



PSFN

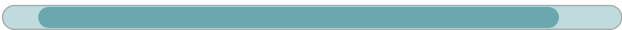
负载量最高的精密型减速机 运行十分安静 采用法兰输出轴

我们的 **PSFN** 装有标准法兰接口以及笼状结构的行星齿轮架，因此抗扭刚度极高。专门研发的斜齿把振动降至最低程度。这种高精度行星减速机凭借它的高倾斜力矩，可以满足您的众多要求。

The precision planetary gearbox for maximum loads with particularly quiet drive and flange output shaft

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.

周期性扭矩
Cyclic torque **14 - 950 Nm**



径向力
Radial force **1450 - 23000 N**



轴向力
Axial force **2350 - 12000 N**



回程间隙
Torsional backlash **1 - 8 arcmin**

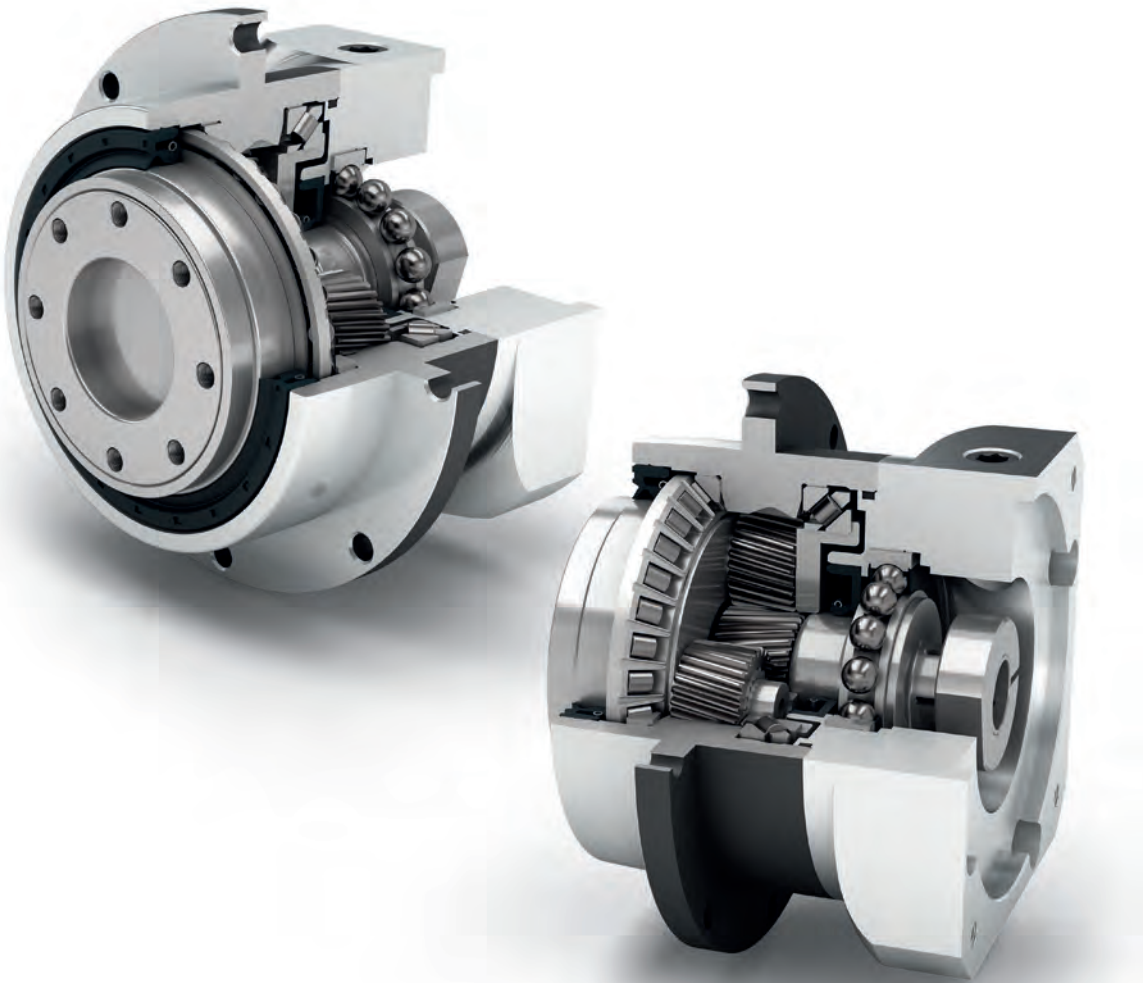


防护等级
Protection class **IP65**



结构尺寸
Frame sizes

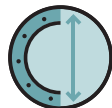




精密型
Precision Line



旋转方向 同方向
Equidirectional rotation



圆形特大号输出法兰
Extra large round type output flange



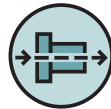
径向轴密封
Rotary shaft seal



行星齿轮架 (笼状结构)
Planet carrier in cage design



可选: 齿轮-齿条
行星减速机 (细节见第 158 页)
Option: Rack and pinion
Planetary gearbox (Details on page 158)



同轴减速机
Coaxial gearbox



斜齿
Helical gear



配有预紧的角接触滚子轴承
Preloaded angular contact roller bearings



法兰输出轴 (按 ISO 9409-1 标准)
Flange output shaft (ISO 9409-1)



可选: 降低回程间隙
Option: Reduced backlash



可选: 喷漆表面
——RAL 9005 黑色
Option: Painted surface
- RAL 9005 Jet black

技术特点的详细解释, 请从第201页读起。
Detailed explanations of the technical features starting on page 201.

Code	减速机参数	Gearbox characteristics			PSFN055	PSFN064	PSFN090	PSFN110	PSFN140	PSFN200	p ⁽¹⁾	
	使用寿命 ⁽²⁾	Service life ⁽²⁾	L _h	h	20.000							
	有效系数 ⁽³⁾	Efficiency ⁽³⁾	η	%	97						1	
	最低工作温度	Min. operating temperature	T _{min}	°C	96						2	
	最高工作温度	Max. operating temperature	T _{max}		-25							
	防护等级	Protection class			90							
					IP65							
S	标准润滑	Standard lubrication			润滑油 (终生润滑) / Oil (lifetime lubrication)							
F	食品级润滑	Food grade lubrication			润滑油 (终生润滑) / Oil (lifetime lubrication)							
	安装位置	Installation position			任意 / Any							
S	标准回程间隙	Standard backlash	φ	arcmin	< 6	< 3	< 3	< 3	< 3	< 3	1	
					< 8	< 5	< 5	< 5	< 5	< 5	< 5	2
R	降低回程间隙	Reduced backlash			< 4	< 2	< 1	< 1	< 1	< 1	< 1	1
					< 6	< 2	< 1	< 1	< 1	< 1	< 1	2
	抗扭刚度 ⁽³⁾	Torsional stiffness ⁽³⁾	C _{2t}	Nm / arcmin	2,8 - 6,2	8,3 - 12,8	21,5 - 32,0	64,0 - 81,0	129,0 - 218,0	374,0 - 602,0	1	
					2,8 - 6,5	8,2 - 13,3	21,0 - 31,5	64,0 - 83,0	127,0 - 206,0	365,0 - 668,0	2	
	减速机重量 ⁽³⁾	Gearbox weight ⁽³⁾	m	kg	0,7	1,6	3,5 - 3,6	5,2 - 5,3	11,5 - 11,7	28,1 - 29,1	1	
					1,1	2,2 - 2,3	3,7 - 3,8	6,7 - 6,9	13,1 - 13,5	32,4 - 33,6	2	
S	标准的箱体表面	Standard surface			箱体: 钢 - 热处理后氧化 (黑色) Housing: Steel - heat-treated and post-oxidized (black)							
B	喷漆表面 ⁽⁴⁾	Painted surface ⁽⁴⁾			RAL 9005 黑色 RAL 9005 Jet black							
	运行噪音 ⁽³⁾	Running noise ⁽³⁾	L _{pA}	dB(A)	56	57	58	63	66	68		

输出轴载荷	Output shaft loads			PSFN055	PSFN064	PSFN090	PSFN110	PSFN140	PSFN200	p ⁽¹⁾
最大径向力	Maximum radial force	F _{r max}	N	1450	2150	3950	4900	12000	23000	
最大轴向力	Maximum axial force	F _{a max}		2350	2850	5450	6450	7500	12000	
最大倾斜力矩	Maximum tilting moment	M _{K max}	Nm	75	132	326	475	1030	2445	

输入特性	Input characteristics			PSFN055	PSFN064	PSFN090	PSFN110	PSFN140	PSFN200	p ⁽¹⁾
输入端锁紧系统直径 (代码)	Clamping system diameter input (Code)	D26	mm	11 (C) ⁽⁵⁾	11 (C)	14 (D)	19 (E)	35 (G) ⁽⁵⁾	48 (K) ⁽⁵⁾	1
				14 (D)	14 (D) ⁽⁵⁾	19 (E) ⁽⁵⁾	24 (F) ⁽⁵⁾	42 (H)	-	
				-	19 (E)	24 (F)	35 (G)	-	-	
				11 (C) ⁽⁵⁾	11 (C)	11 (C)	14 (D)	19 (E)	35 (G) ⁽⁵⁾	2
				14 (D)	14 (D) ⁽⁵⁾	14 (D) ⁽⁵⁾	19 (E) ⁽⁵⁾	24 (F) ⁽⁵⁾	42 (H)	
转动惯量 ⁽³⁾⁽⁵⁾	Mass moment of inertia input ⁽³⁾⁽⁵⁾	J _i	kgcm ²	0,097	0,149	0,450	1,180	6,526	22,520	1
				0,117	0,210	0,719	2,029	9,670	40,642	
				0,095	0,146	0,147	0,435	1,144	6,434	2
				0,109	0,203	0,219	0,697	2,127	10,410	
平均空载扭矩 ⁽³⁾⁽⁵⁾	Average idle torque ⁽³⁾⁽⁵⁾	T ₀	Nm	0,20	0,25	0,50	1,00	2,60	6,70	1
				0,35	0,65	1,65	3,80	9,10	26,90	
				0,15	0,15	0,25	0,45	0,75	1,80	2
				0,25	0,45	0,60	1,45	3,40	8,00	
基于减速机输入法兰的最大弯矩	Max. bending moment based on the gearbox input flange	M _{b1}		10	18	38	80	180	300	1
				10	18	18	38	80	180	2

(1) 减速机级数

(2) 利用 NCP 针对应用进行专门设计 - www.neugart.com

(3) 传动比相关的数值可在 Tec Data Finder 中检索 - www.neugart.com

(4) 更多信息见第 183

(5) 参考 锁紧系统直径

(1) Number of stages

(2) Application specific configuration with NCP - www.neugart.com

(3) The ratio-dependent values can be retrieved in Tec Data Finder - www.neugart.com

(4) More information on page 183

(5) Reference clamping system diameter

输出扭矩	Output torques			PSFN055	PSFN064	PSFN090	PSFN110	PSFN140	PSFN200	i ⁽¹⁾	p ⁽²⁾
周期性扭矩 ⁽³⁾⁽⁴⁾	Cyclic torque ⁽³⁾⁽⁴⁾	T _{2z}	Nm	18	39	80	180	470	950	4	1
				18	40	80	175	405	950	5	
				18	37	78	175	355	900	7	
				18	39	75	155	350	-	8	
				13,5	28	59	140	305	750	10	2
				18	39	80	180	470	950	16	
				18	39	80	180	470	950	20	
				18	40	80	175	405	950	25	
				18	40	80	175	405	950	35	
				18	39	80	180	470	950	40	
				18	40	80	175	405	950	50	
				18	37	78	175	355	900	70	
				13,5	28	59	140	305	750	100	
				最大扭矩 ⁽³⁾⁽⁴⁾	Maximum torque ⁽³⁾⁽⁴⁾	T _{2max}	Nm	28	62	128	
28	64	128	280					640	1520	5	
28	58	124	280					560	1440	7	
28	62	120	245					480	-	8	
21	44	94	220					485	1050	10	2
28	62	128	285					750	1520	16	
28	62	128	285					750	1520	20	
28	64	128	280					640	1520	25	
28	64	128	280					640	1520	35	
28	62	128	285					750	1520	40	
28	64	128	280					640	1520	50	
28	50	124	280					560	1440	70	
21	44	94	220					485	1050	100	

⁽¹⁾ 传动比 (i=n₁/n₂)

⁽²⁾ 减速级数

⁽³⁾ 利用 NCP 针对应用进行专门设计 – www.neugart.com

⁽⁴⁾ 参考夹紧系统直径

⁽¹⁾ Ratios (i=n₁/n₂)

⁽²⁾ Number of stages

⁽³⁾ Application specific configuration with NCP – www.neugart.com

⁽⁴⁾ Based on reference clamping system diameter

输出扭矩	Output torques			PSFN055	PSFN064	PSFN090	PSFN110	PSFN140	PSFN200	i ⁽¹⁾	p ⁽²⁾
连续扭矩 ⁽³⁾	Continuous torque ⁽³⁾	T _{2D}	Nm	15	33	68	153	395	800	4	1
				15	34	68	148	340	800	5	
				15	31	66	148	300	760	7	
				15	33	63	131	295	-	8	
				11	23	50	119	255	630	10	
				15	33	68	153	395	800	16	2
				15	33	68	153	395	800	20	
				15	34	68	148	340	800	25	
				15	34	68	148	340	800	35	
				15	33	68	153	395	800	40	
				15	34	68	148	340	800	50	
				15	31	66	148	300	760	70	
				11	23	50	119	255	630	100	

输入转速	Input speeds			PSFN055	PSFN064	PSFN090	PSFN110	PSFN140	PSFN200	i ⁽¹⁾	p ⁽²⁾
连续输入转速 ⁽³⁾⁽⁴⁾	Continuous input speed ⁽³⁾⁽⁴⁾	n _{1D}	min ⁻¹	3550	4200	2800	2000	680	560	4	1
				4000	4500	3450	2600	940	730	5	
				4550	4500	4000	3500	1350	1000	7	
				5000	4500	4000	3500	1550	-	8	
				5000	4500	4000	3500	1950	1450	10	
				5000	4500	4500	3350	1650	1300	16	2
				5000	4500	4500	4000	2050	1650	20	
				5000	4500	4500	4000	2550	1950	25	
				5000	4500	4500	4000	3500	2750	35	
				5000	4500	4500	4000	3500	3000	40	
				5000	4500	4500	4000	3500	3000	50	
				5000	4500	4500	4000	3500	3000	70	
				5000	4500	4500	4000	3500	3000	100	
				最高机械输入转速 ⁽³⁾	Max. mechanical input speed ⁽³⁾	n _{1max}	min ⁻¹	10000	10000	10000	
10000	10000	10000	10000					8500	6500		2

输出扭矩	Output torques			PSFN055	PSFN064	PSFN090	PSFN110	PSFN140	PSFN200	i ⁽¹⁾	p ⁽²⁾
急停扭矩 ⁽⁴⁾⁽⁵⁾	Emergency stop torque ⁽⁴⁾⁽⁵⁾	T _{2Stop}	Nm	55	120	280	650	1400	2960	4	1
				55	130	280	650	1650	3200	5	
				55	80	175	340	1300	3200	7	
				50	90	200	380	850	-	8	
				24	52	121	295	600	1700	10	
				55	150	300	650	1650	3200	16	2
				55	150	300	650	1650	3200	20	
				55	150	300	650	1650	3200	25	
				55	150	300	650	1650	3200	35	
				55	150	210	485	1180	2680	40	
				55	150	260	600	1480	3200	50	
				55	80	175	340	1300	3200	70	
				24	52	121	295	600	1700	100	

(1) 传动比 (i=n₁/n₂)

(2) 减速机级数

(3) 利用 NCP 针对应用进行专门设计 - www.neugart.com

(4) 参考夹紧系统直径

(5) 允许 1000 次

(1) Ratios (i=n₁/n₂)

(2) Number of stages

(3) Application specific configuration with NCP - www.neugart.com

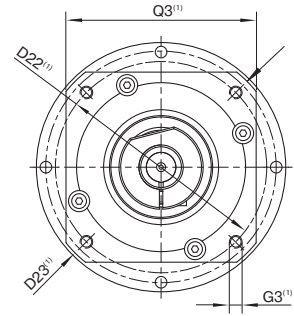
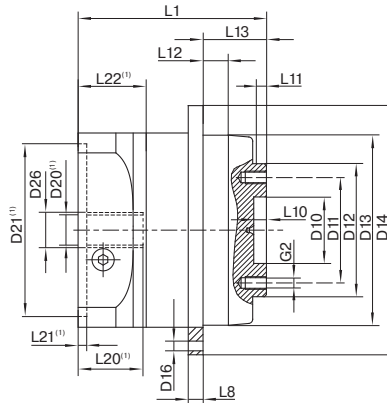
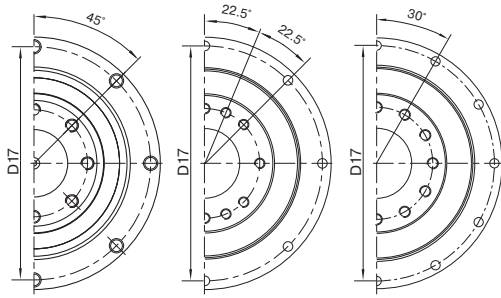
(4) Based on reference clamping system diameter

(5) Permitted 1000 times

PSFN055
PSFN064
PSFN090

PSFN110

PSFN140
PSFN200



图示为带平键的 PSFN090 / 1 级 / 法兰输出轴 / 14 mm 锁紧系统 / 适配电机法兰 - 2 件式 - 圆形通用法兰 / B5 电机法兰类型
Drawing corresponds to a PSFN090 / 1-stage / flange output shaft / 14 mm clamping system / motor adaptation - 2-part - round universal flange / B5 flange type motor

(1) 具体尺寸视电机/减速机法兰而定。可以在 www.neugart.com 下 Tec Data Finder。中针对每个电机适配电机特有的输入法兰几何尺寸。
(1) The dimensions vary with the motor/gearbox flange. The input flange dimensions can be retrieved for each specific motor in Tec Data Finder at www.neugart.com

几何尺寸 ⁽²⁾	Geometry ⁽²⁾			PSFN055	PSFN064	PSFN090	PSFN110	PSFN140	PSFN200	p ⁽³⁾	Code
输出端定位凹槽直径	Centering Ø output shaft	D10	H7	16	20	31,5	40	50	80		
输出端安装孔节圆直径	Pitch circle Ø output shaft	D11		25	31,5	50	63	80	125		
输出轴定位凸台直径	Centering Ø output shaft	D12	h7	34	40	63	80	100	160		
输出法兰定位凸台直径	Centering Ø output flange	D13		55	64	90	110	140	200		
输出法兰直径	Flange diameter output	D14		72	86	118	145	179	247		
输出端安装孔直径	Mounting bore output	D16		3,4 8x45°	4,5 8x45°	5,5 8x45°	5,5 8x45°	6,6 12x30°	9 12x30°		
输出法兰安装孔节圆直径	Pitch circle Ø output flange	D17		67	79	109	135	168	233		
最小总长	Min. total length	L1		66	71	89,5	108	142	172	1	
				89,5	99,5	111,5	130	173	217	2	
输出端法兰厚度	Flange thickness output	L8		4	4	7	8	10	12		
输出轴定位凸台深度	Centering depth output shaft	L10		4,1	4,5	6,5	6,5	6,5	10		
		L11		3	3	6	6	6	7		
输出法兰定位凸台深度	Centering depth output flange	L12		8	10	12	12	14	17,5		
输出法兰长度	Output flange length	L13		19,0	19,5	30,0	29,0	38,0	50,0		
电机轴直径j6/k6	Motor shaft diameter j6/k6	D20		更多信息见第 191/192 页 More information on page 191/192							
输入端锁紧系统直径	Clamping system Ø input	D26		更多信息见第 118 页 More information on page 118							
法兰输出轴 (相似的 ISO 9409-1)	Flange output shaft (similar ISO 9409-1)										
数量 x 螺纹 x 深度	Number x thread x depth	G2		8 x M4x6	8 x M5x7	8 x M6x10	12 x M6x12	12 x M8x15	12 x M10x20		D
带有配合销孔的法兰输出轴 (ISO 9409-1)	Flange output shaft with dowel hole (ISO 9409-1)										
配合销孔 x 深度	Dowel hole x depth	D15	H7	4x5	5x5	6x6	6x6	8x8	10x10		E
数量 x 螺纹 x 深度	Number x thread x depth	G2		7 x M4x6	7 x M5x7	7 x M6x10	11 x M6x12	11 x M8x15	11 x M10x20		

(2) 所有的尺寸单位为mm
(3) 减速机级数

(2) Dimensions in mm
(3) Number of stages