TESLA

2012

MODEL S

OWNER
SAFETY
INFORMATION

INFORMATION ABOUT YOUR MODEL S IS AVAILABLE AT:

www.teslamotors.com/mytesla

To contact Tesla call 1-877-79TESLA (1-877-798-3752)

For Roadside Assistance call 1-866-99TESLA (1-866-998-3752)

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For printed information on how to use the main features of Model S and how to perform basic maintenance procedures, see the document titled "A QUICK GUIDE FOR OWNERS," included in your owner documentation package.

CORRECT DRIVING POSITION

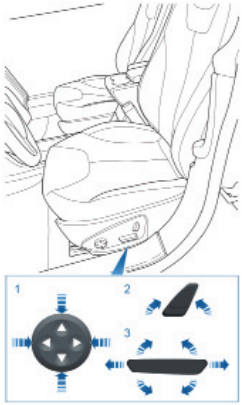
The seat, head support, seat belt and airbags work together to maximize your safety. Using these correctly ensures greater protection.

Position the seat so you can wear the seat belt correctly while being as far away from the front airbag as possible:

1. Sit upright with both feet on the floor and the seat back reclined no more than 30 degrees.
2. Make sure you can easily reach the pedals and that your arms are slightly bent when holding the steering wheel. Your chest should be at least 10” (254 mm) from the center of the airbag cover.
3. Place the seat belt mid-way between your neck and your shoulder. Fit the strap tightly across your hips, not across your stomach.

ADJUSTING THE DRIVER’S SEAT

1. Adjust lumbar support.
2. Adjust backrest.
3. Move seat forward/backward and adjust the height and tilt angle of the seat.



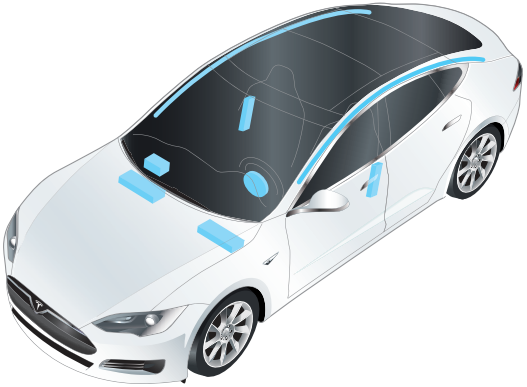
WARNINGS:

Do not make adjustments while driving. Doing so increases the likelihood of a collision.

Riding in a moving vehicle with the seat back reclined can result in serious injuries in a collision as you could slide under the lap belt or be propelled into the seat belt. Ensure your seat back is reclined no more than 30 degrees when the vehicle is moving.

LOCATION OF AIRBAGS

Airbags are located in the approximate areas shown on the following illustration. Airbag warning information is printed on the sun visors.



Inflation of airbags depends on the rate at which your vehicle cabin changes speed in a collision. The rate of deceleration determines whether airbags inflate.

Airbags inflate instantly with considerable force accompanied by a loud noise. The inflated bag, together with the seat belts, limits movement of occupants, reducing the risk of injury to the occupants.

Front airbags are not ordinarily designed to inflate in the event of rear collisions, rollovers, minor front or side collisions, heavy braking, or driving over bumps and potholes. Therefore, significant superficial damage can occur to the vehicle without the front airbags inflating or, conversely, a relatively small amount of structural damage can cause airbags to inflate.

TYPES OF AIRBAGS

Advanced front airbags	The front airbags on the Model S are advanced airbags designed to reduce airbag related injuries to children or small adults who ride in front. On the driver's side, the front airbag works with a seat position sensor that adjusts the inflation level based on the size of the occupant. On the passenger's side, the airbag responds to a sensing system in the seat that determines whether or not the passenger side front airbag inflates, and adjusts the inflation level based on the size of the occupant (see page 4).
Knee airbags	Knee airbags and the front airbags work together. The knee airbags limit the forward motion of the front seat occupants by restricting leg movement, thereby positioning the occupants so that the front airbags work more effectively.
Side airbags	Side airbags protect the thorax region of the torso and pelvis and will inflate only if a severe side impact occurs. The airbags on the non-impacted side will not inflate.
Curtain airbags	Curtain airbags help to protect the head and ordinarily inflate only if a severe side impact occurs or if the vehicle rolls over. The airbags on the non-impacted side will not inflate.

FRONT PASSENGER DETECTION

Model S has an occupancy sensor in the front passenger seat that controls the status of the airbags based on the weight of the occupant. Passenger airbag status displays in the top right corner of the touchscreen to indicate whether the airbag will inflate (ON) or not inflate (OFF) if a collision occurs:

Front passenger seat occupancy*	Passenger airbag status
Empty	OFF
Infant in child seat (up to 20 lbs)	OFF
Child or small occupant (20-100 lbs)	ON or OFF
Heavy object/occupant	ON
*Note: Values are approximate. Occupants whose weight is close to the low weight threshold can cause the status to occasionally switch on and off depending on seating position and physique.	

If the status shows the airbag as permanently ON, even when the seat is empty and the seat belt is unbuckled, contact Tesla immediately.

To make sure the sensing system can correctly detect occupancy status, eliminate the following:

- Objects lodged underneath the seat.
- Heavy objects sitting on the seat (briefcase, large purse).
- Objects wedged between the seat back and seat cushion.
- Cargo interfering with the seat.
- Rear passengers interfering with the seat.
- Aftermarket items attached to, or sitting on, the seat (covers, mats, blankets, etc.).

These conditions can interfere with the occupancy sensor. If you've eliminated the above possibilities, and the airbag status is still incorrect, ask passengers to ride in the rear seat and contact Tesla to have the airbag system checked.

NOTE: The front passenger seat's sensing system affects the operation of the front passenger airbag only. All other airbags, including the side airbag and curtain airbag, are not affected.

AIRBAG WARNING INDICATOR LIGHT

The airbag warning on the instrument panel alerts you of a malfunction of the airbag system. When Model S is powered on, all components of the airbag system are continuously monitored. Contact Tesla if this indicator light stays on.

INFLATION EFFECTS

When airbags inflate, a fine powder is released. This powder can irritate the skin and should be thoroughly flushed from the eyes and from any cuts or abrasions.

After inflation, the airbags will deflate to provide a gradual cushioning effect for the occupants and to ensure the driver's forward vision is not obscured.

If airbags have inflated, or if your vehicle has been in an accident, always have the airbags, seat belt pre-tensioners and any associated components checked and, if necessary, replaced by Tesla.

In a collision, in addition to airbags inflating:

- doors unlock and the door handles extend
- hazard warning lights switch on
- interior lights switch on
- battery power is disabled

To restore Battery power, use the touchscreen to turn the vehicle OFF, then turn it back on again by pressing the brake.

WARNINGS:

All occupants, including the driver, should always wear their seat belts whether or not an airbag is also provided at their seating position to minimize the risk of severe injury or death in the event of a crash.

Front seat occupants should not place their arms over the airbag module, as an inflating bag can cause fractures or other injuries.

Airbags inflate with considerable speed and force, which can cause injury. To limit injuries, ensure that occupants are wearing seat belts and are correctly seated, with the seat as far back as possible. The National Highway Traffic Safety Administration (NHTSA) recommends a minimum distance of 10 inches (25 cm) between an occupant's chest and an airbag.

Do not use a child safety seat or seat young children on a seat with an operational airbag in front of it. Doing so can cause serious injury or death if an airbag inflates.

To ensure correct inflation of the side airbags, maintain an unobstructed gap between an occupant's torso and the side of Model S.

Passengers should not lean their heads against the doors. Doing so can cause injury if a curtain airbag inflates.

Do not allow passengers to obstruct the operation of an airbag by placing feet, knees, or any other part of the body on or near an airbag.

Do not attach or place objects on or near the frontal airbag modules, the side of the front seats, the headliner at the side of the vehicle, or near any other airbag cover that could interfere with inflation of the airbag system. Any such objects could cause harm if the vehicle is in a crash severe enough to cause the airbag to inflate.

Following inflation, some airbag components are hot. Do not touch until they have cooled.

USING SEAT BELTS

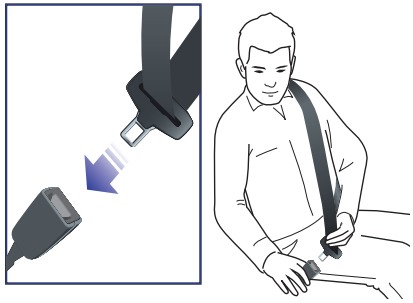
Seat belts and child safety seats are the most effective means of protecting occupants if a collision occurs. Therefore, wearing a seat belt is required by law in most jurisdictions.

Both the driver and passenger seating positions are equipped with three-point inertia reel seat belts. Inertia reel belts are tensioned automatically to allow occupants to move comfortably during normal driving conditions.

The belt reel automatically locks to prevent movement of occupants when Model S experiences a force associated with hard acceleration, braking, cornering or an impact in a collision.

To fasten a belt

1. Ensure correct positioning of the seat.
2. Draw the belt out smoothly, ensuring the belt lays flat across the pelvis, chest and mid-point of the collar bone between the neck and shoulder.
3. Insert the latch plate into the buckle and press down until you hear a “click” indicating it is locked in place.

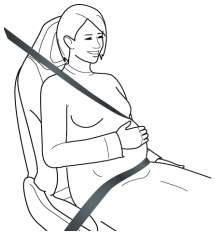


4. Pull the belt to check that it’s securely fastened.
5. Pull the diagonal part of the belt towards the reel to remove excess slack.

To release a belt

Hold the belt near the buckle to prevent the belt from retracting too quickly, then press the button on the buckle. The belt retracts automatically.

Wearing seat belts when pregnant

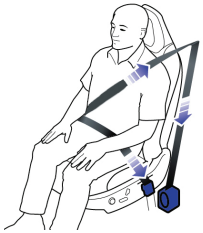


Do not put the lap portion or shoulder portion of the seat belt over the abdominal area. Wear the lap portion of the belt as low as possible across the hips, not the waist. Position the shoulder portion of the belt between the breasts and to the side of the abdomen. Consult your doctor for specific guidance.

Seat belt reminder

The seat belt reminder on the instrument panel alerts you if the seat belt for an occupied front seat is not fastened. If the belt remains unfastened, this reminder flashes, and you’ll hear an intermittent chime.

Seat belt pre-tensioners



The front seat belts are equipped with pre-tensioners that work in conjunction with the airbags in a severe frontal collision. The pre-tensioners automatically retract both the seat belt buckle and the seat belt webbing, reducing slack in both the lap and diagonal portions of the belts, resulting in reduced forward movement of the occupant. Once the seat belt pre-tensioners have been activated, they must be replaced. After any accident, have the airbags, seat belt pre-tensioners, and any associated components checked and, if necessary, replaced.

THREE SEAT BELT TESTS

1. With the seat belt fastened, give the webbing nearest the buckle a quick pull. The buckle should remain securely locked.
2. With the belt unfastened, unreel the webbing to its limit. Check that unreeling is free from snags and visually check the webbing for wear. Allow the webbing to retract, checking that retraction is smooth and complete.
3. With the webbing half unreeled, hold the tongue plate and pull forward quickly. The mechanism should lock automatically and prevent further unreeling.

If a seat belt fails any of these tests, contact Tesla immediately.

HEAD SUPPORTS

Model S seats include integrated head supports that cannot be adjusted or removed.

WARNINGS:

All occupants must wear seat belts, even for short drives. Failure to do so increases the risk of death or serious injury in the event of a collision.

Secure infants and small children in a rear seat using a suitable child safety seat as described on page 9.

Regularly check the condition of all seat belts. Replace belts if you notice any damage to the webbing, fittings, retractor mechanisms or buckles.

Seat belts should be worn low across the pelvis, over the shoulder and across the chest. Avoid wearing the lap section of the belt across the abdominal area. Always adjust the belt to remove slack. Seat belts worn too loose allow excessive forward movement in a collision. Seat belts should not be worn with any part of the strap twisted. An improperly worn seat belt increases the risk of serious injury or death in the event of a collision.

Do not wear seat belts over hard, fragile or sharp items in clothing, such as pens, keys, eyeglasses, etc. In a collision, the pressure from the seat belt can cause them to break, which in turn can cause injury.

Each seat belt assembly must only be used by one occupant; it is dangerous to put a belt around a child being carried on an occupant's lap.

Seat belts that have been worn in an accident must be replaced, even if damage is not obvious. The belt anchors must also be checked.

Avoid contaminating any component of a seat belt assembly with chemicals, liquids, grit, dirt or cleaning products.

If a seat belt fails to retract or latch into the buckle, immediately contact Tesla to have it replaced.

ABOUT CHILD SAFETY SEATS

Your Model S seat belts in the front and second row seats are designed for adults and larger children. You must restrain infants and small children in the second row seats only and you must use a suitable child safety seat appropriate for the child's age, weight, and size. Carefully follow the instructions provided by the manufacturer of the child safety seat. Never use child safety seats in the front row passenger seat.

If your Model S is equipped with rear facing child seats, these seats are child safety seats and are designed only for children within a specific height and weight range (see page 12).

WARNINGS:

According to accident statistics, children are safer when properly restrained in the rear seating positions than in the front seating positions.

To ensure children are safely seated, follow all instructions provided in this document and provided by the manufacturer of the child safety seat. Failure to do so increases the risk of death or serious injury.

Do not allow an infant to be held on a lap. To reduce the risk of injury, a child must be restrained in an appropriate child safety seat.

CHOOSE A SUITABLE CHILD SAFETY SEAT

All children age 12 and under should ride in the rear seats. Always use a child safety seat suitable for a young child's age and weight:

	Infants	Toddlers	Young Children
Age	Birth to 1 year	Over 1 year	4 and older (unless over 57" tall)
Weight	Up to at least 20 lbs.	Over 20 lbs (minimum) Over 40 lbs (recommended)	Over 40 lbs
Type of seat	Rear facing (or convertible) infant seat	Forward facing (or convertible)	Belt retained booster seat
Seat position	Rear facing only*	Forward facing	Forward facing

* Many child safety seats currently available allow children to ride rear facing using the child safety seat's integrated 5 point harness for a longer period of time. Using these systems for as long as possible is strongly recommended.

CAUTION: Laws that governs how and where children should be carried when travelling in a vehicle are subject to change. It is the driver's responsibility to comply with all current regulations.

TWO WAYS TO INSTALL CHILD SAFETY SEATS

There are two ways to install a child safety seat:

- Secure using seat belts
- Attach LATCH type child safety seats to anchor bars built into the rear seat

Check the child safety seat manufacturer's instructions to see which method to use. Some child safety seats can be installed using either method. Always follow the child safety seat manufacturer's instructions.

SAFETY SEATS FOR LARGER CHILDREN

If a child is too large to fit into a child safety seat, but too small to safely fit into the standard seat belts, use a booster seat appropriate for the child's age and size. Carefully follow the manufacturer's instructions.

WARNINGS:

Ensure the child's head is properly supported by either the booster seat or the Model S seat. The seat back must be at or above the center of the child's ears.

Ensure the Model S seat belt properly fits the child. The shoulder portion of the belt must be away from the face and neck, and the lap portion must not be over the stomach.

INSTALLING SEAT BELT RETAINED CHILD SAFETY SEATS

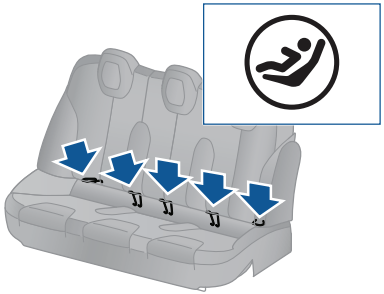
- Make sure that the child falls into the correct weight range for the seat.
- Avoid dressing a child in bulky clothing and do not place any objects between the child and the restraint system.
- Adjust harnesses for every child, every trip.

Always follow detailed instructions provided by the child safety seat manufacturer and the general guidelines provided below.

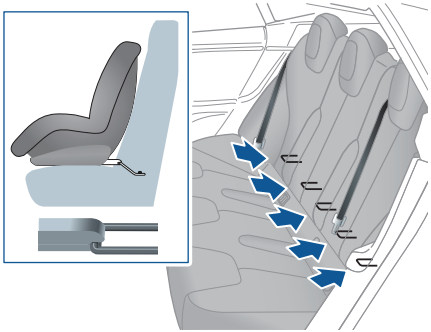
1. Place the child seat in the Model S, route the seat belt and secure the buckle in accordance with the child safety seat manufacturer's fitting instructions.
2. Allow the seat belt to retract and remove all slack in the seat belt while firmly pushing the child seat into the Model S seat.
3. If your seat belt restrained child seat has an upper tether, attach as described on page 10.

INSTALLING LATCH-RETAINED CHILD SAFETY SEAT

Lower LATCH anchorage points are provided at all three rear seating positions and are located between the seat back rest and rear cushion. The exact position of each anchorage point is indicated by the child safety seat identification tab on the seat.

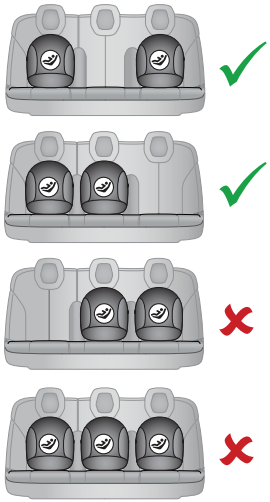


To install a LATCH-retained child safety seat, slide the safety seat onto the anchor bars until it engages. Carefully read and follow the instructions provided by the child safety seat manufacturer.



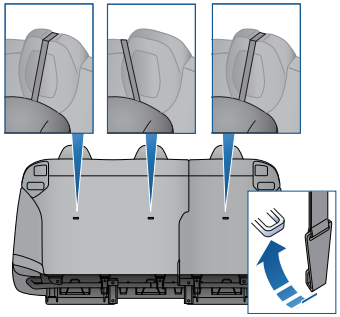
Although LATCH anchorage points are provided at all three rear seating positions, you can only use two at the same time. To seat three children, use a non LATCH-retained child safety seat in the middle.

When installing two LATCH-retained child safety seats, you can not install them adjacent to each other with one in the middle and the other on the left (driver's side).



UPPER TETHER STRAPS

If an upper tether strap is provided, attach the tether strap hook to the tether anchor point located on the back of the rear seats. If the child seat is installed on a left or right hand seat, position the strap so that it runs over the center of the Model S head support on the rear seat. If installed on the center seat, position the strap to run over the left hand side of the head support. Then tighten according to the child safety seat manufacturer's instructions.



NOTE: As you tighten the tether strap, the top of the head rest will deform to prevent the strap from moving from side to side.

TEST BEFORE SEATING A CHILD

Before seating a child, always make sure the child safety seat is not loose:

- Hold the safety seat by the belt path and try to slide the safety seat side to side and front to back.
- If the seat moves more than one inch, then it is too loose.
- Tighten the belt or reconnect the LATCH restrained child seat.
- If you can't reduce the slack, try a different seating location or try another child safety seat.

WARNINGS:

DEATH OR SERIOUS INJURY can occur if instructions and warnings are not properly followed.

Never attach two child safety seats to one anchorage point. In a collision, one anchorage point may not be strong enough to retain both seats, causing serious or fatal injury to an occupant.

Child safety seat anchorages can withstand only loads imposed by correctly fitted child safety seats. Do not use them for adult seat belts, harnesses or for attaching other items. Doing so increases risk of serious injury or death in the event of an accident.

Regularly inspect and check the fit of all child safety seats. Replace seats that show signs of wear or that are no longer suitable for the age and weight of the child.

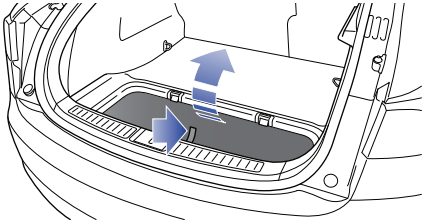
Always check harnesses and the upper tether strap for damage or wear and tear. A child could be seriously injured or killed in a sudden stop or collision if the child safety seat's upper tether strap is damaged or not functioning properly.

OPENING THE TESLA REAR FACING CHILD SEATS

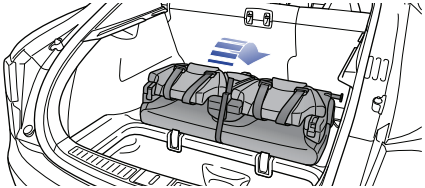
IMPORTANT! Rear facing seats are child restraint systems and must only be used for children over 37 " (94 cm) tall and weighing between 35 and 77 lbs (16.2 to 35.2 kg). Always ensure the top of the child's head can not contact the vehicle and that the child is seated comfortably with the seat belts positioned and latched correctly. Follow all instructions provided and do not use supplemental child restraint systems in these seats.

The rear facing child seats are folded into the floor of the trunk. Follow these steps to open:

1. Remove cover from the trunk floor.

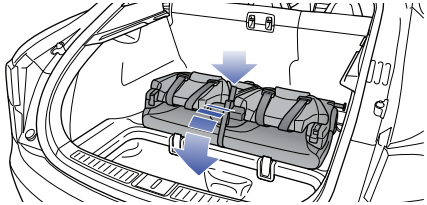


2. Pull the yellow strap attached to the seat to lift up the seat assembly.
3. Push the seat assembly into position and make sure the retaining catches engage.

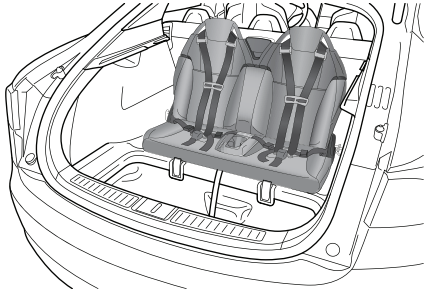


WARNING: The rear facing seats are child safety seats. They are not intended to seat adults or children outside the height and weight ranges provided above.

4. Check that the seat base is securely retained by trying to pull the rear of the seat assembly towards you.
5. Pull the retaining bracket towards you to release.



6. Fold the head supports towards you.
7. Raise the seat back to the upright position and push until it locks into position.



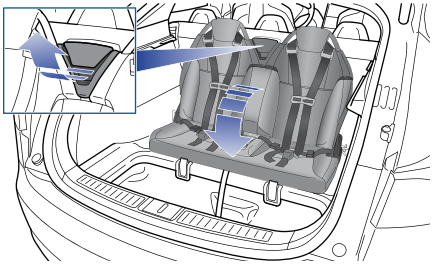
8. Check that the seat back and seat base are securely retained in the upright position by trying to pull the seat back towards you.

WARNING: Follow all instructions and heed all warnings related to the rear facing child seats. Failure to do so can compromise occupant safety.

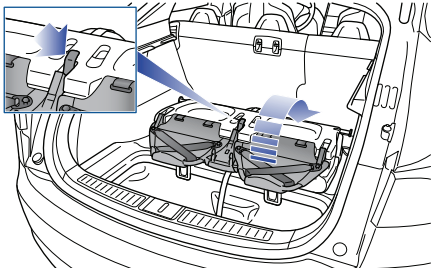
STORING THE TESLA REAR FACING CHILD SEATS

CAUTION: Before folding the seats, fasten the seat belts to prevent them from getting trapped in the seat mechanism and being damaged.

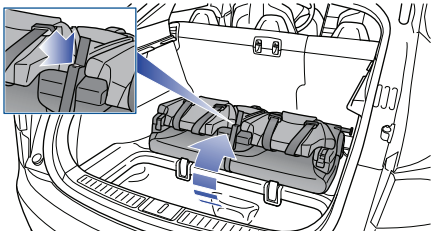
1. Pull the handle to release the seat back and pull the seat back fully forward.



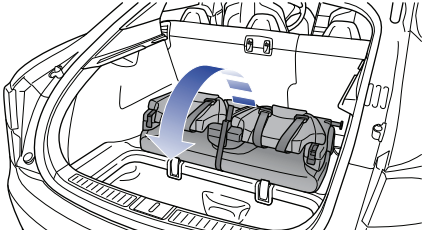
2. Push the lever to release the head supports from the seat back, then fold back onto the seat.



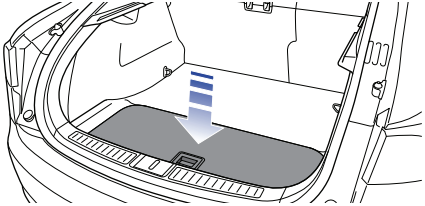
3. Pull the retaining bracket upwards to secure seat assembly.



4. Pull strap at the rear of the seat to release the seat base from the trunk floor.
5. Fold seat assembly into trunk floor.



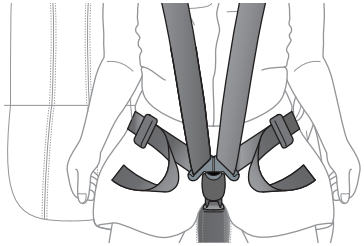
6. Replace cover on trunk floor.



SEATING A CHILD IN THE TESLA REAR FACING CHILD SEATS

WARNING: The rear facing seats are child safety seats. They must only be used for children over 37 " (94 cm) tall and weighing between 35 and 77 lbs (16.2 to 35.2 kg). Ensure the top of the child's head can not contact the vehicle. Do not use supplemental child restraint systems in these seats. Follow all instructions provided.

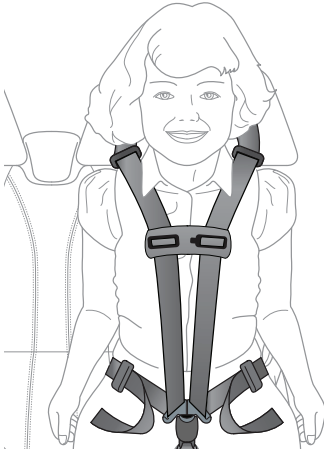
Fastening



1. Position the child in the seat with arms through the loops of the seat belts.
2. Connect the two halves of the seat belt and latch together.
3. Insert the seat belt tongue latch into the buckle and ensure it is securely fastened.
4. Adjust the shoulder belts so that they run over the top of the child's shoulders and away from the face.
5. Connect the chest clip.
6. Pull the lower straps until the child is securely held in the seat.

Releasing

1. Release the seat belts by pressing the button on the buckle.
2. Release the chest clip.
3. Separate the two halves of the seat restraint.



BRAKING SYSTEMS

Model S is equipped with an anti-lock braking system (ABS) that prevents the wheels from locking when you apply maximum brake pressure. This allows you to maintain steering control during heavy braking on most road conditions.

During emergency braking conditions, the ABS constantly monitors the speed of each wheel and varies the brake pressure according to the grip available. The alteration of brake pressure can be felt as a pulsing sensation through the brake pedal. This demonstrates that ABS is operating and is no cause for concern. Keep firm and steady pressure on the brake pedal while experiencing the pulsation.

Model S continuously monitors its brake systems and alerts you if a fault is detected:

	An **ABS fault** is detected. The brakes remain fully operational and are not affected by an ABS failure. However, braking distances may increase and wheels may lock under heavy braking. Contact Tesla.
	A **brake system fault** is detected or the brake fluid level is low. Contact Tesla immediately.

BRAKE WEAR

Model S brake pads are equipped with wear indicators. A wear indicator is a thin metal strip attached to the brake pad that squeals as it rubs against the rotor when the pad wears down. This squealing sound serves as a reminder that you need to replace your brake pads. To stop the squealing, contact Tesla to have your brakes inspected, and if necessary to have new brake pads installed. If you don't replace the brake pads, you will soon hear a grinding sound. This metal on metal grinding can damage your braking system, and in turn, create a braking hazard.

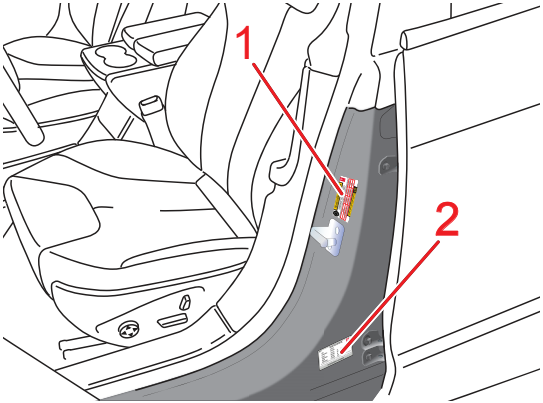
WARNINGS:

In an emergency, fully press the brake pedal. DO NOT pump the brake pedal. ABS does this for you and by pumping the foot brake yourself, you interfere with ABS operation, which can increase braking distance.

Contact Tesla if the movement of the brake pedal has increased, or if you notice a significant loss of brake fluid. Driving under such conditions could result in extended stopping distances or complete brake failure.

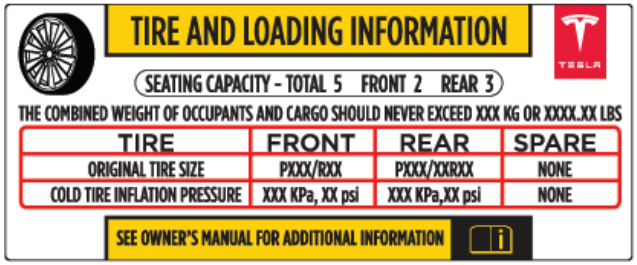
CHECK THESE LABELS

Two labels on the driver's door pillar provide important tire pressure and vehicle loading information.



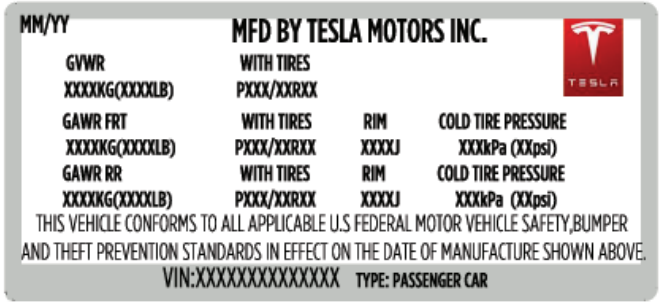
1. **TIRE AND LOADING INFORMATION**

   Specifies tire pressures (see page 17) and the maximum load your vehicle can carry (see page 23).



2. **VEHICLE CERTIFICATION**

   - GVWR - Gross Vehicle Weight Rating. The maximum allowable total mass of the vehicle. This is calculated as the weight of the vehicle, all passengers, fluids, and cargo.
   - GAWR FR and GAWR RR - Gross Axle Weight Rating for the front and rear axles. The maximum distributed weight that may be supported by each axle.



MAINTAIN PROPER TIRE PRESSURES

Check tire pressures monthly when tires are cold and Model S has been parked for over three hours. Inflate tires to the Tesla recommended inflation pressures, printed on the Tire and Loading Information Label (see page 16). These recommended pressures provide optimum ride and handling characteristics.

WARNINGS:

Under-inflation is the most common cause of tire failures and can cause a tire to overheat, resulting in severe tire cracking, tread separation, or "blowout," which causes unexpected loss of vehicle control and increased risk of injury. Under-inflation also reduces Battery range and tire tread life.

Check tire pressures using an accurate pressure gauge when tires are cold. It takes only one mile of driving to warm up the tires sufficiently to affect tire pressures. Parking the vehicle in direct sunlight or in high ambient temperatures can also affect tire pressures. If you must check warm tires, expect increased pressures. Don't let air out of warm tires in an attempt to match recommended cold tire pressures. A hot tire at or below the recommended cold tire inflation pressure is dangerously under-inflated.

To check and adjust tire pressures

1. Remove the valve cap, then firmly press the tire gauge onto the valve.
2. If required, add air to reach the recommended pressure.
3. Re-check pressure by removing and re-attaching the tire gauge.
4. If you added too much air, release air by pushing on the metal stem in the center of the valve. Re-check and adjust if necessary.
5. Screw the valve cap back on to prevent dirt from entering (periodically inspect the valve cap for damage such as cracking).

TIRE PRESSURE MONITORING SYSTEM (TPMS)

Each tire should be checked monthly when cold and inflated to the inflation pressure recommended by the vehicle manufacturer on the vehicle placard or tire inflation pressure label. (If your vehicle has tires of a different size than the size indicated on the vehicle placard or tire inflation pressure label, you should determine the proper tire inflation pressure for those tires.)

As an added safety feature, your vehicle has been equipped with a tire pressure monitoring system (TPMS) that illuminates a low tire pressure telltale when one or more of your tires is significantly under-inflated.

Accordingly, when the low tire pressure telltale illuminates, you should stop and check your tires as soon as possible, and inflate them to the proper pressure. Driving on a significantly under-inflated tire causes the tire to overheat and can lead to tire failure. Under-iinflation also reduces fuel efficiency and tire tread life, and may affect the vehicle's handling and stopping ability.

Please note that the TPMS is not a substitute for proper tire maintenance, and it is the driver's responsibility to maintain correct tire pressures, even if under-inflation has not reached the level to trigger illumination of the TPMS low tire pressure telltale.

Your vehicle has also been equipped with a TPMS malfunction indicator light to indicate when the system is not operating properly.

The TPMS malfunction indicator light is combined with the low tire pressure telltale. When the sytem detects a malfunction, the telltale flashes for approximately one minute and then remain continuously illuminated. This sequence will continue upon subsequent vehicle start-ups as long as the malfunction exists.

When the malfunction indicator light is illuminated, the system may not be able to detect or signal low tire pressure as intended. TPMS malfunctions may occur for a variety of reasons, including the installation of replacement or alternate tires or wheels on the vehicle that prevent the TPMS from functioning properly. Always check the TPMS malfunction telltale after replacing one or more tires or wheels on your vehicle to ensure that the replacement or alternate tires and wheels allow the TPMS to continue to function properly.

The tire pressure warning on the instrument panel alerts you if one or more of your tires is significantly under-inflated. Stop and check tire pressures as soon as possible, and inflate to the recommended pressures.

NOTE: The warning light does not turn off immediately after you adjust tire pressures. It turns off when you drive Model S above 25 mph (40 km/h) for more than 10 minutes with tires at the recommended pressures.

TEMPORARY TIRE REPAIR

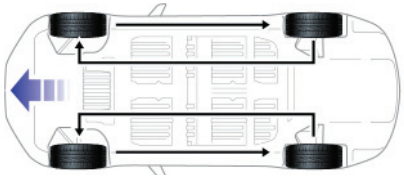
As an option, you can purchase a tire repair kit from Tesla (this kit is included only if you purchased your Model S in Maryland or Rhode Island). This kit is designed to temporarily repair a small tire puncture just long enough for you to drive slowly to the nearest tire repair location. Follow the instructions provided on the kit and heed all warnings.

WARNING: Do not use any tire liquid or aerosol tire sealant other than a tire repair kit purchased as an accessory from Tesla. Other types can cause tire pressure sensors to malfunction.

INSPECTING AND MAINTAINING TIRES

Tire wear

The Model S is originally fitted with tires that have wear indicators moulded into the tread pattern. When the tread has been worn down to 1/16", (1.6 mm) the indicators start appearing at the surface of the tread pattern, producing the effect of a continuous band of rubber across the width of the tire. Replace a tire as soon as an indicator band becomes visible or the tread depth reaches the minimum permitted by law.



Tire rotation, balance and wheel alignment

Tesla recommends rotating the tires every 6,000 miles. After rotating, always check and adjust tire pressures. Unbalanced wheels (sometimes noticeable as vibration through the steering) affects vehicle handling and tire life. Even with regular use, wheels can get out of balance. Therefore, they should be balanced as required. If tire wear is uneven (on one side of the tire only) or becomes abnormally excessive, check the alignment of wheels.

Punctured tires

A puncture eventually causes the tire to lose pressure, which is why it's important to check tire pressures frequently. Permanently repair or replace punctured or damaged tires as soon as possible. Don't drive with a punctured tire, even if it isn't deflated. A punctured tire can deflate suddenly at any time.

Your tubeless tires may not leak when penetrated, provided the object remains in the tire. If, however, you feel a sudden vibration or ride disturbance while driving, or you suspect your tire or vehicle has been damaged, immediately reduce your speed. Drive slowly, while avoiding heavy braking or sharp steering and when safe to do so, stop the vehicle. Arrange to have the vehicle transported to a tire repair center, or to Tesla, to have tires inspected and, if necessary, repaired.

Flat spots

If the vehicle is stationary for a long period in high temperatures, tires can form flat spots. When the vehicle is driven, these flat spots cause a vibration which gradually disappears as the tires get warm and regain their original shape. To minimize the flat spots during storage, inflate tires to the maximum pressure indicated on the tire wall, then, before driving the vehicle, release air to adjust tire pressure to the recommended levels.

Driving In Low Ambient Temperatures

Tire performance reduces in low ambient temperatures, resulting in less grip and an increased susceptibility to damage from impacts. Performance tires can temporarily harden when cold, causing you to hear rotational noise for the first few miles until the tires warm up. Contact Tesla Motors for winter tire recommendations.

WARNING: Defective tires are dangerous. Do not drive if a tire is damaged, excessively worn, or is inflated to an incorrect pressure. The safety of the vehicle and occupants will be adversely affected. Check tires regularly for wear and to ensure there are no cuts, bulges or exposure of the ply/cord structure.

REPLACING TIRES AND WHEELS

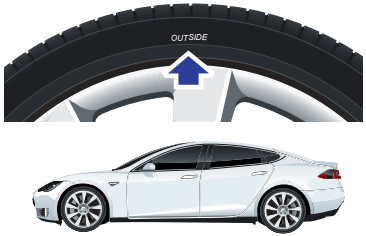
Tires degrade over time due to the effects of ultraviolet light, extreme temperatures, high loads, and environmental conditions. It is recommended that tires are replaced every six years, or sooner if required.

Wheel rims and tires are matched to suit handling characteristics of the vehicle. Replacement tires must comply with the original specification. If tires other than those specified are used, ensure that the load and speed ratings (shown on the tire side wall as described on page 20) equal or exceed those of the original specification.

Ideally, you should replace all four tires at the same time. If this isn't possible, replace the tires in pairs (both front and both rear). When replacing tires, always re-balance and check the alignment of wheels.

Asymmetric tires

Your vehicle's tires are asymmetric and must be mounted on the wheel with the correct sidewall facing outwards. The sidewall of the tire is marked with the words OUTSIDE. When new tires are installed, make sure that the tires are correctly mounted on the wheels.



WARNING: Road holding will be seriously impaired if the tires are incorrectly installed on the wheels.

TIRE AND WHEEL SPECIFICATIONS

Wheel Specifications

Wheel Option	Location	Size
19"	Front	8.0J x 19
	Rear	9.0J x 19
21" Silver 21" Grey	Front	8.5J x 21
	Rear	8.5J x 21
Road wheel nut torque	175 Nm (129 lbf.ft)	

Tire Specifications

Tire Type	Location	Size
On 19" wheels: Goodyear Eagle RS-A2	All	P245/45R19 98V
On 21" wheels: Continental Extreme Contact DWS	All	P245/35R21 96Y

Contact Tesla for recommended winter tire specifications.

UNDERSTANDING TIRE MARKINGS

Federal law requires tire manufacturers to place standardized information on the sidewall of all tires. This information identifies and describes the fundamental characteristics of the tire and also provides the tire identification number (TIN) for safety standard certification and in case of a recall.

1	Tire category. P indicates that the tire is for passenger vehicles
2	Tire width. This 3-digit number is the width (in millimeters) of the tire from sidewall edge to sidewall edge.
3	Aspect ratio. This 2-digit number is the sidewall height as a percentage of the tread width. So, if the tread width is 205 mm, and the aspect ratio is 50, the sidewall height will be 102 mm.
4	Tire construction. R indicates that the tire is of Radial ply construction.
5	Wheel diameter. This 2-digit number is the diameter of the wheel rim in inches.
6	Load index. This 2 or 3-digit number is the weight each tire can support. This number is not always shown.
7	Speed rating. When stated, indicates the maximum speed at which the tire can be used for extended periods. Q 99 T 118 V 149 R 106 U 124 W 168 S 112 H 130 Y 186
8	Tire composition and materials. The number of plies in both the tread area, and the sidewall area, indicates how many layers of rubber coated material make up the structure of the tire. Information is also provided on the type of materials used.
9	Maximum tire load. The maximum load which can be carried by the tire.
10	Maximum permissible inflation pressure. The maximum inflation pressure for the tire. This pressure should not be used for normal driving.
11	U.S. DOT Tire Identification Number (TIN). Begins with the letters DOT and indicates that the tire meets all federal standards. The next 2 digits/letters represent the plant code where it was manufactured, and the last 4 digits represent the week and year of manufacture. For example, the numbers 1712 means the 17th week of 2012. The other numbers are marketing codes used at the manufacturer's discretion. This information can be used to contact consumers if a tire defect requires a recall.
12	Treadwear grade. This number indicates the tire's wear rate. The higher the treadwear number is, the longer it should take for the tread to wear down. A tire rated at 400 for example, will last twice as long as a tire rated at 200. See page 21.
13	Traction grade. Indicates a tire's ability to stop on wet roads. A higher graded tire should allow you to stop your vehicle in a shorter distance than a tire with a lower grade. Traction is graded from highest to lowest as AA, A, B, and C. See page 21.
14	Temperature grade. The tire's resistance to heat is grade A, B, or C, with A indicating the greatest resistance. This grading is provided for a correctly inflated tire, which is being used within its speed and loading limits. See page 21.

UNIFORM TIRE QUALITY GRADING

The following information relates to the tire grading system developed by the National Highway Traffic Safety Administration (NHTSA) which will grade tires by tread wear, traction and temperature performance. Tires that have deep tread, and winter tires, are exempt from these marking requirements.

Quality grades

Where applicable, quality grades can be found on the tire sidewall between the tread shoulder and maximum section width. For example:

TREADWEAR 180	TRACTION AA	TEMPERATURE A

In addition to the marking requirements, passenger car tires must conform to Federal Safety Requirements.

Treadwear

The treadwear grade is a comparative rating based on the wear rate of the tire when tested under controlled conditions on a specified government test course.

For example, a tire graded 150 would wear one and a half times better on a government test course than a tire graded 100. The relative performance of tires depends on the actual conditions of their use, however, and may depart significantly from the norm due to variations in driving habits, service practices, and differences in road characteristics and climate.

Traction

The traction grades, from highest to lowest, are; AA, A, B, and C. These grades represent a tire's ability to stop on wet pavement as measured under controlled conditions on test surfaces of asphalt and concrete. A tire marked C may have poor traction performance.

WARNINGS:

Defective tires are dangerous. Do not drive if a tire is damaged, excessively worn, or is inflated to an incorrect pressure. The safety of the vehicle and occupants will be adversely affected. Check tires regularly for wear and to ensure there are no cuts, bulges or exposure of the ply/cord structure.

The traction grade assigned to the tire is based on straight-ahead braking tests, and doesn't include: acceleration, cornering, hydroplaning or peak traction characteristics.

Temperature

The temperature grades are A (the highest), B, and C, representing the tire's resistance to the generation of heat and its ability to dissipate heat when tested under controlled conditions on a specified indoor laboratory test wheel. Sustained high temperature can cause the tire to degenerate and reduce tire life, and excessive temperature can lead to sudden tire failure.

The grade C corresponds to the minimum level of performance that all passenger car tires must meet under the Federal Motor Safety Standard No. 109. Grades B and A represent levels of performance on the laboratory test wheel that exceed the minimum requirements.

Tire performance decreases at low ambient temperatures, resulting in reduced grip and increased susceptibility to damage from impacts. In temperatures below 15° F (-10° C), winter tires are recommended. Contact Tesla for recommended winter tire specifications.

WARNING: A tire's temperature grade is established for a tire that is properly inflated and not overloaded. Excessive speed, under-inflation, or excessive loading, either separately or in combination, can cause heat buildup and possible tire failure.

WHEELS AND TIRES GLOSSARY

Accessory weight	The combined weight (in excess of those items replaced) of items available as factory installed equipment.
Bead	The inner edge of a tire that is shaped to fit to the rim and form an air tight seal. The bead is constructed of steel wires which are wrapped, or reinforced, by the ply cords.
Cold tire pressure	The air pressure in a tire which has been standing in excess of three hours, or driven for less than one mile.
Curb weight	The weight of a standard vehicle, including any optional equipment fitted, and with the correct fluid levels.
Gross vehicle weight	The maximum permissible weight of a vehicle with driver, passengers, load, luggage, and equipment.
kPa (kilo pascal)	A metric unit used to measure pressure. One kilo pascal equals approximately 0.145 psi.
Maximum inflation pressure	The maximum pressure to which the tire should be inflated. This pressure is given on the tire side wall in psi (lbf/in2). This pressure is the maximum allowed by the tire manufacturer. It is not the pressure recommended for use.
Maximum loaded vehicle weight	The sum of curb weight, accessory weight, vehicle capacity weight, and production options weight.
Production options weight	The combined weight of options installed which weigh in excess of 3 lbs more than the standard items that they replaced, and are not already considered in curb or accessory weights.
PSI (lbf/in2)	Pounds per square inch, unit of measure for pressure.
Rim	The metal support for a tire, or tire and tube, upon which the tire beads are seated.
Vehicle capacity weight	The number of seats multiplied by 150 lbs plus the rated amount of load/luggage.

VEHICLE LOAD LIMIT

WARNINGS:

Overloading the vehicle will have an adverse effect on braking and handling, which could compromise your safety or damage Model S. Therefore you must understand how much weight your Model S can safely carry. This weight is called the vehicle capacity weight and includes the weight of all occupants, cargo and any additional equipment fitted to Model S since it was manufactured.

Always ensure tires are inflated to their recommended levels. Doing so is especially important when carrying heavy loads.

To calculate load limit

1. Locate the statement "The combined weight of occupants and cargo should never exceed XXX kg or XXX lbs" on your vehicle's TIRE AND LOADING INFORMATION label (illustrated on page 16).
2. Determine the combined weight of the driver and passengers that will be riding in your vehicle.
3. Subtract the combined weight of the driver and passengers from XXX kg or XXX lbs.
4. The resulting figure equals the available amount of cargo and luggage load capacity. For example, if the "XXX" amount equals 1400 lbs, and there will be five 150 lb (68 kg) passengers in the vehicle, the amount of available cargo and luggage capacity is 650 lbs. (1400 - 750 (5 x 150) = 650 lbs).
5. Determine the combined weight of luggage and cargo being loaded on the vehicle. That weight may not safely exceed the available cargo and luggage load capacity calculated in Step 4.

Example load limit calculation

How much cargo you can carry in Model S depends on the number and weight of passengers. The following are typical examples of calculated load limits. These examples assume passengers weighing 150 lbs (68 kg). If the passengers weigh more or less, the available cargo and luggage load capacity will decrease or increase respectively.

Example 1: Driver and one passenger

Description	Total
Vehicle Capacity Weight	954 lbs
Subtract Occupant Weight (2 x 150 lbs)	300 lbs
Available Cargo Weight	654 lbs

Example 2: Driver and four passengers

Description	Total
Vehicle Capacity Weight	954 lbs
Subtract Occupant Weight (5 x 150 lbs)	750 lbs
Available Cargo Weight	204 lbs

The available cargo or luggage weight should then be distributed between the front trunk and the trunk.

CAUTION: Never load more than 300 lbs (136 kg) into the front trunk.

VEHICLE TELEMATICS/DATA RECORDERS

This vehicle is equipped with electronic modules that monitor and record data from various vehicle systems, including the motor, Battery, braking and electrical systems. The electronic modules record information about various driving and vehicle conditions, including braking, acceleration, trip and other related information regarding your vehicle and its features such as charging events and status, the enabling/disabling of various systems, diagnostic trouble codes, VIN, speed, direction and location.

The data is stored by the vehicle and may be accessed, used and stored by Tesla service technicians during vehicle servicing or periodically transmitted to Tesla wirelessly through the vehicle's telematics system. This data may be used by Tesla for various purposes, including, but not limited to, providing you with Tesla telematics services, troubleshooting, evaluation of your vehicle's quality, functionality and performance, analysis and research by Tesla and its partners for the improvement and design of our vehicles and systems, and as otherwise may be required by law. In servicing your vehicle, we can potentially resolve issues remotely simply by reviewing your vehicle's data log.

Tesla's telematics services wirelessly transmits vehicle information to Tesla on a periodic basis. The data is used as described above and will help ensure the proper maintenance of your vehicle. In the future, Tesla may develop features that make further use of your vehicle's telematics system and the information provided, including features such as charging reminders, software updates, and remote access to and control of various systems of your vehicle.

Tesla will not disclose the data recorded in your vehicle to any third party except when:

- An agreement or consent from the vehicle's owner (or the leasing company for a leased vehicle) is obtained.
- Officially requested by the police or other authorities.
- Used as a defense for Tesla in a lawsuit.
- Ordered by a court of law.
- Used for research purposes without disclosing details of the vehicle owner or identification information.
- Disclosed to a Tesla affiliated company, including their successors or assigns, or our information systems and data management providers.

In addition, Tesla will not disclosure the data recorded to an owner unless it pertains to a non-warranty repair service and in this case, will disclose the data that is related to the repair.

CALIFORNIA PROPOSITION 65

WARNINGS:

Certain vehicle components contain or emit chemicals known to the State of California to cause cancer and birth defects or other reproductive harm. In addition, certain fluids contained in vehicles and certain products of component wear contain or emit chemicals known to the State of California to cause cancer and birth defects or other reproductive harm.

Certain components of this vehicle such as airbag modules and seat belt pretensioners may contain Perchlorate Material. Special handling may be required for service or vehicle end of life disposal. See:

http://www.dtsc.ca.gov/hazardouswaste/perchlorate.

Battery posts, terminals, and related accessories contain lead and lead compounds. Wash hands after handling.

CONTACTING TESLA

For detailed information about your specific Model S, go to www.teslamotors.com and log in as an owner. All information about your Model S is available here.

If you have any further questions or concerns about your Model S, call 1-877-79TESLA (1-877-798-3752).

REPORTING SAFETY DEFECTS

United States

If you believe that Model S has a defect which could cause a crash or could cause injury or death, you should immediately inform the National Highway Traffic Safety Administration (NHTSA) in addition to notifying Tesla Motors.

If NHTSA receives similar complaints, it may open an investigation, and if it finds that a safety defect exists in a group of vehicles, it may order a recall and remedy campaign. However, NHTSA cannot become involved in individual problems between you, your dealer, or Tesla Motors.

To contact NHTSA, you may call the Vehicle Safety Hotline toll-free at 1-888-327-4236 (TTY: 1-800-424-9153); go to http://www.safercar.gov; or write to: Administrator, National Highway Traffic Safety, 1200 New Jersey Avenue SE., Washington, DC 20590. You can also obtain other information about motor vehicle safety from http://www.safercar.gov.

Canada

If you believe that your Model S has a defect which could cause a crash or could cause injury or death, you should immediately inform Transport Canada, in addition to notifying Tesla. To contact Transport Canada, call their toll-free number: 1-800-333-0510.

3500 Deer Creek Road
Palo Alto, CA 94304