Technical Information
FROM: Maserati TSO
TO: Maserati Network

Maserati
PERSONAL SERVICE LAB
MASTERS OF CARE

Grecale - New Granturismo: air suspension system check

DATE: May 1, 2024

The Maserati Grecale and 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 basis of the speed to reduce aerodynamic resistance, improve stability, and improve 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 cases 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 axles.

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

The purpose of this information is to guide in diagnosis and identify potential air leaks in the system.

Please do not hesitate to contact us for any questions you may have.
Kind regards,

TECHNICAL SERVICE OPERATIONS

Section 1: Standard vehicle lowering while it is parked

The air suspension system is subject to air micro-leaks 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 of the vehicle and due to the presence of "John Guest" intermediate joints.

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

Pre-conditions:

- position the vehicle in the area where it will be parked for 24 hours (smooth and flat surface); from there, 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
- no passengers and no loads must be in the vehicle; the vehicle weight must not be changed within 24 hours, therefore no equipment must be in the vehicle
- always keep the doors closed and the driver window open to connect/disconnect the scan tool (don't sit in the vehicle)
- before starting the procedure, wait until the vehicle is in a "cold engine" condition - a change of the temperature on the spring can impact the vehicle's alignment

1. connect the scan tool to the vehicle through the open window (doors closed)
2. check the pressure of all four tires from the vehicle cluster/IPC or from the scan tool in RFHM ECU and indicate the values in the check list table at the end of section 1 in the bulletin
3. with the scan tool check for the presence of any stored DTC's; in case of any DTC's, do a complete PDF scan report of all the control units and then delete all the DTC's
4. verify that the following items are <u>not</u> active:
    a) vehicle in ship mode or the lifted condition (the Lifter condition is only for the New Granturismo)
    b) tire jack mode
5. carry out the following operations:
    a) with the scan tool 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 to the highest point of each front wheel arch (**<u>borlotto height</u>** – see image on page 3 of pdf for clarification) with the scan tool in VDCM ECU - 7005 - Vertical Dynamic Ride Height Sensors – and indicate the values in the check list table at the end of section 1 of the bulletin
    c) execute the "Get Out of In - Plant Mode" routine with the scan tool and make sure it ends successfully
    d) verify DTC C2212-00 "ECU In Plant Mode" in ECM is no longer present
    e) if the DTC C2212-00 is stored, run the "Get Out of In-Plant Mode" routine in ECM again
    f) disconnect the scan tool through the open window (doors closed)
6. measure the vehicle height from the ground to the highest point of each front wheel arch and indicate the values in the check list table at the end of section 1 of the bulletin
7. wait 6 hours
8. measure the height from the ground to the highest point of each front wheel arch and indicate the values in the check list table at the end of section 1 of the bulletin

9. connect the scan tool to vehicle through the open window (doors closed, don't sit in the car)
10. check the tire pressures from the vehicle cluster/IPC or from the scan tool in the RFHM ECU and indicate the values in the check list table at the end of section 1 of the bulletin
11. read the height from the ground to the highest point of each front wheel arch with the scan tool in VDCM ECU - 7005 - Vertical Dynamic Ride Height Sensors – and indicate the values in the check list table at the end of section 1 of the bulletin
12. Run the "Get Out of In-Plant Mode" routine and make sure it ends successfully

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.

If the difference between the measurements at point 6 and point 8:

- **is greater than 6 mm**, the opening of a BOL is required; indicate the values in the check list table at the end of section 1 of the bulletin.
- **is less than 6 mm**, don't level the car and repeat the procedure from point 1 to point 6 after 24 hours.

If the **total lowering** of the vehicle **after 24 hours** (difference between the height value at point 6 and the height value at point 6 after 24 hours):

- **is greater than 6 mm**, the opening of a BOL is required; indicate the values in the check list table at the end of section 1 of the bulletin.
- **is less than 6mm**, then the car can be leveled and considered compliant with standards.

Fill in the check list 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)?			

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

Tires pressure – indicate bar or psi					
		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: Anomalous car lowering while parked – air leakage in the system

In this section you can find the diagnostic guidelines to identify the potential source of air leakage in the system.

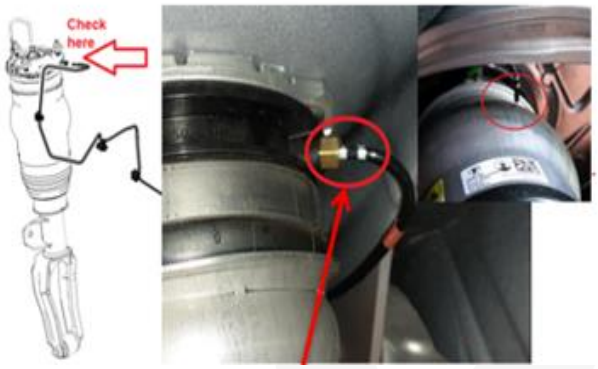
The following checks must be executed in the situation that there are no DTC's stored and/or in the case that there are no warning lights in the cluster/IPC.

Potential DTC stored:

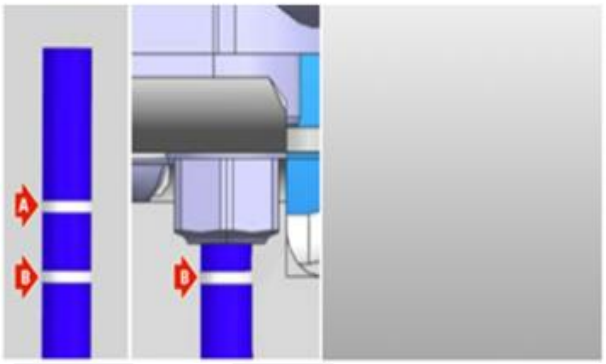
VDCM (1541) - Vehicle Dynamics Control Module: 55A100 - Unable to Obtain Desired Ride Height

Potential warning light in the cluster/IPC:

1 – Front axle

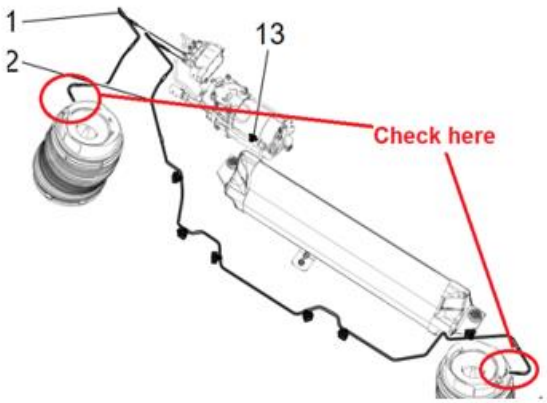


Sample of incorrect Air Suspension pipe installation on the front Air spring



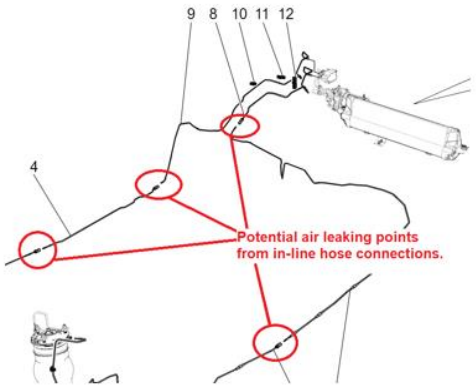
Correct layout to be ensured on the vehicle (points A and B)

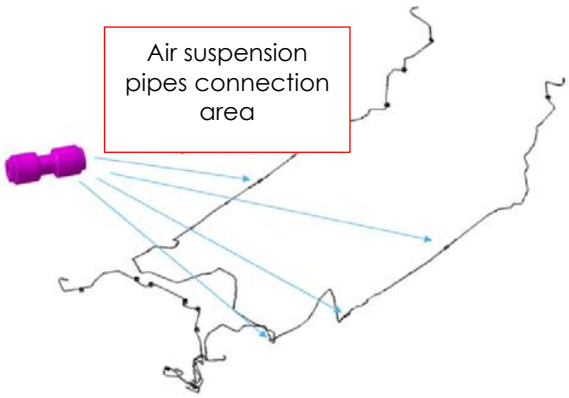
2 – Rear axle



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

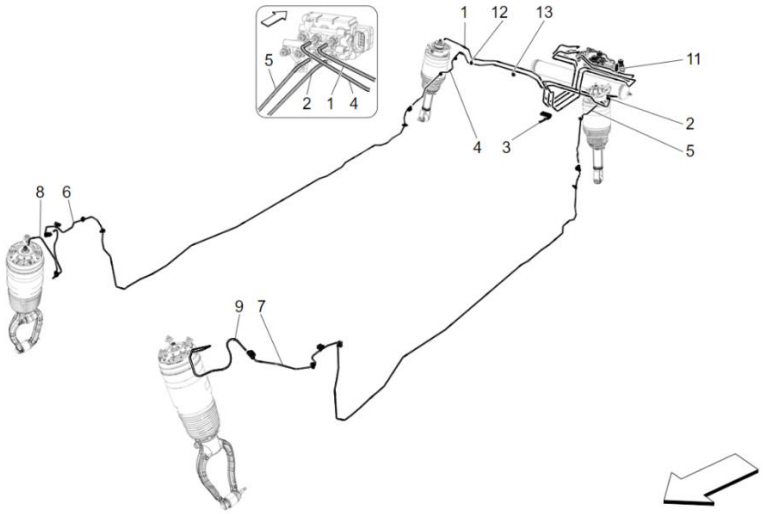
3a – Pipe connection area – Grecale (check the connections for at least 5-10 minutes with one of the products indicated at the end of this document)



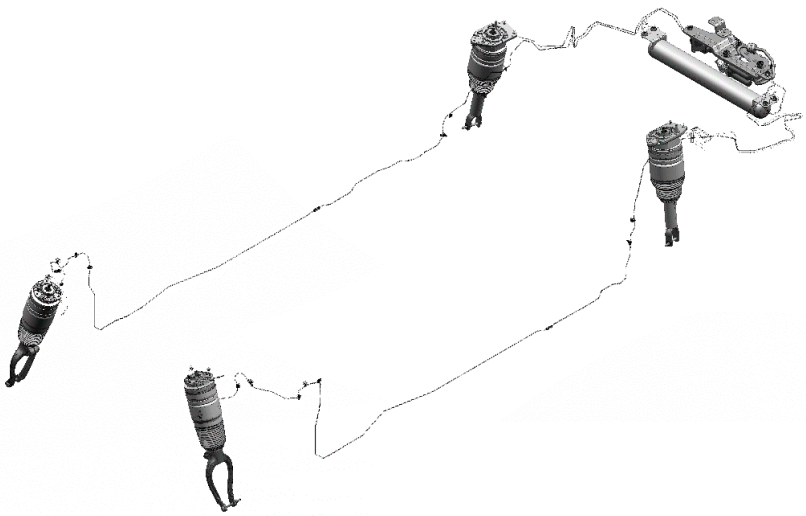


3b – Pipe connection area – New Granturismo (check the connections for at least 5-10 minutes with one of the products indicated at the end of this document)

Old configuration



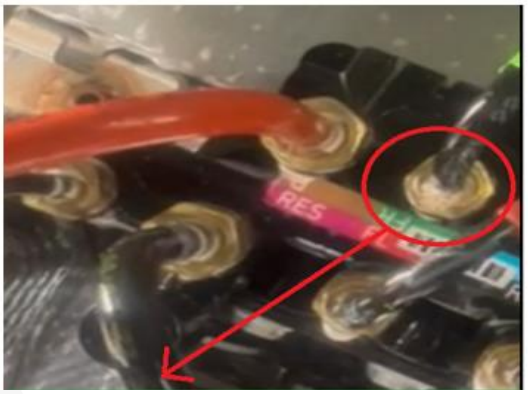
New configuration



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

4 – Air Valves Block pipes – disconnected or wrongly fitted (check the connections for at least 5-10 minutes with one of the products indicated at the end of this document)

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 (full lock position), hold the steering wheel in this position for 30 seconds and check for any sudden lowering of the front part of the car or audible leak.

Straighten the steering wheel and wait for the vehicle to level

Repeat the operation by activating the steering wheel completely to the right (full lock position), hold the steering wheel in this position for 30 seconds and check for any sudden lowering of the front part of the car or audible leak

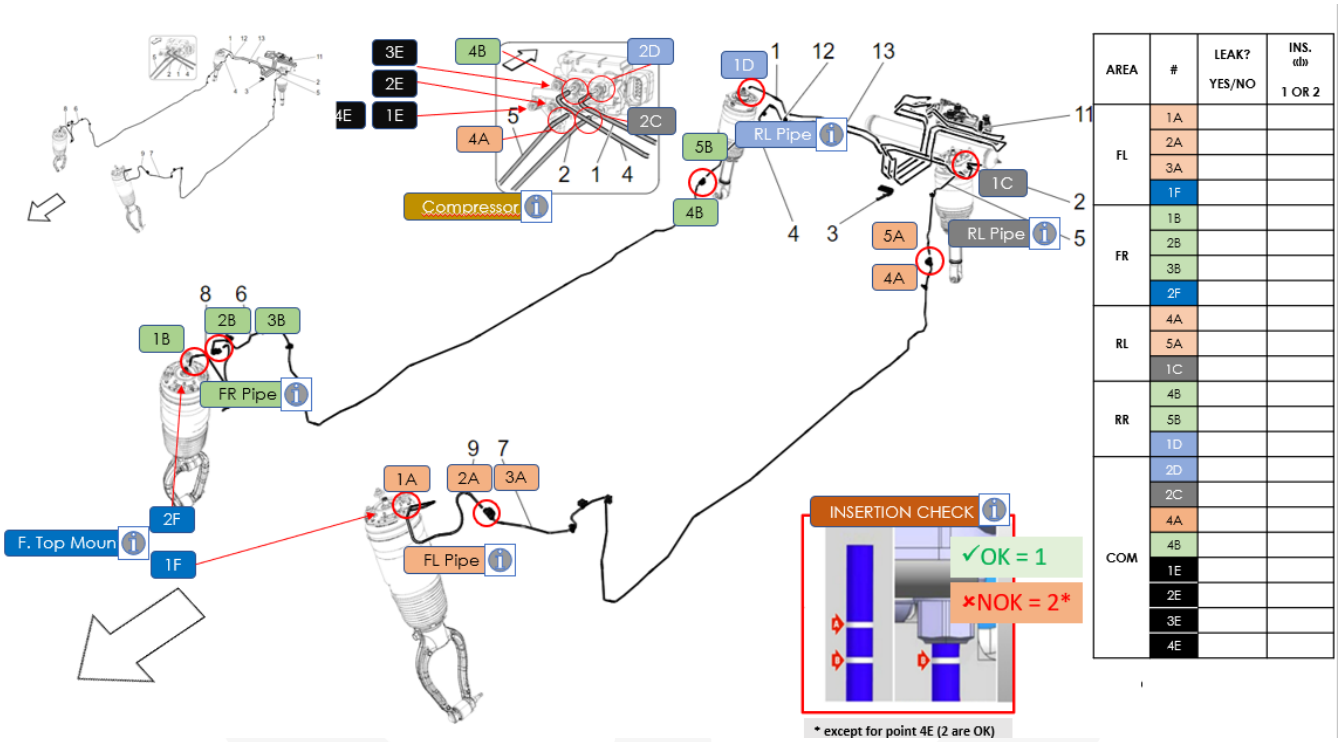
If the car does not lower, repeat the same maneuvers on a slightly sloping road and check for any sudden lowering of the front part of the car or audible leak

NOTE: THE HEIGHT LOWERING CHECK MUST BE PERFORMED WHEN THE WHEELS ARE FULLY TURNED. DURING THE STEERING LOCK MANUVEUR 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 diagnosis and the root cause of the problem, should you detect any leakage in the system, it is requested (for the next two months starting from the date of this publication) to:

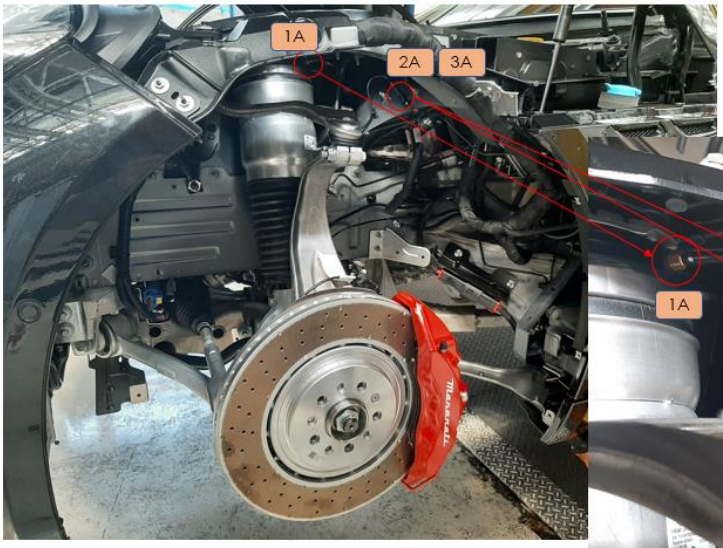
- don't perform any restore operation
- open a BOL ticket reporting the detected anomaly
- indicate the area in which the anomaly was detected
- attach images/videos of the anomaly

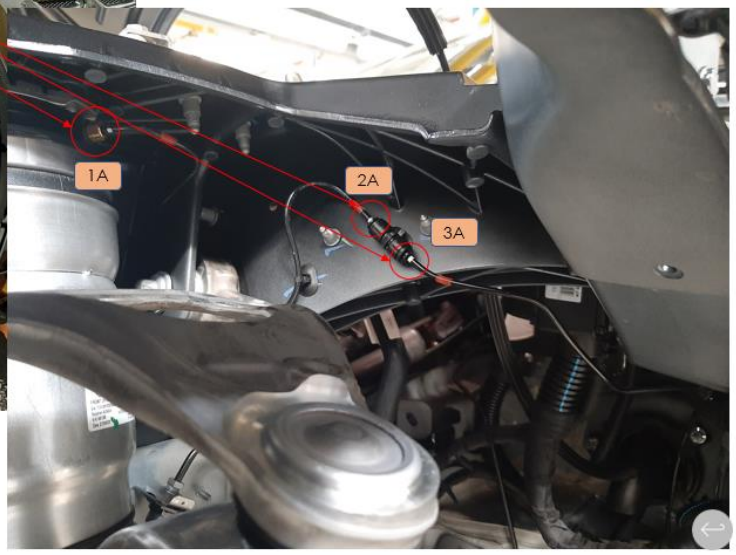
Maserati technical support will indicate the operations to be performed and the eventual parts that must be replaced and returned for analysis.



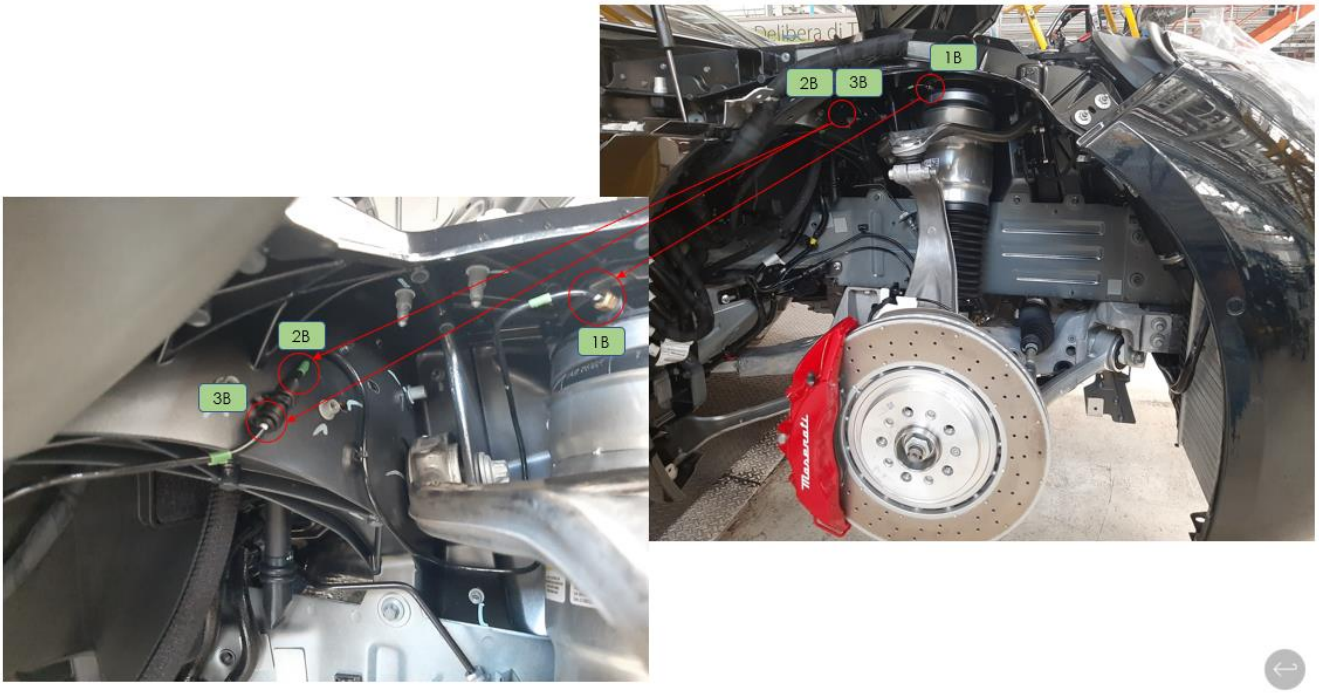
AREA	#	LEAK? YES/NO	INS. 1 OR 2
FL	1A		
	2A		
	3A		
	1F		
FR	1B		
	2B		
	3B		
	2F		
RL	4A		
	5A		
	1C		
RR	4B		
	5B		
	1D		
COM	2D		
	2C		
	4A		
	4B		
	1E		
	2E		
	3E		
	4E		

M189 - FL – Pipe connections

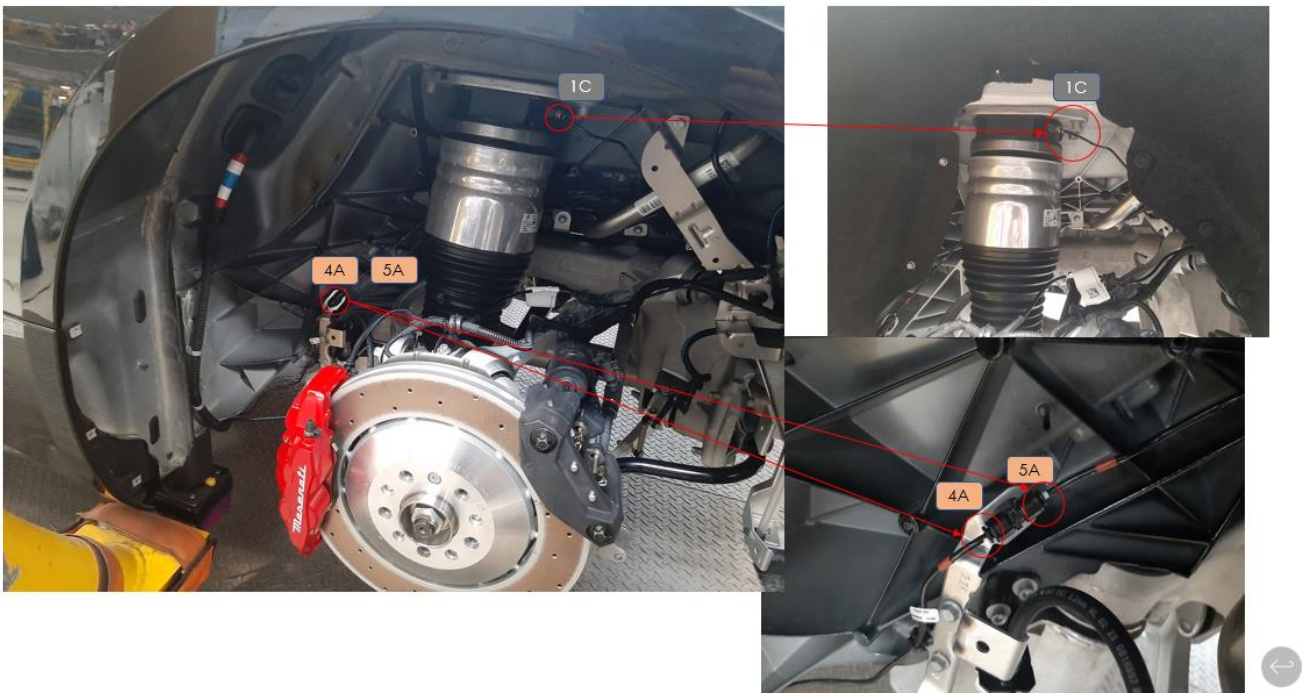




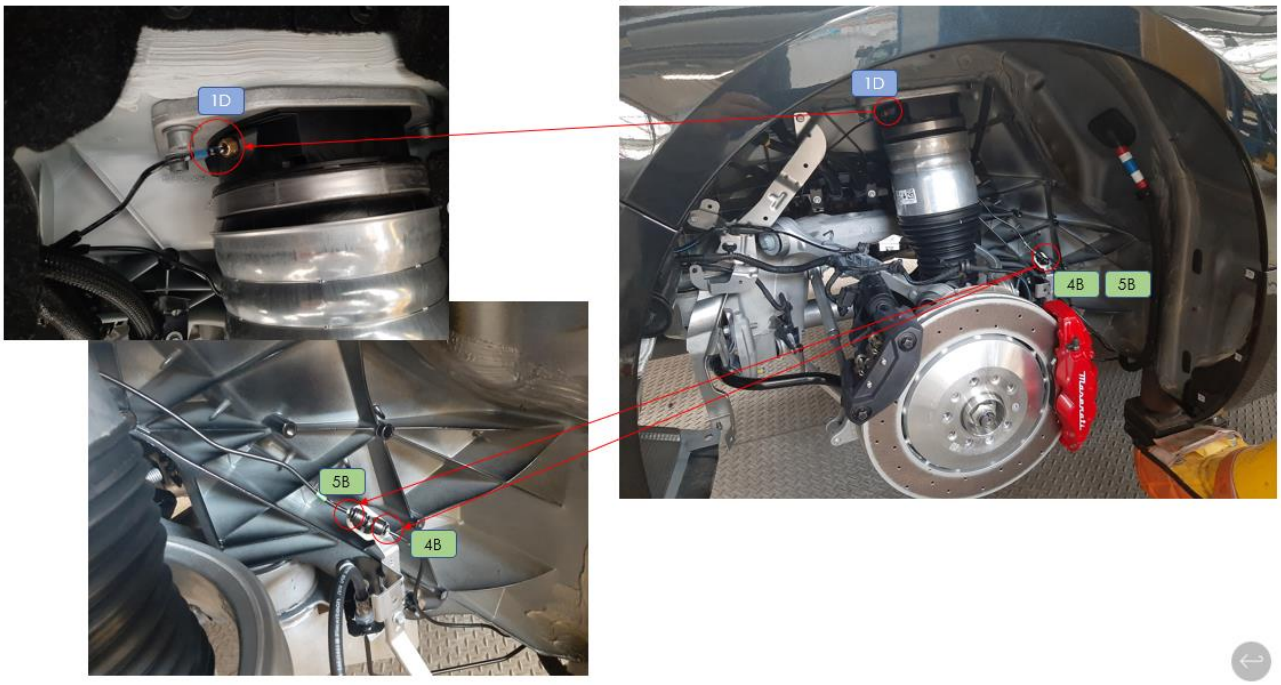
M189 - FR – Pipe connections



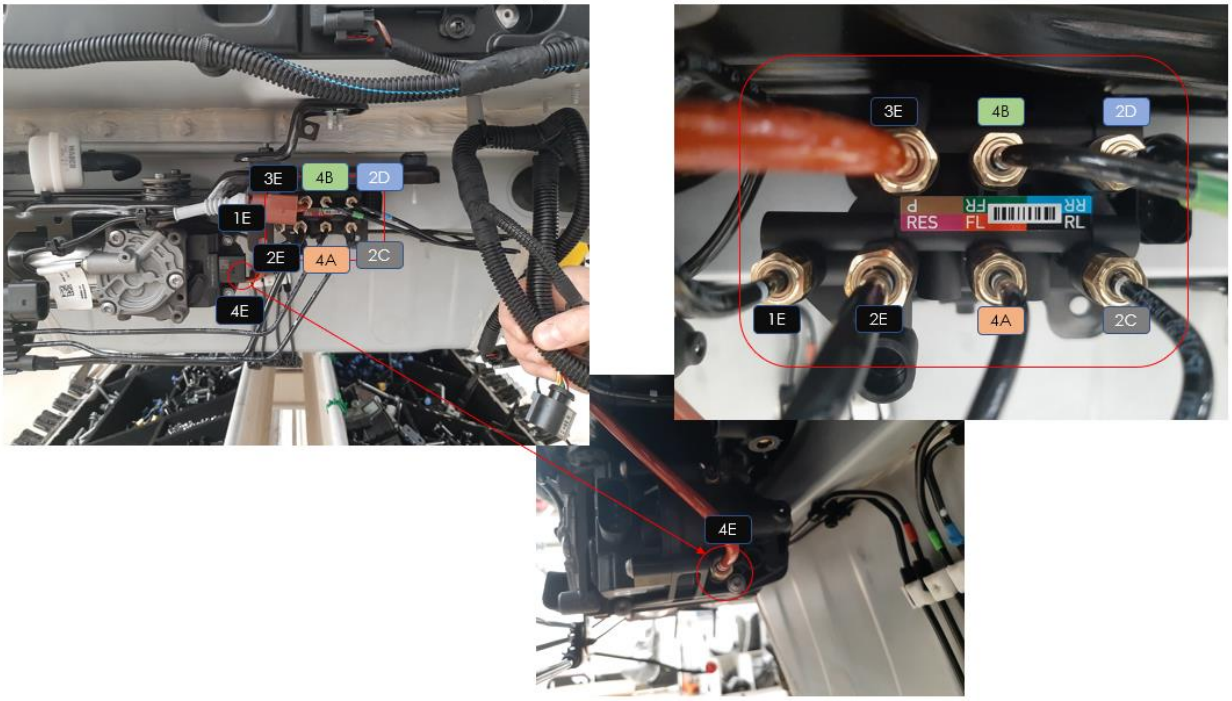
M189 - RL – Pipe connections

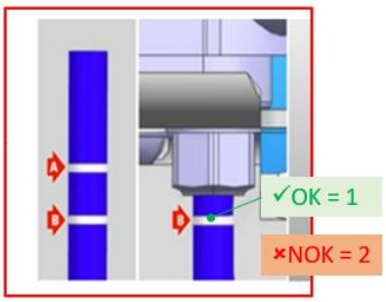


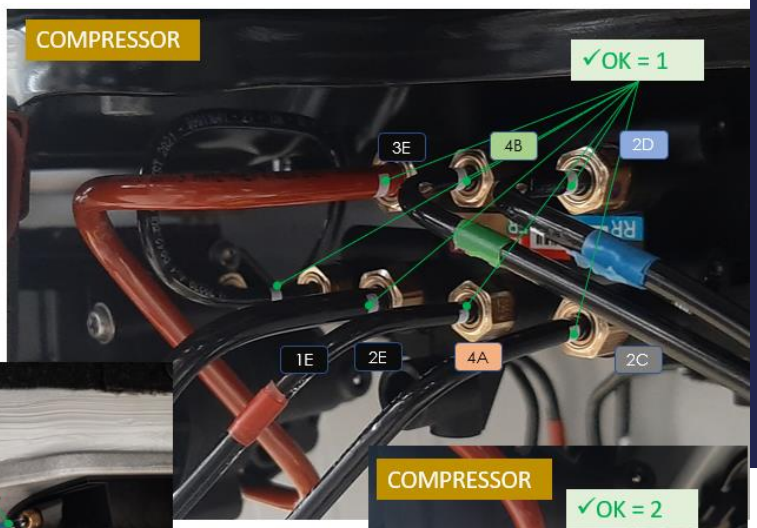
M189 - RR – Pipe connections

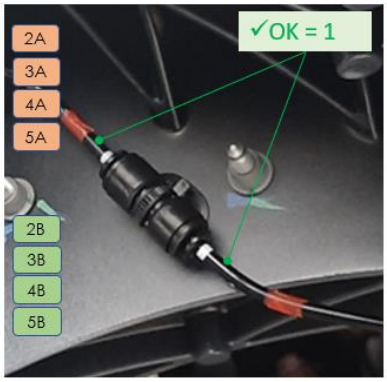


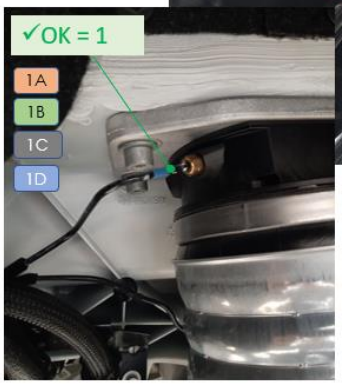
M189 – Compressor – Pipe connections

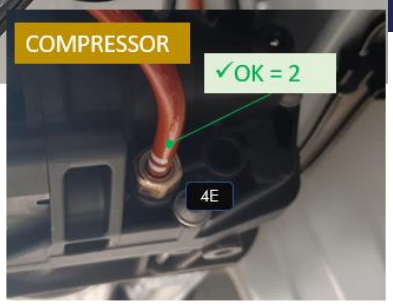


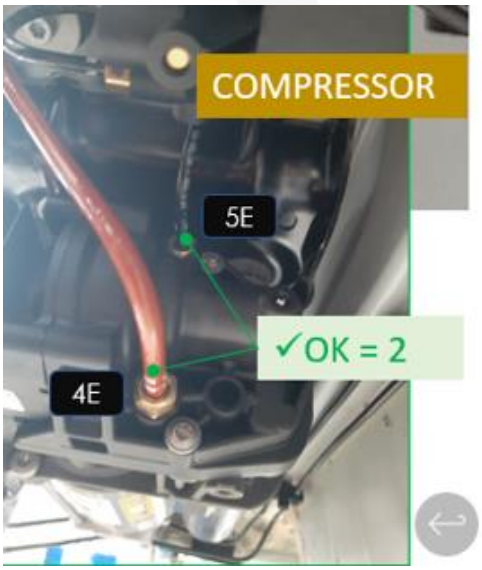


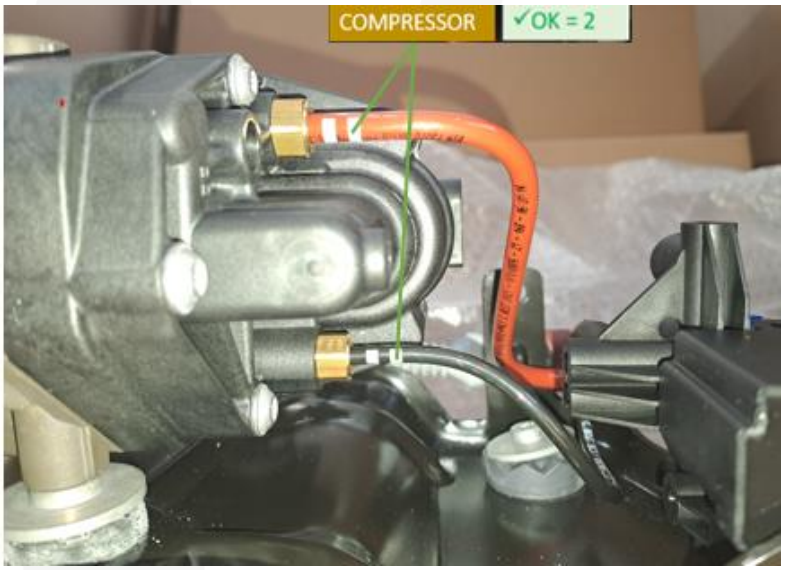








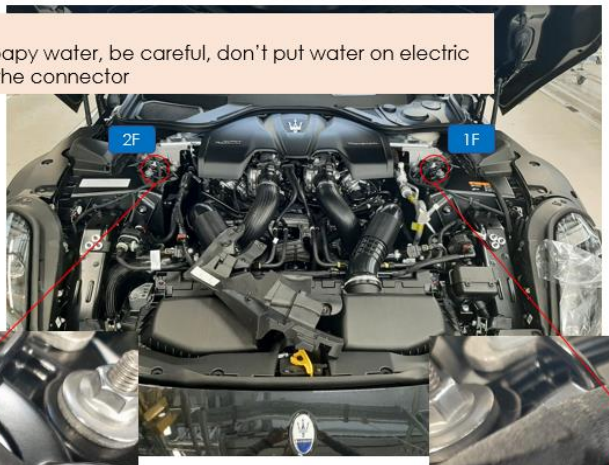




M189 – Compressed air tank – Pipe connections

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

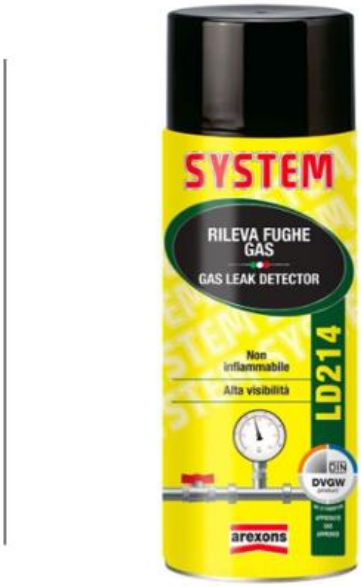


Fill in the check list related to the inspection points

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		
	5E		
	Compressed air tank		

Products to be used to check for any leakage in the air suspension system.

- Kemper 1726 revel gas
- Arexons System LD214 gas leak detector
- 1000 Bulles Air Liquide gas leak detector



Codes to be used to claim the labor costs under warranty.

Use the following codes to request the labor costs under warranty depending on the check performed:

- Section 1: 6.24.000.A for both models (0.85 hours)

Section 2: 6.24.000.B for both models (in this case the time will automatically differ depending on the model: 1.6 hours for Grecale – 2.3 hours for Granturismo).