Nabtesco Precision Europe GmbH	Design notes for the use of RDS-E 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 RDS-E series gearboxes are cycloidal gearboxes with a solid shaft design.
- They are generally intended for use with rotating output shafts.
- 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.

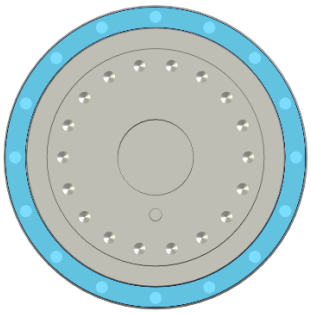
Technical design of the gearboxes:

- Please refer to the product catalogue for technical data.
- We recommend that you observe the following basic values when calculating:
  - 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 taken from the corresponding diagram in the RD2 series catalogue.

Attaching the gearbox to your fixed structure:

- The RDS-E series gearboxes are only available with 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.
- Therefore, use all through holes in the housing when mounting the gearbox.
- Strength class of the screws: 12.9
- Use the centring edge on the gearbox housing to perfectly center the gearbox in your application.
- The centring edge is always tolerance to h7.
- When designing, pay attention to the concentricity, parallelism, and flatness of the mounting surfaces.

design through holes



pilot

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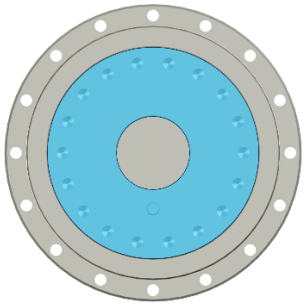
Attaching the gearbox to the structure to be rotated:

- 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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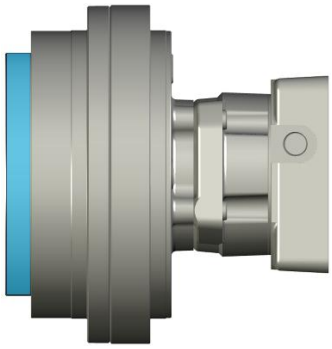
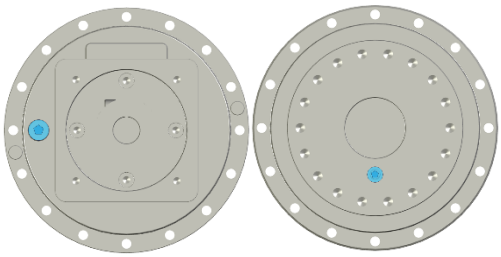


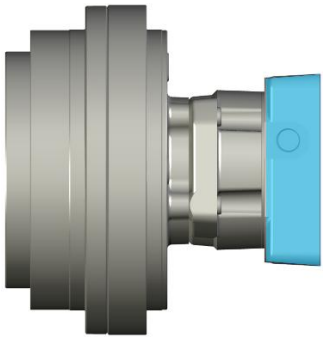
Lubrication:

- 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. This means that the gearbox is closed on both the output and input sides.
- The gearbox is supplied with a motor adapter flange and, if necessary, an adapter sleeve.
- The hole in the flange for clamping the coupling should be freely accessible.
- Use the coding in our RD2 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.
- Please refer to the operating instructions for further details on motor installation.

motor adapter flange