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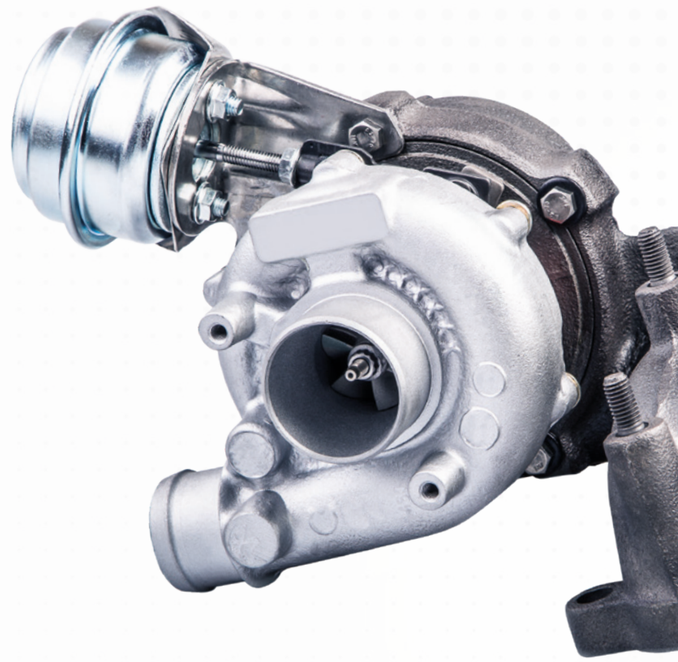
Remanufacturing Technologies

Turbocharger Damage Matrix

Possible causes / Type of error	High oil consumption	Power shortfall charging pressure too low	Charging pressure too high	Black smoke	Blue smoke	Oil leak on the compressor	Oil leak on the turbine	Turbocharger causing noises/whistling	Compressor/turbine wheel faulty	Gas escaping between housings
Exhaust back pressure too high	●	●		●	●	●		●		●
Outlet pipes blocked or deformed	●				●	●	●			
Fuel system/injection system faulty or with invalid values		●	●	●						●
EGR valve carbonized, seized or leaking		●	●	●						
Air filter dirty/wet, suction pipe deformed	●	●		●	●	●				
Valve guide, piston rings, cylinder liners/sleeves worn, increased blow-by	●	●		●	●	●	●			
Dirt in the compressor or intercooler	●	●		●	●	●		●		
Pressure lines, intercooler, intake manifold deformed or leaking		●		●				●		
Pressure control flap does not open, VTG adjustment is not working			●							
Pressure control flap does not close, VTG adjustment is not working		●		●						
Crankcase ventilation clogged or deformed	●				●	●	●			
Wiring for the control box or electronic actuator is faulty		●	●							
Compressor wheel or turbine wheel damged by an foreign object		●		●				●	●	
Turbocharger bearing housing carbonised or full of oil	●				●	●	●			
Turbine housing/waste gate flap damaged or cracked		●		●				●		
Turbocharger bearing damage, increased bearing play	●	●		●	●	●	●	●	●	
Air flow meter and/or exhaust gas sensors faulty		●		●						
Leaks from the flange on the turbine housing and faulty exhaust system								●		
Vacuum pump faulty/worn or vacuum pipes leaking		●								
Too little oil supply and/or cracked/clogged oil supply pipe		●		●	●			●	●	



This matrix is designed to easily identify cause of problems with a turbocharger. The relevant causes must be fixed before turbocharger replacement. If the actual cause of damage or malfunction is not found and fixed, it is likely that the problem will recur even with a new turbocharger.

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