

Claz

PRODUCT BRIEF



Concept

Claz

Performance

Features & Specifications

Product Concept

Authentic Sedan [*Sleek & Elegant*]

Rear Seat Comfort [*Space & convenience*]

Fuel Efficient [*Best In Class*]

Ride & Handling [*Top Notch*]

Features and Technology [*Next Gen*]

Exterior Design



Authentic Saloon

SPORTY and NOBLE

Sleek, Stylish, Sophisticated, Pride to Own



Central Service Training Center

Elegant Proportions





Seamless Flow

Sharp Side Shoulder Lines



Lower Dynamic Line

Stylish Features



Strong Shoulder

Wide Front Image



Wide Front Image



*Stylish Winglet Inspired
feature giving a Bold
Stance*



*Sporty yet Elegant
Grill*



*Detailed Headlamp adding
to the Sporty Character*





Central Service Training Center

Unique surface detailing that connects the Rear to the Side



Characteristic High Mounted tail lamp gives a Bold Sporty Look



Interior Design



Central Service Training Center

Premium Black and Beige Interiors

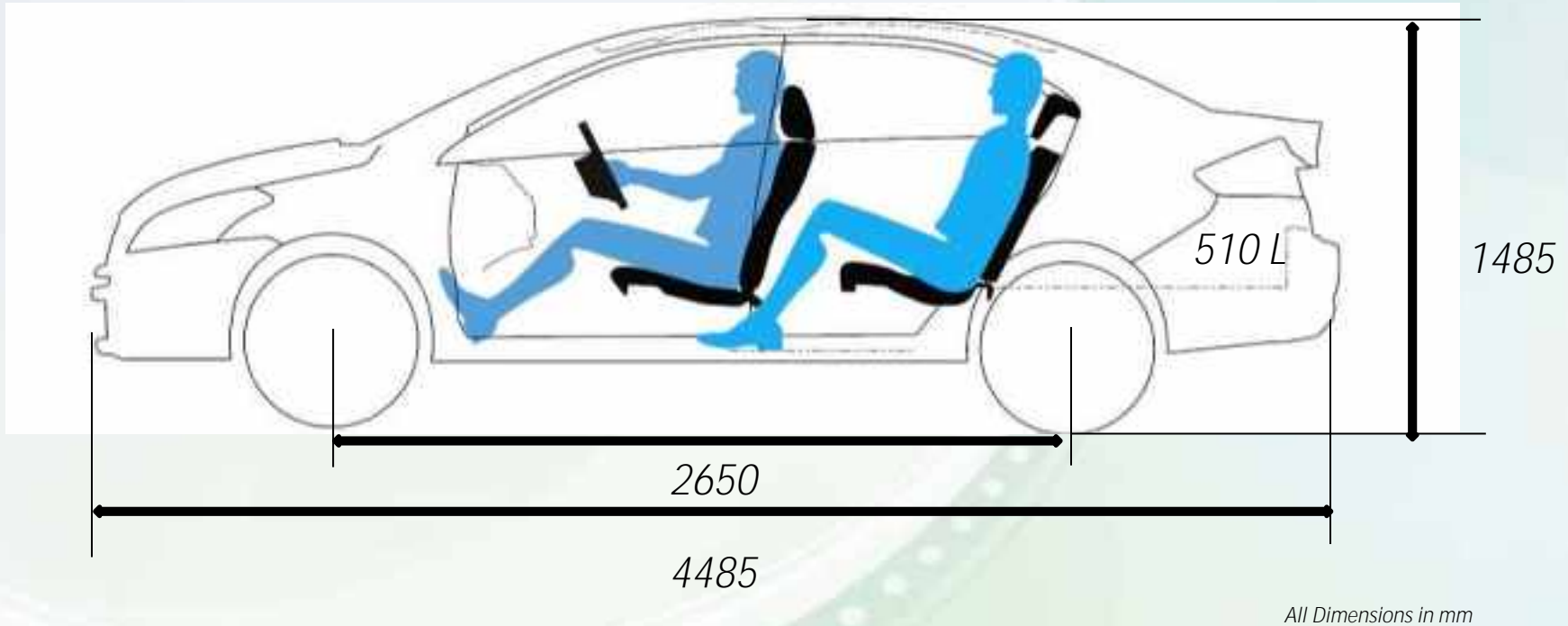


Elegant & Clutter Free Design

Luxurious Wooden Finish Ornaments

Central Service Training Center

Ergonomics and Packaging



- ✓ *Longest & Widest in class*
- ✓ *Best in class Wheelbase giving more stability*
- ✓ *Best in Class Boot Space*
- ✓ *Best in class Front and Rear Visibility*

Design Concept

Ciaz

Performance

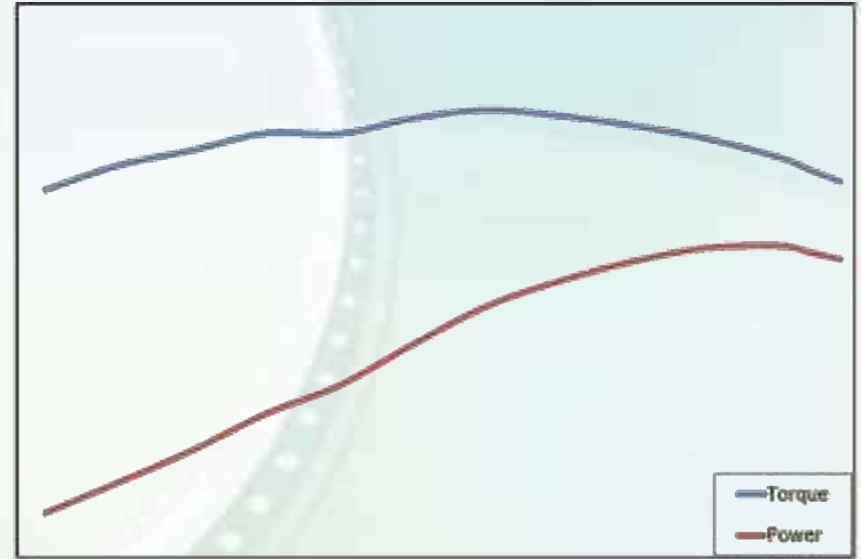
Features & Specifications



Power Train



- ✓ *New Generation K14B Engine*
- ✓ *92.5 PS @ 6000 RPM*
- ✓ *130 Nm @ 4000 RPM*
- ✓ *Delivers Better Low end torque*
- ✓ *Available in 5MT and 4AT options*

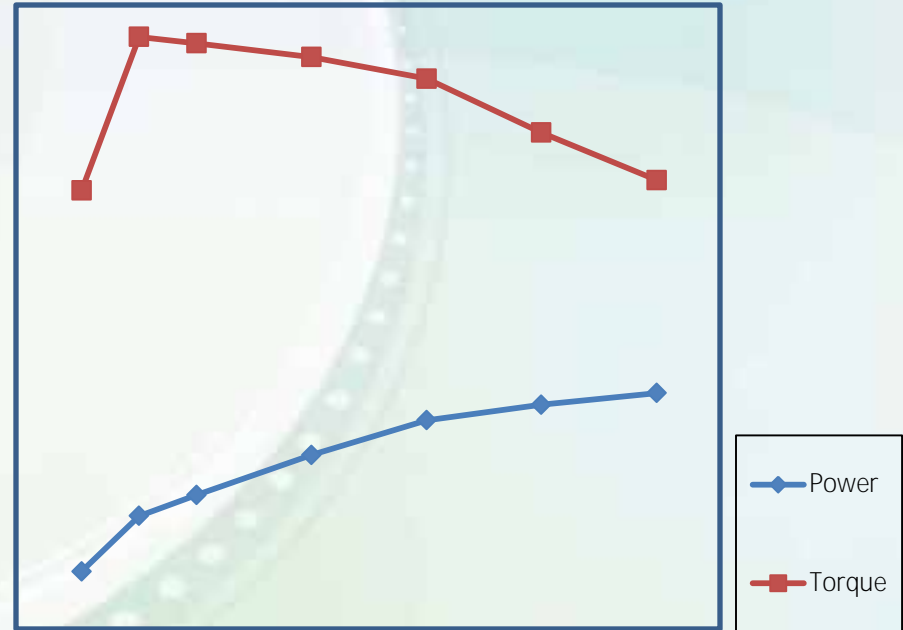


Better Combustion

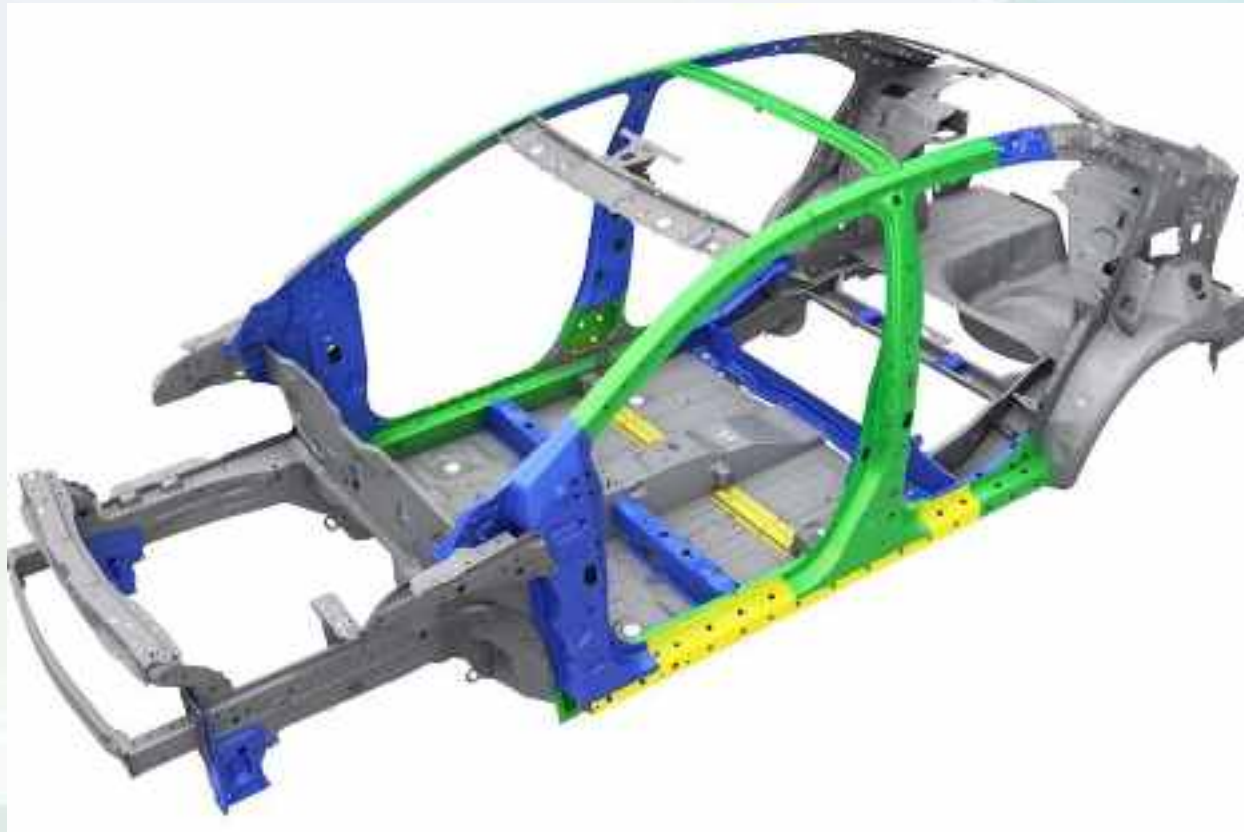
Reduced Friction

Lower Emissions

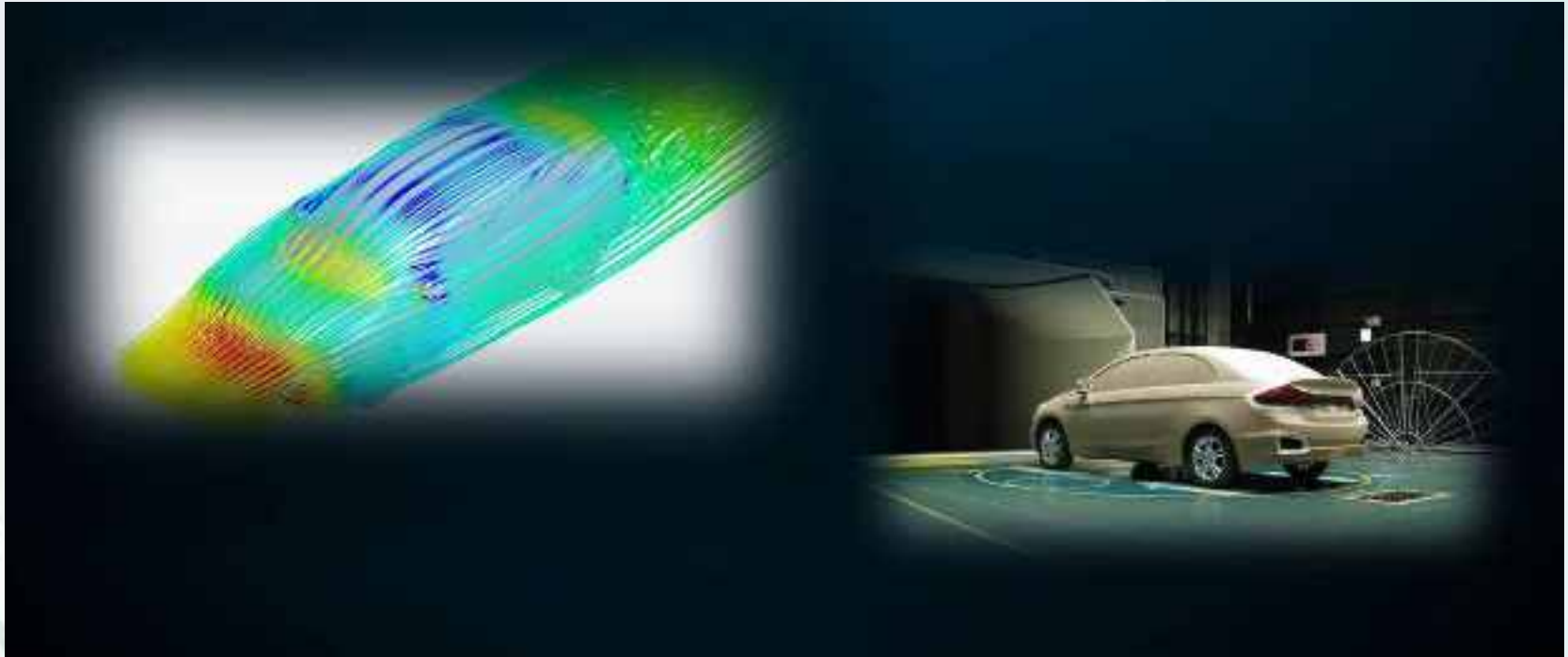
- ✓ *Super Turbo D13 DDIS Engine*
- ✓ *Reduced Emissions and Silent Performance*
- ✓ *90 PS @ 4000 RPM*
- ✓ *200 Nm @ 1750 RPM*
- ✓ *Available in 5MT*



Body



- ✓ *Stronger and Safer High Tensile Steel Body*
- ✓ *High Body Rigidity Obtained by placing Right Material at the Right Position ?*

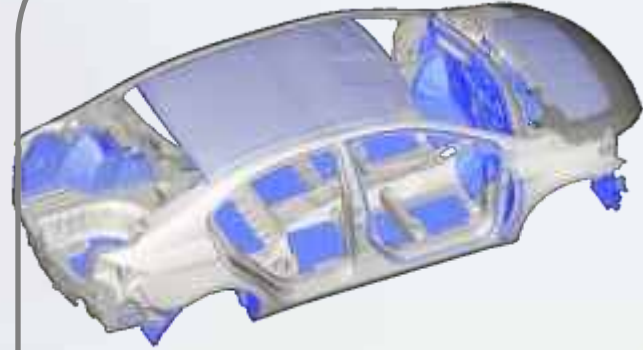


- ✓ *Highly Aerodynamic Design contributing in achieving Best in Class FE*
- ✓ *Remarkably Low drag Coefficient*



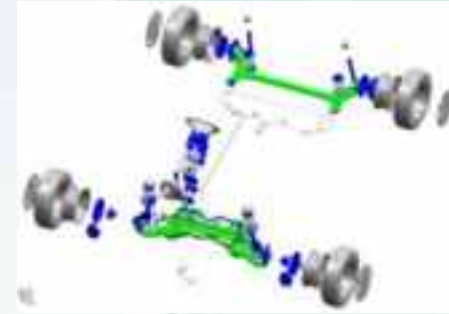
Ride Comfort

NVH



- ✓ Optimization of absorption characteristics for quieter Cabin

Chassis



- ✓ Highly Balanced Chassis System
- ✓ Suspension tuned to give stability as well as great ride comfort

Air Conditioning



- ✓ New generation HVAC with Twin Condenser fans for enhanced cooling Performance
- ✓ Rear AC Vent for enhanced comfort at rear seat



Design Concept

Claz

Performance

Features & Specifications

- ✓ Projector Headlamps
- ✓ Rear AC vents
- ✓ Accessory socket (Rear)
- ✓ Electric Trunk Opening
- ✓ Glass Antennae
- ✓ Illuminated Console Box
- ✓ *Audio with CD/USB/Aux in/ Data card*
- ✓ *4 speakers + 2 Tweeters*
- ✓ *Front center armrest*
- ✓ *Rear center armrest (with cup holders)*
- ✓ *Elect. adj. ORVM with Turn ind*
- ✓ *Keyless entry*
- ✓ *Power Windows*
- ✓ *Auto Up/Down Windows (Dr. side)*

✓

□ *CIAZ will be available in 4 Variants V, V+,Z & Z+*

Inherently Premium

Class Above

Features

❑ CIAZ will be available in 4 Variants V, V+, Z & Z+

- ✓ Projector Headlamps
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ind.)
- ✓ Keyless entry
- ✓ Power Windows
- ✓ Auto Up/Down Windows
(Dr. side)

V

- ✓ ABS + EBD
- ✓ Driver airbag
- ✓ Steering Mounted Audio /
Bluetooth control
- ✓ Driver seat height adjuster
- ✓ Auto AC
- ✓ Bluetooth
- ✓ Front Fog Lamp
- ✓ Parking Sensor

V+

- ✓ Push Start with Smart Key
- ✓ Alloy Wheels (15")
- ✓ Rear Sunshade
- ✓ Footwell Lights
- ✓ Dual Airbag
- ✓ Auto Day/Night IRVM
- ✓ Electric Foldable ORVM
- ✓ Sunglass Holder
- ✓ Parking Camera
- ✓ Personal Reading Lamps

Z

- ✓ Touchscreen
Infotainment System
- ✓ Door Beltline Ornament
- ✓ Alloy wheel (16")
- ✓ Leather Wrapped steering
- ✓ Leather Seats
- ✓ Trunk Lid Garnish
- ✓ Chrome Door Handles

Z+

Best in class Infotainment System

- ✓ 7 touchscreen Display
- ✓ Voice recognition with Indian Accent English
- ✓ Smartphone Integration
- ✓ Navigation with speech guidance



- ✓ Video/Audio playback through SD Card/external DVD Player
- ✓ Bluetooth audio streaming with BT calling
- ✓ Parking Camera integrated display
- ✓ Phone contacts sync

Advance Features



Push Start with Smart Key



Electrically Foldable ORVM



Auto A/C



Glass Antennae



Auto IRVM with reverse camera display (Z)



Sunglass Holder



*Illuminated Console
Box with Cupholders*



*4 Bottle Holder and
Map Pocket*



✓ *Rear Seat Armrest
Cupholders*



✓ *Seat Back & Side
Pocket*



✓ *Glove Box*



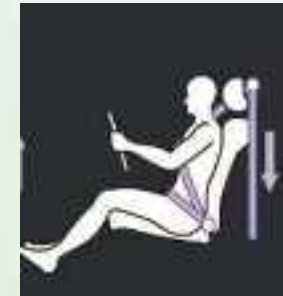
ABS with EBD



Driver and Passenger Airbags



Stronger Hi tensile Steel body



*Seat belt Pre tensioners and
Force Limiters*

Body Colors

Colour Line Up



Pearl Snow White



Sangria Red



Dignity Brown



Clear Beige



Silky Silver



Glistening Grey



Midnight Black

Comparison

Dimensions	Ciaz	SX4	Honda City	Hyundai Verna	Nissan Sunny
Length	4485 ↑	4500	4440 ↑	4370 ↑	4425 ↑
Width	1730 ↑	1735	1695 ↑	1700 ↑	1695 ↑
Height	1485 ↑	1560	1485 =	1475 ↑	1505 ↓
Wheel Base	2650 ↑	2500	2550 ↑	2570 ↑	2600 ↑
Turning Radius	5.4 M	5.3 M	5.3 M	5.2 M	5.3 M
Ground Clearance	170 ↑	180	165 ↑	170 =	160 ↑
Boot Space (Ltr)	510 ↑	505	510 =	465 ↑	490 ↑
Performance	Ciaz	SX4	Honda City	Hyundai Verna	Nissan Sunny
Engine	K14 B DOHC	M16 DOHC	1.5 L (SOHC) i-VTEC	1.4 L VTVT	1.5 L DOHC
Displacement (cc)	1372	1586	1497	1396	1498
Bore (mm)	73	78	73	NA	78
Stroke (mm)	82	83	89.4	NA	78.4
Max Power (PS)	90 @ 6000	104.7 @ 5600	118 @ 6600	107 @ 6300	99 @ 6000
Max Torque	115 @ 4000	145 @ 4100	146 Nm @ 4800	135 Nm @ 5000	134 @ 4000
Fuel Efficiency (kmpl)	20.73	16.5	16.8	17.4	16.5

Foot-well lamp operation mode can be selected by combination meter as well as SDT-II.

One of the three modes can be selected.



?LIGht?(Light)

L1-SL1

Foot-well lamp turns ON/OFF synchronously with lighting switch or door switch.

L1-SL2

Foot-well lamp turns ON/OFF synchronously with door switch.

L1-SL3

Foot-well lamp does not operate.

[Battery Protection Function]
If door switch status does not change for 15 minutes with foot-well lamp ON, the lamp dims and turns OFF

Door Lock Control

	Input	Activated door locks	
1-action type	Remote controller or transmitter	All doors	
	Door request switch		
	Power door locking switch (Driver side)		
	Key cylinder		
	Door lock lever	Each operated door	
2-action type	Remote controller or transmitter	Lock	Push LOCK button once and all doors are locked
		Unlock	Push UNLOCK button once and driver side door is unlocked Push UNLOCK button twice and all doors are unlocked
	Door request switch	Lock	Push request switch once and all doors are locked
		Unlock	Push request switch once and operated door is unlocked Push request switch twice and all doors are unlocked
	Power door lock switch (Driver side)		All doors
	Key cylinder	Lock	Turn key cylinder to LOCK position once and all doors are locked
		Unlock	Turn key cylinder to UNLOCK position once and driver side door is unlocked
			Turn key cylinder to UNLOCK position twice and all doors are unlocked
	Door lock lever		Operated door

[Configuration by Scan Tool]

Action type can be selected by Utility of BCM on Scan Tool.

[Configuration by information display]

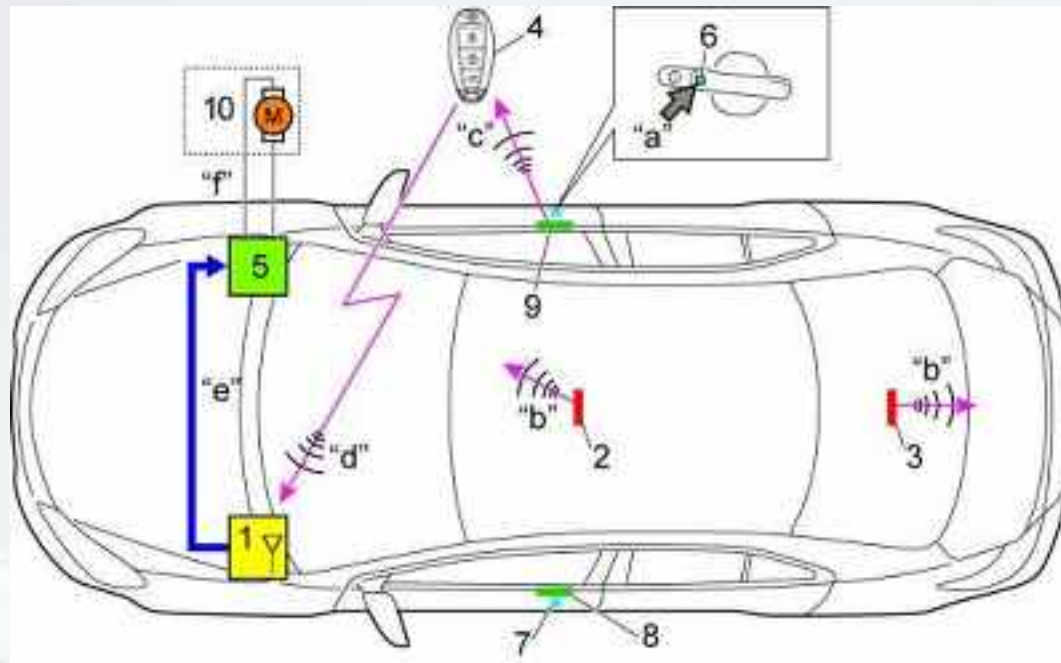
Action type can be also selected by information display.

[Anti-lock-out Function]

Under one of the following conditions, it is not possible to perform lock/unlock operation by keyless transmitter nor power door lock switch.

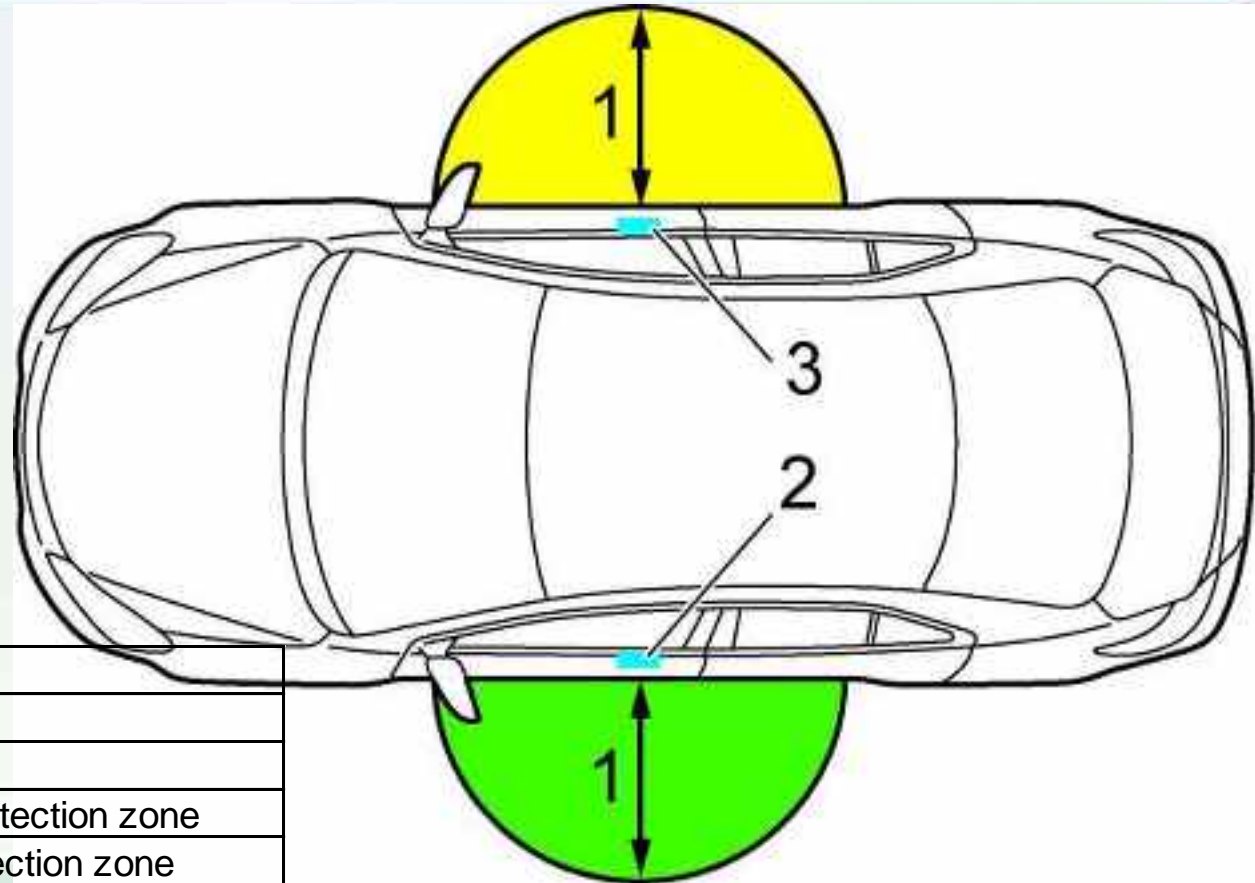
- Ignition key remains in ignition key cylinder
- Any door is open.

Door Lock Operation



1. Upon pressing the door request switch (6 or 7).
2. KLS control module (1) activates antennas (2, 3) and starts communication inside the cabin & trunk.
3. If remote controller (4) is outside the cabin, KLS control module (1) activates the door antenna (8 or 9).
4. Then a request signal is sent to remote controller (4)

5. Remote controller (4) sends ID code to KLS control module (1).
6. If ID code matches the registered one, KLS control module (1) sends lock/unlock request to BCM (5) via CAN.
7. BCM actuates the corresponding door lock motor (10) to lock or unlock the door.



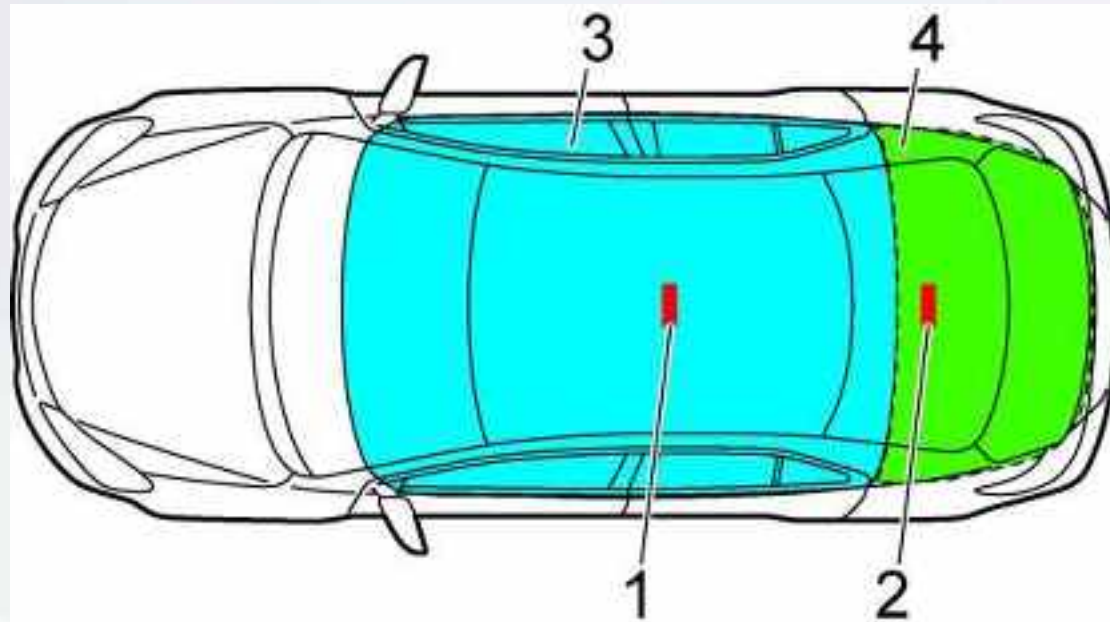
1	Approximately 80cm
2	Left door antenna
3	Right door antenna
	Right door antenna detection zone
	Left door antenna detection zone

Safety Function

1) Door request switch is neglected in the following cases

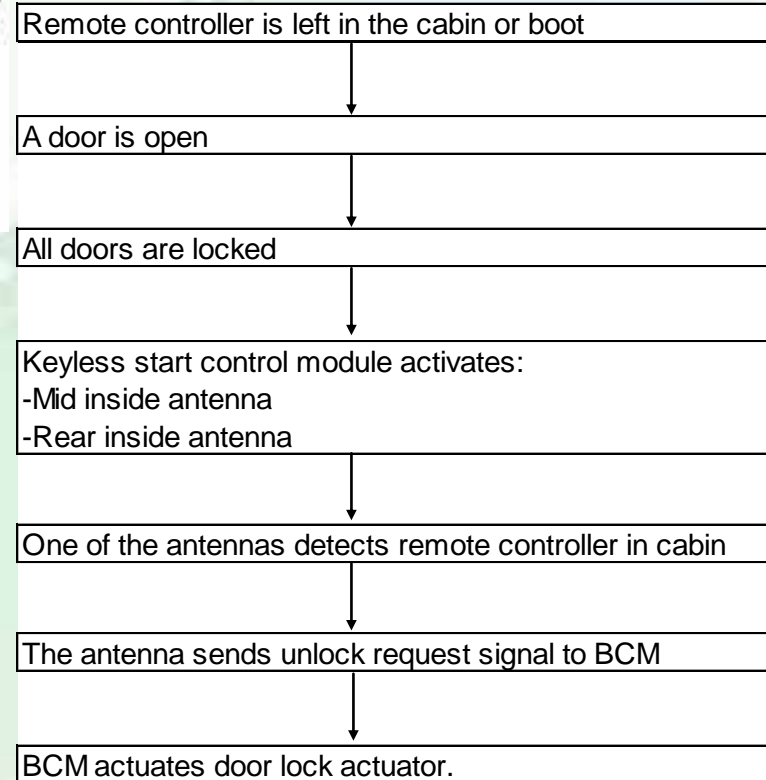
- Keyless remote controller is out of operation range (colored zone in figure above).
- Keyless remote controller is inside the cabin
- Ignition switch remains ACC or ON state.
- A door is open

2) All doors will be locked if 30 seconds passed without opening the door after unlocking.

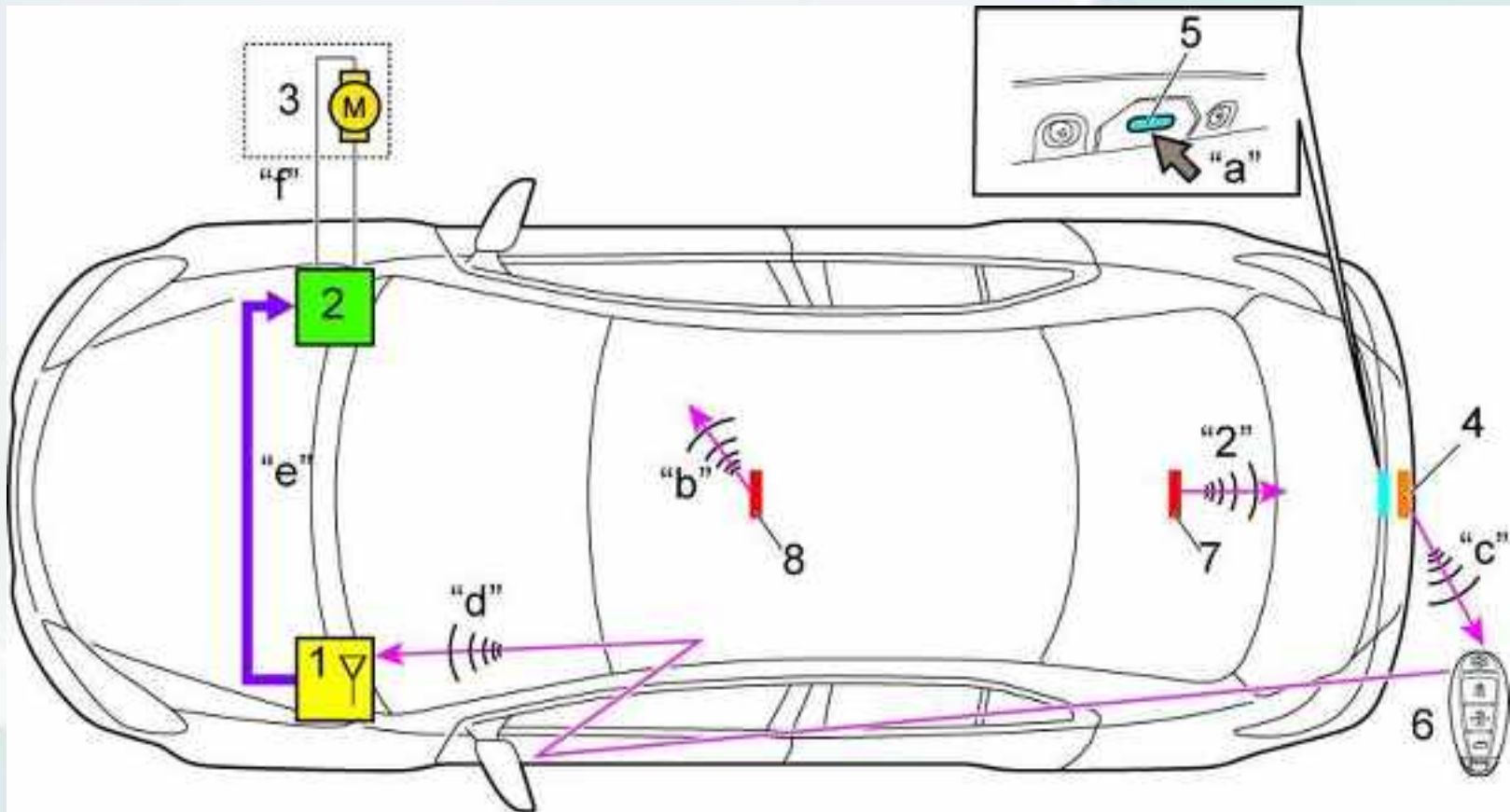


1	Mid inside antenna
2	Rear inside antenna
3	Detection range of mid inside antenna
4	Detection range of rear inside antenna

Anti-Lock-Out Function



Trunk Lid Opener Operation

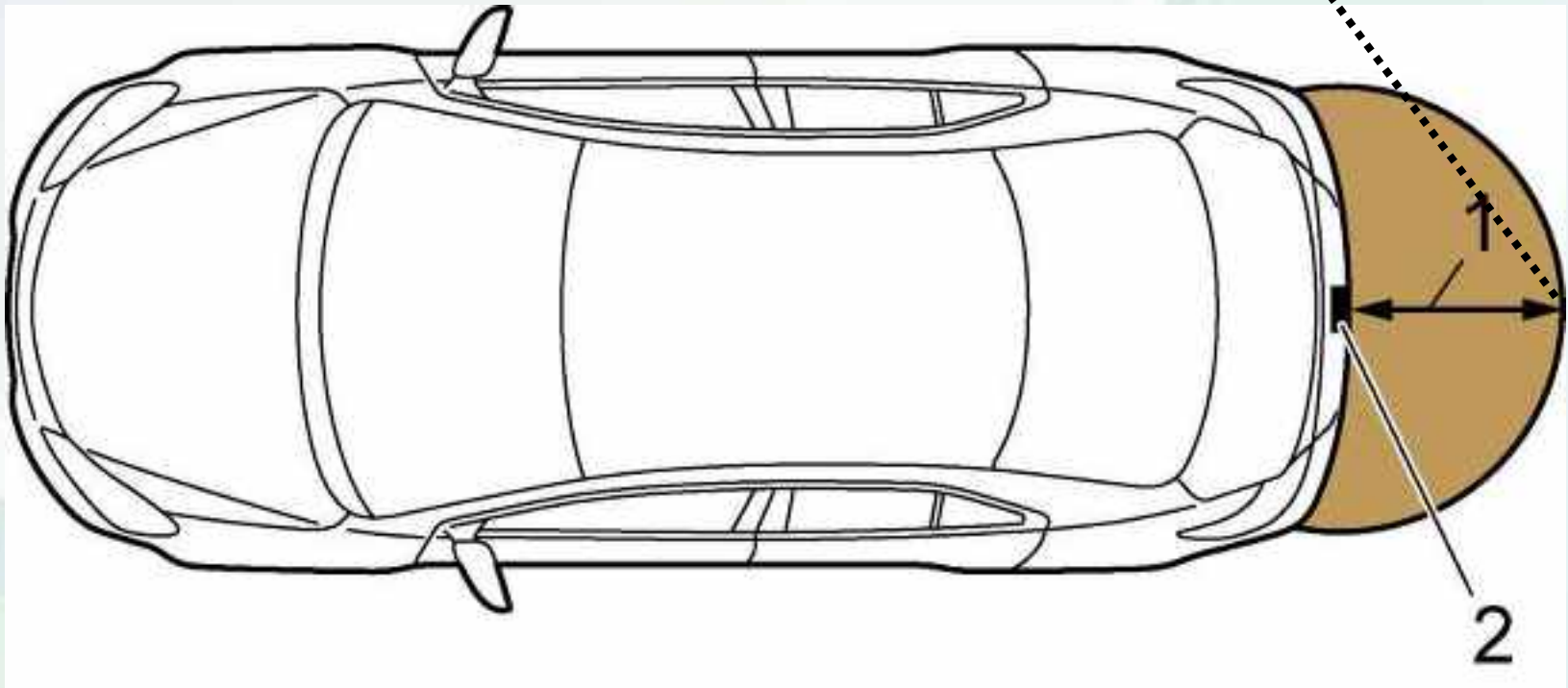


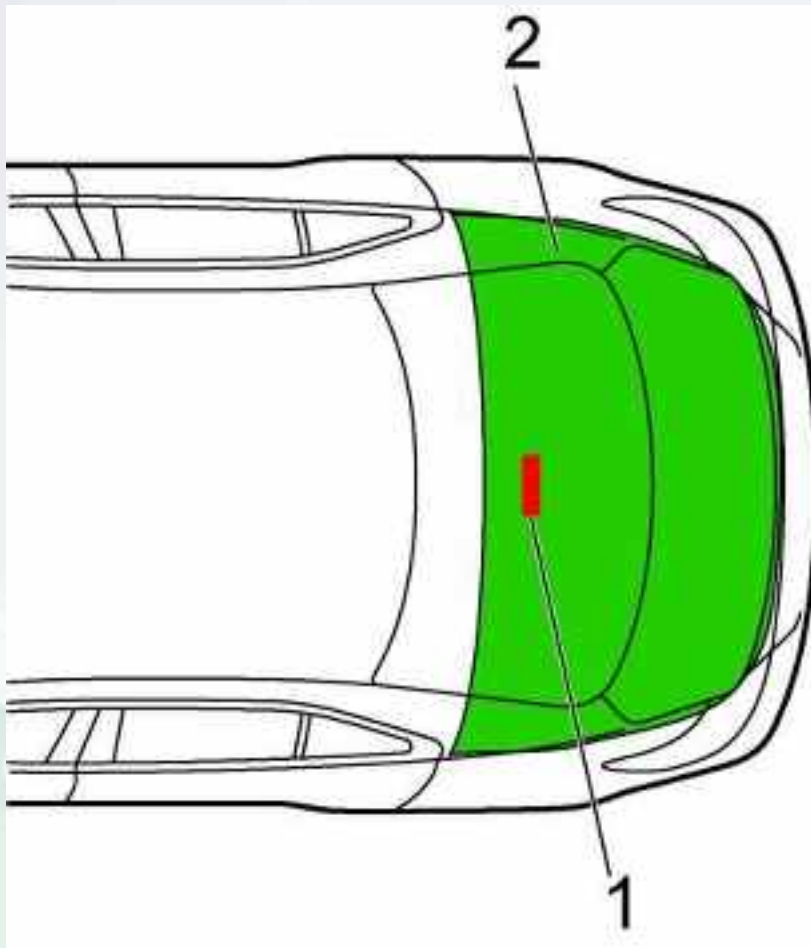
- | |
|--|
| (a) Press trunk lid request switch (5). |
| (b) KLS control module (1) activates antennas (7, 8) and starts communication inside the cabin & trunk. |
| (c) If remote controller (6) is outside the cabin, KLS control module (1) activates the trunk lid antenna (4). Then a request signal is sent to remote controller (6). |
| (d) Remote controller (6) sends secret code to KLS control module (1). |
| (e) If secret code matches the registered one, KLS control module (1) sends unlock request to BCM (2). |
| (f) BCM actuates the trunk lid actuator motor (3) to unlock the trunk lid. |

Trunk Lid Opener Operation

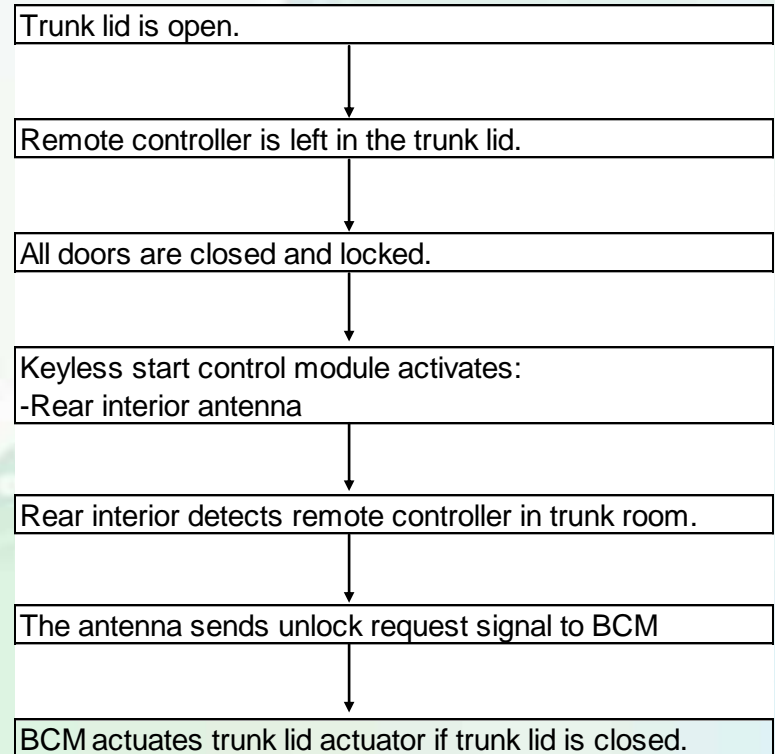
1	Trunk lid antenna
2	Trunk lid antenna pick up zone

Approximately 80cm (31")





Anti-Lock-Out Function



1	Rear interior antenna
2	Detection range of rear interior antenna

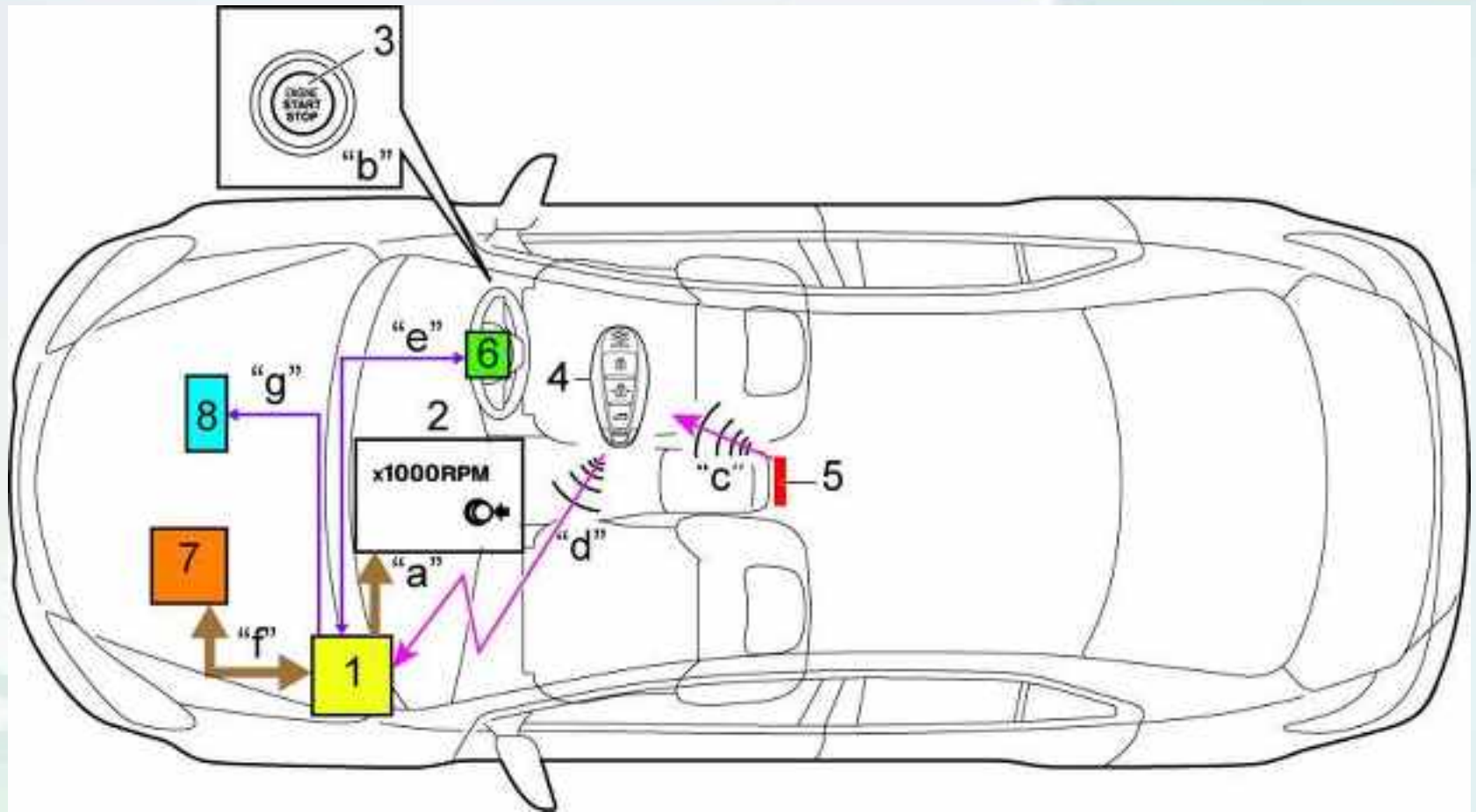
Trunk lid manual Unlock



Trunk lid manual unlatch cable

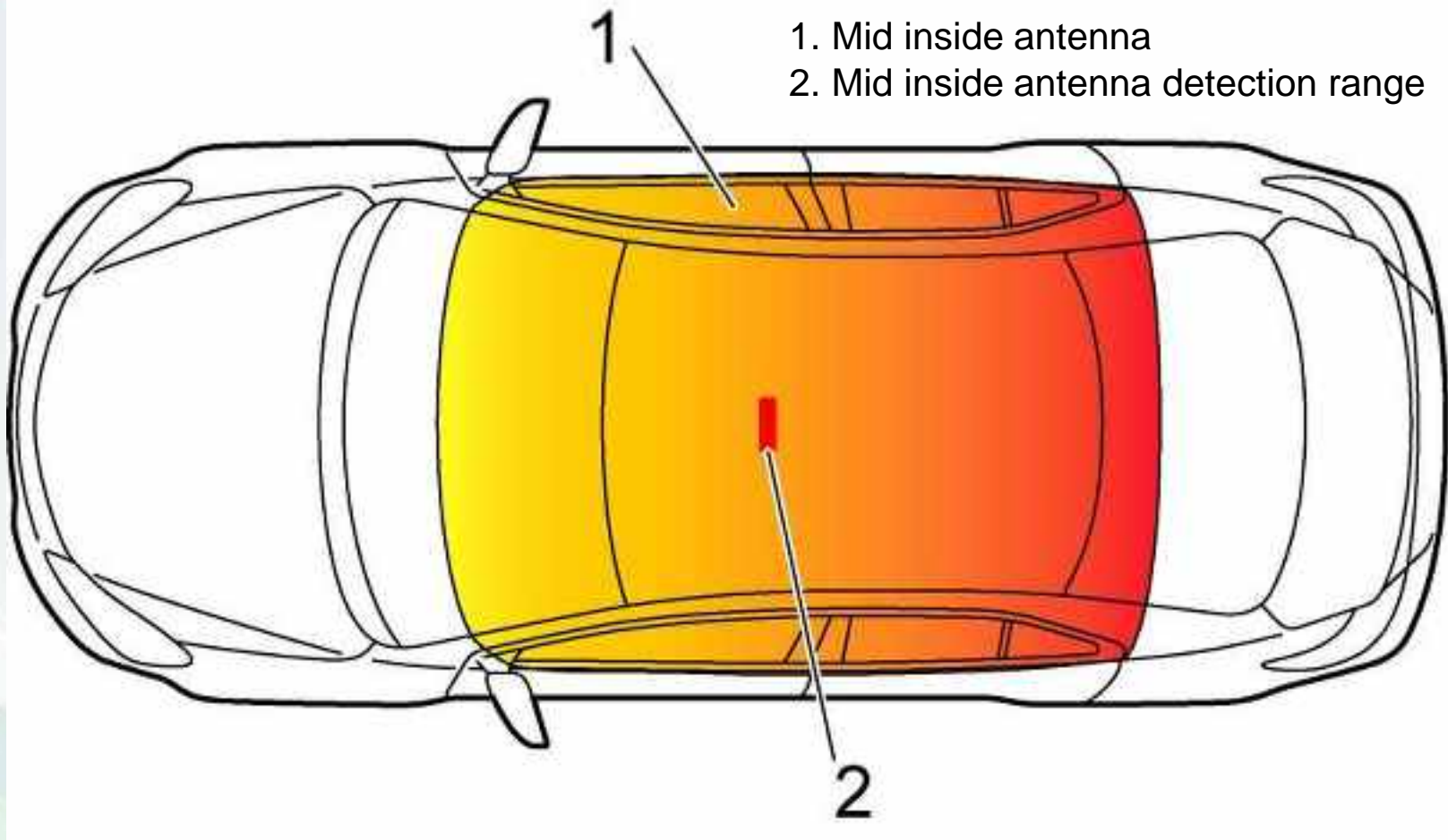


Engine Start Operation



1. Keyless start control module	4. Remote controller	7. ECM
2. Message on info. display	5. Mid inside antenna	8. Starting motor relay
3. Engine push switch	6. Auto steering lock	

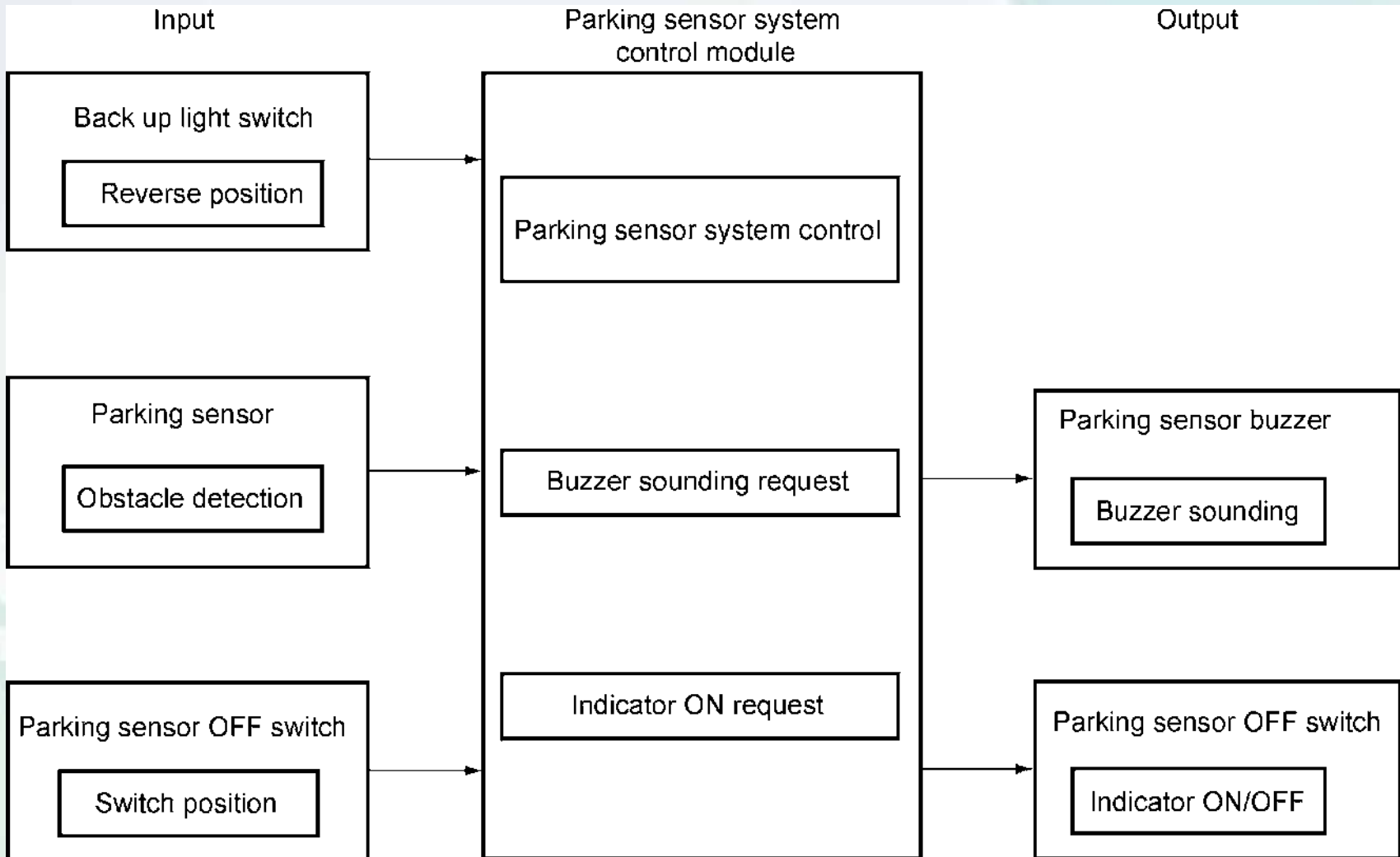
1. The driver steps on the clutch pedal (M/T) or steps on the brake pedal with P range (A/T). KLS control module (1) sends request to combination meter via CAN bus line to show message (2).
2. The driver presses the engine push switch (3).
3. KLS control module (1) activates mid inside antenna (5) and sends a request signal to remote controller (4).
4. KLS remote controller (4) sends ID code to keyless start control module (1).
5. KLS control module (1) confirms that ID code from the remote controller (4) matches the one registered in the control module (1). Then control module (1) sends request to auto steering lock unit (6) to unlock the steering.
6. The control module (1) sends a permission signal to ECM (7) via CAN bus line.
7. The control module (2) turns on the starting motor relay (8) to start the engine.



Safety Function

- 1) Engine does not start with keyless start remote controller outside the range shown above.
- 2) Engine does not start with unregistered key.

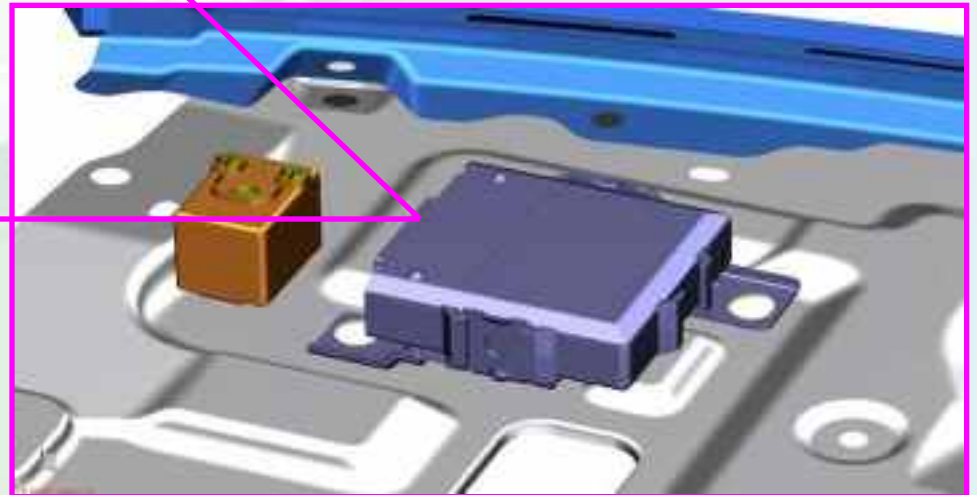
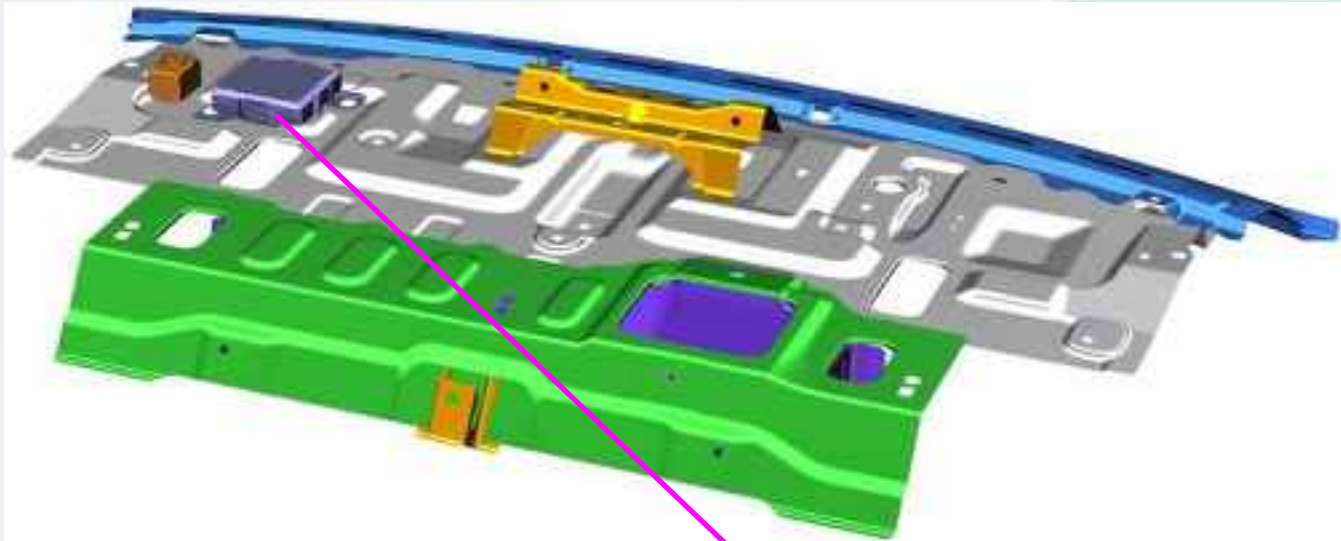
Parking Sensor System - Input / Output Chart



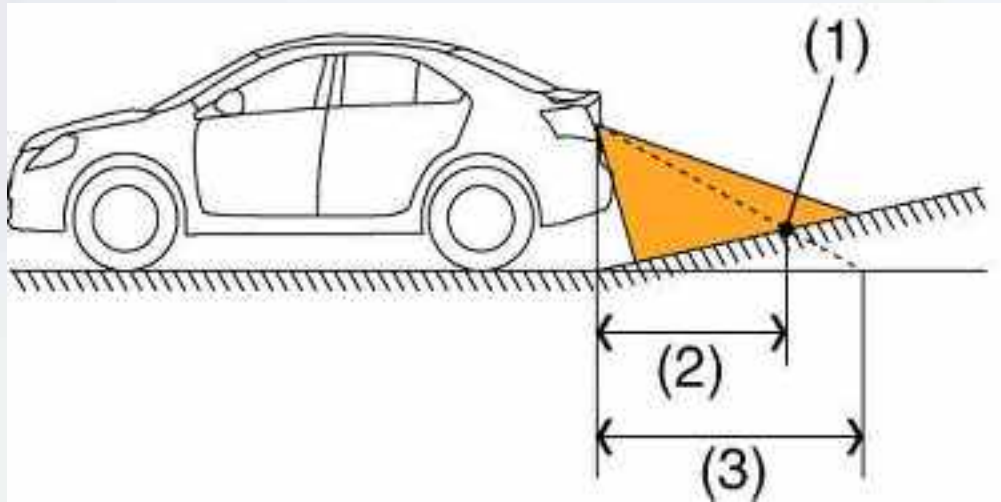
Component Layout ? Parking Sensor



Component Layout ? Parking Sensor

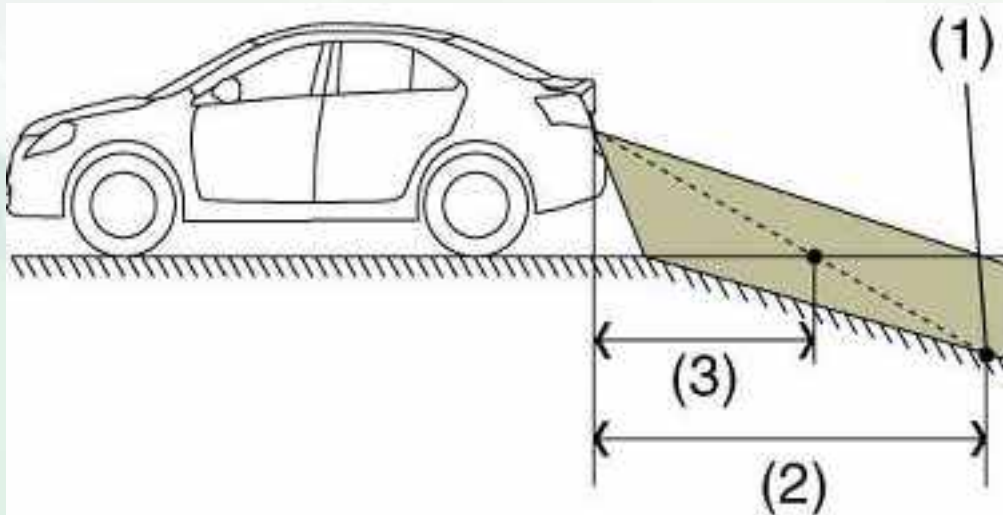


Rear View Mirror System



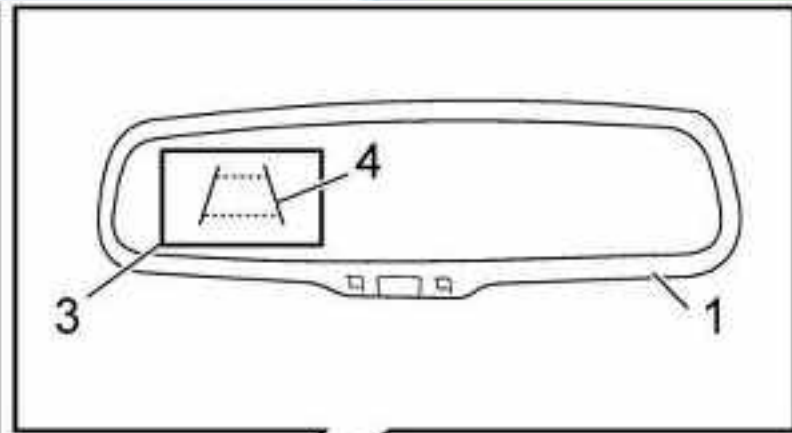
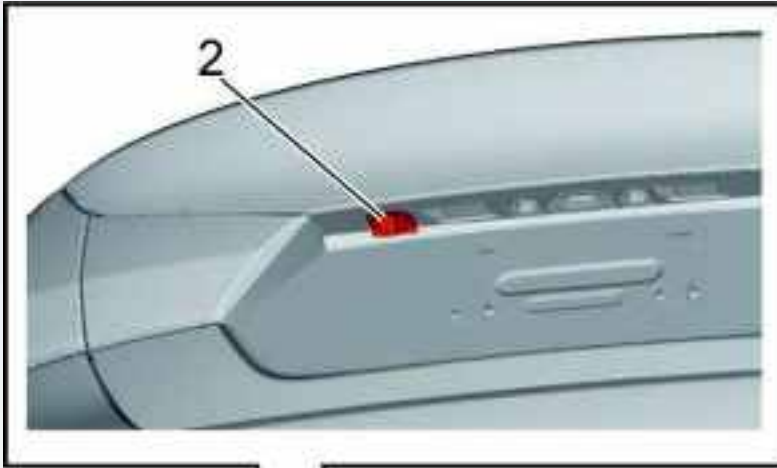
[Uphill behind the vehicle]

- (1) Object
- (2) Actual distance
- (3) Distance on the display

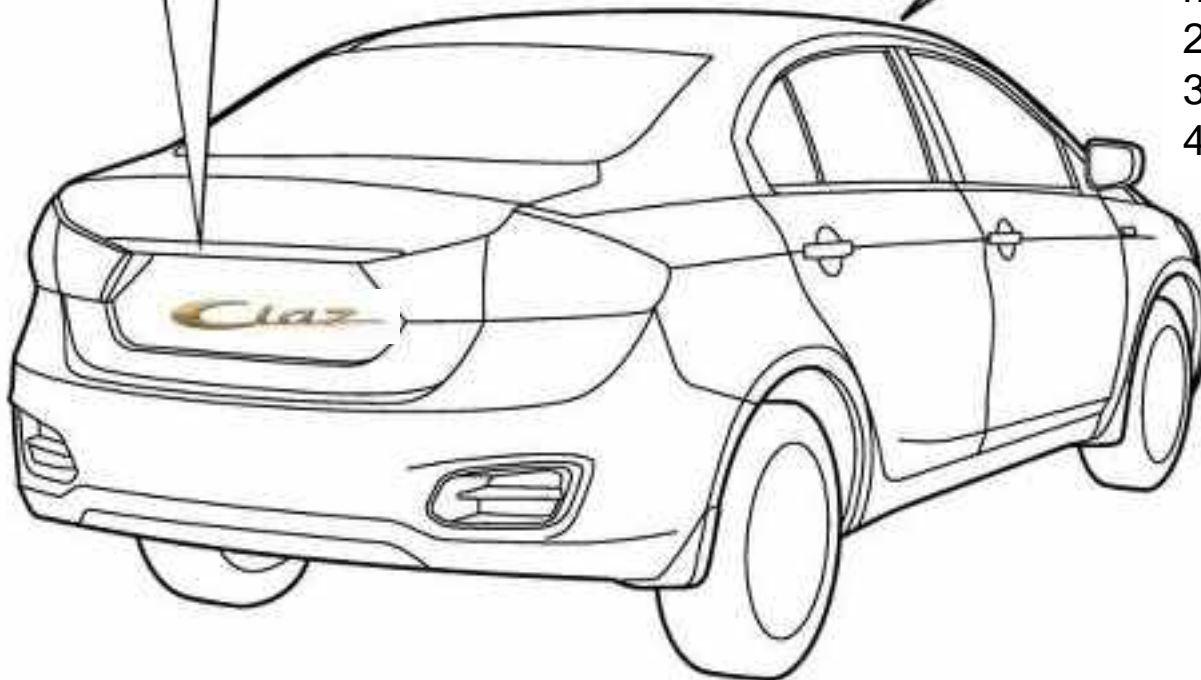


[Downhill behind the vehicle]

Rear View Mirror System



1. Inside rear view mirror
2. Rear view camera
3. Monitor section
4. Parking guidelines

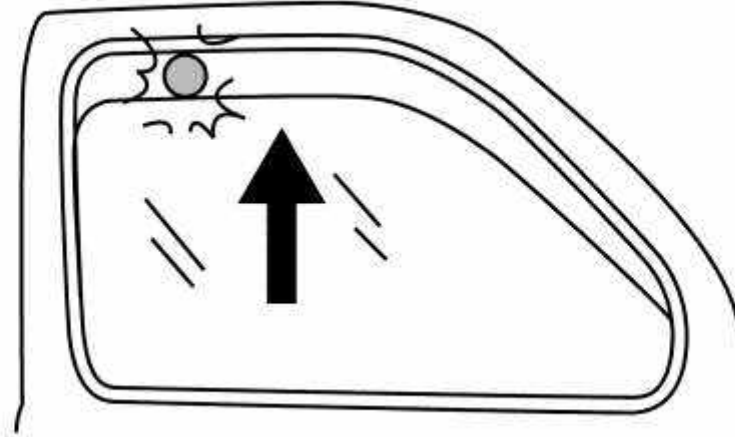


Rear View Mirror System

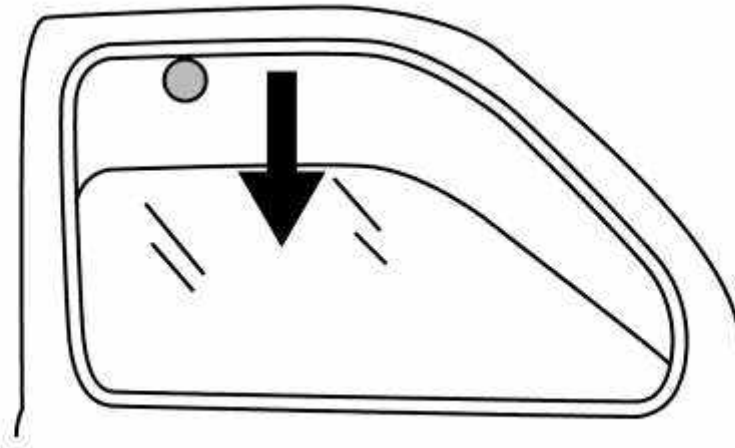


[A]

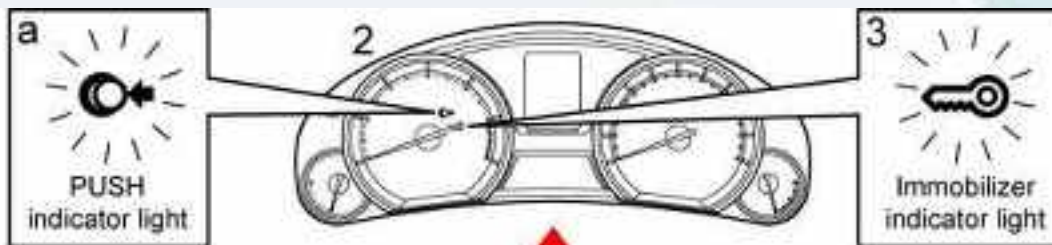
Pinching prevention function





[B]

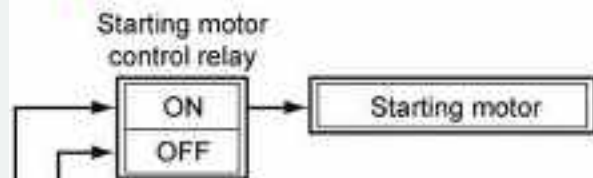


Immobilizer Operation

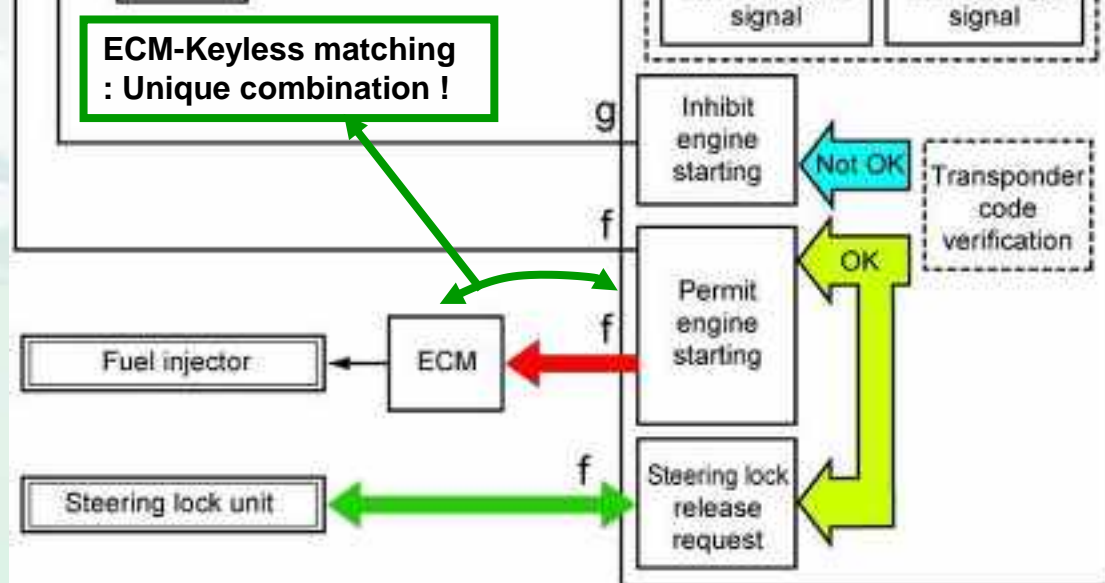


1. Keyless start control module
2. Combination meter
3. Immobilizer warning indicator
4. Remote controller
5. Engine switch with coil antenna

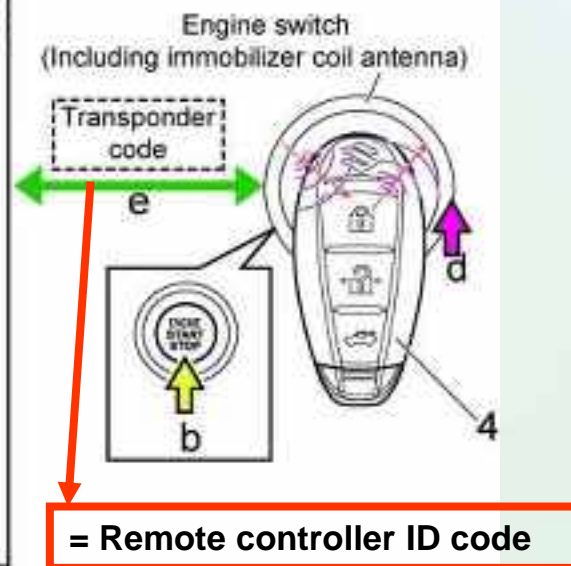
 : CAN communication
 : Serial communication



ECM-Keyless matching : Unique combination !



- a. Depress clutch (or brake pedal in P/N range). Message
- b. Press engine switch.
- c. Immobilizer warning indicator appears.
- d. Get remote controller in contact with engine switch (2 sec.).
- e. Keyless start control module reads TP code via coil antenna.
- f. If TP code matches the registered one, starting motor relay turns ON. Steering lock is unlocked. Engine starting permission is sent to ECM.
- g. If TP code verification failed, starting motor relay is not energized.



1. When depressing clutch pedal (M/T) or the brake pedal with shift position in P or N range (A/T), keyless start control module sends message request signal to combination meter via CAN bus. Push indicator lamp is lit on the information display.
2. Push engine switch.
3. Keyless start control module sends request to combination meter via CAN bus, so that immobilizer warning indicator turns ON.
4. Place the remote controller onto the engine switch while PUSH indicator lamp is shown on the information display.
5. Keyless start control module charges the charging circuit in the transponder in the remote controller. The remote controller transmits TP code (ID code) to coil antenna. The keyless start control module receives the TP code from the coil antenna.
6. If the TP code sent from the remote controller matches the TP code registered in the keyless start control module, the control module energizes the starting motor relay to operate the starting motor. The control module also sends request to AUTO steering lock unit to unlock the steering. The control module, at the same time, communicates with ECM to check if the ECM is the registered one. If yes, keyless start control module sends permission signal to ECM so that ECM can operate fuel injectors and ignition coils.
7. If the TP code does not match the registered one, keyless start control module does not energize the starting motor relay, so that engine cannot start.



Engine Mechanical ? D13A



Type	D13A
Valve mechanism	DOHC 4 valves chain driven
Displace. (cc)	1248
Bore (mm)	69.6
Stroke (mm)	82.0
Compression ratio	17.6
Ignition order	1-3-4-2
Max power (kw/rpm)	66/4000
Max torque (Nm/rpm)	200/1750



Engine Mechanical ? K14B

Engine Specifications

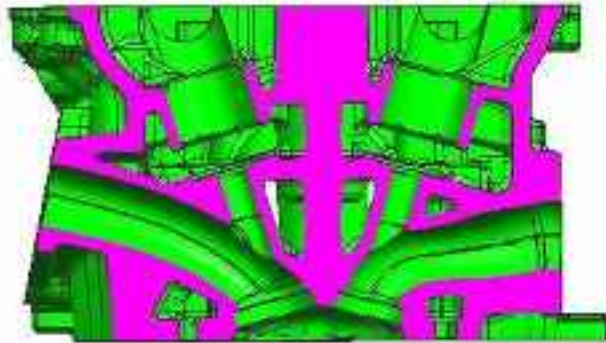
Type	K14B
Valve mechanism	DOHC 4 valves chain driven
Displace. (cc)	1372
Bore (mm)	73.0
Stroke (mm)	82.0
Compression ratio	11.0
Ignition order	1-3-4-2
Max Power	62 Kw @ 6000 RPM
Max Torque	115 Nm @ 4000 RPM



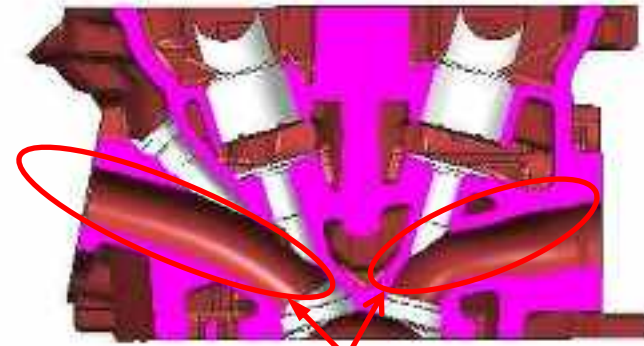
Modification ? Cylinder Head

- **Knock resistance improvement ?** New Combustion chamber, Intake & Exhaust port profile, Intake & Exhaust valve size.

Current



New



Port profile is change

	Current	New
Valve sheet OD	IN: $\phi 28$ EX: $\phi 24$	IN: $\phi 26$ EX: $\phi 23$
Valve sheet position	IN: 103 EX: 102.5	IN: 105 EX: 104.5
Port cutter ID	IN: $\phi 23.5$ EX: $\phi 19$	IN: $\phi 21.5$ EX: $\phi 18$
45° Face ID	IN: $\phi 26.7$ EX: $\phi 22.2$	IN: $\phi 24.7$ EX: $\phi 21.2$
45° Face position (from cam)	IN: 108.5 EX: 108	IN: 110.5 EX: 110

Modification ? Long reach Spark Plug

Purpose : Combustion improvement, Head cooling improvement

CURRENT



New



Improved cooling around
combustion chamber

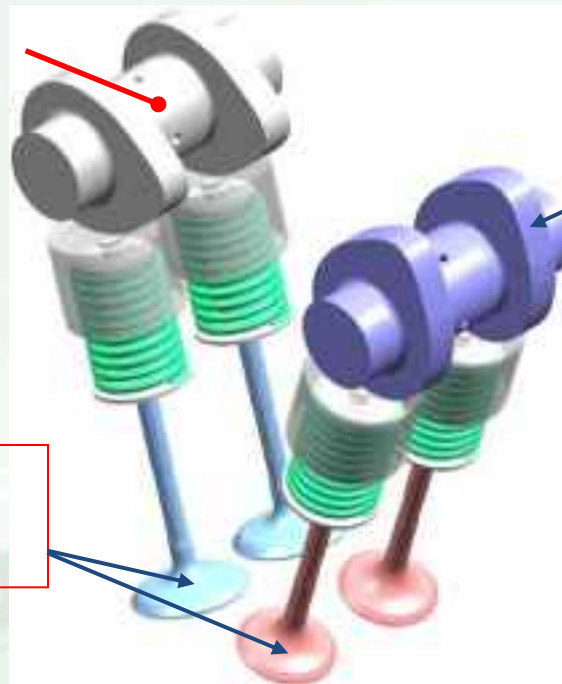


Modification ? Valve Train System

Purpose : To improve combustion.

Modification : Modification in EXH Cam shaft

Intk Cam : No change

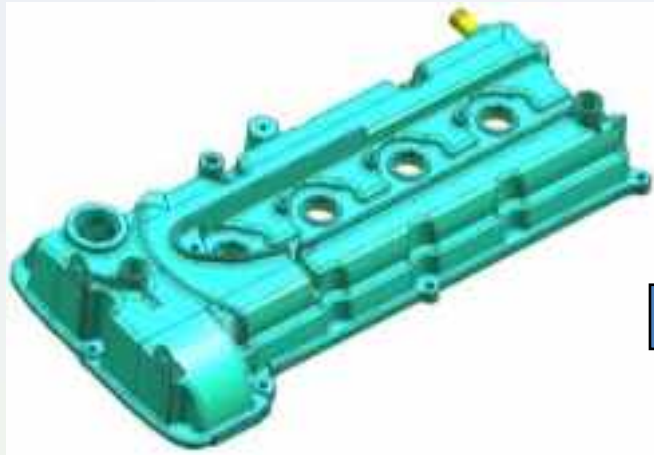


change in Open/Close timing

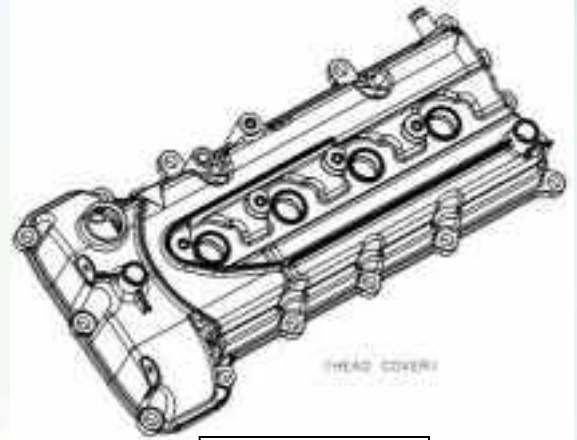
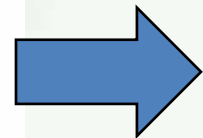
Uncommon parts
-Valve, Intk
- Valve, Exh

Reduce Valve size
INTK: 27.5 25.5
EXH: 22.9 21.9

Modification ? Cylinder Head Cover



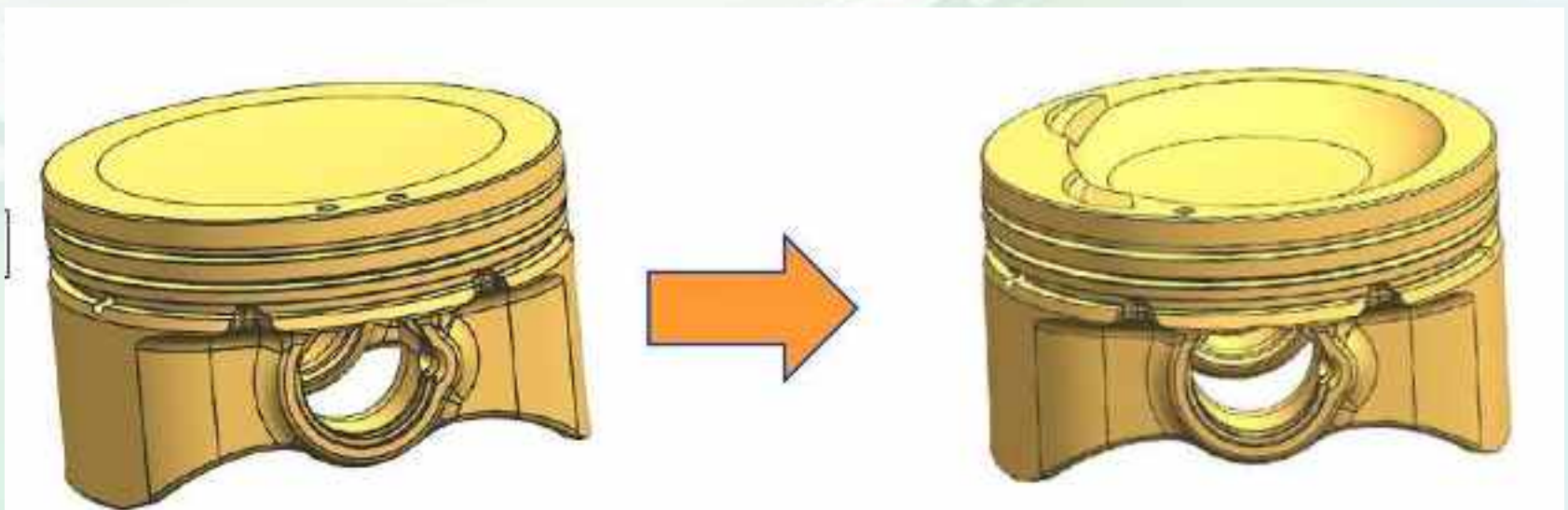
CURRENT
(Aluminum)



New (Plastic)

Modification ? Piston

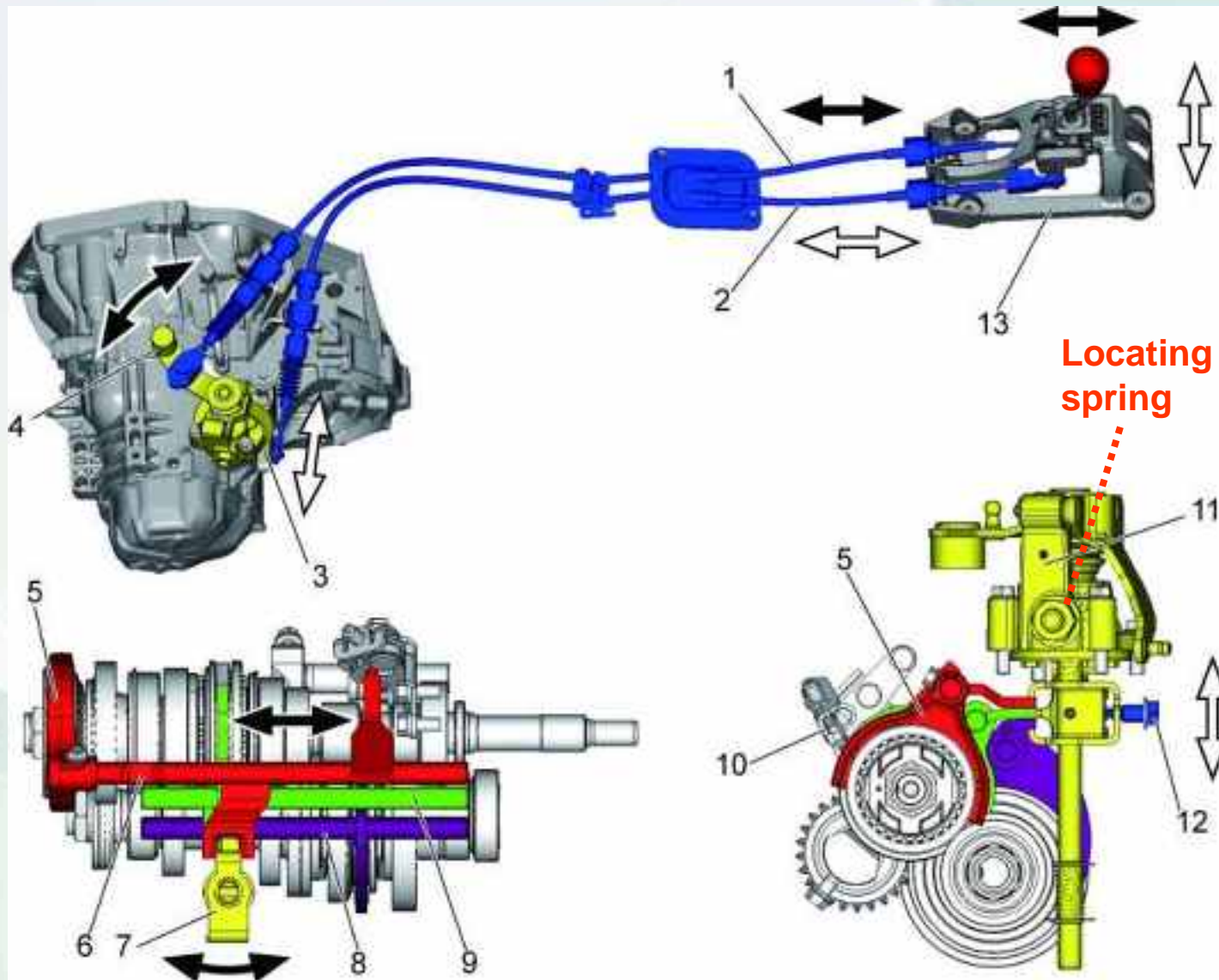
Engine	K14B	
Model	Ertiga/Swift	Ciaz
Material	Aluminum Alloy	
Top Volume (cc)	4.63	9.70
Outer Diameter (mm)	72.978 to 72.990	
Height (mm)	43.25	
Pin to Top distance	26.0	
Oil Ring Tension	11 Nm	9 Nm



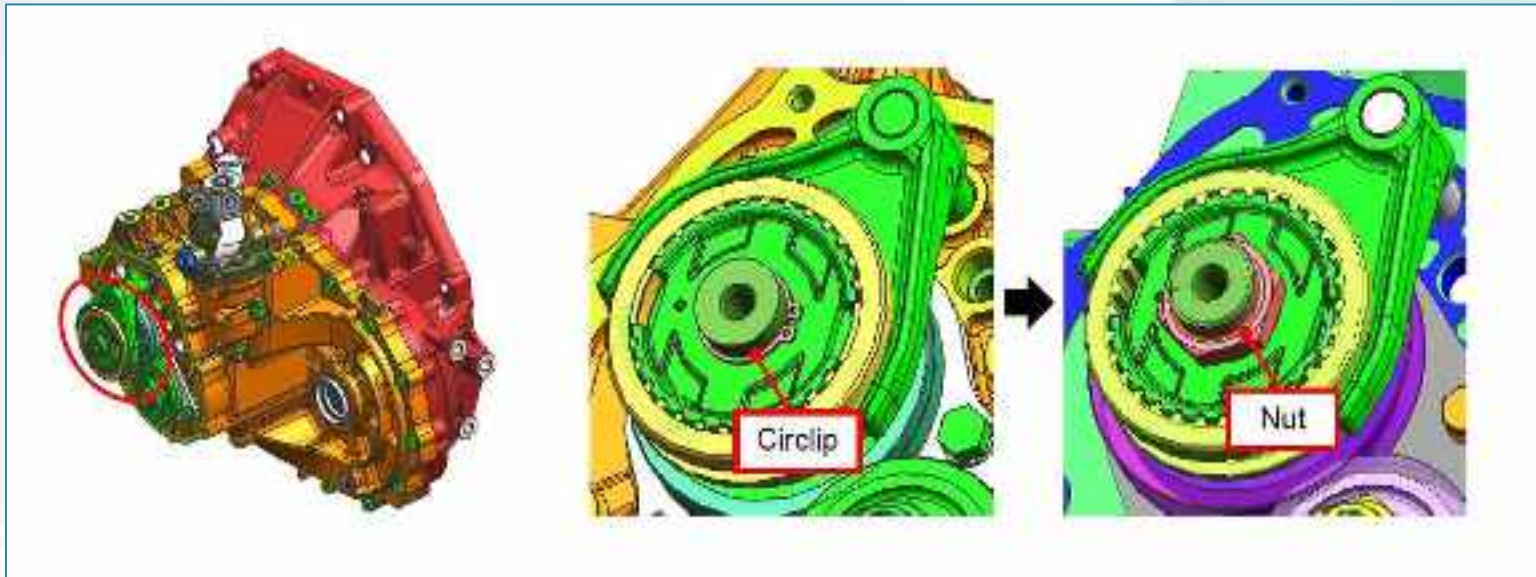


Manual Transmission

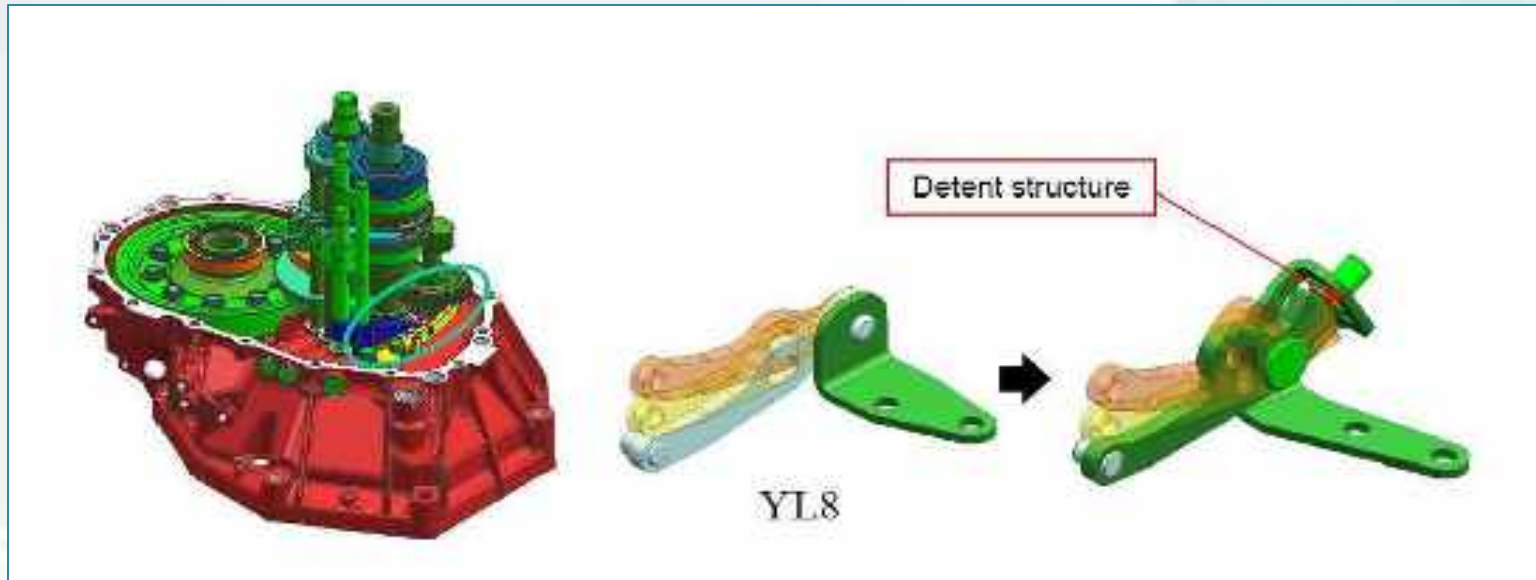
Gear Shift Mechanism



Modification ? Transmission (MT)



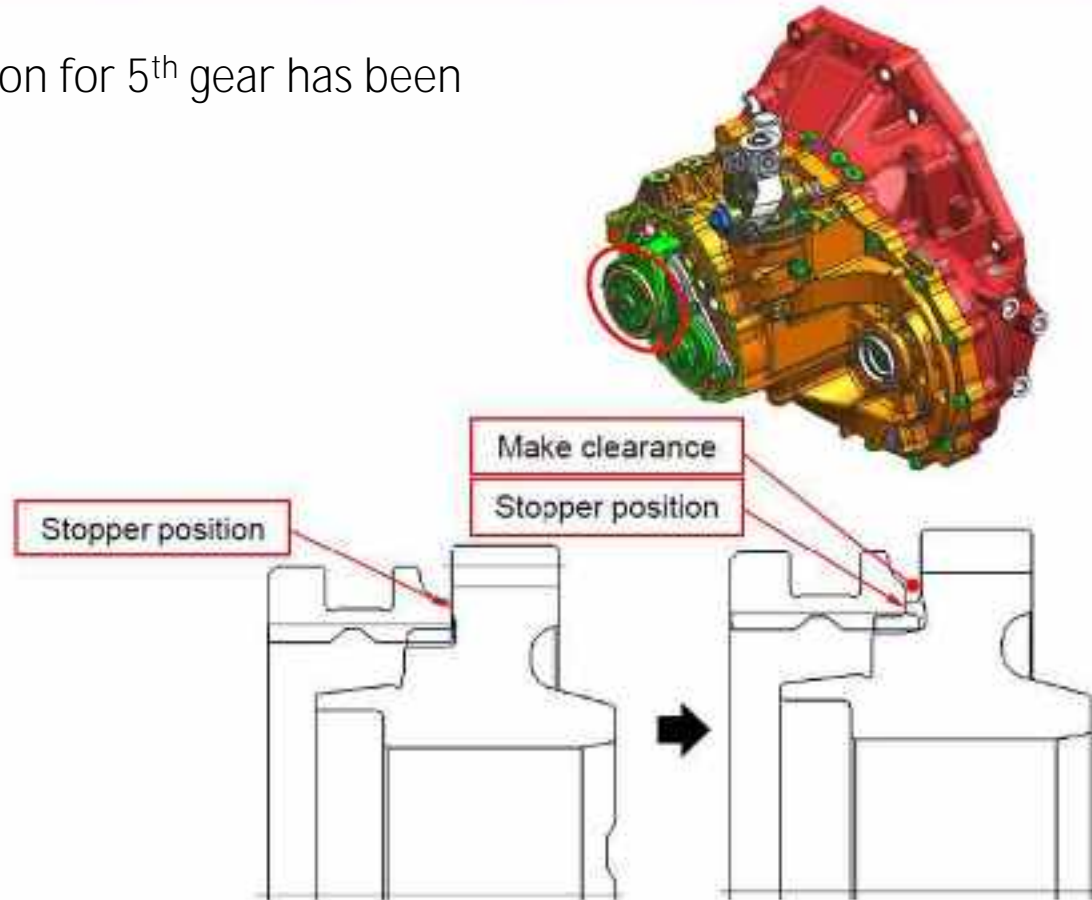
Method for fixing 5th gear hub is changed from Circlip method to Nut.



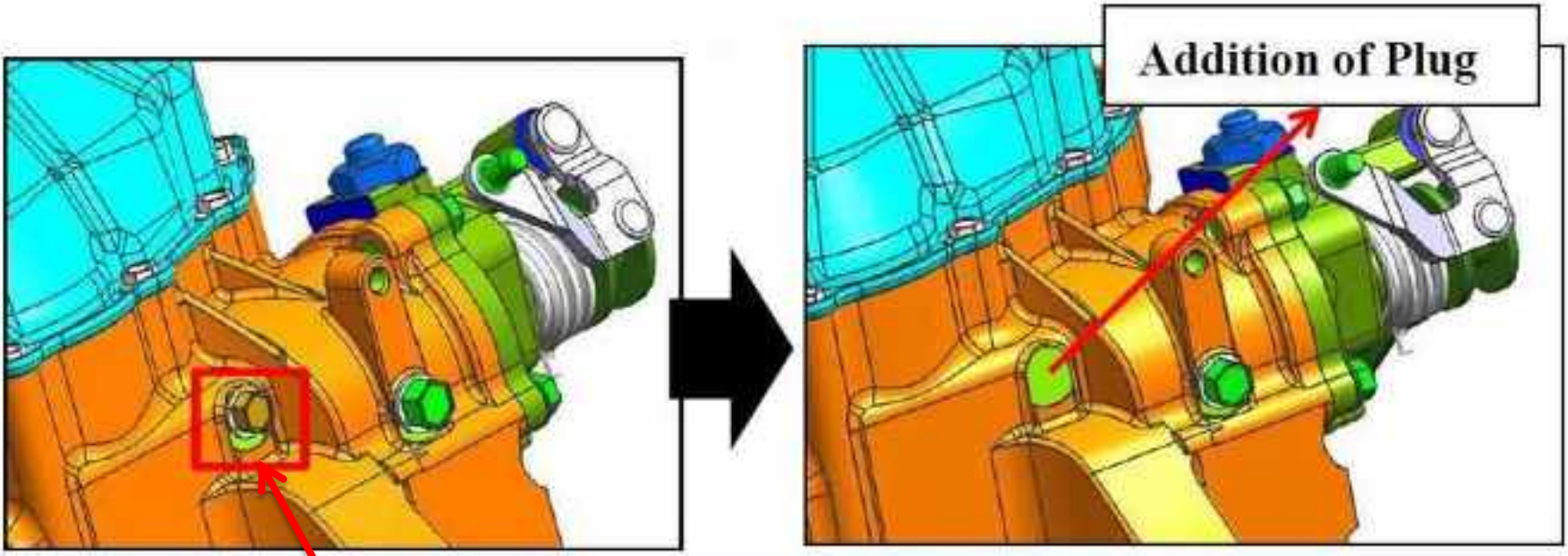
The detent structure is added to Reverse Lever

Modification ? Transmission (MT)

1. Stopper position for 5th gear has been changed.



Modification ? Transmission (MT)

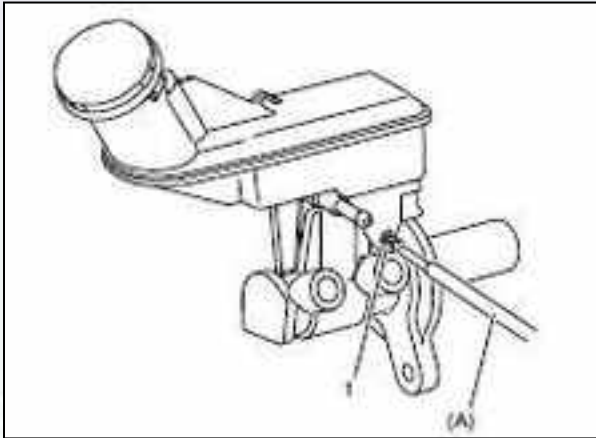


Elimination of Interlock Bolt

Transmission Oil changed to Low viscosity oil
75W-90 to 75W-80

Special Tools

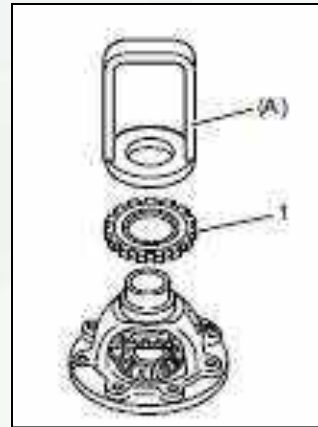
09916-44310
Valve guide remover (5 mm)



Valve guide remover (5 mm)

During removal of Brake Master Cylinder Reservoir; remove the spring pin using special tool.

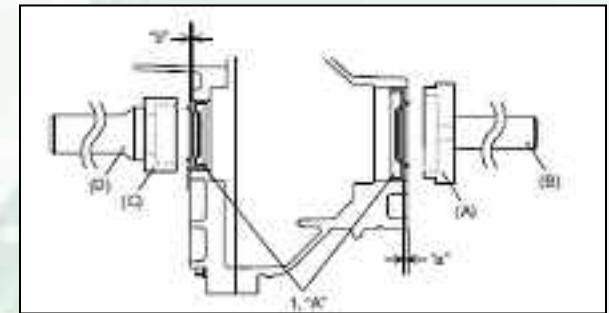
09913-75840
Sensor ring installer



Sensor ring installer

For non-ABS models to press-fit the speed sensor ring can be installed using special tool and hydraulic press.

09951-46010
Drive shaft oil seal installer



Drive shaft oil seal installer

Installing Differential side oil seal using special tool

Smartphone Linkage Display Audio

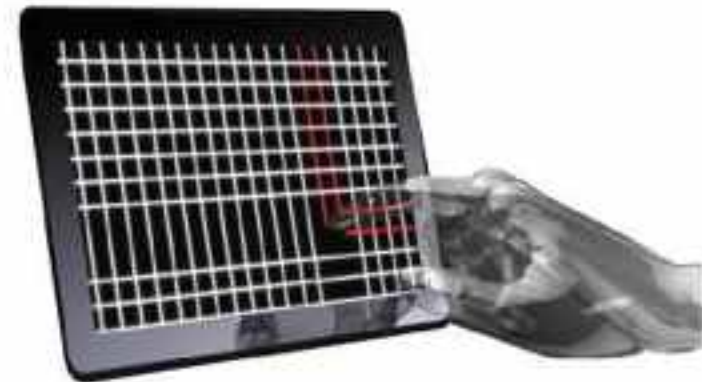
SLDA ? Infotainment System



- Mech-less HMI concept with soft touch buttons.
- 7" WVGA display with Touch Screen
- Main Menu shows 4 application areas
 - Audio (Tuner/Media)
 - Bluetooth
 - Navigation
 - Smartphone Integration (SPI)
- Voice Recognition



The object blocks the Light emitted by LED.



Advantages:-

- 1) Flick, pinch in, pinch out operations are possible.
- 2) Feather touch type feelings similar to capacitive.
- 3) Possible to operate touch using hand gloves.

Features:-

- AM/FM
- Media
- External DVD Player

Feature rich media capability



AM/FM Tuner



Media Playback Management

Audio Playback Management

- Audio playback management commands:
 - Play
 - Pause / Resume
 - Stop
 - Next track
 - Previous track
 - Fast forward
 - Fast rewind
 - Shuffle
 - Repeat

- Playback management possible with USB Mass Storage Device, SD card, Bluetooth audio streaming, cell phones and Apple devices.

- Audio formats supported: MP3, AAC, WMA



Video Playback Management

- Video playback management commands:
 - Play
 - Pause / Resume
 - Stop
 - Next track
 - Previous track
 - Fast forward
 - Fast rewind
 - Repeat

- Playback management possible with USB Mass Storage Device and SD Card

- Video formats supported: MPEG-4, H.264



External DVD Player



- All audio and video decoding in the external device
- Head-unit fitted with additional interfaces & connectors: analogue audio in, analogue video in
- Head-unit HMI implements only a switch to the external audio / video source

Features:-

- BT 3.0
- BT calling
- Call log
- Phone Contacts
- SMS call back
- Dialpad
- BT remote control App
 - **Compatible with Android and iOS**
 - **Connected via Bluetooth**



Functions to be considered:

Play / Pause, Next / Previous Song or Station,
Source Change, Volume Up/Down, Mute/, ...

•Pairing of bluetooth device with head unit



•Receiving call



Calling facility – After BT pairing Phone book and call logs will be available.



Features:-

- 2D and birdview map
- Acoustic route guidance
- Map Data stored on SD card
- MSIL specific POI
- Large number of POI's available for customer ease



Customized for Indian market India specific Destination Entry flow

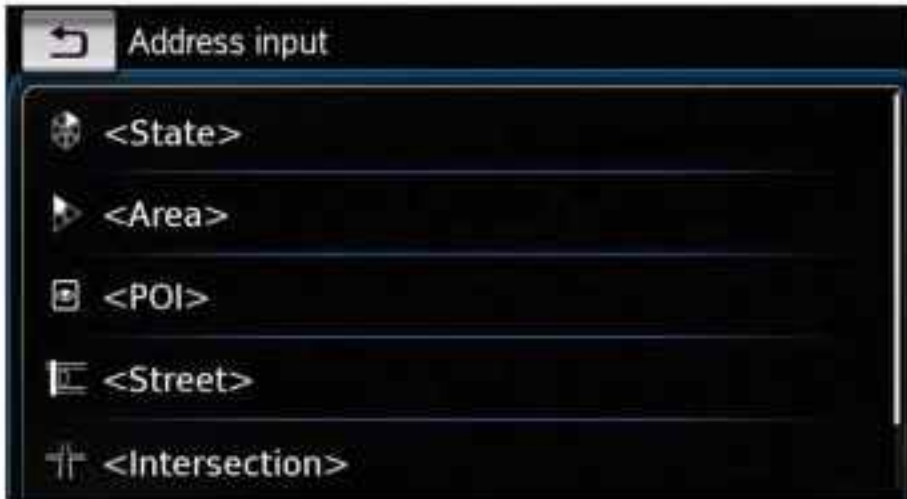


Address input –



Key features -

- Limited entry to reduce user interaction
- Customized for Indian market



- Large number of POI's (Point Of Interest) available for ease of customer

MSIL specific POI



MirrorLink Car Mode App

- The native smartphone screen is not longer duplicated on the HU when the vehicle is in motion.
- Instead, the **Car Mode app** is launched, and only pre-approved apps such as music, navigation and phone features will be available on the HU.



Example Car Mode HMI from different smartphone vendors

→ SLDA has advanced VR functions for India in Indian English e.g. :

- Destination entry
- POI search
by categories and proper names
- Music search by voice
by title, artist, album, genre
- Number & name dialing



Music search by voice

Say artist, album, genre and / or title to select the track to be played



- A single analogue camera displaying the rear view of vehicle on Head Unit
- Directly hardwired to the back of Head Unit
- Activating reverse gear turns on the camera with rear display available on Head Unit
- Aids in backing up, and alleviating the rear blind spot



Commonly used controls listed below available on steering wheel for ease of driver operation and safety :

- Mute
- Vol +
- Vol -
- Mode
- < (Previous)
- > (Next)
- VR
- OFF Hook
- ON Hook

