

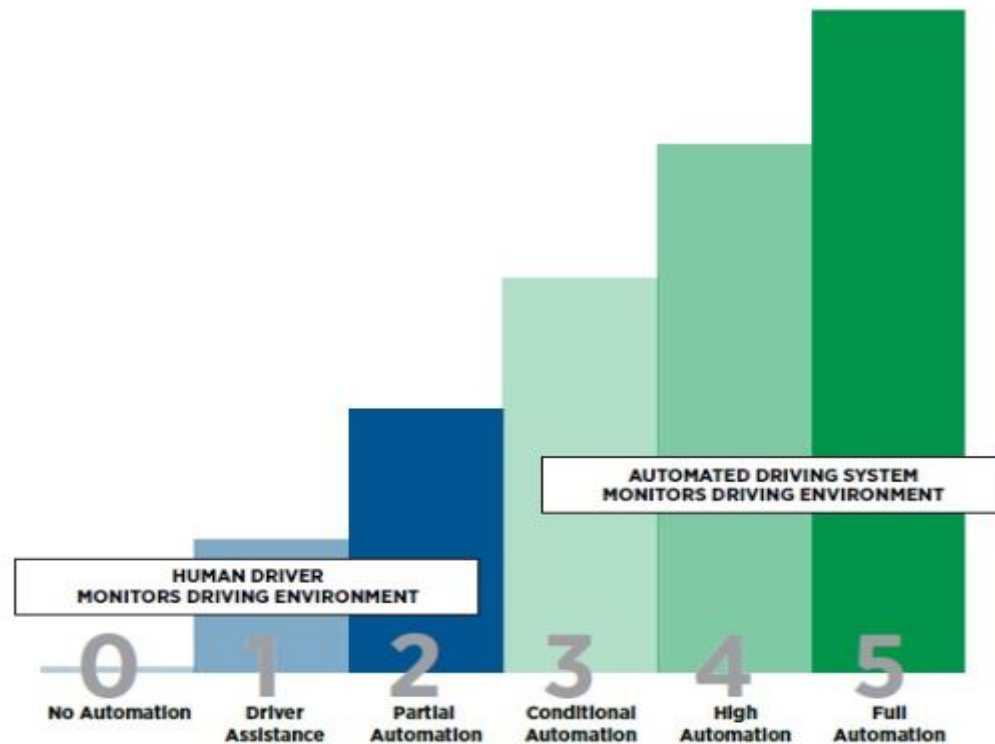
Honda ADAS Systems

Today and Tomorrow

Honda
SENSING



Levels of Automated Driver Assist Systems



Honda is targeting 2025 for introduction of vehicles with level 4 automation

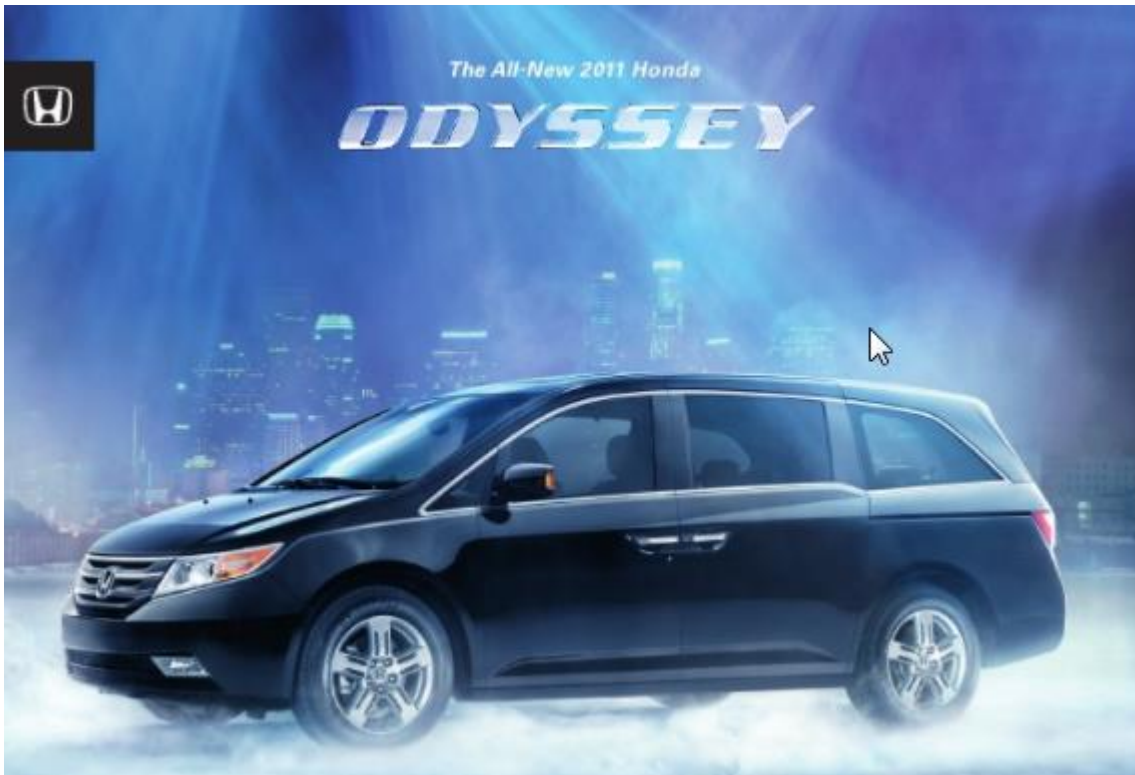
Honda's 2030 Vision includes a goal to lead efforts to realize a collision-free mobile society

The levels of automated driving.

Source: Society of Automotive Engineers

Overview

- 2011 – 2015 ADAS Systems available individually
- 2016 – Current HondaSensing and AcuraWatch ADAS Suites



How to Identify vehicles with ADAS 2011-2015

Service Express
or SIS keyword
“Aiming”



Job Aid

October 31, 2017

03525 Version 1

Aiming Driving Support Systems

Replaces 14-028, *Special Tools for Camera and Radar Aiming*

APPLIES TO:

Year	Model	Trim
2013–15	Accord	EX, EX-L, Touring
2014–15, 2017	Accord Hybrid	ALL
2014	Accord Plug-In	ALL
2016–17	Accord	LX, Sport, EX, EX-L, Touring
2018	Accord	ALL
2014–15	Civic	EX, EX-L, Si, Natural Gas
2013–15	Civic Hybrid	ALL
2016–18	Civic	LX, EX, EX-L, Sport-Touring, Touring
2017	Clarity Fuel Cell	ALL
2017	Clarity Electric	ALL
2015–16	CR-V	EX, EX-L, Touring
2017–18	CR-V	EX, EX-L, Touring
2016	CR-Z	EX, EX-L
2015–16	Crosstour	EX, EX-L
2015–18	Fit	LX, Sport, EX, EX-L
2016–18	HR-V	EX, EX-L
2016–17	Pilot	EX, EX-L, Touring, Elite
2011–13	Odyssey	Touring
2014–17	Odyssey	EX, SE, EX-L, Touring, Touring-Elite
2018	Odyssey	EX, EX-L, Touring, Elite
2017–2018	Ridgeline	RTL-E, Black Edition

How to identify
vehicles with
ADAS 2016 –
current

Service Express
or SIS keyword
“VIN CODE”

8th Digit of VIN

VIN, Engine, (Motor), Transmission Numbers, and Paint Codes

NOTE: Unless otherwise indicated, the illustrations show the 4-door models.

Vehicle Identification Number

19X FC2 F 5 * G E 0000001
a b c d e f g h

a. Manufacturer, Make, and Type of Vehicle

2HG: Honda of Canada Mfg., Honda Canada Inc.
Honda passenger vehicle
19X: Honda Manufacturing of Indiana, LLC
Honda passenger vehicle

b. Line, Body, and Engine Type

FC1: Civic Sedan/L15B7
FC2: Civic Sedan/K20C2
FC3: Civic Coupe/L15B7
FC4: Civic Coupe/K20C2

c. Body Type and Transmission Type

d. Vehicle Grade (Series)

USA models

3: EX-T
4: EX-T Honda Sensing
5: LX
6: LX Honda Sensing
7: EX, EX-TL
8: EX Honda Sensing, EX-TL Honda Sensing
9: Touring
0: LX-P

Canada models

2: DX
3: EX-T
4: EX-T Honda Sensing
5: LX
6: LX Honda Sensing
7: EX
8: EX Honda Sensing
9: Touring

f. Model Year

G: '16

g. Factory Code

H: Alliston, Ontario Plant, Canada
E: Greensburg, Indiana Plant, USA

h. Serial Number

4-door (USA plant models)

000001–: KA models
200001–: KL models
400001–: KC models

4-door (Canada plant models)

000001–: KC models (K20C2)
100001–: KC models (L15B7)
500001–: KA/KL models (K20C2)
630001–: KA/KL models (L15B7)

2018 Honda Accord

Honda's first mass production vehicle to include HondaSensing Suite as standard equipment on all trim levels



Three Categories of Level 1 ADAS

1. Driver Information Systems
2. Preventative Measure Systems
3. Avoidance Assistance Systems



Honda Driver Information Systems



HONDA
The Power of Dreams

BSI

Blind Spot Information



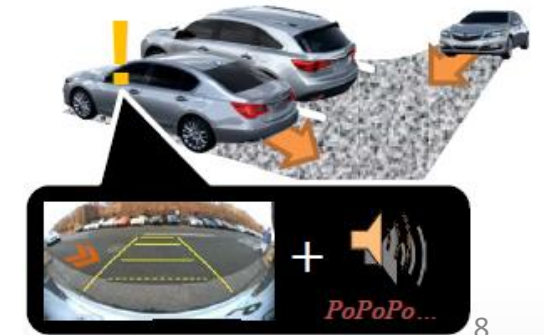
LW

LaneWatch



CTM

Cross Traffic Monitor



Honda Preventative Measure Systems



ACC	Adaptive Cruise Control
ACC w/ LSF	ACC with Low Speed Follow
FCW	Forward Collision Warning
LDW	Lane Departure Warning
LKAS	Lane Keeping Assist System

Honda Avoidance Assist Systems

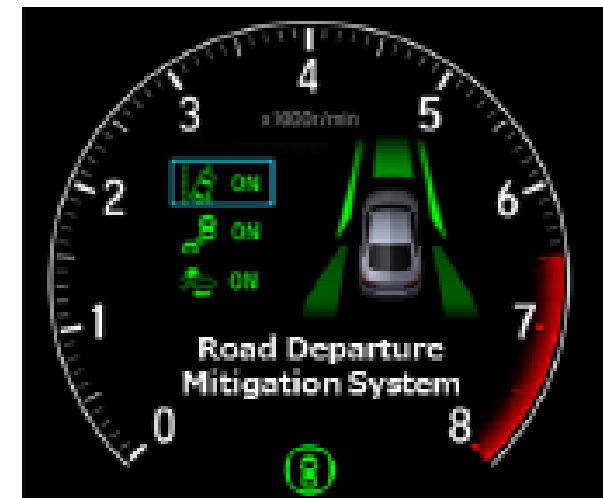
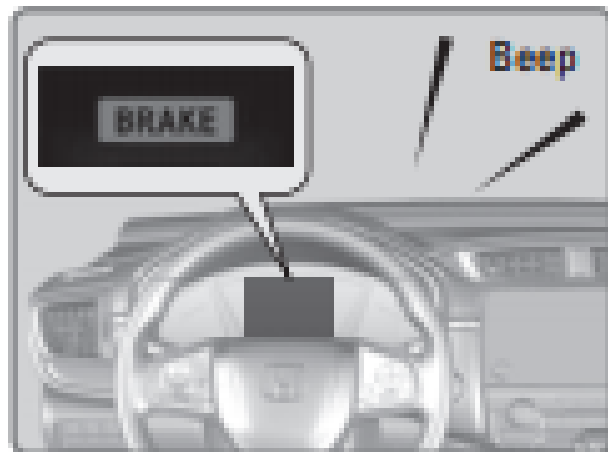


CMBS

Collision Mitigation Braking System

RDM

Road Departure Mitigation



New ADAS Feature Available on 2018 Acura RLX

TJA Traffic Jam Assist

Honda's first level 2
Autonomous
feature is available
this November on
the 2018 Acura RLX



ADAS Components

Millimeter Wave Radar

Multipurpose Camera

BSI Radar

Lane Watch Camera

Multi-Angle Rear View Camera

Honda

Sensing your Surroundings

Honda has integrated Camera and Radar systems to help detect vehicles and pedestrians in front of you

Honda SENSING

Coordinating efforts of a front-mounted camera and radar, Honda offers a suite of available driver-assistive technologies that sense conditions in front of the vehicle.



Forward Collision Warning
Above 10MPH, this system is designed to trigger alerts if it determines the danger of a collision with a vehicle detected ahead.

Adaptive Cruise Control
Adaptive Cruise Control has the ability to keep a set speed and interval from a car detected directly in front of you.

Lane Keeping Assist System
Lane Keeping Assist can gently correct your steering when you leave a detected lane without signaling.

Collision Mitigation Braking System
This system is designed to apply the brakes when it senses a risk of colliding with a vehicle or person detected in front of you.

Lane Departure Warning
Lane Departure Warning can warn a driver of an unintended departure from a detected lane.

LaneWatch™
This system uses a camera on the passenger-side mirror to display a live view of the vehicle's passenger-side blind spot.
Live video displayed on multi-screen.

LaneWatch™ provides a view nearly **4x greater** than using the passenger-side mirror alone.

REARVIEW CAMERA

Rearview Camera **100%** of all 2015 Honda vehicles come with a standard rearview camera!

Did you know...
The National Highway Traffic Safety Administration estimates that less than 60% of all 2014 model year vehicles sold will have a rearview visibility system included.

2014 Industry Average
Only **57%**

Safety for Everyone

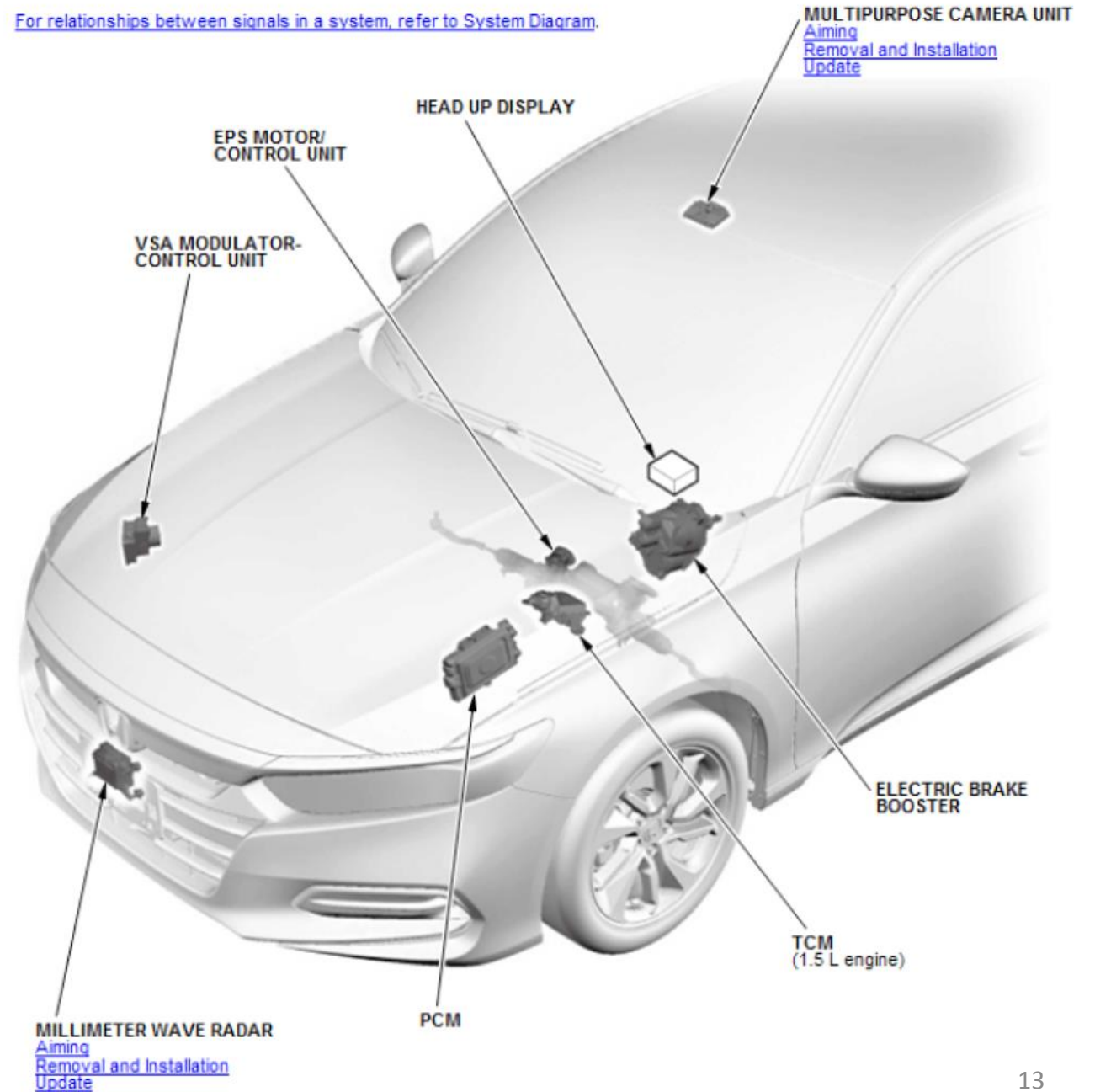
Honda has the vision of achieving a collision free society, not just to benefit drivers and passengers of Honda vehicles, but for everyone on the road.

Honda

CMBS System Components

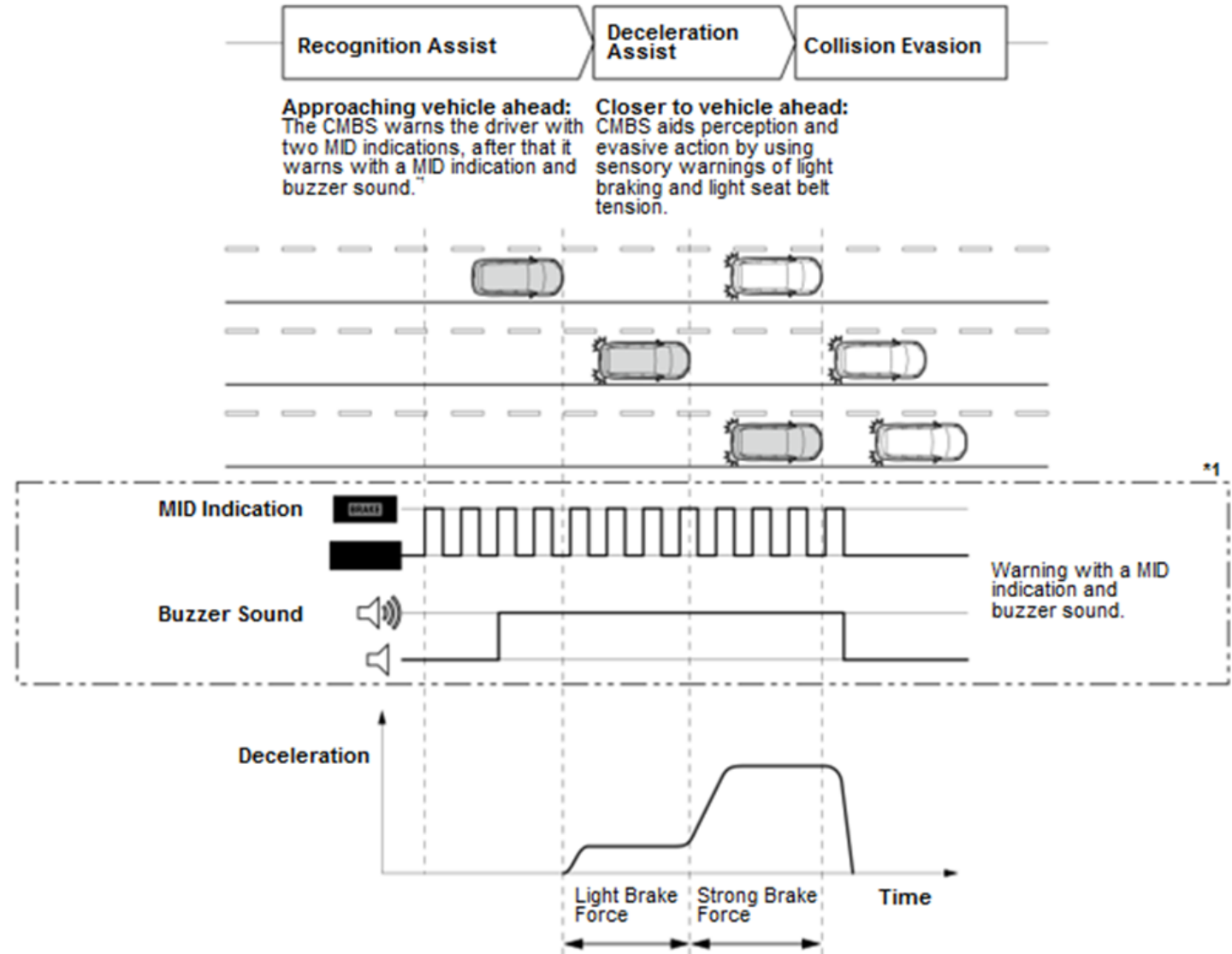
2018 Accord

[For relationships between signals in a system, refer to System Diagram.](#)



CMBS Function

2018 Accord



Millimeter Wave Radar Aiming

When to Calibrate:

If Radar is removed/installed or replaced

If ACC warning light is illuminated

After collision damage to front end

After structural damage anywhere on the vehicle

After SRS deployment

Other Considerations:

Do not repair bumper cover near radar

May require “special” grill or emblem

Wheel alignment should be checked/Adjusted prior to calibration

Aiming should be performed after wheel alignment if needed.

Requires check of mounting position before aiming after a collision

Millimeter Wave Radar Aiming Tools

Radar Aiming

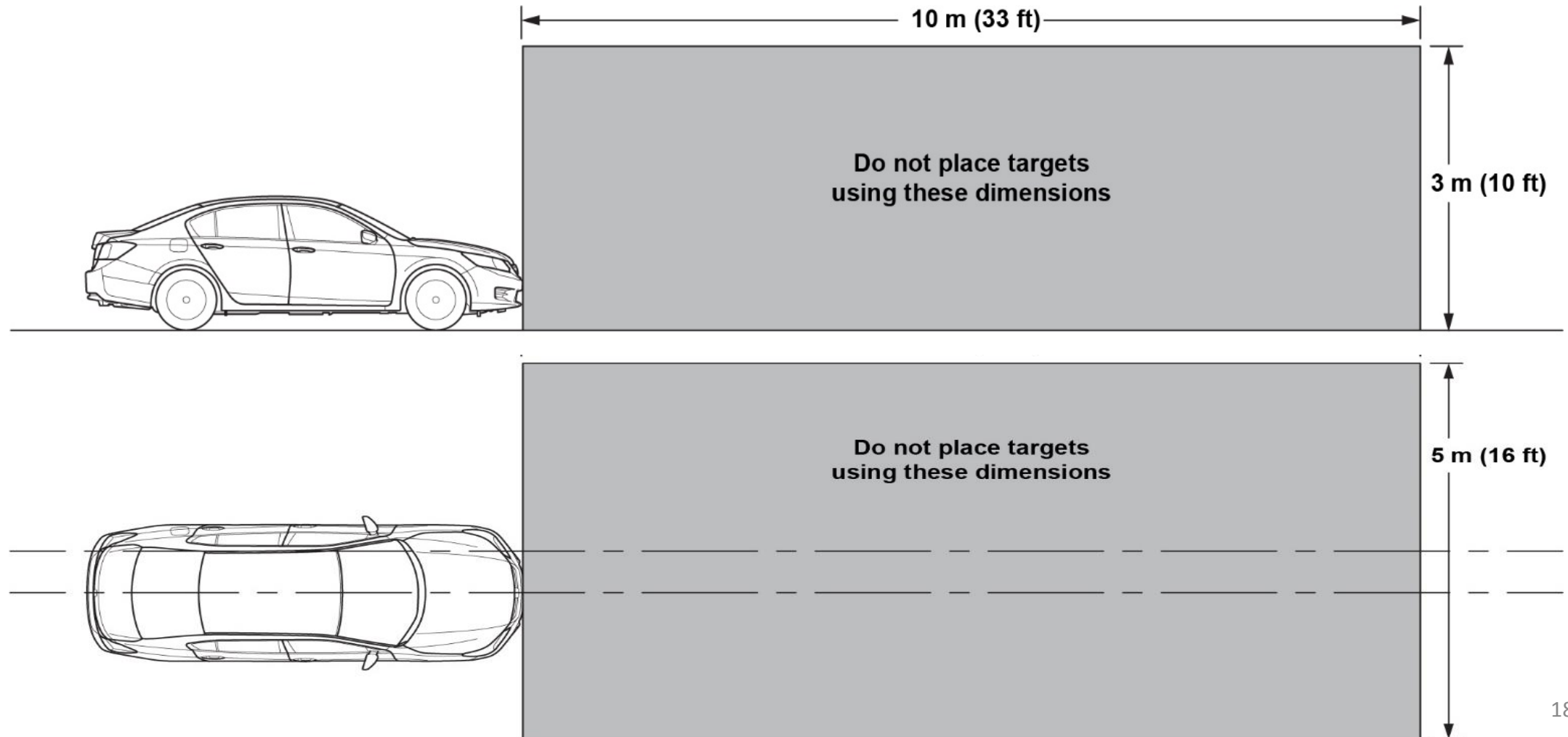
Radar System	Tool Number	Tool Description	Remarks
Millimeter Wave Radar	07AAJ-STKA210	Alignment Set	
	07AAJ-TK8A100	Stand	
	07AAJ-STKA200	Reflector Set	
	07AAG-5R0A100	Gas Strut Holder, Short	Application varies by model.
	N/A	Gas Strut Holder, Long	Included with Alignment Set (T/N 07AAJ-STKA210). Not available separately. Application varies by model.
	07AAK-5K0A200	Reflector Set	Only for 2013–15 Accord
	OTCHMLR10243	Adaptive Cruise Control Alignment Tool	Only for 2013–15 Accord, 2014–15 Accord Hybrid, 2016–18 Civic, and 2017–18 CR-V (Civic and CR-V will only require the adjustment screwdriver.)



Millimeter Wave Radar and Multi Function Camera aiming each require use of the Honda i-HDS Scan Tool and Software



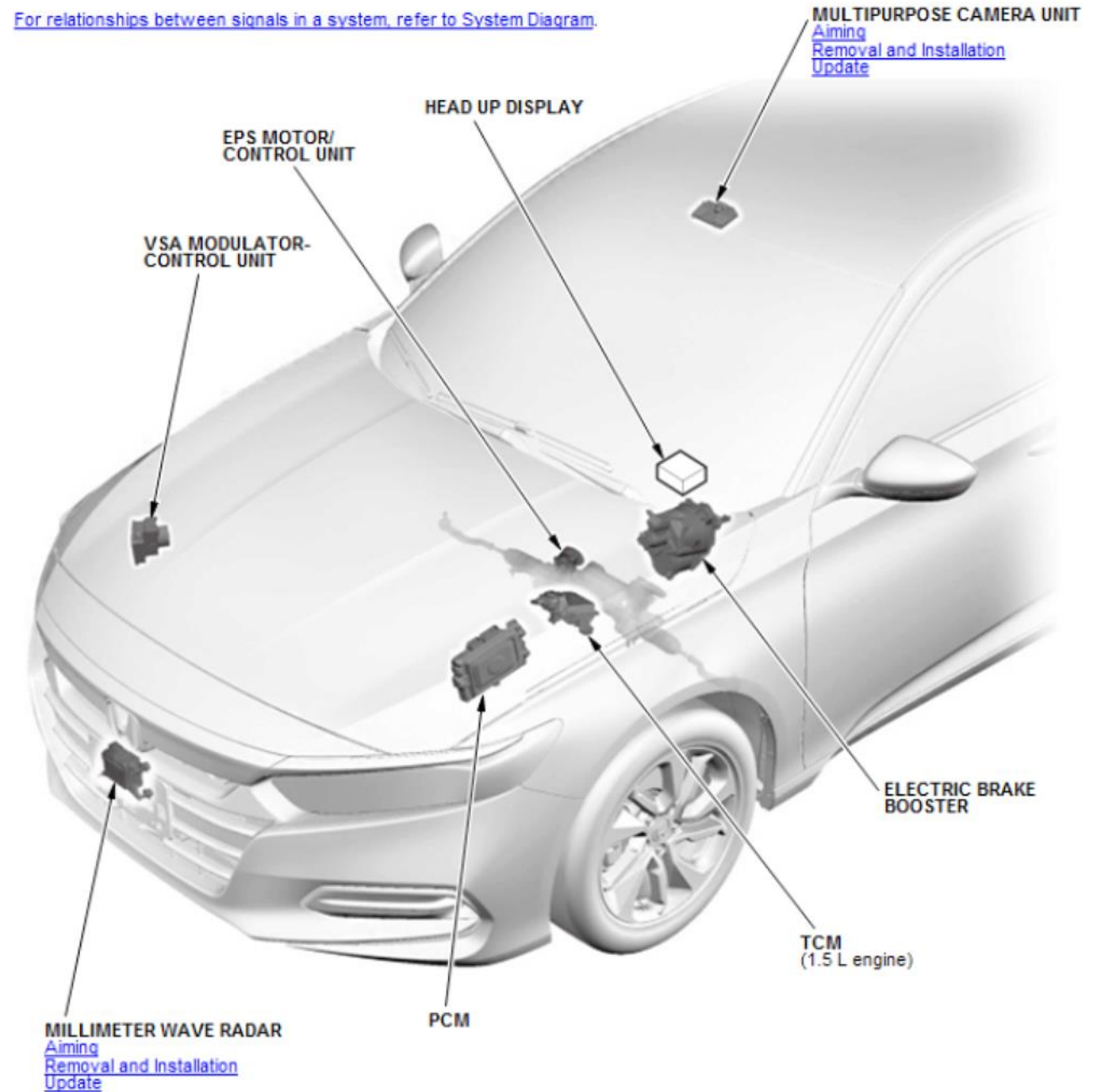
Multi Function Camera and Millimeter Wave Radar Aiming Space Requirements



ACC System Components

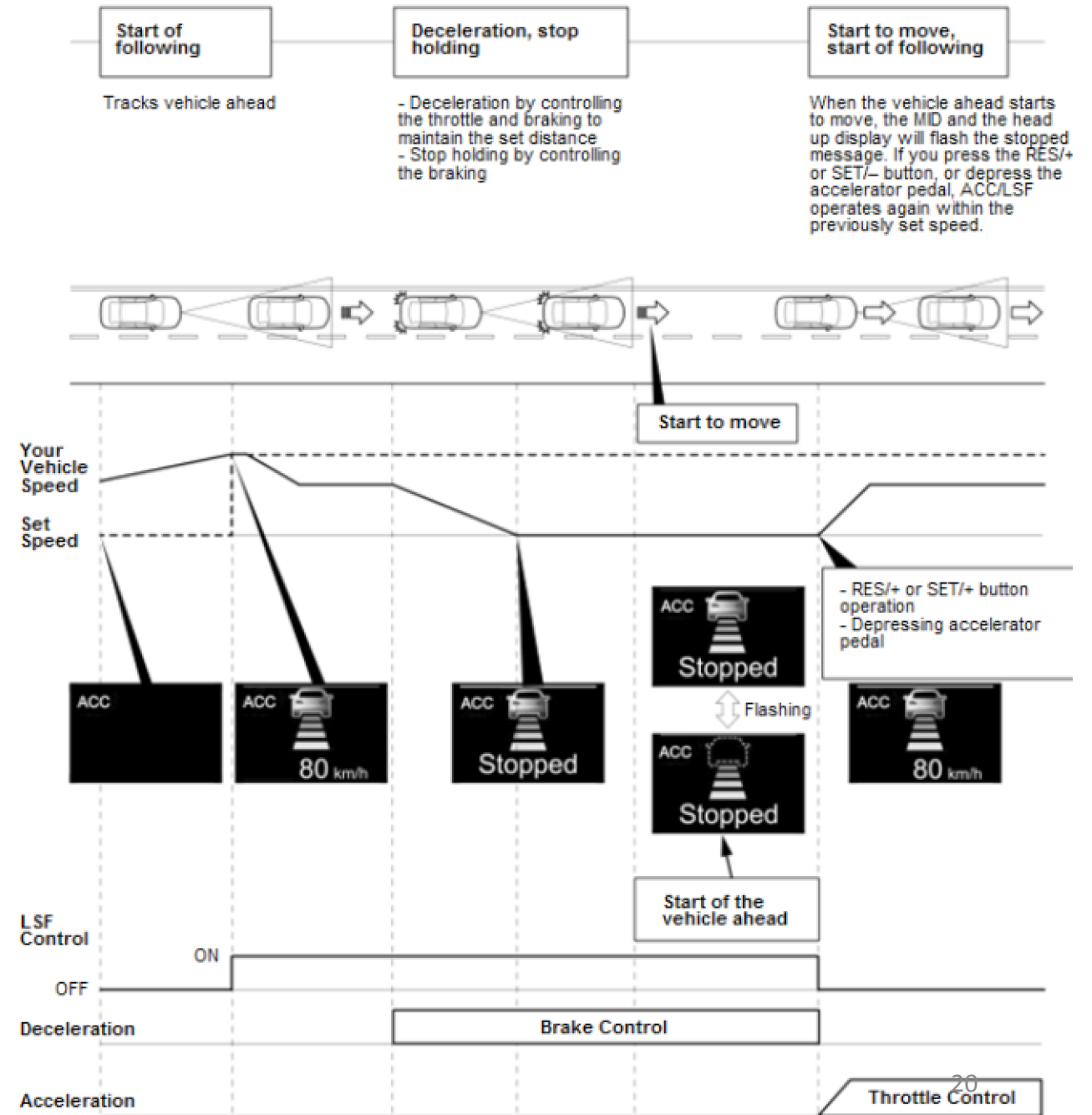
2018 Accord

[For relationships between signals in a system, refer to System Diagram.](#)



ACC w/ LSF Function

2018 Accord



Multi-Function Camera Aiming

When to Calibrate:

If camera unit is removed/installed or replaced

If windshield is removed/installed or replaced

If LKAS or ACC lamps indicate a potential problem

If DTC's indicate a problem with system

If vehicle is involved in a collision

If SRS is deployed

Other Considerations:

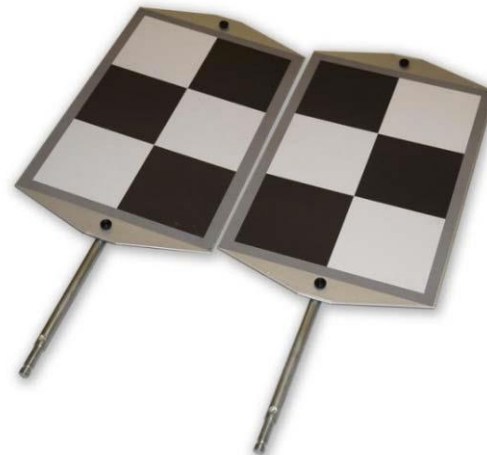
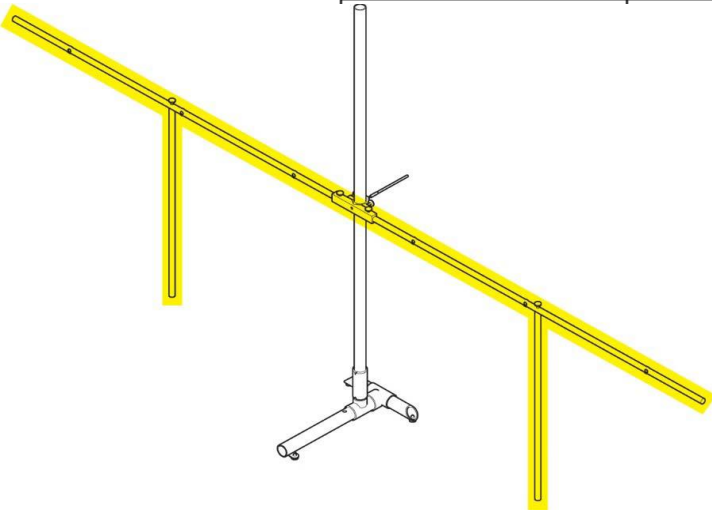
Only use OEM glass for replacement in vehicles equipped with multi-purpose cameras

Should be performed after wheel alignment if needed

Multi-Function Camera Aiming Tools

Camera Aiming

Camera System	Tool Number	Tool Description	Remarks
Multipurpose Camera	07AAJ-STKA210	Alignment Set	
	07AAJ-TK8A100	Stand	
	07AAK-5K0A110	Attachment Bracket	
	07AAK-5K0A120	Stand Pole	
	07AAB-TYPA020	Target Holder Set	Used on 2013–15, 2018 Accord, 2017–18 Civic 5-Dr and CR-V only
	070AK-TYPA030	Target Set	Except 2013–15, 2018 Accord, 2017–18 Civic 5-Dr and CR-V
	07AAK-5K0A100	Target Set	Used on 2013–15, 2018 Accord, 2017–18 Civic 5-Dr and CR-V only
	07AAG-5R0A100	Gas Strut Holder, Short	Application varies by model.
	N/A	Gas Strut Holder, Long	Included with Alignment Set (T/N 07AAJ-STKA210). Not available separately. Application varies by model.



BSI System Components

2018 Accord



BSI System Function

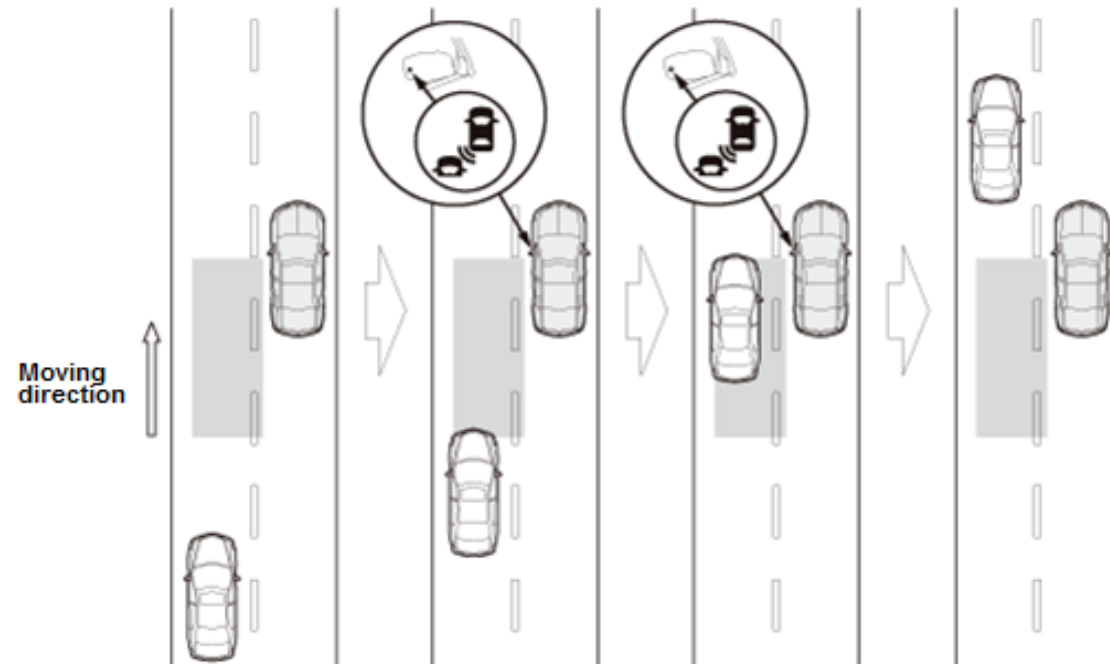
2018 Accord

Blind Spot Information (BSI) System Description

Under normal conditions, the BSI system generally does not alert stationary objects like highway infrastructure, guardrails, posts, walls, foliage, parked cars, etc. The system also doesn't notify when vehicles are traveling in the opposite direction.

	Vehicle operation speed:	Relative speed: Less than
Passing from the rear	20 - 99 mph (32 - 160 km/h)	31 mph (50 km/h)
Lane changes		12 mph (20 km/h)
Passing a vehicle		12 mph (20 km/h)
Starting from a stop		---

Passing from the rear



BSI Radar Aiming

When to calibrate:

After removing/Installing or replacing a BSI radar unit

After repairing or replacing body panels where BSI radar unit mounts

If BSI warning light is illuminated

Other considerations:

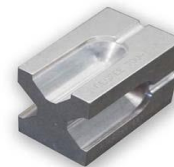
Requires wheel alignment check/adjustment prior to calibration

Do not repair bumper cover near BSI radar units

BSI Camera Aiming Tools

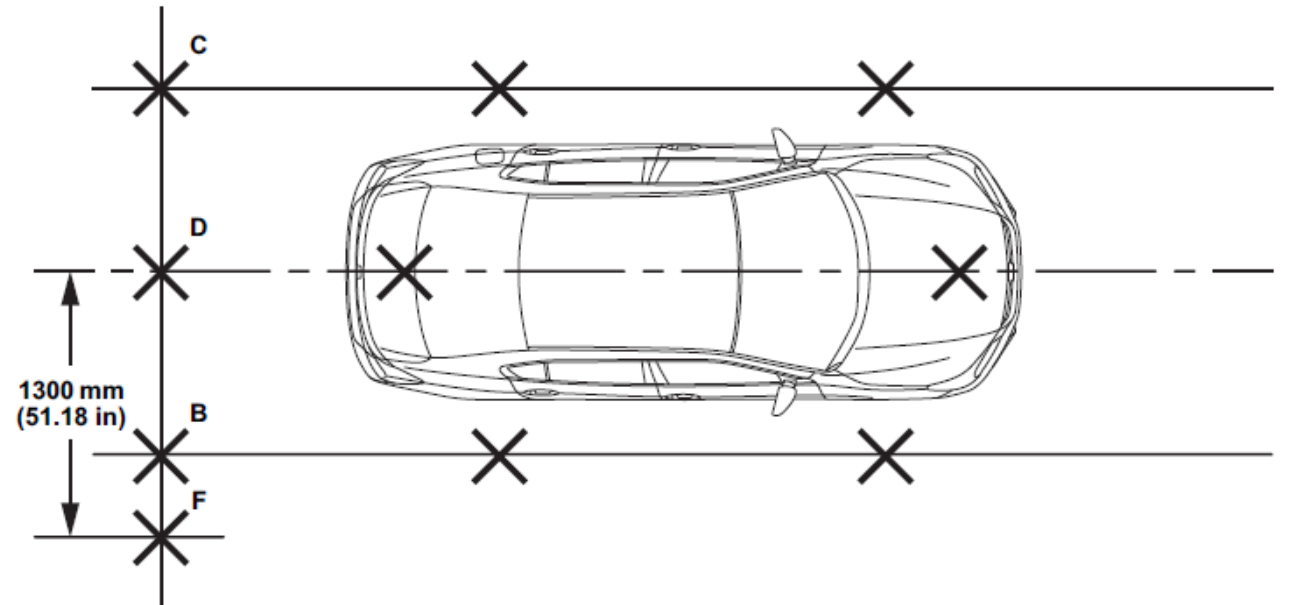
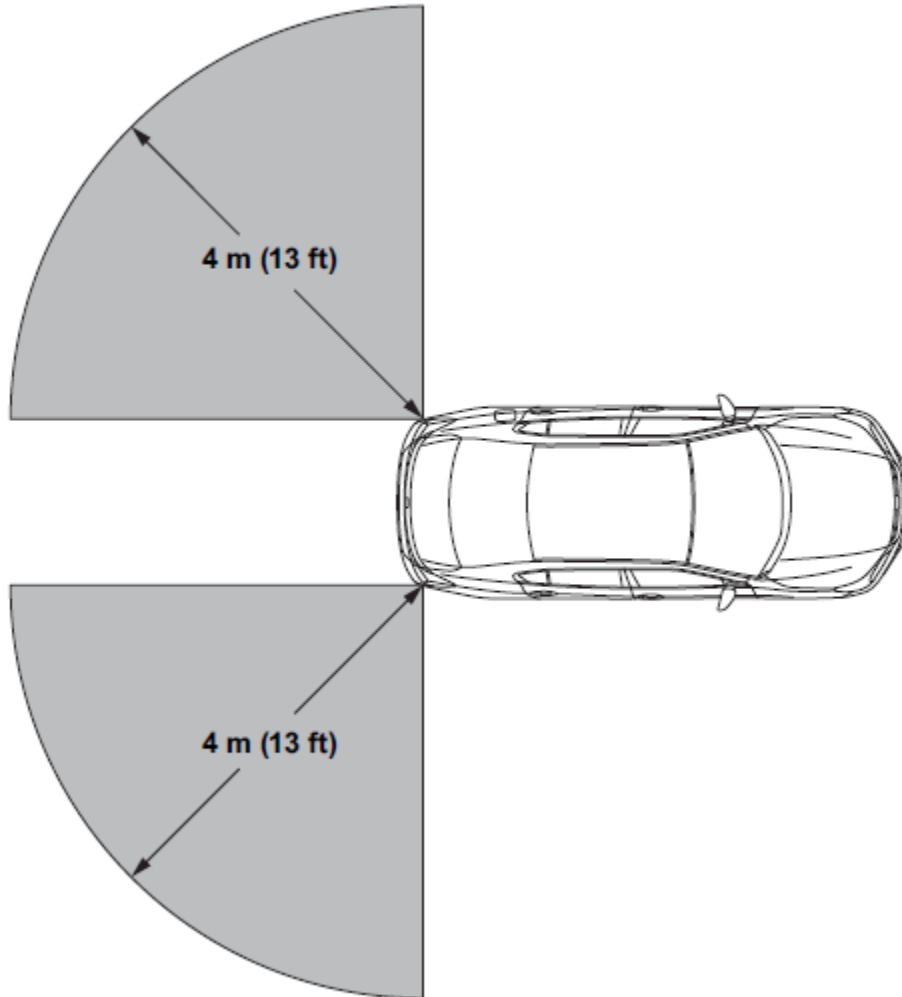
Radar Aiming

Radar System	Tool Number	Tool Description	Remarks
BSI Radar	07AAJ-TK8A100	Stand	
	07AAJ-TK8A150	Rim Frame	
	07AAK-TM0A100	Rim Frame Extension	Only for 2017-18 Ridgeline
	07AAJ-STKA160	Target Set	Includes straight edge.
	07AAJ-STKA170	Angle Gauge	



BSI Camera Aiming Space Requirements

BSI Radar Aiming

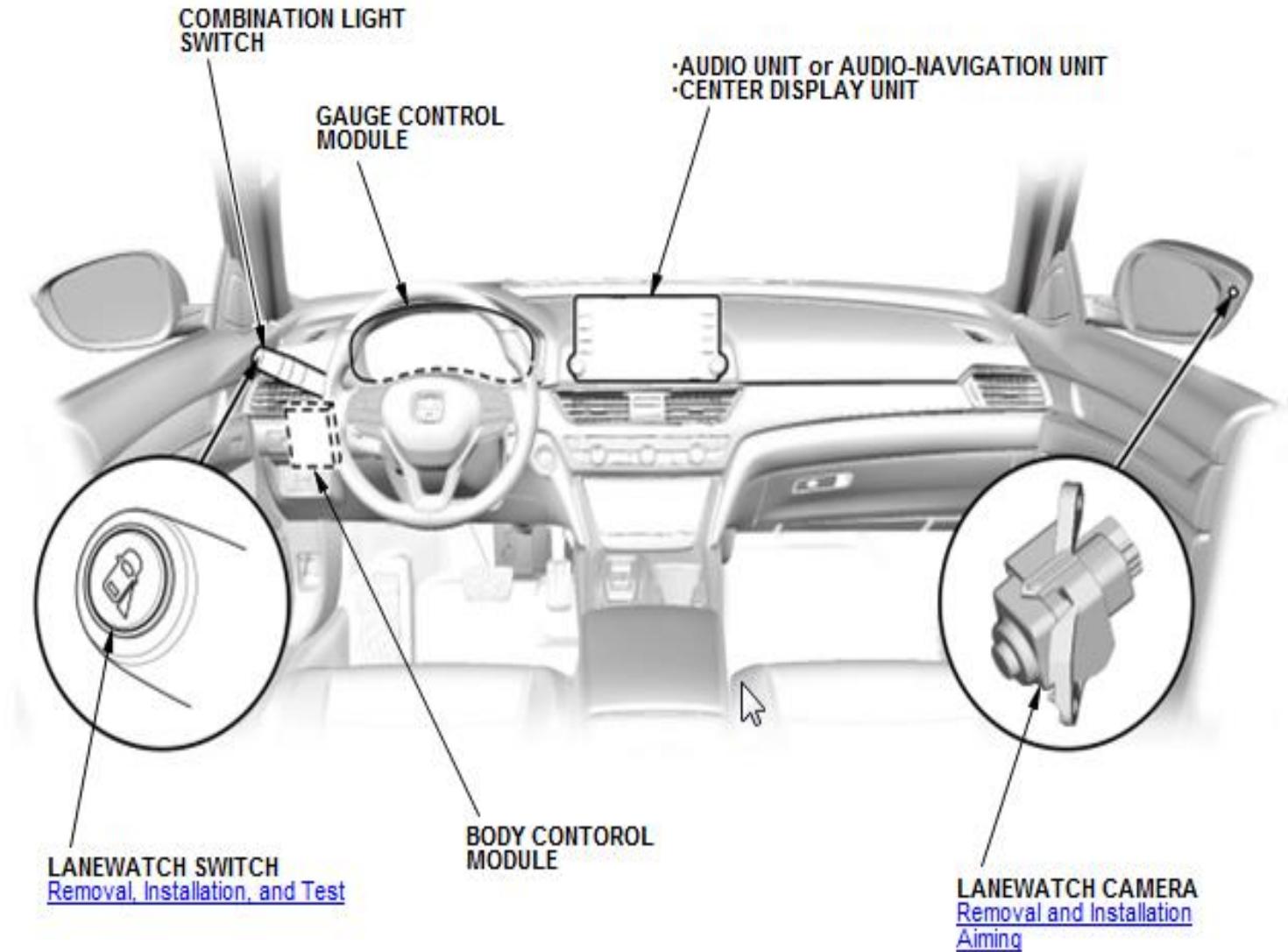


LaneWatch Component Location Index

[For relationships between signals in a system, refer to System Diagram.](#)

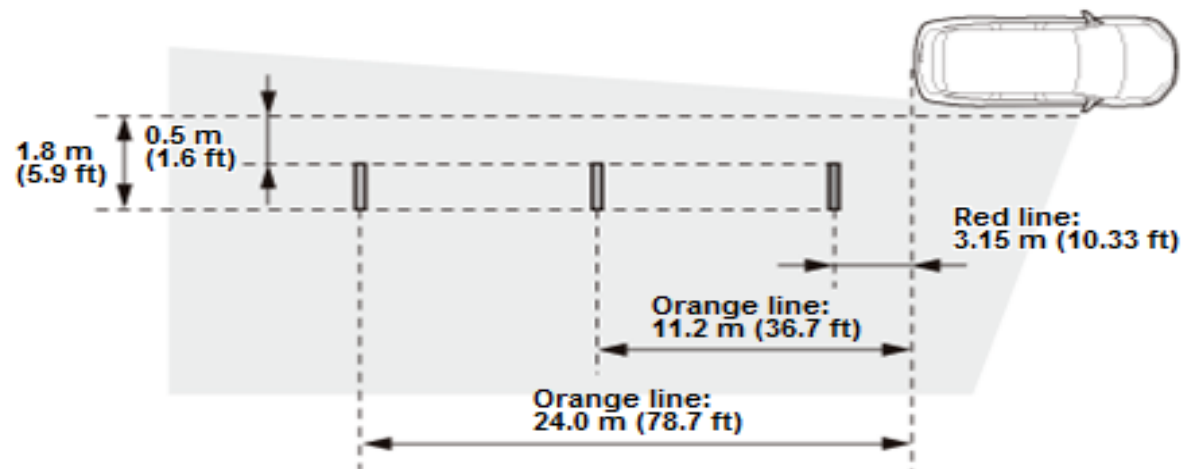
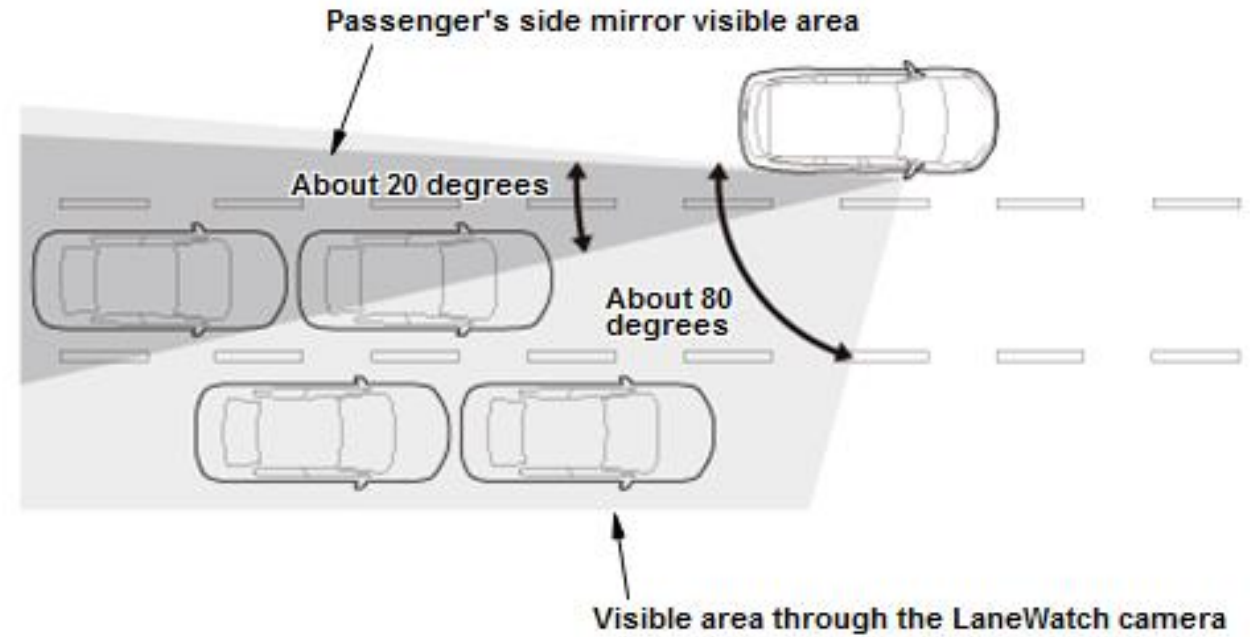
LaneWatch System Components

2018 Accord



LaneWatch System Function

2018 Accord



LaneWatch Aiming

When to Calibrate:

LaneWatch camera is removed/installed or replace

Passenger side rear view mirror is removed/installed or replaced

Passenger side rear view mirror cover is removed/installed or replaced

Passenger side door position is adjusted

Passenger side door is removed/installed or replaced

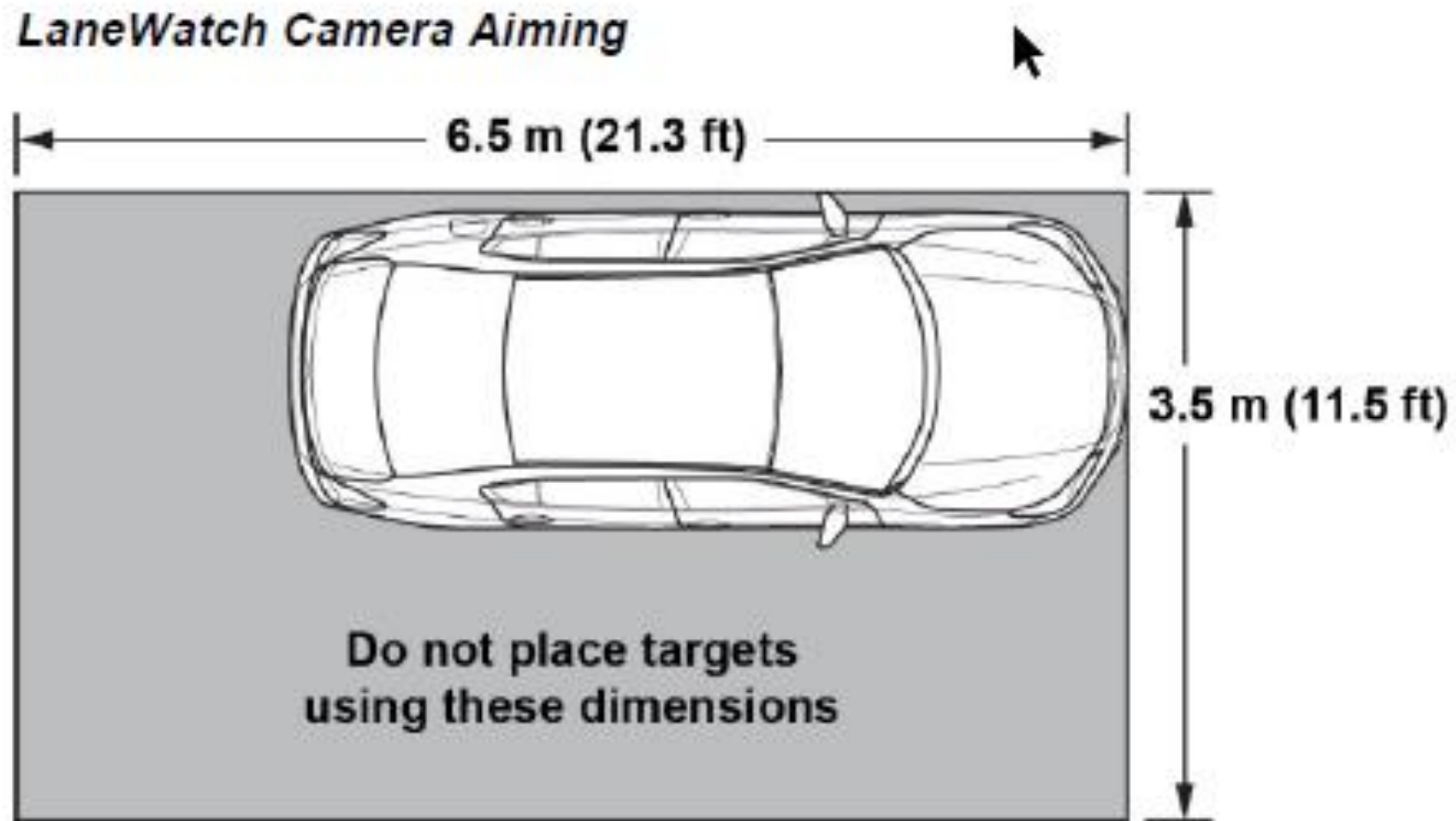
LaneWatch Camera Aiming Tools

Camera Aiming

Camera System	Tool Number	Tool Description	Remarks
LaneWatch Camera	07AAJ-STKA210	Alignment Set	
	070AK-T2AA100	LaneWatch Aiming Stand Set	
	070AK-T2AA110	Aiming Marker	
	07AAG-5R0A100	Gas Strut Holder, Short	Application varies by model.
	N/A	Gas Strut Holder, Long	Included with Alignment Set (T/N 07AAJ-STKA210). Not available separately. Application varies by model.



LaneWatch Camera Aiming Space Requirements



Are ADAS Systems Effective?

Number of collision claims:

Driveable Vehicles	3142	78.73%	305	85.43%		
Non-Driveable Vehicles	849	21.27%	52	14.57%	Decrease of	31.53%
Total	3991		357			

Frequency	17.27%		12.18%		Decrease of:	29.50%
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Driveable Vehicles	3142	78.73%	305	85.43%		
Non-Driveable Vehicles	849	21.27%	52	14.57%	Decrease of	31.53%

Frequency	17.27%		12.18%		Decrease of:	29.50%
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Dollar amount of claims:

Dollar amount of claims:

Driveable Vehicles	\$5,712,156	\$568,825
NonDriveable Vehicles	\$6,272,412	\$420,004
Total	\$11,984,568	\$988,829

Severity	\$3,002.90	\$2,769.83	Decrease of:	7.76%
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Data provided by Allstate Insurance and CCC

Love them or Hate them....

ADAS Systems are probably here to stay.

Will your shop embrace the opportunity?

Honda
SENSING

