

Drive belt chatter at idle / power steering complaints / vehicle runs hot / CEL with DTCs P13BA00 - P13BF00 or P13C000 - P13C500

Topic number	LI13.20-N-066706
Version	1
Function group	13.20 Belt drive, general
Date	07-25-2017
Validity	906
Reason for change	
Reason for block	

Complaint:

Drive belt chatter at idle

Power steering complaints

Vehicle runs hot

CEL with DTCs:

P13BA00 - P13BF00 - "Maximum actuation duration for zero quantity calibration for fuel injector of cylinder X exceeded"

P13C000 - P13C500 - "Maximum actuation duration for zero quantity calibration for fuel injector of cylinder X not reached"

Cause:

The cause may be the one way clutch on the alternator is seized or has excessive resistance.

Remedy:

1 - Remove the poly-V belt (AR13.22-D-1202HD (OM642) or AR13.22-D-1202WE (OM651)).

2 - Pry the plastic cover off the end of the alternator pulley (Figure 1a or 1b, G2). Insert socket wrench tool (W602 589 00 10 00) to hold the shaft from turning (Figure 2). Turn the pulley clockwise by hand and it should lock. Turn the pulley counterclockwise, it should freewheel.

3 - If the pulley did not freewheel, it needs to be replaced. It is not necessary to replace the alternator.

4 - Use a 17mm wrench on the end of the socket wrench tool and hold it stationary (allow it to contact the frame/sub frame). Insert socket through the center of the socket wrench tool and into the end of the alternator shaft. For Bosch alternators, use M10 socket W601 589 00 10 00 and for Valeo alternators use a long Torx 50 socket available commercially. Turn the socket clockwise to remove the pulley (Figure 2). Remove spacer on Valeo alternator (Figure 3).

5 - Confirm correct length of pulley, long pulley for Valeo and shorter pulley for Bosch and Valeo, refer to EPC (Figure 4). Install new pulley and tighten with the socket counterclockwise to 80 nm. Use a torque wrench that functions in both directions. Install new plastic cover on end of pulley. It is important to follow loosening and tightening instructions as described.

6 - For vehicles with N62 Auxillary generator or N63 A/C / refrigeration compressor (Figure N62, N63, and N63 belt) please verify these components have one way clutch pulley installed and that the pulley is functioning properly.

XENTRY TIPS

[i] Note: A seized alternator pulley freewheel will cause the belt tensioner to oscillate back and forth when the engine is running. It can also cause the failure of the AC compressor pulley

Attachments	
File	Description
Pic 2.JPG	Special tool usage for pulley testing / replacement
Pic 3.JPG	Alternator with pulley removed
Pic 4.JPG	Pulley comparison
Special tools.JPG	Special tools
Pic 1a.jpg	Poly-V belt routing OM642
Pic 1b.JPG	Poly-V belt routing OM651
N62.jpg	Auxiliary Generator
N63.jpg	A/C or refrigeration compressor
N63 belt.jpg	A/C or refrigeration compressor belt

Symptoms
Power generation / Engine noise / Chattering
Power generation / Engine cooling system / Function / Has a high coolant temperature
Chassis/suspension / Steering system / Function / Stiff/sluggish
Power generation / Mechanical engine components / Belt drive / V-belt / Noise

Control unit/fault code		
Control unit	Fault code	Fault text
CDI60Common Rail Diesel Injection (CR60NFZ)	P13C500	Minimum actuation duration for zero quantity calibration for injector of cylinder 6 not reached
CDI60Common Rail Diesel Injection (CR60NFZ)	P13BD00	Maximum actuation duration for zero quantity calibration for injector of cylinder 5 exceeded
CDI60Common Rail Diesel Injection (CR60NFZ)	P13BA00	Maximum actuation duration for zero quantity calibration for fuel injector of cylinder 1 exceeded (MOPF)
CDI60Common Rail Diesel Injection (CR60NFZ)	P13C000	Minimum actuation duration for zero quantity calibration for injector of cylinder 1 not reached
CDI60Common Rail Diesel Injection (CR60NFZ)	P13BD00	Maximum actuation duration for zero quantity calibration for fuel injector of cylinder 5 exceeded (MOPF)
CDI60Common Rail Diesel Injection (CR60NFZ)	P13C400	Minimum actuation duration for zero quantity calibration for injector of cylinder 3 not reached
CDI60Common Rail Diesel Injection (CR60NFZ)	P13BB00	Maximum actuation duration for zero quantity calibration for fuel injector of cylinder 4 exceeded (MOPF)
CDI60Common Rail Diesel Injection (CR60NFZ)	P13BF00	Maximum actuation duration for zero quantity calibration for injector of cylinder 6 exceeded
CDI60Common Rail Diesel Injection (CR60NFZ)	P13C000	Minimum actuation duration for zero quantity calibration for fuel injector of cylinder 1 not reached (MOPF)
CDI60Common Rail Diesel Injection (CR60NFZ)	P13C200	Minimum actuation duration for zero quantity calibration for fuel injector of cylinder 2 not reached (MOPF)
CDI60Common Rail Diesel Injection (CR60NFZ)	P13C100	Minimum actuation duration for zero quantity calibration for fuel injector of cylinder 4 not reached (MOPF)

XENTRY TIPS

CDI60Common Rail Diesel Injection (CR60NFZ)	P13BF00	Maximum actuation duration for zero quantity calibration for fuel injector of cylinder 6 exceeded (MOPF)
CDI60Common Rail Diesel Injection (CR60NFZ)	P13C200	Minimum actuation duration for zero quantity calibration for injector of cylinder 2 not reached
CDI60Common Rail Diesel Injection (CR60NFZ)	P13C300	Minimum actuation duration for zero quantity calibration for injector of cylinder 5 not reached
CDI60Common Rail Diesel Injection (CR60NFZ)	P13BC00	Maximum actuation duration for zero quantity calibration for injector of cylinder 2 exceeded
CDI60Common Rail Diesel Injection (CR60NFZ)	P13BE00	Maximum actuation duration for zero quantity calibration for fuel injector of cylinder 3 exceeded (MOPF)
CDI60Common Rail Diesel Injection (CR60NFZ)	P13C500	Minimum actuation duration for zero quantity calibration for fuel injector of cylinder 6 not reached (MOPF)
CDI60Common Rail Diesel Injection (CR60NFZ)	P13BA00	Maximum actuation duration for zero quantity calibration for injector of cylinder 1 exceeded
CDI60Common Rail Diesel Injection (CR60NFZ)	P13BB00	Maximum actuation duration for zero quantity calibration for injector of cylinder 4 exceeded
CDI60Common Rail Diesel Injection (CR60NFZ)	P13C400	Minimum actuation duration for zero quantity calibration for fuel injector of cylinder 3 not reached (MOPF)
CDI60Common Rail Diesel Injection (CR60NFZ)	P13C100	Minimum actuation duration for zero quantity calibration for injector of cylinder 4 not reached
CDI60Common Rail Diesel Injection (CR60NFZ)	P13BC00	Maximum actuation duration for zero quantity calibration for fuel injector of cylinder 2 exceeded (MOPF)
CDI60Common Rail Diesel Injection (CR60NFZ)	P13BE00	Maximum actuation duration for zero quantity calibration for injector of cylinder 3 exceeded
CDI60Common Rail Diesel Injection (CR60NFZ)	P13C300	Minimum actuation duration for zero quantity calibration for fuel injector of cylinder 5 not reached (MOPF)

Parts

Part number	ES1	ES2	Designation	Quantity	Note	EPC
A 642 154 08 02			Alternator (Valeo) (OM642)	1	Verify Alternator part number in EPC by VIN	X
A 642 150 06 60			Alternator pulley (OM642)	1	Verify Alternator pulley part number in EPC by VIN	X
A 000 906 31 22			Alternator (OM651)	1	Verify Alternator part number in EPC by VIN	X
A 278 150 00 60			Alternator pulley (OM651)	1	Verify Alternator part number in EPC by VIN	X

Attachments

XENTRY TIPS

Pic 2.JPG:

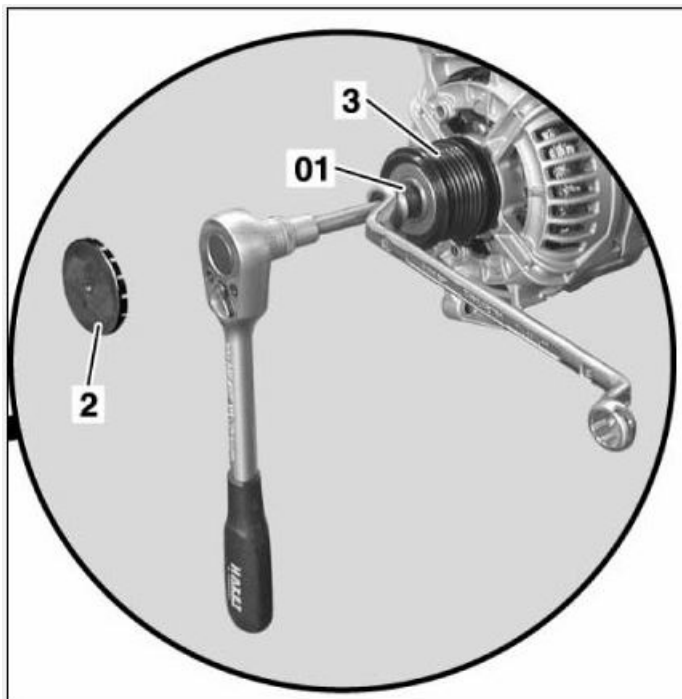


Figure 2
(01) Socket tool W602 589 00 10 00
(2) Protective cap
(3) Alternator pulley w/ freewheel

Pic 3.JPG:



Figure 3

XENTRY TIPS

Pic 4.JPG:

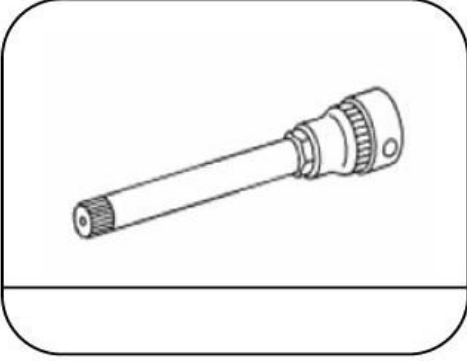


Figure 4

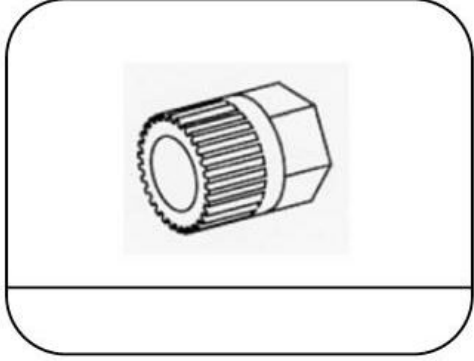
Special tools.JPG:

special_tools.jpg

Special Tools



W601 589 00 10 00

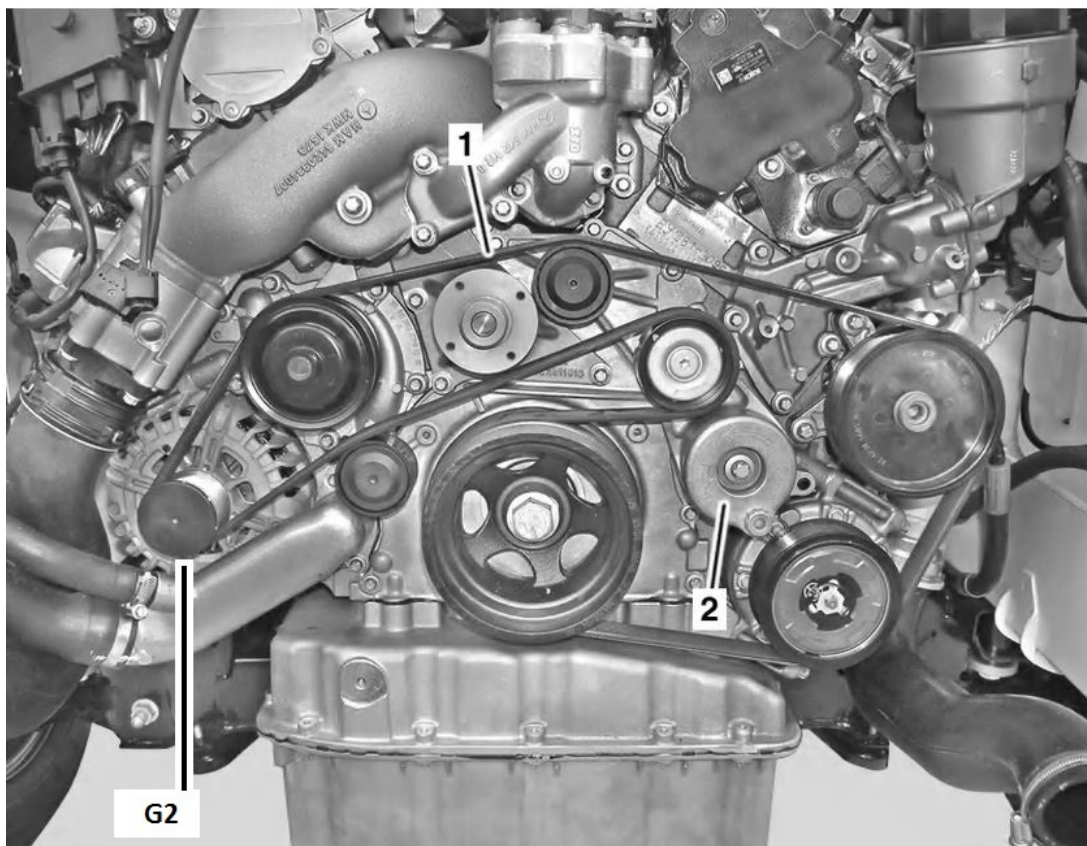


W602 589 00 10 00

MBUSA Special Tool Number	Category	Description
W601 589 00 10 00	B	Socket M10
W602 589 00 10 00	B	Socket wrench

XENTRY TIPS

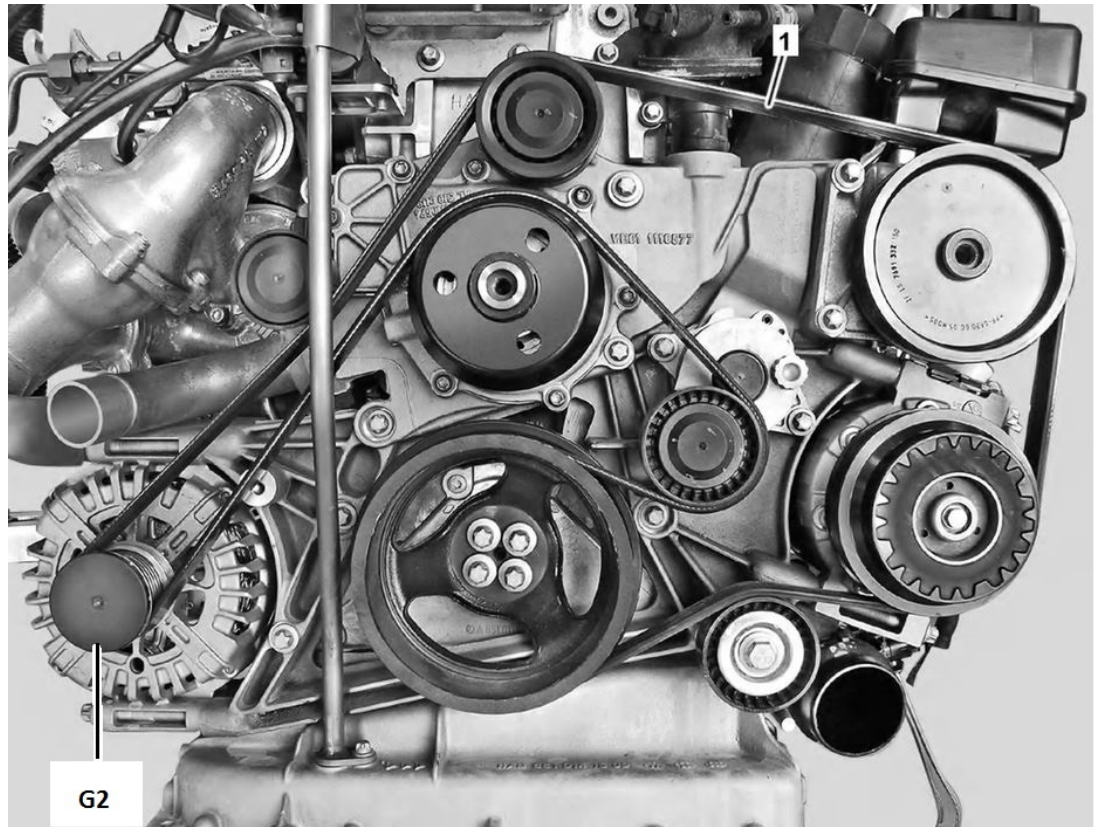
Pic 1a.jpg:



- 1 - Poly-V belt
- 2 - Tensioning device
- G2 - Alternator

XENTRY TIPS

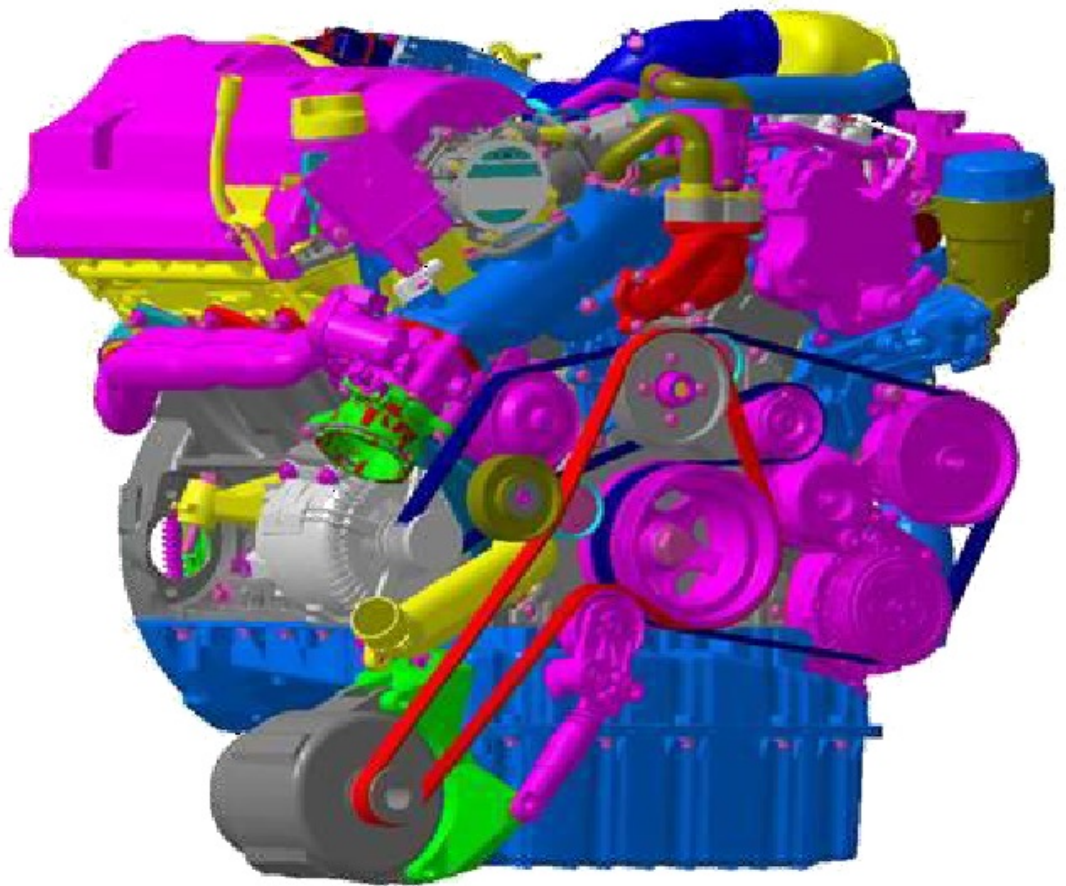
Pic 1b.JPG:



1 - Poly-V belt
G2 - Alternator

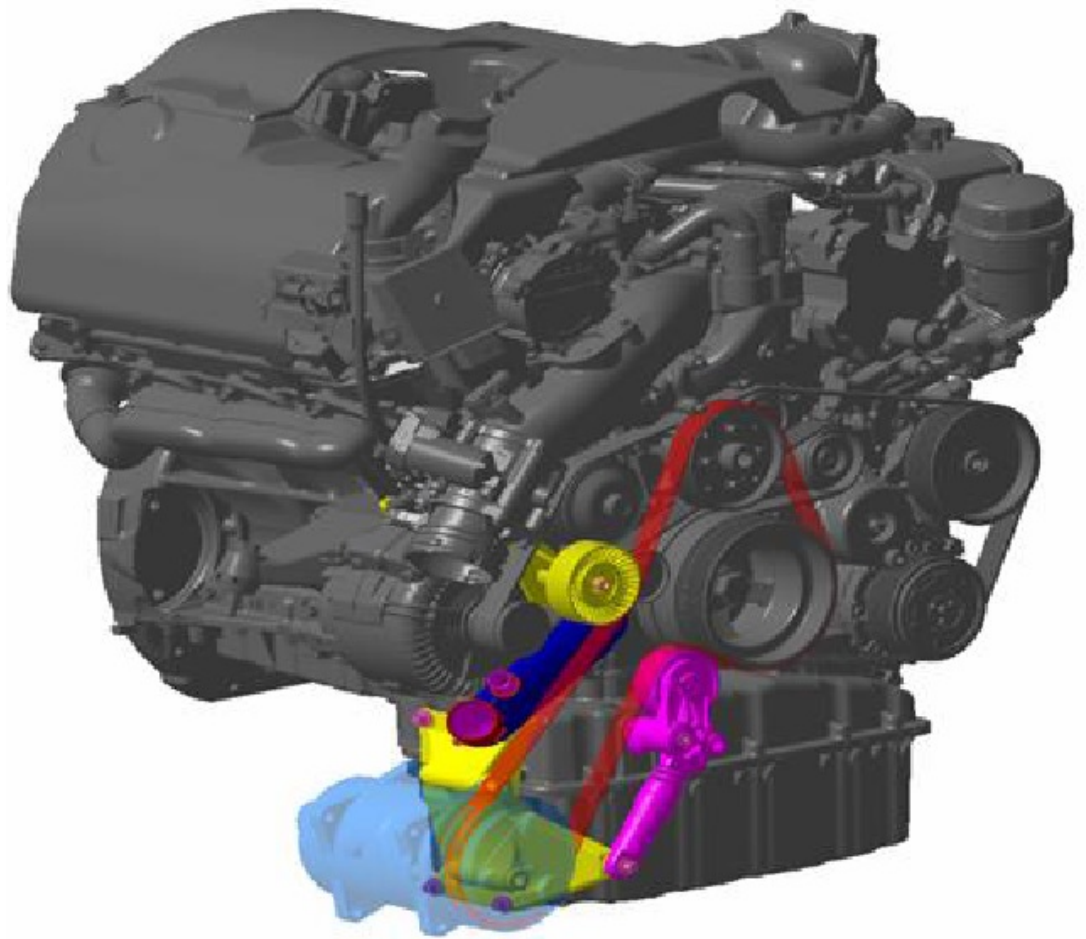
XENTRY TIPS

N62.jpg:



XENTRY TIPS

N63.jpg:



XENTRY TIPS

N63 belt.jpg:

