OM654 Engine Cranks with No Start / Insufficient High-Pressure Fuel Build-Up

Topic number	LI07.16-N-080732
Version	1
Function group	07.16 - Diesel injection system common rail
Date	6/18/26
Validity	OM654 Sprinter 907
Reason for change	

Complaint

The customer reports that the engine cranks but does not start, or only starts after extended cranking. A check engine light may be present, and fault codes P300616 (The fuel pressure in the system is too low) and/or P300617 (The fuel pressure in the system is too low) may be stored, along with other fuel pressure-related fault codes.

Cause

Insufficient high-pressure fuel build-up during engine cranking. The fuel system does not achieve the required rail pressure of >120 bar, preventing engine start.

This condition may be caused by internal leakage within the fuel injection system, inadequate fuel supply from the low-pressure circuit, or a malfunction of the high-pressure fuel pump.

Remedy

1. Verify high-pressure fuel rail pressure during engine cranking using XENTRY actual values.

• Evaluate the actual value “The starter turns and the combustion engine does not start” and monitor high-pressure fuel rail pressure during cranking.

(See attachment: XENTRY actual values – rail pressure not reaching >120 bar)

• The system must achieve a minimum of >120 bar in order to enable engine start.

→ If the specified rail pressure is not achieved, perform the following checks:

2. Check low-pressure fuel supply

• Verify fuel quality (color, clarity, separation, contamination)

• Inspect fuel tank, fuel filter, and low-pressure fuel pump for debris, restriction, or damage

• Measure low-pressure fuel supply before and after the fuel filter and confirm values are within specification

• Perform a fuel volume test at the high-pressure pump inlet to ensure adequate delivery

• Verify that the injector leak line is installed correctly, remains unmodified, and is not restricted or kinked

→ If low-pressure fuel supply is not within specification:

Repair as necessary and recheck high-pressure fuel build-up

3. Check for internal leakage within the fuel injection system

• Perform a fuel injector leak/return test using XENTRY

• Evaluate injector leak-back during cranking

NOTE:

If the combustion engine does not start, perform the test by cranking the engine 3–4 times for approximately 15 seconds each, instead of allowing the engine to run for approximately 60 seconds

→ If injector leakage is present:

Replace the affected injector(s) and perform injector teach-in

4. Check high-pressure fuel system

• If no leakage is identified and low-pressure supply is sufficient, evaluate high-pressure fuel generation

→ If high-pressure fuel system does not generate sufficient pressure:

Replace the high-pressure fuel pump

5. Final verification

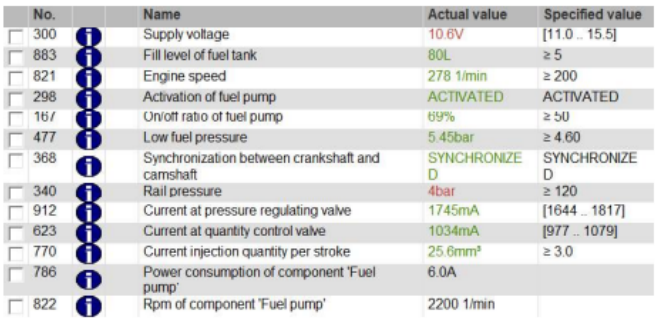
• Verify that rail pressure exceeds >120 bar during cranking

• Confirm the engine starts normally without extended crank

• Clear fault codes and perform final validation

Note:

All work must be carried out in accordance with applicable WIS procedures. Ensure proper cleanliness when working on the fuel system and complete all required teach-in processes.

Attachments	
File	Description
Rail Pressure.png 	Rail pressure not reaching >120 bar

No.	Name	Actual value	Specified value
300	Supply voltage	10.6V	[11.0 .. 15.5]
883	Fill level of fuel tank	80L	≥ 5
821	Engine speed	278 1/min	≥ 200
298	Activation of fuel pump	ACTIVATED	ACTIVATED
167	On/off ratio of fuel pump	69%	≥ 50
477	Low fuel pressure	5.45bar	≥ 4.60
368	Synchronization between crankshaft and camshaft	SYNCHRONIZED	SYNCHRONIZED
340	Rail pressure	4bar	≥ 120
912	Current at pressure regulating valve	1745mA	[1644 .. 1817]
623	Current at quantity control valve	1034mA	[977 .. 1079]
770	Current injection quantity per stroke	25.6mm³	≥ 3.0
786	Power consumption of component 'Fuel pump'	6.0A	
822	Rpm of component 'Fuel pump'	2200 1/min	

Disclaimer

NOTE: The information contained in this document is intended for use by trained, professional technicians with the knowledge to properly and safely perform diagnosis and repairs on Mercedes-Benz vehicles, using Mercedes-Benz approved tools and equipment. It informs service technicians about conditions that could occur in certain vehicles and provides information that could assist in proper vehicle diagnosis, service, or repair. It does not indicate that a defect is present in any vehicle referenced in this document nor does it imply warranty coverage. DO NOT assume that a symptom or condition, or a described cause of a symptom or condition, affects any particular vehicle or groups of vehicles, or that a described repair applies to any particular vehicle or groups of vehicles. There can be multiple causes resulting in the same or similar symptoms or conditions described in this document, and trained professional service technicians must use their diagnostic skills to make evaluations on a case-by-case basis. The information contained in this document does not guarantee warranty coverage nor does it extend the vehicle's warranty in any way.

Symptoms
Power generation > Fuel system > Fuel pump > Malfunction
Power generation > Engine management > Indicator lamp > Engine diagnosis > lit
Power generation > Engine management > Engine start/stop > Long starting time
Power generation > Engine management > Engine start/stop > Does not start
Power generation > Engine management > Function > Malfunction

Operation numbers/damage codes				
Op. no.	Operation text	Time	Damage code	Note