



ADAS

What does today's workshop need to consider?

Today's vehicles are being fitted with more and more technology to assist in avoiding accidents and, where this is not possible, mitigating damage to vehicle occupants, pedestrians, and the vehicle itself. It is important for technicians to familiarise themselves with these technologies to better understand the potential impacts that the work performed may have on vehicles fitted with ADAS.

One such technology is cameras. These cameras can be fitted to the windscreen, the front, sides, and rear of many vehicles today.

Identifying the presence of cameras fitted to a vehicle

Before commencing any repairs on a vehicle today, we recommend conducting a full diagnostic scan of the vehicle to ascertain any pre-existing fault or trouble codes and what, if any, ADAS are fitted. Knowing what systems are fitted will allow you to consider the possible implications any planned work may have on these systems.

Once you have identified the presence of such systems, you can assess if your planned work will impact them. Some rear-view cameras are hidden behind a panel or a manufacturer's badge and are not visible until the vehicle is placed in reverse gear. The side cameras, if fitted, may be well hidden at the bottom of the vehicle's wing mirrors.

Like most sensors fitted to newer vehicles, these cameras may contribute data for multiple driver-assist functions, such as lane keep assist, lane departure warning, parking assist, all-round or "bird's eye" view, and collision mitigation systems such as autonomous emergency braking. Subaru uses its stereo "Eyesight" cameras to also control the adaptive cruise control.

When is calibration required?

The vehicle manufacturer's service information and/or repair methods will state when a camera calibration is required. Typically, if a camera or its ECU has been replaced, it will require calibration. Windscreen cameras typically require calibration after the windscreen has been replaced, including the Subaru fitted with stereo Eyesight cameras, even though they are not disturbed during the windscreen replacement process. Many vehicle manufacturers also state a camera calibration is required after changes to the vehicle's suspension geometry (e.g., a wheel alignment). Additionally, as per the service information, some vehicles also require a camera calibration after a steering angle sensor or level sensor is replaced. For all-round cameras, it is common that all four cameras will require calibration after any one camera is removed, refitted or replaced.

Calibrating cameras

There are two common ways to calibrate these units: static and dynamic.

With a static calibration, a graphical image that is vehicle manufacturer-specific is placed in



a precise location in relation to the camera being calibrated. The ECU interprets the image and, via software, makes any pitch, roll or yaw adjustments required to ensure the camera looks precisely where required. This sets a base for the system to calculate where a relevant obstacle is in relation to the vehicle.

For a dynamic calibration, a diagnostic tool may be required to place the system into calibration mode. The user will then be guided by instructions as to speed, road conditions, etc. to follow whilst driving. A message will indicate when the calibration is complete. We recommend that this procedure involves two people, a driver and someone to monitor the diagnostic tool during the driving procedure.

For a no-obligation discussion with a Hella Gutmann specialist, call 1800 061 729 or email hgscustomersupport@hella.com



Rear-view camera display.