

PLHE

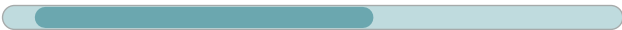
这款行星减速机的进步之处在于：
集高精度和
经济性于一身

PLHE 是经济型减速机与高精度减速机的理想组合。这种行星减速机装有预胀紧的圆锥滚子轴承，确保在承受极大的负荷时仍然具有较高的刚性。高性能的密封提高了防尘和防喷淋水性能。

This is progress:
In this planetary gearbox, precision
and cost effectiveness meet

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.

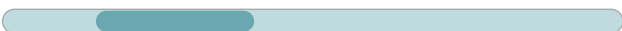
周期性扭矩
Cyclic torque **15 - 260 Nm**



径向力
Radial force **3200 - 6000 N**



轴向力
Axial force **4400 - 8000 N**



回程间隙
Torsional backlash **7 - 12 arcmin**

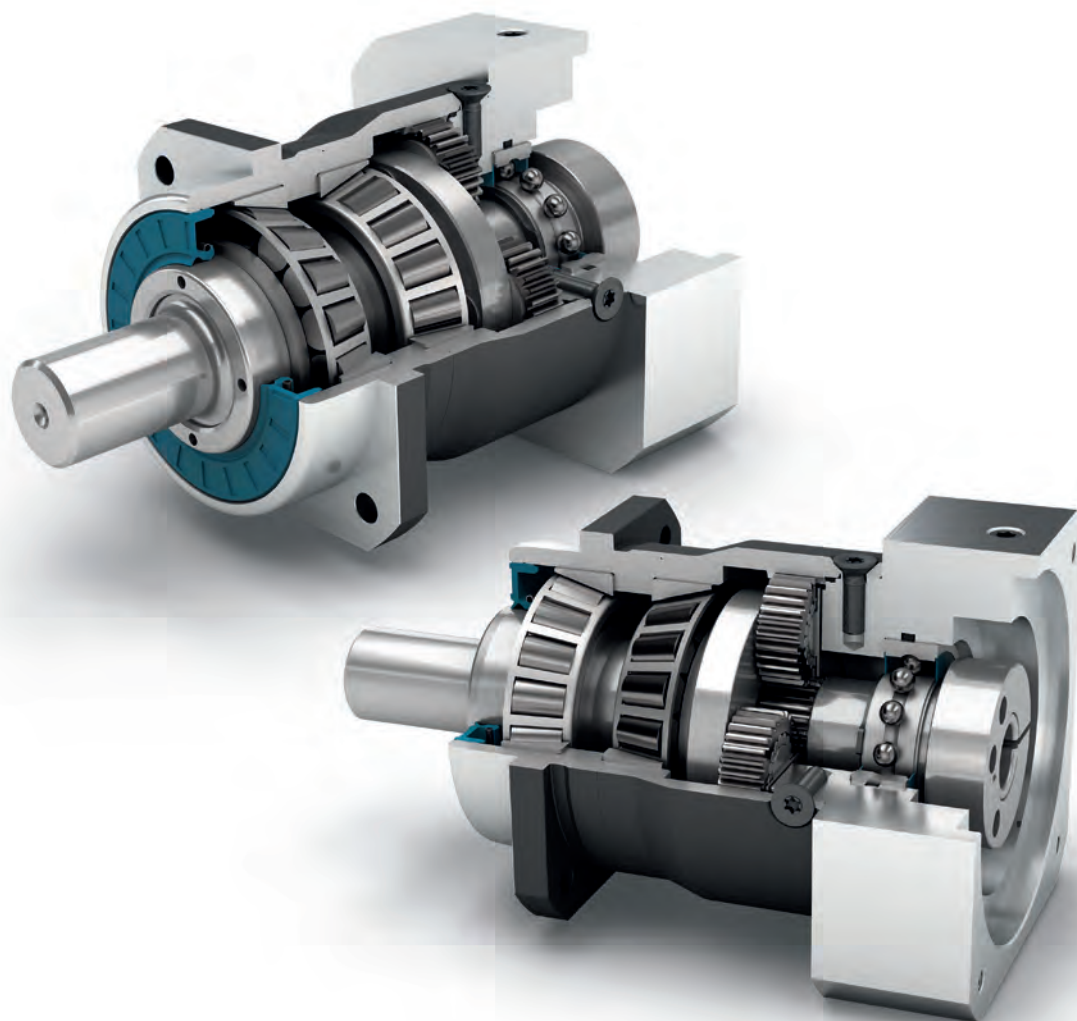


防护等级
Protection class **IP65**



结构尺寸
Frame sizes





经济型
Economy 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



行星齿轮架
Planet carrier in disc 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



直齿
Spur gear



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: 花键输出轴 (DIN 5480)
Option: Splined output shaft (DIN 5480)



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			PLHE060	PLHE080	PLHE120	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			润滑脂 (终生润滑) / Grease (lifetime lubrication)			
F	食品级润滑	Food grade lubrication			润滑脂 (终生润滑) / Grease (lifetime lubrication)			
	安装位置	Installation position			任意 / Any			
S	标准回程间隙	Standard backlash	φ	arcmin	< 10	< 7	< 7	1
					< 12	< 9	< 9	2
	抗扭刚度 ⁽³⁾	Torsional stiffness ⁽³⁾	C _{2t}	Nm / arcmin	2,6 - 4,4	7,3 - 11,6	18,5 - 26,0	1
					2,5 - 4,6	7,3 - 12,3	16,7 - 27,5	2
	减速机重量 ⁽³⁾	Gearbox weight ⁽³⁾	m	kg	1,5 - 1,6	3,0 - 3,1	6,8 - 7,1	1
					1,7 - 1,8	3,5 - 3,6	8,5 - 9,0	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)	58	60	65	

输出轴载荷	Output shaft loads			PLHE060	PLHE080	PLHE120	p ⁽¹⁾
最大径向力	Maximum radial force	F _{r max}	N	3200	5500	6000	
最大轴向力	Maximum axial force	F _{a max}		3400	4500	6500	
最大倾斜力矩	Maximum tilting moment	M _{K max}	Nm	191	383	488	

输入特性	Input characteristics			PLHE060	PLHE080	PLHE120	p ⁽¹⁾
输入端锁紧系统直径 (代码)	Clamping system diameter input (Code)	D26	mm	11 (C)	19 (E) ⁽⁵⁾	24 (F) ⁽⁵⁾	
				14 (D) ⁽⁵⁾	24 (F)	35 (G)	
				19 (E)	-	-	
转动惯量 ⁽³⁾⁽⁵⁾	Mass moment of inertia input ⁽³⁾⁽⁵⁾	J _i	kgcm ²	0,090 - 0,198	0,370 - 0,775	1,390 - 2,486	1
				0,085 - 0,155	0,357 - 0,641	1,378 - 2,326	2
平均空载扭矩 ⁽³⁾⁽⁵⁾	Average idle torque ⁽³⁾⁽⁵⁾	T ₀	Nm	0,15 - 0,50	0,30 - 0,90	0,65 - 1,75	1
				0,10 - 0,20	0,15 - 0,40	0,45 - 0,95	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}		8	16	40	

(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			PLHE060	PLHE080	PLHE120	$i^{(1)}$	$p^{(2)}$
周期性扭矩 ⁽³⁾⁽⁴⁾	Cyclic torque ⁽³⁾⁽⁴⁾	T_{2z}	Nm	28	85	115	3	1
				38	115	155	4	
				40	110	195	5	
				25	65	135	7	
				18	50	120	8	
				15	38	95	10	
				44	130	210	9	2
				44	120	260	12	
				44	110	230	15	
				44	120	260	16	
				44	120	260	20	
				40	110	230	25	
				44	120	260	32	
				40	110	230	40	
				18	50	120	64	
				15	38	95	100	
				最大扭矩 ⁽³⁾⁽⁴⁾	Maximum torque ⁽³⁾⁽⁴⁾	T_{2max}	Nm	44
60	140	245	4					
64	175	310	5					
40	104	215	7					
28	80	192	8					
24	60	152	10					
70	205	335	9					2
70	192	415	12					
70	176	365	15					
70	192	415	16					
70	192	415	20					
64	176	365	25					
70	192	415	32					
64	176	365	40					
28	80	192	64					
24	60	152	100					

PLHE

⁽¹⁾ 传动比 ($i=n_1/n_2$)

⁽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 ($i=n_1/n_2$)

⁽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			PLHE060	PLHE080	PLHE120	i ⁽¹⁾	p ⁽²⁾
连续扭矩 ⁽³⁾	Continuous torque ⁽³⁾	T _{2D}	Nm	23	43	97	3	1
				25	95	131	4	
				25	93	165	5	
				19,5	55	114	7	
				15	42	102	8	
				12,5	32	80	10	
				30	88	178	9	2
				32	102	220	12	
				35	93	195	15	
				35	102	220	16	
				37	102	220	20	
				34	93	195	25	
				37	102	220	32	
				34	93	195	40	
				15	42	102	64	
				12,5	32	80	100	

输入转速	Input speeds			PLHE060	PLHE080	PLHE120	i ⁽¹⁾	p ⁽²⁾					
连续输入转速 ⁽³⁾⁽⁴⁾	Continuous input speed ⁽³⁾⁽⁴⁾	n _{1D}	min ⁻¹	2250	2550	1350	3	1					
				3400	2300	1600	4						
				3950	2800	1800	5						
				4500	3800	2500	7						
				4500	4000	3150	8						
				4500	4000	3500	10						
				4500	3850	1750	9	2					
				4500	4000	2000	12						
				4500	4000	2550	15						
				4500	4000	2300	16						
				4500	4000	2850	20						
				4500	4000	3500	25						
				4500	4000	3500	32						
				4500	4000	3500	40						
				4500	4000	3500	64						
				4500	4000	3500	100						
				最高机械输入转速 ⁽³⁾	Max. mechanical input speed ⁽³⁾	n _{1max}	min ⁻¹		13000	7000	6500		

输出扭矩	Output torques			PLHE060	PLHE080	PLHE120	i ⁽¹⁾	p ⁽²⁾
急停扭矩 ⁽⁴⁾⁽⁵⁾	Emergency stop torque ⁽⁴⁾⁽⁵⁾	T _{2Stop}	Nm	60	150	375	3	1
				80	200	500	4	
				80	220	500	5	
				80	178	340	7	
				80	190	380	8	
				75	200	480	10	
				88	260	500	9	2
				88	240	520	12	
				88	220	500	15	
				88	240	520	16	
				88	240	520	20	
				80	220	500	25	
				88	240	520	32	
				80	220	500	40	
				80	190	380	64	
				75	200	480	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

(5) 允许 1000 次

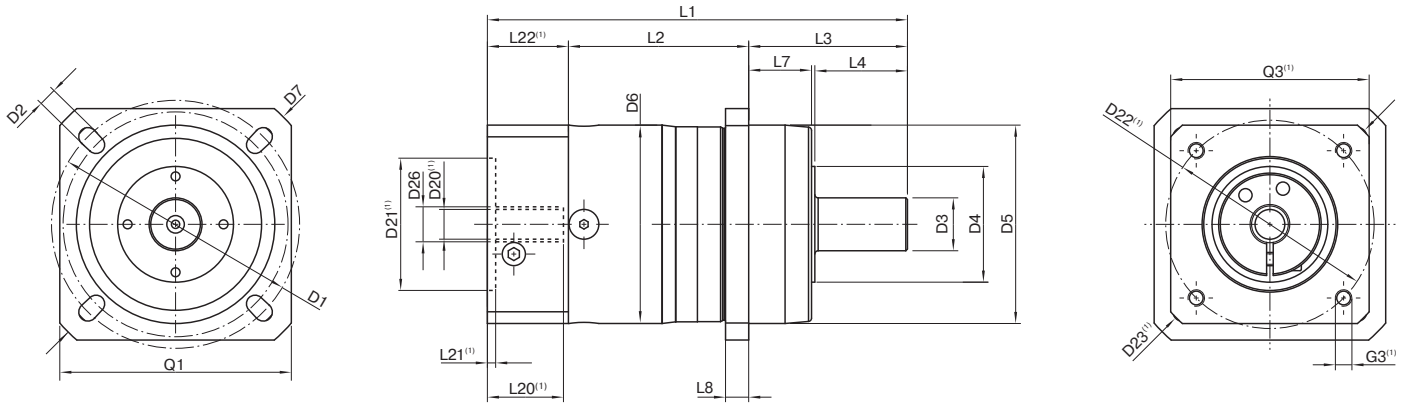
(1) Ratios (i=n₁/n₂)

(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 PLHE060 / 1 级 / 光滑输出轴 / 11 mm 锁紧系统 / 适配电机法兰 - 单一法兰 / B5 电机法兰类型
 Drawing corresponds to a PLHE060 / 1-stage / smooth output shaft / 11 mm clamping system / motor adaptation - one part / 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⁾			PLHE060	PLHE080	PLHE120	p ⁽³⁾	Code
输出端安装孔节圆直径	Pitch circle diameter output	D1		68 - 75	85	120		
输出端安装孔直径	Mounting bore output	D2	4x	5,5	6,5	9,0		
输出轴直径	Shaft diameter output	D3	k6	16	22	32		
输出轴轴肩直径	Shaft collar output	D4		35	40	45		
输出端定位凸台直径	Centering diameter output	D5	g7	60	70	90		
箱体直径	Housing diameter	D6		60	80	115		
输出法兰对角线尺寸	Diagonal dimension output	D7		92	100	140		
输出端法兰外方	Flange cross section output	Q1	■	70	80	110		
最小总长	Min. total length	L1		127	159	199,5	1	
				139,5	177	227	2	
箱体长度	Housing length	L2		55	69,5	64	1	
				67,5	87	91,5	2	
输出轴轴长	Shaft length output	L3		48	56	88		
输出端定位凸台深度	Centering depth output	L7		19	17,5	28		
输出端法兰厚度	Flange thickness output	L8		7	8	10		
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 42 页 More information on page 42				
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
平键宽度 (DIN 6885-1)	Feather key width (DIN 6885-1)	B1		5	6	10		
含平键在内的轴高 (DIN 6885-1)	Shaft height including feather key (DIN 6885-1)	H1		18	24,5	35		
到轴肩的距离	Shaft length from shoulder	L4		28	36	58		
平键长度	Feather key length	L5		25	28	50		
到轴端的距离	Distance from shaft end	L6		2	4	4		
中心孔 (DIN 332, DR 形)	Center hole (DIN 332, type DR)	C		M5x12,5	M8x19	M12x28		
光滑输出轴	Smooth output shaft							
到轴肩的距离	Shaft length from shoulder	L4		28	36	58		B
花键输出轴 (DIN 5480)	Splined output shaft (DIN 5480)			W16x0,8x18x6m	W22x1,25x16x6m	W32x1,25x24x6m		C
花键或键槽的长度	Width of gearing	L _v		15	15	15		
输出轴轴长	Shaft length output	L3		46	46	56		
到轴肩的距离	Shaft length from shoulder	L4		26	26	26		
中心孔 (DIN 332, DR 形)	Center hole (DIN 332, type DR)	C		M5x12,5	M8x19	M12x28		

(2) 所有的尺寸单位为mm
 (3) 减速机级数

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