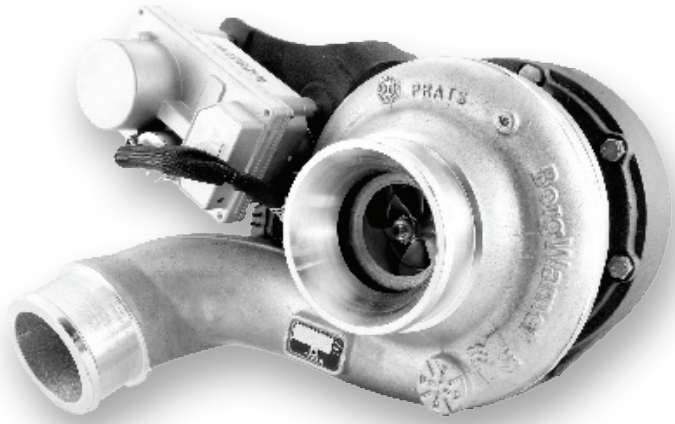


TYPES OF FAILURE



	<i>Compressor turbine wheel defective</i>	<i>Insufficient power/boost pressure too low</i>	<i>Boost pressure too high</i>	<i>Black smoke</i>	<i>Blue smoke</i>	<i>Turbocharger generates acoustic noise</i>	<i>High oil consumption</i>	<i>Oil leakage at compressor end</i>	<i>Oil leakage at turbine end</i>
Dirty air filter system	●	●	●	●	●	●	●		
Suction and pressure line distorted or leaking	●	●			●				
Excessive flow resistance in exhaust system	●	●	●	●	●	●	●		
Leakage upstream of turbine	●	●	●	●	●	●	●		
Oil feed and drain line clogged, leaking or distorted					●	●	●	●	
Crankcase ventilation clogged and distorted					●	●	●	●	
Coke and sludge in turbocharger center housing					●	●	●	●	
Fuel System/injection feed system defective or incorrectly adjusted	●	●	●						
Valve guide, piston rings, engine or cylinder liners worn	●	●	●	●		●	●	●	
Increased blow by	●	●	●	●		●	●	●	
Dirty compression or charge air cooler	●	●	●	●	●	●	●		
Boost pressure control swing valve/poppet valve does not close	●	●							
Boost pressure control swing valve/poppet valve does not open		●							
Pipe assy to swing valve/poppet valve defective	●	●							
Piston ring sealing defective					●	●	●	●	
Turbocharger bearing damage	●	●	●	●	●	●	●	●	●
Foreign body damage on compressor or turbine	●	●	●		●				
Exhaust gas leakage between turbine outlet and exhaust pipe						●			
Engine air collector cracked/missing or loose gaskets		●	●		●				
Turbine housing/flap damaged	●	●	●		●				
Insufficient oil supply of turbocharger	●	●	●		●				