

OIL SEALS — Troubleshooting

There are two potential leak paths on an oil seal, i.e. between the outside diameter of the Oil Seal and the housing (static), and between the sealing lip and the shaft (dynamic) In the table below the causes are listed, with a few recommendations to prevent these problems.

Symptoms	Cause	Remedy
Oil Seal rotates with the shaft	Outside diameter is smaller than the housing diameter	Replace the Oil Seal, choose the right size
Oil Seal is moving in an axial direction on the shaft	Outside diameter is smaller than the housing diameter	Replace the Oil Seal, choose the right size
	Due to excess pressure the Oil Seal is moving axially	
The mounted Oil Seal is deformed	Inside diameter of the Oil Seal is too small	Control the size of the shaft
The case of the Oil Seal is deformed	Wrong installation tools has been used	Use the right tools
Damaged surface of the Oil Seal	The finishing has not been executed properly	Control the roughness of the housing and the presence of a chamfer
	Dirt at the in- our outside of the housing	Clean all parts before assembly
Damaged sealing lip	Insufficient lubrication	Lubricate sufficiently
	Construction limits the transport of the lubrication to the sealing lip	Change the construction so that sufficient lubrication reaches the sealing lip
Partly damaged sealing lip	Oil Seal not placed concentric with regards to the housing	Centre the seal, use the right tools
Sealing lip has hardened, is worn out and is torn	To high temperature, shaft speed, pressure	Choose the right rubber compound and type of Oil Seal
	Insufficient lubrication	Lubricate sufficiently
Swollen sealing lip	Incorrect rubber compound	Choose the correct material
Scraped sealing lip	Roughness of the shaft is incorrect	Control roughness
	Incorrect tools used during assembly	Choose correct assembly tool
Collapsed sealing lip	Incorrect assembly	Lubricate before the assembly
	Too high pressure	Choose an Oil Seal for high pressures
The flexible part is torn	Too high pressure	Choose an Oil Seal for high pressures
	Pressure directed at the flexible part	
Garter spring out the groove	Chamfer does not have the correct angle	Use a mounting sleeve, or make a chamfer on the shaft
	Incorrect assembly	Take care during the assembly
	Grooves not deep enough	Choose another design, or use a spring with a smaller diameter