



WPLN

用途广泛、带有准双曲面齿轮的直角行星减速机，令驱动装置安静运行

我们的 **WPLN** 凭借其准双曲面齿轮达到最优同步。由于振动被降至最低程度，它可以均匀、精确且安静地运行。直角高精度减速机经过终身润滑，可以用多种方式安装。

The versatile right-angle gearbox with hypoid gearing for a quiet drive

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.

周期性扭矩

Cyclic torque **22 - 800 Nm**



径向力

Radial force **3200 - 12500 N**



轴向力

Axial force **4300 - 15000 N**



回程间隙

Torsional backlash **3 - 5 arcmin**



防护等级

Protection class **IP65**



结构尺寸

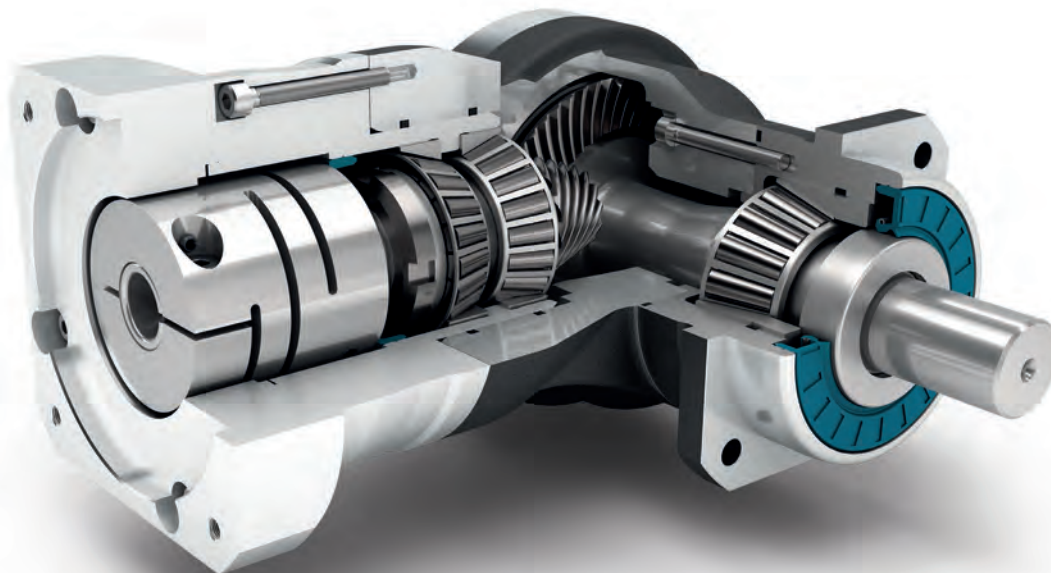
Frame sizes

70

90

115

142



精密型
Precision Line



直角型减速机
Right angle gearbox



准双曲面齿轮 直角箱
Hypoid gear right angle stage



配有预紧的圆锥滚子轴承
Preloaded tapered roller bearings



输出端带有超长定心环
Extra long centering collar



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)



旋转方向 反方向
Counterdirectional 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 (2级)
Option: Reduced backlash (2-stage)



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			WPLN070	WPLN090	WPLN115	WPLN142	p ⁽¹⁾
	使用寿命 ⁽²⁾	Service life ⁽²⁾	L _h	h	20.000				
	有效系数 ⁽³⁾	Efficiency ⁽³⁾	η	%	95				1
					94				2
	最低工作温度	Min. operating temperature	T _{min}	°C	-25				
	最高工作温度	Max. operating temperature	T _{max}		90				
	防护等级	Protection class			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			< 5				
R	降低回程间隙	Reduced backlash	φ	arcmin	-				1
					< 3				2
	抗扭刚度 ⁽³⁾	Torsional stiffness ⁽³⁾	C _{2t}	Nm / arcmin	1,8 - 3,1	4,6 - 7,0	8,6 - 13,5	24,5 - 34,0	1
					2,3 - 3,6	5,9 - 8,6	11,3 - 16,9	31,5 - 42,5	2
	减速机重量 ⁽³⁾	Gearbox weight ⁽³⁾	m	kg	3,3 - 3,4	5,3 - 5,8	11,0 - 11,1	25,3 - 25,9	1
					4,3 - 4,4	5,6 - 5,7	10,0 - 10,3	23,7 - 24,3	2
S	标准的箱体表面	Standard surface			直角箱体: 铝 - 阳极氧化处理 (黑色) Right angle housing: Aluminum - anodized (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)	66	67	68	70	

输出轴载荷	Output shaft loads			WPLN070	WPLN090	WPLN115	WPLN142	p ⁽¹⁾
最大径向力	Maximum radial force	F _{r max}	N	3200	5200	6000	12500	1
				3200	5500	6000	12500	2
最大轴向力	Maximum axial force	F _{a max}		3400	4500	6500	12000	
最大倾斜力矩	Maximum tilting moment	M _{K max}	Nm	322	624	1010	2225	1
				191	383	488	1420	2

Antriebskennwerte	Input characteristics			WPLN070	WPLN090	WPLN115	WPLN142	p ⁽¹⁾
输入端锁紧系统直径 (代码)	Clamping system diameter input (Code)	D26	mm	14 (D) ⁽⁵⁾	19 (E) ⁽⁵⁾	24 (F) ⁽⁵⁾	35 (G) ⁽⁵⁾	1
				19 (E)	24 (F)	35 (G)	42 (H)	
				14 (D) ⁽⁵⁾	14 (D) ⁽⁵⁾	19 (E) ⁽⁵⁾	24 (F) ⁽⁵⁾	2
				19 (E)	19 (E)	24 (F)	35 (G)	
转动惯量 ⁽³⁾⁽⁵⁾	Mass moment of inertia input ⁽³⁾⁽⁵⁾	J _i	kgcm ²	0,500 - 0,658	1,013 - 1,387	4,767 - 5,875	15,090 - 20,883	1
				0,498 - 0,642	0,497 - 0,649	1,014 - 1,419	4,807 - 6,387	2
平均空载扭矩 ⁽³⁾⁽⁵⁾	Average idle torque ⁽³⁾⁽⁵⁾	T ₀	Nm	1,20 - 1,50	1,80 - 2,30	6,00 - 6,90	16,00	1
				0,75 - 1,00	0,75 - 1,25	1,15 - 2,05	4,00 - 7,70	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}		12	25,5	53	120	1
				12	12	25,5	53	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			WPLN070	WPLN090	WPLN115	WPLN142	i ⁽¹⁾	p ⁽²⁾
周期性扭矩 ⁽³⁾⁽⁴⁾	Cyclic torque ⁽³⁾⁽⁴⁾	T _{2z}	Nm	45	90	160	320	4	1
				42	75	140	280	5	
				28	51	91	189	7	
				27	50	90	180	8	
				22	40	75	160	10	
				77	150	300	640	16	2
				77	150	300	800	20	
				65	140	260	700	25	
				77	112	200	360	28	
				77	108	200	360	32	
				65	140	255	455	35	
				65	135	250	450	40	
				65	110	200	375	50	
				40	80	150	450	64	
				24	60	125	305	100	
最大扭矩 ⁽³⁾⁽⁴⁾	Maximum torque ⁽³⁾⁽⁴⁾	T _{2max}	Nm	60	140	255	510	4	1
				67	120	220	445	5	
				44	81	145	300	7	
				43	80	144	285	8	
				35	64	120	255	10	
				123	240	480	1020	16	2
				123	240	480	1280	20	
				104	220	415	1120	25	
				103	179	325	580	28	
				123	172	320	570	32	
				104	220	405	720	35	
				104	215	400	720	40	
				104	176	320	600	50	
				64	128	240	720	64	
				43	96	200	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			WPLN070	WPLN090	WPLN115	WPLN142	i ⁽¹⁾	p ⁽²⁾
连续扭矩 ⁽³⁾	Continuous torque ⁽³⁾	T _{2D}	Nm	29	41	104	235	4	1
				32	39	101	235	5	
				23	40	77	160	7	
				22	38	76	153	8	
				18,5	34	63	136	10	
				65	123	170	435	16	2
				65	127	200	540	20	
				55	119	199	520	25	
				65	95	167	305	28	
				65	91	156	305	32	
				55	119	205	385	35	
				55	114	210	380	40	
				55	93	170	315	50	
				34	68	127	380	64	
				22	51	106	255	100	

输入转速	Input speeds			WPLN070	WPLN090	WPLN115	WPLN142	i ⁽¹⁾	p ⁽²⁾
连续输入转速 ⁽³⁾⁽⁴⁾	Continuous input speed ⁽³⁾⁽⁴⁾	n _{1D}	min ⁻¹	1650	1700	1050	870	4	1
				1800	1850	1150	880	5	
				2050	2050	1300	1100	7	
				2100	2100	1300	970	8	
				2300	2200	1400	1000	10	
				1550	1500	1550	910	16	2
				1700	1750	1850	920	20	
				1900	1850	1850	1000	25	
				1850	1900	1900	1200	28	
				2000	2000	2000	1250	32	
				2150	1950	1900	1200	35	
				2200	2000	2000	1250	40	
				2300	2200	2150	1350	50	
				2450	2750	2650	1600	64	
				2650	3000	2900	1800	100	
最高机械输入转速 ⁽³⁾	Max. mechanical input speed ⁽³⁾	n _{1max}	min ⁻¹	16000	14000	9500	8000		1
				16000	16000	14000	9500		2

输出扭矩	Output torques			WPLN070	WPLN090	WPLN115	WPLN142	i ⁽¹⁾	p ⁽²⁾
急停扭矩 ⁽⁴⁾⁽⁵⁾	Emergency stop torque ⁽⁴⁾⁽⁵⁾	T _{2Stop}	Nm	80	200	400	800	4	1
				100	200	400	800	5	
				75	150	300	700	7	
				75	150	300	700	8	
				75	150	300	700	10	
				150	300	650	1600	16	2
				150	300	650	1600	20	
				150	300	650	1600	25	
				120	280	600	1200	28	
				150	300	600	1200	32	
				130	280	650	1500	35	
				150	300	650	1500	40	
				150	300	600	1200	50	
				80	200	380	980	64	
				50	120	240	580	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

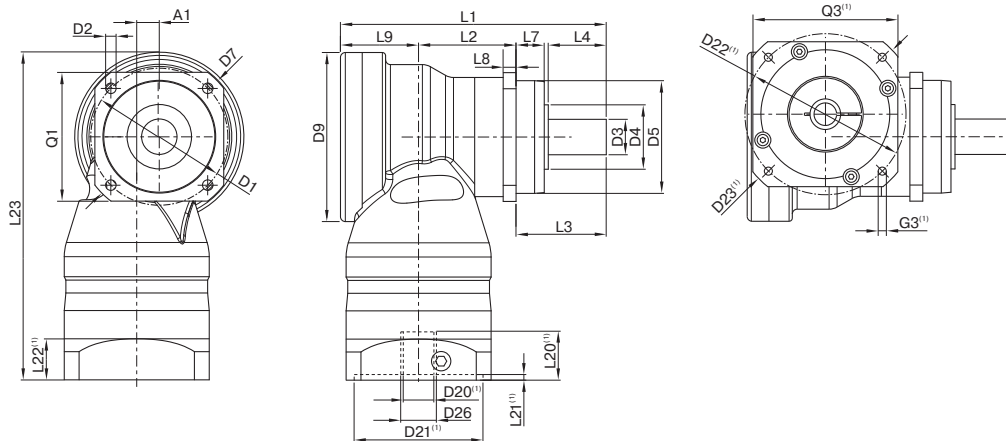
(1) Ratios (i=n₁/n₂)

(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WPLN090 / 1级 / 光滑输出轴 / 19 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 WPLN090 / 1-stage / smooth output shaft / 19 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⁾			WPLN070	WPLN090	WPLN115	WPLN142	p ⁽³⁾	Code
轴向偏差	Axis offset	A1		10	14	20	26	1	
				10	10	14	20	2	
输出端安装孔节圆直径	Pitch circle diameter output	D1		68 - 75	85	120	165		
输出端安装孔直径	Mounting bore output	D2	4x	5,5	6,5	9,0	11,0		
输出轴直径	Shaft diameter output	D3	k6	16	22	32	40		
输出轴轴肩直径	Shaft collar output	D4		30	40	45	70	1	
				35	40	45	70	2	
输出端定位凸台直径	Centering diameter output	D5	g7	60	70	90	130		
输出法兰对角线尺寸	Diagonal dimension output	D7		92	100	140	185		
最大直径	Max. diameter	D9		86	105	120	170	1	
				86	86	105	120	2	
输出端法兰外方	Flange cross section output	Q1	■	70	80	110	142		
总长	Total length	L1		137,5	165	218	273	1	
				185	207	248,5	342,5	2	
箱体长度	Housing length	L2		46,5	60,5	73,5	76	1	
				94	108	112	176	2	
输出轴轴长	Shaft length output	L3		48	56	88	110		
输出端定位凸台深度	Centering depth output	L7		18	17,5	28	28	1	
				19	17,5	28	28	2	
输出端法兰厚度	Flange thickness output	L8		7	8	10	12		
偏差距离	Offset length	L9		43	48,5	56,5	87	1	
				43	43	48,5	56,5	2	
最小总高度	Min. overall height	L23		179	203,5	247,5	318	1	
				179	182,5	210	258,5	2	
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 142 页 More information on page 142					
带平键的输出轴 (DIN 6885-1)	Output shaft with feather key (DIN 6885-1)			A 5x5x25	A 6x6x28	A 10x8x50	A 12x8x65		A
平键宽度 (DIN 6885-1)	Feather key width (DIN 6885-1)	B1		5	6	10	12		
含平键在内的轴高 (DIN 6885-1)	Shaft height including feather key (DIN 6885-1)	H1		18	24,5	35	43		
到轴肩的距离	Shaft length from shoulder	L4		28	36	58	80		
平键长度	Feather key length	L5		25	28	50	65		
到轴端的距离	Distance from shaft end	L6		2	4	4	8		
中心孔 (DIN 332, DR 形)	Center hole (DIN 332, type DR)	C		M5x12,5	M8x19	M12x28	M16x36		
光滑输出轴	Smooth output shaft								B
到轴肩的距离	Shaft length from shoulder	L4		28	36	58	80		
花键输出轴 (DIN 5480)	Splined output shaft (DIN 5480)			W16x0,8 x18x6m	W22x1,25 x16x6m	W32x1,25 x24x6m	W40x2,0 x18x6m		C
花键或键槽的长度	Width of gearing	L _v		15	15	15	20		
输出轴轴肩直径	Shaft collar output	L3		46	46	56	70		
到轴肩的距离	Shaft length from shoulder	L4		26	26	26	40		
中心孔 (DIN 332, DR 形)	Center hole (DIN 332, type DR)	C		M5x12,5	M8x19	M12x28	M16x36		

(2) 所有的尺寸单位为mm
 (3) 减速机级数

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