#### Part Number: PT478-11175-05

#### **Kit Contents**

Item #	Quantity Reqd.	Description
1	1	Carbon Fiber Lower Grille Insert
2		
3		

#### **Hardware Bag Contents**

Item #	Quantity Reqd.	Description
1		
2		
3		

#### **Additional Items Required For Installation**

Item #	Quantity Reqd.	Description
1	1	SST Cone (09870-60040)
2	1	SST Stand (09870-60000)
3	1	Pressure Gauge
4	1	Pointed pendulum/weight
5	1	String (3000mm – 9.84ft) Long
6	1	Techstream

#### Conflicts

None
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#### **Recommended Tools**

Personal & Vehicle	Notes
Protection	
Safety Glasses	
Safety Gloves	(Optional)
Blankets	
Part Boxes	
Special Tools	Notes
<b>Installation Tools</b>	Notes
Screwdriver	#2 Philips head, <sup>1</sup> /4" Flat
	head, pocket screwdriver
	(wrapped in protective tape)
Ratchet	1/4"
Extension	15cm
Socket	10mm
Nylon Pry Tool	Various sizes
Plyers	Needle nose
Special Chemicals	Notes
VDC Approved Cleaner	

#### **General Applicability**

All LC & LCh models

#### **Recommended Sequence of Application**

Item #	Accessory
1	
2	
3	

\*Mandatory

#### Vehicle Service Parts (may be required for reassembly)

Item #	Quantity Reqd.	Description
1		
2		
3		

#### Legend



Care must be taken when installing this accessory to ensure damage does not occur to the vehicle. The installation of this accessory should follow approved guidelines to ensure a quality installation.

These guidelines can be found in the "Accessory Installation Practices" document.

This document covers such items as:-

- Vehicle Protection (use of covers and blankets, cleaning chemicals, etc.).
- Safety (eye protection, rechecking torque procedure, etc.).

LC/LCh

- Vehicle Disassembly/Reassembly (panel removal, part storage, etc.).
- Electrical Component Disassembly/Reassembly (battery disconnection, connector removal, etc.).

Please see your Lexus dealer for a copy of this document.

# Pry tool

#### 1. Prepare the Vehicle.



**NOTE:** For Hybrid vehicles, the battery is located in the trunk.

(b) After the power switch is turned off, the radio receiver assembly records various types of memory and settings. As a result, after turning the power switch off, be sure to wait 6 minutes before disconnecting the cable from the negative auxiliary battery terminal.

#### 2. Remove the Radiator Lower Air Deflector.

 (a) Use an appropriate pry tool to disengage the clips and remove the radiator lower air deflector (Fig. 2-1).

(b) Store the clips in the parts box for reuse.

**NOTE:** The number of clips varies between gas and hybrid models. It is important to remove all of the clips holding the air deflector.





#### 3. Remove the Front Bumper Cover.

- (a) Raise the vehicle such that the undercarriage is easily accessible.
- (b) Remove the 8 bolts (Fig. 3-1).
- (c) Place the bolts in the parts box for reuse.

(d) Inside the wheel well, remove the 3 pin hold clips by turning 90°, so the slot is horizontal, and then pulling out (Fig. 3-2). Retain them for reuse.



(e) Release the fender lining from the plastic hold clips. The lining must be released at all 3 clips (Fig. 3-3).







(f) With the fender lining free, pry it back to expose the clip and claw at the very top of the wheel well (Fig. 3-4).

(g) Remove the bolt and pin (Fig. 3-5). Retain them for reuse.

- (h) Remove the claw (Fig. 3-6). Retain for reuse.
- (i) Repeat Step 3(d) to 3(h) on the other side.

(j) Lower the lifted vehicle to a comfortable working level such that the top of the vehicle is accessible. Put protective tape around the front bumper assembly denoted with (Fig. 3-7).



- (k) Remove the 4 bolts and 2 outer-most clips (Fig. 3-8). Retain them for reuse.
- **HINT:** Do not remove the clip shown in Fig. 3-9 as that holds a metal support bar which will otherwise fall out later.

- (1) Gently pull back in the direction of the arrow to disengage the T-hooks and remove the weather stripping (Fig. 3-10).
  - (m) Repeat Step 3(l) on the other side.



 (n) Reach into the middle of the grille near the emblem to disconnect the connector of the millimeter wave radar sensor assembly (Fig. 3-11).

Fig. 3-10



- (o) Reach in behind the fender lining to disconnect the connector of the front turn signal lamp assembly (Fig. 3-12).
- (p) Repeat Step 3(o) on the other side.

(q) Fig. 3-13 shows the location of the claws that must all be disengaged to remove the front bumper.

Fig. 3-13



- (r) Slightly pull down on the bumper to expose the first claw (circled in red in Fig. 3-13).
   Use a pocket screwdriver covered in protective tape to unhook and disengage the claw (Fig. 3-14).
  - (s) The claw will appear as shown in Fig. 3-15once the bumper is removed. Ensure the claw(circled) is not broken.
- NOTE: If damage occurs to the clip, order part number: 52133-11020 (RH) or 52133-11030 (LH).
  - (t) Repeat Steps 3(r) and 3(s) on the other side.



- (u) Pull gently but firmly forward in the direction shown in Fig. 3-16 to release the other 4 claws from the front bumper.
- (v) Repeat Step 3(u) on the other side.
  - (w) Once the front bumper claws have been released, use assistance to move the front bumper to a work area to disassemble the radiator grille.

#### 4. Disconnect the Parking Sensor.

(a) Disconnect the parking sensor wire harness from the radiator grille sub-assembly on both the RH and LH sides (Fig. 4-1).

#### 5. Remove the Radiator Grille Sub-Assembly.

(a) Remove the 8 screws around the radiator grille (Fig. 5-1). Retain them for reuse.

- (b) Disengage the claws and guides to remove the radiator grille sub-assembly (Fig. 5-2).
- (c) Once the radiator grille is released, move it to a workstation to continue work.



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Fig. 5-2









- 6. Remove the Radiator Grille Molding.
  - (a) Remove the 4 screws (Fig. 6-1). Retain them for reuse.

(b) Disengage the claws to remove the radiator grille molding and pull in the direction of the arrow to remove it (Fig. 6-2).

#### 7. Remove the No. 2 Radiator Grille Molding.

(a) Remove the screw (Fig. 7-1). Retain it for reuse.

(b) Disengage the claws to remove the No. 2 radiator grille molding and pull in the direction of the arrow to remove it (Fig. 7-2).







#### 8. Install the Carbon Fiber Lower Grille.

- (a) Carefully unwrap the protection on the carbon fiber front grille insert.
- (b) Align and engage the claws (Fig. 8-1).

(c) Use the screw removed in Step 7(a) to install the No. 2 radiator grille molding (Fig. 8-2).

- 9. Reinstall the Radiator Grille Molding.
  - (a) Push in the direction of arrow to engage the claws to attach the radiator grille molding (Fig. 9-1).





(b) Use the 4 screws removed in Step 6(a) to secure the radiator grille molding (Fig. 9-2).

#### 10. Reconnect the Parking Sensor.

(a) Reconnect the parking sensor wire harness to the radiator grille sub-assembly on both the RH and LH sides (Fig. 10-1).



#### 11. Install the Radiator Grille Sub-Assembly.

(a) Insert the guides and engage the claws from the radiator grille to the front bumper (Fig. 11-1).

(b) Use the 8 screws removed in Step 5(a) to secure the radiator grille to the front bumper (Fig. 11-2).







#### 12. Install the Front Bumper Assembly.

- (a) Position the front bumper assembly such that the claws align for both sides.
- (b) Gently push in the direction of the arrow to engage the claws on both sides (Fig. 12-1).

- (c) Reconnect the front turn signal lamp assembly harness (Fig. 12-2).
- (d) Repeat Step 12(c) on the other side.

(e) Reconnect the millimeter wave radar sensor assembly harness (Fig. 12-3).





(f) Reinstall the 4 bolts and 2 outer clips removed in Step 3(k) (Fig. 12-4).

Torque: 7.5 N-m (66 in-lbf)

- (g) Reattach the weather stripping by pulling in the direction of the arrow to engage the Thooks (Fig. 12-5).
- **NOTE:** Alternatively, remove the "T" hooks from the front bumper and insert them into the weather stripping. Then reengage them into the holes on the front bumper.
  - (h) Raise the vehicle such that the undercarriage is easily accessible.

**NOTE:** Ensure the bumper and plastic are not visible.

(i) Reinstall the clip and claw removed in Step 3(h) inside the wheel well. Reinsert the pin and tighten the bolt (Fig. 12-6).







(j) Engage the fender lining back into the claws (Fig. 12-7).

(k) Insert the 3 pin hold clips removed in Step 3(d) to secure the fender lining (Fig. 12-8).

(1) Reinstall the 8 bolts removed in Step 3(b) (Fig. 12-9).

#### 13. Reinstall the Radiator Lower Air Deflector.

- (a) Lower the vehicle to the ground.
- (b) Reengage the clips removed in Step 2(a) to secure the radiator lower air deflector (Fig. 13-1).

## 14. Reconnected the Battery. (a) Reconnect the battery. NOTE: The hybrid vehicle battery is loc:

**NOTE:** The hybrid vehicle battery is located in the trunk.

- (1) Position the negative battery cable in the original factory position.
- (2) Tighten the nut to 5.4 N-m (48 in-lbf).



### 15. Adjust the Millimeter Wave Radar Sensor Assembly.

(a) Park the vehicle on a level surface where the area in front of the vehicle shown in the illustration is free of metal objects (Fig. 15-1).

*a	5 m (16.4 ft.)
*b	6 m (19.7 ft.)
*c	4 m (13.1 ft.)
*d	2 m (6.56 ft.)
	Do not place any metal objects in this area
223	Do not place metal objects with a height of
6223	more than 50 mm (1.97 in.) in this area

**NOTE:** Metal objects with a height of 50 mm (1.97 in.) or less placed within the area shown in the illustration will not affect the adjustment.

(b) Check the levelness of the ground at the 3 points shown (Fig. 15-2).

*a	3 m (9.84 ft.)
	Levelness check point

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Fig. 15-2



- (c) Place the level on each levelness check point and check that the air bubble of the level is centered (Fig. 15-3 and Fig. 15-4).
- (d) Adjust the tire inflation pressure to the specified pressure range of 43.5 44.5 psi.
- (e) Clean the radiator grille (or front panel) emblem or millimeter wave radar sensor assembly.
- (f) Visually inspect the front of the vehicle.

**NOTE:** Confirm no damage or deformation has occurred.

(g) Visually inspect the front bumper assembly, radiator grille and stays.

#### 16. Adjust the Millimeter Wave Radar Sensor Assembly Vertically and Horizontally.

(a) Adjust the SST (reflector) height so that the center of the SST (reflector) is the same height as the millimeter wave radar sensor assembly (Fig. 16-1).

Measurement	SST
	09870-60010
575 mm (1.89 ft.)	09870-60000
	09870-60040

**NOTE:** Make sure to align the center of the SST (reflector) with the millimeter wave radar sensor assembly (the center of the emblem).



- (b) Place the SST (reflector).
  - (1) Hang a weight with a pointed tip from the center of the rear emblem, and mark the rear center point of the vehicle (point A) on the ground (Fig. 16-2).

*a	String
*b	Weight
*c	Center
*d	Bilateral symmetry

**NOTE:** Lightly flick the string with your fingers several times to confirm that the string is perpendicular to the ground.

(2) Hang a weight with a pointed tip from the center of the front emblem, and mark the front center point of the vehicle (point B) on the ground (Fig. 16-3).

*a	String
*b	Weight
*с	Center
*d	Bilateral symmetry

**NOTE:** Lightly flick the string with your fingers several times to confirm that the string is perpendicular to the ground.

-0	"c B

(3) Use tape and a string to create a line that connects point B to point A and extends at least 3000 mm (9.84 ft.) beyond the front center point of the vehicle (Fig. 16-4).

*a	String
*b	Таре
*c	300mm (9.84 ft.)

#### **NOTE:**

- Make sure the string is taut when securing it with tape.
- Lightly flick the string with your fingers several times to confirm that the string is perpendicular to the ground.
- (4) Mark point C (SST (reflector) placement position) at a position 3000 mm (9.84 ft.) from point B.
- (5) Place SST (reflector) at point C.
- (c) Adjust the front beam axis.

#### \Lambda NOTE:

- Close all the doors.
- Ensure that no one enters the adjustment area during the adjustment.
- Do not move or shake the vehicle during adjustment (do not get in or out of the vehicle).
- During the procedure, do not enter the adjustment area.
- Do not turn off the Techstream or power switch.

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- (1) Connect the Techstream to the DLC3.
- (2) Turn the power switch on (IG).
- (3) Turn the Techstream on and turn the cruise control system on using the cruise control main switch (ON/OFF button).
- (4) Enter the following menus: Body
   Electrical / Pre-Collision 2 / Utility /
   Front Beam Axis Adjustment.
- (5) According to the display on the Techstream, press "Next"
- (6) Perform the adjustment according to the display on the Techstream.

**NOTE:** If an error code is displayed, perform troubleshooting per the following table, then perform the adjustment again.

ERROR NO.	ERROR DESCRIPTION	CAUSE OF ERROR	ACTION TO BE TAKEN
SST (refle     The radiat		<ul> <li>SST (reflector) is placed incorrectly.</li> <li>The radiator grille (or front panel)</li> </ul>	Place SST (reflector) in the correct position. (See 15.2 MILLIMETER WAVE RADAR SENSOR ASSEMBLY VERTICALLY AND HORIZONTALLY (b) Place SST (reflector))
1	1 No target abnormality	emblem or millimeter wave radar sensor assembly is covered by dirt or snow.	Clean the radiator grille (or front panel) emblem or millimeter wave radar sensor assembly.
			Check the installation condition of the front bumper assembly and radiator grille.
2	Target distance abnormality	• SST (reflector) is placed incorrectly.	Place SST (reflector) in the correct position. (See 15.2 MILLIMETER WAVE RADAR SENSOR ASSEMBLY VERTICALLY AND HORIZONTALLY (b) Place SST (reflector))
•		• There is a reflective object near SST	Remove any reflective objects.
3 F	Plural targets abnormality	(reflector). A person entered the adjustment area.	Ensure that no one enters the adjustment area during the adjustment. (See 15.1 PREPARATION FOR MILLIMETER WAVE RADAR SENSOR ASSEMBLY ADJUSTMENT)

ERROR NO.	ERROR DESCRIPTION	CAUSE OF ERROR	ACTION TO BE TAKEN	
4	Target move abnormality	<ul> <li>SST (reflector) was moved out of position or shaking during the adjustment due to wind.</li> <li>SST (reflector) shaking during beam axis adjustment</li> <li>A person entered the adjustment area.</li> </ul>	Place SST (reflector) in the correct position. (See 15.2 MILLIMETER WAVE RADAR SENSOR ASSEMBLY VERTICALLY AND HORIZONTALLY (b)Place SST (reflector)) Perform adjustment in an area with no wind. Ensure that no one enters the adjustment area during the adjustment. (See 15.1 PREPARATION FOR MILLIMETER WAVE RADAR SENSOR ASSEMBLY ADJUSTMENT)	
5	Motor stop	• Operation of the millimeter wave radar sensor assembly (motor) is abnormal.	Turn the power switch off then on (IG). (See 15.2 MILLIMETER WAVE RADAR SENSOR ASSEMBLY VERTICALLY AND HORIZONTALLY (c)Front Beam Axis Adjustment)	
			Check for DTCs.	
6 Target angle abnormality	Target angle	<ul> <li>SST (reflector) is placed incorrectly.</li> <li>The beam axis of the millimeter wave radar sensor assembly is outside the</li> </ul>	Check for DTCs. Place SST (reflector) in the correct position. (See 15.2 MILLIMETER WAVE RADAR SENSOR ASSEMBLY VERTICALLY AND HORIZONTALLY (b)Place SST (reflector))	
	abnormality	automatic correction range.	Check the condition of the millimeter wave radar sensor assembly.	
			Check the condition of the sensor, radiator grille and front bumper assembly.	
7	Radar abnormality	• Operation of the millimeter wave radar sensor assembly is abnormal.	Check for DTCs.	
8	Radar dirtiness	<ul> <li>There is dirt on the radiator grille (or front panel) emblem or millimeter wave radar sensor assembly.</li> <li>Dirt, snow or other obstruction is on the surface of radiator grille (front panel) emblem or millimeter wave sensor assembly.</li> </ul>	Clean the radiator grille (or front panel) emblem or millimeter wave radar sensor assembly.	
9	Temperature abnormality	• The temperature around the millimeter wave radar sensor assembly is outside the operable range of the millimeter wave radar sensor assembly.	Wait until the temperature drops to the operable range (-30 to 50°C).	
10	Voltage abnormality	• IG power source voltage is outside the operable range of the millimeter wave radar sensor assembly.	Check the auxiliary battery voltage (specified condition: 10 to 16 V).	

LEXUS

Procedure

ERROR NO.	ERROR DESCRIPTION	CAUSE OF ERROR	ACTION TO BE TAKEN	
11	External communication abnormality	• CAN communication between DSS and the millimeter wave radar sensor assembly is abnormal.	Check the condition of the connectors.	
	Padar avis aiming	The beam axis of the millimeter wave radar sensor assembly is outside the	Check the installation condition of the front bumper assembly and radiator grille.	
12	failure upward	automatic correction range (upward).	Manually change the beam axis. (See 15.3 Manually change beam axis of millimeter wave radar sensor assembly)	
13 Radar axis aiming failure downward	Deden evia eineine	The beam axis of the millimeter wave rader concer accombly is outside the	Check the installation condition of the front bumper assembly and radiator grille.	
	automatic correction range (downward).	Manually change the beam axis. (See 15.3 Manualy change beam axis of millimeter wave radar sensor assembly)		
	Vehiele ereed	The vehicle is not stationary	Ensure that the vehicle remains stationary.	
14 abnormality	• The vehicle is not stationary.	Perform adjustment again. (See 15.2 millimeter wave radar sensor		
	Other	A mode change error occurred.     Operation of yaw rate sensor is abnormal	Assembly vertically and horizontally (c) Front Beam Axis Adjustment)	
15		<ul> <li>The vehicle is shaking.</li> </ul>	Check for DTCs.	
			Ensure that the vehicle remains stationary.	

- (7) Press the "Exit" button to finish the front beam axis adjustment.
- (d) If necessary, correct the front beam axis misalignment reading.

#### **NOTE:**

- Close all the doors.
- Ensure that no one enters the adjustment area during the adjustment.
- Do not move or shake the vehicle during adjustment (do not get in or out of the vehicle).
- During the procedure, do not enter the adjustment area.
- Do not turn off the Techstream or power switch.

- (1) Enter the following menus: Body
   Electrical / Pre-Collision 2 / Utility /
   Front Beam Axis misalignment
   reading.
- (2) According to the display on the Techstream, press "Next".
- (3) Perform the adjustment according to the display on the Techstream.

Specified Condition:

Vertical	-0.5 to 0.5 deg
Horizontal	-0.6 to 0.6 deg

(4) Turn the Techstream on and turn the cruise control system on using the cruise control main switch (ON/OFF button).

**NOTE:** If the result is not as specified, perform beam axis adjustment again.

- (e) If necessary, correct the front beam axis offset reading.
  - Perform Enter the following menus: Body Electrical - Pre-Collision 2 – Utility – Front Beam Axis Offset Reading
  - (2) According to the display on the Techstream, press "Next".
  - (3) Perform the adjustment according to the display on the Techstream.

Vertical learning value	0 deg
Horizontal learning value	0 deg

**NOTE:** If the result is not as specified, perform beam axis adjustment again.

- (3) Turn the power switch off.
- (4) Disconnect the Techstream from the DLC3.
- (f) Manually change the beam axis of millimeter wave radar sensor assembly.

#### <u> NOTE:</u>

- Manually change the beam axis when error code 12 (radar axis aiming failure upward) or 13 (radar axis aiming failure downward) is displayed when the target is correctly set.
- If the beam axis change mechanism is in the most upward or downward position, check for DTCs.
- If no DTCs are output, repair or correctly install the front bumper assembly.
- Make sure to set the beam axis to the most upward or downward position.
- Manually change the beam axis to the position \*b (most downward position) when error code 12 (radar axis aiming failure upward) is displayed.
- Manually change the beam axis to the position \*c (most upward position) when error code 13 (radar axis aiming failure downward) is displayed.
- (g) Remove the radiator lower air deflector.



(h) Turn the bolt to change the beam axis of the millimeter wave radar sensor assembly (Fig. 16-5).

*a	Standard position
*b	Most Downward Position
*с	Most Upward Position

Vertical axis change	Upward direction: Turn
	screwdriver to negative (-) side
	Downward direction: Turn
	screwdriver to positive (+) side

#### Torque: 1.5 N-m (13 in-lbf)

#### **NOTE:**

- The manual axis switching mechanism may get damaged if a torque higher than the above is applied.
- If the manual axis switching mechanism is damaged, replace the No. 1 millimeter wave radar sensor bracket.
- The millimeter wave radar sensor assembly is installed to the front bumper assembly. If the front bumper is misaligned, the beam axis will be misaligned. For this reason, if the front bumper assembly is deformed, etc. and the millimeter wave radar sensor assembly is replaced or its beam axis is changed manually without repairing the deformation, the beam axis alignment may not be successfully completed.
- (i) Perform the front beam axis adjustment. See Step 16(c) on Page 17 for the front beam axis adjustment.
- (j) Install the radiator lower air deflector.

LEXUS	LC/LCh	2018 -	<b>CARBON FIBER LOWER GRILLE</b>	
Checklist - these points <b>MUST</b> be checked to ensure a quality installation.				

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Check:	Look For:
Accessory Function Checks Uerify parts:	Removed items have been discarded & replaced items are in place
Vehicle Function Checks	
Headlights function	Headlights function as normal
Turn signals function	Turn signals function as normal
Hazard light function	Hazard light functions as normal
High beam function	High beam functions as normal
Fog lamps	Fog lamps functions as normal
Check SRS Warning Light	Turn the vehicle on and check that the SRS
Radar alignment check (Step 15)	Front beam axis misalignment reading: Vertical -0.5 to 0.5deg Horizontal -0.6 to 0.6deg
	Front beam axis offset reading: Vertical learning value 0.0 deg Horizontal learning value 0.0 deg
Vehicle Appearance Check         After accessory installation and removal of protective cover(s), perform a visual inspection.	Ensure no damage (including scuffs and scratches) was caused during the installation process. (For PPO installations, refer to TMS Accessory Quality Shipping Standard.)