

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

Condition

23 16 02 February 29, 2016 2041118 Supersedes Technical Bulletin V231509 dated December 10, 2015 to update Touareg labor operations and 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



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.



Service

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



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.





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.





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

Figure 3. N290 Fuel Metering Valve and Valve Bore



- 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.

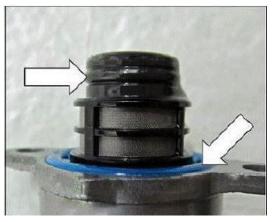


Figure 4. N290 Fuel Metering Valve Orings



To prevent fuel system damage, ensure that the N290 Fuel Metering Valve is free of any contaminates 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).

- 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



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.





It is important that the specific gravity of the fuel sample be tested <u>first</u> before proceeding with sensor head testing. Fuels with a specific gravity of 6.5 or lower <u>cannot</u> 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 proceed to section C Fuel Sampling and Laboratory Analysis. 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" continue onto section C. Fuel Sampling and Laboratory Analysis.

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

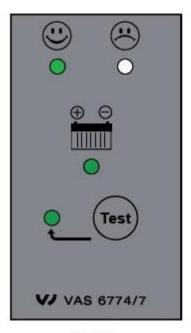
Figure 5

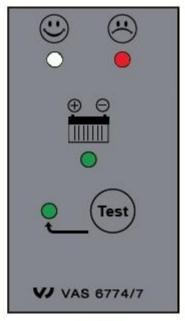




Fuel samples which have a specific density between 0 and 6.5 indicate a fuel mixture which might be flammable under certain conditions. If the specific gravity of the fuel sample is 6.5 or lower **DO NOT** use the VAS 6774/7 to perform a sensor head test, proceed to section C – **Fuel Sampling and Analysis**.

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" continue to section C – Fuel Sampling and Laboratory Analysis.





Pass

Fail

Figure 6



If the specific gravity is above 13 or below 9 the fuel has failed the test and must be sent out for laboratory testing.

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.**



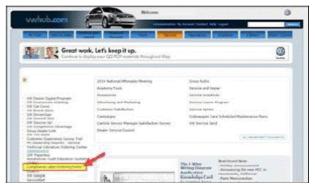
Section C - Fuel Sampling and Laboratory Analysis



This step must only be performed if either of the tests in Section B results in a "Fail"

*Hawaii, Alaska, Puerto Rico: Please follow step one. Once a fuel sample is ordered, you will be contacted by a Volkswagen of America representative who will provide further instructions. A third party will be used to package and ship your fuel samples to the laboratory.

1. The fuel sample kit, P/N LQ1LKIT must be ordered via the Compliance Label Ordering Portal in vwhub.com fuel sample kit will be sent to the dealership within 1 business day*.



The Compliance Label Ordering Portal is available through the Service or Parts tab in VWHub.com

Figure 7. Compliance Label Ordering



Figure 8. Enter VIN

Enter the VIN in the Quick VIN Order field.



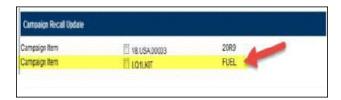


Figure 9. Select part number LQ1LKIT



When ordering LQ1LKIT on the Compliance Label Ordering Portal, please include a secondary email address (ie. service manager) in the purchase order field for dealer e-mail notification.

2. Each fuel sample kit will contain the prepaid shipping label, detailed packaging instructions, and all necessary packaging to send the fuel sample via FedEx ground to a designated test facility.



HAZMAT certification is required for packaging the fuel sample but NOT for shipping. The diesel fuel sample may be shipped to the laboratory utilizing ground shipment services provided the dealer is using the Limited Quantity Kit (PN# LQ1LKIT).

- 3. The fuel analysis results will be available to the dealership within 3 to 5 business days once the fuel sample has been shipped to the laboratory. The dealer will be notified via an email to acquire a pdf copy of the analysis result certificate via an embedded link to VW Google Search. The dealer enters the VIN and the report is presented under the heading "Component Locations, Wiring Diagrams, and Share Folders" in the lower right hand corner of the search results screen.
- 4. Once the test results are obtained by the dealership, they will be clearly marked "PASS" or "FAIL" in the comments section (see figures 10 and 11).
- 5. To determine if this repair is covered under warranty, always refer to the Warranty Policies & Procedures Manual.

Fuel Sample Analysis Results

If the fuel sample Certificate of Analysis indicates "PASS": Sections A & B & C & D will be reimbursed under warranty.

If the fuel sample Certificate of Analysis indicates "FAIL": Only sections A & B & C will be reimbursed under warranty.

6. When the fuel analysis process is complete, proceed to **Section D – High Pressure Fuel Pump Replacement** and **Fuel System Repair.**



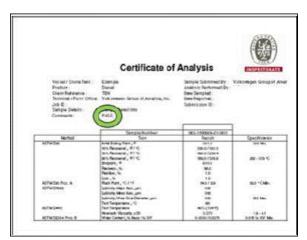


Figure 10. Example of a clean fuel sample analysis.



Each Certificate of Analysis will contain a "Pass" or "Fail" comment as shown.

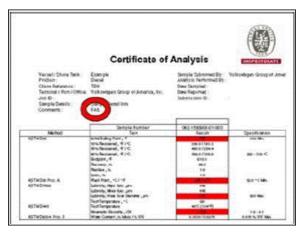


Figure 11. Example of a contaminated fuel analysis.



Section D - 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.
- 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.



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.



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").



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.



Warranty

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

- The vehicle has a Volkswagen-approved misfueling guard installed <u>and</u>
- 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 & C 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 Ran	ge From	VIN Range To	
Golf, Jetta, Jetta SportWagen, Beetle, Beetle Convertible	SportWagen, Beetle, Beetle		2.0L TDI (CJAA, CVCA, CRUA)	All	A	AII	All
SA				Coding			
Claim Type: Use applicable Claim Type 1)				1)			
Service Number:		Damage Code	нѕт		Damage Location (Depends on Service No.)		
2374			0010			oplicable when ed in Elsa (L/R)	
Parts Manufacturer			SportWagen,	a Wagon, Jetta Beetle, Beetle ertible		3M	E ²⁾
Causal Part: Selec	ct Labor	Operatio	n	01320000	•		
			Diagnost	ic Time ⁴⁾			
GFF Time expenditure			01500000 = As required		YES		ES
Road Test			01210002 = 00 TU 01210004 = 00 TU	N		0	
Technical Diagno	sis		01320000 = As re	quired		YE	S



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 & C 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)	Model(s) Year		Eng. Code	Trans. Code	VIN Ran	ge From	VIN Range To
Touareg 2013-2016		3.0L TDI (CNRB)	All	A	.II	All	
Passat	2013	-2016	2.0L TDI (CKRA, CVCA)	All	A	.II	All
SAGA			Coding				
Claim Type: Use app		licable Claim Type	1)				
Service Number:		Damage Code		нѕт			age Location nds on Service No.)
2374			0010				pplicable when ed in Elsa (L/R)
Parts Mar	nufacture	r	Touareg	, Passat	WWO ²⁾		O 2)
Causal Part: Sele	ct Labor	Operatio	n	01320000			
			Diagnost	ic Time ⁴⁾			
GFF Time expenditure			01500000 = As re	s required		YE	S
Road Test			01210002 = 00 TU 01210004 = 00 TU			N	0



Technical Diagnosis 01320000 = As required YES
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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.

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

	o determine if this procedure is covered under Warranty, always refer to the Warranty Policies and Procedures Manual 1)						
Model(s) Year(s) Eng.		Eng. Code(s)	Trans. Code(s)	VIN Ran	ge From	VIN Range To	
Golf, Jetta, Jetta SportWagen, Beetle, Beetle Convertible		2.0L TDI (CJAA, CVCA, CRUA)	All	All		All	
SAGA				Coding			
Claim Type: Use applicable Claim Type			1)				
Service Number:		Damage Code		нѕт		Damage Location (Depends on Service No.)	
2374		0010				oplicable when ed in Elsa (L/R)	
				ta SportWagen, e Convertible		BPY or	BPT ²⁾
Labor Operation 3): Fuel System Clean and Replacement			23744299 = 750 TU				
Causal Part: High Pressure Fuel Pump			*** 130 775* OR ***130 851**				
Outside Material: Diesel Fuel			Part Number: DIESEL				
Diagnostic ¹				ic 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.

⁴⁾ Documentation required per Warranty Policies and Procedures Manual.



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

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

To determine if t	•	dure is c	overed under Warr	anty, always refe	r to the Warranty	Policies and	
Model(s)	Ye	ear	Eng. Code	Trans. Code	VIN Range From	VIN Range To	
Touareg 2013-2016		-2016	3.0L TDI (CNRB)	All	All	All	
Passat	2013	-2016	2.0L TDI (CKRA, CVCA)	All	All	All	
			SAGA	Coding			
Claim Type:	Claim Type: Use applicable Claim Type 1)						
Service Number:		Damage Code	HST		nage Location ds on Service No.)		
2374			0010			Use applicable when indicated in Elsa (L/R)	

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.



3) Labor Time Units (TUs) are subject to change with ELSA updates.

4) Documentation required per Warranty Policies and Procedures Manual.

Parts Manufacturer	Touareg	ı, Passat	BPY or BPT ²⁾	
Labor Operation 3): Fuel System Classification Replacement (Engine Code: CNRB)		23744299 = 1140 TU (Touareg)		
Labor Operation 3): Fuel System Cle Replacement	ean and	23744299 = 750 TU (Passat)		
Causal Part: High Pressure Fuel Pu	ımp	*** 130 755 **		
Outside Material: Diesel Fuel		Part Number: FUEL		
Diagnostic Time 4)				
GFF Time expenditure	01500000 = As re	quired	YES	
Road Test	01210004 = 10 TU	J	YES	
Technical Diagnosis	01320000 = As re	quired	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.				



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



Required Parts and Tools

2013-2014 Jetta, Golf, Beetle, Beetle Convertible



Part No:	Part Description	Quantity
03L 130 851AX	High pressure pump	1
03L130321	Line	1
03L 130 301	Line	1
03L 130 301R	Line	1
03L 130 301B	Line	1
03L 130 301C	Line	1
03L 130 089	Rail	1
5N0 130 307J	Line	1
1K0 127 400K	Filter complete	1
03L 130 235S	Return Line	1
03L 130 277A	Injectors	4
5N0 906 129B	Auxiliary Pump	1
059 130 216 C	Plate	4
WHT 000 884	Seal	4
03L 201 360G	Fuel Line	1
1K0 130 295AH	Fuel Line	1
1K0 130 307BJ	Fuel Hose	1



1K0 130 307BG	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 454A	Nut	1
1K0 919 050 <mark>AB</mark>	In-Tank fuel pump (sending Unit)	1
	All torque to yield bolts must be replaced	All

2013-2014 Jetta SportWagen



Part No:	Part Description	Quantity
03L 130 851AX	High pressure pump	1
03L130321	Line	1
03L 130 301	Line	1
03L 130 301R	Line	1
03L 130 301B	Line	1
03L 130 301C	Line	1
03L 130 089	Rail	1
5N0 130 307J	Line	1
1K0 127 400K	Filter complete	1



03L 130 235S	Return Line	1
03L 130 277A	Injectors	4
5N0 906 129B	Auxiliary Pump	1
059 130 216 C	Plate	4
WHT 000 884	Seal	4
03L 201 360G	Fuel Line	1
1K0 130 295AH	Fuel Line	1
1K0 130 307BJ	Fuel Hose	1
1K0 130 307BG	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 454A	Nut	1
1K0 919 050 AB	In-Tank fuel pump (sending Unit)	1
	All torque to yield bolts must be replaced	All



2013-2014 Passat



Part No:	Part Description	Quantity
03L 130 755AA	High Pressure Pump	1
03L 130 321Q	Line	1
03L 130 301AR	Line	1
03L 130 301AS	Line	1
03L 130 301AT	Line	1
03L 130 301BA	Line	1
03L 201 360AD	Fuel Line	1
03L 130 235AD	Return Line	1
04L 130 216	Plate	2
WHT 004 739	Bolt	2
03L 130 277R	Injector	4
03L 130 089J	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 454A	Nut	1



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

2013 - 2016 Touareg



Part No:	Part Description	Quantity
059 130 755 CB	High pressure pump	1
Or		
059 130 755 CD		
7P6 127 401	Filter	1
059 130 216K	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 CD	Injector	6
059 130 241 CQ	Pressure Lines	2
059 130 241 CR	Pressure Lines	2
059 130 241 CS	Pressure Lines	2
059 130 310 BL	Fuel Line	1



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059 130 309 CD	Fuel Line	1
059 130 299AH	Fuel Line	1
7P0 130 295L	Fuel Line	1
059 130 312 AC	Fuel Line	1
059 130 297AD	Fuel Line	1
WHT 004 923B	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
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
	All torque to yield bolts must be replaced	All



2015 - 2016 Jetta, Beetle, Beetle Convertible, Passat, Golf, Golf Sportwagen



Part No:	Part Description	Quantity
04L 130 755E	High pressure pump	1
04L 130 321	Line	1
03L 130 301AR	Line	1
03L 130 301AS	Line	1
03L 130 301AT	Line	1
03L 130 301BA	Line	1
04L 130 089G	Rail	1
04L 201 360T	Line	1
1K0 127 400N	Filter complete (Passat/Jetta/Beetle)	1
5Q0 127 400F	Filter complete (Golf/Sportwagen)	1
04L 130 235G	Return Line	1
04L 130 277AC	Injectors	4
04L 130 216	Plate	4
WHT 000 884	Seal	4
1K0 130 295AP	Fuel Line (Passat/Jetta/Beetle)	1
1K0 130 307BM	Fuel Line (Passat/Jetta/Beetle)	1
1K0 130 307BN	Fuel Line (Passat/Jetta/Beetle)	1
5Q0 130 295J	Fuel Line (Golf/Sportwagen)	1
5Q0 130 307P	Fuel Line (Golf/Sportwagen)	1
5Q0 130 307L	Fuel Line (Golf/Sportwagen)	1



	T	
561 919 050B	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 454A	Nut	1
N 910 488 04	Bolt	4
1K0 919 050AD	In-Tank fuel pump (Jetta/Beetle)	1
5Q0 919 050P	In-Tank fuel pump (Golf/Sportwagen)	1
	All torque to yield bolts must be replaced	AII

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.