

PSBN

高性能精密减速机 配有高精度斜齿 驱动运行时安静无噪音

我们的 **PSBN** 是高精度行星减速机与高效率轴承技术的理想组合。它是我们为了让电机在高转速下达到最高性能而专门研发的产品。它凭借斜齿设计可以特别平稳地运行 —— 而且噪音低于多数产品。

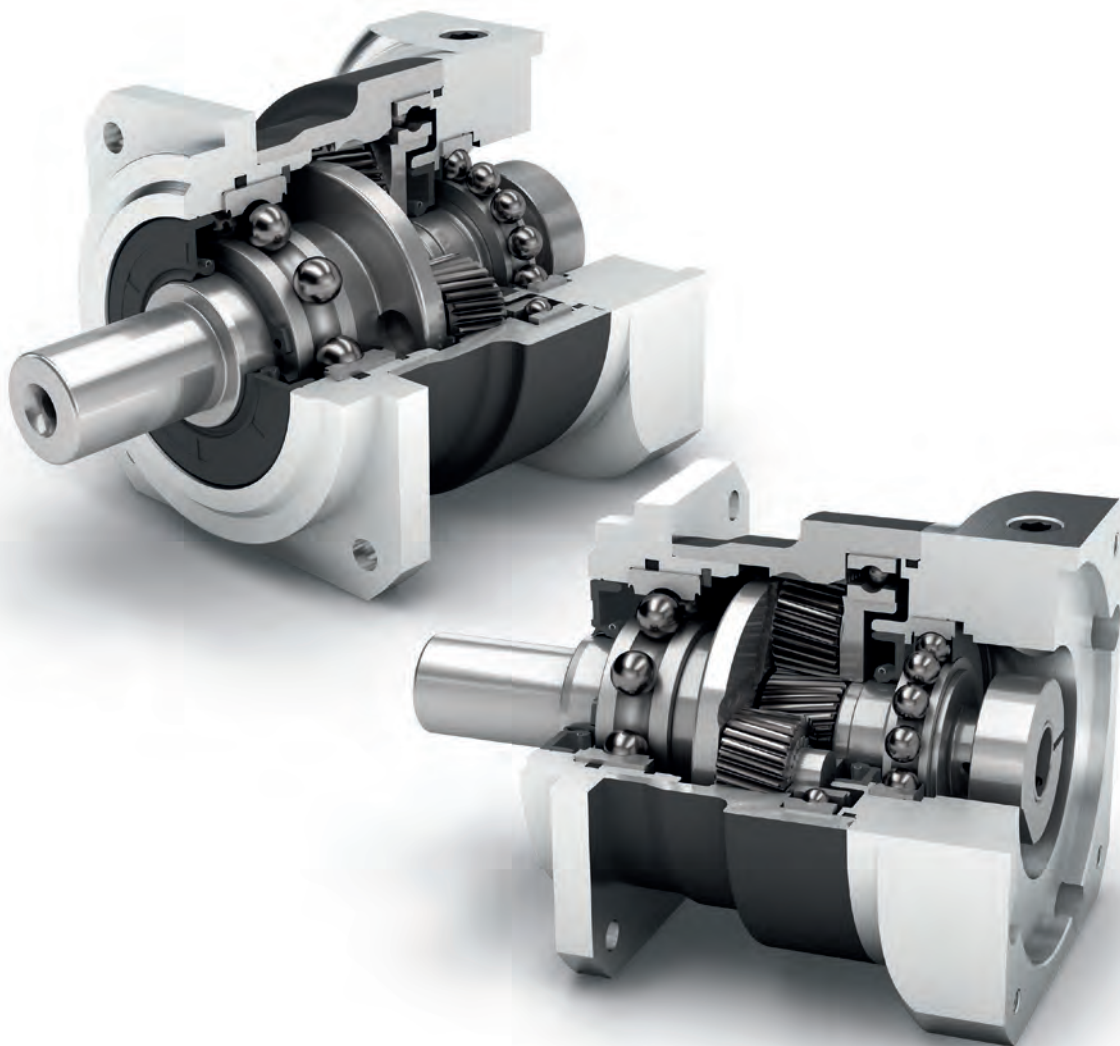
The high-performance precision planetary gearbox with helical gearing for a particularly quiet drive

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.

周期性扭矩 Cyclic torque	11 - 470 Nm
径向力 Radial force	830 - 9500 N
轴向力 Axial force	800 - 9600 N
回程间隙 Torsional backlash	1 - 8 arcmin
防护等级 Protection class	IP65

结构尺寸 Frame sizes

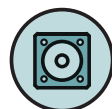
55	70	90	115	142
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精密型
Precision Line



旋转方向 同方向
Equidirectional rotation



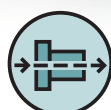
正方形输出法兰
Square type output flange



径向轴密封
Rotary shaft seal



可选：降低回程间隙
Option: Reduced backlash



同轴减速机
Coaxial gearbox



斜齿
Helical gear



增强深沟球轴承
Reinforced deep groove ball bearings



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



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			PSBN055	PSBN070	PSBN090	PSBN115	PSBN142	p ⁽¹⁾	
	使用寿命 ⁽²⁾	Service life ⁽²⁾	L _h	h	20.000						
	有效系数 ⁽³⁾	Efficiency ⁽³⁾	η	%	98					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	1	
					< 8	< 5	< 5	< 5	< 5	< 5	2
R	降低回程间隙	Reduced backlash			< 4	< 2	< 1	< 1	< 1	< 1	1
					< 6	< 2	< 1	< 1	< 1	< 1	2
	抗扭刚度 ⁽³⁾	Torsional stiffness ⁽³⁾	C _{2t}	Nm / arcmin	1,4 - 2,3	4,2 - 5,6	10,7 - 13,7	29,0 - 36,5	59,5 - 76,0	1	
					1,5 - 2,4	4,1 - 5,7	10,3 - 13,5	26,0 - 35,0	58,0 - 71,0	2	
	减速机重量 ⁽³⁾	Gearbox weight ⁽³⁾	m	kg	0,8	1,6 - 1,7	3,3 - 3,4	5,6 - 6,0	13,2 - 13,5	1	
					1,1	2,3	3,5 - 3,6	7,1 - 7,3	15,0 - 15,5	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		

输出轴载荷	Output shaft loads			PSBN055	PSBN070	PSBN090	PSBN115	PSBN142	p ⁽¹⁾
最大径向力	Maximum radial force	F _{r max}	N	830	1600	3100	4500	9500	
最大轴向力	Maximum axial force	F _{a max}		800	1500	2800	4500	9600	
最大倾斜力矩	Maximum tilting moment	M _{K max}	Nm	42	109	251	442	1314 - 1329	

输入特性	Input characteristics			PSBN055	PSBN070	PSBN090	PSBN115	PSBN142	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⁾	1				
				14 (D)	14 (D) ⁽⁵⁾	19 (E) ⁽⁵⁾	24 (F) ⁽⁵⁾	42 (H)					
				-	19 (E)	24 (F)	35 (G)	-					
转动惯量 ⁽³⁾⁽⁵⁾	Mass moment of inertia input ⁽³⁾⁽⁵⁾	J ₁	kgcm ²	0,096	0,149	0,436	1,164	6,539	1				
				0,133	0,283	0,895	2,941	14,440					
				0,096	0,146	0,146	0,431	1,131	2				
				0,113	0,197	0,222	0,709	2,293					
平均空载扭矩 ⁽³⁾⁽⁵⁾	Average idle torque ⁽³⁾⁽⁵⁾	T ₀	Nm	0,15 - 0,25	0,20 - 0,60	0,40 - 1,20	0,70 - 2,40	1,30 - 6,60	1				
				0,15 - 0,25	0,20 - 0,40	0,25 - 0,60	0,45 - 1,20	0,65 - 2,70	2				
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}	Nm	10	18	38	80	180	1				
				10	18	18	38	80	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

(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			PSBN055	PSBN070	PSBN090	PSBN115	PSBN142	i ⁽¹⁾	p ⁽²⁾					
周期性扭矩 ⁽³⁾⁽⁴⁾	Cyclic torque ⁽³⁾⁽⁴⁾	T _{2z}	Nm	16	29	54	135	380	3	1					
				18	39	80	180	470	4						
				18	40	80	175	405	5						
				18	37	78	175	355	7						
				18	39	75	155	350	8						
				13,5	28	59	140	305	10						
				16	29	54	135	380	12	2					
				16	29	54	135	380	15						
				18	39	80	180	470	16						
				18	39	80	180	470	20						
				18	40	80	175	405	25						
				18	40	80	175	405	35						
				18	39	80	180	470	40						
				18	40	80	175	405	50						
				18	37	78	175	355	70						
				13,5	28	59	140	305	100						
				最大扭矩 ⁽³⁾⁽⁴⁾	Maximum torque ⁽³⁾⁽⁴⁾	T _{2max}	Nm	25	46		86	215	520	3	1
								28	62		128	285	700	4	
28	64	128	280					640	5						
28	58	124	280					560	7						
28	62	120	245					480	8						
21	44	94	220					485	10						
25	46	86	215					600	12	2					
25	46	86	215					600	15						
28	62	128	285					750	16						
28	62	128	285					750	20						
28	64	128	280					640	25						
28	64	128	280					640	35						
28	62	128	285					750	40						
28	64	128	280					640	50						
28	50	124	280					560	70						
21	44	94	220					485	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

⁽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			PSBN055	PSBN070	PSBN090	PSBN115	PSBN142	i ⁽¹⁾	p ⁽²⁾
连续扭矩 ⁽³⁾	Continuous torque ⁽³⁾	T _{2D}	Nm	11	24	45	114	320	3	1
				15	33	68	153	395	4	
				15	34	68	148	340	5	
				15	31	66	148	300	7	
				15	33	63	131	295	8	
				11	23	50	119	255	10	
				13,5	24	45	114	320	12	2
				13,5	24	45	114	320	15	
				15	33	68	153	395	16	
				15	33	68	153	395	20	
				15	34	68	148	340	25	
				15	34	68	148	340	35	
				15	33	68	153	395	40	
				15	34	68	148	340	50	
				15	31	66	148	300	70	
				11	23	50	119	255	100	

输入转速	Input speeds			PSBN055	PSBN070	PSBN090	PSBN115	PSBN142	i ⁽¹⁾	p ⁽²⁾					
连续输入转速 ⁽³⁾⁽⁴⁾	Continuous input speed ⁽³⁾⁽⁴⁾	n _{1D}	min ⁻¹	4300	4500	3150	2100	1450	3	1					
				4300	4450	3050	2250	1750	4						
				4850	4500	3850	3050	2400	5						
				5000	4500	4000	3500	3000	7						
				5000	4500	4000	3500	3000	8						
				5000	4500	4000	3500	3000	10						
				5000	4500	4500	3650	2550	12	2					
				4900	4500	4500	4000	3200	15						
				5000	4500	4500	3600	2500	16						
				5000	4500	4500	4000	3150	20						
				5000	4500	4500	4000	3500	25						
				5000	4500	4500	4000	3500	35						
				5000	4500	4500	4000	3500	40						
				5000	4500	4500	4000	3500	50						
				5000	4500	4500	4000	3500	70						
				5000	4500	4500	4000	3500	100						
				最高机械输入转速 ⁽³⁾	Max. mechanical input speed ⁽³⁾	n _{1max}	min ⁻¹	10000	10000		10000	8500	6500		1
								10000	10000		10000	10000	8500		2

输出扭矩	Output torques			PSBN055	PSBN070	PSBN090	PSBN115	PSBN142	i ⁽¹⁾	p ⁽²⁾
急停扭矩 ⁽⁴⁾⁽⁵⁾	Emergency stop torque ⁽⁴⁾⁽⁵⁾	T _{2Stop}	Nm	48	90	210	490	1050	3	1
				48	120	280	650	1400	4	
				48	130	280	650	1650	5	
				48	80	175	340	1300	7	
				48	90	200	380	850	8	
				24	52	121	295	600	10	
				48	135	220	500	1250	12	2
				48	135	220	500	1250	15	
				48	150	300	650	1650	16	
				48	150	300	650	1650	20	
				48	150	300	650	1650	25	
				48	89	300	650	1650	35	
				48	150	210	485	1180	40	
				48	150	260	600	1480	50	
				48	80	175	340	1300	70	
				24	52	121	295	600	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

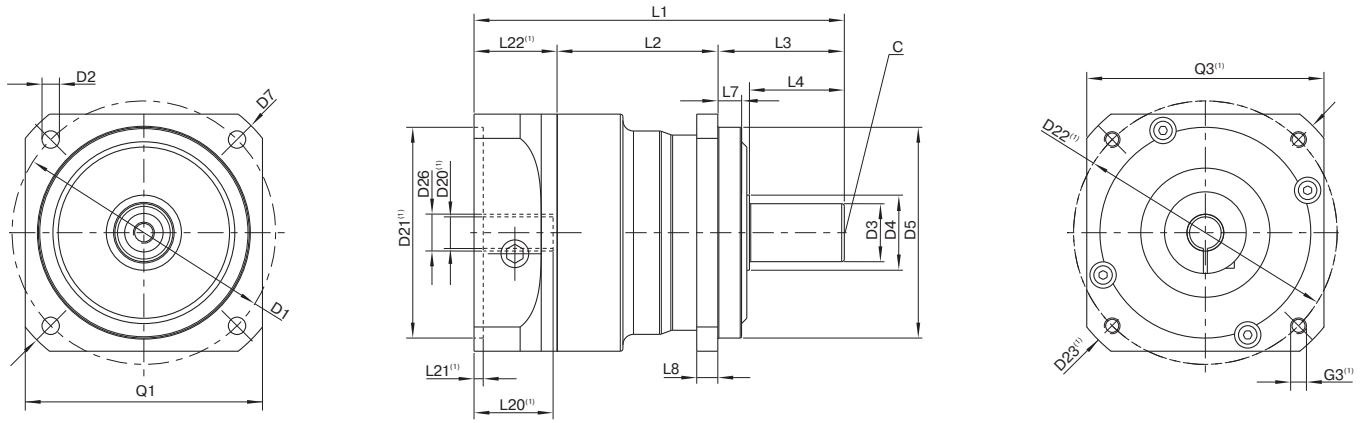
(1) Ratios (i=n₁/n₂)

(2) Number of stages

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

(4) Based on reference clamping system diameter

(5) Permitted 1000 times



图示为带平键的 PSBN090 / 1 级 / 光滑输出轴 / 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 PSBN090 / 1-stage / smooth 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⁾			PSBN055	PSBN070	PSBN090	PSBN115	PSBN142	p ⁽³⁾	Code
输出端安装孔节圆直径	Pitch circle diameter output	D1		63	70	100	130	165		
输出端安装孔直径	Mounting bore output	D2	4x	5,5	5,5	6,6	9,0	11,0		
输出轴直径	Shaft diameter output	D3	j6	13	16	22	32	40		
输出轴轴肩直径	Shaft collar output	D4		17	25	28,5	38,5	48,5		
输出端定位凸台直径	Centering diameter output	D5	g6	50	50	80	110	130		
输出法兰对角线尺寸	Diagonal dimension output	D7		74	80	115	148	185		
输出端法兰外方	Flange cross section output	Q1	■	55	60	90	115	140		
最小总长	Min. total length	L1		93,5	116,5	140,5	182,5	247,5	1	
				117	145	162,5	204	279	2	
箱体长度	Housing length	L2		43	54	61	74	100,5	1	
				56,5	82,5	89	107,5	138,5	2	
输出轴轴长	Shaft length output	L3		26	37	48	65	97		
输出端定位凸台深度	Centering depth output	L7		6	6	9	4	12		
输出端法兰厚度	Flange thickness output	L8		6	6	8	10	12		
中心孔 (DIN 332, DR 形)	Center hole (DIN 332, type DR)	C		M4x10	M5x12,5	M8x19	M12x28	M16x36		
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 diameter input	D26		更多信息见第 124 页 More information on page 124						
带平键的输出轴 (DIN 6885-1)	Output shaft with feather key (DIN 6885-1)			A 5x5x16	A 5x5x25	A 6x6x28	A 10x8x50	A 12x8x65		A
平键宽度 (DIN 6885-1)	Feather key width (DIN 6885-1)	B1		5	5	6	10	12		
含平键在内的轴高 (DIN 6885-1)	Shaft height including feather key (DIN 6885-1)	H1		15	18	24,5	35	43		
到轴肩的距离	Shaft length from shoulder	L4		19	28	36	58	82		
平键长度	Feather key length	L5		16	25	28	50	65		
到轴端的距离	Distance from shaft end	L6		2	2	4	4	8		
光滑输出轴	Smooth output shaft									
到轴肩的距离	Shaft length from shoulder	L4		19	28	36	58	82		

⁽²⁾ 所有的尺寸单位为mm
⁽³⁾ 减速机级数

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