

**21-18-01 - Engine Lacks Performance, Shaft of Turbine Fan of Turbo
Charger Broken or Seized**

Release date: 9/3/2020

Condition**Applicable Vehicles**

Model(s)	Year	Eng. Code	Trans. Code	VIN Range From	VIN Range To
Passat	2012-2014	2.0L TDI (CKRA)	ALL	ALL	ALL

Revision Table

Instance Number	Published Date	Version Number	Reason For Update
2036110/11	9/3/20	21-18-01	Update vendor code.
2036110/10	1/10/18	V211801	Update to parts table.
2036110/9	6/16/16	V211601	Update turbo oil supply pipe part number.
2036110/8	8/21/15	V211507	Update turbo part number.
2036110/1	3/13/14	V211401	Original publication.

Check Engine Light ON, Reduced Performance or Noise from Turbocharger. DTC P0299 may be stored in ECM.

DTC	Description
P0299	Turbo/Super Charger Underboost

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Technical Background

In the case of a damaged turbocharger it is important to follow the steps contained in this document to avoid repeat repairs.

Production Solution

Implemented into production.

Service

**Tip:**

This bulletin only applies, if the symptoms described here are identical with the damage on the customer vehicle.

Check the damage as follows:

- Remove the engine cover according to the repair manual.
- Loosen the intake hose on the turbocharger according to the repair manual.
- Check whether the impeller housing shows signs of contact with the turbine fan.
- Check whether the shaft of the turbocharger turbine fan:
 - Has excessive free play.
 - Is damaged.
 - Is broken or seized.

To confirm a broken shaft on the turbocharger the diesel particulate filter (DPF) must be detached on the turbocharger. This is the only way to check the turbocharger for damage and engine oil ingress on the exhaust side (figure 1).

If no damage is found this technical bulletin does not apply.

- If turbocharger is found to be damaged, the DPF must be reattached at the turbocharger before proceeding to the following steps:

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Figure 1 (broken turbocharger shaft, engine oil ingress on exhaust side).

**Tip:**

In addition, an endoscope can be fed through the threaded hole of the removed oxygen sensor to check:

The exhaust side of the turbocharger for damage and engine oil ingress.

The DPF for engine oil ingress.

**Note:**

The complete engine oil circuit must be flushed out before replacing the turbocharger to avoid a repeat repair. To do this, proceed as follows:

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Step 1

- Replace the oil filter according to the repair manual and thoroughly clean the inside of the oil filter housing.
- Drain the engine oil according to the repair manual.
- Unscrew the banjo bolt for the oil supply pipe on the cylinder block. Replace the banjo bolt with the hex head bolt with part number WHT 005 747 (figure 2, in green) and tighten it according to the repair manual to block oil supply to the damaged turbocharger.

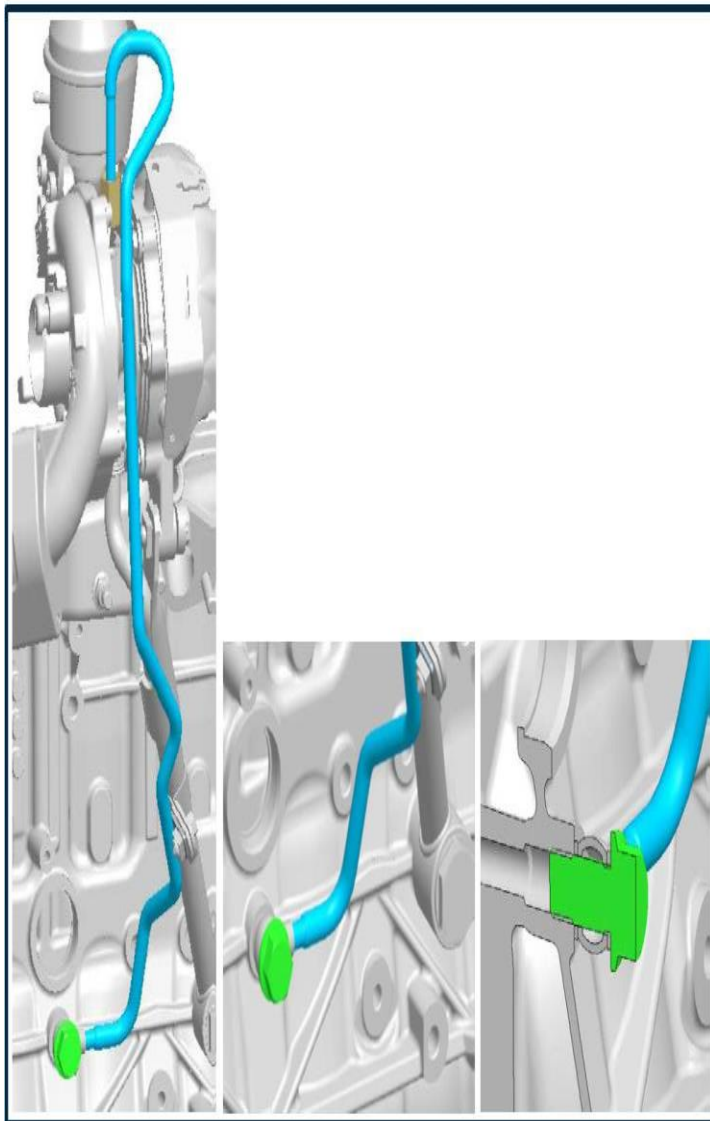


Figure 2

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**Note:**

Flush out the oil circuit while the faulty turbocharger/particulate filter is installed and the intake hose removed from the turbocharger.

- Fill up the engine oil according to the manufacturer guidelines.
- Run the engine at idle speed for about 15-20 minutes.
- Replace the oil filter according to the repair manual and thoroughly clean the inside of the oil filter housing.
- Replace the oil filter housing cap (03L 115 433).
- Drain the engine oil according to the repair manual.

Step 2

- Change the oil pump according to the repair manual and clean the inside of the oil pan.
- Replace the turbo charger with exhaust manifold according to the repair manual.
- Replace the oil supply pipe for the turbocharger according to the repair manual and attach it to the cylinder block with a new banjo bolt and new seal rings according to the repair manual/parts information.
- Replace the oil return pipe from the turbocharger according to the repair manual/parts information.
- Replace the turbocharger support according to the repair manual/parts information and the banjo bolt for the support (oil return) in the cylinder block according to the repair manual.
- Check the complete boost air system including intercooler for dirt or debris and clean it as necessary.
- Check the DPF for damage or oil ingress, if oil ingress is found it is necessary replace the DPF according to the repair manual/parts information.
- Fill up the engine oil according to the manufacturer guidelines.
- Perform the guided fault finding and delete the ECM fault memory.

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Warranty

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
Passat	2012-2014	2.0L TDI (CKRA)	ALL	ALL	ALL
SAGA Coding					
Claim Type:	Use applicable Claim Type ¹⁾				
Service Number:	Damage Code		HST	Damage Location (Depends on Service No.)	
2130	0010		--	--	
Parts Manufacturer		Passat		K21 ²⁾	
Labor Operation ³⁾ : Drain and fill engine oil. Replace drain plug for oil supply pipe, oil filter housing cap, oil filter and thoroughly clean inside of oil filter housing.			10012999 = 60 TU		
Labor Operation ³⁾ : Replace Turbocharger			21301983 = 290 TU		
Labor Operation ³⁾ : Replace Oil Pump			17201983 = 20 TU		
Labor Operation ³⁾ : Remove + Reinstall Oil Pan			17501933 = 160 TU		
Labor Operation ³⁾ : Remove and Install Particulate Filter			26741933 = 370 TU		
Labor Operation ³⁾ Use <u>ONLY</u> if Particulate Filter replacement is necessary			26745583 = 30 TU		
Labor Operation ³⁾ : Check boost air system			21010199 = 10 TU		
Labor Operation ³⁾ : Charge Battery			27068950 = 10 TU		
Causal Part: Turbo Charger			03L253010JX		

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Diagnostic Time ⁴⁾		
GFF Time expenditure	01500000 = 30 TU max.	YES
Road Test	01210004 = 10 TU	YES
Technical Diagnosis Includes: loosen and attach intake hose and particulate Filter, Inspect turbo charger	01320000 = 140 TU max.	YES
Claim Comment: Input "As per Technical Bulletin 2036110" 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.		

Required Parts and Tools

Part No:	Part Description	Quantity
WHT 005 747	Hex. head bolt (for flushing)	1x
The following parts must be ordered separately according to the parts catalogue depending on the requirements and the vehicle:		
03L253010JX	Turbo charger	1x
03L 115 105 F	Oil Pump	1x
03L 145 771 BF	Engine oil supply pipe for turbo charger	1x
03L 145 736 D	Engine oil return pipe for turbo charger	1x
03L 145 535 D	Support (engine oil return) for turbo charger	1x
WHT 005 635	Banjo bolt (support)	1x
03L 115 433 C	Oil filter lid	1x

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03L 115 562	Oil filter with seal	2x
According to parts catalogue	Engine oil (Long Life)	8.6 l
According to parts catalogue	Fasteners, clamps, and seals (only mandatory replacement parts)	— (as required)
561 253 053 A	Exhaust pipe with catalyst and diesel particulate filter	1x (if Necessary)

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.