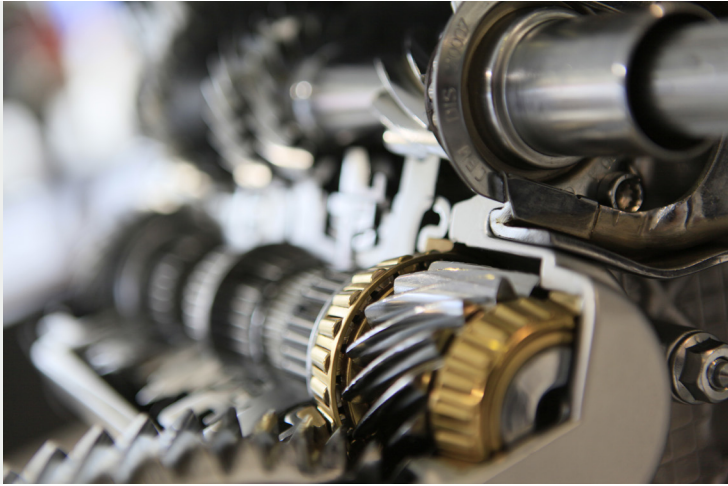


# The common causes of gearbox failure.



Gearbox failure can cause a complete machinery breakdown, expensive both in their subsequent repair and lost output.

Catching signs of failing parts early can reduce downtime, save costs and improve machinery health. Here are some of the most common forms of gearbox failure.

- 34.4% - Inadequate lubrication
- 19.6% - Contamination
- 17.7% - Installation errors
- 6.9% - Overload
- 2.8% - Handling errors

The major cause is inadequate lubrication caused by under filling, incorrect specification, mixing or incompatibility, incorrect lubrication and intervals, deteriorated grease or oil, water contamination and particulate contamination.

Under filling can lead to accelerated wear rates and component failure. This is because the oil acts as a coolant allowing overheating of oil and parts along with the consequences of metal-to-metal contact.

Water contamination essentially disables the lubricating properties of the oil and can cause foaming of the oil. Water in oil can result from condensation or failing seals allowing water ingress.

Particulate contamination can be from putting dirty oil in, leaving a filling plug open or from wear or failure particles within the gearbox. Not only can this be an indicator of problems within the gearbox itself but the particles can also accelerate wear and component breakdown.

> More information at [gillsc.com](https://gillsc.com)

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Overloaded components cause 6.8% of failure, caused by exceeding design limits for load, speed or temperature. The greater the overload proportionately shortens component life.

The primary symptoms of overload include noise and vibration, increased temperatures, metallic chip debris and reduced equipment performance.

Improper handling and installation can cause component failure. This applies in particular to bearings where the cages are particularly prone to careless handling, installation or removal, but can equally apply to misaligned shafts which can then lead to bearing or gear failure.