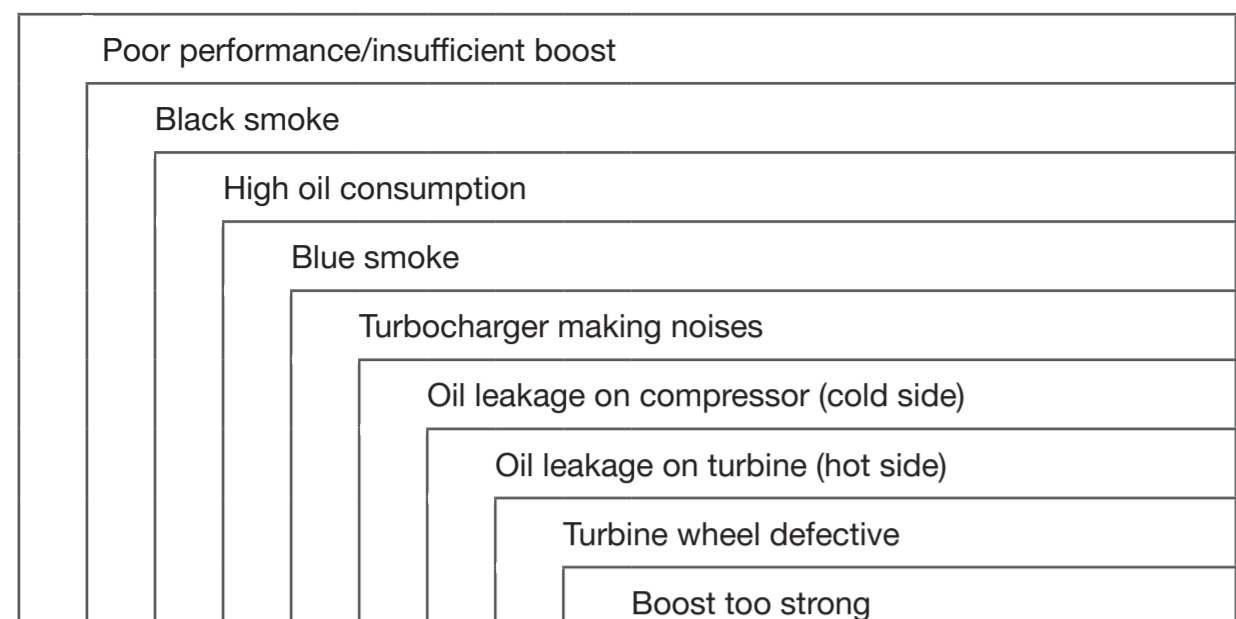
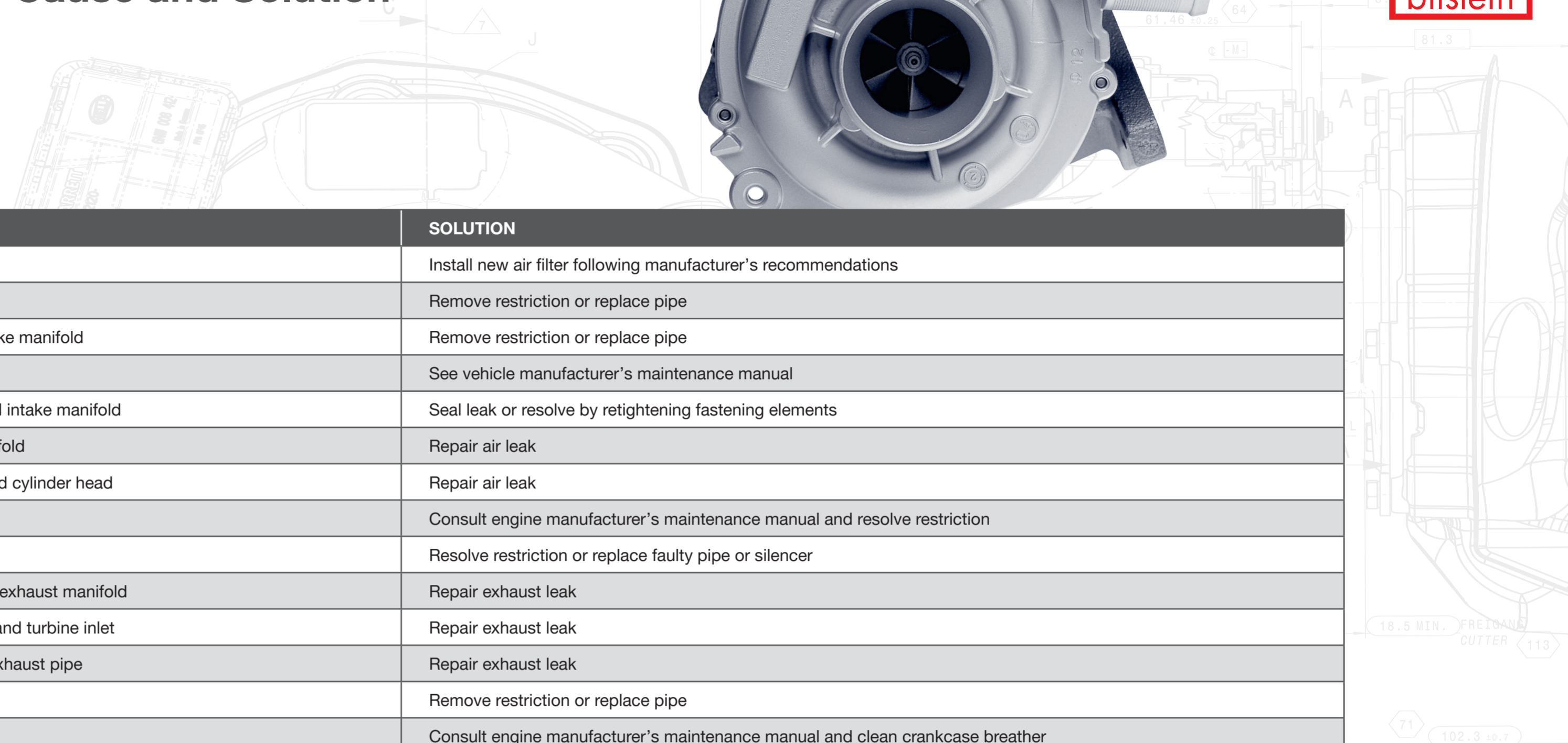
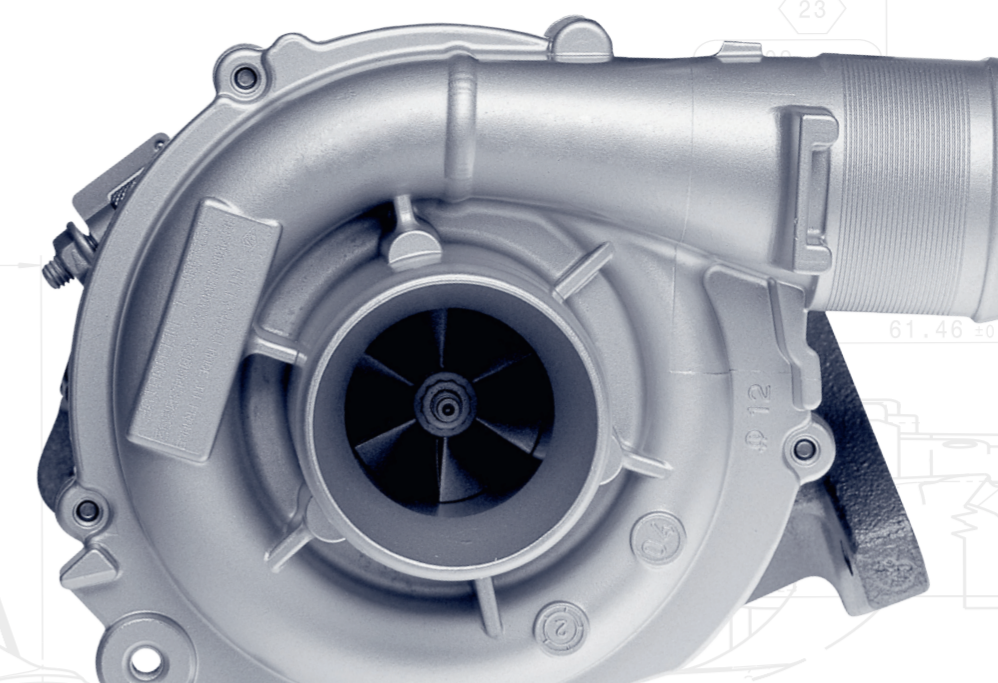


Turbocharger Test Chart

Cause and Solution



										CAUSE	SOLUTION
•	•	•	•	•	•					Blocked air filter	Install new air filter following manufacturer's recommendations
	•	•	•	•	•					Restriction in the suction pipe to turbine	Remove restriction or replace pipe
•	•			•						Restriction in pressure pipe to turbine to intake manifold	Remove restriction or replace pipe
•	•			•						Restriction in intake manifold	See vehicle manufacturer's maintenance manual
				•						Leakage in the suction line between filter and intake manifold	Seal leak or resolve by retightening fastening elements
•	•	•	•	•						Air leakage between turbine and intake manifold	Repair air leak
•	•	•	•	•						Resolve leakage between intake manifold and cylinder head	Repair air leak
•	•	•	•	•	•					Restriction in exhaust manifold	Consult engine manufacturer's maintenance manual and resolve restriction
•	•			•						Restriction in exhaust pipe or silencer	Resolve restriction or replace faulty pipe or silencer
•	•			•	•					Exhaust leakage between cylinder head and exhaust manifold	Repair exhaust leak
•	•			•	•					Exhaust leakage between exhaust manifold and turbine inlet	Repair exhaust leak
				•						Exhaust leakage between turbine inlet and exhaust pipe	Repair exhaust leak
	•	•		•	•					Restriction in the oil drain pipe	Remove restriction or replace pipe
	•	•		•	•					Restricted or blocked crankcase breather	Consult engine manufacturer's maintenance manual and clean crankcase breather
	•	•		•	•					Turbocharger bearing housing contaminated or carbonised	Clean or replace turbocharger, change oil, replace oil filter
•	•							•		Fuel system faulty or configured incorrectly	Consult engine manufacturer's maintenance manual
•	•									Camshaft timing	Consult engine manufacturer's maintenance manual
•	•	•	•		•	•				Worn piston rings or liners (blow-by)	Consult engine manufacturer's maintenance manual
•	•	•	•		•	•				Engine problem (valves, pistons, etc.)	Consult engine manufacturer's maintenance manual
•	•	•	•	•	•	•				Dirt accumulation in the compressor wheel or in the diffuser	Have an authorised specialist repair the turbocharger
•	•	•	•	•	•	•				Damaged turbocharger	Have an authorised specialist repair the turbocharger
•										Bypass valve malfunction	Check opening function following manufacturer's specifications
•	•									Boost pressure control valve does not close	Have an authorised specialist repair the turbocharger
								•		Boost pressure control valve does not open	Replace boost pressure control valve
•								•		Faulty control line to boost pressure control valve	Replace boost pressure control valve/control line
•	•	•	•	•	•	•	•			Bearing damage to turbocharger	Replace turbocharger
•	•			•				•		Foreign object damage to turbine	Have an authorised specialist repair or replace the turbocharger
•	•			•				•		Insufficient oil supply to the turbocharger	Check oil feed line, check oil level, change oil, change oil filter