



Technical Service Bulletin

21 Engine difficult to start, turbocharger damaged, V8 4.0TFSI

21 17 24 2044640/1 February 2, 2017.

Model(s)	Year	VIN Range	Vehicle-Specific Equipment
S6	2013 - 2016	All	4.0L
RS 6	2013 - 2016	All	4.0L
S7	2013 - 2016	All	4.0L
RS 7	2014 – 2016	All	4.0L
RS 7+	2016	All	4.0L
A8	2013 - 2015	All	4.0L
S8	2013 - 2014	All	4.0L

Condition

Customer statement:

- Engine cannot be started or only with difficulty.
- Engine makes unusual noises when accelerating.
- Engine has reduced performance.

Workshop findings:

- Damage on turbocharger impeller fins, increased free play on impeller shaft of turbocharger or broken impeller shaft.

Technical Background

Damage to the turbocharger is rarely directly the result of turbocharger failure. Therefore, it is important to perform further checks to find the root cause to avoid repeat repairs.

Known causes for turbocharger damage:

- Performance increases by tuned ECM
- Non-compliance with service intervals
- Incorrectly fitted oil filter element

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- Leaks in intake tract allowing outside unfiltered air and debris into the turbocharger
- Poor oil supply of turbocharger

Production Solution

Not applicable.

Service

1. Perform the Guided Functions with the diagnosis tester: "01 check warranty information." Then check for an entry with the vehicle data in ELSA under warranty code.
 - All information must be documented on attached Checklist and stored with the Repair Order

2. Check the hardware version of the engine control unit. An X version indicates that the engine control unit was replaced/or is modified (Figure 1).

First system test with DTC memory entries

Address: 0001 System name: 01 - Engine Electronics Protocol versions: UDS/ISOTP	
ASAM base version:	BV_EnginContrModul1UDS
ASAM control module version:	EV_ECM20TFS0208W0906259C_001
Hardware part number:	06L907425
Software part number:	8W0906259C
Hardware version number:	H13
Software version number:	0004
Build group number:	

Figure 1. Correct hardware version number.

3. Check the intake tract for leaks. Review the repair history for possible previous repairs on the intake tract.
4. Measure the oil pressure at idle and 2000 rpm according to ElsaPro.
5. Visually assess the condition of the damaged turbocharger from both sides. No oil marks (charge air and exhaust side) could be another indication for a poor oil supply to the turbocharger.
6. Check the oil filter for correct installation and correct filter part number 079115561J. If the oil filter is not centrally fitted, the engine oil may not be filtered, entering the oil supply of the turbocharger due to the crooked position of the oil filter element.
 - Check the installation of the oil filter bypass valve according to service measure 17F2.
 - Check the oil supply line for through flow and oil deposits.
 - Check the oil drain hoses for through flow and oil deposits.



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⚠ Note:

This TSB is not replacing any Repair Manual instructions, this TSB is meant to supplement the Repair Manual. See ElsaPro, *Engine > 8-Cylinder Direct Injection 4.0L 4V TFSI Engine > 21 Turbocharger > Turbocharger, Removing and Installing.*

7. Replace both of the turbochargers as well as the oil strainer and non-return valve in the inner valley of engine according to ElsaPro and observe all instructions.
8. Change the engine oil including oil filter.
9. Follow the installation instructions in ElsaPro for the turbochargers exactly including:
 - Filling the turbocharger at the supply line connections with engine oil.
 - To ensure the turbocharger is supplied with enough oil, let the engine run at idle for approximately one minute after starting, do not increase rpm.

Warranty

Claim Type:	<ul style="list-style-type: none"> • 110 up to 48 Months/50,000 Miles. • G10 for CPO Covered Vehicles – Verify Owner. • If vehicle is outside any warranty, this Technical Service Bulletin is informational only. 		
Service Number:	2130		
Damage Code:	0010		
Labor Operations:	For all models:		
	Turbocharger replace	2130 5671	50 TU
	Oil pressure check	1703 0199	80 TU
	Check intake and exhaust system for debris, additional time is included in Turbocharger remove + reinstall	2130 0199	20 TU
	Remove + reinstall oil strain and check valve	1726 2099	70 TU
	Check that oil bypass valve is fitted correctly	1701 0199	10 TU



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	Engine oil and filter change	1701 1799	40 TU
	For A8 and S8:		
	Air intake distributor remove + reinstall without night camera and radar sensor	2446 1921	470 TU
	Turbochargers remove + reinstall	2130 2071	520 TU
	For S6, S7, and RS7:		
	Turbochargers remove + reinstall	2130 2071	470 TU
	(S6/S7 only) Air intake distributor remove + reinstall without night camera and radar sensor	2446 1921	600 TU
	(RS7 only) Air intake distributor remove + reinstall without night camera and radar sensor	2446 1923	690 TU
Diagnostic Time:	GFF	0150 0000	30 TU
	Road test prior to service procedure	0121 0002	10 TU
	Road test after service procedure	0121 0004	10 TU
	Technical diagnosis at dealer's discretion (Refer to Section 2.2.1.2 and Audi Warranty Online for DADP allowance details)		
Claim Comment:	As per TSB # 2044640/1		

All warranty claims submitted for payment must be in accordance with the *Audi Warranty Policies and Procedures Manual*. Claims are subject to review or audit by Audi Warranty.

Required Parts and Tools

Part Number	Part Description	Quantity
079103175C	Check valve	1
079115175F	Oil strainer	1
079103161Q	Cover Gasket	1



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N 90303801	Lower oil supply o-rings 9x1.5 black	2
N 91056801	Upper oil supply o-rings 12x2 black	2
WHT006901	Oil return o-rings 14.5x2	2
N 90465003	Water tube o-rings 23x2.6	3
N 90409501	Clamp breather hoses	4
079129717K	Intercooler housing gasket right side	1
079129717J	Intercooler housing gasket left side	1
079145818	Throttle body gasket	1
079103583	Breather seals	3
N 90686902	Spring clips 23x12 breather hoses	4
WHT006335A	Turbo coolant pipe o-rings lines (blue 2.0mm) ⚠ Note: Installed seals are based on which pipes are installed (see TSB 2036167).	4
WHT006537	Turbo coolant pipe o-rings lines (black 2.8mm) ⚠ Note: Installed seals are based on which pipes are installed (see TSB 2036167).	4
WHT001011A	Coolant supply pipe lower o-rings yellow 12.2x1.65	2
Order by VIN	Left turbocharger	1
Order by VIN	Right turbocharger	1
WHT005529	Inlet pipe o-rings	2
079253039M	Exhaust manifold gaskets	2
N 90894601	Manifold nuts M8	16
G 052112A3	Hot bolt paste 170G	1



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4G0253115D	Turbocharger outlet gaskets	2
N 91153902	Turbocharger studs	10
N 91130802	Manifold nuts	10
N 0138494	Drain plug gasket	1
079198405D	Oil filter kit	1
G 013A8J1G	Coolant additive	1
Outside material	Distilled water (obtained locally)	As needed (Max \$10.00)
Tool Number	Tool Description	
3371	Gauge – Gap adjustment tool	
V.A.G 1342	Oil pressure gauge kit	
V.A.G 1274/8	Adapter	
V.A.G 1274/10	Adapter	
VAS 6096	Cooling system charge unit	
T10007 A	Refractometer	
	Approved battery charger	

All parts and service references provided in this TSB (2044640) are subject to change and/or removal. Always check with your Parts Department and service manuals for the latest information.

Additional Information

More information can be found at the following resources:

- ElsaPro, *Engine > 8-Cylinder Direct Injection 4.0L 4V TFSI Engine > 21 Turbocharger > Turbocharger, Removing and Installing.*

The following Technical Service Bulletin(s) will be necessary to complete this procedure:

- TSB 2028842, *01 Automatic detection of unauthorized chip tuning (TD1 warranty key)*
- TSB 2036167, *19 Coolant pipe seepage on turbocharger*



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