



Technical Bulletin

Model(s)	Year(s)	Engine Code	Trans Code	VIN Range From	VIN Range To
All (Except Routan)	2009-2017	All Gasoline Engines	All	All	All

Condition

20 17 02 August 15, 2017 **2034072** Supersedes Technical Bulletin V201602 dated November 21, 2016 to include an additional DTC.

Activated Charcoal Filter System, Solenoid Valve 1 -N80- (Canister Purge Valve) Diagnosis



Note:

Please read bulletin in its entirety before beginning diagnosis.

One or more of the following fault codes may be stored in the ECM Fault Memory:

DTC	Description
P04F0	EVAP system high pressure purge line performance
P043E	EVAP emission system leak detection reference orifice low flow
P043F	EVAP emission system leak detection reference orifice high flow
P0440	EVAP emission control system malfunction
P0441	EVAP emission control system incorrect purge flow
P0442	EVAP emission control system small leak detected
P0443	EVAP emission system purge control valve circuit
P0444	EVAP emission system purge control valve circuit open
P0445	EVAP emission system purge control valve circuit shorted



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P0447	EVAP emission system vent control circuit open
P0448	EVAP emission system vent control circuit shorted
P0449	EVAP emission system vent valve/solenoid circuit
P0455	EVAP emission control system gross leak detected
P0456	EVAP emission control system small leak detected
P0457	EVAP emission system leak detected (fuel cap loose/off)
P0458	EVAP emission system purge control valve circuit low
P0459	EVAP emission system purge control valve circuit high
P0496	EVAP emission system high purge flow



Note:

BEFORE performing the procedures outlined in this technical bulletin, be sure to thoroughly smoke test the EVAP system for leaks and reevaluate the customer concern after any repairs are performed.

DO NOT diagnose or replace Canister Purge Valve -N80- **before** performing the repair procedure as outlined in this bulletin.

Technical Background

Completing the GFF function test and performing a vacuum check on the Canister Purge Valve -N80- are essential to diagnose proper operation and to avoid unnecessary replacements.

Production Solution

Not applicable.



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Service



Note:

Test steps for this bulletin are written for diagnosis using Off-board Diagnosis Information System (ODIS). Though the tests performed will be the same, the process required to access the function tests may be different if VAS-PC is used.

Perform Guided Fault Finding test plan for Activated charcoal filter system, solenoid valve 1 -N80- to determine operation of valve

- Once ODIS has loaded, and the vehicle information has been updated, select the “Test Plan” top tab (Figure 1).

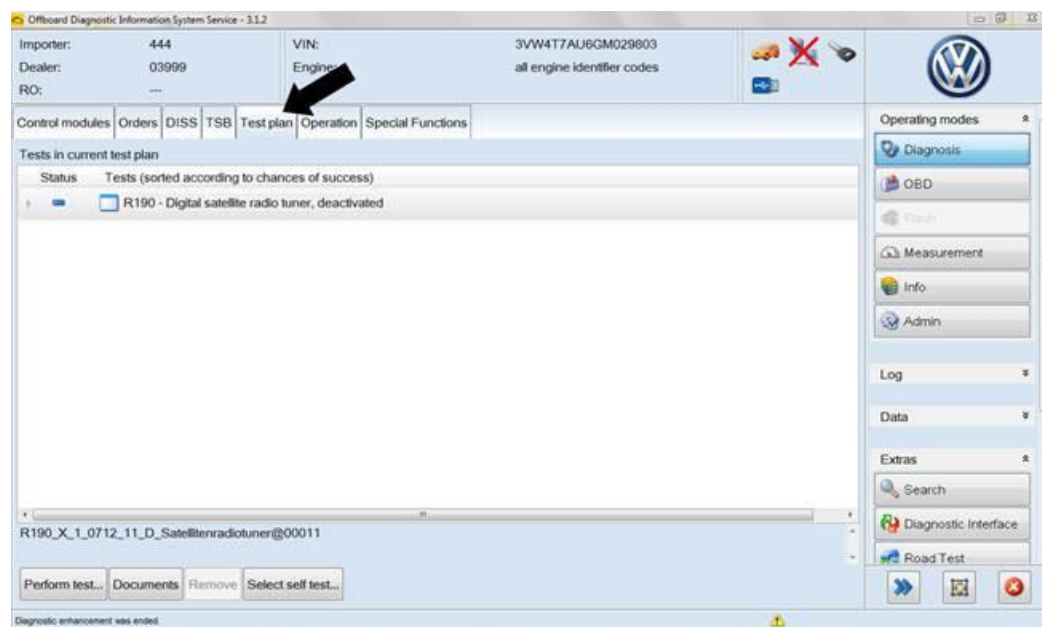


Figure 1

- Locate the test plan for the “Activated charcoal filter system, solenoid valve 1 -N80-” by utilizing the search button in the “Extras” drop down side tab and searching for “N80” with the object type “Test” selected.



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- Attach the “Activated charcoal filter system, solenoid valve 1 -N80- “test” to the test plan list (Figure 2).

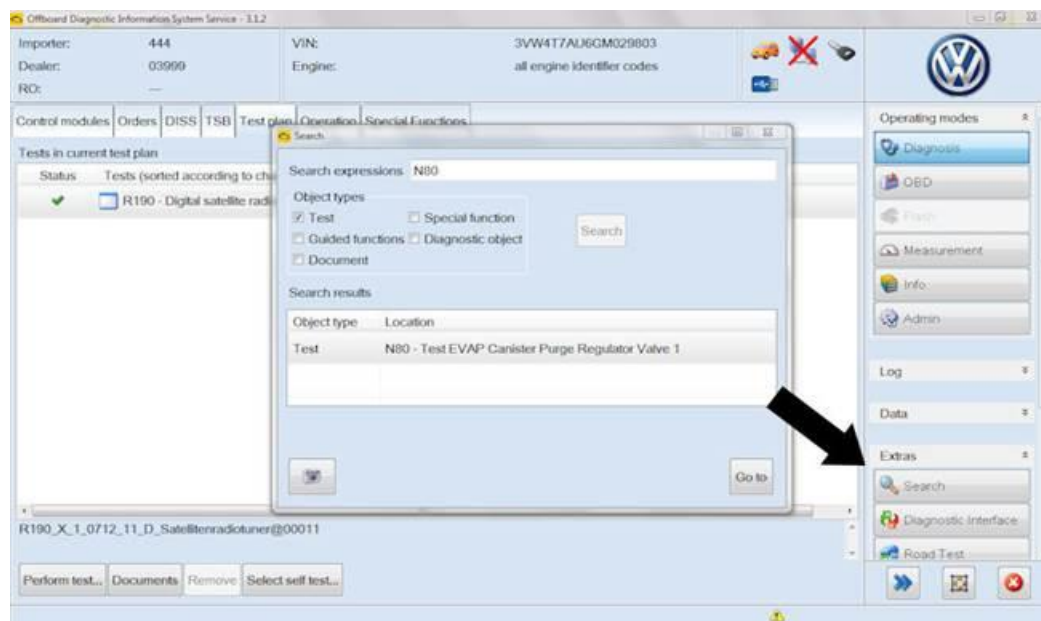


Figure 2

- Highlight the Activated charcoal filter system, solenoid valve 1 -N80- test plan and select “Perform Test” (Figure 3).

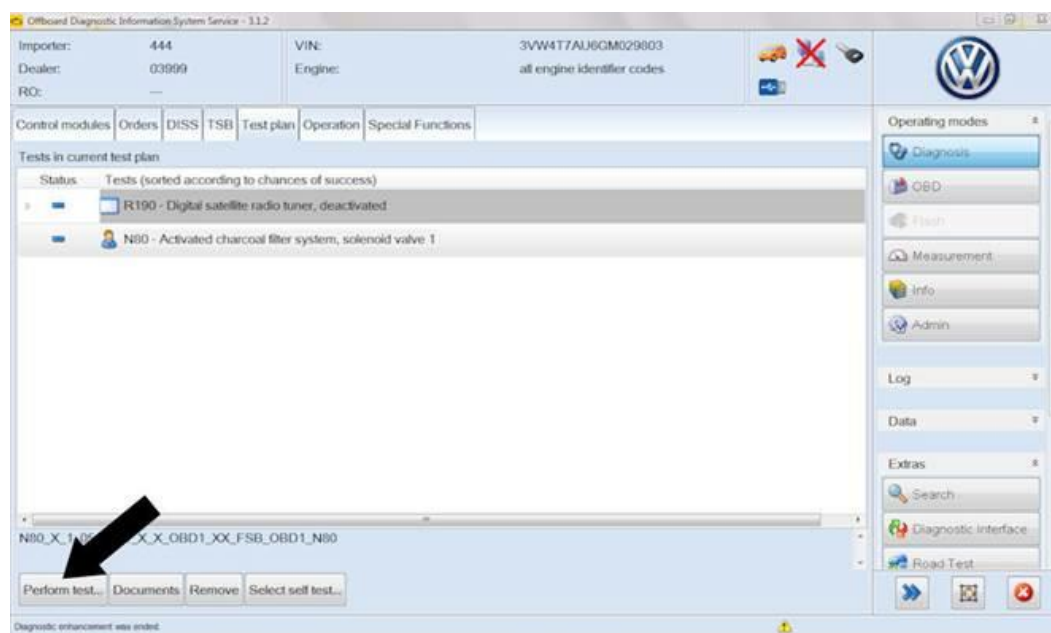


Figure 3



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- Answer on screen prompts to start the -N80- test (Figures 4 and 5).

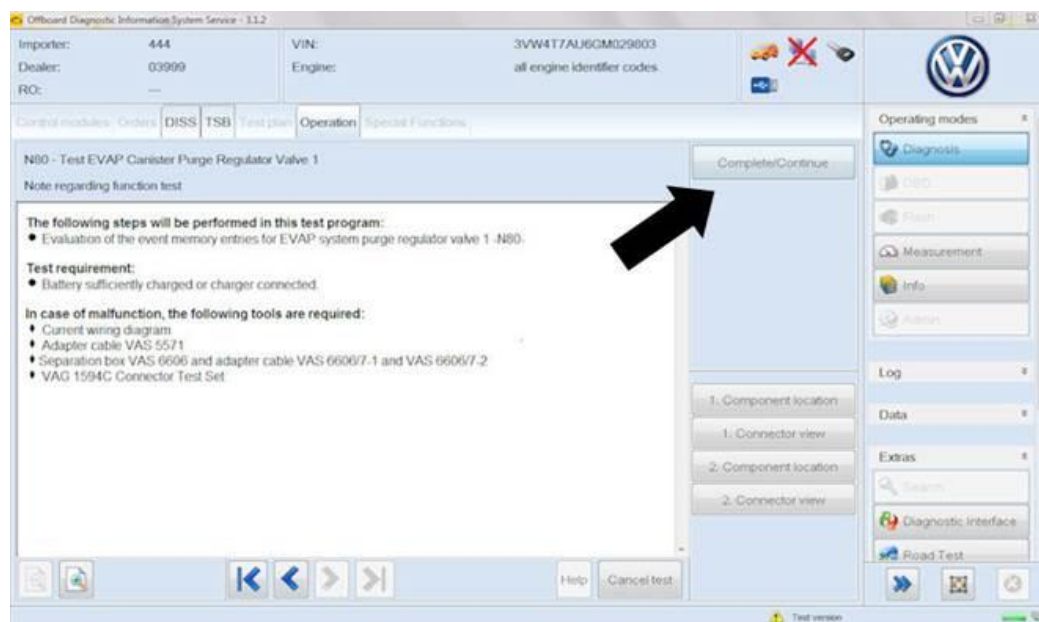


Figure 4

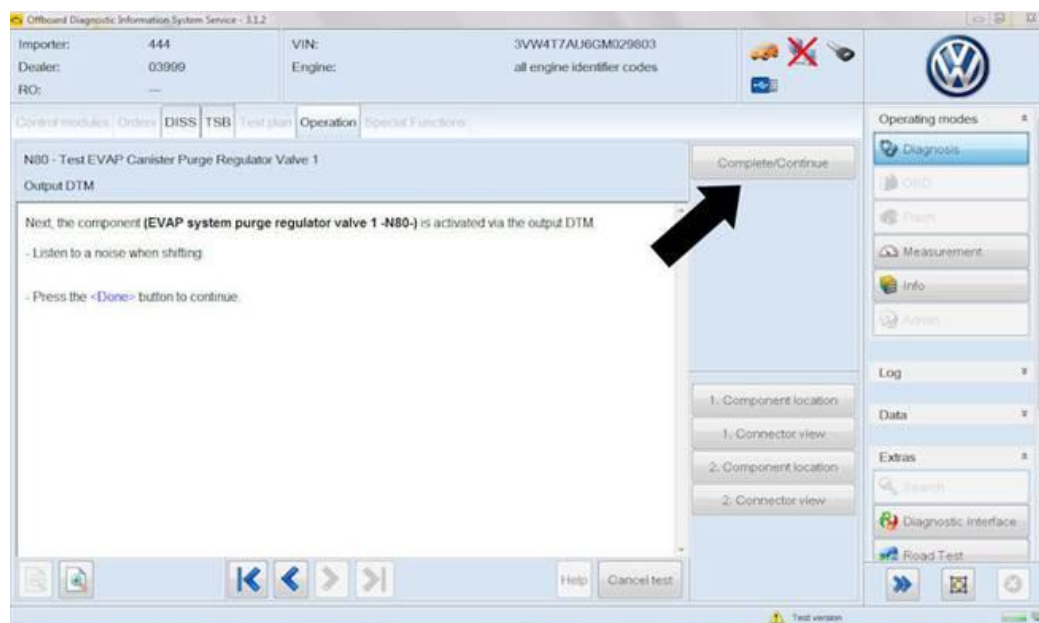


Figure 5



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Tip:

When the test starts, the -N80- Canister Purge Valve will be activated via the output diagnosis test mode, listen and/or feel for an audible “click” sound coming from the -N80- purge valve. The audible “click” sound may be heard easier if the vehicle hood is open.

- If audible “click” noise is heard, the -N80- Activated Charcoal Filter System Solenoid Valve is operational (Figure 6, 7 and 8), and a vacuum check must be performed to verify if the valve is sealing properly.
- If audible “click” noise is not heard this bulletin does not apply, continue Guided Fault Finding based diagnosis.

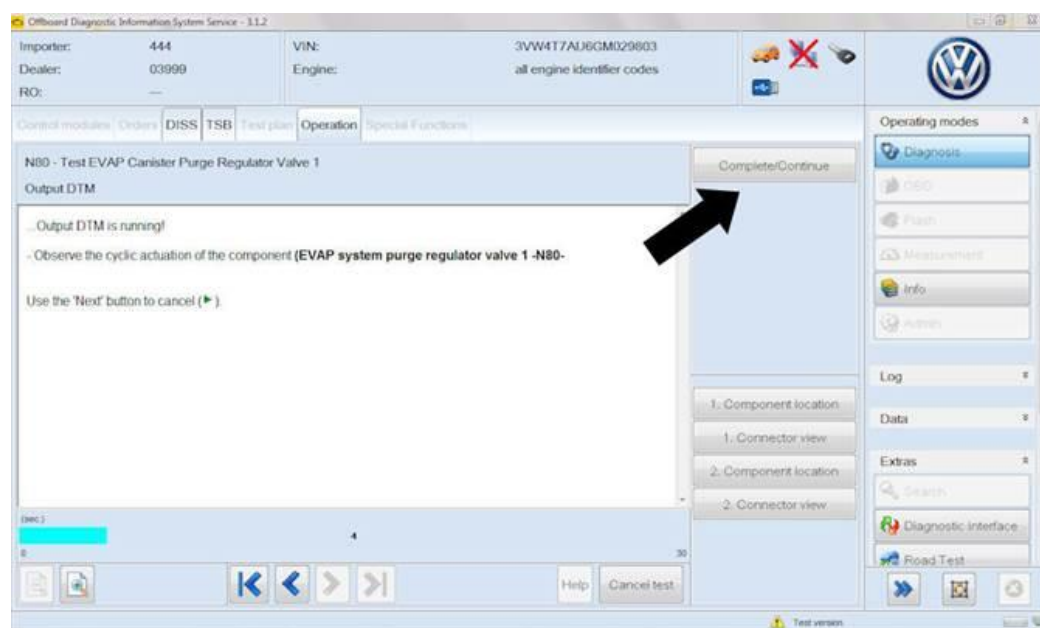


Figure 6



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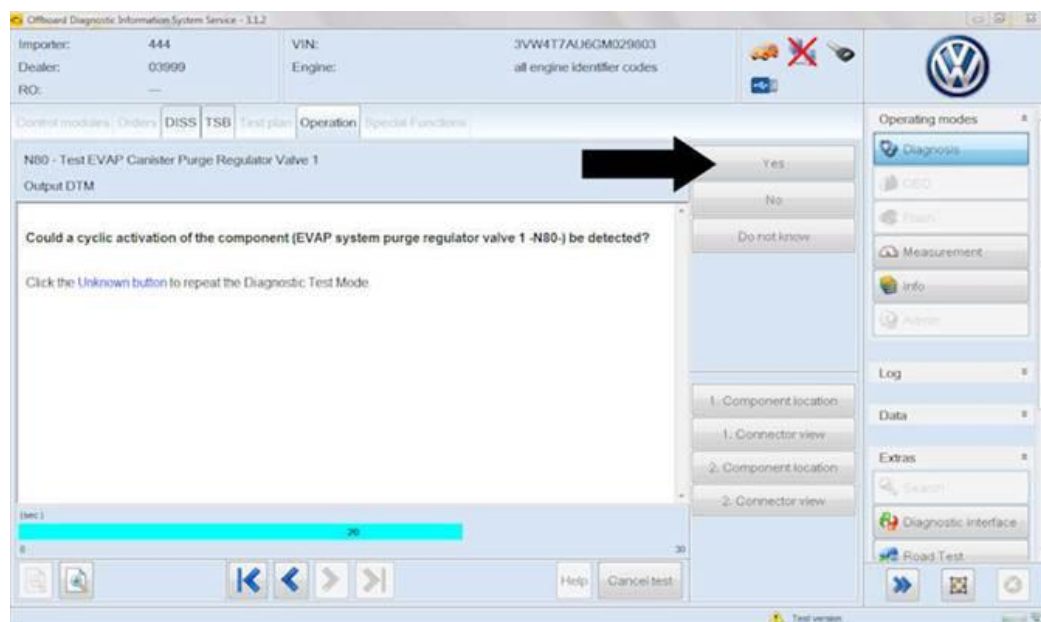


Figure 7



Figure 8



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Perform vacuum check to verify proper sealing of -N80- Canister Purge Valve



Note:

Multiple test procedures are listed below, based on the applicable engine code. Please select the procedure that fits the vehicle being repaired.

Canister purge valves connected with removable rubber hoses (CBPA, CBTA, CBUA, CRZA, CDVB, CNNA, CGRA, CPPA, CPLA, CPRA, CPKA, CXBA, CXBB, CXCA, CXCB, CYFB engine codes):

- With the -N80- purge valve disconnected from the engine, attach the VAS6213 Vacuum / Pressure pump to the engine side of the valve (side flow indicator on valve points to), and apply approximately -0.6 Bar (-450 mmHg) of vacuum.



Tip:

If practical, vacuum check may be performed with Canister Purge Valve -N80- removed from engine.



Note:

When performing a vacuum check on the canister purge valve please ensure to hook the vacuum pump up correctly for the valve (Vacuum should be applied to the side the flow indicator is pointing). If the vacuum pump is installed incorrectly, the seal will be pulled open, causing a false leak.

- Incorrect Installation of VAS6213 vacuum pump on the Canister Purge Valve (N80). This will create a false leak resulting in unnecessary replacement (Figure 9, Bosch valve shown below).



Figure 9



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- Correct installation of VAS6213 vacuum pump on the Canister Purge Valve -N80- (Figure 10, Bosch valve shown below).



Figure 10

- Correct installation of VAS6213 vacuum pump on the Canister Purge Valve -N80- (Figure 11, Freudenberg and Valeo valves shown below).



Figure 11



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- If the valve holds vacuum, **do not** replace -N80- Activated charcoal filter system, solenoid valve. The canister purge valve is not causing the fault codes to store. This bulletin does not apply. Continue Guided Fault Finding based diagnosis for faults.
- If the valve does not hold vacuum, replace -N80- Activated charcoal filter system, solenoid valve. Perform leakage test to verify there are no further issues.
- Clear any DTCs that were caused by disconnecting the canister purge valve electrical connector during the test.



Note:

Performing a road test may not allow fuel tank leakage diagnostics to run. A tank leakage test must be performed to verify repairs.

Canister purge valves with non-removable plastic hoses on engine side of valve (CCTA, CBFA, CGFA engine codes):

- With the engine OFF, remove rubber hose from EVAP Canister side of -N80- Canister Purge Valve.
- Install VAS6213 vacuum pump to the -N80- purge valve as shown below (Figure 12).



Figure 12

- Disconnect the electrical connector from the purge valve.
- Start the engine and allow it to idle.
- Monitor the reading on the vacuum gauge.



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Tip:

The reading should be at 0 PSI or higher (no vacuum should be measured).

- If there is no vacuum present at the vacuum gauge, **do not** replace -N80- Activated charcoal filter system, solenoid valve. The canister purge valve is not leaking and is not causing the fault codes to store. This bulletin does not apply. Continue Guided Fault Finding based diagnosis.
- If vacuum is present, replace -N80- Activated charcoal filter system, solenoid valve. Perform leakage test to verify there are no further issues.
- Clear any DTCs that were caused by disconnecting the canister purge valve electrical connector during the test.



Note:

Performing a road test may not allow fuel tank leakage diagnostics to run. A tank leakage test must be performed to verify repairs.

Canister Purge Valve on Jetta 1.4T (CNLA and CZTA engine codes):

- With engine off, disconnect EVAP line connection to -N80- purge valve beneath coolant expansion tank shown below (Figure 13).



Figure 13



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- Use the VAG1318 pressure gauge kit to assemble an adaptor using tool numbers VAG1318/24, VAG1318/11, and the female to female adaptor for the pressure gauge as shown below (Figure 14).



Figure 14

- Install the adaptor to the EVAP line connection to the -N80- purge valve and connect VAS6213 vacuum pump to the adaptor as shown below (Figure 15).



Figure 15



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- Disconnect the electrical connector from the purge valve.
- Start the engine and allow it to idle.
- Monitor the reading on the vacuum gauge.



Tip:

The reading should be at 0 PSI or higher (no vacuum should be measured).

- If there is no vacuum present at the vacuum gauge, **do not** replace -N80- Activated charcoal filter system, solenoid valve. The canister purge valve is not leaking and is not causing the fault codes to store. This bulletin does not apply. Continue Guided Fault Finding based diagnosis.
- If vacuum is present, replace -N80- Activated charcoal filter system, solenoid valve. Perform leakage test to verify there are no further issues.
- Clear any DTCs that were caused by disconnecting the canister purge valve electrical connector during the test.



Note:

Performing a road test may not allow fuel tank leakage diagnostics to run. A tank leakage test must be performed to verify repairs.

Warranty

Canister Purge Valve Replacement Only

To determine if this procedure is covered under Warranty, always refer to the Warranty Policies and Procedures Manual ¹⁾					
Model(s)	Year(s)	Eng. Code(s)	Trans. Code(s)	VIN Range From	VIN Range To
All except Routan	2009-2017	All Gasoline Engines	All	All	All
SAGA Coding					
Claim Type:	Use applicable Claim Type ¹⁾				
Service Number:	Damage Code	HST	Damage Location (Depends on Service No.)		
2024	0010	--	Use applicable when indicated in Elsa (L/R)		



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Parts Manufacturer	Engine Code: CBPA, CBTA, CBUA, CRZA, BPR, BPS	BOG ²⁾
	Engine Code: CPLA, CPPA, CGRA, CPRA, CPKA, CCTA, CBFA, CNLA, CGFA, CXBA, CXBB, CXCA, CXCB, CXFB, CZTA	FG4 ²⁾
	Engine Code: CDVB, CNNA,	DC2 ²⁾
Labor Operation ³⁾ : Charge Battery		27068950 = 10 TU
Labor Operation ³⁾ : ACF Valve Remove and Install		202419XX = See Elsa for applicable labor operations.
Causal Part:	Engine Code: CBPA, CBTA, CBUA, CRZA, BPR, BPS	06E 906 517 A
	Engine Code: CCTA, CBFA	06J 133 781 CE
	Engine Code: CPPA, CPLA, CPRA, CPKA	06H 906 517 T
	Engine Code: CGRA	03H 906 517
	Engine Code: CNNA, CDVB	06D 133 517 B
	Engine Code: CNLA	04E 133 366 AH
	Engine Code: CZTA	04E 133 366 CQ
	Engine Code: CXBA, CXCA, CYFB	06H 906 517 T
	Engine Code: CGFA	7P0 133 366 A
Diagnostic Time ⁴⁾		
GFF Time expenditure	01500000 = 20 TU max.	YES
Road Test	01210002 = 00 TU 01210004 = 00 TU	NO
Technical Diagnosis	01320000 = 30 TU max.	YES
Claim Comment: Input "As per Technical Bulletin 2034072" in comment section of Warranty Claim.		



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- 1) Vehicle may be outside any Warranty in which case this Technical Bulletin is informational only
- 2) Code per warranty vendor code policy.
- 3) Labor Time Units (TUs) are subject to change with ELSA updates.
- 4) Documentation required per Warranty Policies and Procedures Manual.

Required Parts and Tools

No Special Parts Required.

Tool Description	Tool No:
Midtronics Battery Tester/Charger	InCharge 940 (INC-940) or GRX3000VAS
Vacuum / Pressure Pump	VAS 6213
Fuel Injector Pressure Gauge Kit and Adaptors	VAG 1318, VAG 1318/11, VAG 1318/24
VAS Diagnostic Tool	VAS 6150/X & VAS 6160/X and ODIS Service with: current online updates

Additional Information

All part and service references provided in this Technical Bulletin are subject to change and/or removal. Always check with your Parts Dept. and Repair Manuals for the latest information.

Document Control Revision Table			
Instance Number	Published Date	Version Number	Reason For Update
2034072/4	8/15/17	V201702	To include additional DTC.
2034072/3	11/21/16	V201602	To include current model years and engine codes.
2034072/1	7/18/2013	V201306	Original publication.