

Technical Info

FROM: Maserati TSO

TO: Maserati Network



MASTERS OF CARE

Grecale - New Granturismo: air suspension system check



DATE: JANUARY 31, 2024

The Maserati Grecale and the New Granturismo offer an air suspension system (standard equipment on all versions for New Granturismo and OPT for Grecale) that improves the ride comfort and the vehicle handling in all conditions to maximize the Maserati driving experience.

This system has many advantages, including the possibility of lowering the vehicle height automatically on the base of the speed to reduce aerodynamic resistance and improve stability and handling.

The system also offers the possibility to increase the height of the vehicle from the ground in particular maneuvers such as overcoming any obstacles on the road surface and, for Grecale, in the case of offroad conditions.

The system also makes it possible to automatically keep the vehicle body level regardless of any load variations on both the front and the rear axle.

On Grecale, the lowering of the vehicle body allows all passengers to enter and exit the vehicle comfortably when the vehicle is parked.

The purpose of this information is to provide guidance and help to identify potential air leaks in the system.

Please read and review this bulletin first before ordering parts and/or starting the procedure.

Contact your Regional AfterSales Manager (RAM) or the Technical Support Helpdesk if you have any questions.

Thank You for your continued support and cooperation.

Maserati North America
Aftersales Dept.

Section 1: Standard vehicle lowering while it is parked.

The air suspension system is subject to air micro-leaks which are physiological of the system, and which could occur particularly on the springs and on the components installed in the front part of the vehicle due to the greater distance from the compressor and the valve unit, which are installed in the rear area of the vehicle and due to the presence of John Guest" intermediate joints.

In the case of the vehicle lowering while it is parked, it is necessary to carry out the check listed below:

Pre-conditions:

- position the vehicle in the area where it will be parked for 24 hours (smooth and flat support surface); from now on, the vehicle must not be moved for 24 hours.
 - the engine must be off and must not be started again within 24 hours.
 - use a battery maintainer and keep it out of the vehicle.
 - no passenger and/or control operator and no load must be in the vehicle; the vehicle weight must no longer be changed within 24 hours; therefore, no equipment must be in the vehicle.
 - always keep the doors closed and the window opened to connect/disconnect the OBD diagnostic tool (don't sit in the vehicle)
 - before starting the procedure, wait until the vehicle is in "cold engine" condition - a change of the temperature on the spring can impact the vehicle alignment measurements.
1. Connect the EVO to the vehicle through the window opened (doors closed)
 2. check the pressure of the four tires from the vehicle cluster or the EVO in RFHM ECU and indicate the values in the checklist at the end of section 1 of the bulletin.
 3. check with the diagnostic tool the presence of any stored DTC; in case of any DTC, do a complete scan report of all the control units and then cancel all the DTCs.
 4. check that it is not active:
 - a) the Shipping condition or the Lifter condition (the Lifter condition only for the New Granturismo)
 - b) the convergence/tire check mode
 5. carry out the following operations:
 - a) with the EVO, take the vehicle to the Normal height (use the "leveling to set level" command that must end with a positive result)
 - b) read the height from the ground of the highest point of each front wheel arch (height) with the diagnostic tool in VDCM ECU - 7005 - Vertical Dynamic Ride Height Sensors – and indicate the values in the checklist at the end of section 1 of the bulletin.
 - c) run the "Get Out of In-Plant Mode" routine.
 - d) check the absence of the DTC C2212-00 "ECU In Plant Mode" in ECM
 - e) if the DTC C2212-00 is stored, run again the "Get Out of In-Plant Mode" routine in ECM.
 - f) disconnect the OBD tool through the window opened (doors closed)
 6. Measure the height from the ground to the highest point of each front wheel arch (Figure 1) and indicate the values in the checklist at the end of section 1. Figure 1
 7. wait 6 hours.

8. Measure the height from the ground to the highest point of each front wheel arch (Figure 1) again and indicate the values in the checklist at the end of section 1.
9. connect the EVO to the vehicle through the window opened (doors closed, don't sit in the vehicle)
10. check the pressure of the four tires from the vehicle cluster or the diagnostic tool in RFHM ECU and indicate the values in the checklist at the end of section 1 of the bulletin.
11. read the height from the ground of the highest point of each front wheel arch (height) with the diagnostic tool in VDCM ECU - 7005 - Vertical Dynamic Ride Height Sensors – and indicate the values in the checklist at the end of section 1 of the bulletin.
12. Run the "Get Out of In-Plant Mode" routine.

Compare the measures at pt.6 and pt.8 → on each corner, the difference must be smaller than **6mm**.

Compare the measures at pt.5b and pt.11 → on each corner, the difference must be smaller than **6mm**.

Remember that the values read in the points above may have a difference between them.

Repeat the procedure after 24 hours and indicate the values in the checklist at the end of section 1.

If the checks carried out show that the lowering of the vehicle is less than 6 mm, the vehicle can be leveled and considered compliant with the standards.

If the checks carried out show that the lowering of the vehicle is greater than 6 mm, the opening of a BOL (As support Request) is required; indicate the results of the measures carried out in the points listed above.



Figure 1

Fill in the checklist with all the required information.

Preliminary information					
		YES	NO		
1	Check the vehicle with the MD EVO tool: is any DTC stored?				
2	Are the conditions 4a) and 4b) satisfied?				
3	Is the routine executed from 5c) to 5f)?				

height - mm					
		After 6 hours		After 24 hours	
		Point 6	Point 8	Point 6	Point 8
Front Left					
Front Right					
Rear Right					
Rear Left					

Tires pressure – bar					
		After 6h		After 24h	
		Point 2	Point 10	Point 2	Point 10
Front Left	0129 – Tire 1 (Left Front) Altitude Compensated Pressure				
Front Right	012A – Tire 2 (Right Front) Altitude Compensated Pressure				
Rear Right	012B – Tire 3 (Right Rear) Altitude Compensated Pressure				
Rear Left	012C – Tire 4 (Left Rear) Altitude Compensated Pressure				

Vehicle height – mm					
		After 6h		After 24h	
		Point 5b	Point 11	Point 5b	Point 11
Front Left	Front Left Ride Height Sensor				
Front Right	Front Right Ride Height Sensor				
Rear Right	Rear Right Ride Height Sensor				
Rear Left	Rear Left Ride Height Sensor				

Section 2: Abnormal lowering while parked – possible air leakage in the system.

In this document, you can find the diagnostic guidelines to speed up the diagnosis to identify the potential source of air leakage in the system.

The following check must also be executed in the case that there isn't any DTC stored and/or in the case that there isn't any warning light in the IPC.

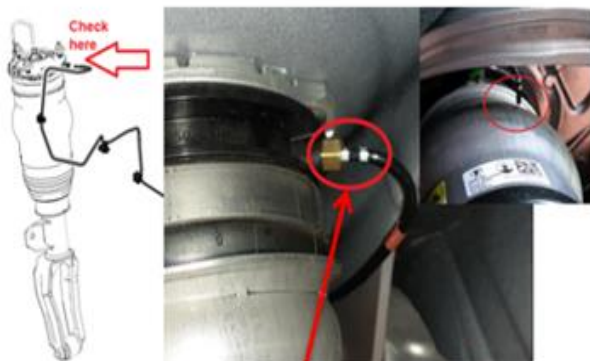
Potential DTC stored:

VDCM (1541) - Vehicle Dynamics Control Module: 55A100 - Unable to Obtain Desired Ride Height

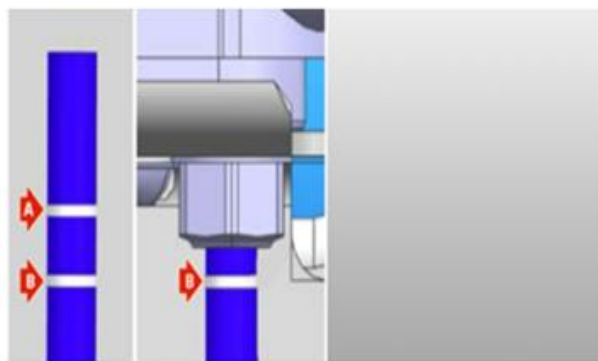
Potential warning light in the IPC:



1 – Front axle

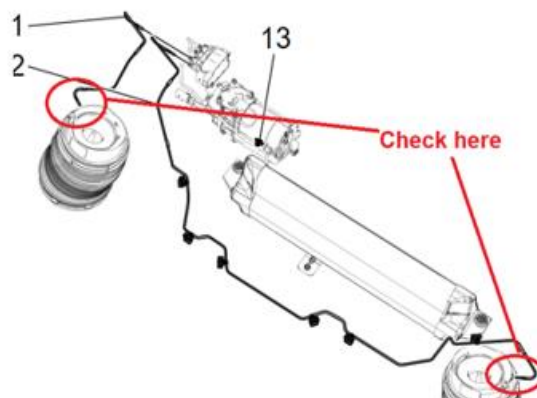


Sample of incorrect Air Suspension pipe installation on the front Air spring



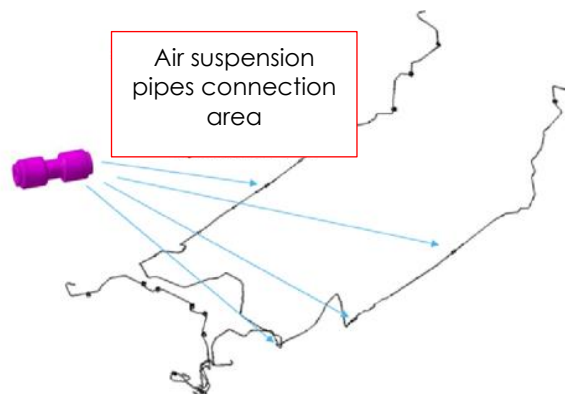
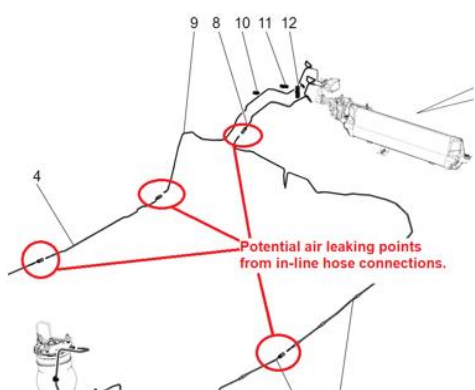
Correct layout to be ensured on the vehicle (points A and B)

2 – Rear axle

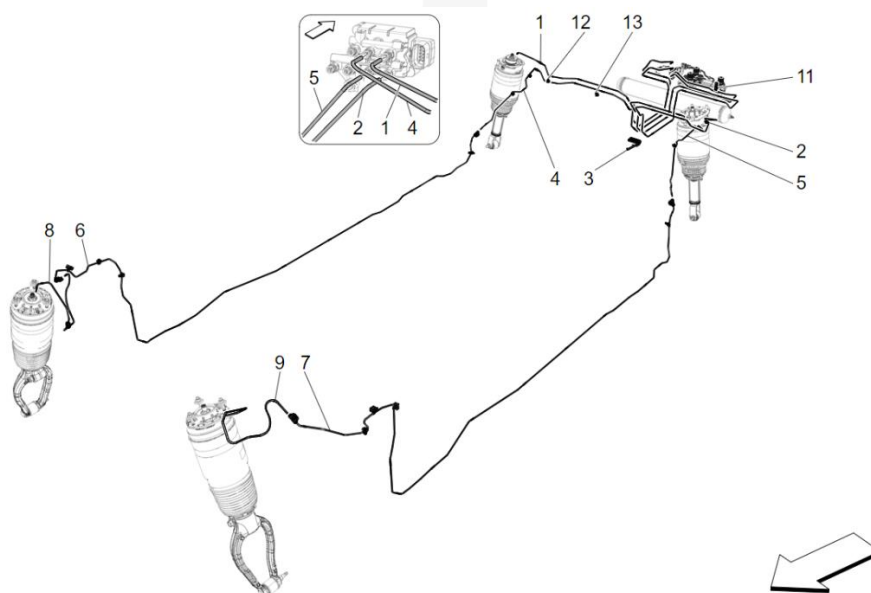


Sample of incorrect Air Suspension pipe installation on the Rear Air Spring

3a – Pipes connection area – Grecale (check the connections with soapy water for 5 minutes)



3b – Pipes connection area – Granturismo (check the connections with soapy water for 5 minutes)



For the Granturismo, follow the instructions related to inspection points and fill in the specific checklist that you find in the final section of this document.

4 – Air Valves Block pipes – disconnected or wrongly fitted



Check the air valves block pipes to ensure that there isn't any disconnected and/or wrongly installed line.



Use soapy water to detect potential air leak through the system.

5- Front shock absorbers – air leakage while steering

To check for any air leakage from the front shock absorbers, carry out the following maneuver with the car parked on a flat surface.

Turn the steering wheel completely to the left in two seconds, hold the steering wheel in this position for 30 seconds and check for any sudden lowering of the front part of the car.

Realign the steering wheel and wait for the vehicle leveling.

Repeat the operation by activating the steering wheel completely to the right in two seconds, hold the steering wheel in this position for 30 seconds and check for any sudden lowering of the front part of the car. If the car does not lower, repeat the same maneuvers on a slightly sloping road and check for any sudden lowering of the front part of the car.

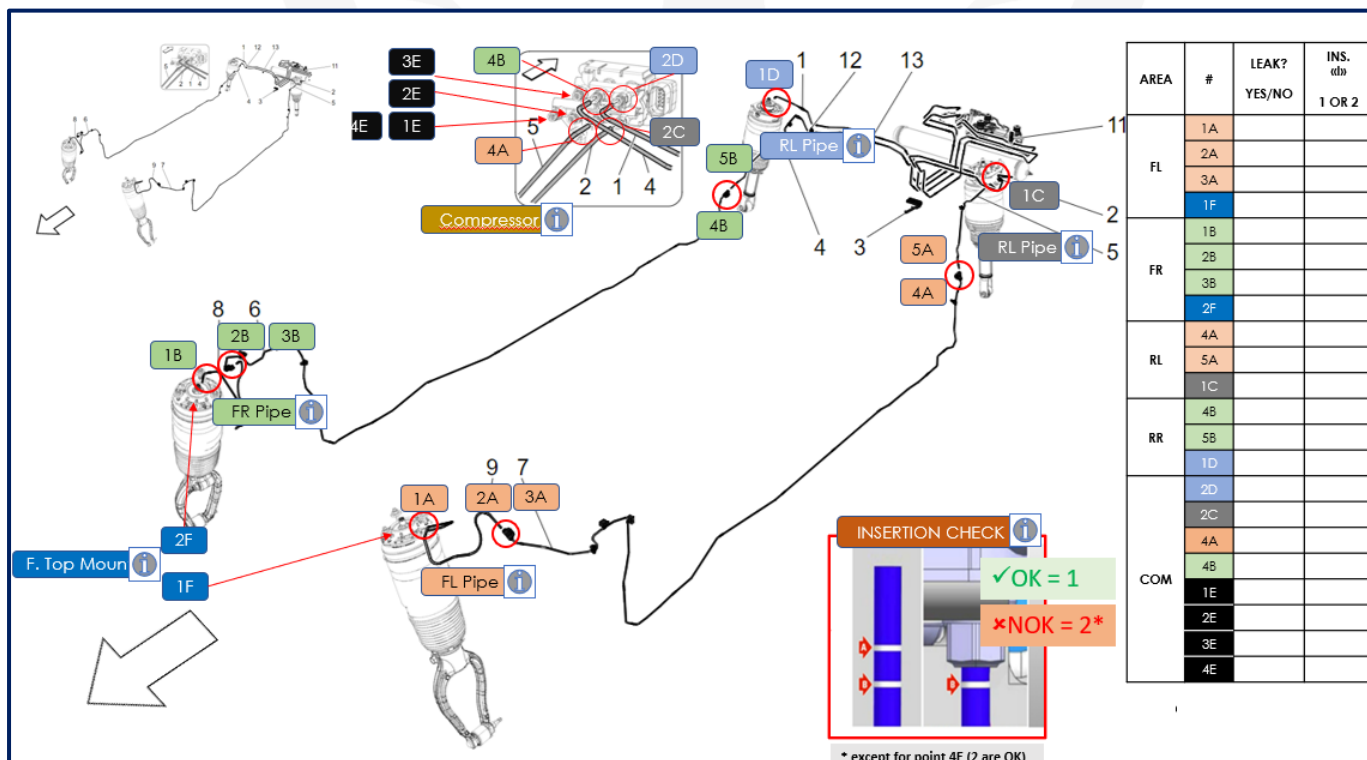
NOTE: THE HEIGHT LOWERING CHECK MUST BE PERFORMED WHEN THE WHEELS ARE FULLY TURNED. DURING THE STEERING (2 SECONDS) THERE IS A LEVELING OF THE VEHICLE DUE TO THE SUSPENSION GEOMETRY – IT MUST NOT BE CONFUSED WITH A LOWERING OF THE VEHICLE.

To guarantee the correct investigation of the root cause of the problem, if you detect any leakage in the system, it is requested (for the next two months starting from the date of this publication) to:

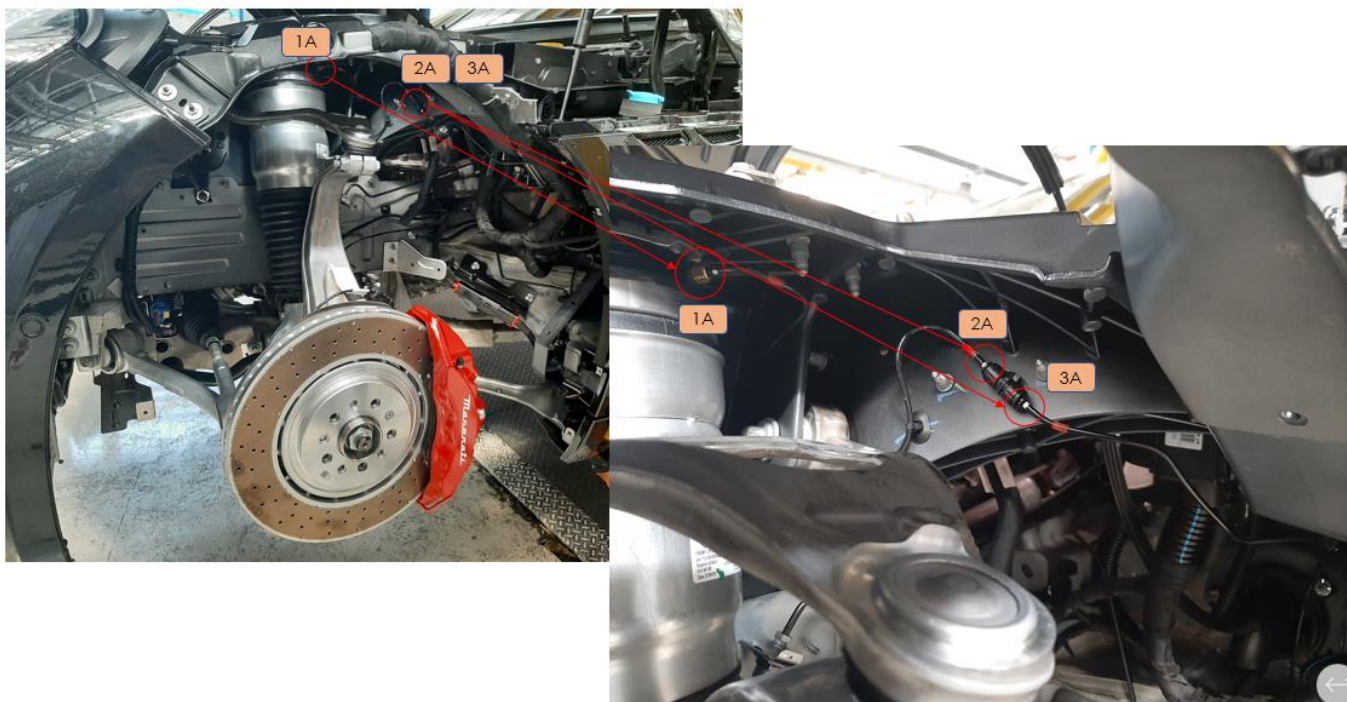
- don't perform any restore operation
- open a BOL ticket reporting the detected anomaly
- indicate the area in which the anomaly was detected
- attach images/videos of the anomaly

Maserati technical support will indicate the operations to be performed and the eventual parts that must be replaced and returned for analysis.

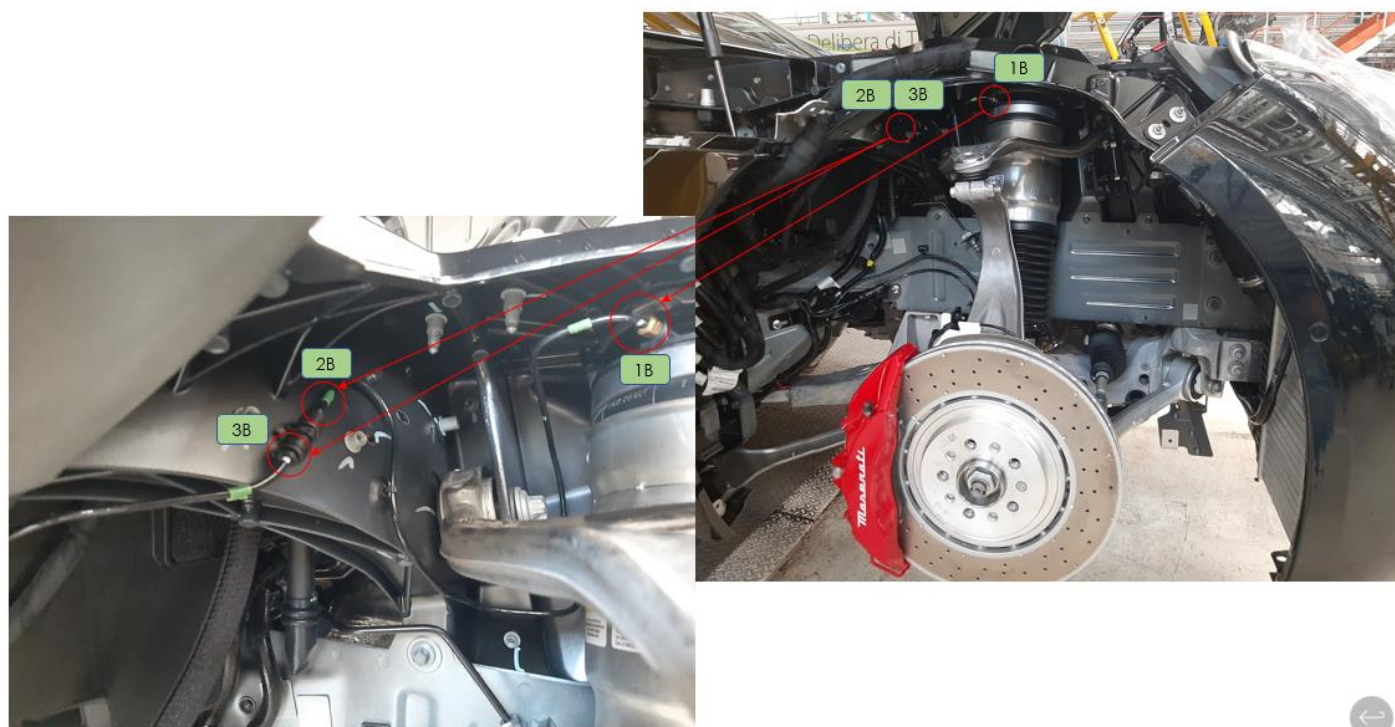
Inspection points for the New Granturismo



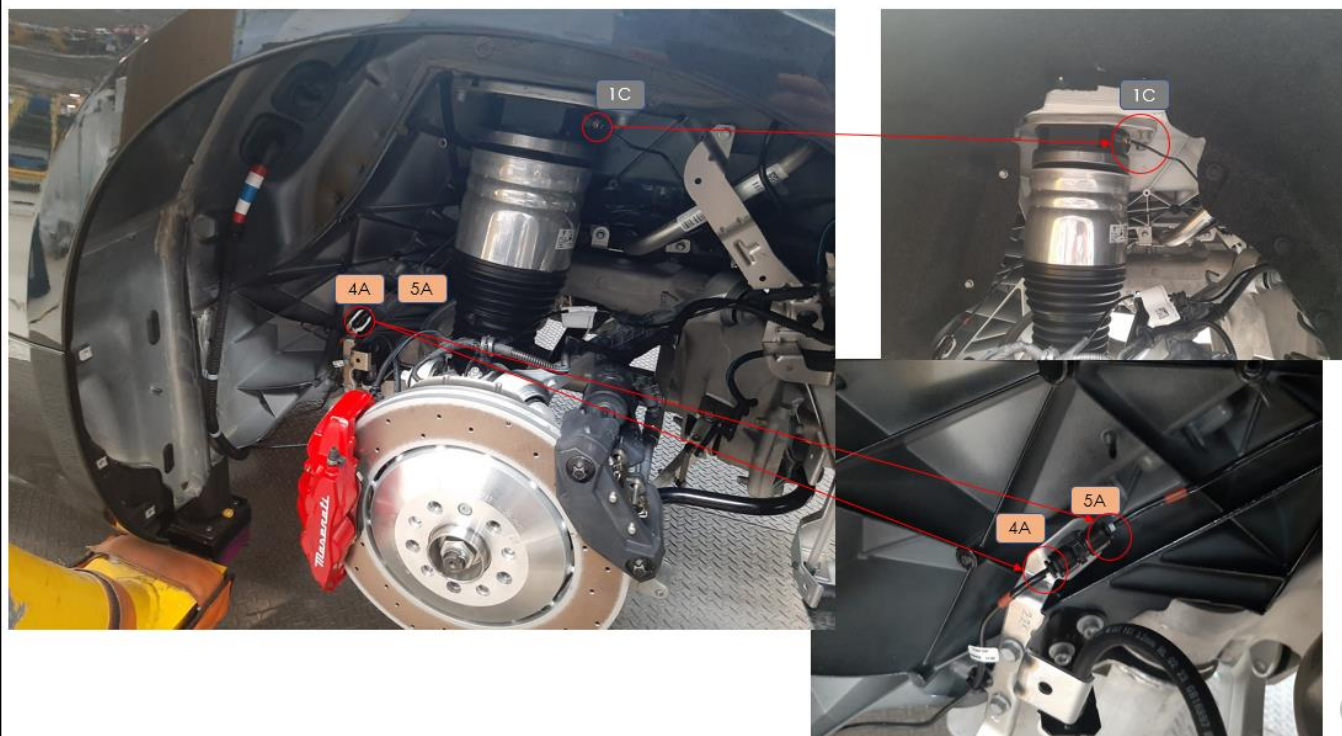
M189 - FL – Pipe connections



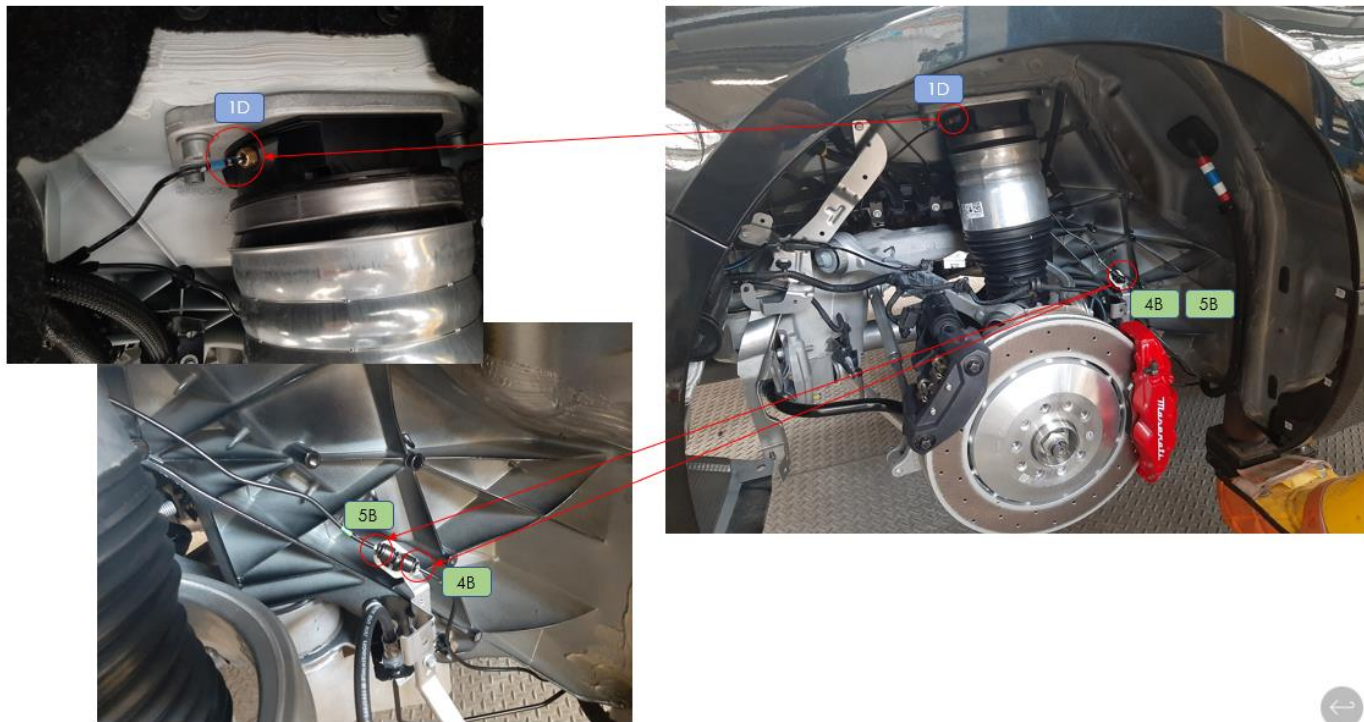
M189 - FR – Pipe connections



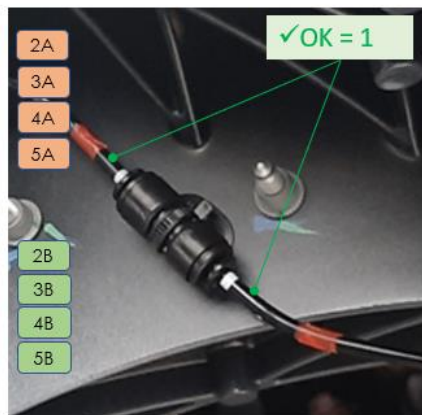
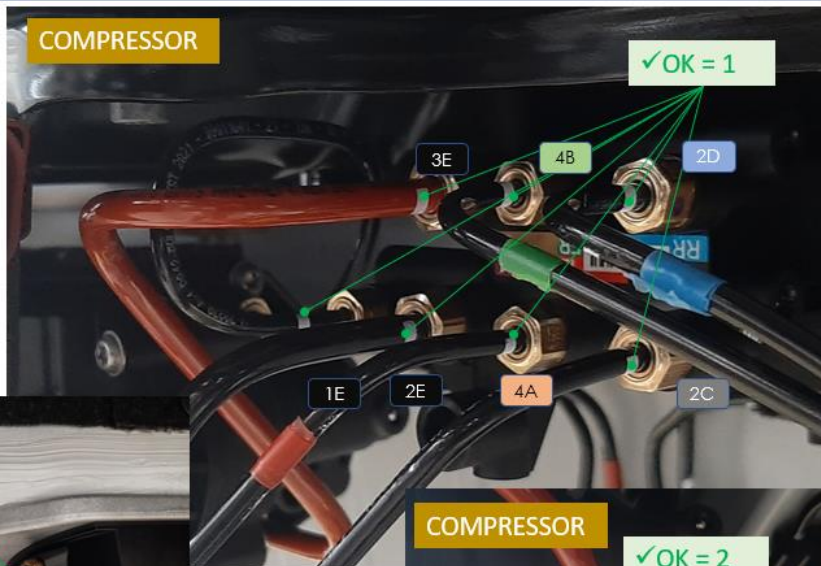
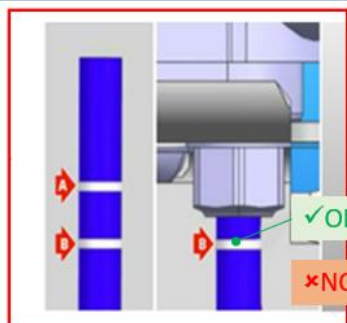
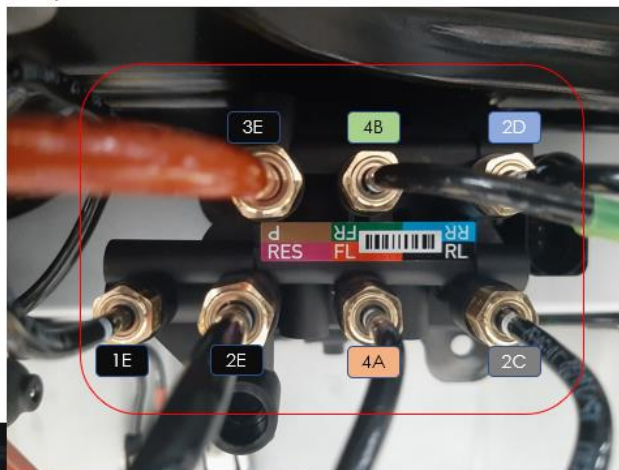
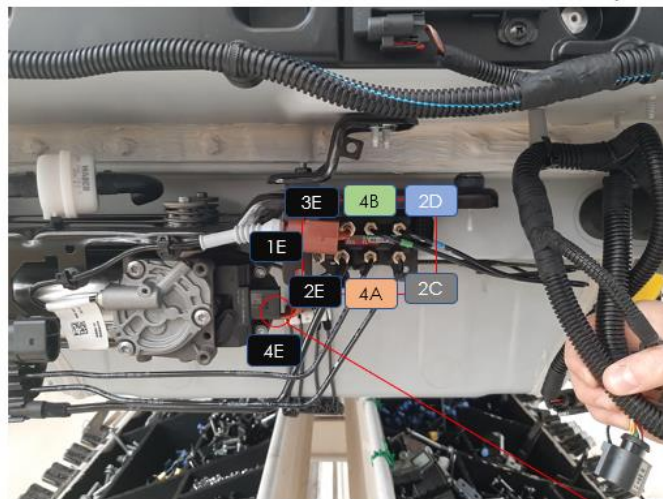
M189 - RL – Pipe connections

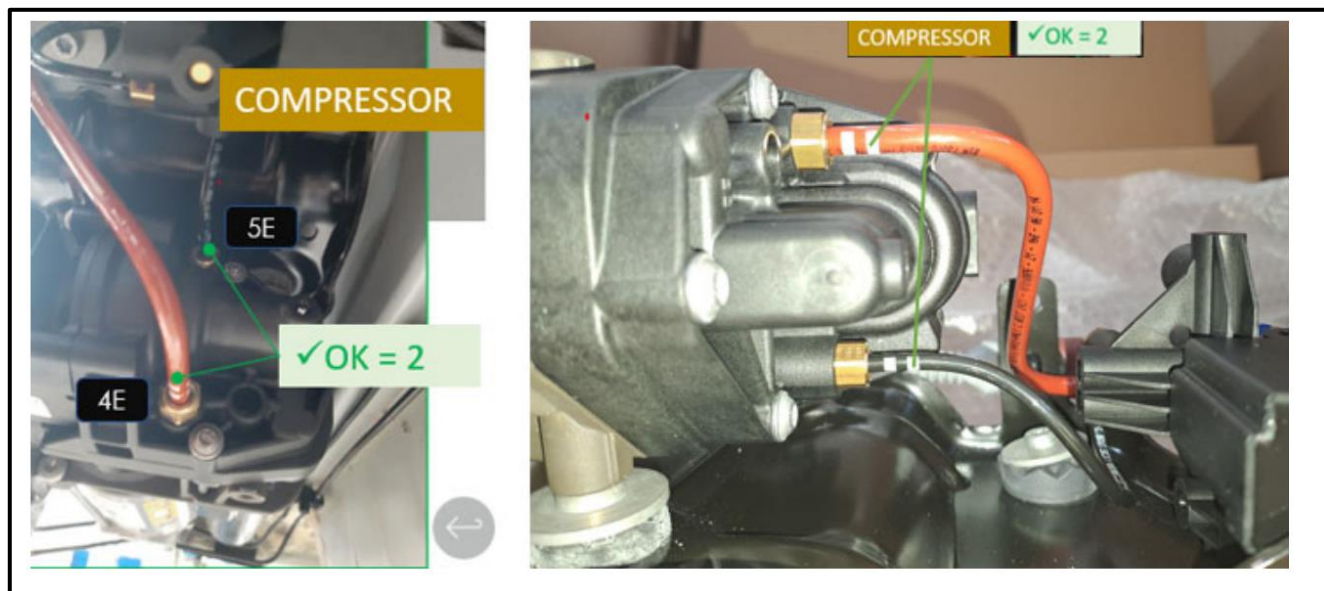


M189 - RR – Pipe connections



M189 – Compressor – Pipe connections





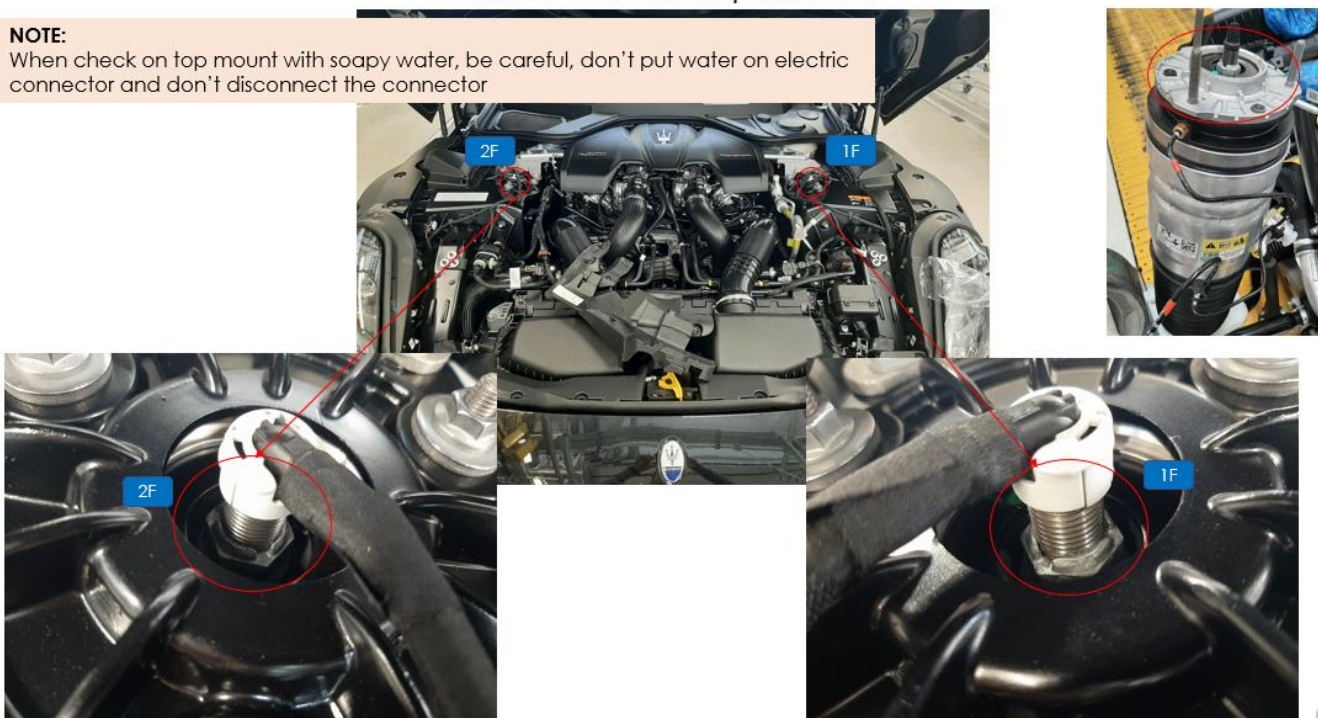
M189 – Compressed air tank – Pipe connections



M189 – Front Top Mount

NOTE:

When check on top mount with soapy water, be careful, don't put water on electric connector and don't disconnect the connector



Fill in the inspection point checklist.

AREA	#	LEAK? YES/NO	INS. « I » 1 OR 2
FL	1A		
	2A		
	3A		
	1F		
FR	1B		
	2B		
	3B		
	2F		
RL	4A		
	5A		
	1C		
RR	4B		
	5B		
	1D		
COM	2D		
	2C		
	4A		
	4B		
	1E		
	2E		
	3E		
	4E		