



Gearbox brochure

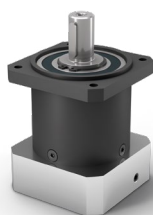


**E**

Economy Line coaxial gearboxes



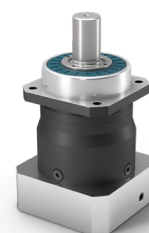
**PLE**



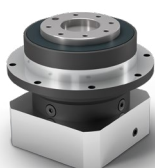
**PLQE**



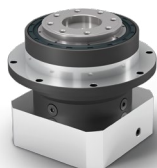
**PLPE**



**PLHE**



**PLFE**



**PFHE**

Economy Line right angle gearboxes



**WPLE**



**WPLQE**



**WPLPE**



**WPLFE**

Planetary gearboxes with mounted pinion



**PK1**



**PM1**



**P**

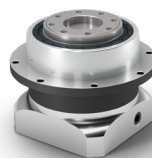
Precision Line coaxial gearboxes



**PSN**



**PLN**



**PSFN**



**PLFN**



**PSBN**

Precision Line right angle gearboxes



**WPLN**



**WPSFN**



**WGN**

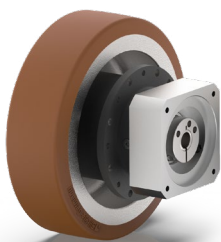
**A**

Application-specific gearboxes

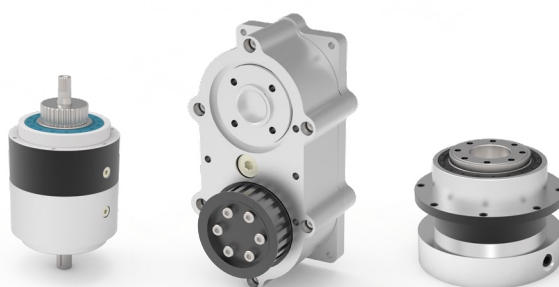
Custom made gearboxes



**HLAE**



**NGV**

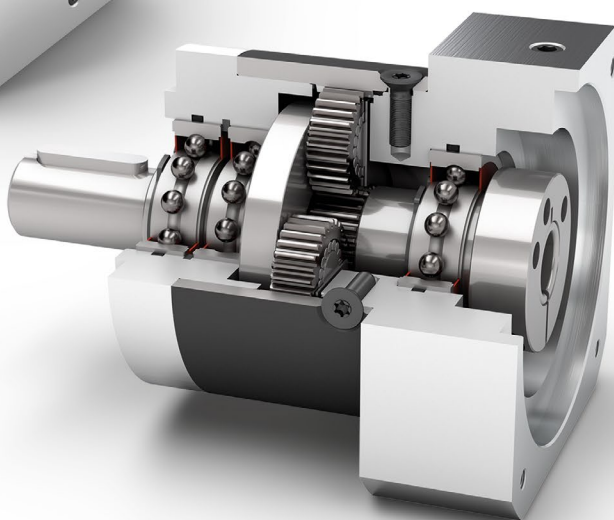


## Economy Line coaxial gearbox

# 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.



-  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

Nominal output torque **5 - 800 Nm**

Radial force **200 - 5000 N**

Axial force **200 - 7000 N**

Torsional backlash **6 - 22 arcmin**

Protection class **IP54**

Frame sizes

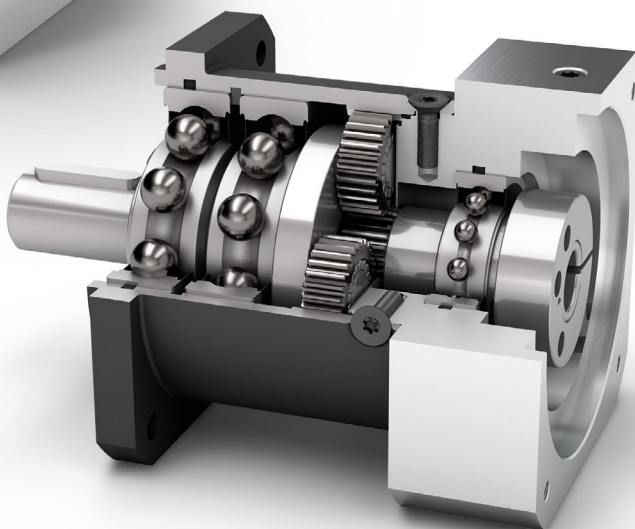
- 40
- 60
- 80
- 120
- 160







## 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.



-  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

Nominal output torque **15 - 260 Nm**

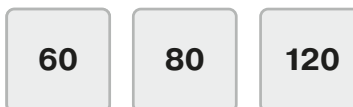
Radial force **900 - 2950 N**

Axial force **1000 - 2500 N**

Torsional backlash **7 - 15 arcmin**

Protection class **IP54**

Frame sizes

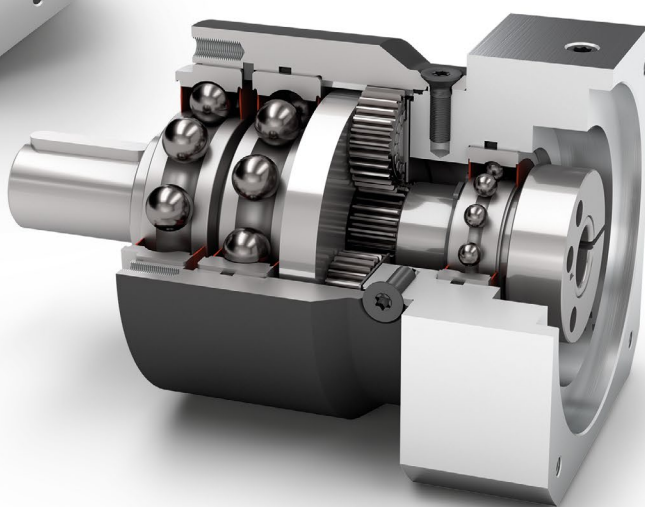







## Economy Line coaxial gearbox

# PLPE



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
-  Spur gear
-  Round type output flange
-  Reinforced deep groove ball bearings
-  Planet carrier in disc design

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

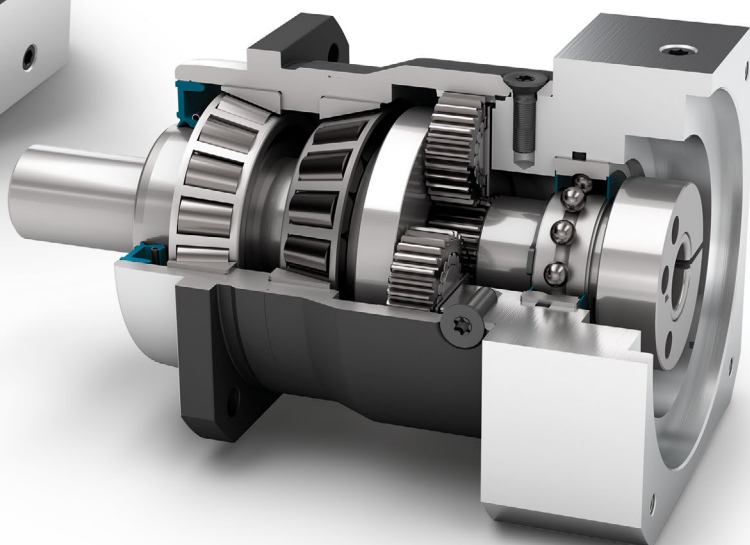
- 50
- 70
- 90
- 120
- 155

## Economy Line 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.



Economy Line



Spur gear



Square type output flange



Preloaded tapered roller bearings



Rotary shaft seal



Extra long centering collar



Planet carrier in disc design



Option: Planetary gearbox with mounted pinion

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

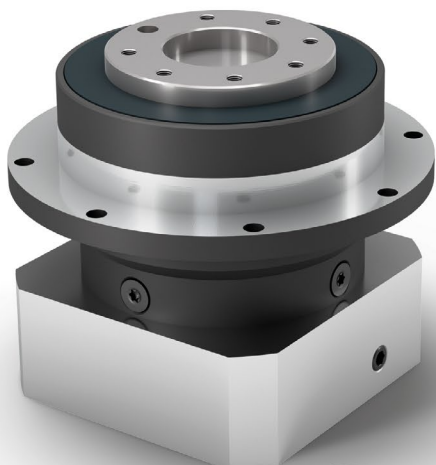
60

80

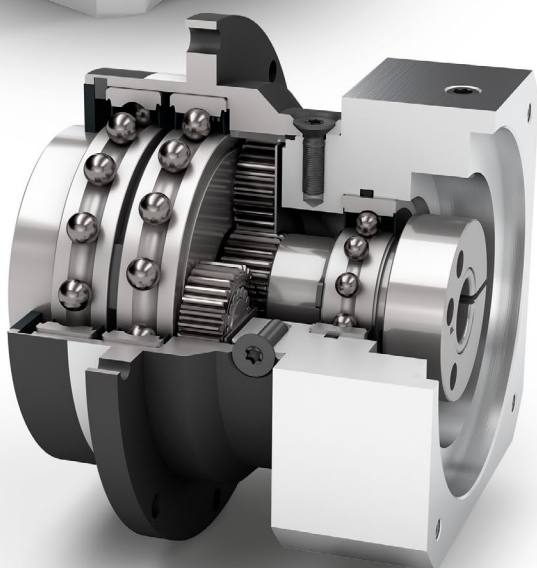
120

## 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.



-  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

Nominal output torque **15 - 260 Nm**

Radial force **550 - 2400 N**

Axial force **1200 - 3300 N**

Torsional backlash **7 - 12 arcmin**

Protection class **IP54**

Frame sizes

64

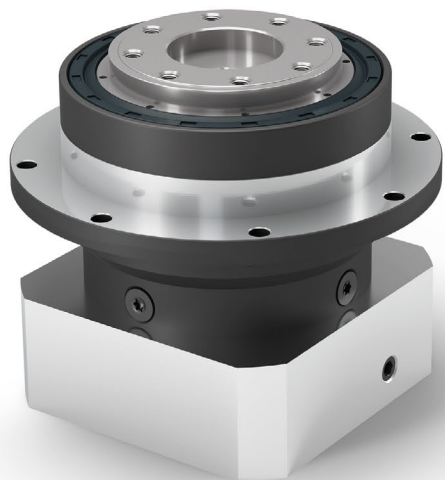
90

110

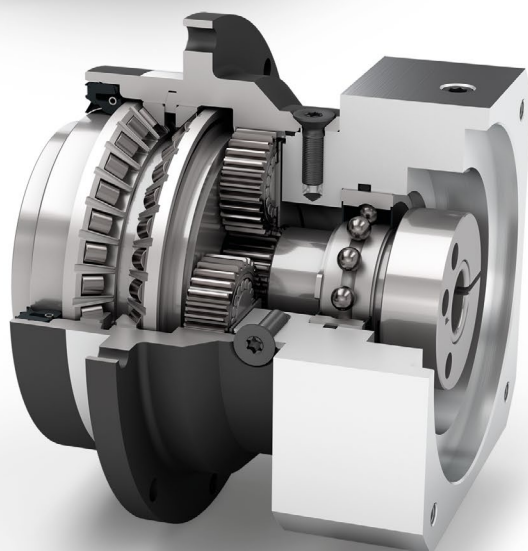


## Economy Line coaxial gearbox

# PFHE



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.



Economy 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 disc design



Option: Planetary gearbox with mounted pinion

Nominal output torque **15 - 260 Nm**

Radial force **2300 - 5150 N**

Axial force **2850 - 6450 N**

Torsional backlash **7 - 12 arcmin**

Protection class **IP65**

Frame sizes

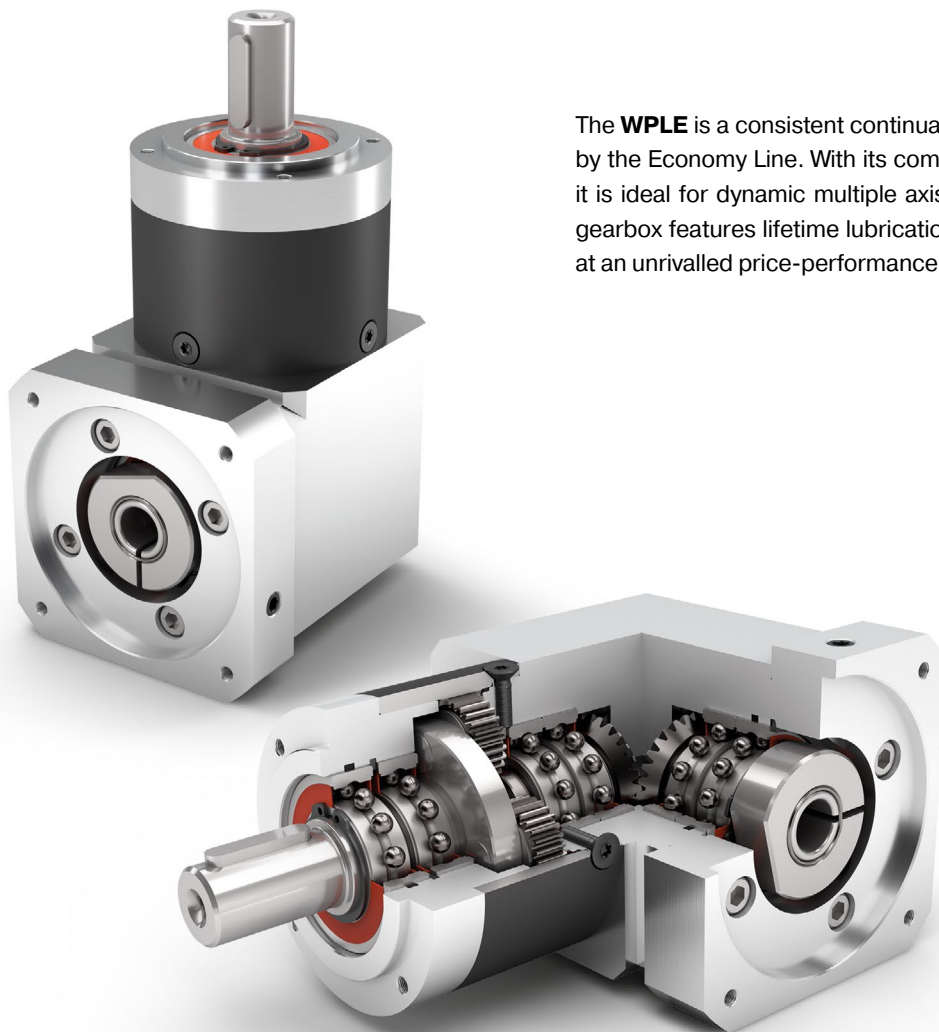
64

90







110

## Economy Line right angle gearbox

# WPLE



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.

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

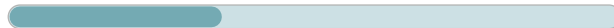
Nominal output torque **15 - 260 Nm**



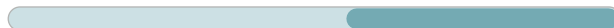
Radial force **200 - 1750 N**



Axial force **200 - 2500 N**



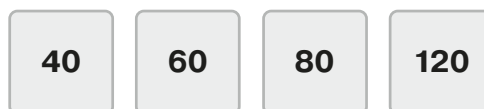
Torsional backlash **11 - 28 arcmin**



Protection class **IP54**



Frame sizes

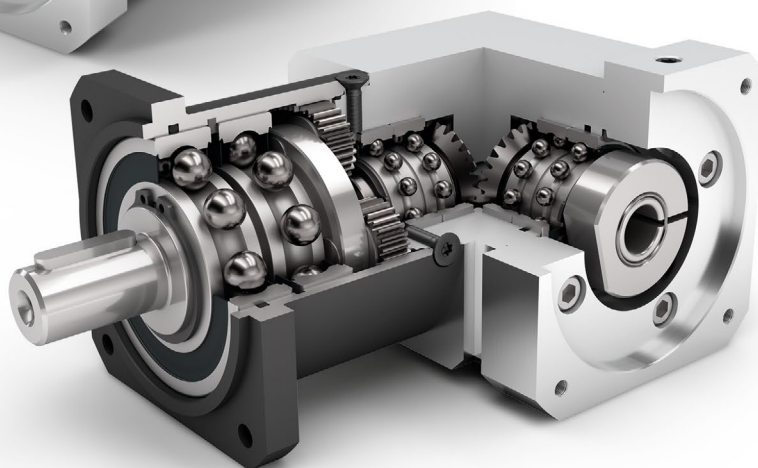









## Economy Line right angle gearbox

# WPLQE



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.



-  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

Nominal output torque **14 - 260 Nm**



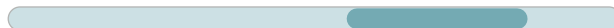
Radial force **900 - 2950 N**



Axial force **1000 - 2500 N**



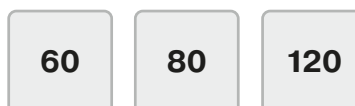
Torsional backlash **11 - 21 arcmin**



Protection class **IP54**

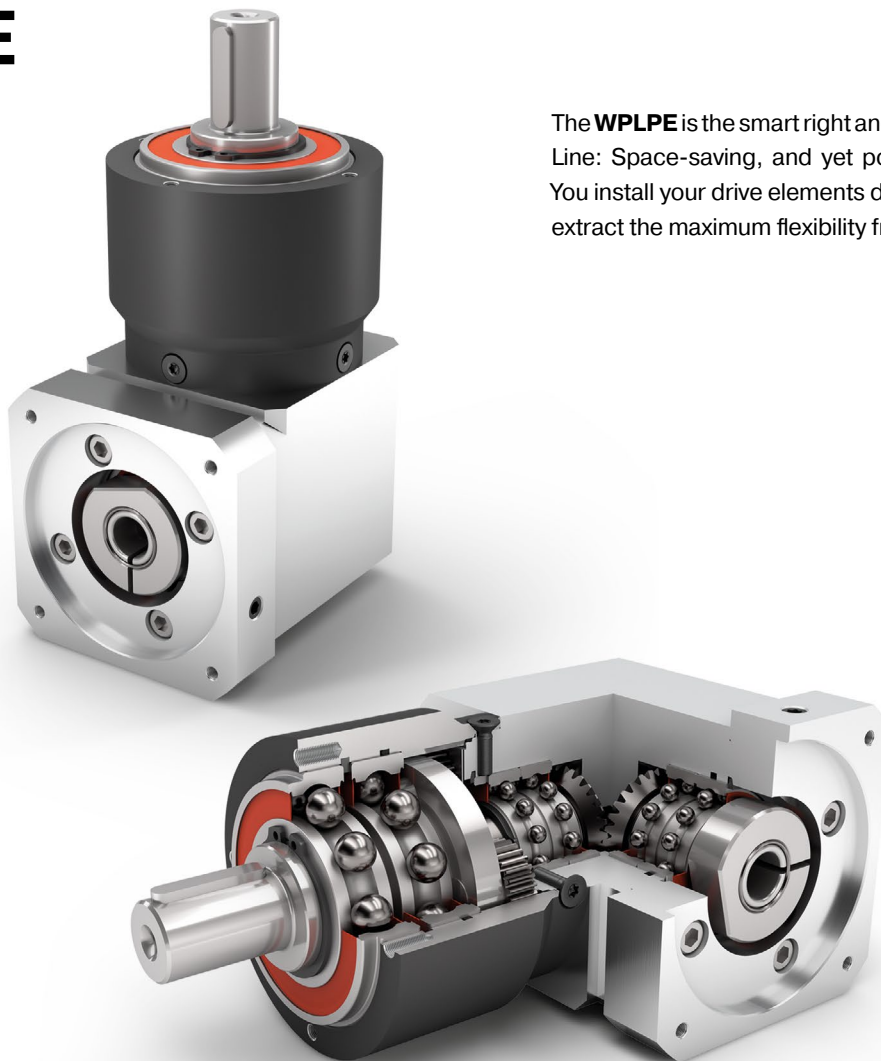


Frame sizes









## 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.

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

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

## Economy Line right angle gearbox

# WPLFE



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.

-  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

Nominal output torque **14 - 260 Nm**

Radial force **550 - 2400 N**

Axial force **1200 - 3300 N**

Torsional backlash **11 - 18 arcmin**

Protection class **IP54**

Frame sizes

64

90

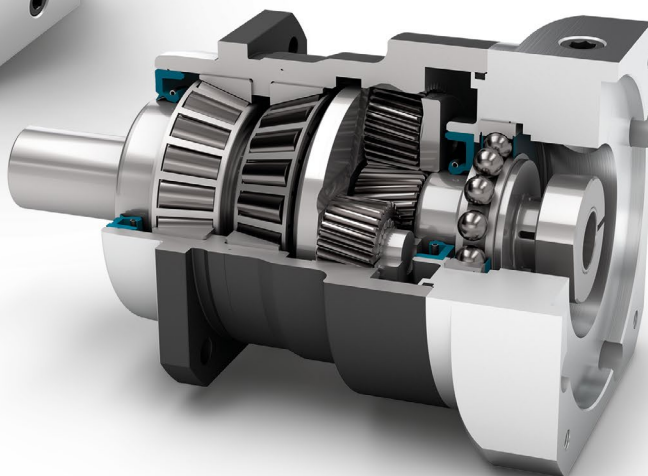
110

## Precision Line coaxial gearbox

# PSN



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



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

Nominal output torque **28 - 950 Nm**

Radial force **3200 - 20000 N**

Axial force **4400 - 19000 N**

Torsional backlash **1 - 5 arcmin**

Protection class **IP65**

Frame sizes

70

90

115

142

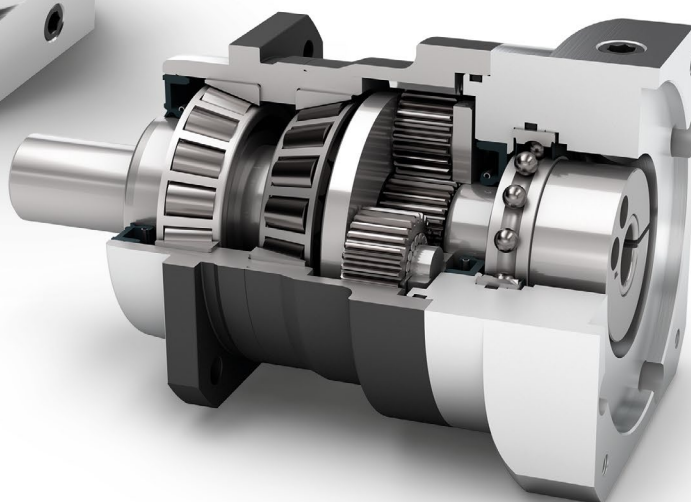
190

## Precision Line coaxial gearbox

# PLN



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.



Precision Line



Spur 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

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

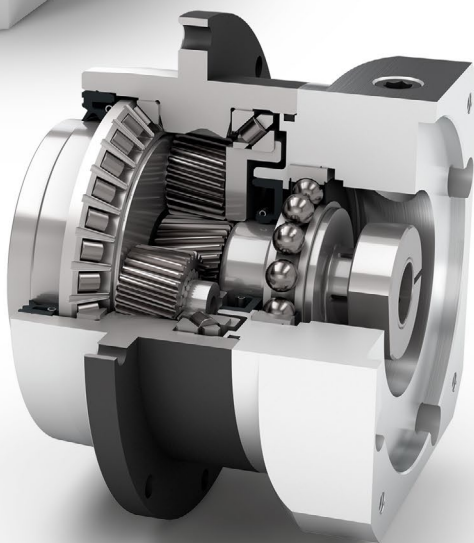
190

# 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

Nominal output torque **28 - 950 Nm**

Radial force **2150 - 23000 N**

Axial force **4300 - 16000 N**

Torsional backlash **1 - 5 arcmin**

Protection class **IP65**

Frame sizes

64

90

110

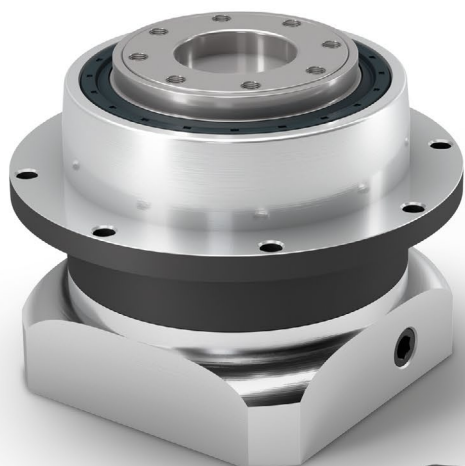
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200

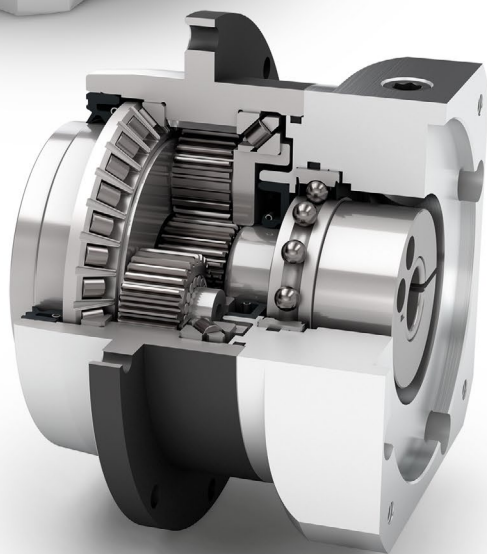


## Precision Line coaxial gearbox

# PLFN



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.



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

Nominal output torque **27 - 1800 Nm**

Radial force **2150 - 33000 N**

Axial force **4300 - 15000 N**

Torsional backlash **1 - 5 arcmin**

Protection class **IP65**

Frame sizes

64

90

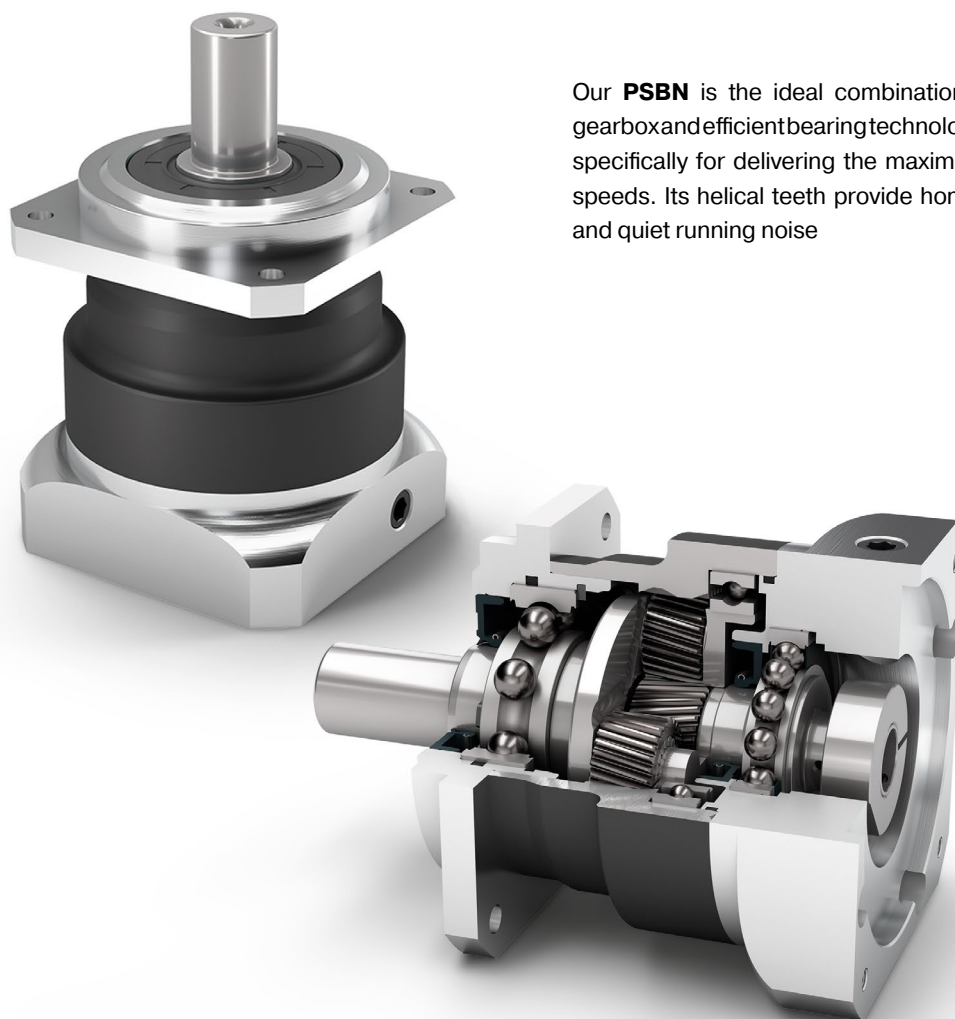
110

140








200

# Precision Line coaxial gearbox

## PSBN



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
-  Helical gear
-  Square type output flange
-  Low-friction deep groove ball bearings
-  Rotary shaft seal
-  Planet carrier in cage design
-  Option: Reduced backlash

Nominal output torque **28 - 470 Nm**

Radial force **1000 - 5800 N**

Axial force **1500 - 9400 N**

Torsional backlash **1 - 5 arcmin**

Protection class **IP65**

Frame sizes

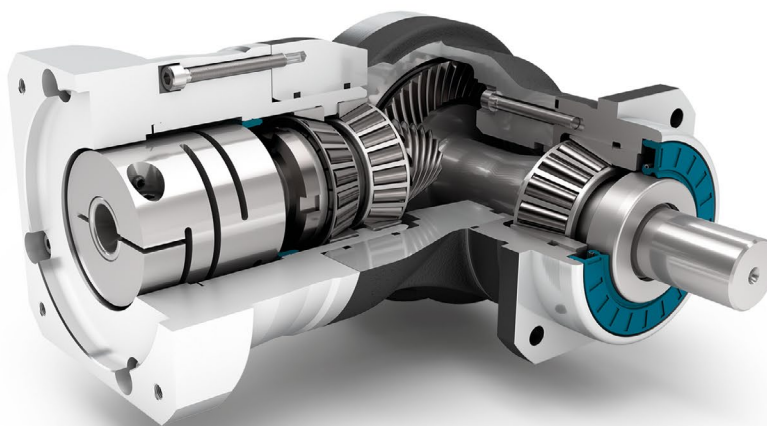
- 70
- 90
- 115
- 142

## 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

Nominal output torque **22 - 800 Nm**

Radial force **3200 - 12500 N**

Axial force **4300 - 15000 N**

Torsional backlash **3 - 5 arcmin**

Protection class **IP65**

Frame sizes

70

90

115

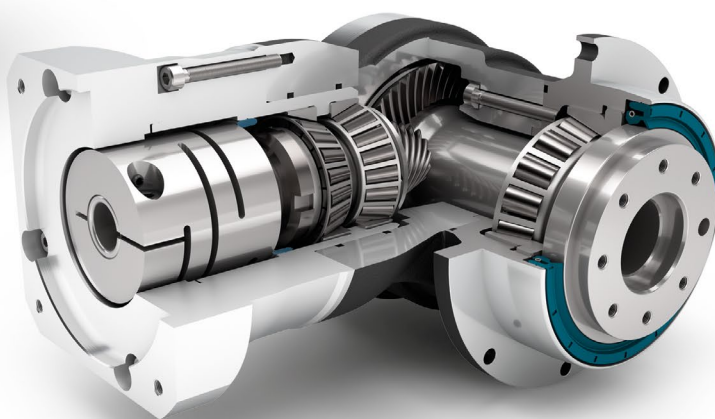
142

## Precision Line right angle gearbox

# WPSFN



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.



Precision Line



Counterdirectional rotation



Hypoid gear right angle stage



Extra large round type output flange



Preloaded angular contact roller bearings



Rotary shaft seal



Flange output shaft (ISO 9409)



Hollow shaft (1-stage)



Option: Reduced backlash (2-stage)



Option: Planetary gearbox with mounted pinion

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

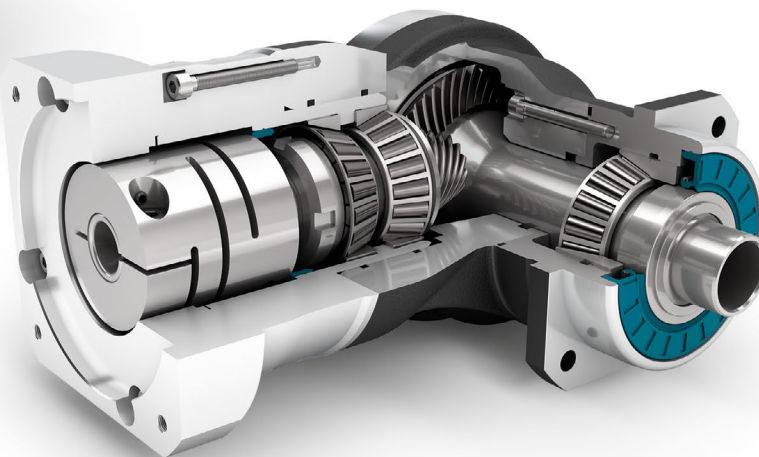
140

## Precision Line right angle gearbox

# WGN



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

Nominal output torque **22 - 320 Nm**

Radial force **2700 - 10000 N**

Axial force **4300 - 14500 N**

Torsional backlash **5 arcmin**

Protection class **IP65**

Frame sizes

70

90

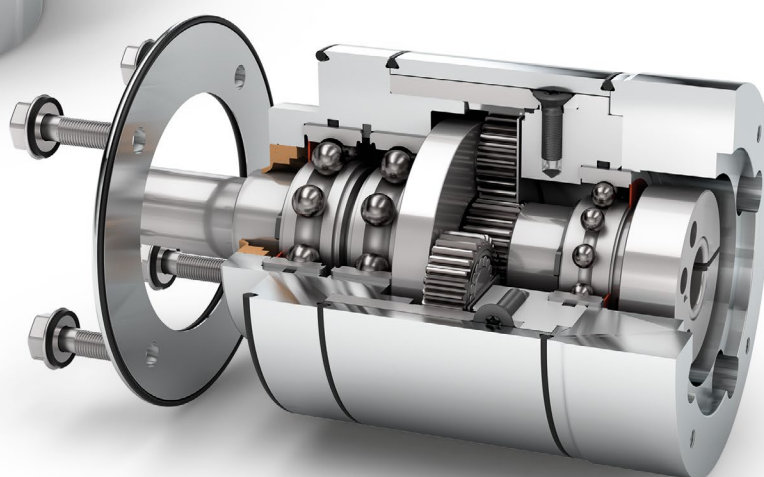
115

142








## Application-specific gearbox

# HLAE

Hygienic Design  
for the Food and  
Pharmaceutical  
Industries



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

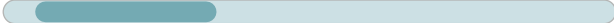
Nominal output torque **15 - 171 Nm**



Radial force **450 - 1450 N**



Axial force **550 - 2500 N**



Torsional backlash **7 - 12 arcmin**



Protection class **IP69K**



Frame sizes

70

90

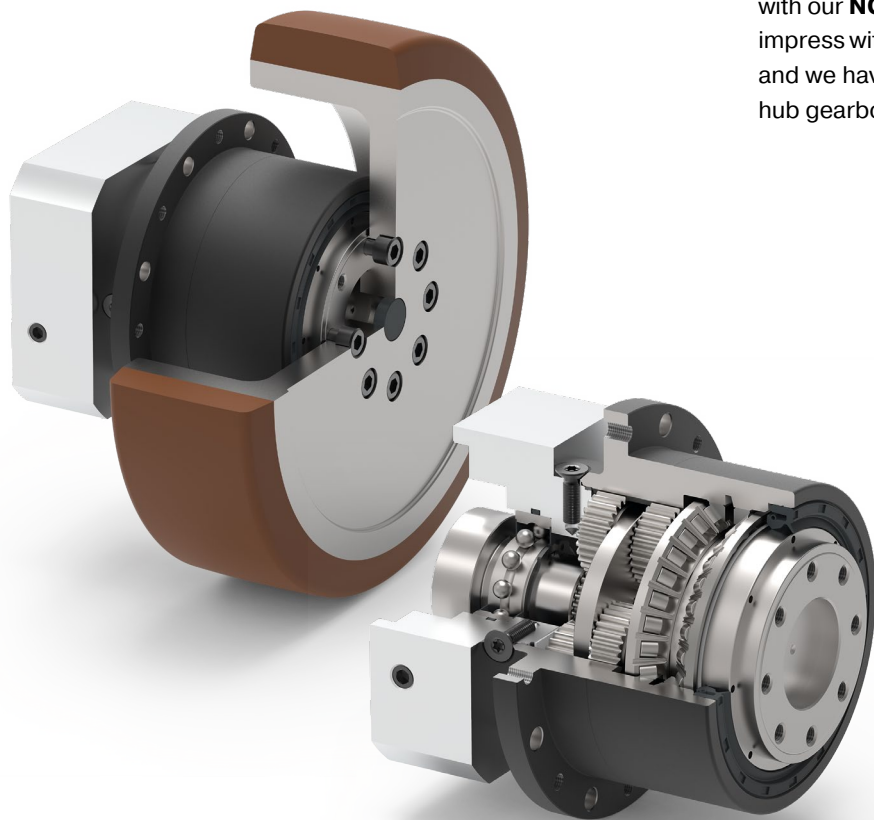
110







## 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.



-  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

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












## 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
-  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



## Custom made gearboxes



### **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		Nominal output torque	Backlash	Bearing load	Protection class	Running noise	Input speeds	Torsional stiffness	Wide range of ratios
PLE		Standard	Standard	Standard	Standard	Standard	Excellent	Standard	Excellent
PLQE		Standard	Standard	Standard	Standard	Standard	Excellent	Standard	Excellent
PLPE		Standard	Standard	Standard	Standard	Standard	Excellent	Standard	Standard
PLHE		Standard	Standard	Standard	Standard	Standard	Standard	Standard	Standard
PLFE		Standard	Standard	Standard	Standard	Standard	Excellent	Standard	Standard
PFHE		Standard	Standard	Standard	Standard	Standard	Standard	Standard	Standard
WPLE		Standard	Standard	Standard	Standard	Standard	Excellent	Standard	Excellent
WPLQE		Standard	Standard	Standard	Standard	Standard	Excellent	Standard	Excellent
WPLPE		Standard	Standard	Standard	Standard	Standard	Excellent	Standard	Standard
WPLFE		Standard	Standard	Standard	Standard	Standard	Standard	Standard	Standard

— Standard    ———— Excellent

# Performance classes

Precision Line		Nominal output torque	Backlash	Bearing load	Protection class	Running noise	Input speeds	Torsional stiffness	Wide range of ratios
<b>PSBN</b>		-----	-----	-----	-----	-----	-----	-----	-----
<b>PSN</b>		-----	-----	-----	-----	-----	-----	-----	-----
<b>PLN</b>		-----	-----	-----	-----	-----	-----	-----	-----
<b>PSFN</b>		-----	-----	-----	-----	-----	-----	-----	-----
<b>PLFN</b>		-----	-----	-----	-----	-----	-----	-----	-----
<b>WPLN</b>		-----	-----	-----	-----	-----	-----	-----	-----
<b>WPSFN</b>		-----	-----	-----	-----	-----	-----	-----	-----
<b>WGN</b>		-----	-----	-----	-----	-----	-----	-----	-----

Application specific gearbox		Nominal output torque	Backlash	Bearing load	Protection class	Running noise	Input speeds	Torsional stiffness	Wide range of ratios
<b>HLAE</b>		-----	-----	-----	-----	-----	-----	-----	-----
<b>NGV</b>		-----	-----	-----	-----	-----	-----	-----	-----

----- Standard      ----- Excellent



**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](http://www.neugart.com)

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