Gearbox brochure
Economy Line coaxial gearboxes

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- PLQE
- PLPE
- PLHE
- PLFE
- PFHE

Economy Line right angle gearboxes

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- WPLQE
- WPLPE
- WPLFE

Planetary gearboxes with mounted pinion

- PK1
- PM1
Precision Line coaxial gearboxes

PSN
PLN
PSFN
PLFN

Precision Line right angle gearboxes

WPLN
WPSFN
WGN

Application-specific gearboxes

HLAE
NGV

Custom made gearboxes
Economy Line coaxial gearbox

**PLE**

The **PLE** is perhaps the basis of our success. It is notably light, extremely powerful, yet suitable for complex production cycles due to its low-friction bearing design and optimized lubrication. A genuine powerhouse at an attractive, fair price.

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### Frame sizes

- 40
- 60
- 80
- 120
- 160

### Technical specifications

- **Nominal output torque**: 5 - 800 Nm
- **Radial force**: 200 - 5000 N
- **Axial force**: 200 - 7000 N
- **Torsional backlash**: 6 - 22 arcmin
- **Protection class**: IP54

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**Economy Line**

- Spur gear
- Round type output flange
- Low-friction deep groove ball bearings
- High ratio variety i=3 up to i=512
- Planet carrier in disc design
Economy Line coaxial gearbox

PLQE

Our PLQE is uncomplicated and powerful. It can be connected directly to your installation without the need for an intermediate flange. The large deep groove ball bearings at the output can absorb large axial and radial forces. In the process, only little heat is generated, so reliable operations are assured even in complex production cycles.

- **Nominal output torque**: 15 - 260 Nm
- **Radial force**: 900 - 2950 N
- **Axial force**: 1000 - 2500 N
- **Torsional backlash**: 7 - 15 arcmin
- **Protection class**: IP54
- **Frame sizes**: 60, 80, 120

Economy Line
- Spur gear
- Square type output flange
- Reinforced deep groove ball bearings
- High ratio variety i=3 up to i=512
- Planet carrier in disc design
Our PLPE unites the best properties of the Economy Line with a performance advantage. It is cost effective, yet powerful, and generates minimal heat. The optimized output bearing has been designed for high radial and axial forces.

### Economy Line coaxial gearbox

**PLPE**

**Nominal output torque**: 5 - 460 Nm

**Radial force**: 800 - 5200 N

**Axial force**: 1000 - 7000 N

**Torsional backlash**: 7 - 19 arcmin

**Protection class**: IP54

**Frame sizes**: 50, 70, 90, 120, 155

Economy Line

Spur gear

Round type output flange

Reinforced deep groove ball bearings

Planet carrier in disc design
Economy Line coaxial gearbox

PLHE

The PLHE is the world’s first combination of economy and precision planetary gearboxes. The prestressed tapered roller bearings of our planetary gearboxes safeguard great stiffness even under the highest loads. The seal we have developed provides the perfect protection against dust and water jets.

<table>
<thead>
<tr>
<th>Feature</th>
<th>Specification</th>
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<tbody>
<tr>
<td>Economy Line</td>
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<td>Spur gear</td>
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<td>Extra long centering collar</td>
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<td>Planet carrier in disc design</td>
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<td>Option: Planetary gearbox with mounted pinion</td>
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Nominal output torque: 15 - 260 Nm
Radial force: 3200 - 6000 N
Axial force: 4400 - 8000 N
Torsional backlash: 7 - 12 arcmin
Protection class: IP65

Frame sizes: 60, 80, 120
Economy Line coaxial gearbox

PLFE

There’s no such thing as too short: The PLFE is our planetary gearbox with compact flange output shaft. You save more than a third of the space and gain a significantly higher torsional stiffness. Due to its standardized flange interface, it is especially easy to install. The integrated dowel hole provides additional secureness during fitting.

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<thead>
<tr>
<th>Feature</th>
<th>Specification</th>
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<tbody>
<tr>
<td>Nominal output torque</td>
<td>15 - 260 Nm</td>
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<td>Radial force</td>
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<td>Axial force</td>
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<td>Protection class</td>
<td>IP54</td>
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<td>Frame sizes</td>
<td>64, 90, 110</td>
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Economy Line
Spur gear
Extra large round type output flange
Low-friction deep groove ball bearings
Flange output shaft (ISO 9409)
Planet carrier in disc design
The PFHE represents an economically attractive alternative for high-load applications in which high radial loads occur. The combination of special pre-stressed inclined roller bearings and a flanged output shaft in accordance with EN ISO 9409-1 gives the PFHE a very high load capacity. Thanks to the radial shaft seal that is used, this gearbox achieves protection class IP65 at the output side and can therefore also withstand adverse usage conditions.
The WPLE is a consistent continuation of the benefits offered by the Economy Line. With its compact, but powerful design, it is ideal for dynamic multiple axis systems. Our right angle gearbox features lifetime lubrication, is easy to install, all this at an unrivalled price-performance ratio.

- **Nominal output torque**: 15 - 260 Nm
- **Radial force**: 200 - 1750 N
- **Axial force**: 200 - 2500 N
- **Torsional backlash**: 11 - 28 arcmin
- **Protection class**: IP54
- **Frame sizes**: 40, 60, 80, 120
The **WPLQE** is our right angle gearbox with the square output flange. This makes it particularly easy to install for a wide range of applications, and its large deep groove ball bearings also make it ideal for high radial and axial forces.

### Frame sizes

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<tr>
<th>Nominal output torque</th>
<th>14 - 260 Nm</th>
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<tbody>
<tr>
<td>Radial force</td>
<td>900 - 2950 N</td>
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<tr>
<td>Axial force</td>
<td>1000 - 2500 N</td>
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<tr>
<td>Torsional backlash</td>
<td>11 - 21 arcmin</td>
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<tr>
<td>Protection class</td>
<td>IP54</td>
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</table>

- **Economy Line**
- **Spur gear**
- **Bevel gear right angle stage**
- **Square type output flange**
- **Reinforced deep groove ball bearings**
- **High ratio variety i=3 up to i=512**
- **Planet carrier in disc design**
Economy Line right angle gearbox

**WPLPE**

The **WPLPE** is the smart right angle solution from our Economy Line: Space-saving, and yet powerful at an attractive price. You install your drive elements directly on the output shaft and extract the maximum flexibility from your application.

### Key Features
- **Economy Line**
- **Spur gear**
- **Bevel gear right angle stage**
- **Round type output flange**
- **Reinforced deep groove ball bearings**
- **Planet carrier in disc design**

### Technical Specifications
- **Nominal output torque**: 5 - 195 Nm
- **Radial force**: 800 - 2500 N
- **Axial force**: 1000 - 4000 N
- **Torsional backlash**: 11 - 25 arcmin
- **Protection class**: IP54
- **Frame sizes**: 50, 70, 90, 120
Thinking around corners even in tight spaces. The WPLFE is our right angle planetary gearbox with compact flange output shaft. You save more than a third of the space and gain a significantly higher torsional stiffness. Thanks to its standardized flange interface, it is especially easy to install. The integrated dowel hole provides additional secureness during fitting.

**WPLFE**

- Economy Line right angle gearbox

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**Frame sizes**

- 64
- 90
- 110

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**Economy Line**
- Spur gear
- Bevel gear right angle stage
- Extra large round type output flange
- Low-friction deep groove ball bearings
- Flange output shaft (ISO 9409)
- Planet carrier in disc design

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**Nominal output torque**

- 14 - 260 Nm

**Radial force**

- 550 - 2400 N

**Axial force**

- 1200 - 3300 N

**Torsional backlash**

- 11 - 18 arcmin

**Protection class**

- IP54
Our **PSN** embodies pure progress: Its innovative helical teeth safeguard low-noise operations. This precision planetary gearbox minimizes vibrations, and therefore increases the quality of your workpiece surfaces even under the highest bearing loads. The **PSN** is optionally available with a mounted pinion.

**Precision Line coaxial gearbox**

![Image of PSN gearbox]

- **Precision Line**
- **Helical gear**
- **Square type output flange**
- **Preloaded tapered roller bearings**
- **Rotary shaft seal**
- **Extra long centering collar**
- **Planet carrier in cage design**
- **Option: Reduced backlash**
- **Option: Splined output shaft (DIN 5480)**
- **Option: Planetary gearbox with mounted pinion**

### Frame sizes

- 70
- 90
- 115
- 142
- 190

### Performance Specifications

- **Nominal output torque**: 28 - 950 Nm
- **Radial force**: 3200 - 20000 N
- **Axial force**: 4400 - 19000 N
- **Torsional backlash**: 1 - 5 arcmin
- **Protection class**: IP65
Our straight-toothed precision planetary gearbox has been designed for the highest performance and torque. The prestressed tapered roller bearings in the PLN and the seal we have developed safeguard the optimal performance even against dust and water jets. The PLN is optionally available with a mounted pinion.

Options:
- Splined output shaft (DIN 5480)
- Reduced backlash
- Planetary gearbox with mounted pinion

Specifications:
- Nominal output torque: 27 - 1800 Nm
- Radial force: 3200 - 21000 N
- Axial force: 4400 - 21000 N
- Torsional backlash: 1 - 5 arcmin
- Protection class: IP65

Frame sizes:
- 70
- 90
- 115
- 142
- 190
Precision Line coaxial gearbox

PSFN

Thanks to its standardized flange interface, our PSFN can be installed easily and reliably. Our Neugart-designed helical teeth makes additional noise absorption measures absolute. Thanks to its high tilting moment, you may demand the utmost from this precision planetary gearbox.

- Precision Line
- Helical gear
- Extra large round type output flange
- Preloaded angular contact roller bearings
- Rotary shaft seal
- Flange output shaft (ISO 9409)
- Planet carrier in cage design
- Option: Reduced backlash
- Option: Planetary gearbox with mounted pinion

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<thead>
<tr>
<th>Nominal output torque</th>
<th>28 - 950 Nm</th>
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<tbody>
<tr>
<td>Radial force</td>
<td>2150 - 23000 N</td>
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<tr>
<td>Axial force</td>
<td>4300 - 16000 N</td>
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<td>Torsional backlash</td>
<td>1 - 5 arcmin</td>
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<tr>
<td>Protection class</td>
<td>IP65</td>
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</tbody>
</table>

Frame sizes

- 64
- 90
- 110
- 140
- 200
Our **PLFN** features a standardized flange interface for ease of installation. The straight-teeth precision planetary gearbox has been designed for the highest performance and torque. Its high tilting moment delivers the best performance even under the highest radial and axial forces.

- **Nominal output torque**: 27 - 1800 Nm
- **Radial force**: 2150 - 33000 N
- **Axial force**: 4300 - 15000 N
- **Torsional backlash**: 1 - 5 arcmin
- **Protection class**: IP65

**Precision Line coaxial gearbox**

**PLFN**

- Precision Line
- Spur gear
- Extra large round type output flange
- Preloaded angular contact roller bearings
- Rotary shaft seal
- Flange output shaft (ISO 9409)
- Planet carrier in cage design
- Option: Reduced backlash
- Option: Planetary gearbox with mounted pinion

**Frame sizes**

- 64
- 90
- 110
- 140
- 200
Our **PSBN** is the ideal combination of precision planetary gearbox and efficient bearing technology. It has been developed specifically for delivering the maximum performance at high speeds. Its helical teeth provide homogeneous synchronism and quiet running noise.

**Precision Line coaxial gearbox**

**PSBN**

- **Nominal output torque**: 28 - 470 Nm
- **Radial force**: 1000 - 5800 N
- **Axial force**: 1500 - 9400 N
- **Torsional backlash**: 1 - 5 arcmin
- **Protection class**: IP65

**Options**:
- Reduced backlash

**Technical Features**:
- Precision Line
- Helical gear
- Square type output flange
- Low-friction deep groove ball bearings
- Rotary shaft seal
- Planet carrier in cage design
- Frame sizes: 70, 90, 115, 142
Precision Line right angle gearbox

WPLN

Thanks to its spiral teeth, our WPLN achieves the optimal synchronism for the best surface qualities. By minimizing vibrations, it runs uniformly and quietly. The precision right angle planetary gearbox features lifetime lubrication and can be mounted virtually anywhere.

- Precision Line
- Counterdirectional rotation
- Hypoid gear right angle stage
- Square type output flange
- Preloaded tapered roller bearings
- Rotary shaft seal
- Extra long centering collar
- Option: Reduced backlash (2-stage)
- Option: Planetary gearbox with mounted pinion

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### Frame sizes

- 70
- 90
- 115
- 142

### Technical Specifications

- **Nominal output torque:** 22 - 800 Nm
- **Radial force:** 3200 - 12500 N
- **Axial force:** 4300 - 15000 N
- **Torsional backlash:** 3 - 5 arcmin
- **Protection class:** IP65
Our WPSFN is extremely light and easy to integrate thanks to its standardized flange interface. It achieves optimized synchronization with the spiral gearing and the helical-toothed planetary stage for the best surface qualities. The shortest right angle precision gearbox with integrated hollow shaft provides you with new structural solutions.

### WPSFN

**Precision Line right angle gearbox**

**Nominal output torque**

- 22 - 625 Nm

**Radial force**

- 2150 - 12000 N

**Axial force**

- 4200 - 9500 N

**Torsional backlash**

- 3 - 5 arcmin

**Protection class**

- IP65

**Frame sizes**

- 64
- 90
- 110
- 140
Our **WGN** is a hollow-shaft right angle gearbox that operates with particularly low noise levels. At the same time, the spiral teeth increase the quality of your workpiece surfaces. It can be connected directly to the application via a shrink disc, a simple and reliable solution that offers you new design possibilities.

- **Precision Line**
- **Counterdirectional rotation**
- **Hypoid gear right angle stage**
- **Square type output flange**
- **Preloaded tapered roller bearings**
- **Rotary shaft seal**
- **Extra long centering collar**
- **Hollow shaft for clamping system with shrink disc**

### Frame sizes

- **70**
- **90**
- **115**
- **142**

### Technical specifications

- **Nominal output torque**: 22 - 320 Nm
- **Radial force**: 2700 - 10000 N
- **Axial force**: 4300 - 14500 N
- **Torsional backlash**: 5 arcmin
- **Protection class**: IP65
Our **HLAE** is unique: It is the world’s first planetary gearbox with certified hygienic design – flexible without a radial screw, powerful, and yet ideal for fast and easy cleaning. It has been developed specifically for challenging applications such as in the pharmaceutical, cosmetics and food industries.

### Application-specific gearbox

**Spur gear**

**Round type output flange**

**Low-friction deep groove ball bearings**

**Rotary shaft seal**

**Planet carrier in disc design**

**Option: FFKM seal**

**Nominal output torque** 15 - 171 Nm

**Radial force** 450 - 1450 N

**Axial force** 550 - 2500 N

**Torsional backlash** 7 - 12 arcmin

**Protection class** IP69K

**Frame sizes**

70 90 110
Application-specific gearbox

NGV
for AGVs

AGVs are designed to transport heavy loads on a continuous basis. The specific structural and mechanical demands are extremely high. However, we fulfill them in a reliable way with our NGV planetary gearboxes. Because the gearboxes impress with their compact design, efficiency and durability, and we have specifically optimized them for use as a wheel hub gearbox in AGVs.

- **Nominal output torque**: 18 - 260 Nm
- **Radial force**: 2300 - 5150 N
- **Axial force**: 2850 - 6450 N
- **Torsional backlash**: 9 - 12 arcmin
- **Protection class**: IP65
- **Frame sizes**: 64, 90, 110

**Application-specific gearbox**

- Spur gear
- Extra large round type output flange
- Preloaded angular contact roller bearings
- Rotary shaft seal
- Extra long centering collar
- Flange output shaft (ISO 9409)
- Planet carrier in disc design
Planetary gearbox with mounted pinion

PK1 - PM1

The pinion is the essential element of the rack and pinion drive for converting the rotatory movement of the gearbox into a linear movement. The Neugart pinion is pre-mounted on the gearbox and secured with screws. This means that the compact unit consisting of the gearbox and the pinion can be quickly installed in the application, and less installation work is required.

Depending on the gearbox selected, the following features are available:

- Pinion with straight teeth
- Pinion with helical teeth
- Coaxial gearbox
- Right angle gearbox
- Preloaded tapered roller bearings
- Extra long centering collar
- Extra large round type output flange
- Square type output flange
- Rotary shaft seal
- Option: Reduced backlash

**PK1**

- Module: 2-5
- Number of teeth: 15-27
- Maximum feed force: 4-31 kN

**PM1**

- Module: 2-4
- Number of teeth: 26-45
- Maximum feed force: 2-14 kN
**Innovative and individual:**
**Our custom made gearboxes.**

A custom design, specialized performance data, a modified output shaft, safe for use in the food industry: Do you need an individually adapted gearbox? We can meet your requirements. Quickly and easily by modifying one of our standard planetary gearboxes or with a custom gearbox developed specifically for you. The qualified specialists in our Engineering department design gearbox solutions and systems to meet your requirements: in terms of performance, cost and quality.

With the help of the most modern development and design tools, we design gearboxes suitable for the most diverse applications, from all areas of mechanical and plant engineering, robotics, medical, pharmaceutical and food technology or model making.

Your innovation advantage: We rely on our many years of experience, while at the same time keeping updated on new developments and integrating them into our customer solutions.
### Performance classes

- High efficiency
- For any mounting position
- Individual adaptation of the input flange to the motor
- Lifetime lubrication for maintenance-free operation
- Clamping systems with optimized mass moment of inertia

#### Economy Line

<table>
<thead>
<tr>
<th>Economy Line</th>
<th>Nominal output torque</th>
<th>Backlash</th>
<th>Bearing load</th>
<th>Protection class</th>
<th>Running noise</th>
<th>Input speeds</th>
<th>Torsional stiffness</th>
<th>Wide range of ratios</th>
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- Standard
- Excellent
Performance classes

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Application specific gearbox

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Do you have any questions or need further information?
We are happy to advise you on all topics relating to drive technology.
You can find your personal contact at: www.neugart.com

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