

## **gear pump catalogue**

As a widely used power component in industrial equipment, the proper installation and maintenance of hydraulic gear pumps directly affect their service life and operational efficiency. This article is a hydraulic [gear pump catalogue](#) that provides a brief overview of potential faults in gear pumps to facilitate user experience.

### **1. Pressure Abnormalities**

**Insufficient Pressure:** Increased gear meshing clearance due to wear causes leakage from the high-pressure chamber to the low-pressure chamber; poor sealing between the pump body and end cover (aged gaskets or out-of-tolerance flatness); air leaks in the suction line disrupt vacuum pressure (more likely to occur when suction lift exceeds the rated value).

**Excessive Pressure:** External piping blockage or valves not fully open, causing sudden increase in discharge resistance; safety valve malfunction preventing pressure relief, leading to continuous pressure rise.

### **2. Abnormal Flow Rate Faults**

**Sudden Flow Rate Decrease:** Gear shaft fracture or coupling disengagement causing idle rotation; clogged oil filter increasing suction resistance.

**Gradual flow decrease:** Axial leakage caused by a gap exceeding 0.03 mm between the gear end face and end cover; viscosity of the medium exceeding the applicable range, causing blockage.

**Severe flow pulsation:** Large gear tooth profile error (cumulative tooth pitch error exceeds specifications); bearing wear causing gear center distance deviation.

### **3. Leakage faults**

**Shaft end leakage:** Wear of the mechanical seal's moving ring and stationary ring (medium contains impurities); aging of the seal ring (long-term high-temperature operation); loosening of the packing seal cover or depletion of the packing.

**Pump body joint surface leakage:** Uneven tightening torque of the end cover bolts; seal gasket specifications do not match; deformation of the pump body due to temperature differences.

### **4. Abnormal Noise and Vibration**

**High-frequency piercing noise:** High intake pipe resistance (pipe diameter too small) causing cavitation; low oil tank level, air entering the suction pipe.

**Low-frequency muffled noise:** Gear and pump body radial clearance too small ( $<0.1$  mm) causing friction; bearing raceway wear; poor gear meshing (assembly phase misalignment).

**Severe vibration:** Gear dynamic balance accuracy exceeds specifications (noticeable at speeds over 1800 r/min); misaligned coupling installation; resonance caused by loose pump body mounting bolts.

### **5. Overheating faults**

**High pump body temperature (exceeding 90°C):** Increased friction due to small gear meshing clearance; poor bearing lubrication (incorrect oil viscosity or insufficient quantity); poor heat dissipation due to blocked return oil lines.

**Medium-induced overheating:** Medium viscosity exceeds design range, causing high resistance; high medium temperature (exceeding 120°C) damaging the oil film.

### **6. Mechanical wear and tear faults**

**Gear tooth surface wear:** Medium contains hard particles; poor lubricant cleanliness; long-term overload operation.

Bearing wear: Insufficient lubrication; excessive axial force during installation; bearing material fatigue.

#### 7. Motor-related failures

Motor overload: Internal blockage in the pump housing (e.g., gear seizure); output pressure far exceeds the rated value; improper matching between the motor and pump. Motor abnormal noise: Damaged motor bearings; friction between the rotor and stator; poor contact in the power supply lines.

#### 8. Control component failures

Safety valve blockage: Valve core stuck by debris; spring fatigue failure; valve seat wear and poor sealing.

Pressure gauge malfunction: Damaged internal components; blocked connecting pipes; stuck pointer.

Gear pump failures are often interrelated and require analysis of operating parameters and maintenance records to accurately identify the root cause.

Gear pumps are prone to malfunction due to factors such as operating conditions and maintenance during long-term operation. The above is a summary of common malfunctions and their causes. If you would like to learn more about [gear pump catalogs](#), please visit our official website.

eaton hydraulics gear pump specifications

dts 26 series gear pump

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