

Turbocharger Failure Diagnosis

Loss of power, excess smoke, high fuel consumption, overheating, high exhaust temperatures and oil leakages from the turbocharger are all symptoms that could indicate turbocharger malfunction. However, these faults are often wrongly attributed to the turbocharger because defects in other components can produce the same symptoms. The turbocharger performance can only be impaired by mechanical damage or blockage caused by dirt.

This checklist provides a comprehensive list of the most common symptoms related to turbocharger failure. BEFORE replacing a turbocharger, verify the problem by consulting the chart below. If after taking the appropriate action, problems still persist, please contact your nearest authorised Holset distributor for advice.

Restricted compressor intake duct Remove restriction or replace damaged parts as required	
Restricted air duct from compressor to intake manifold Replace seals, gaskets or tighten fasteners as required	
Restricted intake manifold Refer to engine manufacturer's manual and remove restriction	

Clean or replace element according to manufacturer's recommendations

Dirty air cleaner

Air leak in feed from compressor to intake manifold
Replace seals, gaskets or tighten fasteners as required
Air leak between intake manifold and engine

Foreign object in ex	haust manifold (from engine)
Refer to engine ma	nufacturer's manual and replace gaskets or tighten fasteners as require
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Refer to engine manufacturer's manual and remove obstruction
Restricted exhaust system
Remove restriction or replace damaged parts as required

Exhaust manifold cracked, gaskets blown or missing
Refer to engine manufacturer's manual and replace gaskets or damaged parts as required

Gas leak at turbine inlet/exhaust manifold joint	
Replace gasket or tighten fasteners as required	

Gas leak in ducting after turbine outlet	
Refer to engine manufacturer's manual and repair lea	al

Refer to engine manufacturer's manual and repair leak
Restricted turbocharger oil drain line

Remove restriction or replace damaged parts as required

Restricted engine crankcase breather
Refer to engine manufacturer's manual, clear restriction

Turbocharger bearing housing sludged or coked

Engine valve timing incorrect

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Refer to engine manufacturer's manual and replace or adjust faulty components as required

Worn engine piston	n rings or liners
Refer to engine ma	anufacturer's manual for correct settings and adjust as required

Burnt valves and/or pistons		
Refer to engine manufacturer's r	nanual and repa	ir as required

Refer to engine manufacturer's manual and repair as required

Excessive dirt build-up on impeller and/or diffuser vanes	
Clean in accordance with the appropriate Heleet repair manual	ı

Clean in accordance with the appropriate Hoiset repair manual	
Turbocharger damaged	

Siezed valve	
Free valve/replace complete turbine housing sub-assembly	

Replace nose and clips
Wastegate mechanism set incorrectly
Contact nearest Holset distributor for correct setting details

Engine Running Hot	oor Transient Response
	Poor

Smoke

Black Exhaust Smoke

High Oil Consumption

Cyclic Sound from the Turbocharger

Oil Leak from Turbine Seal











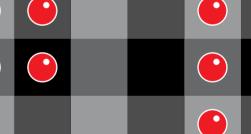


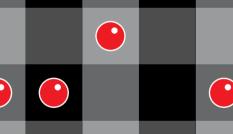


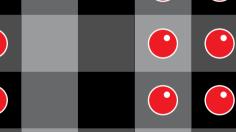


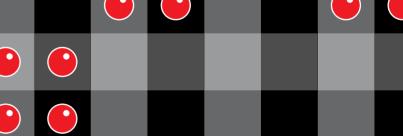


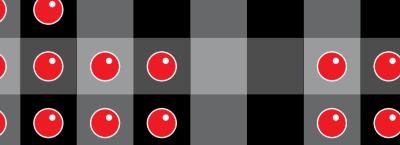




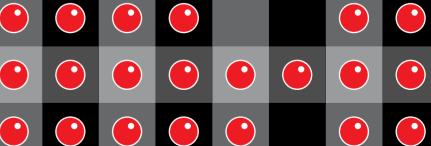


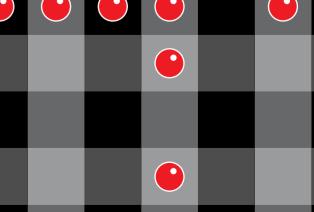














Replace using correct Actuator Service Kit

Leaking hose