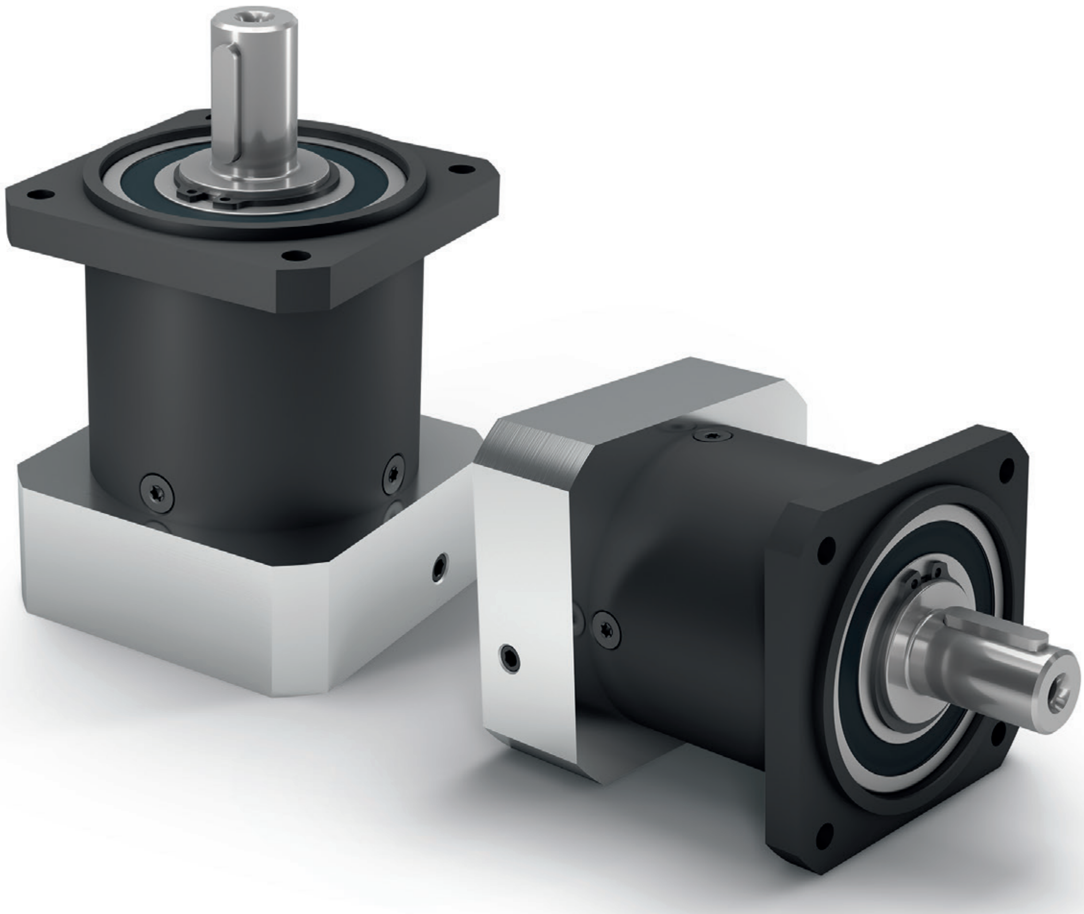


PLQE

一款安装便捷的行星减速机
发热量低
可承受较高的力

我们的 **PLQE** 结构简单且性能强大。它可以直接和您的系统连接，不需要中间法兰。输出装置上的大型深沟球轴承可以承受较高的轴向力和径向力。它凭借着良好的传动效率，即使在严苛的生产周期内也能始终可靠地运行。

The easy to install planetary gearbox absorbs high forces with low heat generation

Our **PLQE** is uncomplicated and powerful. It can be connected directly to your installation without the need for an intermediate flange. The larger deep groove ball bearings on the output allow higher axial and radial forces to be absorbed. Thanks to its favorable efficiency, this means that it always operates reliably even when production cycles are demanding.

额定扭矩
Nominal output torque **5 - 260 Nm**

径向力
Radial force **390 - 2950 N**

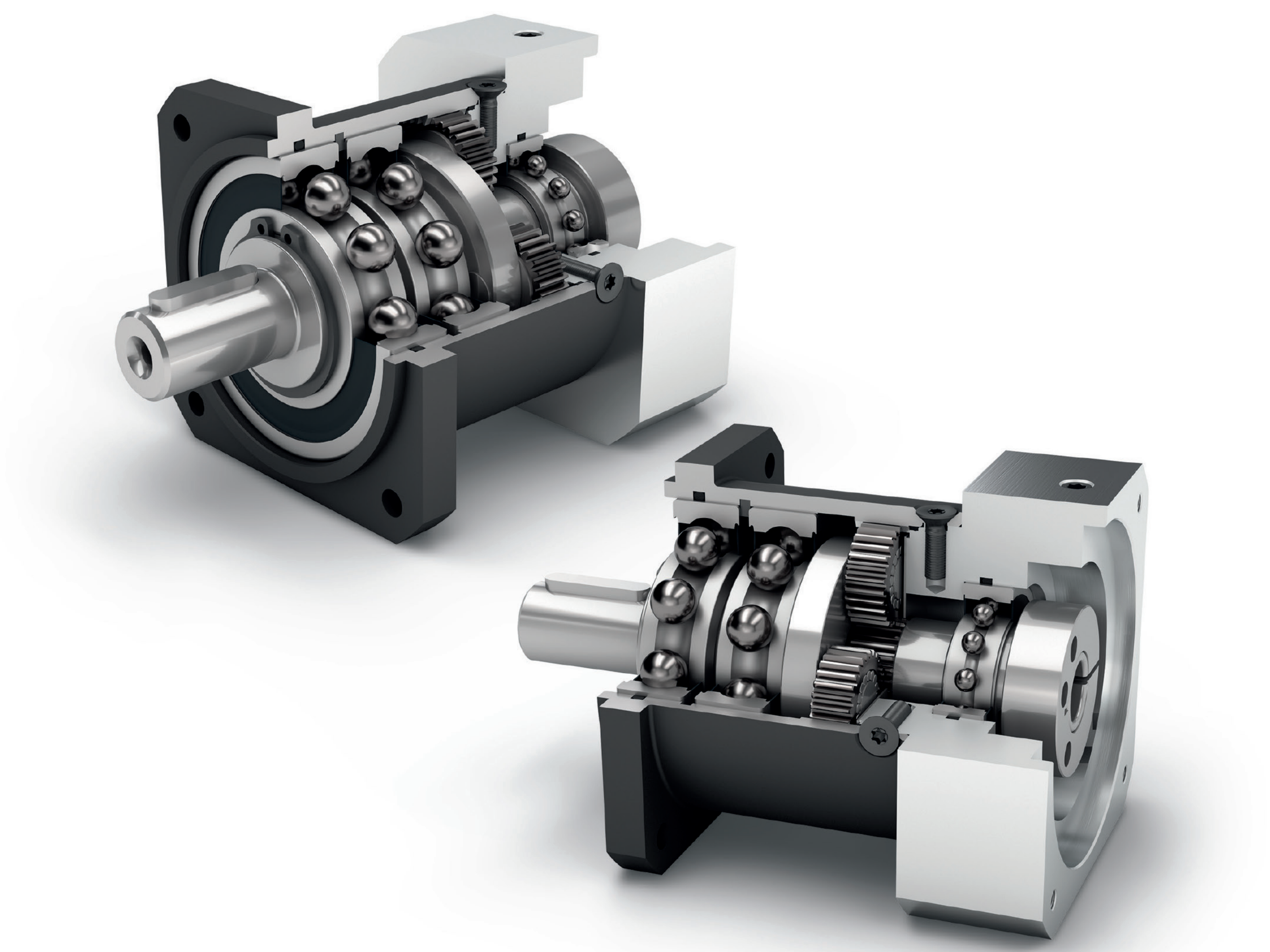
轴向力
Axial force **620 - 2500 N**

回程间隙
Torsional backlash **7 - 15 arcmin**

防护等级
Protection class **IP54**

结构尺寸
Frame sizes

40	60	80	120



经济型
Economy Line

同轴减速机
Coaxial gearbox

旋转方向 同方向
Equidirectional rotation

直齿
Spur gear

正方形输出法兰
Square type output flange

增强深沟球轴承
Reinforced deep groove ball bearings

多样的传动比（i=3 至 i=512）
High ratio variety i=3 up to i=512

行星齿轮架
Planet carrier in disc 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173页读起。
Detailed explanations of the technical features starting on page 173.

Code	减速机参数	Gearbox characteristics			PLQE040	PLQE060	PLQE080	PLQE120	p[1]
	使用寿命 (L_{10h})	Service life (L_{10h})	t_L	h	30.000				
	满载时效率[2]	Efficiency at full load[2]	η	%	98				1
					97				2
					92				3
	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			IP54				
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)				
L	低温润滑[3]	Low temperature lubrication[3]			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	j_t	arcmin	< 15	< 10	< 7	< 7	1
					< 19	< 12	< 9	< 9	2
					< 22	< 15	< 11	< 11	3
	抗扭刚度[2]	Torsional stiffness[2]	C_g	Nm / arcmin	1,2 - 2,2	2,8 - 4,0	8,5 - 12,6	14,0 - 18,5	1
					1,4 - 2,5	3,3 - 4,1	9,4 - 13,3	15,6 - 19,0	2
					1,5 - 2,6	3,3 - 4,1	9,4 - 13,4	15,6 - 19,0	3
	减速机重量[2]	Gearbox weight[2]	m_G	kg	0,4	1,1	2,6 - 3,0	6,4 - 6,7	1
					0,5	1,3	3,4 - 3,5	8,1 - 8,5	2
					0,6	1,5	3,9 - 4,0	9,9 - 10,3	3
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	Painted surface			RAL 9005 黑色 RAL 9005 Jet black				
	运行噪音[4]	Running noise[4]	Q_g	dB(A)	58	58	60	65	
	基于减速机输入法兰的最大弯矩[5]	Max. bending moment based on the gearbox input flange[5]	M_b	Nm	4,5	12	16	40	

输出轴载荷	Output shaft loads			PLQE040	PLQE060	PLQE080	PLQE120	p[1]
20.000 h 径向力[6][7]	Radial force for 20,000 h[6][7]	$F_{r\,20.000\,h}$	N	250 - 390	900	2050	2950	
20.000 h 轴向力[6][7]	Axial force for 20,000 h[6][7]	$F_{a\,20.000\,h}$		620	1000	2500	2500	
30.000 h 径向力[6][7]	Radial force for 30,000 h[6][7]	$F_{r\,30.000\,h}$		250 - 340	700	1700	2400	
30.000 h 轴向力[6][7]	Axial force for 30,000 h[6][7]	$F_{a\,30.000\,h}$		620	800	2000	2100	
最大径向力[7][8]	Maximum radial force[7][8]	$F_{r\,Stat}$		520	1500	2500	4000	
最大轴向力[7][8]	Maximum axial force[7][8]	$F_{a\,Stat}$		620	1950	3800	3800	
20.000 h 倾斜力矩[6][8]	Tilting moment for 20,000 h[6][8]	$M_{K\,20.000\,h}$	Nm	7 - 10	37	102	232	
30.000 h 倾斜力矩[6][8]	Tilting moment for 30,000 h[6][8]	$M_{K\,30.000\,h}$		7 - 9	29	84	188	

转动惯量	Moment of inertia			PLQE040	PLQE060	PLQE080	PLQE120	p[1]
转动惯量[2]	Mass moment of inertia[2]	J	kgcm²	0,015 - 0,029	0,066 - 0,142	0,371 - 0,783	1,381 - 2,393	1
				0,015 - 0,026	0,066 - 0,123	0,366 - 0,625	1,414 - 2,292	2
				0,015 - 0,025	0,066 - 0,076	0,365 - 0,590	1,413 - 2,196	3

(1) 减速机级数
(2) 传动比相关的数值可在 Tec Data Finder 中检索 – www.neugart.com
(3) T_{min} = -40°C. 理想运行温度最高为 50°C
(4) 距离减速机1 m 时；在输入转速为 n_1=3000 min⁻¹ 且无负荷时测得；i=5
(5) 最大电机重量* (单位 : kg) = 0.2 x M_b / 电机长度 (单位: m)
 * 电机重量对称分布
 * 水平和固定的安装位置
(6) 数据以 n_2=100 min⁻¹ 的输出轴转速为准。
(7) 以输出轴中心为准
(8) 更改 T_{2N}, F_r, F_a 以及周期和轴承使用寿命时，数值存在偏差(部分较高)。利用 NCP 针对应用进行专门设计 – www.neugart.com

(1) Number of stages
(2) The ratio-dependent values can be retrieved in Tec Data Finder – www.neugart.com
(3) T_{min} = -40°C. Optimal operating temperature max. 50°C
(4) Sound pressure level from 1 m, measured on input running at n_1=3000 rpm no load; i=5
(5) Max. motor weight* in kg = 0.2 x M_b / motor length in m
 * with symmetrically distributed motor weight
 * with horizontal and stationary mounting
(6) These values are based on an output shaft speed of n_2=100 rpm
(7) Based on center of output shaft
(8) Other (sometimes higher) values following changes to T_{2N}, F_r, F_a, cycle, and service life of bearing. Application specific configuration with NCP – www.neugart.com

输出扭矩	**Output torques**			**PLQE040**	**PLQE060**	**PLQE080**	**PLQE120**	i[1]	p[2]
额定输出扭矩[3][4]	Nominal output torque[3][4]	T_{2N}	Nm	11	28	85	115	3	1
				15	38	115	155	4	
				14	40	110	195	5	
				8,5	25	65	135	7	
				6	18	50	120	8	
				5	15	38	95	10	
				16,5	44	130	210	9	2
				20	44	120	260	12	
				18	44	110	230	15	
				20	44	120	260	16	
				20	44	120	260	20	
				18	40	110	230	25	
				20	44	120	260	32	
				18	40	110	230	40	
				7,5	18	50	120	64	
				20	44	110	260	60	3
				20	44	120	260	80	
				20	44	120	260	100	
				18	44	110	230	120	
				20	44	120	260	160	
				18	40	110	230	200	
				20	44	120	260	256	
				18	40	110	230	320	
				7,5	18	50	120	512	
最大输出扭矩[4][5]	Max. output torque[4][5]	T_{2max}	Nm	17,5	45	136	184	3	1
				24	61	184	248	4	
				22	64	176	312	5	
				13,5	40	104	216	7	
				10	29	80	192	8	
				8	24	61	152	10	
				26	70	208	336	9	2
				32	70	192	416	12	
				29	70	176	368	15	
				32	70	192	416	16	
				32	70	192	416	20	
				29	64	176	368	25	
				32	70	192	416	32	
				29	64	176	368	40	
				12	29	80	192	64	
				32	70	176	416	60	3
				32	70	192	416	80	
				32	70	192	416	100	
				29	70	176	368	120	
				32	70	192	416	160	
				29	64	176	368	200	
				32	70	192	416	256	
				29	64	176	368	320	
				12	29	80	192	512	

(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) 平键 (代码 “A”)时的数值: 针对交变载荷
(5) 允许输出轴转动30.000转; 参见第 166 页

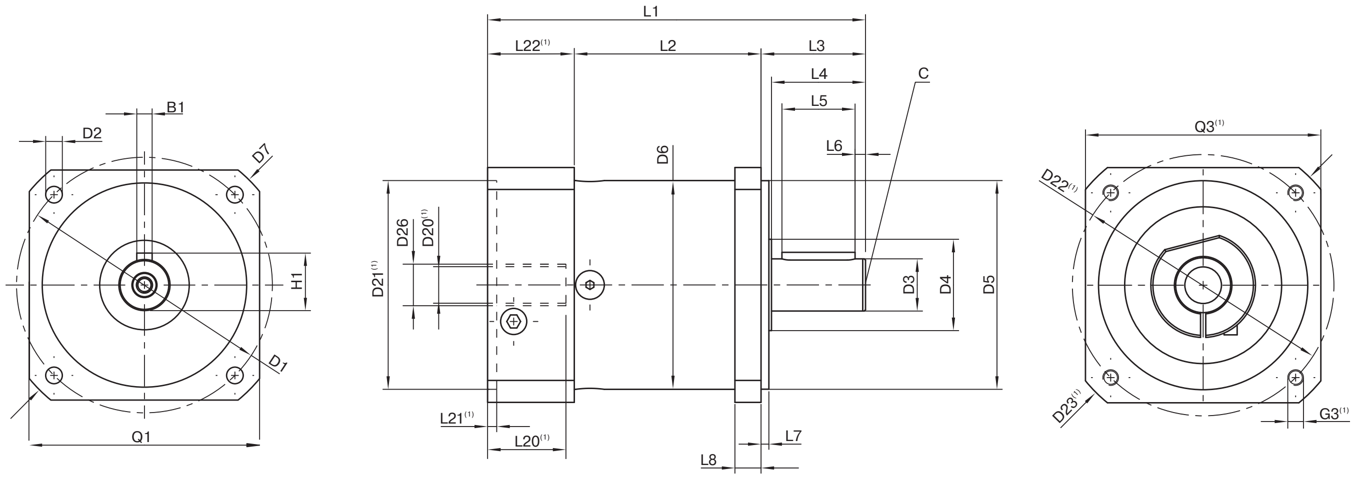
(1) Ratios ($i=n_1/n_2$)
(2) Number of stages
(3) Application specific configuration with NCP – www.neugart.com
(4) Values for feather key (code “A”): for repeated load
(5) 30,000 rotations of the output shaft permitted; see page 167

输出扭矩	Output torques			PLQE040	PLQE060	PLQE080	PLQE120	i[1]	p[2]
急停扭矩[3]	Emergency stop torque[3]	T_{2Stop}	Nm	22,5	66	180	390	3	1
				30	88	240	520	4	
				36	80	220	500	5	
				26	80	178	340	7	
				27	80	190	380	8	
				27	80	200	480	10	
				33	88	260	500	9	2
				40	88	240	520	12	
				36	88	220	500	15	
				40	88	240	520	16	
				40	88	240	520	20	
				36	80	220	500	25	
				40	88	240	520	32	
				36	80	220	500	40	
				27	80	190	380	64	
				40	88	220	520	60	3
				40	88	240	520	80	
				40	88	240	520	100	
				36	88	220	500	120	
				40	88	240	520	160	
				36	80	220	500	200	
				40	88	240	520	256	
				36	80	220	500	320	
				27	80	190	380	512	

输入转速	Input speeds			PLQE040	PLQE060	PLQE080	PLQE120	i[1]	p[2]
T_{2N} 和 S1 时的平均热输入转速[4][5]	Average thermal input speed at T_{2N} and S1[4][5]	n_{1N}	min^{-1}	5000	4500[6]	3400[6]	3400[6]	3	1
				5000	4500[6]	3450[6]	3500[6]	4	
				5000	4500	4000[6]	3500[6]	5	
				5000	4500	4000	3500	7	
				5000	4500	4000	3500	8	
				5000	4500	4000	3500	10	
				5000	4500	4000[6]	3500[6]	9	2
				5000	4500	4000[6]	3500[6]	12	
				5000	4500	4000	3500[6]	15	
				5000	4500	4000	3500[6]	16	
				5000	4500	4000	3500	20	
				5000	4500	4000	3500	25	
				5000	4500	4000	3500	32	
				5000	4500	4000	3500	40	
				5000	4500	4000	3500	64	
				5000	4500	4000	3500	60	3
				5000	4500	4000	3500	80	
				5000	4500	4000	3500	100	
				5000	4500	4000	3500	120	
				5000	4500	4000	3500	160	
				5000	4500	4000	3500	200	
				5000	4500	4000	3500	256	
				5000	4500	4000	3500	320	
				5000	4500	4000	3500	512	
最高机械输入转速[4]	Max. mechanical input speed[4]	n_{1Limit}	min^{-1}	18000	13000	7000	6500		

(1) 传动比 ($i=n_1/n_2$)
(2) 减速机级数
(3) 允许 1000 次
(4) 利用 NCP 针对应用设计转速 – www.neugart.com
(5) 定义请参见第 166 页
(6) 在 50% T_{2N} 输出和 S1 模式下 的平均热输入转速

(1) Ratios ($i=n_1/n_2$)
(2) Number of stages
(3) Permitted 1000 times
(4) Application-specific speed configurations with NCP – www.neugart.com
(5) See page 167 for the definition
(6) Average thermal input speed at 50% T_{2N} and S1



图示为带平键的 PLQE080 / 1 级 / 附带平键的输出轴 / 19 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 PLQE080 / 1-stage / output shaft with feather key / 19 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)**			**PLQE040**	**PLQE060**	**PLQE080**	**PLQE120**	**p(3)**	**Code**
输出端安装孔节圆直径	Pitch circle diameter output	D1		50	75	100	130		
输出端安装孔直径	Mounting bore output	D2	4x	3,4	5,5	6,5	8,5		
输出轴直径	Shaft diameter output	D3	h7	13	16	20	25		
输出轴轴肩直径	Shaft collar output	D4		17	20	35	35		
输出端定位凸台直径	Centering diameter output	D5	h7	35	60	80	110		
箱体直径	Housing diameter	D6		40	60	80	115		
输出法兰对角线尺寸	Diagonal dimension output	D7		57	92	116	145		
输出端法兰外方	Flange cross section output	Q1	■	42	70	90	115		
最小总长	Min. total length	L1		90	111	145	201,5	1	
				103	123,5	162,5	229,5	2	
				115,5	136	180	257	3	
箱体长度	Housing length	L2		35,5	55	71	99	1	
				48,5	67,5	89	127	2	
				61	80,5	106,5	154,5	3	
输出轴轴长	Shaft length output	L3		26	32	40	55		
输出端定位凸台深度	Centering depth output	L7		5,5	3	3	4		
输出端法兰厚度	Flange thickness output	L8		7	10	10	15		
电机轴直径 j6/k6	Motor shaft diameter j6/k6	D20		更多信息见第 163/164 页 More information on page 163/164					
输入端锁紧系统直径	Clamping system diameter input	D26							
带平键的输出轴 (DIN 6885-1)	Output shaft with feather key (DIN 6885-1)			A 5x5x14	A 5x5x20	A 6x6x28	A 8x7x40		A
平键宽度 (DIN 6885-1)	Feather key width (DIN 6885-1)	B1		5	5	6	8		
含平键在内的轴高 (DIN 6885-1)	Shaft height including feather key (DIN 6885-1)	H1		15	18	22,5	28		
到轴肩的距离	Shaft length from shoulder	L4		18	28	36	50		
平键长度	Feather key length	L5		14	20	28	40		
到轴端的距离	Distance from shaft end	L6		2	4	4	5		
中心孔 (DIN 332, DR 形)	Center hole (DIN 332, type DR)	C		M4x10	M5x12,5	M6x16	M10x22		
光滑输出轴	Smooth output shaft								B
到轴肩的距离	Shaft length from shoulder	L4		18	28	36	50		

(2) 所有的尺寸单位为mm
(3) 减速机级数

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