

ENGINE LACKS POWER	BLACK EXHAUST SMOKE	EXCESSIVE ENGINE OIL CONSUMPTION	BLUE EXHAUST SMOKE	NOISY TURBOCHARGER	CYCLIC SOUND	OIL LEAK - COMPRESSOR	OIL LEAK - TURBINE	CAUSE	REMEDY
*	*	*	*			*		Clogged air filter element	Replace element according to engine manufacturers recommendations
	*	*	*	*	*	*		Obstructed air intake duct to turbo compressor	Remove obstruction or replace damaged parts as required
*	*			*				Obstructed air outlet duct from compressor to intake manifold	Remove obstruction or replace damaged parts as required
*	*			*				Obstructed intake manifold	Refer to engine manufacturers manual & remove obstruction
				*				Air leak in duct from air cleaner to compressor	Correct leak by replacing seals or tightening fasteners as required
*	*	*	*	*				Air leak in duct from compressor to intake manifold	Correct leak by replacing seals or tightening fasteners as required
*	*	*	*	*				Air leak at intake manifold to engine joint	Refer to engine manufacturers manual & replace gaskets or tighten fasteners as required
*	*	*	*	*		*		Obstruction in exhaust manifold	Refer to engine manufacturers manual & remove obstruction
*	*					*		Obstruction in muffler or exhaust stack	Remove obstruction or replace faulty components as required
*	*			*		*		Gas leak in exhaust manifold to engine joint	Refer to engine manufacturers manual & replace gaskets or tighten fasteners as required
*	*			*		*		Gas leak in turbine inlet to manifold joint	Replace gasket or tighten fasteners as required
				*				Gas leak in ducting after the turbine outlet	Refer to engine manufacturers manual & repair leak
		*	*			*	*	Obstructed turbocharger oil drain line	Remove obstruction or replace line as required
		*	*			*	*	Obstructed engine crankcase vent	Refer to engine manufacturers manual, clear obstruction
		*	*			*	*	Turbocharger center housing sludged or caked	Change engine oil & oil filter, overhaul or replace turbo as required
*	*							Fuel injection pump or fuel injectors incorrectly adjusted	Refer to engine manufacturers manual- replace or adjust faulty component(s) as required
*	*							Engine camshaft timing incorrect	Refer to engine manufacturers manual & replace worn parts
*	*	*	*			*	*	Worn engine piston rings or liners (BLOWBY)	Refer to engine manufacturers manual & repair engine as required
*	*	*	*			*	*	Internal engine problem (valves, pistons)	Refer to engine manufacturers manual & repair engine as required
*	*	*	*	*	*	*	*	Dirt caked on compressor wheel and/or diffuser vanes	Clean using a Non-Caustic cleaner & Soft Brush. Find & correct source of unfiltered air & change engine oil & oil filter
*	*	*	*	*		*	*	Damaged turbocharger	Analyze failed turbocharger, find & correct cause of failure, overhaul or replace turbocharger as required