

Smart Cruise Control (SCC) Sensor Alignment

The objective of the alignment is to ensure correct SCC performance. In order for the sensor to perform correctly, the sensor must be aligned correctly. The sensor alignment has major impact on road estimation, lane prediction, and target processing. When the sensor is misaligned, the performance of SCC cannot be guaranteed. Therefore, when the sensor is reinstalled or a new sensor is installed on a vehicle, the sensor shall be aligned by service personnel.

NOTE: *The sensor must be aligned when;*

- *The sensor is reinstalled after removing.*
- *A new sensor is installed on a vehicle.*
- *The sensor or nearby parts are impacted in a collision.*
- *The sensor can not recognize a vehicle ahead.*

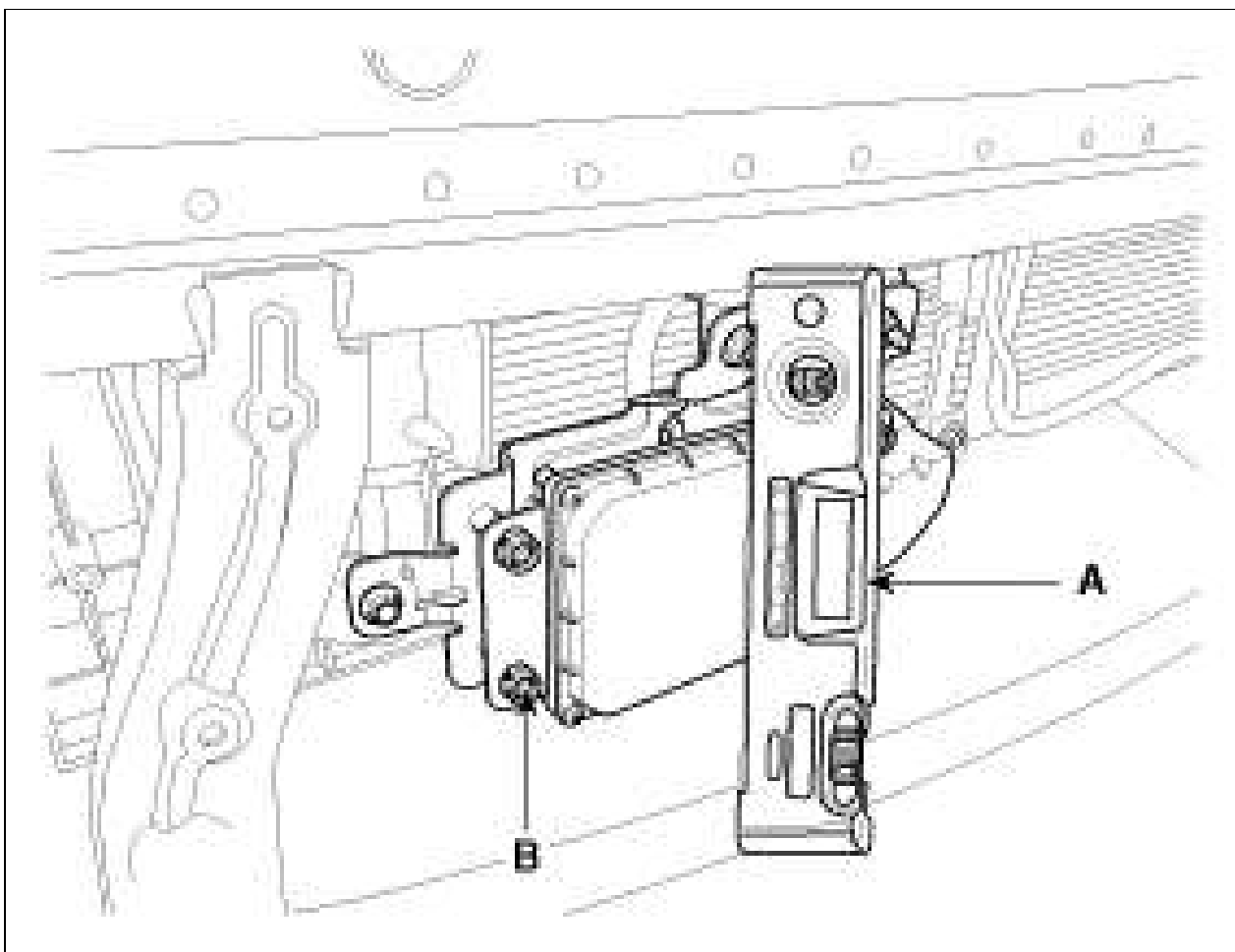
CAUTION: *The sensor can not recognize a vehicle ahead.*

- *Remove heavy objects, such as luggage in the trunk, from the vehicle.*
- *Remove heavy objects, such as luggage in the trunk, from the vehicle.*
- *Check wheel alignment.*
- *Check the pollution condition of sensor cover*

Radar sensor should be aligned in vertical and horizontal direction. Vertical alignment should be performed using level/tilt meter and horizontal alignment should be performed by driving on a road.

1. To maintain the horizontal condition between a vehicle and ground, park a vehicle on a lift or level ground.
2. Remove the bumper cover.
(Refer to "FRONT BUMPER COVER ")
3. Check out the vertical alignment of sensor using a level/tilt meter. (Tolerance: $\pm 1.25^\circ$ less)
If verticality of the sensor is out of the tolerance, turn the adjustment screw (B) to adjust it within the tolerance.

Fig 1: Checking Sensor Vertical Alignment Using Level/Tilt Meter



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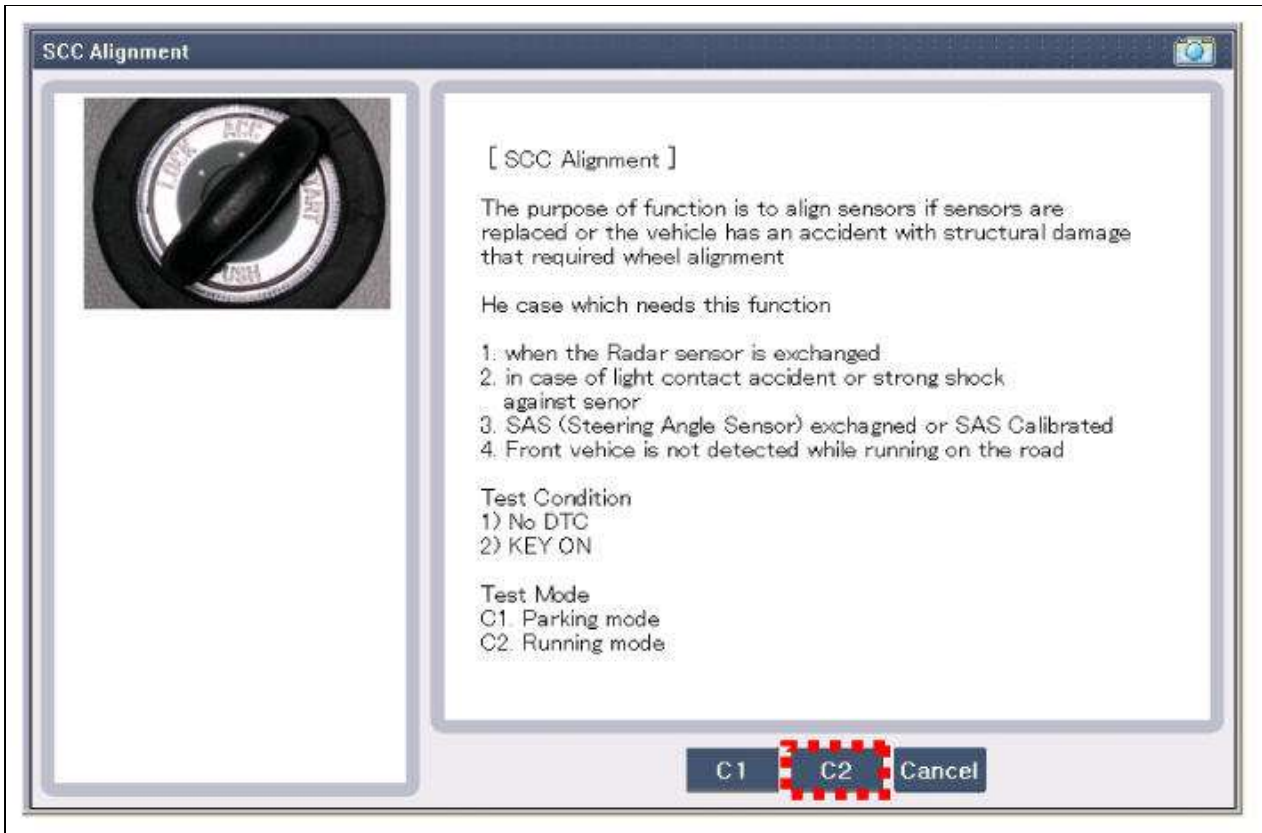
NOTE: For the vertical sensor alignment, use a digital tilt meter for better accuracy. If not available, a bubble meter can be used.

4. Install the bumper cover.
(Refer to "FRONT BUMPER COVER ")
5. To perform the horizontal sensor alignment, connect GDS after starting the engine and choose "SCC Alignment"

NOTE: Erase the DTC code before the sensor alignment procedure.

6. Select "Driving Mode" to start sensor alignment.

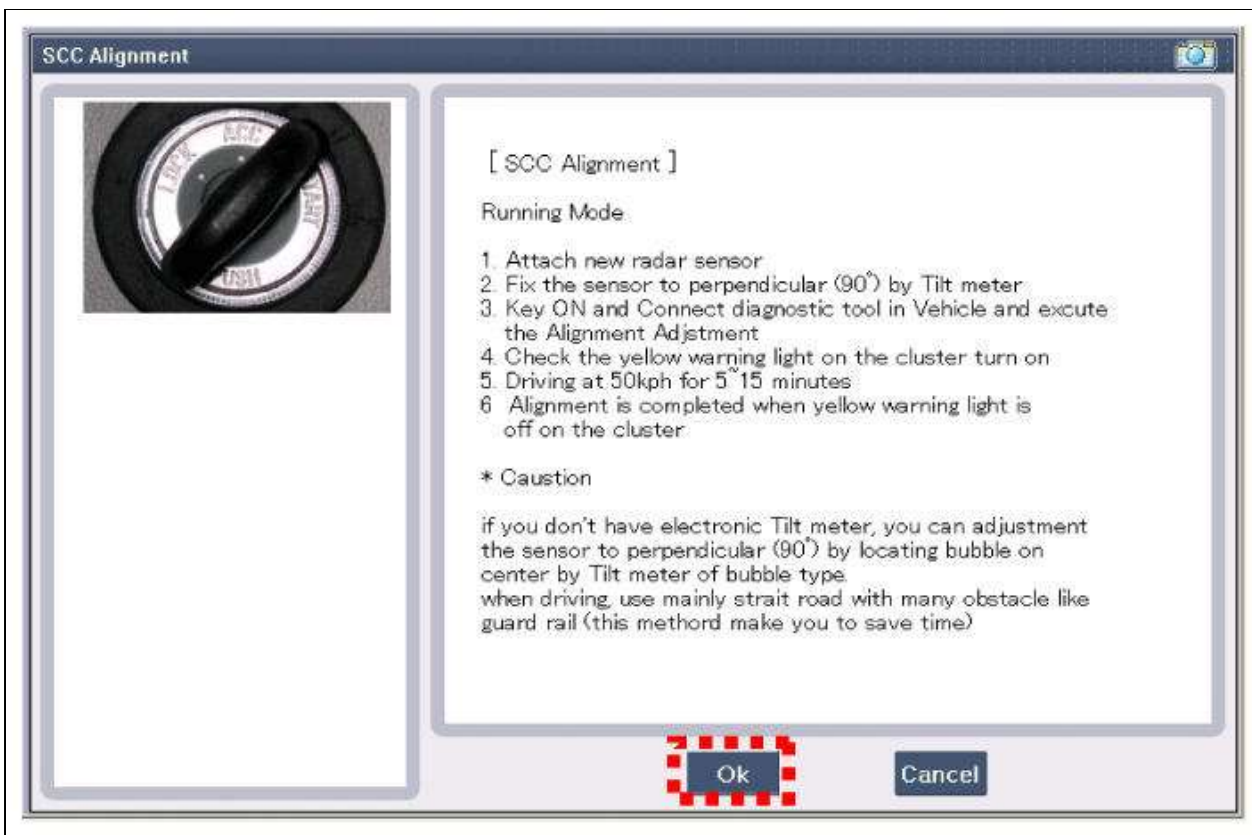
Fig 2: Display - Start Sensor Alignment Screen



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7. Drive the vehicle after checking the alignment start on the GDS. Check the red light of instrument cluster is on.

Fig 3: Display - Check GDS Sensor Alignment Screen



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NOTE: The sensor alignment will last about 5~15 minutes.

Depending on the traffic situation or road condition, the duration of the procedure can shorten or extend.

To complete the alignment in minimum time, if it is possible, drive the vehicle considering the driving/road conditions as follows.

1. To shorten the duration of the alignment;
 1. Drive at more than 65 km/h (40.4 mph).
 2. Drive on a straight road without any curve and incline.
 3. Drive on a thick and wide asphalt road.
 4. Drive on a road with repetitive static targets.
 5. - Drive on a dry and good road without rain and snow.
2. The alignment process can be interrupted when the following condition exists;
 1. When the vehicle encounter curves with a radius smaller than 100m (328.0ft).
 2. Drive below minimum demand speed or stop (waiting at a red light, etc.)
 3. When the vehicle is in a tunnel or under overpass.

4. *When there are excessive steering wheel actions such as turning to the right or left and sudden lane change.*
5. *Drive on a road with few repetitive static targets.*

CAUTION: *Be careful when driving the vehicle for sensor alignment as follows;*

1. *Observe a regulation speed on the road.*
2. *Do not stick to the previous driving/road conditions excessively to shorten the duration of the alignment and drive the vehicle safely considering traffic situations.*
3. *When driving the vehicle, do not operate the GDS and look at the GDS display for a long time. You can lose your steering control.*
4. *Operate the GDS only when the vehicle stops.*

8. *After the sensor alignment is completed, the instrument cluster warning light is off.*

NOTE: *If sensor alignment has not completed, check horizontal angle using GDS.*

If the vertical angle of the sensor is out of $\pm 3^\circ$, check the back beam or mounting area. If there is no abnormality, replace the SCC unit with new one.

After replacing the SCC unit with new one, align the sensor again.