



Gearbox brochure

E

## Economy Line coaxial gearboxes



PLE



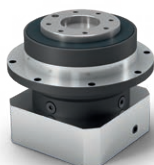
PLQE



PLPE



PLHE



PLFE



PFHE

E

## Economy Line right angle gearboxes



WPLE



WPLQE



WPLPE



WPLHE



WPLFE

P

Precision Line coaxial gearboxes



PSBN



PSN



PLN



PSFN



PLFN

P

Precision Line right angle gearboxes



WPLN



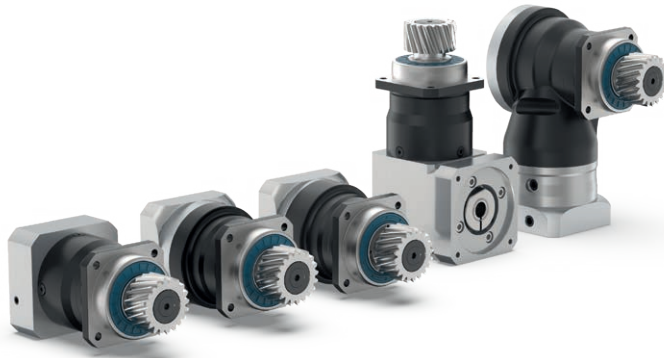
WPSFN



WGN



## Planetary gearboxes with mounted pinion



**PK1**



**PM1**



**PM2**



## Application-specific gearboxes

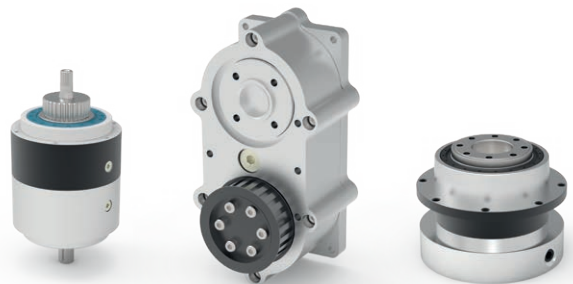


**HLAE**



**NGV**

## Custom made gearboxes

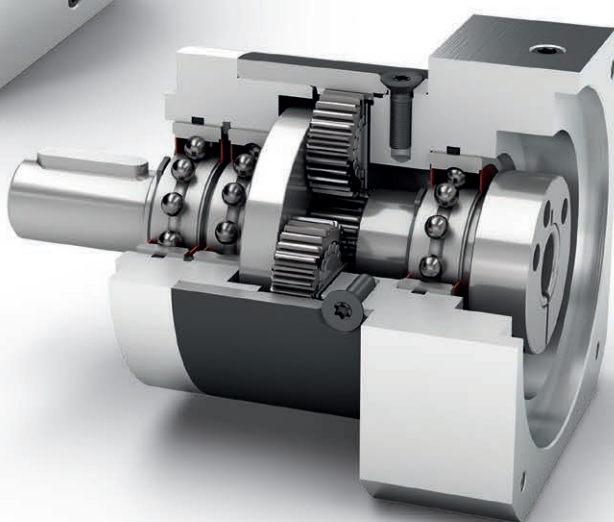


## Economy Line coaxial gearbox

# PLE



The **PLE** is our price/performance wonder. It is particularly lightweight, extremely powerful and yet still suitable for demanding production cycles thanks to its low-friction bearing concept and optimized lubrication. A real powerhouse at an attractive and 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

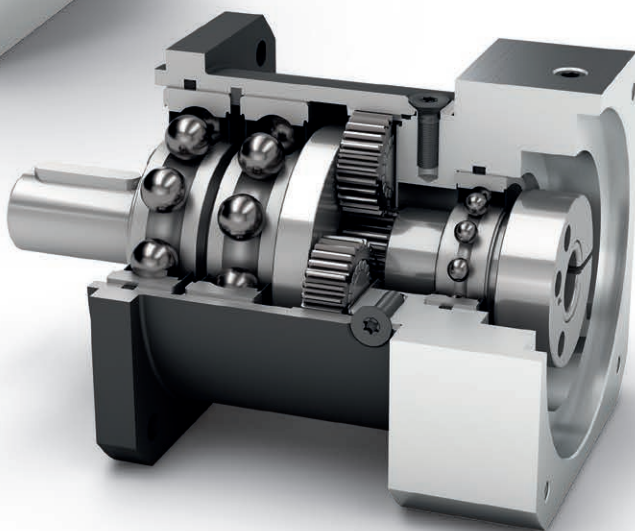


## Economy Line coaxial gearbox

# PLQE



Our **PLQE** is uncomplicated and powerful. It can be connected directly to your installation without the need for an intermediate flange. The larger deep groove ball bearings on the output allow higher axial and radial forces to be absorbed. Thanks to its favorable efficiency, this means that it always operates reliably even when production cycles are demanding.



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 **5 - 260 Nm**



Radial force **390 - 2950 N**



Axial force **620 - 2500 N**



Torsional backlash **7 - 15 arcmin**



Protection class **IP54**



Frame sizes

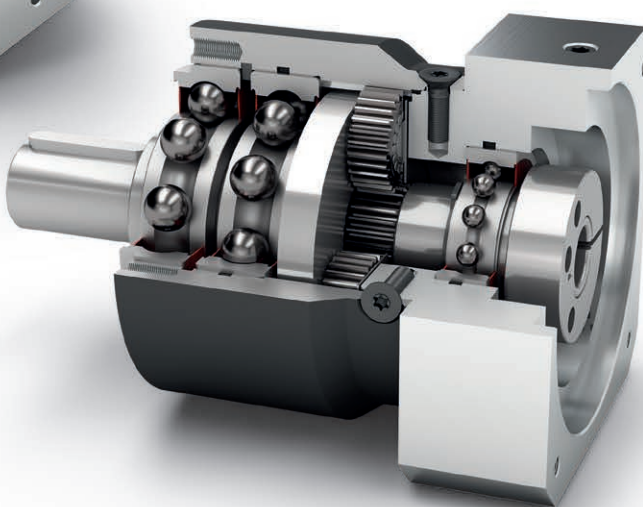


## Economy Line coaxial gearbox

# PLPE



Our **PLPE** combines the best features of the Economy series with a performance bonus: The optimized output bearing is designed for higher radial and axial forces. The compact outer contour of the **PLPE** also allows it to be used in limited spaces.



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

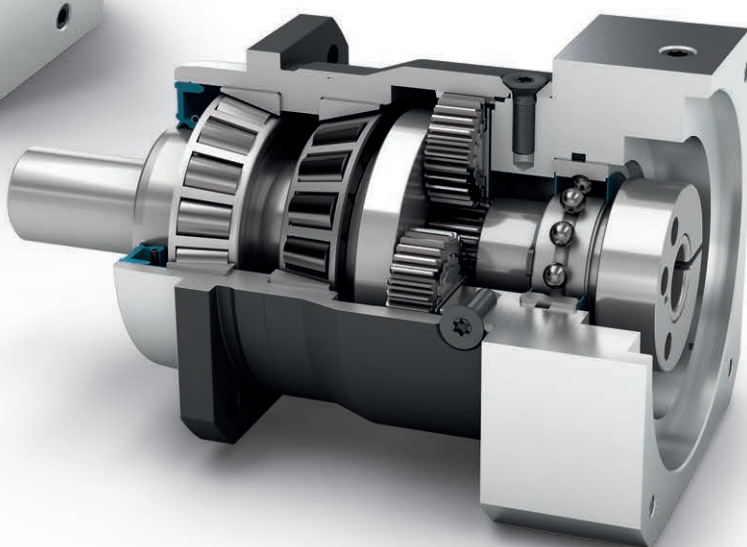
155

## Economy Line coaxial gearbox

# PLHE



The **PLHE** is our ideal combination of economy and precision gearboxes. The preloaded tapered roller bearings of this planetary gearbox guarantee high rigidity even under maximum load. The high-performance seal provides increased protection against dust and water spray.



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

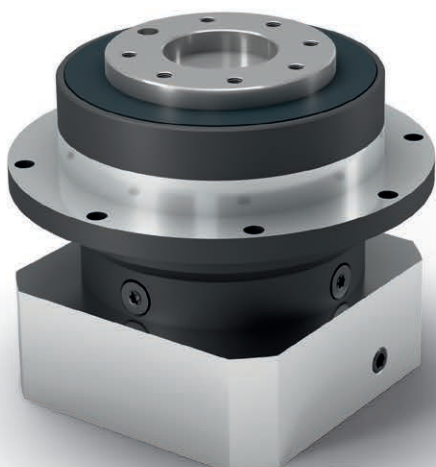
80

120

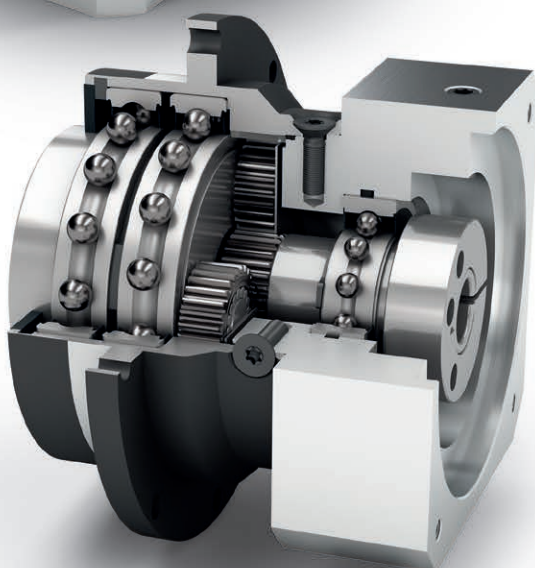


## Economy Line coaxial gearbox

# PLFE



There is no such thing as too short: The **PLFE** is our planetary gearbox with compact flange output shaft. They are more than one-third smaller in size. Its standardized flange interface makes it particularly easy to install. The integrated dowel pin drill hole provides additional stability during installation.



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 **5 - 260 Nm**

Radial force **550 - 2400 N**

Axial force **480 - 3300 N**

Torsional backlash **7 - 15 arcmin**

Protection class **IP54**

Frame sizes

55

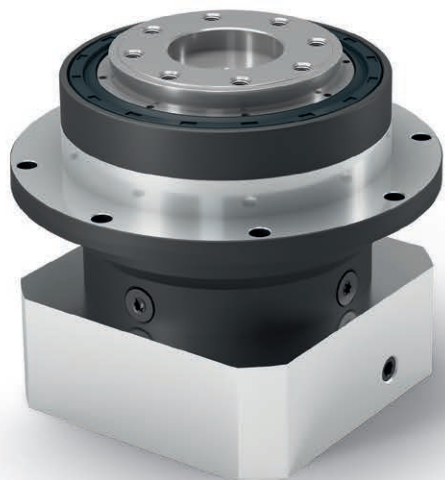
64

90

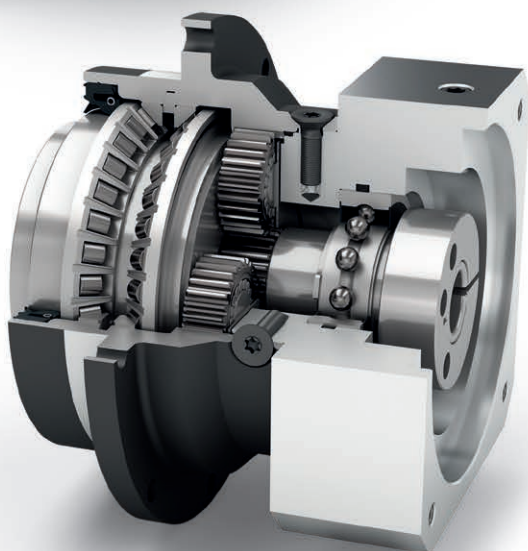
110

## 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 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

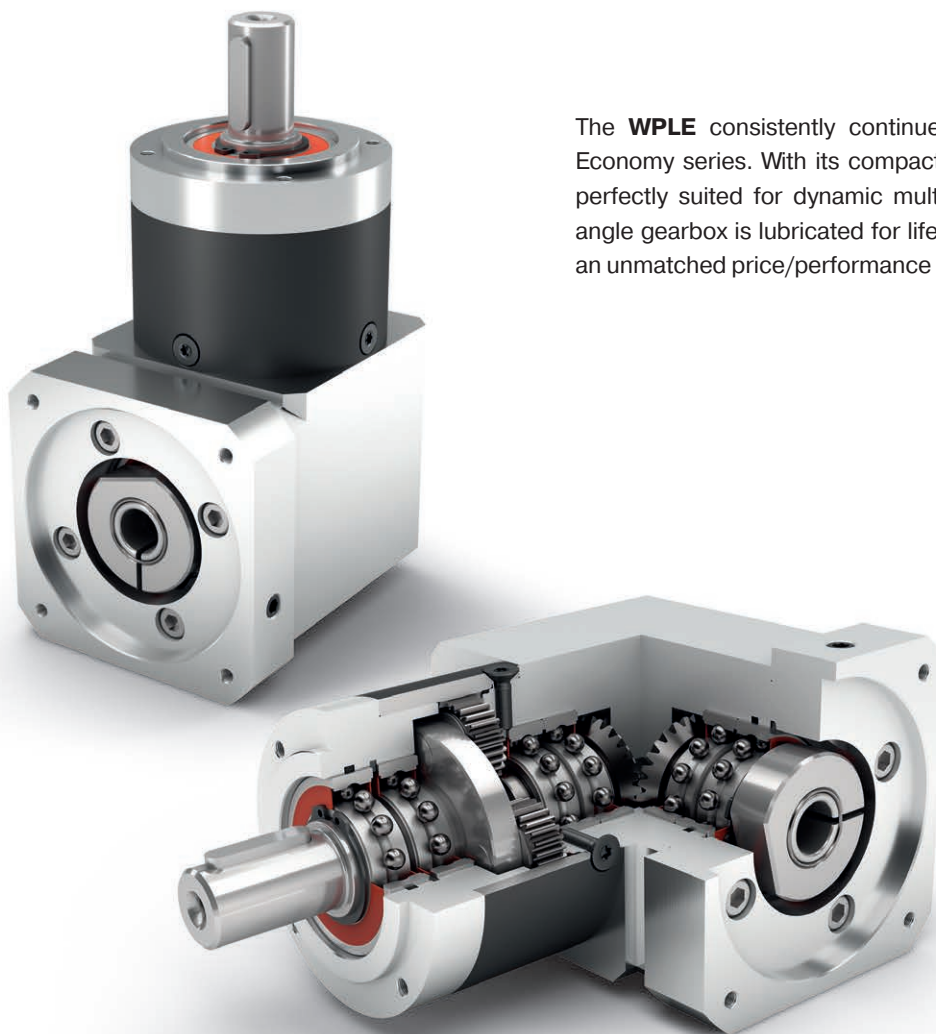
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90


110

## Economy Line right angle gearbox

# WPLE



The **WPLE** consistently continues the advantages of the Economy series. With its compact but powerful design, it is perfectly suited for dynamic multi-axis systems. Our right-angle gearbox is lubricated for life, easy to mount and offers an unmatched 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

40

60

80

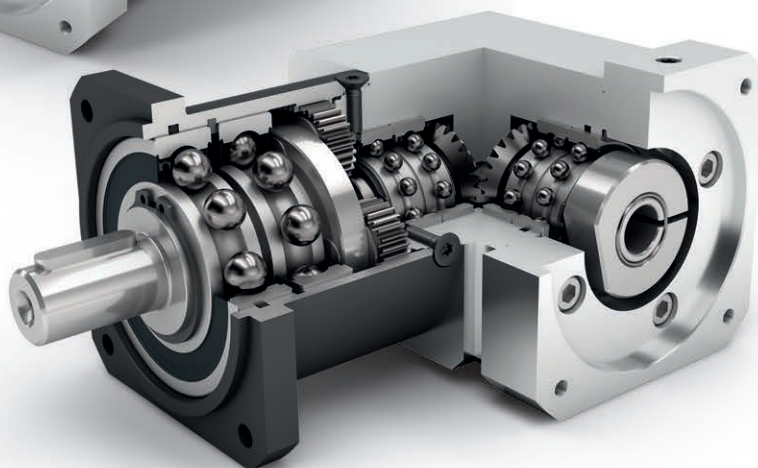
120








## Economy Line right angle gearbox

# WPLQE



Our **WPLQE** is the right-angle gearbox with a square output flange. This makes it particularly easy to mount, versatile and, thanks to its larger deep groove ball bearings, also suitable for higher radial and axial forces.

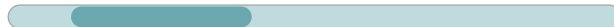


-  Economy Line
-  Spur gear
-  Bevel gear right angle stage
-  Square type output flange
-  Reinforced deep groove ball bearings
-  High ratio variety  $i=3$  up to  $i=512$
-  Planet carrier in disc design

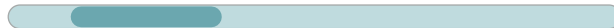
Nominal output torque **14 - 260 Nm**



Radial force **900 - 2950 N**



Axial force **1000 - 2500 N**



Torsional backlash **11 - 21 arcmin**



Protection class **IP54**



Frame sizes

60

80

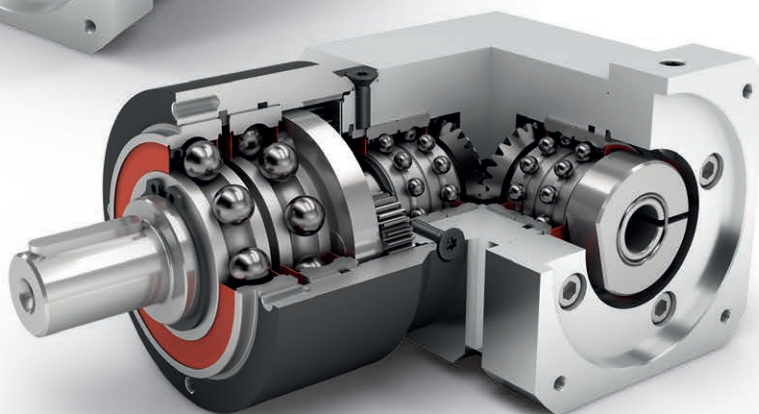
120







## Economy Line right angle gearbox

# WPLPE



The **WPLPE** is the sought-after angle solution from our Economy range: space-saving yet powerful at an attractive price. You attach your drive elements directly to the output shaft, which can also withstand high radial forces thanks to extra-strong deep groove ball bearings.



-  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

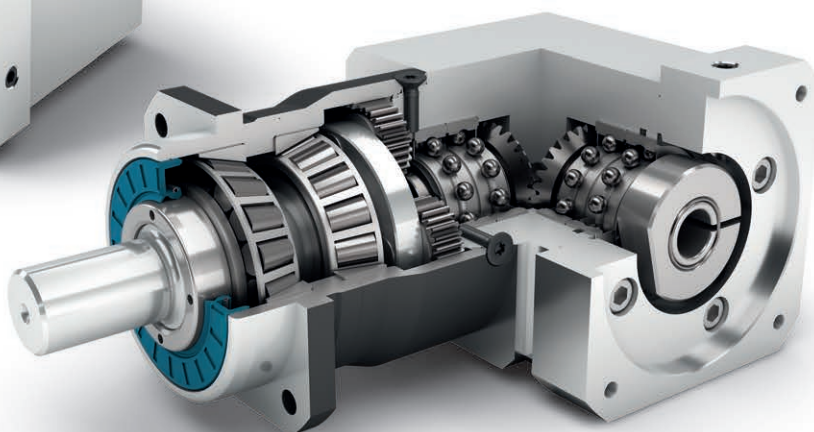


## Economy Line right angle gearbox

# WPLHE



Axially space-saving, economical, IP65-compliant and designed for high radial and axial forces at the output: The **WPLHE** combines all the advantages of the successful PLHE, the world's first combination of the Economy and Precision gearboxes, as an right-angle variant.



Economy Line



Counterdirectional rotation



Spur gear



Bevel gear right angle stage



Square type output flange



Preloaded tapered roller bearings



Rotary shaft seal



Extra long centering collar



Planet carrier in disc design



Option: Splined output shaft (DIN 5480)



Option: Planetary gearbox with mounted pinion

Nominal output torque **14 - 260 Nm**

Radial force **3200 - 6000 N**

Axial force **4400 - 8000 N**

Torsional backlash **11 - 18 arcmin**

Protection class **IP65**

Frame sizes

60

80

120

## Economy Line right angle gearbox

# WPLFE



The **WPLFE** is our right-angle planetary gearbox with a compact flange output shaft. You save up to a third of the space. Its standardized flange interface makes it particularly easy to install. The integrated dowel pin drill hole provides additional stability during installation.



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

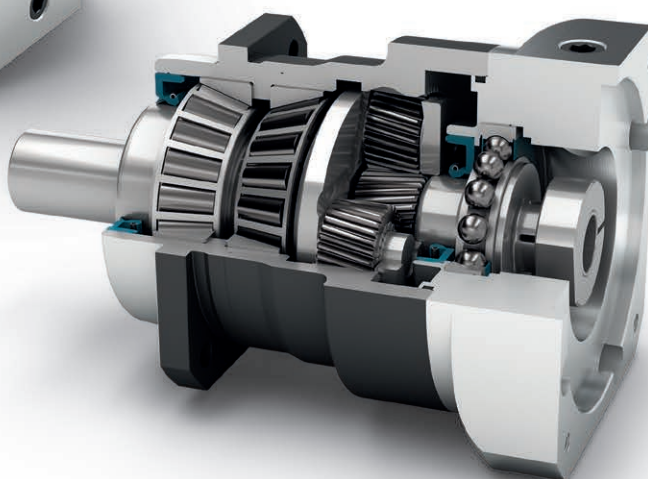
110

## Precision Line coaxial gearbox

# PSN



Our **PSN** is pure progress: Its helical gearing ensures low-noise synchronization. With this precision planetary gearbox, vibrations are reduced to a minimum. Precision even under very high loads makes the **PSN** one of the most high-performance gearboxes in the world.



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

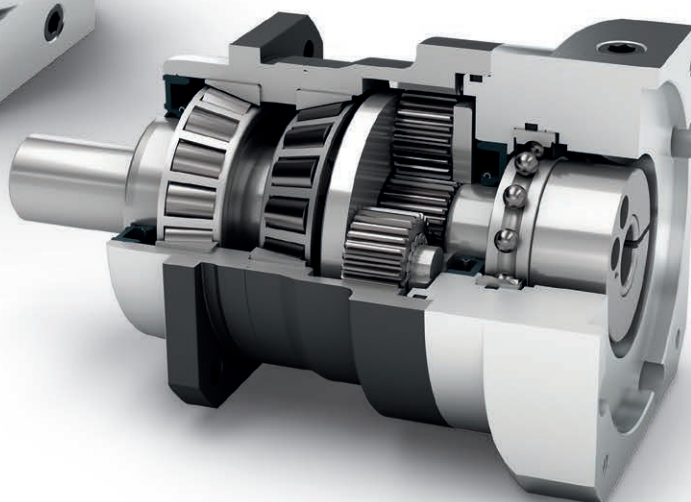
190

## Precision Line coaxial gearbox

# PLN



Our precision straight-toothed planetary gearbox is designed for maximum power and torque. The preloaded tapered roller bearings in the **PLN** and the specially matched seal guarantee optimum performance even in applications where dust and water spray are encountered.



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

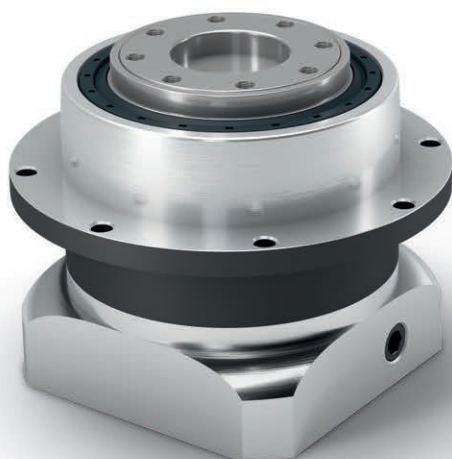
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142

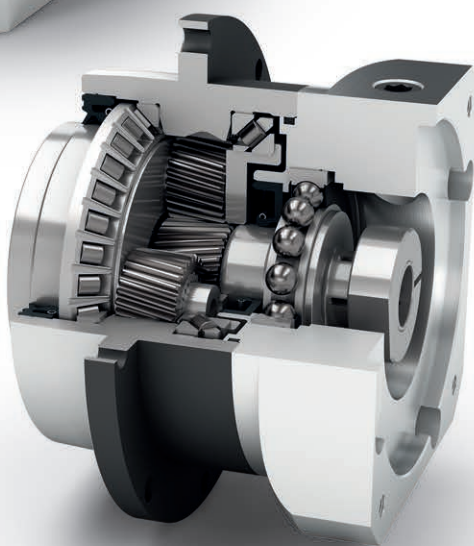
190

## Precision Line coaxial gearbox

# PSFN



Thanks to its standardized flange interface and a planet carrier in a cage design, our **PSFN** is extremely torsionally rigid. The specially developed helical gearing reduces vibrations to a minimum. With its high tilting moment, you can demand a lot 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

140

200

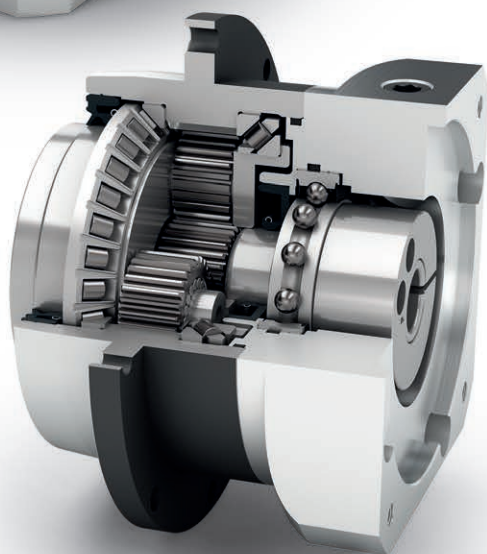


## Precision Line coaxial gearbox

# PLFN



Our **PLFN** has a standardized flange interface, which allows easy mounting. The straight-toothed precision planetary gearbox is designed for high performance and torque. Its high tilting moment allows the best performance even with 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**

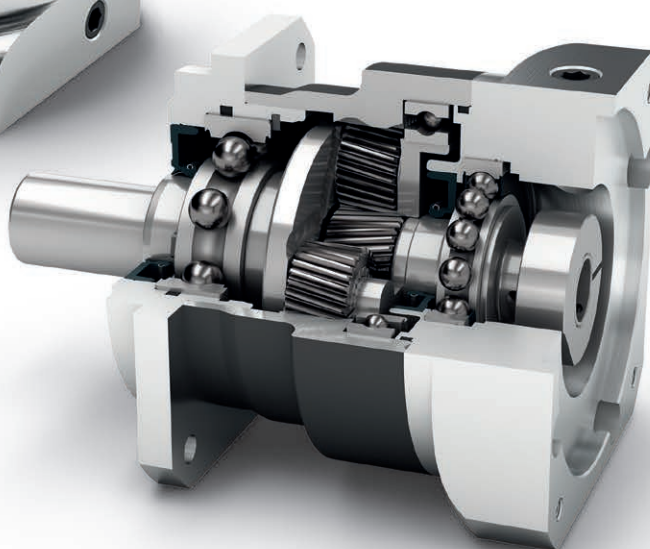
**200**








## Precision Line coaxial gearbox

# PSBN



Our **PSBN** is the ideal combination of a precision planetary gearbox and efficient bearing technology. It was designed specifically to achieve maximum performance at high speed. Thanks to the helical gearing, it operates particularly smoothly - and is quieter than average.



-  Precision Line
-  Helical gear
-  Square type output flange
-  Reinforced 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**

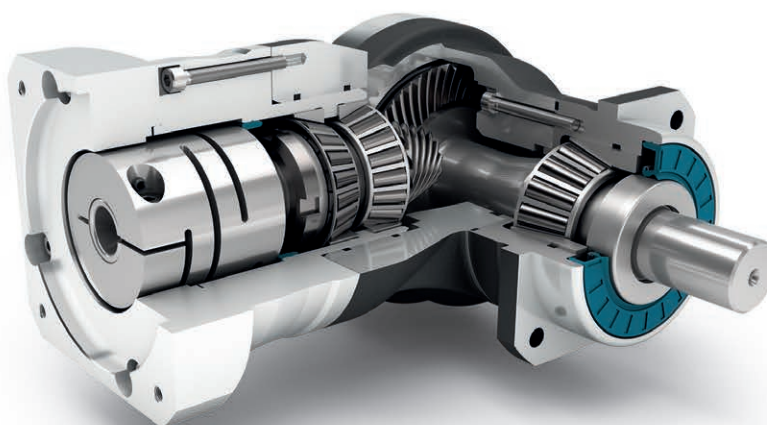
**142**

## Precision Line right angle gearbox

# WPLN



Due to its hypoid gearing, our **WPLN** achieves optimal synchronization. Because vibrations are reduced to a minimum, it operates smoothly, precisely and quietly. The right-angle precision gearbox is lubricated for life and can be mounted in a variety of ways.



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

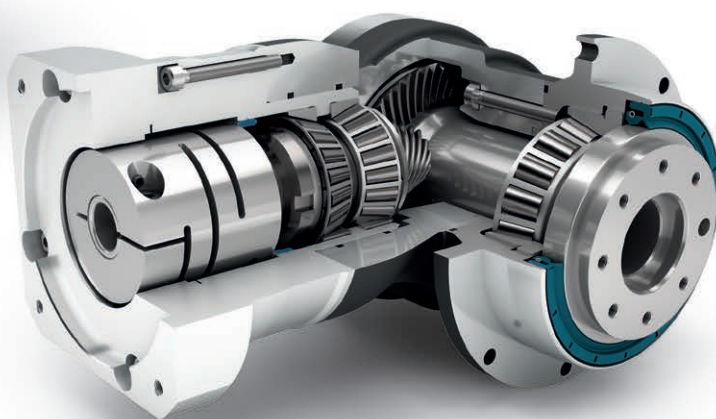
142

## Precision Line right angle gearbox

# WPSFN



Our **WPSFN** is particularly easy and quick to integrate thanks to its standardized flange interface and offers high torsional rigidity. With its hypoid gearing, as well as the helical-toothed planetary stage, it achieves optimal synchronization for best surface qualities. The shortest right-angle precision gearbox, in a single-stage design with integrated hollow shaft, offers you new design 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**

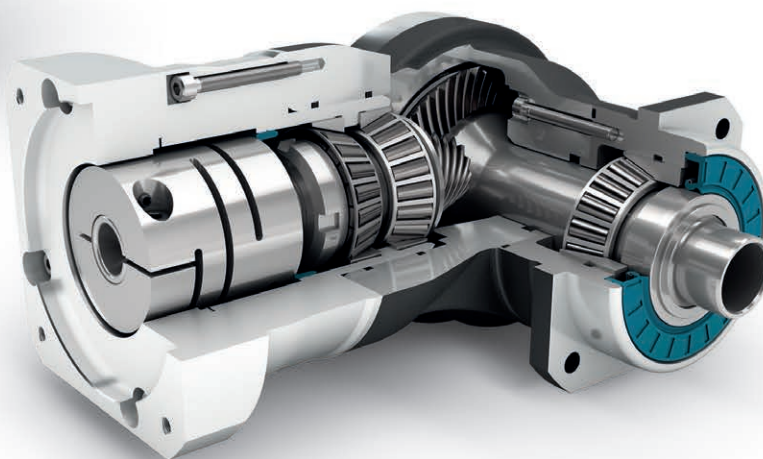


## Precision Line right angle gearbox

# WGN



Our **WGN** is the right-angle hollow shaft gearbox that operates particularly quietly. At the same time, the hypoid gearing increases the quality of the surface of your workpiece. With a shrink disc, it can be connected directly to the application - this is uncomplicated, safe and opens up 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



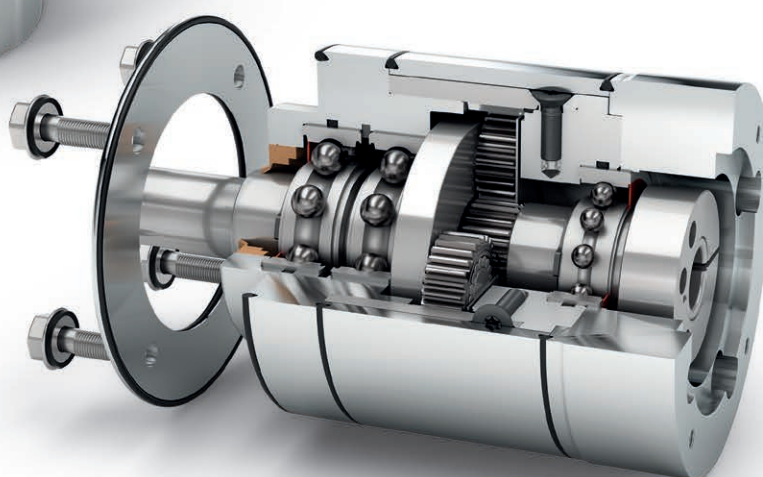
## Application-specific gearbox

# HLAE

Hygienic Design  
for the Food and  
Pharmaceutical  
Industries



Our **HLAE** is unique: It is the world's first planetary gearbox in a certified hygienic design – flexible without a radial bolt, powerful and yet easy and quick to clean. It was developed specifically for applications in sensitive areas such as pharmaceuticals, cosmetics and food.



Application-specific gearbox



Spur gear



Round type output flange



Low-friction deep groove ball bearings



Rotary shaft seal



Extra long centering collar



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**

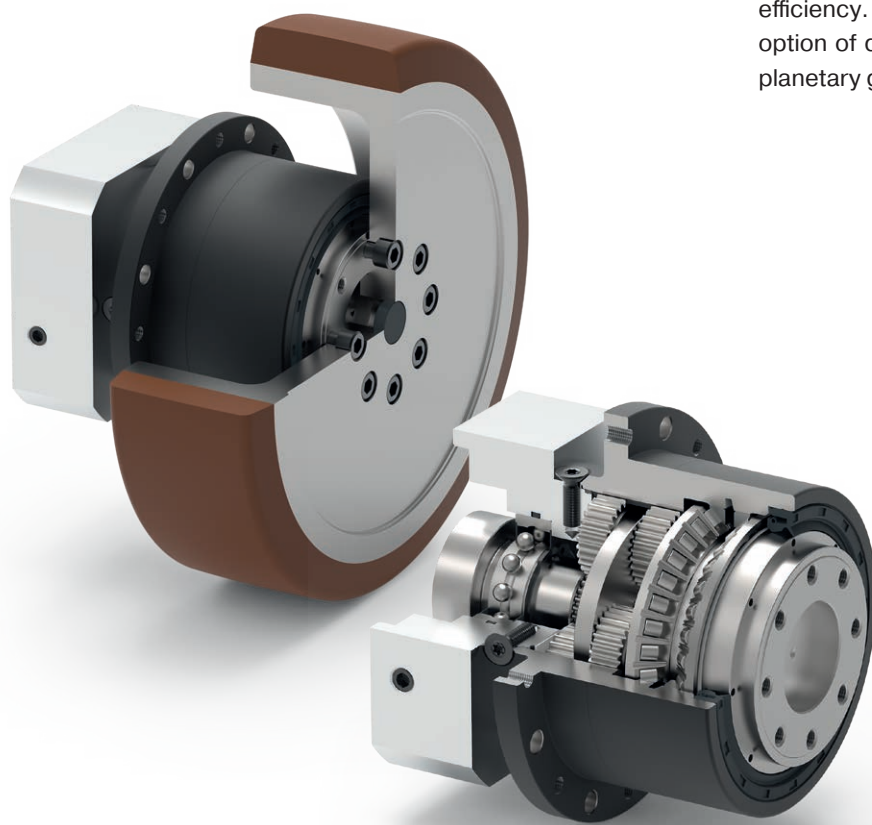
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## Application-specific gearbox

# NGV

for AGVs

Automated guided vehicles have special requirements when it comes to drive technology. These include high radial loads, space-saving design, 24/7 use and energy efficiency. With its special output bearing concept and the option of direct mounting to the vehicle chassis, our **NGV** planetary gearbox precisely meets these requirements.



	Application-specific gearbox	Nominal output torque	18 - 260 Nm
	Spur gear	Radial force	2300 - 5150 N
	Extra large round type output flange	Axial force	2850 - 6450 N
	Preloaded angular contact roller bearings	Torsional backlash	9 - 12 arcmin
	Rotary shaft seal	Protection class	IP65
	Extra long centering collar	Frame sizes	64 90 110
	Flange output shaft (ISO 9409)		
	Planet carrier in disc design		

## Planetary gearbox with mounted pinion












# PK1 ▪ PM1 ▪ PM2

NEW



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**

### PM 2

Module **2-5**

Number of teeth **16-22**

Maximum feed force **7-30 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	Standard	Standard	Standard
PLQE		Standard	Standard	Standard	Standard	Standard	Standard	Standard	Standard
PLPE		Standard	Standard	Standard	Standard	Standard	Standard	Standard	Standard
PLHE		Standard	Standard	Standard	Standard	Standard	Standard	Standard	Standard
PLFE		Standard	Standard	Standard	Standard	Standard	Standard	Standard	Standard
PFHE		Standard	Standard	Standard	Standard	Standard	Standard	Standard	Standard
WPLE		Standard	Standard	Standard	Standard	Standard	Standard	Standard	Standard
WPLQE		Standard	Standard	Standard	Standard	Standard	Standard	Standard	Standard
WPLPE		Standard	Standard	Standard	Standard	Standard	Standard	Standard	Standard
WPLHE		Standard	Standard	Standard	Standard	Standard	Standard	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
PSBN		<div><div></div></div>	<div><div></div></div>	<div><div></div></div>	<div><div></div></div>	<div><div></div></div>	<div><div></div></div>	<div><div></div></div>	<div><div></div></div>
PSN		<div><div></div></div>	<div><div></div></div>	<div><div></div></div>	<div><div></div></div>	<div><div></div></div>	<div><div></div></div>	<div><div></div></div>	<div><div></div></div>
PLN		<div><div></div></div>	<div><div></div></div>	<div><div></div></div>	<div><div></div></div>	<div><div></div></div>	<div><div></div></div>	<div><div></div></div>	<div><div></div></div>
PSFN		<div><div></div></div>	<div><div></div></div>	<div><div></div></div>	<div><div></div></div>	<div><div></div></div>	<div><div></div></div>	<div><div></div></div>	<div><div></div></div>
PLFN		<div><div></div></div>	<div><div></div></div>	<div><div></div></div>	<div><div></div></div>	<div><div></div></div>	<div><div></div></div>	<div><div></div></div>	<div><div></div></div>
WPLN		<div><div></div></div>	<div><div></div></div>	<div><div></div></div>	<div><div></div></div>	<div><div></div></div>	<div><div></div></div>	<div><div></div></div>	<div><div></div></div>
WPSFN		<div><div></div></div>	<div><div></div></div>	<div><div></div></div>	<div><div></div></div>	<div><div></div></div>	<div><div></div></div>	<div><div></div></div>	<div><div></div></div>
WGN		<div><div></div></div>	<div><div></div></div>	<div><div></div></div>	<div><div></div></div>	<div><div></div></div>	<div><div></div></div>	<div><div></div></div>	<div><div></div></div>

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

Standard
 Excellent

For your notes

For your notes



**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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