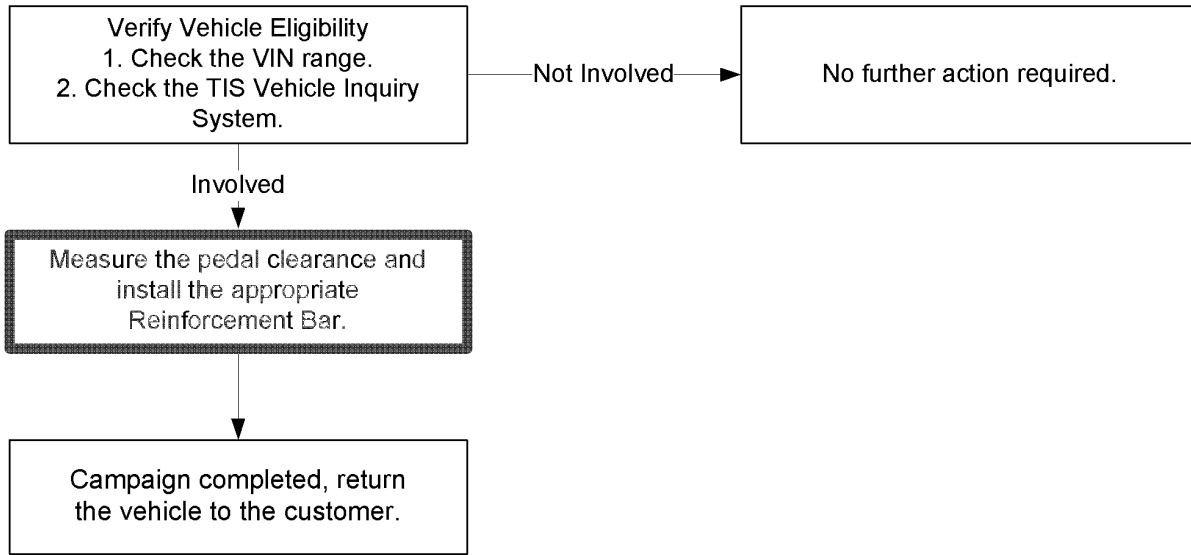


TECHNICAL INSTRUCTIONS
FOR
SAFETY RECALL A0A
CTS ACCELERATOR PEDAL
REINFORCEMENT BAR INSTALLATION

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	U [REDACTED] - U [REDACTED]
		2006	BK36B	U [REDACTED] - U [REDACTED]
		2007	BK36B	U [REDACTED] - U [REDACTED]
		2008	BK36B	U [REDACTED] - U [REDACTED]
		2009	BK36B	U [REDACTED] - U [REDACTED]
		2010	BK3DB	U [REDACTED] - U [REDACTED]

AVALON UIO: 330,000

MODEL	WMI	MY	VDS	START - FINISH
COROLLA	1NX	2009	BE40E	Z [REDACTED] - Z [REDACTED]
			BU40E	Z [REDACTED] - Z [REDACTED]
		2010	BE4EE	Z [REDACTED] - Z [REDACTED]
			BU4EE	Z [REDACTED] - Z [REDACTED]
	2T1	2009	BE40E	C [REDACTED] - C [REDACTED]
			BU40E	C [REDACTED] - C [REDACTED]
		2010	BE4EE	C [REDACTED] - C [REDACTED]
			BU4EE	C [REDACTED] - C [REDACTED]

COROLLA UIO: 490,000

MODEL	WMI	MY	VDS	START - FINISH	
CAMRY*	4T1	2007	BE46K	U [REDACTED] - U [REDACTED]	
			BK46K	U [REDACTED] - U [REDACTED]	
		2008	BE46K	U [REDACTED] - U [REDACTED]	
			BK46K	U [REDACTED] - U [REDACTED]	
		2009	BE46K	U [REDACTED] - U [REDACTED]	
			BK46K	U [REDACTED] - U [REDACTED]	
		2010	BF3EK	U [REDACTED] - U [REDACTED]	
			BK3EK	U [REDACTED] - U [REDACTED]	
		4T4	2007	BE46K	R [REDACTED] - R [REDACTED]
			2008	BE46K	R [REDACTED] - R [REDACTED]
	2009		BE46K	R [REDACTED] - R [REDACTED]	
			2010	BF3EK	R [REDACTED] - R [REDACTED]

CAMRY UIO: 790,000

*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.

[APG]

MODEL	WMI	MY	VDS	START - FINISH
HIGHLANDER*	5TD	2010	BK3EH	S [REDACTED] - S [REDACTED]
			DK3EH	S [REDACTED] - S [REDACTED]
			EK3EH	S [REDACTED] - S [REDACTED]
			JK3EH	S [REDACTED] - S [REDACTED]
			KK3EH	S [REDACTED] - S [REDACTED]
			XK3EH	S [REDACTED] - S [REDACTED]
			YK3EH	S [REDACTED] - S [REDACTED]
			ZA3EH	S [REDACTED] - S [REDACTED]
ZK3EH	S [REDACTED] - S [REDACTED]			

HIGHLANDER UIO: 20,000

*Hylander 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	S [REDACTED] - S [REDACTED]
			BY64A	S [REDACTED] - S [REDACTED]
			BY67A	S [REDACTED] - S [REDACTED]
			BY68A	S [REDACTED] - S [REDACTED]
			ZT64A	S [REDACTED] - S [REDACTED]
			ZY64A	S [REDACTED] - S [REDACTED]
			ZY67A	S [REDACTED] - S [REDACTED]
			ZY68A	S [REDACTED] - S [REDACTED]
		2009	BT64A	S [REDACTED] - S [REDACTED]
			BW68A	S [REDACTED] - S [REDACTED]
			BY64A	S [REDACTED] - S [REDACTED]
			BY67A	S [REDACTED] - S [REDACTED]
			BY68A	S [REDACTED] - S [REDACTED]
			ZT64A	S [REDACTED] - S [REDACTED]
			ZY64A	S [REDACTED] - S [REDACTED]
			ZY67A	S [REDACTED] - S [REDACTED]
		ZY68A	S [REDACTED] - S [REDACTED]	
		2010	BM5G1	S [REDACTED] - S [REDACTED]
			BW5G1	S [REDACTED] - S [REDACTED]
			BY5G1	S [REDACTED] - S [REDACTED]
			DW5G1	S [REDACTED] - S [REDACTED]
			DY5G1	S [REDACTED] - S [REDACTED]
			JW5G1	S [REDACTED] - S [REDACTED]
			JY5G1	S [REDACTED] - S [REDACTED]
KM5G1	S [REDACTED] - S [REDACTED]			
KY5G1	S [REDACTED] - S [REDACTED]			
YY5G1	S [REDACTED] - S [REDACTED]			
ZM5G1	S [REDACTED] - S [REDACTED]			
ZY5G1	S [REDACTED] - S [REDACTED]			
ZY67A	S [REDACTED] - S [REDACTED]			

SEQUOIA UIO: 50,000

MODEL	WMI	MY	VDS	START - FINISH
MATRIX	2T1	2009	GE40E	C [REDACTED] - C [REDACTED]
			KE40E	C [REDACTED] - C [REDACTED]
			KU40E	C [REDACTED] - C [REDACTED]
			LE40E	C [REDACTED] - C [REDACTED]
		2010	KE4EE	C [REDACTED] - C [REDACTED]
			KU4EE	C [REDACTED] - C [REDACTED]
			LE4EE	C [REDACTED] - C [REDACTED]
			ME4EE	C [REDACTED] - C [REDACTED]

MATRIX UIO: 70,000

MODEL	WMI	MY	VDS	START - FINISH
RAV4	2T3	2009	BF31V	W [REDACTED] - W [REDACTED]
			BF32V	W [REDACTED] - W [REDACTED]
			BF33V	W [REDACTED] - W [REDACTED]
			BF34V	W [REDACTED] - W [REDACTED]
			BF35V	W [REDACTED] - W [REDACTED]
			BK31V	W [REDACTED] - W [REDACTED]
			BK32V	W [REDACTED] - W [REDACTED]
			BK33V	W [REDACTED] - W [REDACTED]
			BK34V	W [REDACTED] - W [REDACTED]
			BK35V	W [REDACTED] - W [REDACTED]
			ZF31V	W [REDACTED] - W [REDACTED]
			ZF32V	W [REDACTED] - W [REDACTED]
			ZF33V	W [REDACTED] - W [REDACTED]
			ZF34V	W [REDACTED] - W [REDACTED]
			ZF35V	W [REDACTED] - W [REDACTED]
			ZK31V	W [REDACTED] - W [REDACTED]
		ZK32V	W [REDACTED] - W [REDACTED]	
		ZK33V	W [REDACTED] - W [REDACTED]	
		ZK34V	W [REDACTED] - W [REDACTED]	
		ZK35V	W [REDACTED] - W [REDACTED]	
		2010	BF4DV	W [REDACTED] - W [REDACTED]
			BK4DV	W [REDACTED] - W [REDACTED]
			DF4DV	W [REDACTED] - W [REDACTED]
			DK4DV	W [REDACTED] - W [REDACTED]
			EF4DV	W [REDACTED] - W [REDACTED]
			EK4DV	W [REDACTED] - W [REDACTED]
			JF4DV	W [REDACTED] - W [REDACTED]
			JK4DV	W [REDACTED] - W [REDACTED]
			KF4DV	W [REDACTED] - W [REDACTED]
			KK4DV	W [REDACTED] - W [REDACTED]
			RF4DV	W [REDACTED] - W [REDACTED]
			RK4DV	W [REDACTED] - W [REDACTED]
			WF4DV	W [REDACTED] - W [REDACTED]
			WK4DV	W [REDACTED] - W [REDACTED]
			XF4DV	W [REDACTED] - W [REDACTED]
			XK4DV	W [REDACTED] - W [REDACTED]
			YF4DV	W [REDACTED] - W [REDACTED]
			YK4DV	W [REDACTED] - W [REDACTED]
			ZF4DV	W [REDACTED] - W [REDACTED]
			ZK4DV	W [REDACTED] - W [REDACTED]

RAV4 UIO: 50,000

[APG]

MODEL	WMI	MY	VDS	START - FINISH
TUNDRA	5TB	2007	BT541	S - S
			BT581	S - S
			BV541	S - S
			BV581	S - S
			DT541	S - S
			DT581	S - S
			DV541	S - S
			DV581	S - S
			ET541	S - S
			ET581	S - S
			EV541	S - S
			EV581	S - S
			RT541	S - S
			RT581	S - S
			RU541	S - S
			RV541	S - S
RV581	S - S			

MODEL	WMI	MY	VDS	START - FINISH
TUNDRA	5TB	2008	BT541	S - S
			BT581	S - S
			BV541	S - S
			BV581	S - S
			DT541	S - S
			DT581	S - S
			DV541	S - S
			DV581	S - S
			ET541	S - S
			ET581	S - S
			EV541	S - S
			EV581	S - S
			RT541	S - S
			RT581	S - S
RV541	S - S			
RV581	S - S			

MODEL	WMI	MY	VDS	START - FINISH
TUNDRA	5TF	2007	BT541	X - X
			BT581	X - X
			BV541	X - X
			BV581	X - X
			CT541	X - X
			CV541	X - X
			DT541	X - X
			DT581	X - X
			DV541	X - X
			DV581	X - X
			ET541	X - X
			ET581	X - X
			EV541	X - X
			EV581	X - X
			JT521	X - X
			JU521	X - X
			JV521	X - X
			KT521	X - X
			KV521	X - X
			LT521	X - X
			LU521	X - X
			LV521	X - X
			MT521	X - X
			MV521	X - X
			RT541	X - X
			RT581	X - X
			RU541	X - X
			RV541	X - X
			RV581	X - X
			ST541	X - X
SV541	X - X			

MODEL	WMI	MY	VDS	START - FINISH
TUNDRA	5TF	2008	BT541	X - X
			BT581	X - X
			BV541	X - X
			BV581	X - X
			CT541	X - X
			CV541	X - X
			DT541	X - X
			DT581	X - X
			DV541	X - X
			DV581	X - X
			ET541	X - X
			ET581	X - X
			EV541	X - X
			EV581	X - X
			JT521	X - X
			JU521	X - X
			JV521	X - X
			KT521	X - X
			KV521	X - X
			LT521	X - X
			LU521	X - X
			LV521	X - X
			MT521	X - X
			MV521	X - X
			RT541	X - X
			RT581	X - X
RU541	X - X			
RV541	X - X			
RV581	X - X			
ST541	X - X			
SV541	X - X			

[APG]

MODEL	WMI	MY	VDS	START - FINISH
TUNDRA	5TF	2009	BT541	X - X
			BV541	X - X
			BV581	X - X
			BW541	X - X
			BW581	X - X
			CT541	X - X
			CV541	X - X
			CW541	X - X
			DT541	X - X
			DV541	X - X
			DV581	X - X
			DW541	X - X
			DW581	X - X
			ET541	X - X
			EV541	X - X
			EV581	X - X
			JU521	X - X
			JV521	X - X
			KT521	X - X
			KV521	X - X
			KW521	X - X
			LT521	X - X
			LU521	X - X
			LV521	X - X
			MT521	X - X
			MV521	X - X
			MW521	X - X
			RT541	X - X
			RU541	X - X
			RV541	X - X
RV581	X - X			
ST541	X - X			
SV541	X - X			

MODEL	WMI	MY	VDS	START - FINISH
TUNDRA	5TF	2010	BM5F1	X - X
			BW5F1	X - X
			BY5F1	X - X
			CM5F1	X - X
			CW5F1	X - X
			CY5F1	X - X
			DM5F1	X - X
			DW5F1	X - X
			DY5F1	X - X
			EM5F1	X - X
			EY5F1	X - X
			FM5F1	X - X
			FY5F1	X - X
			HM5F1	X - X
			HW5F1	X - X
			HY5F1	X - X
			JM5F1	X - X
			JU5F1	X - X
			JY5F1	X - X
			KM5F1	X - X
			KW5F1	X - X
			KY5F1	X - X
			LM5F1	X - X
			LU5F1	X - X
			LY5F1	X - X
			MM5F1	X - X
			MW5F1	X - X
			MY5F1	X - X
			RM5F1	X - X
			RU5F1	X - X
RY5F1	X - X			
SM5F1	X - X			
SY5F1	X - X			
TM5F1	X - X			
TY5F1	X - X			
UM5F1	X - X			
UW5F1	X - X			
UY5F1	X - X			

TUNDRA UIO: 430,000

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.

[APG]

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 at minimum 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)

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.

[APG]

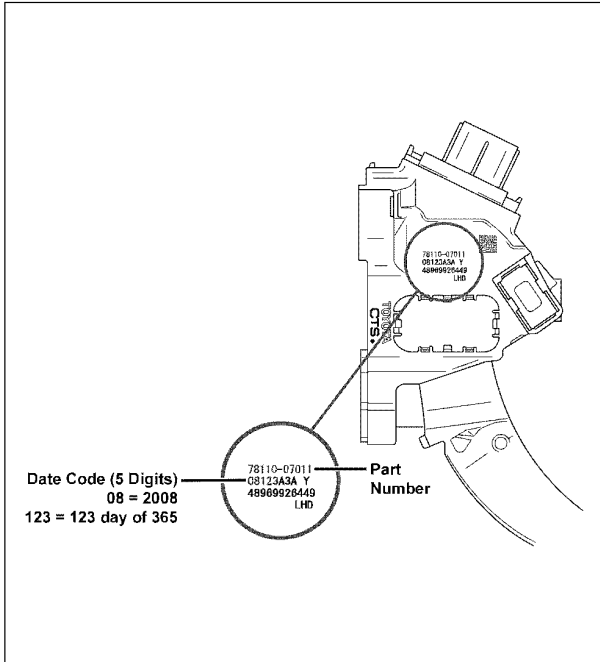
V. WORK PROCEDURE



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 & Newer
78110-0R020	10018 & Newer
78110-07011	10016 & Newer
78110-08010	10015 & Newer
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 older than what is listed on the table above: Continue with these Technical Instructions.

2. DISCONNECT THE NEGATIVE BATTERY CABLE FOR CERTAIN MODELS ONLY

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

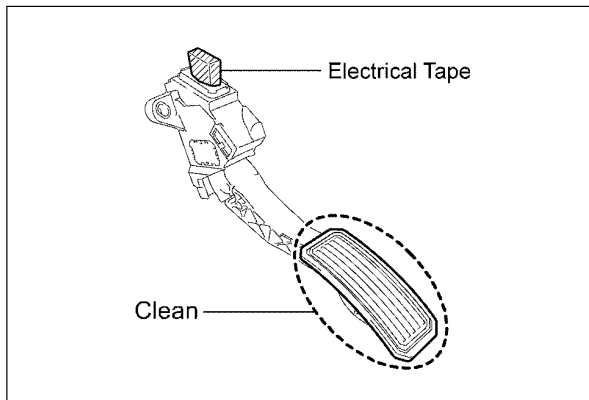
MY	Model	Engine Type	Engine Type
2007 - 2009	Tundra	1GR-FE (4.0 L)	2UZ-FE (4.7 L)
2009 - 2010	RAV4	2GR-FE (3.5L)	

3. 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.

[APG]



4. PROTECT CONNECTOR

Click here to watch the video to supplement steps (4-6)

- a) Tape the electrical connector using UL listed electrical tape.

5. CLEAN THE ACCELERATOR PEDAL ASSEMBLY

- 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

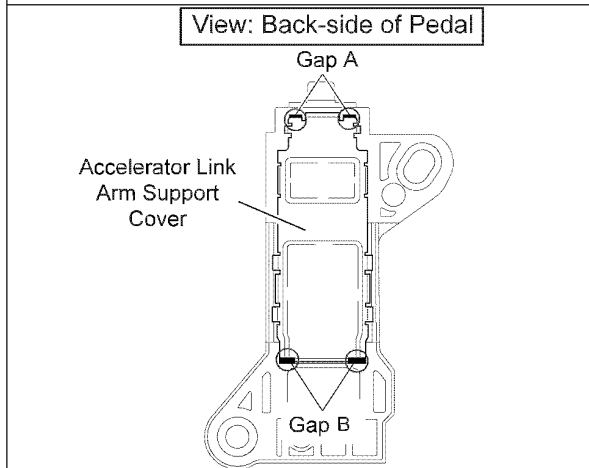
NOTE:

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

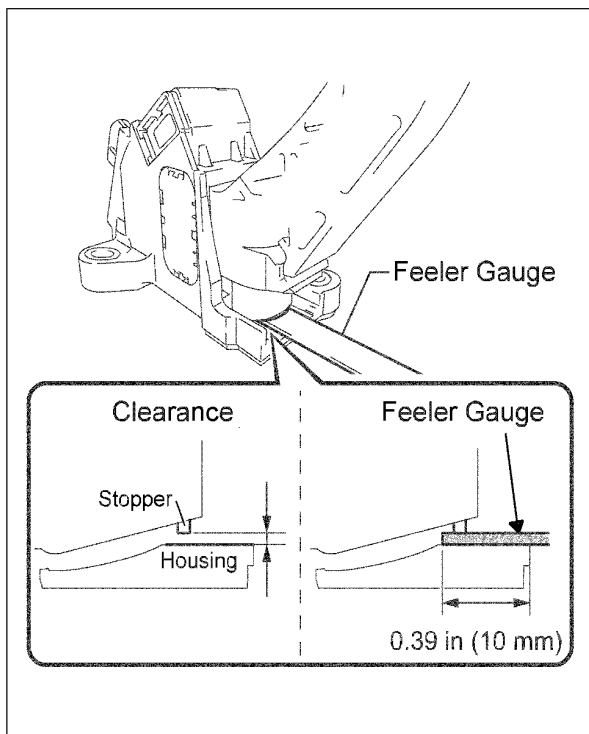
Click here to watch the video to supplement steps (7-10)

- 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:

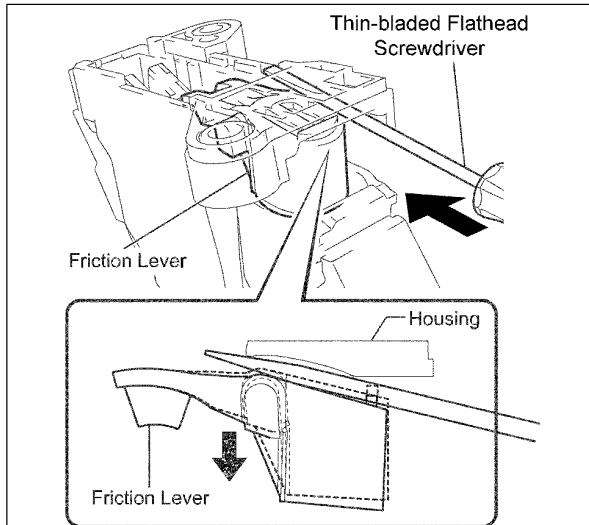
Mark the feeler gauge 10mm from the edge to aid in measurement.

- 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

[APG]

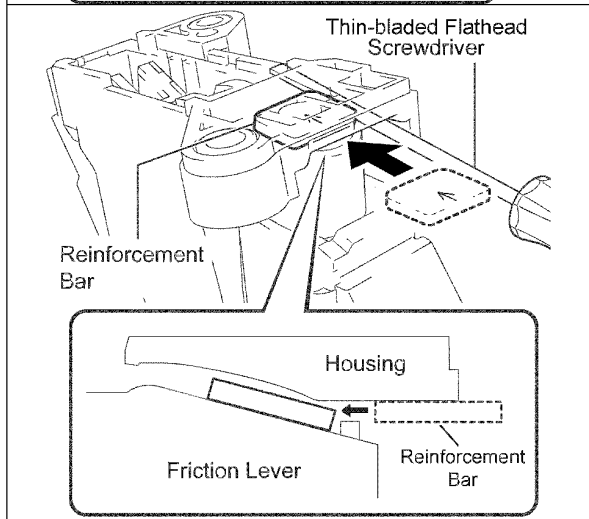


8. INSTALL REINFORCEMENT BAR

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

NOTE:

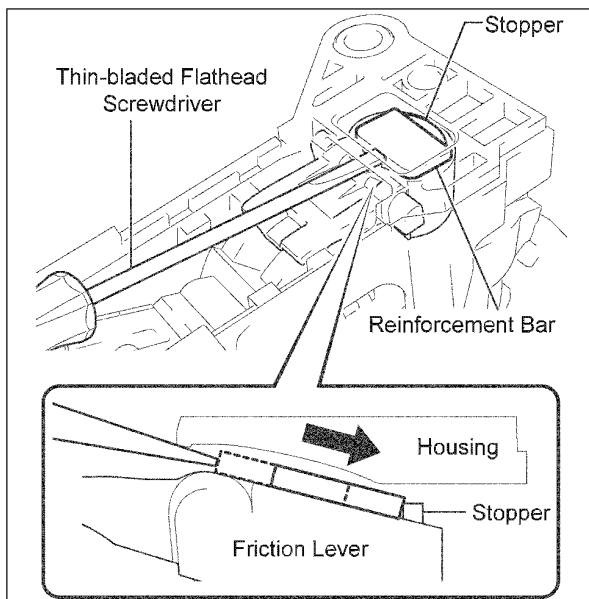
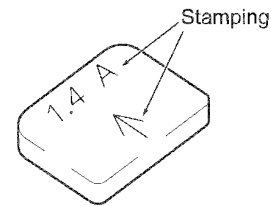
Do not push more than necessary; it may deform the housing.



- b) With the increased clearance between the friction lever and the housing, insert the reinforcement bar selected from step 6.

NOTE:

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

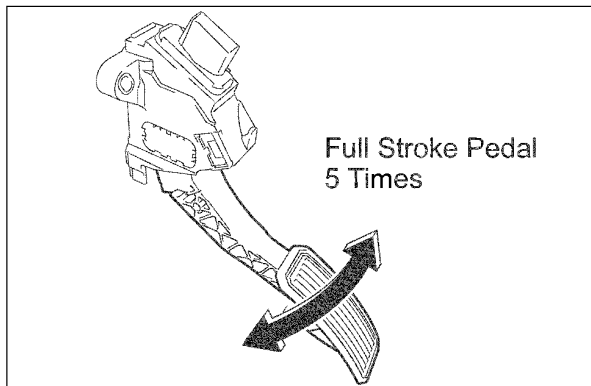


- c) From the back of the pedal, firmly push the reinforcement bar until it contacts the stopper.
 d) Carefully center the reinforcement bar behind the stopper using a pocket screwdriver.

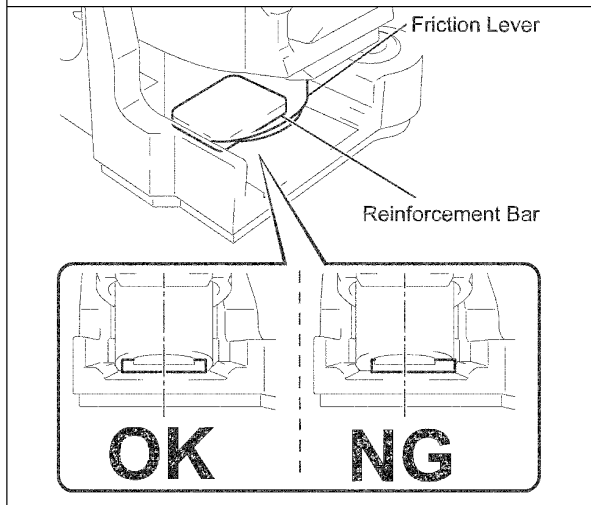
NOTE:

Never stack multiple reinforcement bars inside of the pedal assembly.

[APG]

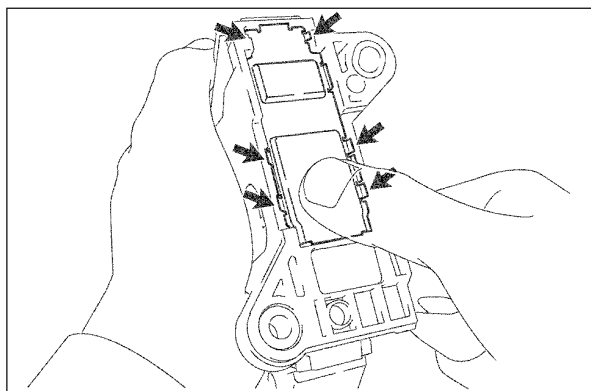


- e) Pump the accelerator pedal 5 times in a full stroke to properly seat the reinforcement bar.



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 (11-14)

- 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.

[APG]

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) Connect Techstream to the DLC3.
- b) Enter the following menus: Powertrain / Engine and ECT / Data List.
- c) Check the values by referring to the table below.

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.

Parameter	Value	Unit	Parameter	Value	Unit
Vehicle Speed	0	MPH	Throttle Idle Position	OFF	
Engine Speed	0	rpm	Throttle Require Position	4.003	V
Calculate Load	0.0	%	Throttle Sensor Position	65.0	%
Vehicle Load	0.0	%	Throttle Position No.1	0.000	V
MAF	0.46	gm/sec	Throttle Position No.2	0.000	V
Atmosphere Pressure	-0	psi(gauge)	Throttle Position No.1	4.003	V
Coolant Temp	77	F	Throttle Position No.2	4.960	V
Intake Air	81	F	Throttle Position Command	4.003	V
Ambient Temperature	63	F	Throttle Sens Open Pos #1	0.898	V
Engine Run Time	0	s	Throttle Sens Open Pos #2	1.992	V
Initial Engine Coolant Temp	77.0	F	Throttle Motor Current	0.9	A
Initial Intake Air Temp	81.5	F	Throttle Motor DUTY	80.3	%
Battery Voltage	12.070	V	Throttle Motor Current	0.000	A
Accelerator Position	100.0	%	Throttle Motor Open Duty	0	%
Accel Sens No.1 Volt %	72.9	%	Throttle Motor Close Duty	0	%
Accel Sens No.2 Volt %	89.4	%	Throttle Motor Duty (Open)	16	%
Accel Sensor Out No.1	0.000	V	Throttle Motor Duty (Close)	0	%
Accel Sensor Out No.2	0.000	V	Throttle Fully Close Learn	0.644	V
Accel Sensor Out No.1	3.632	V	+BM Voltage	12.070	V
Accel Sensor Out No.2	4.453	V	Actuator Power Supply	ON	
Accelerator Idle Position	OFF		Injector (Port)	0	us
Accel Fully Close Learn #1	19.5	deg	Injection Valum (Cylinder1)	0.000	ml
Accel Fully Close Learn #2	39.5	deg	Fuel Pump/Speed Status	OFF	
Throttle Sensor Volt %	80.3	%	Vacuum Pump	OFF	
Thrott Sensor #2 Volt %	99.6	%	EVAP (Purge) VSV	0.0	%
ST1	OFF		Evap Purge Flow	0.0	%
System Guard	ON		Purge Density Learn Value	0.000	
Open Side Malfunction	OFF		Vapor Pressure Pump	755.801	mmHg(abs)

Techstream Parameter	Measurement: Range (Display)	Normal Condition	Diagnostic Note
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[APG]

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

[APG]