

THE FUTURE OF SAFETY IS HERE

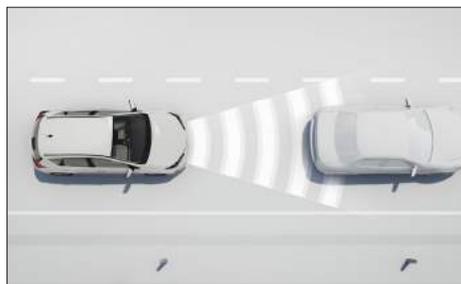
TOYOTA'S ADVANCED ACTIVE SAFETY PACKAGES: TSS-C AND TSS-P



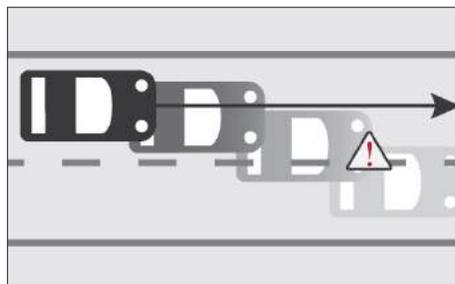
Crash protection starts with crash prevention. Collisions that result in injury may be caused by the delay in a driver's recognition of the situation and their ability to react accordingly. According to NHTSA¹, there were almost 5.7 million reported crashes in 2014—many of which were avoidable.

Toyota Safety Sense™ (TSS)² is designed to help protect drivers, passengers, people in other vehicles on the road and pedestrians (TSS-P² and AHB⁷) from harm. TSS² is comprised of advanced active safety packages anchored by automated pre-collision warning³ and braking. TSS² represents the latest milestone in our long history of creating advancements and innovations in safety that have helped prevent crashes and protect people.

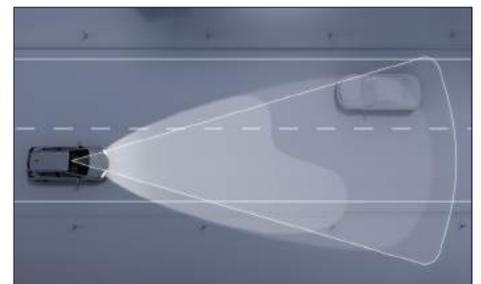
TSS ADDRESSES THE THREE MOST COMMON ACCIDENT TYPES



Frontal Collisions



Unintended Lane Departures



Nighttime Accidents

TSS² is designed to support driver awareness, decision making and vehicle operation over a wide range of speeds under certain conditions. Packaged together in an integrated system, TSS² features help address three key areas of accident protection: preventing or mitigating **frontal collisions**³, keeping drivers **within their lane**⁶, and enhancing road safety during **nighttime driving**⁷. Always drive safely, obey traffic speed limits and laws and focus on the road while driving.

TSS² will be offered on certain vehicles in the form of two packages:

- **Toyota Safety Sense™ C² [TSS-C]** for compact vehicles
- **Toyota Safety Sense™ P² [TSS-P]** for mid-sized and large vehicles

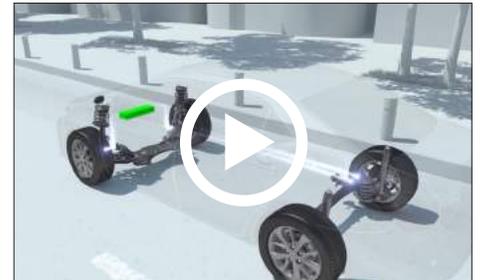
TSS-C



Toyota Safety Sense™ C² features three proprietary active safety technologies: Pre-Collision System³, Lane Departure Alert⁶, Automatic High Beams⁷. TSS-C² combines an in-vehicle camera and laser for outstanding performance and reliability. The package is designed to alert the driver to and/or help mitigate or prevent collisions in a range of vehicle speeds.

PRE-COLLISION SYSTEM (PCS) – VEHICLE DETECTION

With Toyota Safety Sense™ C², PCS³ uses an **in-vehicle camera and laser** to help detect the vehicle in front of your vehicle. As there is a limit to the degree of recognition accuracy and control performance that this system can provide, do not overly rely on this system. This system will not prevent collisions or lessen collision damage or injury in every situation. Do not use PCS³ instead of normal braking operations under any circumstances. Do not attempt to test the operation of the pre-collision system³ yourself, as the system may not operate or engage, possibly leading to an accident. In some situations such as when driving in inclement weather such as heavy rain, fog, snow or a sandstorm or while driving on a curve and for a few seconds after driving on a curve, a vehicle may not be detected by the laser and camera sensors, preventing the system from operating properly. Refer to your Owner's Manual for a list of additional situations in which the system may not operate properly.



VEHICLE DETECTION

- When the Pre-Collision System³ determines that the possibility of a frontal collision with that vehicle is high, it prompts the driver to take evasive action and brake, by using an audio and visual alert
 - **These alerts operate when the vehicle speed is between approximately 7 to 85 miles-per-hour (MPH) for potential collisions with a vehicle** (Alerts are designed to function prior to auto brake function at speeds between approximately 10 to 85 MPH. Alert and brake functions may occur simultaneously for PCS operational speeds below 10 MPH.)
- If the driver notices the hazard and brakes, the system may provide additional braking force using Brake Assist⁴. This system may apply greater braking force in relation to how strongly the brake pedal is depressed
- If the driver does not brake in a set time and the system determines that the possibility of a frontal collision with another vehicle is extremely high, the system may automatically apply the brakes, reducing speed in order to help the driver reduce the impact and in certain cases avoid the collision
 - **The PCS³ included with the TSS-C² package may operate auto braking feature at speeds between approximately 7 to 50 MPH⁵ for potential collisions with a vehicle**
 - **May reduce vehicle speed by up to 19 MPH for potential collisions with a vehicle⁵**
- If the vehicle is stopped by the operation of the pre-collision brake function, the operation of the pre-collision brake hold will be canceled (brake will be released) after the vehicle has been stopped for approximately **two seconds** to allow the vehicle to move, if necessary. The driver of the vehicle must then determine whether brake or gas pedal application, or neither, is appropriate for the conditions

The pre-collision braking function may not operate if certain operations are performed by the driver. If the accelerator pedal is being depressed strongly or the steering wheel is being turned, the system may determine that the driver is taking evasive action and possibly prevent the pre-collision braking function from operating. In some situations, while the pre-collision braking function is operating, operation of the function may be canceled if the accelerator pedal is depressed strongly or the steering wheel is turned and the system determines that the driver is taking evasive action.

The following setting(s) can be adjusted (Varies by vehicle and type of TSS):

- PCS Alert Timing (Alert timing only, brake operation remains the same): Far – Mid (default) - Near
- Pre-Collision System: Turn function ON or OFF. If PCS² is turned off by the driver, PCS² will default back to ON with the Mid alert timing each time the ignition is cycled

Refer to a Toyota Owner's Manual for additional information on PCS operation, setting adjustments, limitations and precautions.

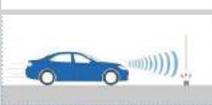
PRECAUTIONS

TSS-C: PRE-COLLISION SYSTEM (PCS)

PCS is premised on safe driving by the driver. It is not a system that will avoid collision under all conditions. Do not depend on the system or use it in place of emergency brake operation. Depending on operating conditions, if accelerator pedal is depressed strongly or steering wheel turned, the system judges this to be avoidance operation by the driver and automatic emergency brake may not operate.

REMINDER: TSS-C PCS is not designed to detect pedestrians. TSS-C PCS operation is dependent on the in-vehicle laser and camera's ability to detect and see clearly a preceding vehicle on relatively straight roadways, as well as the visibility/detectability of the preceding vehicle itself. PCS may not operate if it cannot recognize a visible preceding vehicle. PCS is not designed to detect animals. Situations such as a fogged/dirty/broken/tinted/ice, rain, snow, or sticker-covered windshield blocking the camera or laser, intense light from the front or inclement weather obstructing camera visibility or laser detection, or sharp curves in the road all may affect PCS operation. Also, changes to the vehicles height or angle from load, suspension or tire modifications/chains may affect PCS operation. Furthermore, if a preceding vehicle cannot be correctly recognized, there are cases where unneeded driver alerts / automatic braking may occur, so the driver needs to pay continuous attention to the surrounding conditions, the direction of travel and vehicle's location on the road, and ultimately be responsible for brake input and vehicle speed/distance to a preceding vehicle/operation at all times. See below for additional precautions/limitations.

System may not be able to recognize a preceding vehicle and may not operate as designed in the following conditions:

	
When visibility to the front is poor due to bad weather (rain, snow, fog, dust raised by wind, sandstorm, blizzard, etc.)	When there is a sudden appearance in the forward direction of the vehicle
	
When driving around locations with sharp curves or undulations	When vehicle angle/stance is changing dramatically
	
When a preceding vehicle cuts in front of you suddenly	When sensor direction is offset due to vehicle grille damage
	
When sensor detects something that is not a preceding vehicle	When driving on a slope (road surface goes up and down) and not able to recognize a preceding vehicle
	
When there is intense light from the front such as strong sunlight or high beams of a vehicle going the opposite direction	

System may not operate in the following conditions:

The following targets may not be detected:

- If the rear-most surface of the vehicle in front is small, uneven or low (low-platform trailer, empty carrier truck or cargo trailer) (Figure 1)
 - Empty truck where the load bed does not have a skirt
 - Vehicle where loaded items jut out from its rear end
- Vehicle where the ground clearance is irregularly high (Figure 2)

The following types of vehicles may not be detected or the PCS may not operate:

- Motorcycle or bicycle (Figure 3)
- Abrupt steering, acceleration or deceleration of the leading vehicle
- When very close to the vehicle in front (distance of approximately 6.5 feet or less from your car to target) (Figure 4)

In the following types of environment, the system may not be able to recognize vehicles in front and may not operate:

- If visibility is insufficient due to water, snow or mud spray from vehicles close by or water vapor, dust or smoke
- Low light (dusk, dawn, etc.); when driving without headlights at night or in a tunnel
- If the vehicle in front does not have its tail lights on at night or in a tunnel
- If the brakes are cold, such as just after starting to drive or low outside temperatures
- If camera recognition conditions are poor when the camera is hot, such as when parked in the sun

There are limits to sensor and system performance, so the system may not operate in the following cases:

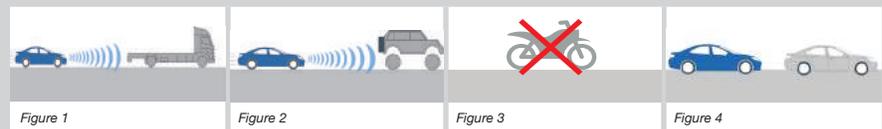
- Vehicles outside the system detection range
- Low overlap percentage (when vehicle in front is offset compared to your vehicle)
- A period of time driving after starting the engine
- A period of time after turning
- When coming close to the leading vehicle after making a lane change

There are cases where the system does not operate when the following operations are performed:

- If there is wobbling while driving
- If the steering wheel is turned
- While the accelerator is pressed
- While the brake is pressed
- While backing up
- While driving at very high speeds

Other:

- When the vehicle is sliding sideways while the VSC system is not operating
- When the multi-information display or PCS indicator shows failure or unusable



System automatic cancellation:

- If there is a failure with the system, the warning light turns ON or flashes and a warning message is displayed.
- If the system detects a failure such that the sensor cannot detect (such as filth on the sensor) the system will automatically turn OFF.
- When the windshield glass is dirty or covered with raindrops, condensation, ice, snow, etc.

System may operate in the following conditions, even if collision is not likely:

- When there is an obstacle at the point of entering a curve, in a curve or at an intersection
- When there is a metal object, unevenness or protrusion on the road surface
- When passing an opposing vehicle when turning right or left or passing an opposing vehicle around a curve
- When suddenly getting close to another vehicle that is driving ahead
- Upon seeing a raised intersection, sign or advertisement in front of the vehicle
- While driving up or down a slope, when metal such as a steel plate is in front of the vehicle
- Reacting to Electronic Toll Collection (ETC) bar when passing through an ETC gantry
- When sensor direction is offset due to a strong impact near the sensor
- When passing through vapor, fog or smoke
- When passing a leading vehicle or a leading vehicle turning to the left or right
- When passing a vehicle that is moving away from in front of you
- When passing through parked cars or driving between two other vehicles
- When driving on a narrow road surrounded by roadside
- When turning around a curve where there is a parked car to the front of your car
- Other:
 - When passing under a vinyl curtain, flag, etc., due to water or snow splashed by the vehicle in front, the car stopping just shy of a wall or car in front, when passing too closely to an object, such as a stopped vehicle or guard rail
 - If there is a pattern of paint on the road surface or wall surface that is difficult to distinguish from a vehicle
 - When passing by a highly reflective object (large truck, guard rail, etc.)

System may be activated by:

- Glass, mirrors, walls, doors, fences, shutters, etc.
- Guard rails, telephone poles, trees, etc.
- Items dropped onto the road surface

Note: The system is designed not to operate in the scene described above but in cases of conditions that are difficult to distinguish from collisions, operation may occur. Therefore, if brakes are pushed, they may be applied more than is normal.

The section is abbreviated and does not include all precautions or limitations.
Refer to a Toyota Owner's Manual for a more comprehensive list of PCS operation, precautions and limitations.

LANE DEPARTURE ALERT (LDA)

LDA⁶ uses an in-vehicle camera designed to detect visible white and yellow lane markers in front of the vehicle and the vehicle's position on the road. If the system determines that the vehicle is starting to unintentionally deviate from its lane, the system alerts the driver with an audio and visual alert. When the alerts occur, the driver must check the surrounding road situation and carefully operate the steering wheel to move the vehicle back to the center part of their lane.



- **LDA⁶ is designed to function at speeds of approximately 32 MPH or higher on relatively straight roadways**
- The vehicle's multi-information display indicates the system's operating status:
 - The inside of the displayed lines will be empty if the system is not able to detect the lane markings or if the system operation is temporarily disabled on one or both sides
 - The inside of the lines will be filled in (usually white) if the system is able to detect the lane markings
 - The inside of the lines will flash on the affected side (usually orange) when LDA⁶ is operating. This is the Visual Alert

The following setting(s) can be adjusted (Varies by vehicle and type of TSS):

- LDA Audio and Visual Alert: Turn function ON or OFF & Adjust Alert Sensitivity

NOTE: Operation of the LDA⁶ system and setting adjustments continues in the same condition regardless of ignition cycle until changed by the driver or system is reset

Refer to a Toyota Owner's Manual for additional information on LDA operation, setting adjustments, limitations and precautions.

PRECAUTIONS

TSS-C: LANE DEPARTURE ALERT (LDA)

LDA operation is dependent on the in-vehicle camera's ability to see clearly and detect visible lane markers on relatively straight roadways, as well as the visibility of the lane markers themselves. LDA does not operate if it cannot recognize visible lane markers. Situations such as a fogged/dirty/broken/tinted/sticker-covered windshield blocking the camera, strong light or inclement weather obstructing camera visibility, sunlight glare off of the road surface obscuring lane marker visibility, rain/snow/ice/dirt covering lane markers or faded lane markers, lane width very narrow or very wide, strong wind or sharp curves in the road all may affect LDA operation. Also, changes to the vehicle's height or angle from suspension or tire modifications / chains may affect LDA operation. Furthermore, if lane markers cannot be correctly recognized, there are cases where unneeded driver alerts may occur, so the driver needs to pay continuous attention to the surrounding conditions, the direction of travel and vehicle's location on the road, and ultimately be responsible for steering input and vehicle operation at all times.

System may not operate as designed under the following conditions:



Bad weather conditions such as rain, fog, snow, dust storm, etc.

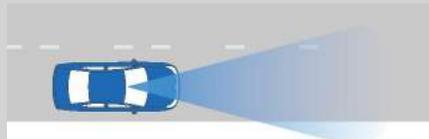


When driving on a slippery surface (icy road, etc., changing the angle of the camera and vehicle's position relative to the lane markers possibly decreasing lane marker detection)

Other:

- If there is construction on the side of the road that may be misunderstood, such as a white line (guard rail, curb, reflection pole, etc.)
- When driving at a branching or merging road location
- When equipped with studless tire, tire chains or emergency tires
- When pulling a trailer

System operation may be reduced under the following conditions:



- If white line has been rubbed off or can't be seen due to dirt, rain, snow cover or fog
- Road surface is bright (strong light reflection), light (concrete), wet (rainy weather, after rainfall, puddles, etc.) or covered with snow
- When driving on a road that has been repaired or where lane marks have been deleted but still can be seen
- If lane markers are an abnormal width/pattern or something other than a line (cats eye, stones placed, etc.)
- If vehicle is tilted (tire air pressure reduced, load conditions)

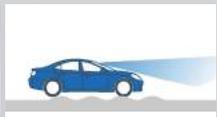


If the camera faces the wrong direction

System may stop temporarily under the following conditions:



When amount of light changes dramatically (tunnel exit/entrance)



If the vehicle moves up and down (uneven/bumpy road, road surface joint)

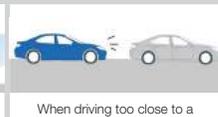
Other:

- When the camera is bathed in strong light (headlights from opposing vehicle, sunlight, reflection from surrounding vehicles)
- When driving around a sharp curve

The system will not operate in the following conditions:



If driving on an unpaved road



When driving too close to a preceding vehicle blocking the camera from seeing the lane markers

Other:

- If there are no lane markers (tool booth, ticket booth, intersections, etc.)
- If lane width is either very narrow or very wide
- If the windshield is fogged up

The section is abbreviated and does not include all precautions or limitations.
Refer to a Toyota Owner's Manual for a more comprehensive list of LDA operation, precautions and limitations.

AUTOMATIC HIGH BEAMS (AHB)

AHB⁷ is a safety system designed to help drivers see more of what's ahead at nighttime without dazzling other drivers. When enabled, Automatic High Beams⁷ uses an in-vehicle camera to help detect the headlights of oncoming vehicles and tail lights of preceding vehicles, then automatically switches between high and low beams as appropriate to provide the most light possible and enhance forward visibility. By using high beams more frequently, the system may allow earlier detection of pedestrians and obstacles.



- **AHB⁷ is designed to function at speeds of approximately 25 MPH or higher. Minimum speed may vary by vehicle.**

The following setting(s) can be adjusted:

- AHB: Turn function ON or OFF

Refer to a Toyota Owner's Manual for additional information on AHB operation, setting adjustments, limitations and precautions.

PRECAUTIONS

TSS-C/TSS-P: AUTOMATIC HIGH BEAMS (AHB)

AHB operation is dependent on the in-vehicle camera's ability to see clearly and detect preceding headlights or taillights, as well as the visibility of the preceding headlights or taillights themselves. Situations such as a fogged/dirty/broken/tinted/sticker covered windshield blocking the camera, inclement weather obstructing camera visibility, frequent curves in the road, or frequent up and down driving situations all may affect operation. There are limits to the high beam control using AHB. It is the driver's responsibility to pay attention to their surroundings and directly confirm safety of surroundings through turning high beams ON and OFF manually as needed.

In the following conditions the system may not be able to accurately detect surrounding vehicles and light:



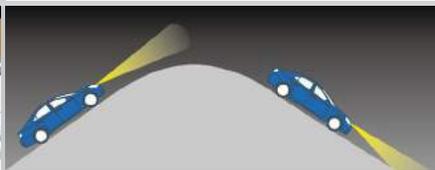
Bad weather conditions such as rain, fog, snow or a dust storm



A road with frequent curves or when there is a sharp curve



If a vehicle in front is driving without lights, irregular lights, odd color lights or where the light axis is offset



When road conditions go up and down frequently

Other:

- If the windshield obstructs the camera's view (by frozen, snowfall, frost, sand, mud, water deposits, bugs attached, cracking, fogged up or an attached film)
- When there is a reflection of something on the dashboard on the windshield
- When there is light similar to head lights or tail lights in the vicinity
- If there is a vehicle in front with very dirty head lights or tail lights
- When surroundings get light and dark frequently
- When driving on a road that is uneven (rough roads such as stone paving, gravel road, unpaved road, etc.)
- When there is an object in front that strongly reflects (mirror, sign, etc.)
- When head light breaks, deforms or is dirty
- When the vehicle is inclined front to back or side to side while driving (flat tire, overloaded, when being towed)
- When there is a problem with the vehicle or if modified

The section is abbreviated and does not include all precautions or limitations.

Refer to a Toyota Owner's Manual for a more comprehensive list of AHB operation, precautions and limitations.

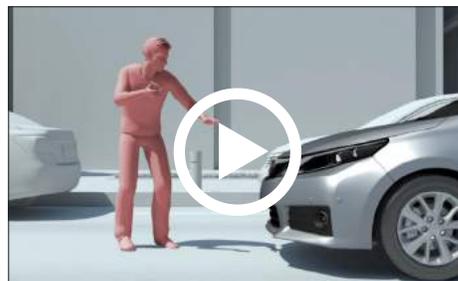
TSS-P



Toyota Safety Sense™ P² combines an in-vehicle camera and front-grill mounted millimeter-wave radar for enhanced performance and more functionality. In addition to the three active safety technologies featured in the TSS-C² package, TSS-P enhances the Pre-Collision System³ by adding a Pedestrian Detection function⁹, enhances LDA⁶ by adding a Steering Assist function⁸ on certain models, and adds Dynamic Radar Cruise Control¹⁰.

PRE-COLLISION SYSTEM WITH PEDESTRIAN DETECTION FUNCTION (PCS W/PD) – VEHICLE AND PEDESTRIAN DETECTION

As there is a limit to the degree of recognition accuracy and control performance that this system can provide, do not overly rely on this system. This system will not prevent collisions or lessen collision damage or injury in every situation. Do not use PCS³ instead of normal braking operations under any circumstances. Do not attempt to test the operation of the pre-collision system³ yourself, as the system may not operate or engage, possibly leading to an accident. In some situations such as when driving in inclement weather such as heavy rain, fog, snow or a sandstorm or while driving on a curve and for a few seconds after driving on a curve, a vehicle/pedestrian may not be detected by the radar and camera sensors, preventing the system from operating properly. Refer to your Owner's Manual for a list of additional situations in which the system may not operate properly.



VEHICLE DETECTION

With Toyota Safety Sense™ P², PCS³ uses an **in-vehicle camera and front-grill mounted millimeter-wave radar** to help detect the vehicle in front of your vehicle.

- When the PCS³ determines that the possibility of a frontal collision with that vehicle is high, it prompts the driver to take evasive action and brake, by using an audio and visual alert
 - **These alerts operate when the vehicle speed is between approximately 7 to 110 MPH for potential collisions with a vehicle**
- If the driver notices the hazard and brakes, the system may provide additional braking force using Brake Assist⁴. This system may apply greater braking force in relation to how strongly the brake pedal is depressed
- If the driver does not brake in a set time and the system determines that the possibility of a frontal collision with another vehicle is extremely high, the system may automatically apply the brakes, reducing speed in order to help the driver reduce the impact and in certain cases avoid the collision
 - **The PCS³ included with the TSS-P² package may operate automated braking for potential collisions with a vehicle when vehicle speeds are between approximately 7 to 110 MPH¹¹**
 - **May reduce vehicle speed by up to 25 MPH for potential collisions with a vehicle¹¹**

PEDESTRIAN DETECTION

In certain conditions, the PCS³ system included with the TSS-P package may also help to detect pedestrians⁹.

- The in-vehicle camera of PCS³ detects a potential pedestrian based on size, profile, and motion of the detected pedestrian⁹. However, a pedestrian may not be detected depending on the conditions, including the surrounding brightness and the motion, posture, size, and angle of the potential detected pedestrian, preventing the system from operating (Refer to the Owner's Manual for additional information)
- If PCS³ determines that the possibility of a frontal collision with a pedestrian is high under certain conditions, it prompts the driver to take evasive action and brake, by using an audio and visual alert, followed by brake assist⁴
 - **These alerts operate when the vehicle's speed is between approximately 7 to 50 MPH**
- If the driver does not brake in a set time and the system determines that the risk of collision with a pedestrian is extremely high, the system may automatically apply the brakes, reducing speed in order to help the driver reduce the impact and in certain cases avoid the collision
 - **The PCS³ included with the TSS-P² package may operate automated brake for potential collisions with a pedestrian⁵ when vehicle speeds are between approximately 7 to 50 MPH**
 - **May reduce vehicle speed by up to 19 MPH for potential collisions with a pedestrian⁵**

The following setting(s) can be adjusted (Varies by vehicle and type of TSS). Adjustments made affect vehicle and pedestrian detection together, they cannot be independently adjusted:

- Pre-Collision System: Turn function ON or OFF
- PCS Alert Timing (Alert timing only, brake operation remains the same): Far – Mid (default) - Near. If PCS³ is turned off by the driver, PCS³ will default back to ON with the Mid alert timing each time the IGN is cycled

Refer to a Toyota Owner's Manual for additional information on PCS operation, setting adjustments, limitations and precautions.

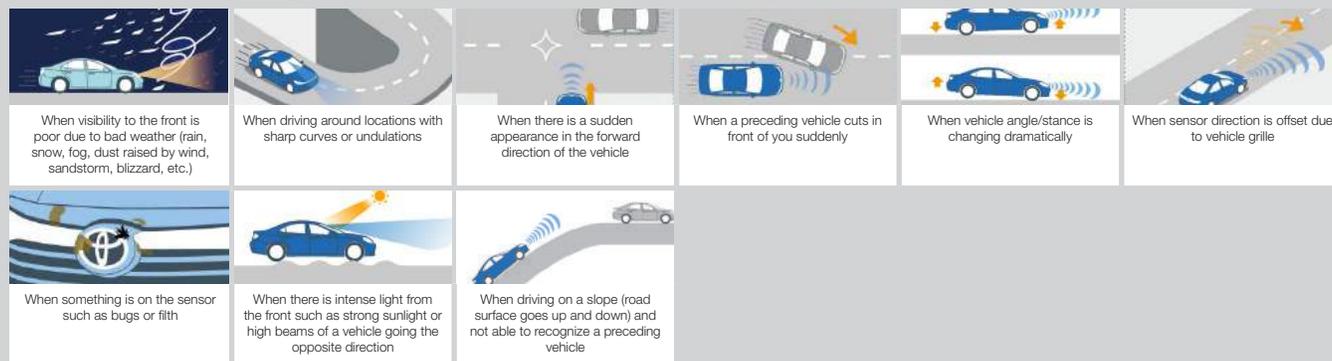
PRECAUTIONS

TSS-P: PRE-COLLISION SYSTEM WITH PEDESTRIAN DETECTION FUNCTION (PCS W/PD)

PCS is premised on safe driving by the driver. It is not a system that will avoid collision under all conditions. Do not depend on the system or use it in place of emergency brake operation. Depending on operating conditions, if accelerator pedal is depressed strongly or steering wheel turned, the system judges this to be avoidance operation by the driver and automatic emergency brake may not operate.

TSS-P PCS operation is dependent on the front-gill mounted millimeter-wave radar and in-vehicle camera's ability to detect and see clearly a preceding vehicle or pedestrian on relatively straight roadways, as well as the visibility/detectability of the preceding vehicle/pedestrian itself. PCS may not operate if it cannot recognize a visible preceding vehicle or pedestrian. PCS is not designed to detect animals. Situations such as dirt, debris, ice, rain, snow, or sticker-covered windshield or radar, a fogged/dirty/broken/tinted windshield blocking the camera, intense light from the front or inclement weather obstructing camera visibility or radar detection, or sharp curves in the road all may affect PCS operation. Also, changes to the vehicle's height or angle from load, suspension or tire modifications/chains may affect PCS operation. Furthermore, if a preceding vehicle cannot be correctly recognized, there are cases where unneeded driver alerts / automatic braking may occur, so the driver needs to pay continuous attention to the surrounding conditions, the direction of travel and vehicle's location on the road, and ultimately be responsible for brake input and vehicle speed/distance to a preceding vehicle/operation at all times. See below for additional precautions/limitations.

System may not be able to recognize a preceding vehicle and may not operate as designed in the following conditions:



System may not operate in the following conditions:

The following targets may not be detected:

1. If the rear-most surface of the vehicle in front is small, low (low-platform trailer, empty carrier truck or cargo trailer) or uneven (Figure 1)
- Empty truck where the load bed does not have a skirt
- Vehicle where loaded items jut out from its rear end
2. Vehicle where the ground clearance is irregularly high (Figure 2)

The following types of vehicles and pedestrians may not be detected or the PCS may not operate:

1. Pedestrians that run out from behind or alongside a vehicle
2. Motorcycle or bicycle (Figure 3)
3. Abrupt steering, acceleration or deceleration of the leading vehicle
4. When very close to the vehicle in front (distance of approximately 6.5 feet or less from your car to target) (Figure 4)
7. Pedestrians close to abrupt changes in lighting such as at tunnel exits
8. Pedestrians wearing white that reflects sunlight and vehicles that appear extremely bright due to strong sunlight
9. Pedestrians walking in a group
10. Pedestrians staying close to a wall or other obstacle
11. People walking alongside a vehicle, fence or guard rail
12. Pedestrians with brightness similar to scenery and that blend into the background
13. Pedestrians walking at high speed (come out with a speed of approximately 5 mph or higher)
14. Pedestrians that abruptly change walking speed
15. Pedestrians colliding with the edge of the vehicle
16. Persons walking on top of metal on the road surface
17. Pedestrians that are 3 feet or shorter or 6.5 feet or taller
18. Pedestrians whose silhouette is hidden by a rain coat, coat, long skirt, etc.

19. Pedestrians where a part of their body is hidden

20. Pedestrians holding, shouldering or carrying a large package
21. Pedestrians using an umbrella
22. Pedestrians leaning forward, crouching, lying down or standing still upright
23. Pedestrians pushing a stroller, wheelbarrow, bicycle, etc.

In the following types of environment, the system may not be able to recognize vehicles or pedestrians in front and may not operate:

1. If visibility is insufficient due to water, snow or mud spray from vehicles close by or water vapor, dust or smoke
2. Low light (dusk, dawn, etc.) or driving without headlights at night or in a tunnel
3. If the vehicle in front does not have their tail lights on at night or in a tunnel
4. If the brakes are cold, such as just after starting to drive or low outside temperatures
5. If camera recognition conditions are poor when the camera is hot, such as when parked in the sun

There are limits to sensor and system performance, so the system may not operate in the following cases:

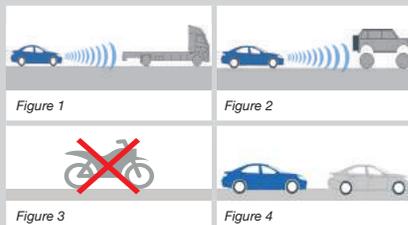
1. Vehicles or pedestrians outside the system detection range
2. Low overlap percentage (when vehicle in front is offset compared to your vehicle)
3. A period of time driving after starting the engine
4. A period of time after turning
5. When coming close to the leading vehicle after making a lane change

There are cases where the system does not operate when the following operations are performed:

1. If there is wobbling while driving
2. If the steering wheel is turned
3. While the accelerator is pressed
4. While the brake is pressed
5. While backing up
6. While driving at very high speeds

Other:

- When the vehicle is sliding sideways while the VSC system is not operating
- When the multi-information display or PCS indicator shows failure or unusable



System automatic cancellation:

- If there is a failure with the system, the warning light turns ON or flashes and a warning message is displayed.
- If the system detects a failure such that the sensor cannot detect (such as filth on the sensor) the system will automatically turn OFF.
- When the windshield glass is dirty or covered with raindrops, condensation, ice, snow, etc.

System may operate in the following conditions, even if collision is not likely:

1. When there is an obstacle at the point of entering a curve, in a curve or at an intersection
2. When passing through a narrow steel bridge
3. When there is a metal object, unevenness or protrusion on the road surface
4. When passing an opposing vehicle when turning right or left or passing an opposing vehicle around a curve
5. When driving on an uneven road or in weeds
6. When suddenly getting close to another vehicle that is driving ahead
7. Upon seeing a raised intersection, sign or advertisement in front of the vehicle
8. When driving in an area where the road grade changes abruptly
9. While driving up or down a slope, when metal such as a steel plate is in front of the vehicle
10. Reacting to Electronic Toll Collection (ETC) bar when passing through an ETC gantry
11. When vehicle height is changing dramatically
12. When sensor direction is offset due to a strong impact near the sensor
13. When passing through a low-ceilinged tunnel of parking structure
14. When passing under a bridge or narrow tunnel
15. When turning around a curve where there is a pedestrian to the front of your car
16. While passing close by a pedestrian
17. When passing through pedestrians
18. If a pedestrian suddenly crosses in front of your vehicle
19. If a pedestrian crossing in front of your vehicle stops
20. If a pedestrian gets close to you while crossing
21. When passing a leading vehicle or a leading vehicle turning to the left or right
22. When passing a vehicle that is moving away from in front of you
23. When passing through parked cars or driving between two other vehicles
24. When the transverse position between your car and the car in front of you is offset within the same lane
25. When driving on a narrow road surrounded by roadside objects
26. When turning around a curve where there is a parked car to the front of your car
27. Other:
 - If there is a pattern of paint on the road surface or wall surface that is difficult to distinguish from a vehicle or pedestrian
 - When passing by a highly reflective object (large truck, guard rail etc.)
 - When traveling close to a broadcasting station that easily interferes with radio

System may be activated by:

1. Glass, mirrors, walls, doors, fences, shutters, etc.
2. Guard rails, telephone poles, trees, etc.
3. Items dropped onto the road surface

Note: The system is designed not to operate in the scene described above but in cases of conditions that are difficult to distinguish from collisions, operation may occur. Therefore, if brakes are pushed, they may be pressed more than is normal.

The section is abbreviated and does not include all precautions or limitations.
Refer to a Toyota Owner's Manual for a more comprehensive list of PCS operation, precautions and limitations.

LANE DEPARTURE ALERT (LDA) WITH STEERING ASSIST FUNCTION (ELECTRONIC POWER STEERING (EPS) EQUIPPED MODELS)

The alert function of LDA⁶ in TSS-P² operates the same as TSS-C² vehicles. LDA⁶ uses an in-vehicle camera designed to detect visible white and yellow lane markers in front of the vehicle and the vehicle's position on the road. If the system determines that the vehicle is starting to unintentionally deviate from its lane, the system alerts the driver with an audio and visual alert. When the alerts occur, the driver must check the surrounding road situation and carefully operate the steering wheel to move the vehicle back to the center part of their lane.



In addition to the alert function of LDA, TSS-P equipped vehicles with EPS will feature a Steering Assist function⁸. When equipped and enabled, if the system determines that the vehicle is on a path to unintentionally depart from its lane, the system may provide small corrective steering inputs to the steering wheel for a short period of time to help the driver keep the vehicle in its lane.

- **LDA⁶ is designed to function at speeds of approximately 32 MPH or higher on relatively straight roadways**
- The vehicle's multi-information display indicates the system's operating status:
 - The inside of the displayed lines will be empty if the system is not able to detect the lane markings or if the system operation is temporarily disabled on one or both sides
 - The inside of the lines will be filled in (usually white) if the system is able to detect the lane markings
 - The inside of the lines will flash on the affected side (usually orange) when LDA⁶ is operating. This is the Visual Alert
 - Outside of the filled in lines will flash on the affected side (usually green) if Steering Assist function is operating

The following setting(s) can be adjusted (Varies by vehicle and type of TSS):

- LDA Audio and Visual Alert: Turn function ON or OFF & Adjust Alert Sensitivity
- Steering Assist function: Turn the Steering Assist function ON or OFF & Adjust Sensitivity
- Vehicle Sway Warning: Turn function ON or OFF & Adjust Alert Sensitivity

NOTE: Operation of the LDA⁶ system and setting adjustments continues in the same condition regardless of ignition cycle until changed by the driver or system is reset

Refer to a Toyota Owner's Manual for additional information on LDA operation, setting adjustments, limitations and precautions.

PRECAUTIONS

TSS-P: LANE DEPARTURE ALERT (LDA) WITH STEERING ASSIST FUNCTION

LDA operation is dependent on the in-vehicle camera's ability to see clearly and detect visible lane markers on relatively straight roadways, as well as the visibility of the lane markers themselves. LDA does not operate if it cannot recognize visible lane markers. Situations such as a fogged/dirty/broken/tinted/sticker-covered windshield blocking the camera, strong light or inclement weather obstructing camera visibility, sunlight glare off of the road surface obscuring lane marker visibility, rain/snow/ice/dirt covering lane markers or faded lane markers, lane width very narrow or very wide, strong wind or sharp curves in the road all may affect LDA operation. Also, changes to the vehicles height or angle from suspension or tire modifications / chains may affect LDA operation. Furthermore, if lane markers cannot be correctly recognized, there are cases where unneeded driver alerts may occur, so the driver needs to pay continuous attention to the surrounding conditions, the direction of travel and vehicle's location on the road, and ultimately be responsible for steering input and vehicle operation at all times.

System may not operate as designed under the following conditions:

<p>Bad weather conditions such as rain, fog, snow, dust storm, etc.</p>	<p>When driving on a slippery surface (icy road, etc.), changing the angle of the camera and vehicle's position relative to the lane markers possibly decreasing lane marker detection)</p>	<p>Other:</p> <ul style="list-style-type: none"> • If there is construction on the side of the road that may be misunderstood, such as a white line (guard rail, curb, reflection pole, etc.) • When driving at a branching or merging road location • When equipped with studless tires, tire chains or emergency tires • When pulling a trailer
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System operation may be reduced under the following conditions:

<ul style="list-style-type: none"> • If white line has been rubbed off or can't be seen due to dirt, rain, snow cover or fog • Road surface is bright (strong light reflection), light (concrete), wet (rainy weather, after rainfall, puddles, etc.) or covered with snow • When driving on a road that has been repaired or where lane marks have been deleted but still can be seen • If lane markers are an abnormal width/pattern or something other than a line (cats eye, stones placed, etc.) • If vehicle is tilted (tire air pressure reduced, load conditions) 	<p>If the camera faces the wrong direction</p>
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System may stop temporarily under the following conditions:

<p>When amount of light changes dramatically (tunnel exit/entrance)</p>	<p>If the vehicle moves up and down (uneven/bumpy road, road surface joint)</p>	<p>Other:</p> <ul style="list-style-type: none"> • When the camera is bathed in strong light (headlights from opposing vehicle, sunlight, reflection from surrounding vehicles) • When driving around a sharp curve
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The system will not operate in the following conditions:

<p>If driving on an unpaved road</p>	<p>When driving too close to a preceding vehicle blocking the camera from seeing the lane markers</p>	<p>Other:</p> <ul style="list-style-type: none"> • If there are no lane markers (tool booth, ticket booth, intersections, etc.) • If lane width is either very narrow or very wide • If the windshield is fogged up
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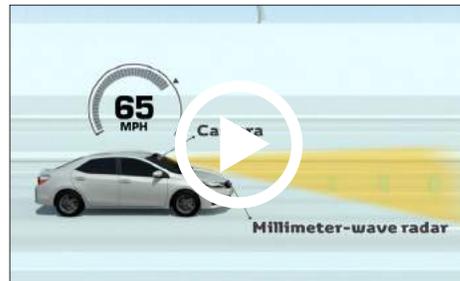
The section is abbreviated and does not include all precautions or limitations.

Refer to a Toyota Owner's Manual for a more comprehensive list of LDA operation, precautions and limitations.

DYNAMIC RADAR CRUISE CONTROL (DRCC)

On highways or expressways, Dynamic Radar Cruise Control¹⁰ functions similar to conventional “constant speed” cruise control in that it helps vehicles travel at a consistent speed set by the driver, but this system adds a vehicle-to-vehicle distance control mode which assists the driver by adjusting vehicle speed (within a set range) to help maintain a pre-set distance to a preceding vehicle when the preceding vehicle is traveling at a lower speed.

Once a vehicle speed is set by the driver, Dynamic Radar Cruise Control¹⁰ uses a front-grill mounted millimeter-wave radar and an in-vehicle camera to detect a preceding vehicle and help determine its distance.



If the vehicle ahead is detected traveling at a speed slower than your set speed or within your distance range setting, the system is designed to automatically decelerate your vehicle without having to cancel the cruise control. When a greater reduction in vehicle speed is necessary, the system may apply the brakes and operate your vehicle brake lights. The system will then respond to changes in the speed of the vehicle ahead in order to help maintain the vehicle-to-vehicle distance set by the driver. When there is no longer a preceding vehicle driving slower than your vehicle’s set speed, the system accelerates until the set speed is reached and returns to constant speed cruising.

The vehicle-to-vehicle distance, or distance between your vehicle and preceding vehicle, can be set by operating the vehicle-to-vehicle distance control. Pressing the button allows the driver to choose from three vehicle-to-vehicle distance settings: Long - Medium - Short.

- **DRCC¹⁰ is designed to function at speeds of approximately 25 to 110 MPH. However, vehicle speed must be above approximately 28 MPH to initiate DRCC as that is the lowest set speed.**
- Starting with certain 2016 Prius Liftback models (and 2017 Prius Liftback and Prius Prime), select Toyota vehicles may also feature the new **Full-Speed Range DRCC¹⁰, which is designed to also cover speeds below 25 MPH. Full-Speed Range DRCC is designed to function at approximately 0 to 110 MPH.** Full-Speed Range DRCC¹⁰ may enable low speed following, speed matching, stopping, and acceleration/deceleration to a preceding vehicle

The following setting(s) can be adjusted:

- Vehicle-to-vehicle distance settings: Long - Medium (default) - Short

Refer to a Toyota Owner's Manual for additional information on DRCC operation, setting adjustments, limitations and precautions.

PRECAUTIONS

TSS-P: DYNAMIC RADAR CRUISE CONTROL (DRCC)

DRCC is a system primarily for driving on expressways and highways. With regards to traffic conditions on general roads, there are cases where it will not operate appropriately and could lead to an accident, so do not use it. In addition, there are limits to DRCC's ability to control distance between vehicles and deceleration control. While driving, the driver will need to continually pay attention to distance between vehicles with the leading vehicle and surroundings and decelerate and accelerate themselves to ensure distance between their vehicle and preceding or following vehicles is safe. DRCC operation is dependent on the millimeter-wave radar's ability to detect a preceding vehicle, as well as the detectability of the preceding vehicle itself. Situations such as a snow/ice/debris/film covered front Toyota emblem blocking the radar, inclement weather obstructing radar visibility, frequent curves in the road, or frequent up and down driving situations all may affect DRCC operation.

In the following conditions, DRCC may lead to an unexpected accident, so do not use the system:



Bad weather conditions, such as rain, fog, snow or a dust storm
When the system judges weather to be bad, there are cases where it automatically turns OFF

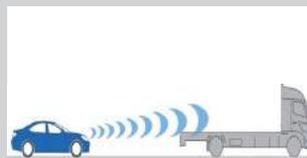


Raindrops, snow, ice, road debris, or film/metal coatings on the millimeter wave radar sensor (badge or cover)
If the system detects filth, it will automatically turn OFF

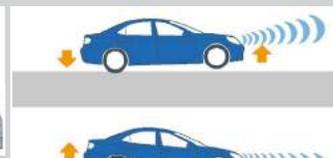
Other:

- Roads with a lot of traffic or around a sharp curve
- Slippery road surfaces, such as icy roads or snowy roads
- Steep inclines
- Traffic conditions leading to frequent acceleration and deceleration
- When leaving lane while on an expressway, etc.
- When vehicle is being towed

In the following conditions, the system is not able to accurately detect leading vehicles and may not be able to maintain appropriate distance between vehicles:



When the leading vehicle is pulling an empty trailer, etc., making rear surface area very small (including motorcycles)



When something very heavy is placed in the trunk or back seat, changing the angle of the vehicle

In the following conditions the system may inadvertently operate or may not be able to detect the leading vehicle:



In a curve or when the lane width is narrow, if a vehicle from another lane is recognized as that of your lane



When the leading vehicle is driving at the edge of the lane and is not in the detection area

Other:

- When the leading vehicle leaves the sensor detection area, such as at a curve
- When the leading vehicle leaves the sensor detection area due to steering input

The system will not operate in the following conditions:

If the opposing object is a stopped vehicle or a leading vehicle with a speed dramatically slow comparing to own vehicle

In the following conditions, detection of the leading vehicle may be delayed or may not be feasible:

When a leading vehicle cuts in front of your vehicle at a close distance

Motorcycle driving at the edge of the lane

The section is abbreviated and does not include all precautions or limitations.

Refer to a Toyota Owner's Manual for a more comprehensive list of DRCC operation, precautions and limitations.

ADDITIONAL RESOURCES FOR CUSTOMERS

For more information, please check out the following:

▶ [Toyota.com TSS Page](#)

▶ [Toyota Safety Sense™
Videos: YouTube](#)

▶ [Standard Automated
Braking by 2017](#)

▶ [2013 Traffic Safety
Facts](#)

▶ [DRCC Article](#)

1. United States Department of Transportation, National Highway Traffic Safety Administration (NHTSA). (2014). *TRAFFIC SAFETY FACTS 2013*. 2. Drivers should always be responsible for their own safe driving. Please always pay attention to your surroundings and drive safely. Depending on the conditions of roads, vehicles, and weather, etc., the system(s) may not work as intended. See Owner's Manual for details. 3. The TSS Pre-Collision System is designed to help avoid or reduce the crash speed and damage in certain frontal collisions only. It not a substitute for safe and attentive driving. System effectiveness depends on many factors, such as speed, driver input and road conditions. See Owner's Manual for detail. 4. Brake Assist is designed to help the driver take full advantage of the benefits of ABS. It is not a substitute for safe driving practices. Braking effectiveness also depends on proper brake-system maintenance, tire and road conditions. See Owner's Manual for details. 5. Results achieved during testing using a vehicle traveling at 19 mph and a stationary vehicle/pedestrian; system operation depends on driving environment (including road and weather) and vehicle circumstances. 6. Lane Departure Alert is designed to read lane markers under certain conditions, and provide visual and audible alerts when lane departure is detected. It is not a collision-avoidance system or a substitute for safe and attentive driving. Effectiveness depends on many factors. See Owner's Manual for details. 7. Automatic high beams operate at speeds above 25 mph. Factors such as dirty windshield, weather, lighting & terrain limit effectiveness requiring driver to manually operate the high beams. See Owner's Manual for details. 8. Lane Departure Alert with Steering Assist is designed to read lane markers under certain conditions. It provides a visual and audible alert and slight steering force when lane departure is detected. It is not a collision-avoidance system or a substitute for safe and attentive driving. Effectiveness depends on many factors. See Owner's Manual for details. 9. The Pedestrian Detection System is designed to detect a pedestrian ahead of the vehicle, determine if impact is imminent and help reduce impact speed. It is not a substitute for safe and attentive driving. System effectiveness depends on many factors, such as speed, size and position of pedestrians, driver input and weather, light and road conditions. See Owner's Manual for details. 10. Dynamic Radar Cruise Control is designed to assist the driver and is not a substitute for safe and attentive driving practices. System effectiveness depends on many factors, such as weather, traffic and road conditions. See your Owner's Manual for details. 11. Results achieved during testing using a vehicle traveling at 25 mph and a stationary vehicle. System operation depends on driving environment (including road and weather) and vehicle circumstances.

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