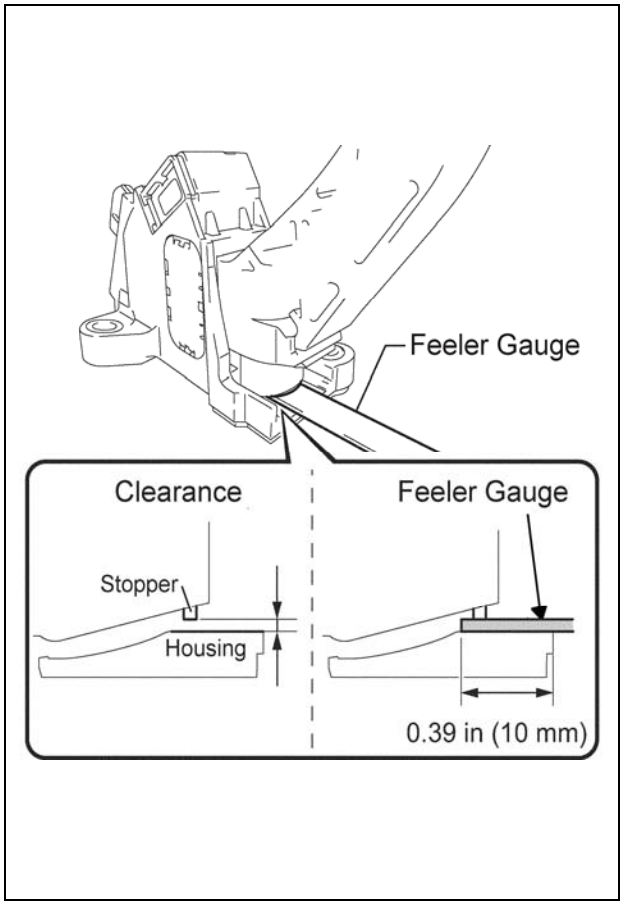


6. REMOVE THE ACCELERATOR LINK ARM SUPPORT COVER

NOTE:
Do not twist or bend the cover; it will need to be reinstalled.

a) Using a pocket screwdriver, evenly and lightly pry up on **gaps (A)** and then **gaps (B)** to remove the cover.

NOTE:
Do not clean out any debris caused by wear; this may trap debris in the pedal causing future malfunctions.



7. DETERMINE THE REINFORCEMENT BAR THICKNESS

Click here to watch the video to supplement steps (7-10)

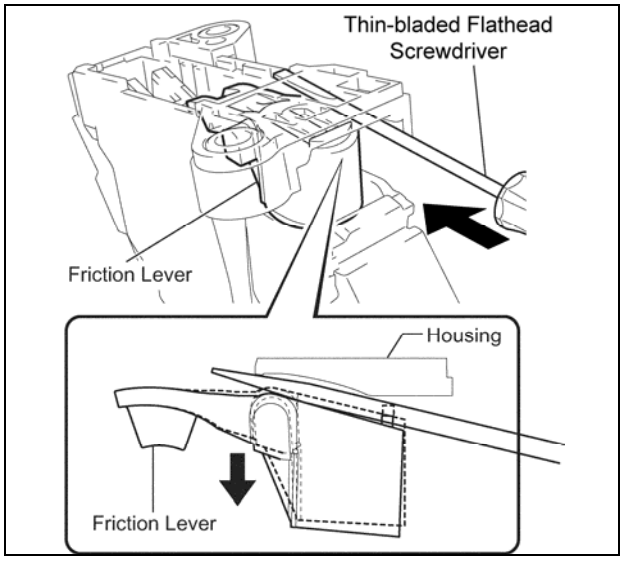
a) Using a feeler gauge, measure the clearance between the stopper and the housing.
b) Only insert the feeler gauge 10mm from the end of the housing as illustrated.

NOTE:
Mark the feeler gauge 10mm from the edge to aid in measurement.

c) Based on the measurement from step a), select the correct Reinforcement Bar using the table below.

Clearance	Reinforcement Bar	
	Thickness	Stamping
0.0 mm – 0.29 mm	1.4 mm	1.4 A
0.3 mm – 0.59 mm	1.6 mm	1.6 B
0.6 mm – 0.79 mm	1.8 mm	1.8 C
0.8 mm – 1.09 mm	2.0 mm	2.0 D
1.1 mm – 1.49 mm	2.3 mm	2.3 E
1.5 mm – 1.89 mm	2.6 mm	2.6 F
1.9 mm – 2.30 mm*	2.9 mm	2.9 G

***NOTE: Dealer in-stock and lower mileage vehicles may have a clearance greater than 2.3 mm and less than 2.7 mm. The 2.9 mm thickness reinforcement bar is specified for these cases.**

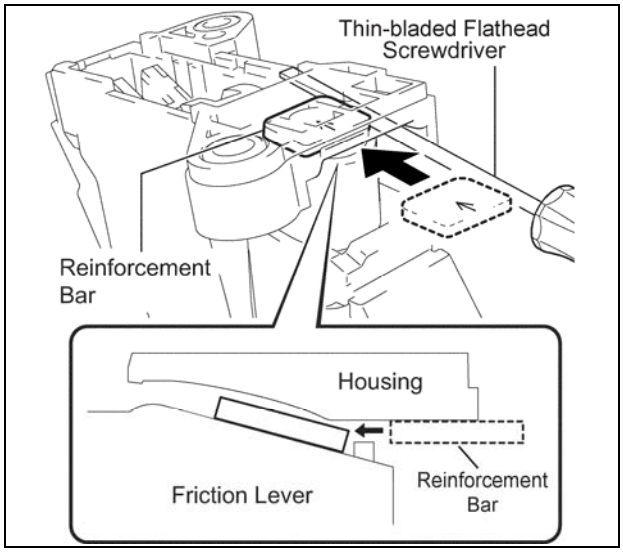


8. INSTALL REINFORCEMENT BAR

b) Insert a clean thin-bladed flathead screwdriver between the housing and the friction lever until the friction lever lowers.

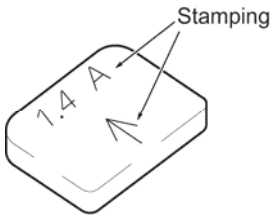
NOTE:
Do not push more than necessary; it may deform the housing.

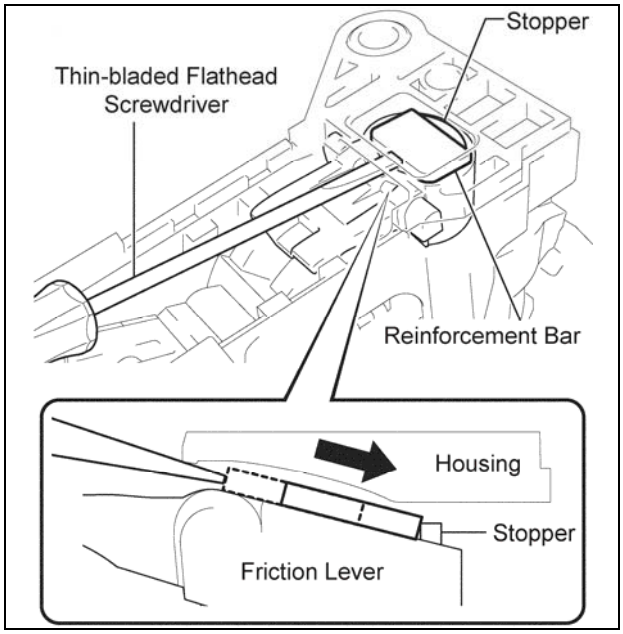
NOTE:
Never stack multiple reinforcement bars inside of the pedal assembly.



c) With the increased clearance between the friction lever and the housing, insert the reinforcement bar selected from step 7.

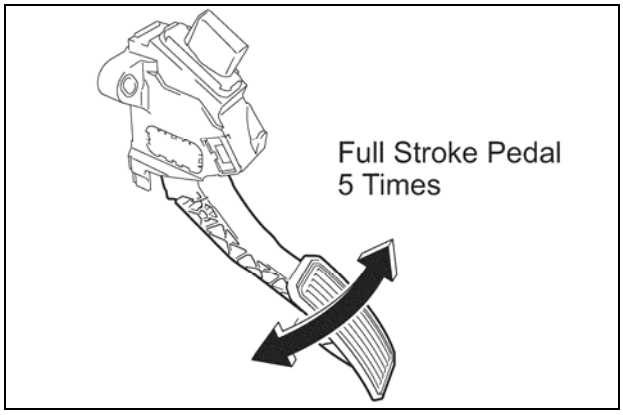
NOTE:
- **Do NOT add any lubricants or chemicals to assist with installation!!**
- **As illustrated, insert the reinforcement bar with its stamped arrow facing up.**



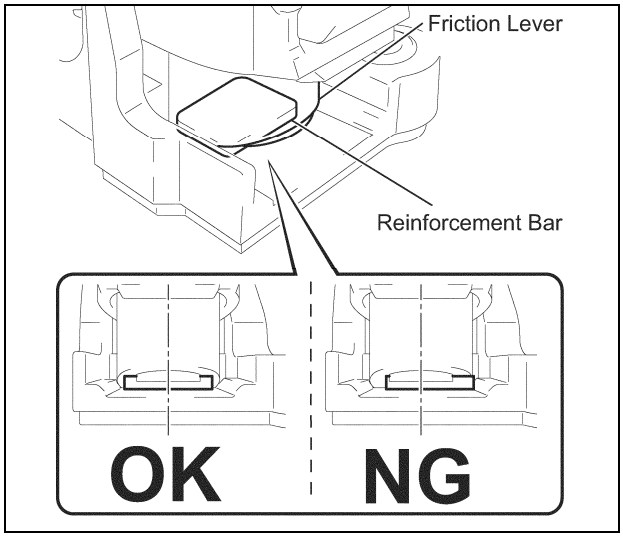


d) From the back of the pedal, firmly push the reinforcement bar until it contacts the stopper.

e) Carefully center the reinforcement bar behind the stopper using a pocket screwdriver.

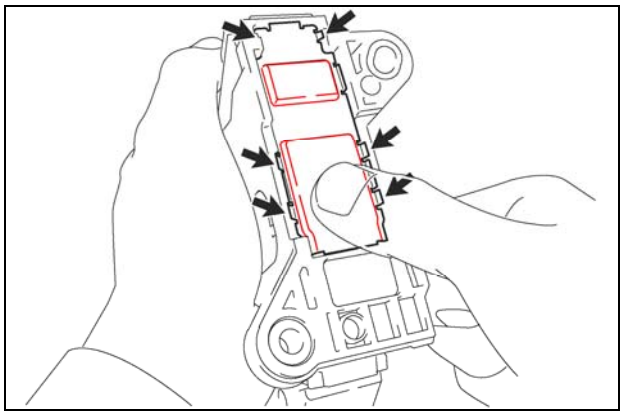


f) Pump the accelerator pedal 5 times in a full stroke to properly seat the reinforcement bar.



9. VERIFY REINFORCEMENT BAR INSTALLATION

a) Verify that the reinforcement bar is properly centered and flush with the stopper.



10. INSTALL THE ACCELERATOR LINK ARM SUPPORT COVER

a) Repair any bent claws on the accelerator link arm support cover.
b) With the two protrusions (illustrated in red) facing out, press down on the 6 claws to firmly install the accelerator link arm support cover.

NOTE:
If the cover is difficult to reinstall it may be installed upside down.

11. REINSTALL THE ACCELERATOR PEDAL ASSEMBLY

Click here to watch the video to supplement steps (11-15)

a) Remove the tape from the electrical connector.
b) Reinstall the pedal with the 2 bolts OR 2 nuts depending on model.
c) Torque to specification.

Model	Torque Specification:	Model	Torque Specification:
Avalon	5.4 Nm (55 kgf cm, 48 in. lbf)	Corolla	5.5 Nm (56 kgf cm, 49 in. lbf)
Camry		Matrix	
RAV4		Sequoia	
Highlander		Tundra	5.0 Nm (51 kgf cm, 44 in. lbf)

d) Reconnect the accelerator pedal connector.
e) Reconnect the negative battery cable.

NOTE: For additional information on accelerator pedal installation, please refer to TIS.

12. CONFIRM THE CORRECT FLOOR MAT

a) Confirm the correct floor mat for this model is secured with the retaining hooks (clips).
   - If the grommets in the floor for the vehicle are in poor condition, refer to the appropriate TSB and repair the grommets.

13. CHECK FOR DTC CODES

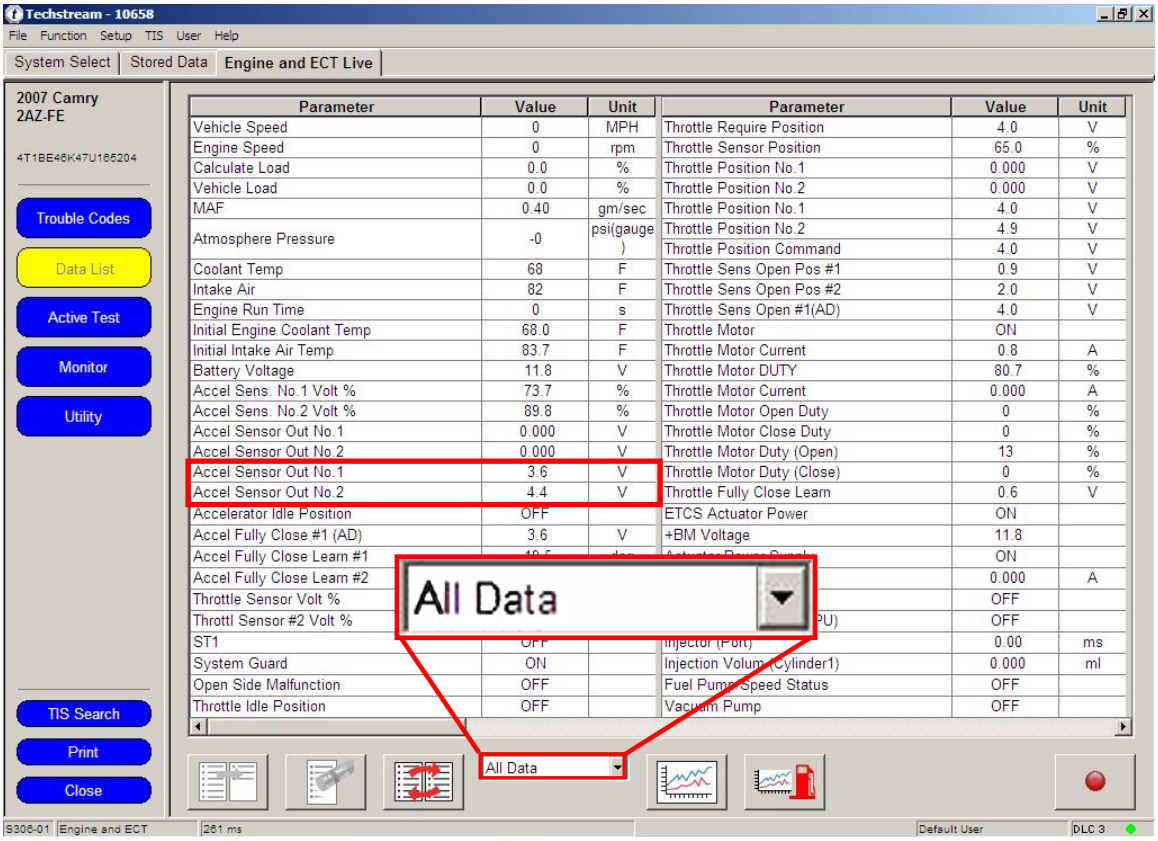
a) Connect the Techstream to the DLC3.
b) Check for DTC codes.

NOTE: If DTC(s) are displayed, verify the code(s) and record the freeze frame data, then perform repairs as necessary.

14. INSPECT THE ACCELERATOR PEDAL ASSEMBLY OPERATION

a) Enter the following menus: Powertrain / Engine and ECT / Data List.

NOTE:
There are two sets of the same Accel Sensor Out No. 1 & No. 2 parameters. Select ALL DATA on the pull down menu at the bottom of the screen when searching for the correct parameters.



15. CONTINUED: INSPECT THE ACCELERATOR PEDAL ASSEMBLY OPERATION

a) Check the values by referring to the table below.

Techstream Parameter	Measurement: Range (Display)	Normal Condition	Diagnostic Note
Accel Sensor Out No. 1	APP sensor No. 1 voltage	Accelerator Pedal Released: 0.5 to 1.1 V Accelerator Pedal Fully Depressed: 2.6 to 4.5 V	Read value with ignition switch to ON (Do not start engine)
Accel Sensor Out No. 2	APP sensor No. 2 voltage	Accelerator Pedal Released: 1.2 to 2.0 V Accelerator Pedal Fully Depressed: 3.4 to 5.0 V	Read value with ignition switch to ON (Do not start engine)

-Campaign Complete-