



Cold Weather Brake Package

Classification Repair Bulletin **Section/Group** 33 - Brakes **Country/Region** All

Year 2012-2016 **Model** Model S **Version** All

Bulletin Classification: *This repair bulletin provides instructions and guidelines for a noted condition or a customer concern. The information provided can address a broad range of known or perceived issues with the operation of Tesla vehicles. This bulletin might not be VIN-specific. These instructions assume knowledge of motor vehicle and high voltage electrical component repairs, and should only be executed by trained professionals. Tesla Motors assumes no liability for injury or property damage due to a failure to properly follow these instructions or repairs attempted by unqualified individuals.*

This Service Bulletin supersedes SB-15-33-001, dated 13-Apr-15. Each content change is marked by a vertical line in the left margin. Discard the previous version and replace it with this one.

Condition

In extremely cold or wet regions, or in areas where road salts are used to melt snow, Model S brake pads could become seized or stick to the rotors after being parked for an extended period of time.

In addition, brake pedal feel and travel could be affected in the following scenarios:

- Mild rust builds up on the rotors while the vehicle is parked
- Snow gathers around the calipers then melts onto the pads while the vehicle is parked
- The brake pads become wet while driving in heavy rain without regular brake usage or when using mainly regenerative braking
- The brake pads become wet while washing the vehicle

The brakes continue to conform with regulatory and internal Tesla standards for brake performance even under these circumstances. However, the brake pads could require slightly increased brake pedal force or longer pedal travel during the first few stops prior to the pads warming up and/or drying off.

Correction

Upon customer complaint, ensure that the vehicle has rear dust shields, 2nd generation front dust shields, front brake pads with a part number of 1055066-00-B or later, and rear brake pads with a part number of 1055068-00-B or later. Replace rotors as a cosmetic improvement, if necessary.

In addition, remind the customer that all disc brake systems are susceptible to mild rust and that affected brake pedal feel and travel is normal behavior for any vehicle with wet brake pads.

Required Part(s):	Part Number	Description	Quantity
		If necessary:	
	1055068-00-B	REAR BRAKE PAD SVC KIT HP1000-T	1
	1055066-00-B	FRONT BRAKE PAD SVC KIT HP1000-T	1
	1027661-01-B	FRONT CW BRAKE ROTOR SHIELD LH	0-1
	1045945-01-B	FR BRAKE DISC DUST SHIELD LH - DUAL MOTOR	0-1
	1027662-01-B	FRONT CW BRAKE ROTOR SHIELD RH	0-1
	1045951-01-B	FR BRAKE DISC DUST SHIELD RH - DUAL MOTOR	0-1
	6006432-00-A	RR BRAKE DISC ROTOR DUST SHIELD LH	1
	6006433-00-A	RR BRAKE DISC ROTOR DUST SHIELD RH	1
	2007067	BOLT TRX BTNHD M6x1.0x16[6.8]U-MP-ZnAIW	12
	1020297-00-A	NUT HF M24x1.5 [8.8] ZnFI-W	2
	1004377-00-B	BLT CSK TRX M8x1.25x20 10.9-ZnAl-W	2-4
	1025099-00-B	FR BRAKE ROTOR W/ AS-CAST OUTER HAT	2
	6006431-00-D	REAR BRAKE ROTOR - OUTER HAT AS CAST	2
	1063021-00-A	BRAKE CALIPER CERAMIC GREASE	As required

Shop supplies:

5 mm or #8 drill bit
M6x1 tap
Brake cleaner

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):	Part Number	Description
	1057529-00-A	BRUSH 1 3/8" LONG NYLON BRISTLE
	1062500-00-A	MAGNETIC FIELD VIEWING CARD

Correction Description	Correction	Time
SB-15-33-001 Not Applicable	S011533001	0.00
Vehicle Inspection Only; Cold Weather Brake Package Components Already Installed	S021533001	0.60
Install Front Rotors	S031533001	0.75
Install Rear Rotors	S041533001	0.85
Install Front And Rear HP1000-T Brake Pads	S051533001	1.10
Retrofit 2nd Generation Front Dust Shields, Install Front Rotors	S061533001	1.35
Retrofit 2nd Generation Front Dust Shields	S071533001	1.35
Install Front Rotors, Install Front And Rear HP1000-T Brake Pads	S081533001	1.40
Install Rear Rotors, Install Front And Rear HP1000-T Brake Pads	S091533001	1.50
Retrofit 2nd Generation Front Dust Shields, Install Rear Rotors	S101533001	1.60
Install Front Rotors, Install Rear Rotors	S111533001	1.60
Retrofit 2nd Generation Front Dust Shields, Install Front And Rear HP1000-T Brake Pads	S121533001	1.75
Retrofit 2nd Generation Front Dust Shields, Install Front Rotors, Install Front And Rear HP1000-T Brake Pads	S131533001	1.75
Install Rear Dust Shields, Install Rear Rotors	S141533001	1.75
Install Front Rotors, Install Rear Rotors, Install Front And Rear HP1000-T Brake Pads	S151533001	1.80
Retrofit 2nd Generation Front Dust Shields, Install Front Rotors, Install Rear Rotors	S161533001	1.85

Install Rear Dust Shields	S171533001	1.85
Install Rear Dust Shields, Install Front Rotors, Install Rear Rotors	S181533001	2.15
Retrofit 2nd Generation Front Dust Shields, Install Front Rotors, Install Rear Rotors, Install Front And Rear HP1000-T Brake Pads	S191533001	2.15
Retrofit 2nd Generation Front Dust Shields, Install Rear Rotors, Install Front And Rear HP1000-T Brake Pads	S201533001	2.15
Install Rear Dust Shields, Install Front Rotors	S211533001	2.25
Install Rear Dust Shields, Install Front And Rear HP1000-T Brake Pads	S221533001	2.25
Install Rear Dust Shields, Install Rear Rotors, Install Front And Rear HP1000-T Brake Pads	S231533001	2.25
Install Rear Dust Shields, Install Front Rotors, Install Rear Rotors, Install Front And Rear HP1000-T Brake Pads	S241533001	2.45
Install Rear Dust Shields, Install Front Rotors, Install Front And Rear HP1000-T Brake Pads	S251533001	2.65
Retrofit 2nd Generation Front Dust Shields, Install Rear Dust Shields, Install Front Rotors, Install Rear Rotors	S261533001	2.70
Retrofit 2nd Generation Front Dust Shields, Install Rear Dust Shields	S271533001	2.70
Retrofit 2nd Generation Front Dust Shields, Install Rear Dust Shields, Install Front Rotors	S281533001	2.70
Retrofit 2nd Generation Front Dust Shields, Install Rear Dust Shields, Install Rear Rotors	S291533001	2.70
Retrofit 2nd Generation Front Dust Shields, Install Rear Dust Shields, Install Front And Rear HP1000-T Brake Pads	S301533001	2.90
Retrofit 2nd Generation Front Dust Shields, Install Rear Dust Shields, Install Rear Rotors, Install Front And Rear HP1000-T Brake Pads	S311533001	2.90
Retrofit 2nd Generation Front Dust Shields, Install Rear Dust Shields, Install Front Rotors, Install Front And Rear HP1000-T Brake Pads	S321533001	2.90
Retrofit 2nd Generation Front Dust Shields, Install Rear Dust Shields, Install Front Rotors, Install Rear Rotors, Install Front And Rear HP1000-T Brake Pads	S331533001	2.90

Procedure

1. Raise and support the vehicle (refer to Service Manual procedure 10000205).
2. Inspect the rear brakes for dust shields (Figures 1 and 2).
 - If rear dust shields are already installed, continue to the next step in this procedure.
 - If rear dust shields are not installed, install rear brake dust shields (refer to Service Manual procedure 33011802).



Figure 1 (Rear dust shield)



Figure 2 (Rear dust shield highlighted)

3. Inspect the part number on the rear rotors:
 - If the part number is 6006431-00-D or later, continue to the next step in this procedure.
 - If the part number is not 6006431-00-D or later and the hat (Figure 3) has excessive visible rust, replace the rear rotors (refer to Service Manual procedure 33010202).

NOTE: Do not replace the rotors unless there is excessive visible rust on the hat.

NOTE: If the rotors are close to the service limit, recommend replacement to the customer for their convenience. However, do not claim them under warranty.

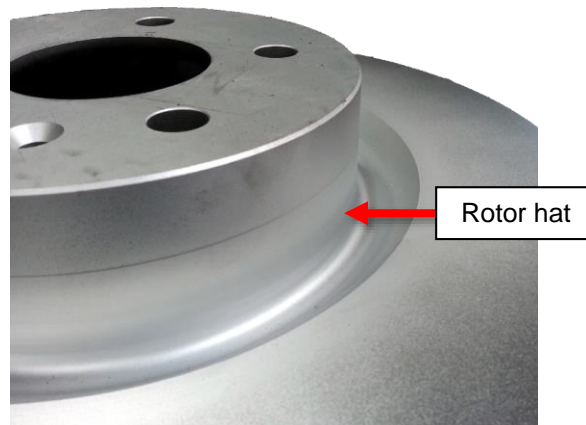


Figure 3 (No visible rust on hat)

4. Remove the rear brake pads (refer to Service Manual procedure 33010802) and check the part number (Figure 4).
- If the part number is “XB4.L0.10” or “07.7783.54” (and the thickness is within Tesla-approved specifications), reinstall the brake pads and continue this procedure.
 - If the part number is unreadable or is anything other than “XB4.L0.10” or “07.7783.54”, replace the brake pads.

⚠ CAUTION: Follow the installation procedure in Service Manual procedure 33010802 when installing the rear brake pads.

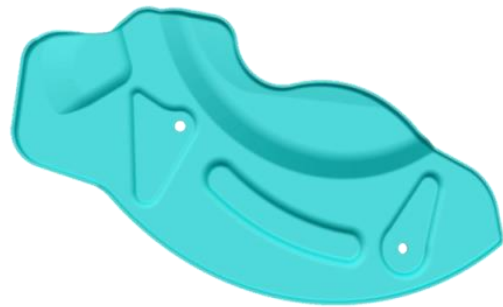


Figure 4 (Part number location highlighted)

5. Inspect the front brakes for 2nd generation dust shields (Figure 5).
- If the vehicle has 2nd generation front dust shields (Figure 5), skip to step 7.
 - If the vehicle has 1st generation front dust shields (Figure 6) or no front dust shields, continue to the next step in this procedure.



✓ Figure 5 (2nd generation front dust shield)



✗ Figure 6 (1st generation front dust shield)

6. Retrofit 2nd generation front dust shield on both sides of the vehicle (refer to Service Manual procedure 33012006).

7. Inspect the part number on the front rotors:

- If the part number is 1025099-00-B or later, continue to the next step in this procedure.
- If the part number is not 1025099-00-B or later and there is visible rust on the hat, replace the rear rotors (refer to Service Manual procedure 33010102).

NOTE: Do not replace the rotors unless there is visible rust on the outer hat.

NOTE: If the rotors are close to the service limit, recommend replacement to the customer for their convenience. However, do not claim them under warranty.

8. Remove the front brake pads (refer to Service Manual procedure 33010702) and check the part number (Figure 7).

- If the part number is “07.C593.10”, “XB4.L0.04”, or “07.C593.11” (and the thickness is within Tesla-approved specifications), reinstall the brake pads and continue this procedure.
- If the part number is unreadable or is anything other than “07.C593.10”, “XB4.L0.04”, or “07.C593.11”, replace the brake pads.

⚠ CAUTION: Follow the installation procedure in Service Manual procedure 33010702 when installing the front brake pads.



Figure 7 (Part number location highlighted)

9. Reinstall all components that were removed for access.

⚠ CAUTION: Ensure that all rotors spin freely before reinstalling the wheels.

10. If any brake pads were replaced, perform the brake burnishing procedure (refer to Service Manual procedure 33013000).

11. Ensure that the customer is aware of the following:

- The Tesla Mobile app’s ability to “precondition” Model S; refer to “Preconditioning Model S” within this document.
- The new features that were introduced through firmware; refer to “New Firmware Features” within this document.

Preconditioning Model S

- I Similar to a remote start system on an internal combustion vehicle, some devices have the ability to remotely precondition Model S prior to driving by using the Tesla App. Tesla recommends preconditioning Model S before driving, especially in cold climates. This will ensure that the cabin is comfortable for the occupants and that the Battery has warmed up.

NOTE: Regenerative braking is not available when the Battery's state of charge (SOC) is at 100% or if the Battery is too cold. Preconditioning the vehicle in cold weather and charging to less than 100% is recommended to immediately gain the benefits of regenerative braking.

New Firmware Features

Firmware version 5.14 (1.66.45) (released in September, 2014) introduced 2 new changes in Model S that help mitigate issues that occur due to soaked brakes in cold climates—brake disc wipe (BDW) and hydraulic fade compensation (HFC).

BDW can intermittently apply brake pressure to keep the brake pads and rotors dry. HFC allows Model S to increase hydraulic pressure if brake pad friction is compromised (brake fade, ice buildup, etc.).

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- I **Affected VIN(s)** Affected Model S vehicles built before approximately August 1, 2016.

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.

For feedback on the accuracy of this document, email ServiceBulletinFeedback@teslamotors.com.