



Adjust Camera Pitch, 2nd Generation Autopilot

Classification Campaign Bulletin **Section/Group** 17 - Electrical **Country/Region** All

Year 2016-2017 **Model** Model S **Version** 2nd Generation Autopilot

Bulletin Classification: This campaign bulletin addresses a known non-safety-related condition and provides recommended technical diagnosis and repair procedures. Apply this procedure to all vehicles in the affected VIN range listed. These instructions assume knowledge of motor vehicle and high voltage electrical component repairs, and should only be executed by trained professionals. Tesla assumes no liability for injury or property damage due to a failure to properly follow these instructions or repairs attempted by unqualified individuals.

Condition

On some vehicles with 2nd generation Autopilot, the forward facing camera pitch (vertical angle) might be out of the specifications required for some future Autopilot features.

Correction

Install a rear view mirror mount plate and pitch carrier to adjust the camera pitch.

Correction Description	Correction	Time
SB-17-17-002 Not Applicable	S011717002	0.00
Perform Front Camera Pre-Calibration; No Additional Work Required	S021717002	0.05
Install Mirror Mount Plate And Pitch Carrier To Adjust Front Camera Pitch	S031717002	0.25
Install Mirror Mount Plate And Pitch Carrier To Adjust Front Camera Pitch, Inspect Glare Shield	S041717002	0.40
Install Mirror Mount Plate And Pitch Carrier, Replace Front Camera To Adjust Camera Pitch, Inspect Glare Shield	S051717002	0.50

Required Part(s):	Part Number	Description	Quantity
If required:			
	1119836-01-B	MS TRIPLE CAM PITCH CARRIER -01- RED	1-3
	1119836-02-B	MS TRIPLE CAM PITCH CARRIER -02- GREEN	1-3
	1098491-99-C	TRIPLE CAM RR VIEW MIRROR MOUNT PLATE	1
	1005222-00-A	WASHER,FLAT,M3.2	2
	1089531-00-C	INLINE TRIPLE CAMERA	1
If required, one of the following:			
	1092617-99-C	MS TRIPLE CAM GLARE SHIELD	1
	1092617-00-D	MS TRIPLE CAM GLARE SHIELD	1
Shop Supplies			
	1089991-00-A	TAPE, V710 FOAM (or equivalent)	
These part numbers were current at the time of publication. Use the revisions listed or later, unless otherwise specified in the Parts Manual.			
Special Tool(s):	1080559-20-A	Adjustable Torque Vario Screwdriver (0.8 - 2.0 Nm)	

Procedure

- Perform a forward facing camera pre-calibration (refer to Service Manual procedure 17230800):
 - If the camera passes pre-calibration, no additional work is needed. Discontinue this procedure.
 - If the camera fails pre-calibration, continue this procedure.
- Remove the rear view mirror (refer to Service Manual procedure 15050502).
- Remove the mirror cover (Figure 1).

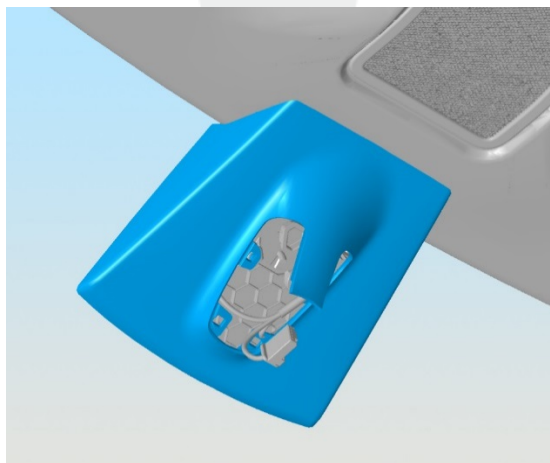


Figure 1

4. Release the 6 screws that secure the mirror mount plate to the glare shield (Figure 2). Discard the mirror mount plate. Allow the camera to hang by its harnesses.

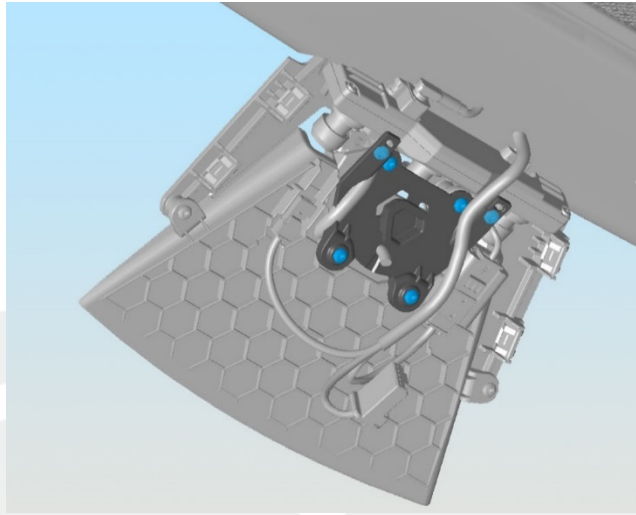


Figure 2

5. Set the new mirror mount plate into position on the glare shield (Figure 3).



Figure 3 (Shown with components removed for clarity)

6. Position the appropriate pitch carrier on the new mirror mount plate (Figure 4).

NOTE: Refer to Toolbox article 33106 to determine the proper color of pitch carrier.



Figure 4 (Red pitch carrier shown)

7. Install the 6 fasteners in the order shown to secure the mirror mount plate and pitch carrier to the glare shield and camera (torque 0.8 Nm) (Figure 5).

NOTE: Use an M3 washer when installing the fasteners that secure the camera to the mirror mount plate (fasteners 5 and 6).

NOTE: Ensure that the tape is present on the glare shield to secure the harness connectors.

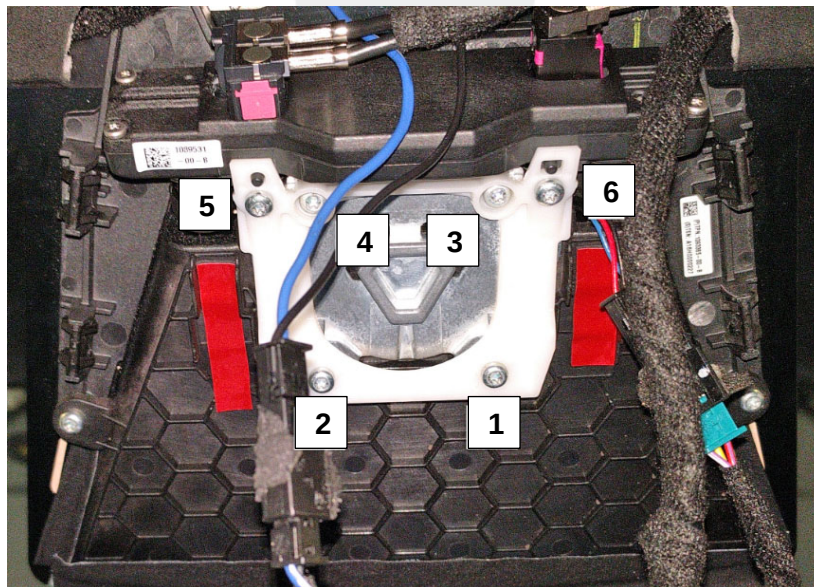


Figure 5

8. Perform a forward facing camera pre-calibration (refer to Service Manual procedure 17230800):

- If the camera passes pre-calibration, no additional work is needed. Discontinue this procedure; reinstall the components removed for access.
- If the camera fails pre-calibration, continue this procedure.

9. Disconnect the harness connectors on the underside of the glare shield (Figure 6).

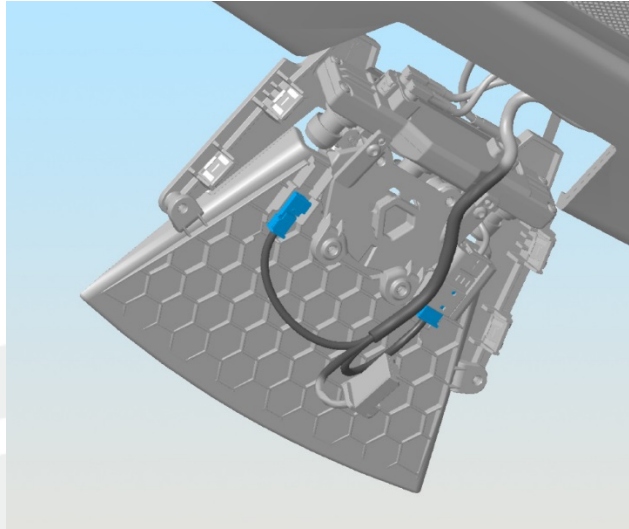


Figure 6

10. Release the fasteners that secure the mirror mount plate and pitch carrier to the glare shield. Allow the camera to hang by its harness.
11. Release the fasteners that secure the glare shield to the windshield. Remove the glare shield from the vehicle.

⚠ CAUTION: When removing the glare shield, do not allow the light/temperature/humidity sensor to fall out of the plastic carrier (Figure 7).

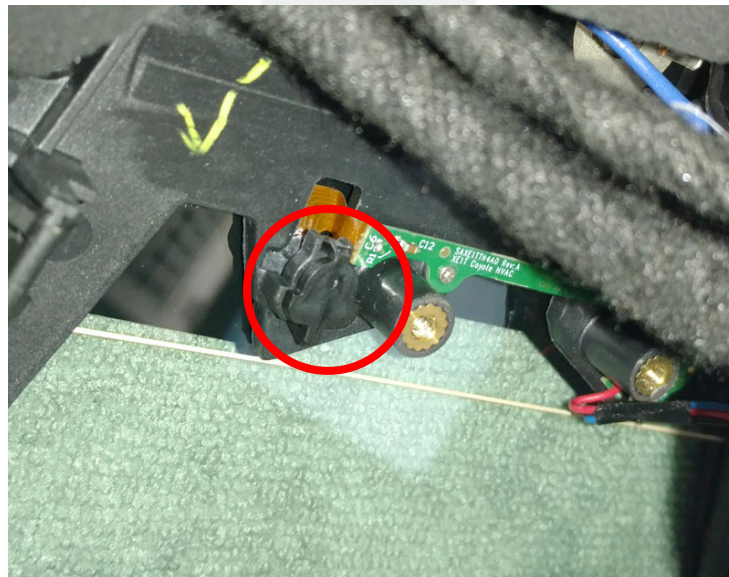


Figure 7

12. Inspect the part number of the glare shield:

- If the glare shield is either revision 99-C or revision D or later:
 - a. Discard the washers.
 - b. If not already present, cut pieces of 6 mm x 30 mm double-sided foam tape and apply them to the glare shield (Figure 8).



Figure 8 (Shown removed from vehicle for clarity)

- If the glare shield is any other revision level, discard the glare shield and any washers. Install a new glare shield.

13. Remove and discard the pitch carrier from the mirror mount plate. Install a new plastic pitch carrier of the same color.

14. Install the 6 fasteners to secure the mirror mount plate and pitch carrier to the glare shield and camera (torque 0.8 Nm).

NOTE: Use the same torque sequence described in step 7.

NOTE: Use an M3 washer when installing the fasteners that secure the camera to the mirror mount plate.

15. Reconnect the harnesses (Figure 9). Affix the connectors to the double-sided tape on the underside of the glare shield.

⚠ CAUTION: Route the harnesses as shown in Figure 9.

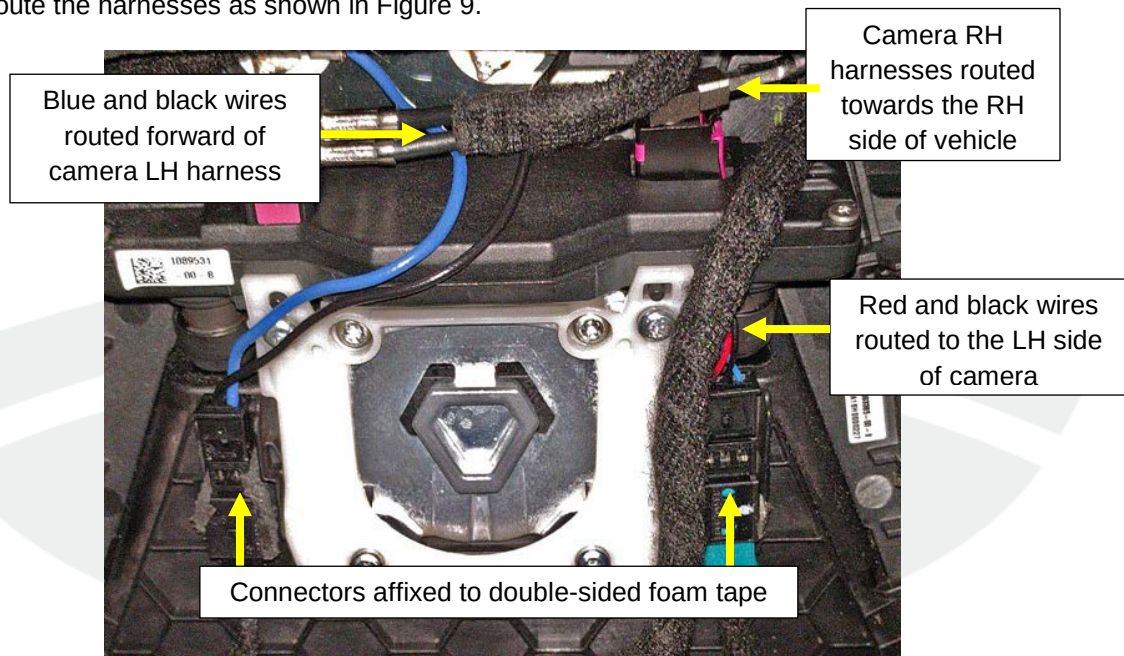


Figure 9

16. Perform a forward facing camera pre-calibration (refer to Service Manual procedure 17230800):
- If the camera passes pre-calibration, no additional work is needed. Discontinue this procedure; reinstall the components removed for access.
 - If the camera fails pre-calibration, continue this procedure.
17. Remove the forward facing camera (refer to Service Manual procedure 17231002).
18. Remove the pitch carrier from the mirror mount plate. Install a pitch carrier of the same color.
19. Install a new forward facing camera. Install the 6 fasteners to secure the mirror mount plate and pitch carrier to the glare shield and camera (torque 0.8 Nm).
- ⚠ CAUTION:** Route the harnesses as shown in Figure 9.
- NOTE:** Use the same torque sequence indicated in step 7.
- NOTE:** Use an M3 washer when installing the fasteners that secure the camera to the mirror mount plate.
20. Perform a forward facing camera pre-calibration (refer to Service Manual procedure 17230800):
- If the camera passes pre-calibration, no additional work is needed. Discontinue this procedure; reinstall the components removed for access.
 - If the camera fails pre-calibration, escalate a Toolbox session.

Affected VIN(s) Affected Model S vehicles built between approximately October 13, 2016 and February 5, 2017.

NOTE: This is a simplified summary of the affected VIN list. Refer to the VIN/Bulletin Tracker or Customer/Vehicle profile to determine applicability of this bulletin for a particular vehicle.

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