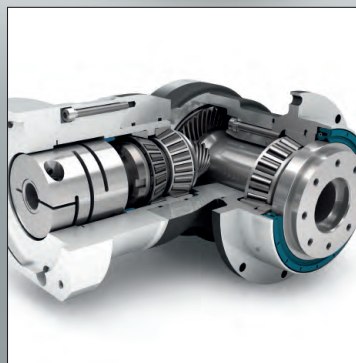


# WPSFN

The shortest spiral-toothed  
right angle gearbox with  
flange output shaft and hollow shaft



- + Space-saving thanks to minimal installation height
- + Greater quality due to high-class gearing
- + Standard flange interface with hollow shaft

Our new right angle planetary gearbox at a glance:

### + Greater quality due to high-class gearing

Thanks to its spiral gearing, the **WPSFN** achieves optimal, homogeneous synchronism. The two-stage right angle precision gearbox operates with extremely low vibration with the helical-toothed planetary stage. As a result, your machine produces the highest surface quality and the best prints.

### + Space-saving thanks to minimal installation height

The **WPSFN** is the shortest right angle precision gearbox. Depending on the frame size, you may use up to 25% less installation space than with comparable right angle gearboxes with spiral gearing.

### + Standard flange interface with hollow shaft

The **WPSFN** right angle precision gearbox with its EN ISO 9409-1 standard flange interface allows you to quickly integrate drive components such as a flanged pinion or turntable. Discover new design solutions for flexible line routing with the hollow shaft integrated in the single-stage **WPSFN**.

### + More flexibility for the motor

The input flange can be individually adapted to your motor to improve your flexibility.

### + Particularly quiet drive

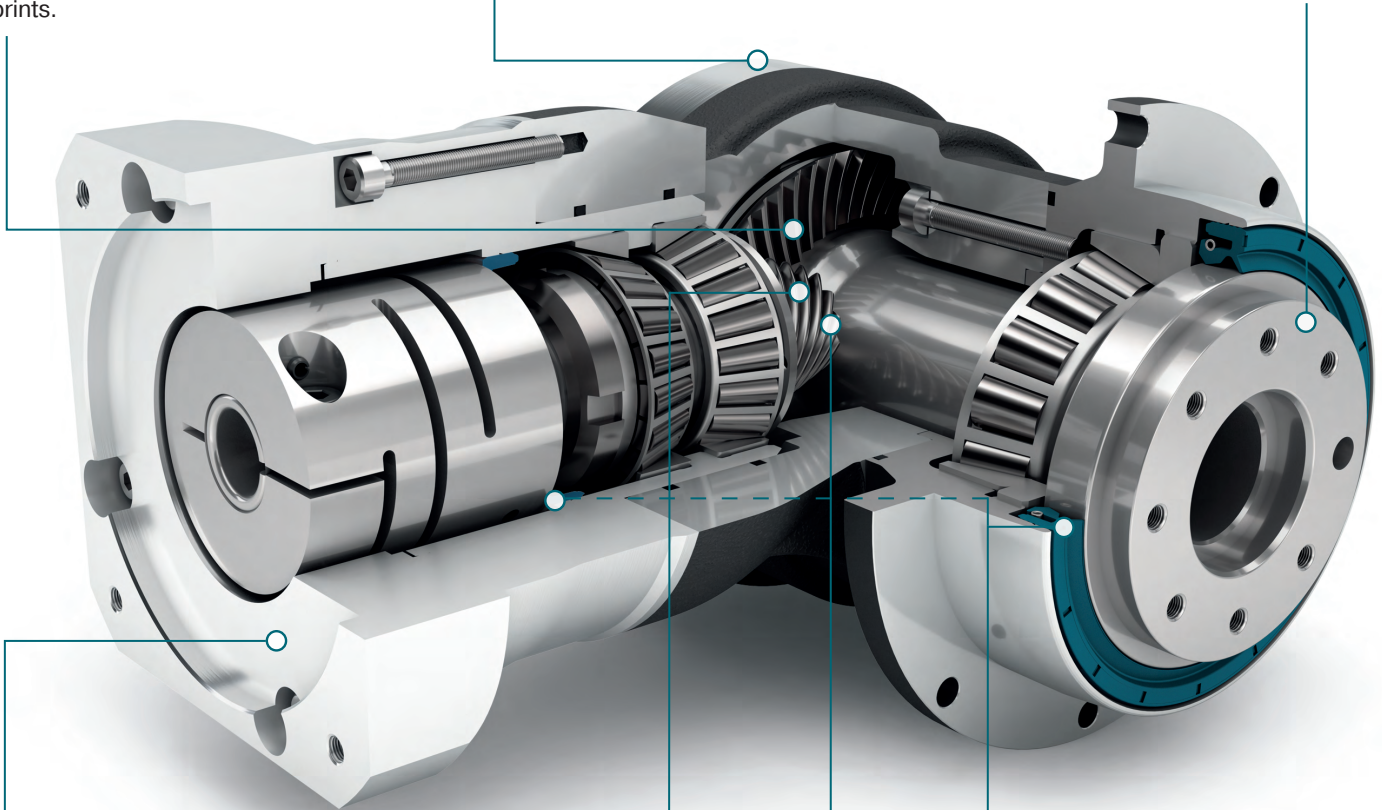
Thanks to the Neugart-developed spiral teeth, the **WPSFN** delivers particularly quiet and low-vibration performance. The machine does not need any additional noise absorption measures.

### + Minimized backlash for maximized precision

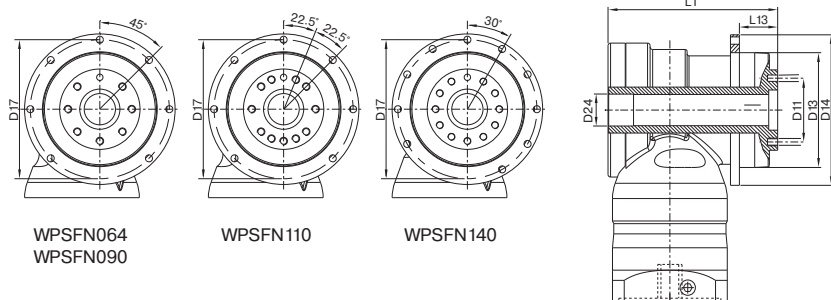
Thanks to the high gear tooth quality, the **WPSFN** also exhibits minimized backlash ( $< 3$  arcmin). This increases your machine's precision and provides you with a high precision drive solution.

### + Perfectly sealed

This gearbox resists dust and water jets. Thanks to its radial shaft seal, the **WPSFN** is also ideal in the most grueling conditions. Perfect IP 65 protection class, due to its intelligent design.



Gearbox characteristics			WPSFN064	WPSFN090	WPSFN110	WPSFN140	z <sup>(1)</sup>
Service life <sup>(2)</sup>	t <sub>L</sub>	h	20,000				
Service life <sup>(2)</sup> at T <sub>2N</sub> x 0.88			30,000				
Efficiency at full load <sup>(3)</sup>	η	%	94				1
			93				2
Operating temperature	T <sub>min</sub> /T <sub>max</sub>	°C	- 25 / + 90				
Protection class			IP 65				
Standard backlash	j <sub>t</sub>	arcmin	< 5	< 5	< 5	< 5	2
Reduced backlash			< 3	< 3	< 3	< 3	
Torsional stiffness <sup>(3)</sup>	c <sub>g</sub>	Nm/arcmin	1.9 - 2.6	4.0 - 5.5	10.1 - 13.5	26.0 - 34.5	1
			5.3 - 6.9	15.3 - 20.5	33.5 - 44.0	85.0 - 111.0	2
Gearbox weight	m <sub>G</sub>	kg	3.3	6.1	10.9	24.0	1
			3.7	5.3	8.4	17.8	2
Running noise <sup>(4)</sup>	Q <sub>g</sub>	dB(A)	66	67	68	70	
Output shaft loads							
Radial force <sup>(2)(5)</sup>	F <sub>r</sub>	N	2100 - 2400	3900 - 4400	4800 - 5500	11000 - 12000	
Axial force <sup>(2)(5)</sup>	F <sub>a</sub>		3700 - 4300	6300 - 8200	8400 - 9500	7500 - 8500	
Tilting moment for 20,000 h <sup>(2)(6)</sup>	M <sub>K20,000 h</sub>	Nm	147 - 200	361 - 484	534 - 689	1030 - 1989	
Moment of inertia							
Mass moment of inertia <sup>(3)</sup>	J	kgcm <sup>2</sup>	0.500 - 0.822	1.046 - 1.591	4.857 - 6.435	15.220 - 18.825	1
			0.497 - 0.642	0.497 - 0.659	1.015 - 1.452	4.810 - 6.449	2
Output torques							
Nominal output torque <sup>(3)</sup>	T <sub>2N</sub>	Nm	22 - 45	40 - 90	75 - 160	160 - 320	1
			28 - 62	59 - 130	140 - 310	305 - 625	2
Max. output torque <sup>(3)(7)</sup>	T <sub>2max</sub>	Nm	35 - 72	64 - 144	120 - 256	256 - 512	1
			45 - 99	94 - 210	224 - 502	488 - 1003	2
Emergency stop torque <sup>(3)(8)</sup>	T <sub>2Stop</sub>	Nm	75 - 100	150 - 200	300 - 400	700 - 800	1
			80 - 150	175 - 300	340 - 650	600 - 1650	2
Input speeds							
Average thermal input speed at T <sub>2N</sub> and S1 <sup>(3)(9)</sup>	n <sub>1N</sub>	min <sup>-1</sup>	1550 - 2650	1350 - 2550	850 - 1500	850 - 1400	1
			2000 - 3050	1950 - 3850	1400 - 3300	1200 - 2400	2
Max. mechanical input speed <sup>(9)</sup>	n <sub>1Limit</sub>	min <sup>-1</sup>	16000	14000	9500	8000	1
			16000	16000	14000	9500	2



Drawing corresponds to a WPSFN090 / 1-stage / flange output hollow shaft with dowel hole / 19 mm clamping system / motor adaptation – 2-part – round universal flange / B5 flange type motor

All other variants can be retrieved in the Tec Data Finder at: [www.neugart.com](http://www.neugart.com)

Geometry*			WPSFN064	WPSFN090	WPSFN110	WPSFN140	z <sup>(1)</sup>
Pitch circle diameter output shaft	D11		31.5	50	63	80	
Centering diameter output flange	D13	h7	64	90	110	140	
Flange diameter output	D14		86	118	145	179	
Pitch circle diameter output flange	D17		79	109	135	168	
Hollow shaft diameter	D24	M7	17	25	35	50	1
Total length	L1		104.5	132.0	153.5	201.5	1
			122	139.5	154	224	2
Output flange length	L13		19.5	30	29	38	

\* Dimensions in mm

<sup>(1)</sup> Number of stages

<sup>(2)</sup> Other (sometimes higher) values following changes to T<sub>2N</sub>, F<sub>r</sub>, F<sub>a</sub>, cycle, and service life of bearing.

Application specific configuration with NCP – [www.neugart.com](http://www.neugart.com)

<sup>(3)</sup> The ratio-dependent values can be retrieved in Tec Data Finder – [www.neugart.com](http://www.neugart.com)

<sup>(4)</sup> Sound pressure level from 1 m, measured on input running at n<sub>1</sub> = 3000 rpm no load; i = 5

<sup>(5)</sup> Based on the end of the output shaft

<sup>(6)</sup> These values are based on an output shaft speed of n<sub>2</sub> = 100 rpm

<sup>(7)</sup> 30,000 rotations of the output shaft permitted

<sup>(8)</sup> Permitted 1000 times

<sup>(9)</sup> Application-specific speed configurations with NCP – [www.neugart.com](http://www.neugart.com)

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.

The product code shows the numerous variants of the **WPSFN**. You can select the gearbox variant most suited to your requirements.

		WPSFN	090	–	005	–	S	S	S	H	3	A	E	–	Z	14 / 30 / 80 / 100 / B5 / M6					
																More motor details					
Series																					
Frame size																					
064	Frame size	64																			
090	Frame size	90																			
110	Frame size	110																			
140	Frame size	140																			
Ratio																					
004	Ratio	i = 4																			
005	Ratio	i = 5																			
008	Ratio	i = 8																			
010	Ratio	i = 10																			
016	Ratio	i = 16																			
020	Ratio	i = 20																			
025	Ratio	i = 25																			
032	Ratio	i = 32																			
040	Ratio	i = 40																			
050	Ratio	i = 50																			
070	Ratio	i = 70																			
100	Ratio	i = 100																			
Torsional backlash																					
S	Standard backlash																				
R	Reduced backlash															2-stage					
Lubrication																					
S	Standard lubrication																				
F	Low temperature lubrication																				
</																					

Neugart's **Tec Data Finder** allows you to very easily configure your right angle planetary gearbox with flange output shaft an hollow shaft. The product code helps you to quickly and directly request a quote.



Use **Tec Data Finder** to easily generate all the relevant information about your gearbox online. This includes the specific and geometrical data in the form of a dimension sheet as well as the CAD models in all of the usual formats.



The **NCP** configuration software enables you to determine the optimum motor-gearbox combination for your application with the relevant dynamics data and loads. A huge number of possible applications and over 12,000 motors are available to you.

### Do you still have unanswered questions or want more information?

We would be happy to advise on all matters relating to drive technology.

You can find your local sales contact at [www.neugart.com](http://www.neugart.com)

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