WARNING

Calibration of individual sensors should only be attempted by experienced users. Read this section very carefully and only undertake a calibration when the procedure is fully understood.

Serious damages can occur if the procedure is performed improperly! GAP Diagnostics assumes no liability for damages or injuries incurred during use or resulting from the use of the IIDTool.

Notes :

- ***Different calibration values for each corner are normal*** *– they do NOT need to be set to the same value! These values represent arbitrary electrical constants relative to the height sensors mechanical positioning. Correlating these values to the measured height of each corner is part of the calibration procedure.*
- *Changes in calibration are instantaneous in the EAS ECU but the ECU may not apply these changes immediately. The EAS ECU will adjust a corner when it's +/- 10 mm or higher than the desired height. For example, if the corner is at +9 mm, it will not adjust the corner height.*
- *The settings and changes are given in millimetres but this does not correspond exactly to changes at the wheel. Each change in height must be measured from the bottom of the wheel arch to the centre of the wheel.*
- *A metric measuring tape is recommended for proper calibration.*

II Sensors calibration

Steps:

1. **Preparation:** go to https://www.gap-diagnostic.com/support/documents/IIDTool/, download and print the ***EAS Calibration Aid*** and ***Sample EAS Calibration Calculation***. Make sure the air pressure in each tire (or tyre...) are within specification and that no heavy objects are in the vehicle. Place the vehicle **on a flat, levelled surface** in standard mode with wheels straight. While small surface irregularities may not reduce calibration accuracy, large irregularities can make the calibration harder to verify. The calibration must be done outside with the engine running as the air suspension will not rise when the engine's not running. Study these instructions and the ***Sample EAS Calibration Calculation*** before proceeding.

2. The vehicle must first be brought to a steady state in standard height mode. To do this, change the height to off-road using the switch on the console. Once at off-road height (off-road LED not flashing), return to standard height and again wait for the LED to stop flashing. Move the vehicle forward 5 metres and back to its original position.

3. Use the IIDTool to take note of the actual calibration. Go to menu item 'Live Values->Suspension ECU->Calibration'. Note down values in the ***EAS Calibration Aid***.

4. Navigate the IIDTool to 'Live Values->Suspension->Current Height'. The driver's weight affects the current height values therefore they must be noted from outside the vehicle. Open the driver's window, exit the vehicle and close the door. After a few seconds, open the door slightly. This will prevent the EAS ECU from making adjustments while measuring. Leave the IIDTool in 'Live Values->Suspension->Current Height' mode for the following steps.

5. Measure the height in millimetres of each corner from the bottom of the wheel arch to the centre of the wheel. For each corner take note of the current height displayed on the cluster LCD (from outside) just before or after taking the measurement.

   Make sure the measurement of each corner is noted at the corresponding spot.

Figure 54. Wheel measuring

ption 1 : Calibrating the left sensor and using the right side as reference.

6. The correct calibration is achieved by adjusting only the left side of the vehicle to match the right. Calculate the new calibration value for the left side using the formula below. To do the calculation, fill in the table below or on the ***EAS Calibration Aid*** with the values noted for front corners and repeat for rear corners.

All values are in millimetres

Front

	Current Calibration Values	Current Height Values	Measured Heights
Front Left	X= 202 mm	A= −6mm	C= 477mm
Front Right	197 mm	B= 5 mm	D= 464mm

Table 29. Required data, front left calibration

Rear

Rear Left	X= 202 mm	A= 18mm	C= 494mm
Rear Right	190 mm	B= −10mm	D= 483mm

Table 30. Required data, rear left calibration

Calibration Formula for left-hand adjustment

All values are in millimetres

New Calibration Value Front Left	=	Old Calibration Value Left X	+	Current Height A	-	Current Height B	-	Measured height C	+	Measured height D
178 (24 LESS)		202	+	−6	-	5	-	477	+	464

New Calibration Value Rear Left	=	Old Calibration Value Left X	+	Current Height A	-	Current Height B	-	Measured height C	+	Measured height D
219 (17 MORE)	=	202	+	18	-	−10	-	494	+	483

Table 31. Calculus, new left side calibration value

*Please remember: when a value minus a negative value, the minus in the equation becomes a plus (subtracting a negative number = adding a positive number). For example, 3 - -3 = 6

Option 2 : Calibrating the right sensor and using the left side as reference.

6. The correct calibration is achieved by adjusting only the right side of the vehicle to match the left. Calculate the new calibration value for the right side using the formula below. To make the calculation, fill in the table below or on the ***EAS Calibration Aid*** with the values noted for front corners and repeat for rear corners.

All values are in millimetres

Front

	Current Calibration Values	Current Height Values	Measured Heights
Front Right	**X=**	**A=**	**C=**
Front Left		**B=**	**D=**

Table 32. Required data, front right calibration

Rear

Rear Right	**X=**	**A=**	**C=**
Rear Left		**B=**	**D=**

Table 33. Required data, rear right calibration

Calibration Formula for right-hand adjustment

All values are in millimetres

New Calibration Value Front Right	=	Old Calibration Value Right X	+	Current Height A	-	Current Height B	-	Measured height C	+	Measured height D
	=		+		-		-		+	
New Calibration Value Rear Right	=	Old Calibration Value Right X	+	Current Height A	-	Current Height B	-	Measured height C	+	Measured height D
	=		+		-		-		+	

Table 34. Calculus, new left side calibration value

*Please remember: when a value minus a negative value, the minus in the equation becomes a plus (subtracting a negative number = adding a positive number). For example, 3 - -3 = 6

Step 7 is an example for a left side (option 1) adjustment. If a right side adjustment is performed, simply replace the left for right in the following text.

7. If the “new calibration value left” varies less than 3mm from the old calibration value, it can be considered good. Otherwise navigate the IIDTool to “Calibration->Suspension->Adjust Front Left” or “Calibration->Suspension->Adjust Rear Left” and use the *Speed + / Menu up* and *Speed - / Menu down* buttons to adjust the value to the “new calibration value left”.

Repeat the process to verify the calibration.

8. Once calibration is done, the vehicle baseline height can be adjusted to the user requirements. Navigate to ‘Height’->Adjust Front’, ‘Height->Adjust Rear’ or ‘Height->Adjust All’ and use the *Speed + / Menu up* and *Speed - / Menu down* buttons to adjust the value.

App Sensors calibration

Manual Calibration
Simply follow instructions for *II Sensors calibration using the integrated interface*

Guided Calibration
This calibrating method will allow calibration of each individual height sensors to the original standard height using a simpler approach. No calculations are required **and only one itteration is necessary**. Upon entering, instructions will be displayed.

Notes:

- *Measurements of each corner are made from the bottom of the wheel arch to the centre of the wheel. They can be made in metric or imperial.*

Figure 55. Wheel measuring