Nabtesco Precision Europe GmbH	Design notes for the use of RH-N gearboxes	Creator: COT Date: 22.10.2025 Version: 1.1

Basic information:

- Request access to our download area at https://www.nabtesco.de/en/service/downloads
- Here you will find all technical data and CAD data (2D, 3D).
- The RH-N series gearboxes are cycloidal gearboxes with a solid shaft design.
- They are generally intended for use with a rotating output shaft.
- The gearboxes are equipped with a pair of angular contact ball bearings to absorb the axial and radial forces of your application.
- The gearboxes have basic corrosion protection and are designed with protection class IP65.

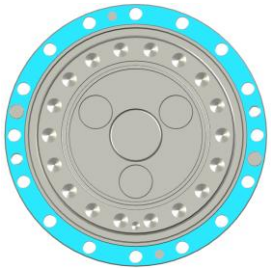
Technical design of the gearboxes:

- Please refer to the product catalogue for technical data.
- We recommend that you observe the following basic values when performing calculations:
  - Their average torque should not exceed the nominal torque T0.
  - Their maximum torque should not exceed the acceleration torque TS1.
  - The distance between the angular contact ball bearings must be taken into account when calculating the tilting moment load. The maximum tilting moment M01 must not be exceeded.
  - The relationship between the permissible axial load and the permissible tilting moment can be found in the corresponding diagram in the RV-N Series catalogue.

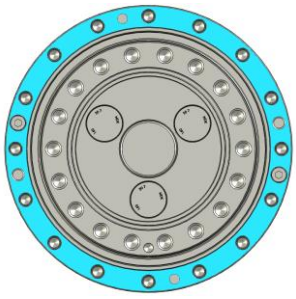
Attaching the gearbox to your fixed structure:

- The RH-N series gearboxes are available with both threaded holes and through holes in the housing to connect the gearbox to your application.
- The number and size of the screws on the gearbox flange are dimensioned so that when all screws are used, the emergency torque can be maintained without the gearbox slipping.
- When mounting the gearbox, therefore, use all threaded holes or through holes in the housing if possible.
- Strength class of the screws: 12.9.
- Use the centring rim on the gearbox housing to perfectly center the gearbox in your application.
- The centring rim is generally tolerated with tolerance h7. The deviation from the original tolerances is due to corrosion protection.
- During design, pay attention to the concentricity, parallelism, and flatness of the mounting surfaces.

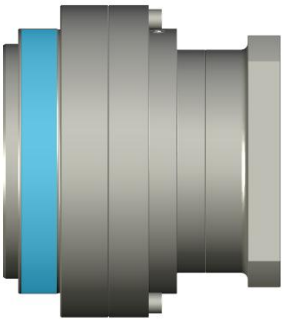
design through holes



design thread holes



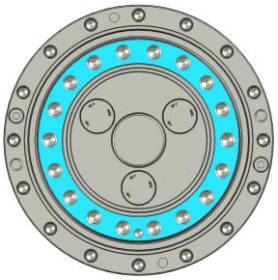
pilot



Attaching the gearbox to the structure to be rotated:

- The number and size of the screws on the output shaft are dimensioned so that when all screws are used, the emergency torque can be maintained without the gearbox slipping.
- When attaching the machine parts to the output shaft, therefore, use all threaded holes if possible.
- Strength class of the screws 12.9
- Use the centring rim on the gearbox housing to accurately centre the gearbox in your application.
- The centring rim is generally tolerance to h7. The deviation from the original tolerances is due to corrosion protection.
- During design, pay attention to the concentricity, parallelism, and flatness of the attachment parts.

output shaft



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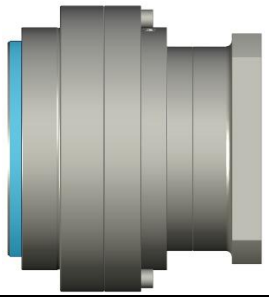

Lubrication:

- The gearboxes are already filled with lubricant upon delivery.
- If you need to change the grease, please read the instructions in the operating manual.
- When designing the structure, ensure that the two screw plugs are freely accessible. This will make it easier to change the grease or oil at a later date.

oil plug

Motor mounting:

- The gearbox is supplied as a closed gearbox head. The gearbox is only closed on the output side.
- The drive side is exposed until the motor is mounted.
- The gearbox is supplied with a motor adapter flange and a drive pinion.
- Use the coding in our RH-N catalogue to configure the gearbox.
- When selecting the adapter flange, pay attention to any shoulders on the motor shaft. These can cause collisions with the gearbox coupling.
- If the parts required for your motor are not listed in the catalogue, it may be necessary to design these parts. We will be happy to assist you with this.
- When mounting, make sure that the gearbox is laying on the output shaft, otherwise lubricant may leak out.
- The drive pinion is first mounted on the motor shaft. Please check the concentricity. The concentricity deviation should not exceed 50µm.
- Please refer to the operating instructions for further details on motor installation.

motor adapter flange