

GEARBOX PRODUCT MANUAL

INTRODUCTION

This product manual provides a detailed and quantitative guide to the gearbox, its components, and the assembly process. Each component is described with precise measurements and specifications for accurate assembly.

COMPONENT DETAILS

GEARBOX ILLUSTRATIONS

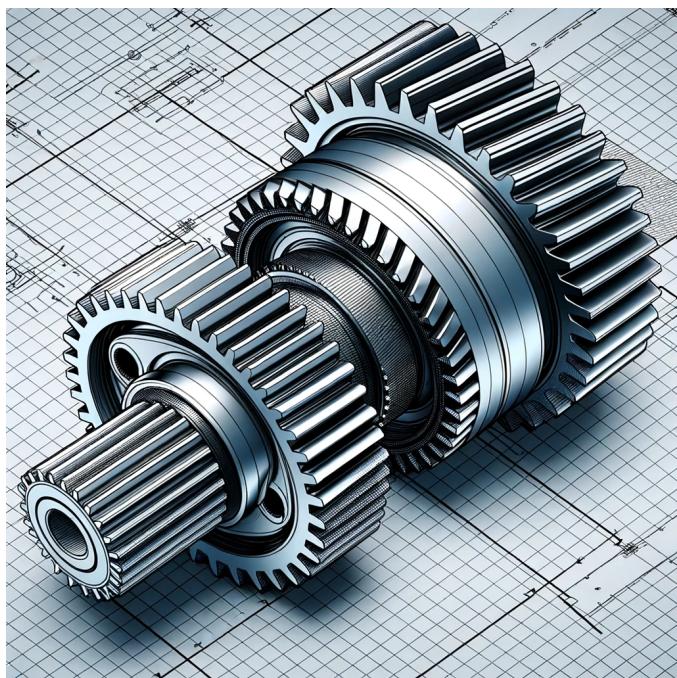


Figure 1: Typical Gear Set

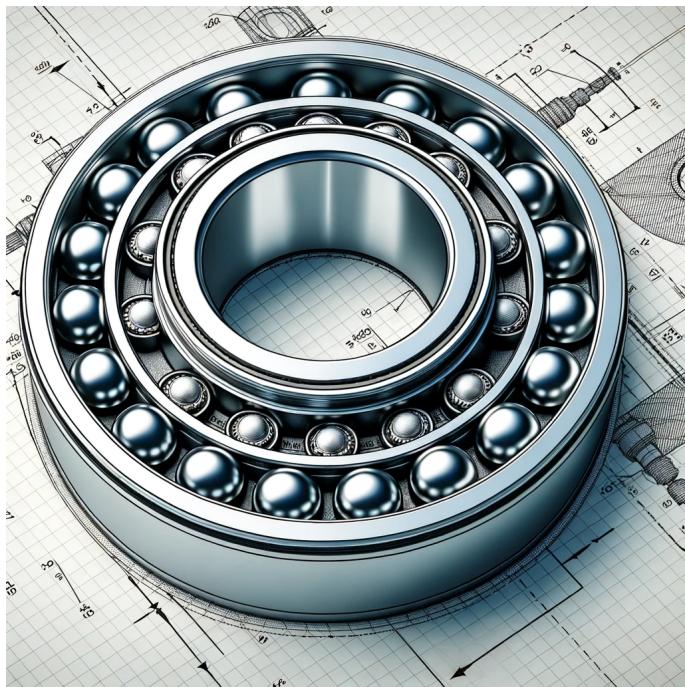


Figure 2: Bearings used in a gearbox



Figure 3: Gearbox Shaft

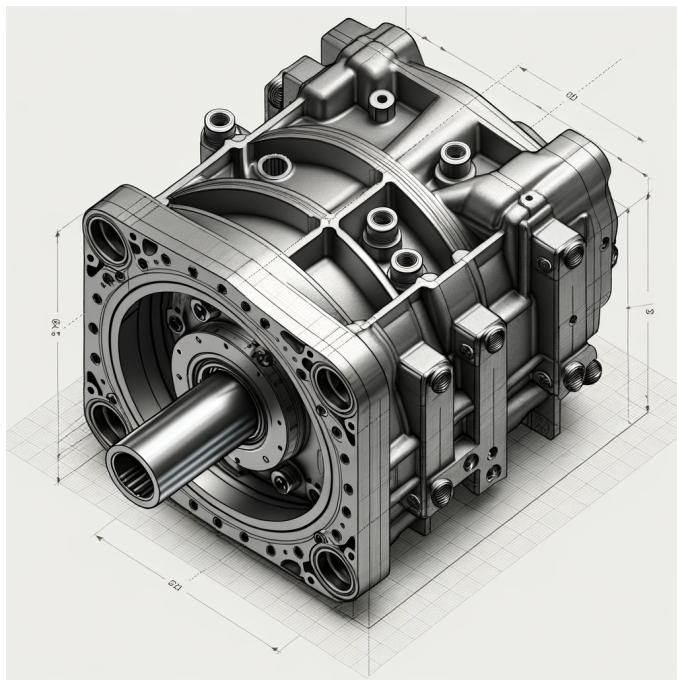


Figure 4: Gearbox Housing

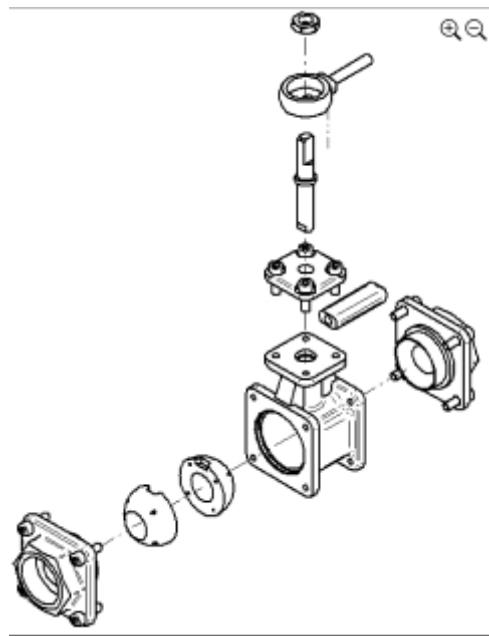


Figure 5: Assembly

GEAR SET

- Type: Helical Gears
- Material: High-strength steel
- Diameter: 10 cm (large), 5 cm (small)
- Teeth: 40 (large), 20 (small)

- Pitch: 5 mm

BEARINGS

- Type: Ball Bearings
- Material: Stainless steel
- Inner Diameter: 3 cm
- Outer Diameter: 5 cm
- Width: 2 cm

SHAFTS

- Material: Carbon steel
- Diameter: 3 cm
- Length: 20 cm
- Tolerance: ± 0.05 mm

HOUSING

- Material: Aluminum alloy
- Dimensions: 25 cm x 25 cm x 10 cm
- Thickness: 5 mm

SEALS

- Type: O-ring seals
- Material: Nitrile rubber
- Inner Diameter: 4.8 cm
- Cross-Section Diameter: 0.6 cm

ASSEMBLY INSTRUCTIONS

1. **Housing Preparation:** Clean the housing using a lint-free cloth. Check for any deformities or damage. Ensure all screw holes are clear.
2. **Install Bearings:** Place the bearings in the designated slots. Ensure they sit flush against the housing. Secure with retaining clips if provided.
3. **Install Shafts:** Slide the shafts through the bearings. Ensure a gap of 1 mm between the shaft end and the bearing.
4. **Install Gear Set:** Slide the gears onto the shafts. Ensure proper alignment using alignment markers. Secure with retaining pins.

5. **Sealing:** Place the seals in the designated grooves. Ensure they sit flush and are not twisted.
6. **Lubrication:** Fill with 500 ml of SAE 30 oil. Ensure even distribution by rotating the shafts.
7. **Final Assembly:** Close the housing using the provided bolts. Tighten to a torque of 10 Nm. Test the gearbox for smooth operation.

MAINTENANCE AND SAFETY

- Inspect every 6 months.
- Replace oil every year or 1000 hours of operation.
- Always disconnect power before maintenance.
- Use safety gear.
- Store in a cool, dry place.