C63/GTx with M17LS1/178 Check Engine Light on with Misfire DTC's. Engine Running Roughly

Topic number	LI54.21-P-062006
Version	11
Function group	54.21 Control units / basic modules
Date	11-20-2019
Validity	Model 190.3## Model 190.4## Model 205.#8#
Reason for change	Updated coil pack part number
Reason for block	

Complaint:

Engine running rough / Fault code entry

Possible fault codes:

P030185 - Combustion misfiring of cylinder 1 was detected.

P030285 - Combustion misfiring of cylinder 2 was detected.

P030385 - Combustion misfiring of cylinder 3 was detected.

P030485 - Combustion misfiring of cylinder 4 was detected.

P030585 - Combustion misfiring of cylinder 5 was detected.

P030685 - Combustion misfiring of cylinder 6 was detected.

P030785 - Combustion misfiring of cylinder 7 was detected.

P030885 - Combustion misfiring of cylinder 8 was detected.

P030022 - Combustion misfiring was detected

Cause:

Misfire detection protocol in ME SW

Attachments	
File	Description
IMG_3273.JPG	Example image of ceramic damage on spark plug
20150609_105958.jpg	Example image of electrode damage on spark plug

Remedy:

Check that the ME Control Software is up to date

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If ME Control Unit Software is NOT up to date:

1. Update the ME SW along with the VGS, PTCU, and FSCU control units.
2. Ensure that all ignition coils are part number A 177 906 42 02
3. After updating, clear out the mixture adaptation data and perform 2 AMG Engine Adaptation Drives
4. Read out the injector performance data, label this "IPDA"
5. Perfrom 2 AMG engine adaptation drives (this can be found in the AMG User's Guide), then read out and upload the injector performance data. Label this "IPDB"
6. Perform a line graph version of the fault counter per the attachment: "Hot-Cold Misfire Detection"
7. Create a PTSS case and upload the old (showing the fault codes) IQT, the new (after ME update) IQT, IPDA, IPDB, and Fault Counter Readout
8. The data will be reviewed and you will be given instructions on whether to release the vehicle or perform further adaptations

If ME Control Unit Software IS up to date:

1) Smoke test intake/exhaust and check for leaks. NOTE: The intakes to the turbochargers as well as the tubes from the turbochargers to the intercoolers must be tested.

- Repair as necessary.
- NOTE: Smoke emanating from the wastegate arm bushing on the center section of the turbo is normal when the turbo is cold.
- If no leaks are found, or repair does not remedy complaint proceed to step (2).

2) Inspect ignition coils and verify they are PN: A 177 906 95 00.

- Replace as necessary.
- If all coils are PN A 177 906 95 00 swap the coil(s) of the misfiring cylinder(s) with those of cylinder(s) that are not misfiring and road test the vehicle.
    - If the misfires move with the coils, replace the coils and the spark plugs on original misfiring cylinders
    - If the misfires do not move with coils, or if the misfires do not reappear proceed to step (3)

3) Measure the following grounds. If any reading is above 0.5 ohm, check grounding locations (per attachments).

- ME Connector F, Pin 1 to ground
- ME Connector F, Pin 2 to ground
- ME Connecter F, Pin 4 to ground
- ME Connector M, Pin 6 to ground
- ALL Coils, Pin 1 to ground
- Rework grounding locations by removing and cleaning the chassis ground point(s) of any paint or debris.
- If rework/replacement does not remedy complaint, proceed to step (4).

4) If the check engine light returns while trying to complete step (4) open a PTSS case IMMEDIATELY and INCLUDE IN THE CASE:

1. All Data from previous steps
2. MED1775 Control Unit Log
3. Fault codes without status filter
4. Software update check for ME and Transmission control units
5. Graphical version of the fault counter per the instructions in the attachments
6. PICO compression test or manual compression test of all cylinders

Attachments	
File	Description
AMG Adaptation.docx	AMG Engine Adaptation Drive
Fault Counter.pdf	Fault Counter Instructions

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Hot-Cold Misfire Detection.pdf	Hot-Cold Misfire Detection
C_Class Ground Points LS1.pdf	C-Class Ground Points
GT Ground Check.pdf	GT Ground Points

Symptoms
Power generation / Engine management / Engine running / Runs rough/shakes
Power generation / Engine management / Indicator lamp / Engine diagnosis / lit

Control unit/fault code		
Control unit	Fault code	Fault text
N3/10 - Motor electronics 'MED1775' for combustion engine 'M177' (ME)	-	-

Operation numbers/damage codes				
Op. no.	Operation text	Time	Damage code	Note
			54575 90	Use the appropriate damage code according to the cause

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