

Turbo Diagnostic Matrix

Often a defective turbocharger is the consequence of some other primary engine defect which cannot be cured just by replacing the turbocharger, if you don't address the cause of turbo failure, you may have to replace the turbo Again

Prior to installing a new turbo, it's vital to evaluate and identify the root cause of the failure, by a common set of indicators. Use the Turbocharger Troubleshooting Matrix below to determine if the issue is actually the turbocharger.

Possible Cause	Problem indicator										
	Black smoke	Blue Smoke	Low Boost	Boost pressure too high	Acoustic Noise	oil leak from compressor side	Oil leak from Exhaust side	Unusual Oil Consumption	Damaged Turbine or compressor wheel	Engine Running hot	Engine Lacks Power
Dirty air cleaner	●	●	●			●		●		●	●
Restricted compressor intake duct	●	●			●	●		●		●	
Restricted air duct from compressor to intake manifold	●		●		●					●	●
Leaking or damaged oil Drain line		●				●	●	●			
Restricted Crankcase Breather		●				●	●	●			
Foreign Object Damage Turbine or compressor	●		●		●	●		●	●		
Exhaust Gas Leak between exhaust pipe and turbine outlet					●						
Restricted exhaust system	●					●				●	●
Improper oil supply to turbo	●				●				●		●
Restricted Oil Drain Line		●				●	●	●			
Lack of Oil to turbocharger			●		●				●		●
Turbocharger bearing housing sludged or coked		●				●	●	●			
Fuel injection pump or fuel injectors incorrectly set											●
Engine valve timing incorrect	●										●
Piston ring sealing defective		●				●	●	●			
Boost pressure control swing valve/poppet valve does not close	●		●								
Dirty compressor or charge air cooler	●	●	●		●	●		●			
Increased Blow by	●	●				●	●	●			●
Burnt valves and/or pistons	●	●				●	●	●			●
Clogged Catalitic	●	●						●			●