

Subject Target Placement for TSS and BSM Calibration		Market USA
Service Category Vehicle Interior	Section Pre-Collision Safety	
Applicability Models with TSS or BSM		

APPLICABLE VEHICLES

2018-2022	C-HR	2018-2020	Sienna
2016-2021	Land Cruiser	2018-2022	Camry
2016-2022	Prius	2017-2018	iM
2016-2022	Avalon	2021-2022	Sienna HV
2016-2022	Avalon HV	2017-2022	Highlander
2017-2019, 2022	Yaris	2017-2022	Highlander HV
2018-2022	Tacoma	2018-2022	Tundra
2020-2022	4Runner	2021-2022	RAV4 Prime
2016-2022	RAV4	2019-2022	Corolla Hatchback
2016-2022	RAV4 HV	2017-2022	Corolla
2018-2022	Sequoia	2018-2022	Camry HV
2016-2021	Prius C		

CONDITION

When used in conjunction with the Repair Manual, these Blind Spot Monitor, Forward Recognition Camera, and Front Millimeter Wave Radar tips leverage SSTs and readily available tools to support target placement in varying shop environments.

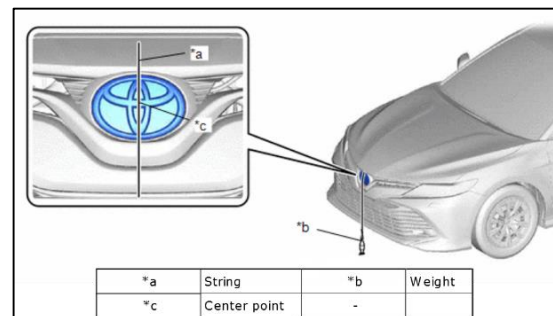
RECOMMENDATIONS

Creating the Centerline – Marking/securing the centerline of the vehicle is the first step to ensure correct target placement.

A. Creating a Centerline Using a 90-degree Laser (for Blind Spot Monitor)

Hint: The vehicle centerline needs to extend past the rear of the vehicle for Blind Spot Monitor procedures.

1. Hang a plumb bob from the vehicle's front emblem, per the Repair Manual instructions, and mark the vehicle's front center point on the ground.



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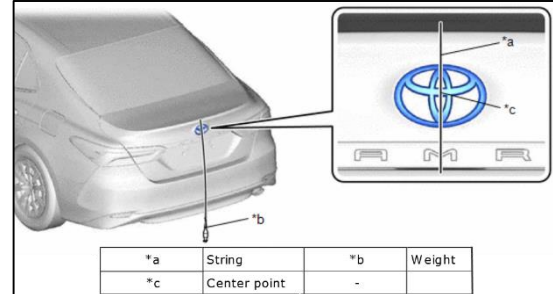
Applicability

RECOMMENDATIONS

2. Hang a plumb bob from the vehicle's rear emblem/center point, per the Repair Manual instructions, and mark the vehicle's rear center point on the ground.
3. Place the 90-degree laser from the SST kit (PN 00816-00103) approximately one foot in front of the **FRONT** vehicle centerline point so that the laser hits the center line mark.
4. Place the laser target from the SST kit (PN 00816-00103) on the **REAR** vehicle centerline mark.

Hint: A solid object with a 90-degree face can be used if the laser target is not available.

5. Align the laser with both vehicle centerline marks.



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- Remove the laser target at the rear of the vehicle to extend the centerline far enough to mark a perpendicular cross line required for target placement. Refer to the **“Creating a Perpendicular Line”** section (Pg. 6) for more information.

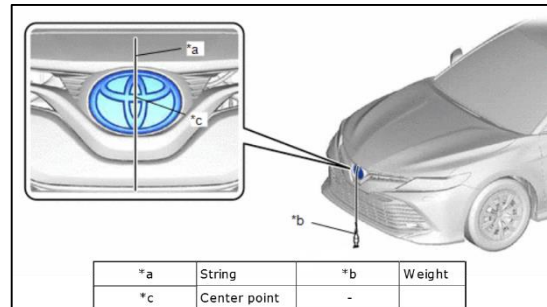
Hint: This laser line can now be used as the vehicle centerline.



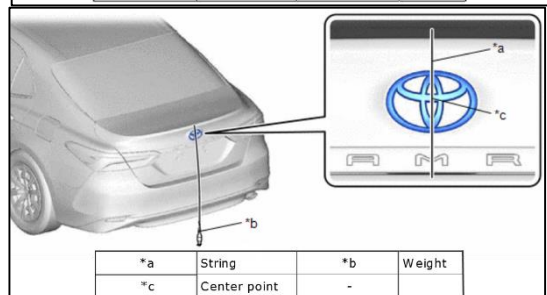
B. Creating a Centerline Using a 90-Degree Laser (for Forward Recognition Camera and Front Millimeter Wave Radar)

Hint: The vehicle centerline needs to extend past the front of the vehicle for Forward Recognition and Front Millimeter Wave Radar procedures.

- Hang a plumb bob from the vehicle’s front emblem, per the Repair Manual instructions, and mark the vehicle’s front center point on the ground.



- Hang a plumb bob from the vehicle’s rear emblem/center point, per the Repair Manual instructions, and mark the vehicle’s rear center point on the ground.



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- Place the 90-degree laser from the SST kit (PN 00816-00103) approximately one foot behind the **REAR** vehicle centerline point so that the laser hits the centerline mark.



- Place the laser target from the SST kit (PN 00816-00103) on the **FRONT** vehicle centerline mark.

Hint: Any solid, 90-degree block can be used if laser target is not available.



- Align the laser with both vehicle centerline marks.
- Remove the laser target to extend the centerline far enough to mark the perpendicular cross line required for target placement. Refer to the **“Creating a Perpendicular Line”** section (Pg. 6) for more information.

Hint: This laser line can now be used as the vehicle centerline.



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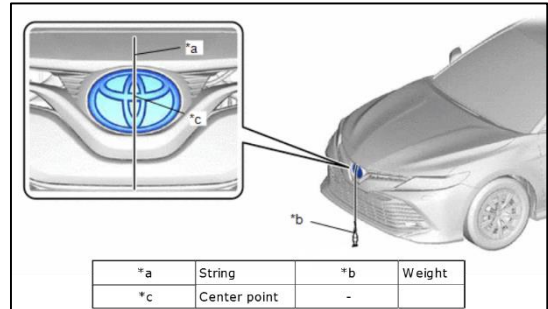
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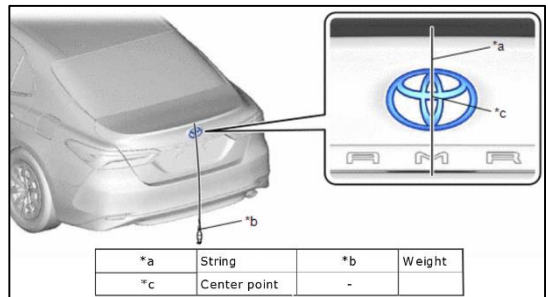
RECOMMENDATIONS

C. Creating a Centerline Using a String with Weight (All Systems)

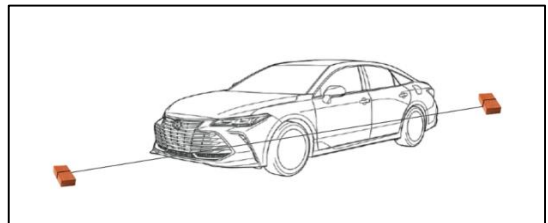
1. Hang a plumb bob from the vehicle's front emblem, per the Repair Manual instructions, and mark the vehicle's front center point on the ground.



2. Hang a plumb bob from the vehicle's rear emblem/center point, per the Repair Manual instructions, and mark the vehicle's rear center point on the ground.



3. Tie each end of a long string around separate solid objects. Stretch the string under the vehicle through both center point marks far enough to mark the perpendicular cross line required for target placement. Refer to the **“Creating a Perpendicular Line”** section (Pg. 6) for more information.



Hint: This string line can now be used as the vehicle centerline.

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Creating a Perpendicular Crossline – Marking a perpendicular line off the vehicle centerline is the next step to ensure correct target placement.

A. Creating a Perpendicular Crossline with a 90-Degree Laser (Forward Recognition Camera and Blind Spot Monitor)

1. Mark the vehicle centerline.

Hint: Refer to “Creating the Centerline” (Pg. 1) or applicable Repair Manual.

2. Use the **Blind Spot Monitor Calculator**, **Forward Recognition Camera Calculator** (located in “Linked References” on Pg. 12) or the Repair Manual for this measurement. Mark the point on the vehicle centerline where the perpendicular crossline will intersect.

Hint: The example photo is displaying the perpendicular crossline point in the **rear** of the vehicle for Blind Spot Monitor, but this tip can also be used for Forward Recognition Camera, where this point will be at the **front** of the vehicle.



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- Place the 90-degree laser from the SST kit (PN 00816-00103) over the perpendicular line mark on the vehicle centerline.



- Place the laser target from the SST kit (PN 00816-00103) on the vehicle's marked center point farthest from the 90-degree laser.

Hint: For Blind Spot Monitor (shown), place laser target on the vehicle's **front** centerline point. For Forward Recognition Camera, place the laser target on the vehicle's **rear** centerline point.



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5. Create a laser line that intersects both vehicle centerline points by using the 90-degree laser and the laser target from the SST kit.



6. Create the perpendicular line using the 90-degree laser.



7. Refer to the **Blind Spot Monitor Calculator**, **Forward Recognition Camera Calculator**, or the applicable Repair Manual for this measurement. On the perpendicular crossline, mark the distance away from the vehicle centerline where the target/marker will be placed.

Hint: As an alternative measuring method, use the laser distance measurer from the SST kit (PN 00816-00103).



8. Without moving the base, rotate the laser 90 degrees counter-clockwise to extend your perpendicular line towards the opposite target/marker, then repeat Step 7.

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B. Creating a Perpendicular Crossline with a Carpenters Square (for Forward Recognition Camera)

1. Mark the vehicle centerline.

Hint: Refer to “Creating the Centerline” (Pg. 1) or applicable Repair Manual.

2. Open **Forward Recognition Camera Calculator** (located in “Linked References” on Pg. 12). Use this calculator to determine the point on the vehicle centerline where the perpendicular crossline will intersect.

Hint: The perpendicular line point is also the center target placement point.

3. Using the square, align one leg along the centerline, with the other leg perpendicular to the vehicle



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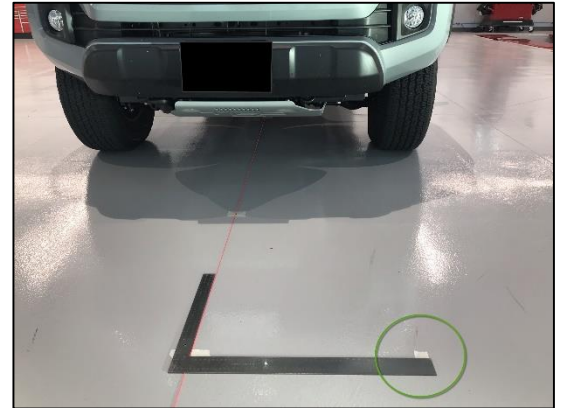
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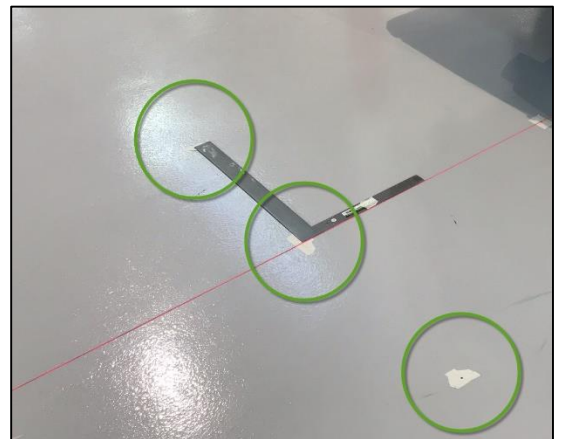
RECOMMENDATIONS

4. Refer to the **Forward Recognition Camera Calculator** or the applicable Repair Manual for this measurement. On the perpendicular crossline, mark the distance away from the vehicle centerline where the target will be placed.

Hint: Use a square that is at least 600mm long.



5. Repeat Step 4 on the opposite side of vehicle's centerline for third target placement point



C. Creating a Perpendicular Crossline with a Carpenters Square (for Blind Spot Monitor)

1. Mark the vehicle centerline.

Hint: Refer to "Creating the Centerline" (Pg. 1) or applicable Repair Manual.

2. Use the **Blind Spot Monitor Calculator** (located in "Linked References" on Pg. 12) or the Repair Manual for this measurement. Mark the point on the vehicle centerline where the perpendicular crossline will intersect.

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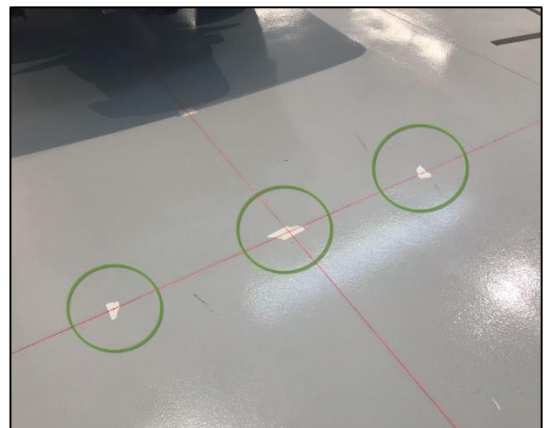
3. Using the square, align one leg along the centerline, with the other leg perpendicular to the vehicle centerline. Mark the furthest point out on the square.



4. Using the square on the **opposite** side, align one leg along the centerline, with the other leg perpendicular to the vehicle centerline. Mark the furthest point out on the square.



5. Create a perpendicular crossline that intersects all 3 points (two points created by the square and the vehicle centerline point) and extend the perpendicular line past the target/marker placement point.



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6. Refer to the **Blind Spot Monitor Calculator** or the applicable Repair Manual for this measurement. On the perpendicular crossline, mark the distance from the vehicle centerline where the target will be placed.



Hint: The links below can be used to download and save the calculators to the Techstream desktop for future reference.

LINK REFERENCES

- [Forward Recognition Camera Calculator.pdf](#)
- [Blind Spot Monitor Calculator.pdf](#)