



Technical Bulletin

Model(s)	Year	Eng. Code	Trans. Code	VIN Range From	VIN Range To
All	2013-2016	All with TDI	All	All	All

Condition

23 17 07 August 10, 2017 **2041118** Supersedes Technical Bulletin 23-17-02 (V231702) dated April 13, 2017 to update Touareg part table.

Diesel Fuel System Diagnosis and Repair

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

DTC	Description
P0087	Fuel Rail/System Pressure – Too Low
P0088	Fuel Rail/System Pressure – Too High
P0191	Fuel Rail Pressure Sensor “A” Circuit Range/Performance

Technical Background



Note:

These vehicles are not covered by the Warranty Extension found within Policies and Procedure Bulletin VWP-15-06.

The vehicle must have a Volkswagen-approved misfueling guard installed to be considered for regular or powertrain warranty.

Production Solution

Information Only.



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Service

Section A – Initial Diagnosis of the High Pressure Fuel Pump (HPFP)



Note:

Removing the N290 Fuel Metering Valve to inspect for metallic particles should only be considered as a last step after all GFF diagnostic procedures have been performed. This includes testing supply pressure to the high pressure fuel pump (low pressure side), and checking for internal leakage from the injectors and the N276 Pressure Regulating Valve.

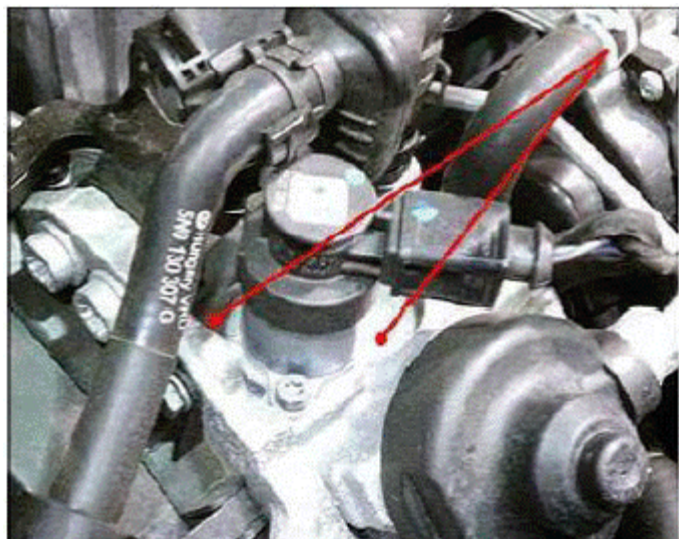


Figure 2. Surrounding Area



Note:

Prior to removing the N290 Fuel Metering Valve, the area surrounding the valve (Figure 2) must be clean and dried with compressed air to remove ALL debris from the area. See Repair Manual Group 20 Fuel Supply, General Information, Clean Working Conditions in Elsa.

If debris enters the fuel system, components may be damaged.



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Figure 3. N290 Fuel Metering Valve and Valve Bore

1. Remove the N290 Fuel Metering Valve and inspect the valve and valve bore for the presence of metallic particles (see Figure 3).

2. If metallic particles are found on the N290 Fuel Metering Valve or in the valve bore, replacement of the high pressure fuel pump and major components in the fuel system is necessary. **Proceed to Section B –Fuel Sample Pre-Analysis.**

3. If no metallic particles are found on the N290 Fuel Metering Valve or in the valve bore, do not replace the high pressure fuel pump. Open a VTA case and contact the Volkswagen Technician's Helpline for further assistance diagnosing the vehicle, this bulletin does not apply.

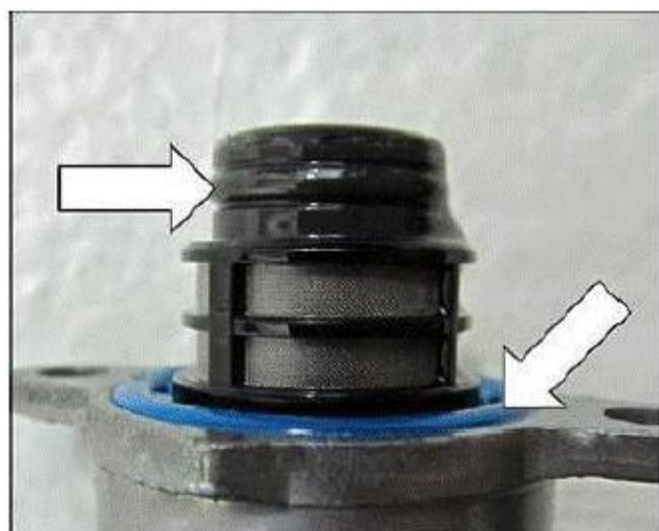


Figure 4. N290 Fuel Metering Valve O-rings



Note:

To prevent fuel system damage, ensure that the N290 Fuel Metering Valve is free of any contaminants before reinstalling.

Prior to reinstallation of the N290 Fuel Metering Valve, ensure that both O-rings are not damaged. If they are damaged, the high pressure fuel pump must be replaced.

To prevent damaging the O-rings when reinstalling the N290 Fuel Metering Valve, lubricate the O-rings with diesel fuel (see Figure 4).



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4. Install the N290 Fuel Metering Valve into the valve bore using light pressure.
5. Install and hand tighten both M5 fasteners, ensuring that the threads are clean and dry.
Pre-tighten to 2 Nm, then to 6.5 – 7 Nm.

Section B – Fuel Sample Pre-Analysis



Note:

A fuel sample must be taken and analyzed using the VAS 6774 tool before performing further repairs to the vehicle.

Please review the instructional DVD included in the tool case titled 'Fuel-Identification Kit VAS 6774'. Here you will find a user manual, an FAQ, and a video that will describe the proper way to use, clean, and maintain this tool. The instructions are also posted to ServiceNet by going to ServiceNet> Workshop Equipment> Tool Information> Instruction Manuals & Videos> Manuals> VAS 6774 Fuel Identification Unit Operating Instructions.



Note:

It is important that the specific gravity of the fuel sample be tested first before proceeding with sensor head testing. Fuels with a specific gravity of 6.5 or lower cannot be tested using the VAS 6774/7 under any circumstances. For this reason please disregard the order of testing as seen in the video and follow the order in the manual that came with the tool.

1. Obtain a 500 mL fuel sample from the vehicle.
2. Following the instructions included with the VAS 6774 kit, test the specific gravity of the fuel sample. A correct specific gravity measurement is any reading between 9 and 13. **(See Figure 5)** If the specific gravity reading falls outside of those numbers warranty coverage does not apply. If the specific gravity is between 9 and 13 proceed to step 2a.
- 2a. If the specific gravity test results in a reading between 9 and 13 a sensor head test is required to check for gasoline particles. If the specific gravity test results in a "Fail" warranty coverage does not apply.



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Measurement result	interpretation	
below 0	case for the fuel laboratory (neither petroleum nor diesel fuel)	
0 - 5.5	petroleum fuel EN 228	
4.5 - 6.5	E 85 (85 % Ethanol, 15 % petroleum fuel)	
Approx. 7	E 100 (pure Ethanol)	
7 - 9	case for a fuel laboratory (neither petroleum nor diesel fuel)	
9 - 11	Diesel in Asia (Russia, India)	Diesel in USA (typical value, density is NOT specified in D-975)
10 - 13	Diesel in accordance with EN 590 (Europe)	
13 - 15	case for a fuel laboratory	
15 - 17	Biodiesel case for a fuel laboratory	
greater than 17	case for a fuel laboratory	

Figure 5



Note:

Fuel samples which have a specific density between 0 and 6.5 indicate a fuel mixture which might be flammable under certain conditions. If the specific gravity of the fuel sample is 6.5 or lower **DO NOT** use the VAS 6774/7 to perform a sensor head test, warranty coverage does not apply.

2b. A sensor head test must be performed next to check the fuel for gasoline residue. Follow the instructions included with the tool to perform a sensor head test. If the sensor head test results in a "Pass" continue to step 3. If the sensor head results in a "Fail" warranty coverage does not apply.



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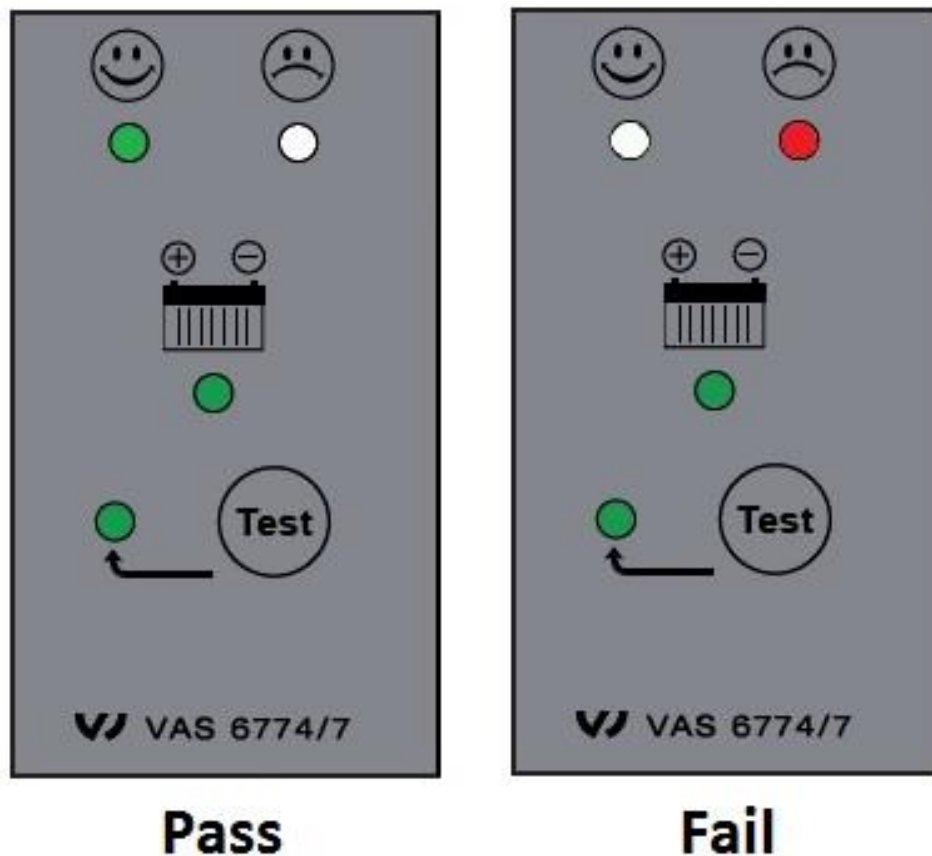


Figure 6



Note:

If the specific gravity is above 13 or below 9 the fuel has failed the test and warranty coverage does not apply.

3. If the sensor head test results in a “Pass” and the specific gravity test results in a reading between 9 and 13 you may proceed with section D – **High Pressure Fuel Pump Replacement and Fuel System Repair**.

Section C – High Pressure Fuel Pump Replacement and Fuel System Repair

1. Always use the latest information in Elsa for detailed removal and replacement instructions of the components listed in this technical bulletin.
2. Remove in-tank fuel pump (Sending unit).
3. Drain and clean the fuel tank using the suction pump VAS5226.
4. Fill the fuel tank with **(1.3 gallons)** of fresh diesel fuel.
5. Drain and clean the tank completely using VAS5226.



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6. Replace the in-tank fuel pump (Sending unit).

7. Flush the fuel lines (both feed and return) from the fuel tank to the bulk head, using either mineral spirits or brake clean with compressed air. Alternate from both ends of the lines while using a shop towel to catch any debris that may still be in the line. Verify all metal is removed from both lines before proceeding.

8. Replace the following components as per Elsa: high pressure fuel pump, high pressure fuel lines, fuel rail (with both sensors included), all fuel injectors, fuel return lines (overflow lines), fuel filter, fuel filter housing, auxiliary fuel pump.



Note:

The rubber fuel line insulators from the original injector supply lines should be transferred to the new lines.

9. Once repairs are complete fuel the vehicle.

10. Ensure the fuel injector return lines are properly seated and sealed once it is installed.



Note:

The “injector quantity calibration” and the “injector voltage calibration” for the new injectors must be programmed into the Engine Control Module -J623- after replacing one or more injectors. Refer to “Guided Functions” in the vehicle diagnostic tester.

11. Using the VAS tester, perform the guided function “Vent Fuel System”. (see Elsa for additional information under “Fuel System, Filling and Bleeding”).



Note:

If the test plan is unavailable through Guided Functions, switch to Self Diagnosis>Engine Electronics>Basic Settings>35 and perform the basic settings 3 times consecutively. For UDS vehicles, perform basic settings for initial fueling.

12. Once the repairs are complete, test drive the vehicle.

13. Inspect for fuel seepage at the fuel injector return line connector. If seepage is found the condition MUST be corrected.



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Warranty

Warranty covers the replacement of diesel fuel system components ***only*** if:

- The vehicle has a Volkswagen-approved misfueling guard installed ***and***
- The correct, uncontaminated fuel is present in the vehicle.

Please use appropriate labor operations from ELSA and parts from ETKA based on vehicle type.

Reimbursement for Sections A & B Only Where Fuel Analysis Result = FAIL

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
Golf, Jetta, Jetta SportWagen, Beetle, Beetle Convertible	2013-2015	2.0L TDI (CJAA, CVCA, CRUA)	All	All	All
SAGA Coding					
Claim Type:		Use applicable Claim Type ¹⁾			
Service Number:		Damage Code	HST	Damage Location (Depends on Service No.)	
2374		0010	--	Use applicable when indicated in Elsa (L/R)	
Parts Manufacturer		Golf, Jetta, Jetta Wagon, Jetta SportWagen, Beetle, Beetle Convertible		3ME ²⁾	
Causal Part: Select Labor Operation			01320000		
Diagnostic Time ⁴⁾					
GFF Time expenditure		01500000 = As required		YES	
Road Test		01210002 = 00 TU 01210004 = 00 TU		NO	



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Technical Diagnosis	01320000 = As required	YES
Claim Comment: Input "As per Technical Bulletin 2041118" in comment section of Warranty Claim.		
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.		

Reimbursement for Sections A & B Only Where Fuel Analysis Result = FAIL

To determine if this procedure is covered under Warranty, always refer to the Warranty Policies and Procedures Manual ¹⁾					
Model(s)	Year	Eng. Code	Trans. Code	VIN Range From	VIN Range To
Touareg	2013-2016	3.0L TDI (CNRB)	All	All	All
Passat	2013-2015	2.0L TDI (CKRA, CVCA)	All	All	All
SAGA Coding					
Claim Type:	Use applicable Claim Type ¹⁾				
Service Number:	Damage Code	HST	Damage Location (Depends on Service No.)		
2374	0010	--	Use applicable when indicated in Elsa (L/R)		
Parts Manufacturer		Touareg, Passat		WWO ²⁾	
Causal Part: Select Labor Operation			01320000		
Diagnostic Time ⁴⁾					
GFF Time expenditure		01500000 = As required		YES	



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Road Test	01210002 = 00 TU 01210004 = 00 TU	NO
Technical Diagnosis	01320000 = As required	YES
Claim Comment: Input "As per Technical Bulletin 2041118" in comment section of Warranty Claim.		
<p>1) Vehicle may be outside any Warranty in which case this Technical Bulletin is informational only</p> <p>2) Vendor code BPY or BPT must be recorded from the original High Pressure Fuel Pump.</p> <p>3) Labor Time Units (TUs) are subject to change with ELSA updates.</p> <p>4) Documentation required per Warranty Policies and Procedures Manual.</p>		

Reimbursement for Sections A & B & C Where Fuel Analysis Results = PASS

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
Golf, Jetta, Jetta SportWagen, Beetle, Beetle Convertible	2013 - 2015	2.0L TDI (CJAA, CVCA, CRUA)	All	All	All
SAGA Coding					
Claim Type:	Use applicable Claim Type ¹⁾				
Service Number:	Damage Code	HST	Damage Location (Depends on Service No.)		
2374	0010	--	Use applicable when indicated in Elsa (L/R)		
Parts Manufacturer	Golf, Jetta, Jetta SportWagen, Beetle, Beetle Convertible		BPY or BPT ²⁾		
Labor Operation ³⁾ : Fuel System Clean and Replacement	23744299 = 750 TU				



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Causal Part: High Pressure Fuel Pump		*** 130 775* OR ***130 851**
Outside Material: Diesel Fuel		Part Number: DIESEL
Diagnostic Time ⁴⁾		
GFF Time expenditure	01500000 = As required	YES
Road Test	01210004 = 10 TU	YES
Technical Diagnosis	01320000 = As required	YES
Claim Comment: Input "As per Technical Bulletin 2041118" in comment section of Warranty Claim.		
<p>¹⁾ Vehicle may be outside any Warranty in which case this Technical Bulletin is informational only</p> <p>²⁾ Vendor code BPY or BPT must be recorded from the original High Pressure Fuel Pump.</p> <p>³⁾ Labor Time Units (TUs) are subject to change with ELSA updates.</p> <p>⁴⁾ Documentation required per Warranty Policies and Procedures Manual.</p>		



Note:

Vendor code BPY or BPT must be recorded from the original High Pressure Fuel Pump for claiming purposes.

Reimbursement for Sections A & B & C Where Fuel Analysis Results = PASS

To determine if this procedure is covered under Warranty, always refer to the Warranty Policies and Procedures Manual ¹⁾					
Model(s)	Year	Eng. Code	Trans. Code	VIN Range From	VIN Range To
Touareg	2013-2016	3.0L TDI (CNRB)	All	All	All
Passat	2013-2015	2.0L TDI (CKRA, CVCA)	All	All	All
SAGA Coding					
Claim Type:	Use applicable Claim Type ¹⁾				



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Service Number:	Damage Code	HST	Damage Location (Depends on Service No.)
2374	0010	--	Use applicable when indicated in Elsa (L/R)
Parts Manufacturer	Touareg, Passat	BPY or BPT ²⁾	
Labor Operation ³⁾ : Fuel System Clean and Replacement (Engine Code: CNRB)		23744299 = 1140 TU (Touareg)	
Labor Operation ³⁾ : Fuel System Clean and Replacement		23744299 = 750 TU (Passat)	
Causal Part: High Pressure Fuel Pump		*** 130 755 **	
Outside Material: Diesel Fuel		Part Number: FUEL	
Diagnostic Time ⁴⁾			
GFF Time expenditure	01500000 = As required	YES	
Road Test	01210004 = 10 TU	YES	
Technical Diagnosis	01320000 = As required	YES	
Claim Comment: Input "As per Technical Bulletin 2041118" in comment section of Warranty Claim.			
¹⁾ Vehicle may be outside any Warranty in which case this Technical Bulletin is informational only ²⁾ Vendor code BPY or BPT must be recorded from the original High Pressure Fuel Pump. ³⁾ Labor Time Units (TUs) are subject to change with ELSA updates. ⁴⁾ Documentation required per Warranty Policies and Procedures Manual.			



Note:

Vendor code BPY or BPT must be recorded from the original High Pressure Fuel Pump for claiming purposes.



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Required Parts and Tools

2013-2014 Jetta, Golf, Beetle, Beetle Convertible



Note:

Part numbers are for reference only; please consult ETKA by VIN for most current information.

Part No:	Part Description	Quantity
03L 130 851 AX	High pressure pump	1
03L 130 321	Line	1
03L 130 301	Line	1
03L 130 301 R	Line	1
03L 130 301 B	Line	1
03L 130 301 C	Line	1
03L 130 089	Rail	1
5N0 130 307 J	Line	1
1K0 127 400 K	Filter complete	1
03L 130 235 S	Return Line	1
03L 130 277 A	Injectors	4
5N0 906 129 B	Auxiliary Pump	1
059 130 216 C	Plate	4
WHT 000 884	Seal	4
03L 201 360 G	Fuel Line	1
1K0 130 295 AH	Fuel Line	1
1K0 130 307 BJ	Fuel Hose	1



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1K0 130 307 BG	Fuel Line	1
N 911 803 01	Bolt	3
WHT 002 494	Bolt	1
N 107 145 01	Bolt	2
N 910 488 02	Bolt	4
N 107 158 01	Bolt	3
038 109 454 A	Nut	1
1K0 919 050 AB	In-Tank fuel pump (sending Unit)	1
	All torque to yield bolts must be replaced	All

2013-2014 Jetta SportWagen



Note:

Part numbers are for reference only; please consult ETKA by VIN for most current information.

Part No:	Part Description	Quantity
03L 130 851 AX	High pressure pump	1
03L 130 321	Line	1
03L 130 301	Line	1
03L 130 301 R	Line	1
03L 130 301 B	Line	1
03L 130 301 C	Line	1
03L 130 089	Rail	1
5N0 130 307 J	Line	1
1K0 127 400 K	Filter complete	1



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03L 130 235 S	Return Line	1
03L 130 277 A	Injectors	4
5N0 906 129 B	Auxiliary Pump	1
059 130 216 C	Plate	4
WHT 000 884	Seal	4
03L 201 360 G	Fuel Line	1
1K0 130 295 AH	Fuel Line	1
1K0 130 307 BJ	Fuel Hose	1
1K0 130 307 BG	Fuel Line	1
N 911 803 01	Bolt	3
WHT 002 494	Bolt	1
N 107 145 01	Bolt	2
N 910 488 02	Bolt	4
N 107 158 01	Bolt	3
038 109 454 A	Nut	1
1K0 919 050 AB	In-Tank fuel pump (sending Unit)	1
	All torque to yield bolts must be replaced	All



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2013-2014 Passat



Note:

Part numbers are for reference only; please consult ETKA by VIN for most current information.

Part No:	Part Description	Quantity
03L 130 851 HX	High Pressure Pump	1
03L 130 321 Q	Line	1
03L 130 301 AR	Line	1
03L 130 301 AS	Line	1
03L 130 301 AT	Line	1
03L 130 301 BA	Line	1
03L 201 360 AD	Fuel Line	1
03L 130 235 AD	Return Line	1
04L 130 216	Plate	2
WHT 004 739	Bolt	2
03L 130 277 R	Injector	4
03L 130 089 J	Rail	1
N 911 761 01	Bolt	3
N 107 145 01	Bolt	2
WHT 002 494	Bolt	1
N 910 488 04	Bolt	4
N 911 854 01	Bolt	3
WHT 004 739	Bolt	2
038 109 454 A	Nut	1



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7N0 127 400 D	Filter	1
561 130 307	Fuel Line	1
561 130 295 D	Fuel Line	1
561 130 307 B	Fuel Line	1
561 919 050 B	In-Tank Fuel pump	1
	All torque to yield must be replaced	All

2013 - 2016 Touareg



Note:

Part numbers are for reference only; please consult ETKA by VIN for most current information.

Part No:	Part Description	Quantity
059 130 755 CB Or 059 130 755 CD	High pressure pump	1
7P6 127 401	Filter	1
059 130 216 K	Plate	6
059 130 218 AM	Retention Valve	1
059 130 089 BT	Fuel Rail Left	1
059 130 090 CN	Fuel Rail Right	1
059 130 277 EM	Injector	6
WHT 000 884	Injector O-Ring	6
059 130 241 CQ	Pressure Lines	2
059 130 241 CR	Pressure Lines	2



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059 130 241 CS	Pressure Lines	2
059 130 310 BL	Fuel Line	1
059 130 309 CD	Fuel Line	1
059 130 299 AH	Fuel Line	1
7P0 130 295 L	Fuel Line	1
059 130 312 AC	Fuel Line	1
059 130 297 AD	Fuel Line	1
059 103 147 F	Gasket	1
059 145 757 AF	Gasket	1
059 121 149 E	Washer	1
N 908 091 02	Washer	1
7P6 201 905 A	Hose	1
WHT 004 923 B	Bolt	6
7P6 919 715 A	Suction Jet Pump	1
WHT 005 491	Turbocharger Mounting Nut	2
059 131 599 K	EGR Turbocharger Seal	1
N 911 962 01	EGR Turbocharger Bolt	2
4G0 253 115 A	Exhaust Gasket	1
N 908 946 01	Nut	3
059 253 115 B	Exhaust Gasket	2
N 911 878 01	Bolt	6
059 129 717 N	Intake Manifold Seals	6
059 129 718 A	Intake Manifold Seals	6
059 131 815	Air Guide Pipe Seal	1



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059 131 547 R	EGR Tube Seal	1
059 117 070 B	Oil Cooler Seal	1
059 121 149 B	Oil Cooler Seal	1
7P6 919 088 B	In-Tank fuel pump	1
8E0 919 133 B	Seal Ring (Inspect and replace only if damaged)	1
059 145 215 B	Air Pipe Gasket (Inspect and replace only if damaged)	1
Use G-13 (G 013A8J1G) for parts ordering Use G 013A8JS0 for warranty claiming purposes	Coolant	As required.
	All torque to yield bolts must be replaced	All

2015 Jetta, Beetle, Beetle Convertible, Passat, Golf, Golf Sportwagen



Note:

Part numbers are for reference only; please consult ETKA by VIN for most current information.

Part No:	Part Description	Quantity
04L 130 755 E	High pressure pump	1
04L 130 321	Line	1
03L 130 301 AR	Line	1
03L 130 301 AS	Line	1
03L 130 301 AT	Line	1
03L 130 301 BA	Line	1
04L 130 089 G	Rail	1
04L 201 360 T	Line	1



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1K0 127 400 N	Filter complete (Passat/Jetta/Beetle)	1
5Q0 127 400 F	Filter complete (Golf/Sportwagen)	1
04L 130 235 G	Return Line	1
04L 130 277 AC	Injectors	4
04L 130 216	Plate	4
WHT 000 884	Seal	4
1K0 130 295 AP	Fuel Line (Passat/Jetta/Beetle)	1
1K0 130 307 BM	Fuel Line (Passat/Jetta/Beetle)	1
1K0 130 307 BN	Fuel Line (Passat/Jetta/Beetle)	1
5Q0 130 295 J	Fuel Line (Golf/Sportwagen)	1
5Q0 130 307 M	Fuel Line (Golf/Sportwagen)	1
5Q0 130 307 L	Fuel Line (Golf/Sportwagen)	1
561 919 050 B	In-Tank fuel pump (Passat)	1
WHT 005 478	Bolt	2
N 106 650 01	Bolt	2
N 107 145 01	Bolt	1
038 109 454 A	Nut	1
N 910 488 04	Bolt	4
1K0 919 050 AD	In-Tank fuel pump (Jetta/Beetle)	1
5Q0 919 050 P	In-Tank fuel pump (Golf/Sportwagen)	1
	All torque to yield bolts must be replaced	All



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Tool Description	Tool No:
Midtronics Battery Tester/Charger	InCharge 940 (INC-940) or GRX3000VAS
VAS Fuel Identification Unit	VAS 6774
VAS Diagnostic Tool	VAS 6150/X & VAS 6160/X with: 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
2041118/12	8/10/17	V231707	To update Touareg part table.
2041118/11	4/13/17	V231702	To update fuel sampling requirement and update Touareg part table.
2041118/1	6/24/15	V231501	Original publication.

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