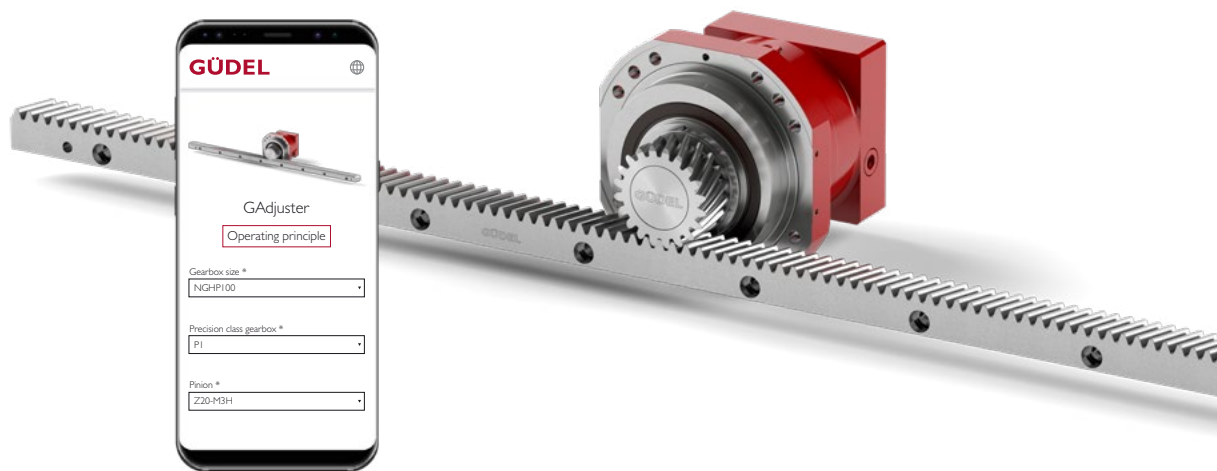


Components

GAdjustment – Innovative system solution

Planetary gearbox with integrated eccentric output flange which provides precise gear mesh adjustment for the rack and pinion drive train



Defined set-up process using integrated mounting and positioning system

The performance of a rack and pinion drive system is greatly influenced by how precisely the gear mesh between rack and pinion are set, as well as by the precision of the individual components. This gear mesh is typically set via the radial relationship of the pinion to the rack. To achieve low backlash, the pinion engages with the rack through a linear movement of the gearbox.

While seemingly easy in theory, this proves difficult in practice and can only be achieved with great effort, trained personnel, and suitable measurement equipment. Costly repetitive measurements and perhaps even specific equipment may be required for the customer's machine structure.

Güdel has now developed an innovative system, which in a very simple way, resolves the setting of the gear mesh between rack and pinion, while setting new standards when it comes to precision, performance, cost-effectiveness, and ease of maintenance.

At the heart of this innovative GAdjustment system is a low backlash planetary gearbox with an internal eccentric flange that rotates about the pinion. Once the gearbox is mounted into the machine structure by attaching the flange the pinion is engaged with the rack by rotating the gearbox housing. Fully supporting the radial mounting surface of the output flange provides maximum stiffness, resulting in longer gearbox bearing life. A benefit of this method of adjustment is that the ratio between rotation and pinion linear motion allows finer adjustment increments. This results in high precision and accuracy of the gear mesh between rack and pinion. This eccentric motion also enables the pinion to be completely disengaged from the rack when the planetary gearbox is rotated 180 degrees into the mounting position. In this way, the drive system can be quickly decoupled to allow manual movement for maintenance activity.

Key features of this system:

- Maximum stiffness due to form fit support of the output bearing and the CP (compact pinion)* solution
- Compact functional unit with integral mounting and positioning system built into one component
- Set-up guidance through the easy-to-use web application GAdjuster
- Quick disengagement of the pinion from the rack for maintenance work
- Precise and repeatable adjustment process for setting gear mesh
- Assembly and disassembly with standard tools
- Simple and cost-effective interface to the customer's machine structure
- Optimal force transmission into the customer-side machine structure

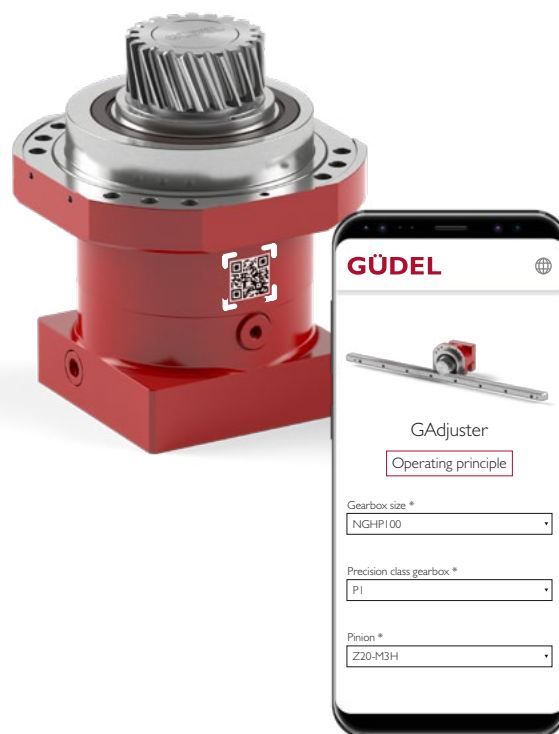
NGHP planetary gearbox – convincing technology for movement

<p>Compact package with high stiffness</p>	<p>The planetary gearbox NGHP is built on the proven technology of the Güdel NRHP Series planetary gearboxes. The addition of the unique adjustable flange mounting methodology provides both ease of adjustment and superior torsional stiffness and rigidity.</p>
<p>All-new interface</p>	<p>The all-new designed interface of the NGHP gearbox with the eccentric output flange guarantees optimal performance due to its form fit support. Furthermore, the new interface simplifies the customer structure and thus helps to reduce costs.</p>
<p>* Integrated output pinion CP</p>	<p>The integrated output pinion CP (compact pinion) is a unique solution with optimized distance and mounting characteristics. This function package, combining rack, pinion and gearbox creates an ideal drive train.</p>

GAdjuster

The GAdjuster supports you with a guided process for adjusting the gear mesh between rack and pinion. More than 20 years of experience in drive train technology allow us to give you a setting recommendation based on your configuration. Scan the QR code on the gearbox and set the recommended linear backlash by using step by step the easy-to-follow web application.

- Guided adjustment process
- Recommended linear backlash settings based on 20 years experience in drive train technology
- Detection of gearbox configuration
- Platform independent
- Quick link to the operating principle
- Related links to operating manual and catalog



Operating principle

The easy-to-follow adjustment principle ensures a simple, faultless and repeatable setting of the linear backlash between rack and pinion. The web application GAdjuster supports the operator with the appropriate value for the prevailing configuration.

1. Determine the highest point of the rack
2. Install the gearbox in mounting position 0° (Fig. 1)
3. Turn the gearbox in the anticlockwise direction to pre-position 30° (Fig. 2)
4. Measure the backlash with appropriate measuring device
5. Determine the end position using the GAdjuster
6. Repeat backlash measurement and compare with target value
7. If necessary, readjust by using correction value
8. The linear backlash is set (Fig. 3)

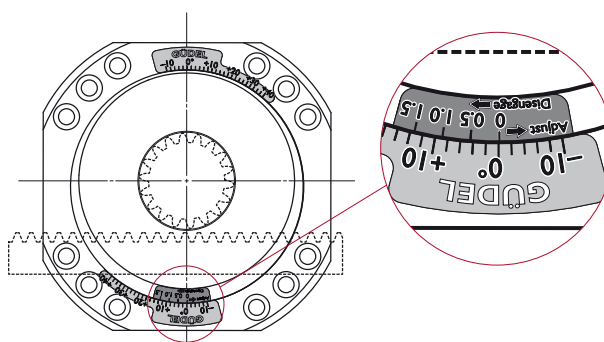


Figure 1: Mounting Position 0°

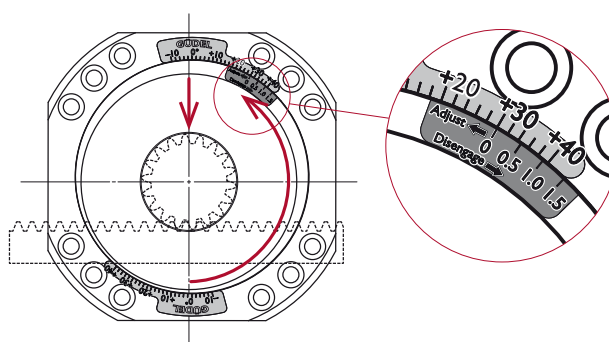


Figure 2: Pre-position 30°



Vernier system for high-precision set-up

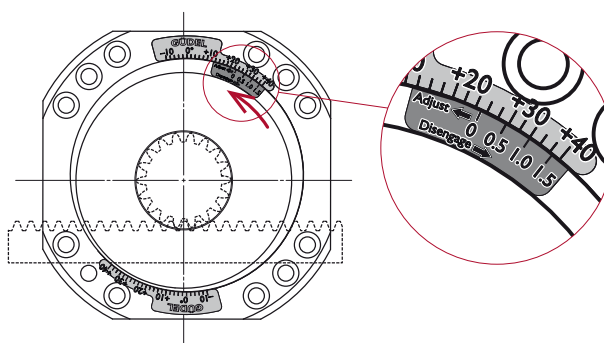


Figure 3: Operating Position

Technical Data

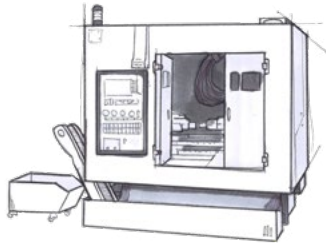
Sizes		080, 100, 140
Nominal output torque S5	T _{2N} [Nm]	Up to 500
Acceleration torque S5	T _{2N} [Nm]	Up to 650
Ratios	i	From 3 to 100
Backlash	J _c [arcmin]	1 ; 3 ; 5
Rigidity (Stiffness)		...
Input Speed		...
Assembly		...
Noise		...
Duty cycle	SI / S5	✓

For more details and technical data sheets see our catalog for high precision planetary gearboxes

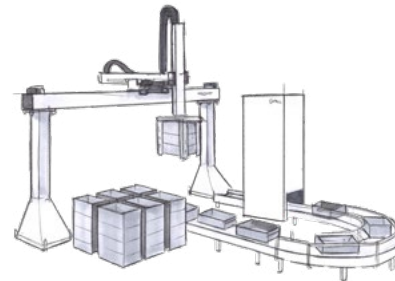
Industries

GAdjustment is an optimized, solution based drive train for the highest demands on linear drive systems. Beside the trusted performance, GAdjustment supports you in reducing complexity, errors, costs

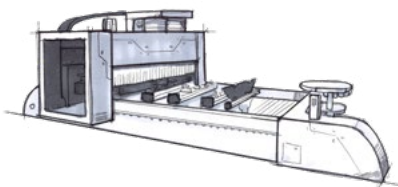
and saves assembly and maintenance time. For modern machine tools of all kinds, for a wide variety of materials, with highly dynamic movements.



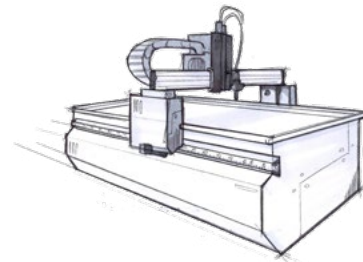
Machine tools



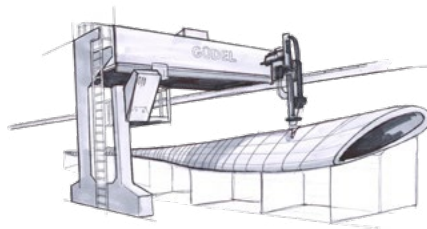
Robotics, automation and handling technology



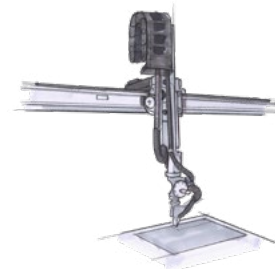
Wood, plastic and composite processing machines



Cutting machines laser, plasma, water, glass



Wind and energy



Aerospace and defense technology

Güdel Group

The Güdel Group is a manufacturer of high-precision machine components and provider of sophisticated automation solutions. Its spectrum of products ranges from linear guideways, racks, pinions and drives right through to linear axes and gantry robots. Güdel assembles its products into systems with a high degree of control intelligence and complete plant installations, which

can be used in the automotive, tire, metal, rail, intralogistics, pharmaceutical, renewable energy, wood, and aerospace industries. The Güdel Group has a workforce of approximately 1,200 employees worldwide in over 30 locations. The Güdel Group has its headquarters in Switzerland.