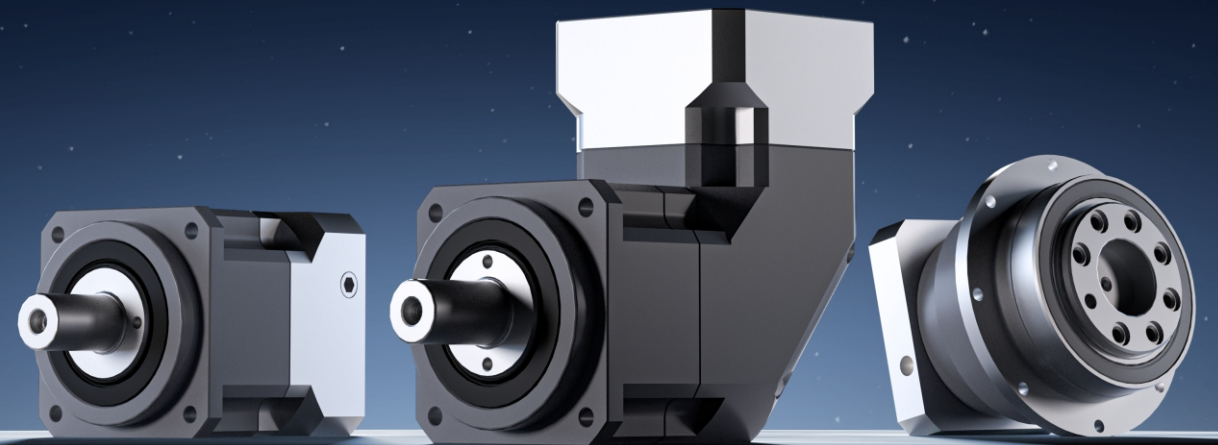


JONSTAR

DRIVE

HIGH PRECISION GEARBOX SINCE 1985

椒星传动



STARTRAC-星驰系列
行星齿轮减速机

实现精准定位
Precise positioning of movement



CONNECTING THE WORLD POWERING THE FUTURE

联动世界 驱动未来

始创 Establish

1985

椒星公司创立之初，前身为“海门行星变速器厂”，专注于行星锥盘减速机的研发。在早期，由于信息闭塞，公司在研发过程中面临诸多挑战，包括理论基础薄弱、优质材料匮乏以及试验设备不足等困难。面对这些困境，我们迎难而上，致力于技术攻关，成功实现了国产行星锥盘减速机的技术突破，推动了行业技术的发展，完成了从无到有的跨越式飞跃。

In its early days, Jonstar (formerly known as "Haimen Planetary Transmission Factory") focused on the development of planetary cone disk reducers. During the initial phase, the company faced numerous challenges in the R&D process due to limited information access, including a weak theoretical foundation, shortage of high-quality materials, and insufficient testing equipment. Confronted with these difficulties, we rose to the challenge, dedicating ourselves to technological breakthroughs. We successfully achieved domestic innovations in planetary cone disk reducer technology, driving industry advancement and accomplishing a leap from scratch.

研发 Develop

2017

椒星传动专注于精密行星齿轮减速机的专项研究，致力于攻克传统减速机在实际应用中的关键难题。我们深入探讨了传统行星齿轮减速机的几大缺陷，包括背隙过大、重复定位精度不足、响应速度滞后和耐磨性不佳等问题，这些问题往往导致系统精度下降、效率减弱，并缩短设备寿命。针对这些挑战，我们的目标是开发出具备卓越性能的行星齿轮减速机。该减速机将呈现显著优势：更小的背隙以提升传动精度、更高的重复定位精度以确保可靠的操作性能、更快的响应速度以应对高动态需求、以及更长的耐磨寿命以减少维护频次和更换成本。通过这些改进，我们期待大幅提升设备的整体性能与可靠性，满足行业对高精度和耐用性的严格要求。

Jonstar Transmission focuses on specialized research into precision planetary gear reducers, aiming to tackle critical issues faced by traditional reducers in practical applications. We have conducted an in-depth analysis of several drawbacks in conventional planetary gear reducers, such as excessive backlash, insufficient repeated positioning accuracy, inadequate speed stability, and poor wear resistance. These issues often lead to decreased system accuracy, reduced efficiency, and shorter equipment lifespans. In response to these challenges, our goal is to develop high-performance planetary gear reducers. These reducers will showcase several significant advantages: enhanced backlash for improved transmission precision, greater positioning accuracy for reliable operation, better speed stability to meet high-speed demands, and increased wear resistance to reduce maintenance frequency and replacement costs. Through these improvements, we anticipate substantial advancements in equipment performance and reliability, meeting the stringent requirements of the industry for precision and durability.

创新 Innovate

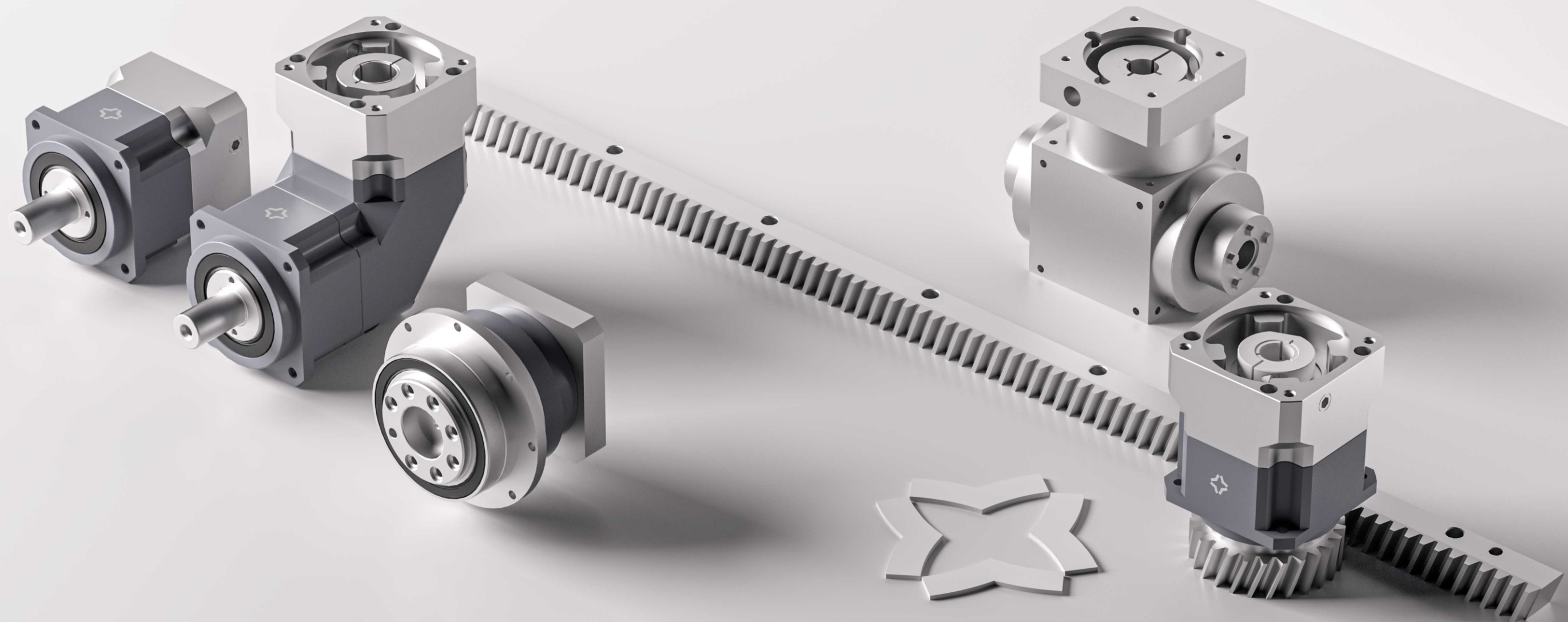
2023

椒星传动成功申请并成立“机械工业超精密行星传动研究中心”，专注于超精密行星传动技术的研发与应用。作为行业领先的研究机构，我们致力于创新与优化高精度、高效率的行星传动系统。中心汇聚了国内外顶尖的工程师和研究人员，通过深入的理论研究与实验验证，推动行星传动技术在精密机械、航空航天、自动化设备等领域的广泛应用。我们的研究方向涵盖了超精密行星传动系统的设计、制造工艺、材料选择以及性能测试。中心拥有先进的实验设备和计算分析工具，为新技术的开发及现有技术的改进提供坚实的技术支持。我们致力于为行业提供卓越的解决方案，提升设备性能、降低能耗，并加速相关技术的商业化应用。通过与行业领先企业和科研机构的紧密合作，研究中心不断推动行星传动技术的前沿发展，为机械工业的进步和国家科技创新贡献力量。

Jonstar Transmission has successfully established the "Ultra-Precision Planetary Transmission Research Center for the Mechanical Industry," dedicated to the research and application of ultra-precision planetary transmission technology. As a leading research institution in the industry, we are committed to innovating and optimizing high-precision, high-efficiency planetary transmission systems. The center brings together top engineers and researchers from both domestic and international backgrounds, who, through in-depth theoretical research and experimental validation, advance the application of planetary transmission technology across precision machinery, aerospace, automation equipment, and more. Our research directions include the design, manufacturing processes, material selection, and performance testing of ultra-precision planetary transmission systems. With state-of-the-art experimental equipment and computational analysis tools, we provide robust technical support for the development of new technologies and the improvement of existing ones. We are dedicated to delivering exceptional solutions to the industry, enhancing equipment performance, reducing energy consumption, and accelerating the commercialization of relevant technologies. Through close collaboration with leading companies and research institutions, the center continually drives forward the cutting edge of planetary transmission technology, contributing to advancements in the mechanical industry and national scientific innovation.

机械工业超精密行星传动研究中心

中国机械工业超精密行星传动研究中心



高精度，大扭矩，低噪音

星驰系列高精密行星齿轮减速机是一种高精度的机械传动装置，最低背隙可达到1弧分，广泛用于需要精确定位和高扭矩的应用场景。其主要特点包括：

高传动精度：星驰行星齿轮减速机具有独特的结构和较低的背隙，能够提供非常高的传动精度和稳定性，以减少齿轮在传动过程中出现的间隙，从而提高系统的定位精度和重复性。而且，低背隙有助于更快地响应负载变化，使得系统在快速启动、停止或改变运动方向时表现更加稳定和灵敏。

大扭矩：相比传统齿轮减速机，精密行星齿轮减速机在较小体积下能提供较大的扭矩输出。

低噪音：齿轮咬合更紧密，能够减少齿轮在运行过程中产生的振动和噪音，改善工作环境。

紧凑设计：其结构紧凑，适合空间有限的应用环境。

这种减速机广泛应用于机器人、数控机床、航空航天等领域，能够满足对运动控制精度和可靠性的高要求。

较长的使用寿命：星驰系列的齿轮采用了先进的热处理工艺，确保了其高硬度和卓越的耐用性。结合星驰行星齿轮的低背隙特点，这种设计能够有效减少齿轮之间的冲击载荷，降低磨损，进而显著延长减速机的使用寿命。

综上所述，星驰系列低背隙行星齿轮减速机能够提高系统的性能和可靠性，是许多精密应用中重要的性能指标。

The StarDrive series high-precision planetary gear reducer is a highly accurate mechanical transmission device, with a minimum backlash as low as 1 arc-minute, making it ideal for applications requiring precise positioning and high torque. Key features include:

High Transmission Precision: The unique structure and low backlash of the StarDrive planetary gear reducer enable it to provide exceptional transmission accuracy and stability, reducing gear gaps during operation and enhancing system positioning accuracy and repeatability. Furthermore, the low backlash facilitates faster response to load changes, allowing for more stable and responsive performance during rapid starts, stops, or changes in movement direction.

High Torque Output: Compared to traditional gear reducers, precision planetary gear reducers deliver higher torque in a more compact form.

Low Noise: The tighter gear engagement significantly reduces vibration and noise during operation, improving the working environment.

Compact Design: Its compact structure is ideal for space-constrained applications.

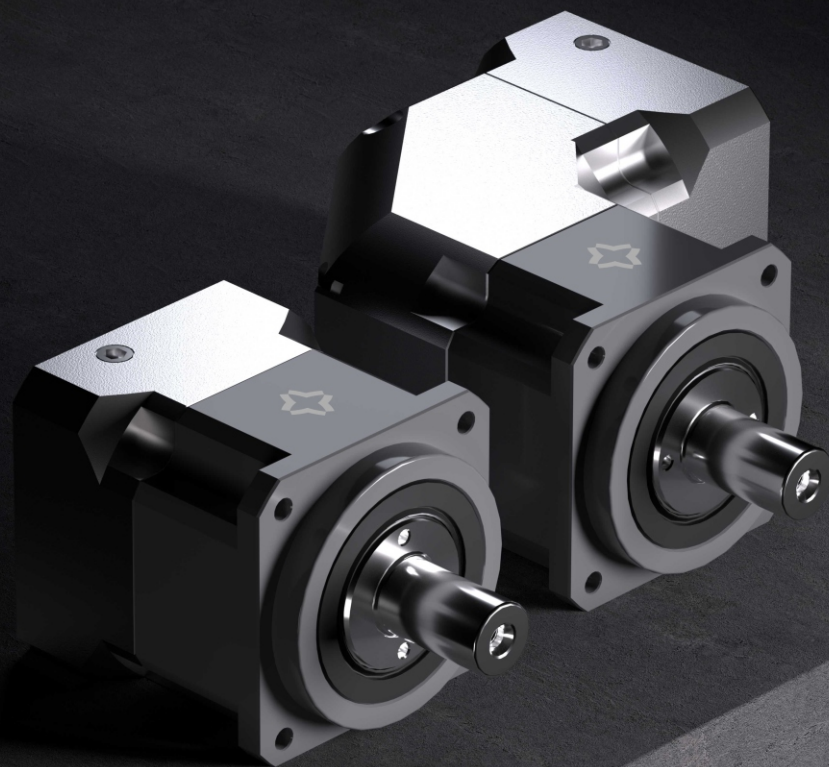
These reducers are widely used in robotics, CNC machines, aerospace, and other fields, meeting high requirements for motion control precision and reliability. **Extended Service Life:** The gears in the StarDrive series are manufactured using advanced heat treatment processes, ensuring high hardness and exceptional durability. Coupled with the low-backlash design, this reduces impact loads between gears, lowers wear, and significantly extends the service life of the reducer.

With these excellent designs and rigorous manufacturing processes, the StarDrive series low-backlash planetary gear reducers enhance system performance and reliability, making them a key performance metric in many precision applications.

STARTRAC 星驰系列

精准的来回往复运动定位

Accurate reciprocating motion positioning



SERIES OVERVIEW 系列介绍

SERIES XPG XPG/XPF系列

SERIES STARTRAC

星驰系列

XPG

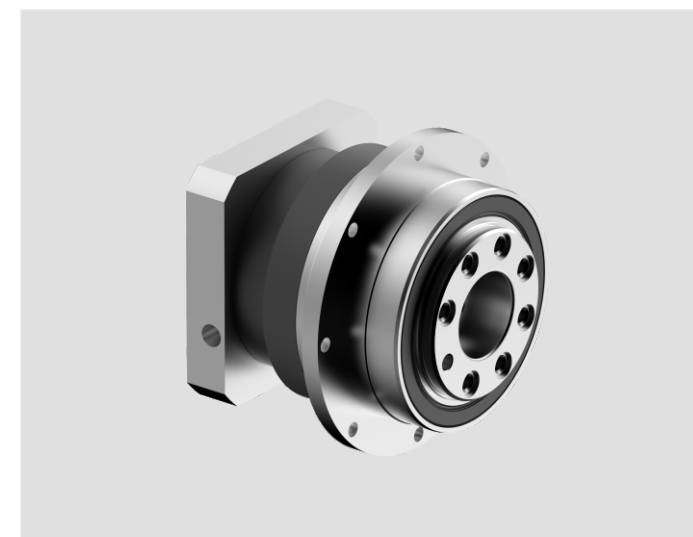
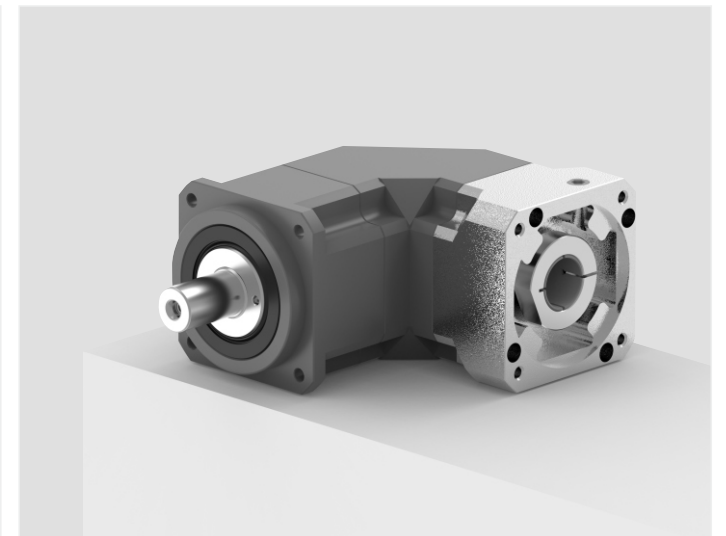
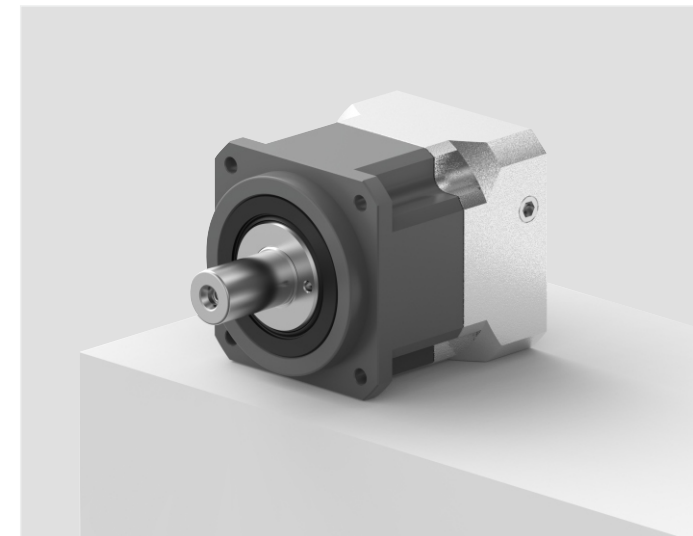
XPG是高精度行星齿轮和高效轴承科技完美结合的产物。专为需要保证高转速、低噪音的同时达到最优化性能的应用而设计。借助高刚性的结构、高精度的斜齿,运行平稳、安静,更具有强劲的性能。

XPG series precision planetary gearbox is the perfect combination of high precision planetary gear and high efficiency bearing. It is designed for applications that require high speed and low noise while achieving optimized performance. With high stiffness structure and high precision helical gear, it runs smoothly, quietly, and has more powerful performance.

XPGR

XPG是高精度行星齿轮和高效轴承科技完美结合的产物。专为需要保证高转速、低噪音的同时达到最优化性能的应用而设计。借助高刚性的结构、高精度的斜齿,运行平稳、安静,更具有强劲的性能。

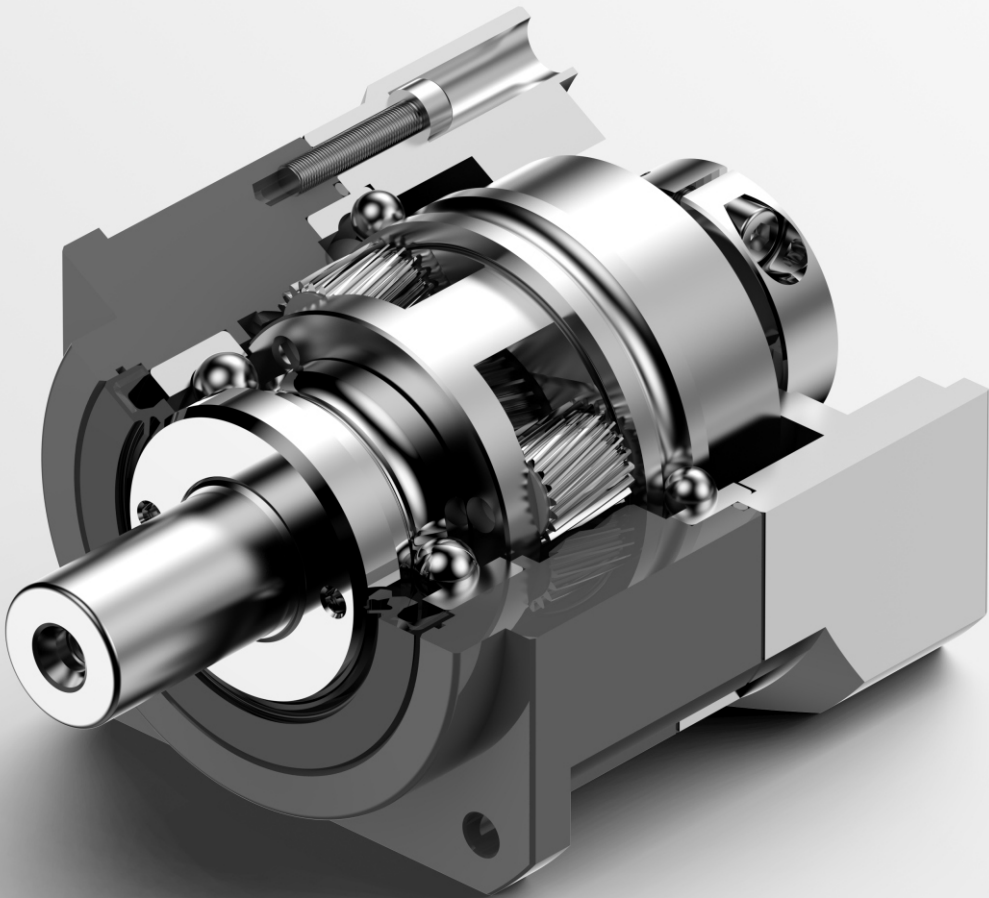
XPGR series precision planetary gearbox is the perfect combination of high precision planetary gear and high efficiency bearing. It is designed for applications that require high speed and low noise while achieving optimized performance. With high stiffness structure and high precision helical gear, it runs smoothly, quietly, and has more powerful performance.



XPF

新的斜齿轮设计优化了同步、平稳运行,并最大限度地减少了振动。采用高精度齿轮,实现高精度传动和低间隙。输出扭矩大,传动效率高,传动平稳,速度快,噪音低。同轴设计,旋转方向一致,输出轴形式多样。刚性高,结构紧凑,外观美观,耐候性好,适用于任何安装方向,互换性好,可匹配各种伺服电机,安装方便,终身润滑,免维护。

The new helical gear design optimizes synchronous, smooth operation and minimizes vibration. Adopt high precision gear to achieve high precision transmission and low backlash. Large output torque, high transmission efficiency, smooth transmission, high speed, low noise. Coaxial design, rotation in the same direction, the output shaft form is diversified. High rigidity, compact, beautiful appearance, good weather resistance, suitable for any installation orientation and good interchangeability, it can match a variety of servo motors, and easy installation, lifelong lubrication, maintenance-free.



XPG系列

XPG是高精度行星齿轮和高效轴承科技完美结合的产物。专为需要保证高转速、低噪音的同时达到最优化性能的应用而设计。借助高刚性的结构、高精密的斜齿,运行平稳、安静,更具有强劲的性能。新型的斜齿设计实现了最优化的同步、平稳运行，把振动降至最低采用高精密的齿轮，实现高精度传动及小背隙输出扭矩大，传动效率高传动平稳、可高转速、噪音小同轴式设计，旋转同向,输出轴形式多样化高刚性、紧凑型、小型化设计外形美观、耐候性好适用于任何安装方位,具备较好的互换性可以匹配各种电机，且安装方便密封性好，终生润滑，免维护

SERIES XPG

XPG is the perfect combination of high-precision planetary gears and efficient bearing technology. It is designed for applications that require optimized performance while ensuring high speeds and low noise. With its high rigidity structure and precision helical teeth, it operates smoothly and quietly, delivering robust performance. The new helical gear design achieves optimal synchronization and smooth operation while minimizing vibration. High-precision gears are used to realize high-precision transmission and low backlash. It offers high output torque, high transmission efficiency, smooth operation, high speed, and low noise. The coaxial design ensures consistent rotation direction, and the output shaft is diversified. With high rigidity, a compact design, and an aesthetically pleasing appearance, it has good weather resistance and is suitable for any installation orientation. It possesses excellent interchangeability, can be matched with various motors, and allows for easy installation, good sealing, lifetime lubrication, and maintenance-free operation.

SYMBOLS AND UNITS OF MEASURE

参数符号对应表

符号Symbols	单位Units	注解	Description
P	[kW]	功率	Power
P ₁	[kW]	输入功率	Transmitted power at input shaft
P ₂	[kW]	输出功率	Transmitted power at output shaft
P _{n1}	[kW]	额定输入功率	Rated input power
M _{n1}	Nm	电机额定扭矩	Motor rated torque
M ₂	Nm	输出扭矩	Transmitted torque at output shaft
M _{c2}	Nm	计算的输出扭矩	Calculated torque at output shaft
M _{n2}	Nm	额定输出扭矩	Rated torque at output shaft
M _{n3}	Nm	额定加速扭矩	Rated acceleration torque
M _{n5}	Nm	计算的加速扭矩	Calculated Output acceleration torque
M _{r2}	Nm	需求的扭矩	Required torque at output shaft
n ₁	min ⁻¹	输入转速	Angular input speed
n ₂	min ⁻¹	输出转速	Angular output speed
i	-	减速比	Ratio
η _d	-	动态效率	Dynamic efficiency
η _s	-	静态效率	Static efficiency
Z ₁	-	蜗杆齿数	Number of worm thread
M _x	-	轴向模数	Axial modulus
f _s	-	工作系数	Service factor
J _e	kgm ²	在电机轴上衰减的惯性矩	Moment of the external inertia reduced at the drive shaft
J _m	kgm ²	电机惯性矩	Moment of inertia of motor
F _{r1}	N	输入轴径向负荷	Input shaft radial load
F _{r2}	N	输出轴径向负荷	Output shaft radial load
F _{a2}	N	输出轴轴向负荷	Output shaft axial load
E-stop	Nm	输出急停扭矩(最大时间限度2秒)	Output emergency torque(2 seconds duration maximum)
C1f	Nm	启动输入摩擦扭矩	Starting input friction torque
ig	kg.m ²	输入惯性矩	Rated acceleration torque
ET	Nm/arcmin	输出抗扭刚度	Torsional stiffness on output

XPG MAKE CHOICE

XPG选型

下列的标题包含选择减速器的原理以及正确使用它们的方法。
具体的数值参照相应的章节

The following headings contain information on essential elements
forselection and correct use of gearbox.
For specific data on the gearbox range,see the relevant chapters.

需求的扭矩

T_{2r} [Nm]

基于实际所需，数值等于或小于减速器的额定扭矩 M_{n2}。

Required torque

T_{2r} [Nm]

The torque demand based on application requirement. It is
recommended to be equal to or less than torque M_{n2} the gearbox
under study is rated for.

计算扭矩

T_{2c} [Nm]

在选择减速器时有用。
它要考虑实际需求的扭矩M₁₂。以及工作系数f_s，
由以下关系式计算出:

$$T_{2c} = T_{2r} \cdot f_s \leq T_{2n}$$

Calculated torque

T_{2c} [Nm]

Computational torque value to be used when selecting the gearbox.
It is calculated considering the required torque M₁₂ , and service factor f_s ,as per
the relationship here after:

功率

P_{n2} [kW]

额定输入功率

减速器安全运转时的功率(kW)值，列于参数表中。
它是在速度等于n₁，且工作系数f_s=1的情况下得出的。

$$P_{n2} = P_{n1} \cdot \eta$$

$$P_{n2} = \frac{T_{2n} \cdot n_2}{9550}$$

Power

P_{n2} [kW]

Rated input power

The parameter can be found in the gearbox rating charts and represents the
KW that can be safely transmitted to the gearbox, based on input speed n₁,
and service factor f_s= 1.

工作系数

[f_s]

减速器的工作系数(f_s)主要取决于减速机的运行条件，
为了选择最合适的工作环境系数进行正确的组合，
必须考虑如下因素:

1. 减速器的负载形式:**A-B-C**
2. 工作时间:**小时/天(Δ)**
3. 开机频率:**次/小时(*)**

负载类型:

A-均衡负荷, f_s≤0.3

B-中等冲击, f_s≤3

C-严重冲击, f_s≤10

$$f_a = J_e / J_m$$

- J_e(kgm²):在驱动轴上衰减的惯性矩
- J_m(kgm²):电机惯性矩
- 如果f_s。 >10时请与技术服务部联系

A-轻质材料螺旋输送机，风扇，装配线，轻质材料
皮带输送机，小型搅拌机，提升机，清洁机，灌装机，
控制器。

B-卷绕装置，木工机械，货物提升机，平衡器，螺纹
机，介质搅拌机，重型材料皮带输送机，绞盘，移动
门，刮机，包装机，混凝土搅拌机，起重机，磨割机，
卷板机，齿轮泵。

C-重型材料搅拌机，剪切机，压力机，离心机，旋转
支撑,重型材料绞盘和提升机，磨床，石材，升降机，
钻孔机，锤式粉碎机，凸轮压力机，折叠机，运输带，
翻斗车，振动器，撕碎机

Service factor

[f_s]

The service factor (f_s.) depends on the operating conditions the gearbox is
subjected to the parameters that need to be taken into consideration to
select the most adequate servies factor correctly comprise:

- 1.type of load of the operated machine : **A - B- C**
- 2.length of daily operating time: **hours/day(Δ)**
- 3.start-up frequency: **starts/hour (*)**

TYPE OFLOAD:

A - uniform, f_s≤0.3

B- moderate shocks, f_s≤3

C- heavy shocks, f_s≤10

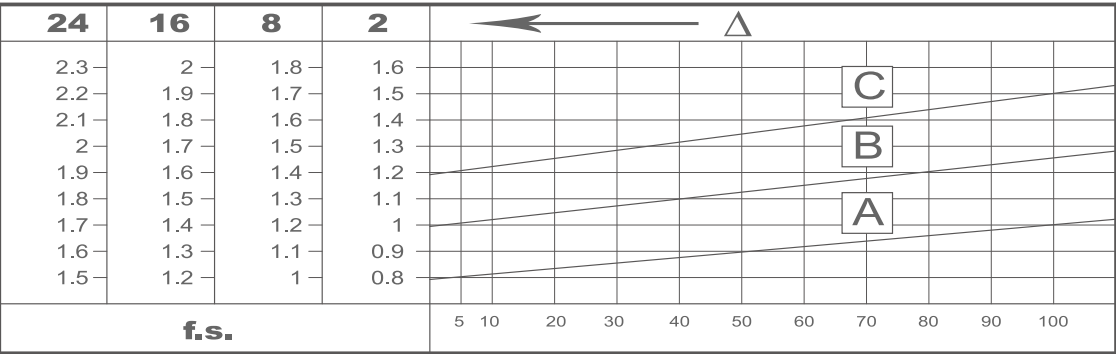
$$f_a = J_e / J_m$$

- J_e(kgm²) moment of the external inertia reduced at thedrive shaft
- J_m (kgm²) moment of inertia of motor
- If f_s >10 please contact our Technical Service2

A -Screw feeders for light materials, fans, assembly lines, conveyorbelts for
light materials, small mixers, lifts, cleaning machines,fillers, control
machines.

B-Winding devices,woodworking machine feeders, goods
lifts,balancers,threading machines, medium mixers,conveyor belts forheavy
materials,winches,sliding doors,fertilizer scrapers,
packingmachines,concrete mixers, crane mechanisms, milling
cutters,folding machines, gear pumps.

C-Mixers for heavy materials, shears, presses,centrifuges,
rotatingsupports,winches and lifts for heavy materials,grinding
lathes,stonemills, bucket elevators, drilling machines, hammer
mills,campresses,folding machines,turntables,tumbling
barrels, vibrators,shredders.



减速机参数 Gearbox characteristics			级数 Stage	减速比 RatiO[i] ⁽¹⁾	XPG 042	XPG 060	XPG 060A	XPG 090	XPG 090A	XPG 115	XPG 115A	XPG 142	XPG 142A	XPG 180	XPG 220	
额定输出所扭矩 Nominal Output Torque	T _{2n}	N.m	1	3	20	55	—	130	—	208	—	342	—	588	1140	
				4	19	50	—	140	—	290	—	542	—	1050	1700	
				5	22	60	—	160	—	330	—	650	—	1200	2000	
				6	20	55	—	150	—	310	—	600	—	1100	1900	
				7	19	50	—	140	—	300	—	550	—	1100	1800	
				8	17	45	—	120	—	260	—	500	—	1000	2000	
				9	14	40	—	100	—	230	—	450	—	900	1500	
				10	14	40	—	100	—	230	—	450	—	900	2000	
				2	12	19	50	50	140	140	290	290	542	542	1050	1700
					15	20	55	55	130	130	208	208	342	342	588	1140
			16		19	50	50	140	140	290	290	542	542	1050	1700	
			20		19	50	50	140	140	290	290	542	542	1050	1700	
			25		22	60	60	160	160	330	330	650	650	1200	2000	
			28		19	50	50	140	140	300	300	550	550	1100	1800	
			30		20	55	55	150	150	310	310	600	600	1100	1900	
			32		17	45	45	120	120	260	260	500	500	1000	1600	
			35		19	50	50	140	140	300	300	550	550	1100	1800	
			40		17	45	45	120	120	260	260	500	500	1000	1600	
			45		14	40	40	100	100	230	230	450	450	900	1500	
			50		22	60	60	160	160	330	330	650	650	1200	2000	
			60		20	55	55	150	150	310	310	600	600	1100	1900	
			70		19	50	50	140	140	300	300	550	550	1100	1800	
			80		17	45	45	120	120	260	260	500	500	1000	1600	
			90	14	40	40	100	100	230	230	450	450	900	1500		
			100	14	40	40	100	100	230	230	450	450	900	1500		
急停力矩 Emergency stop Torque	T _{2NOT} ⁽²⁾	N.m	1,2	3-100	3倍额定扭矩 / 3 times of Nominal Output Torque											
额定输入转速 Nominal Input speed	n _{1N}	rpm	1,2	3-100	5000	5000	5000	4000	4000	4000	4000	3000	3000	3000	2000	
最大输入转速 Input speed	n _{1B}		1,2	3-100	10000	10000	10000	8000	8000	8000	8000	6000	6000	6000	4000	
超精密背隙 Micro Backlash	P _O	arcmin	1	3-10	—	—	—	≤1	—	≤1	—	≤1	—	≤1	≤1	
	2		12-100	—	—	—	—	—	≤3	≤3	≤3	≤3	≤3	≤3	≤3	
精密背隙 Reduced Backlash	P ₁	arcmin	1	3-10	≤3	≤3	—	≤3	—	≤3	—	≤3	—	≤3	≤3	
	2		12-100	≤5	≤5	≤5	≤5	≤5	≤5	≤5	≤5	≤5	≤5	≤5	≤5	
标准背隙 Standard Backlash	P ₂		1	3-10	≤5	≤5	—	≤5	—	≤5	—	≤5	—	≤5	≤5	
	2		12-100	≤7	≤7	≤7	≤7	≤7	≤7	≤7	≤7	≤7	≤7	≤7	≤7	
抗扭刚性 Torsional Rigidity		N.m/ arcmin	1,2	3-100	3	7	7	14	14	25	25	50	50	145	225	
容许径向力 Max. Radial Load	F _{2rB} ⁽³⁾	N	1,2	3-100	780	1530	1530	3250	3250	6700	6700	9400	9400	14500	50000	
容许轴向力 Max. Axial Load	F _{2aB} ⁽³⁾	N	1,2	3-100	390	765	765	1625	1625	3350	3350	4700	4700	7250	25000	
效率 Efficiency	η	%	1	3-10	≥97%											
			2	12-100	≥94%											
重量 Weight		kg	1	3-10	0.6	1.3	—	3.7	—	7.8	—	14.5	—	29	48	
			2	12-100	0.8	1.5	1.9	4.1	5.3	9	11.4	17.5	20.7	33	60	
使用温度 Operating Temp		℃	1,2	3-100	-10℃—+90℃											
润滑 Lubrication			1,2	3-100	合成润滑油脂 / Synthetic lubrication oils											
防护等级 Degree of Gearbox Protection			1,2	3-100	IP65											
安装方向 Mounting positions			1,2	3-100	任意方向 / all directions											
噪音值 Noise		dB(A)	1,2	3-100	≤56	≤58	≤60	≤60	≤63	≤63	≤65	≤65	≤67	≤67	≤70	

(1) 减速比 (i=N_{in} /N_{out})

(2) 最大加速扭矩 T_{2B} = T_{2NOT} × 60%

(3) 数据以 n₂ =100rpm，作用于输出轴中心位置为准

(4) 数据以 i=10 / i=100, n_i=3000r/min 空载状态测得

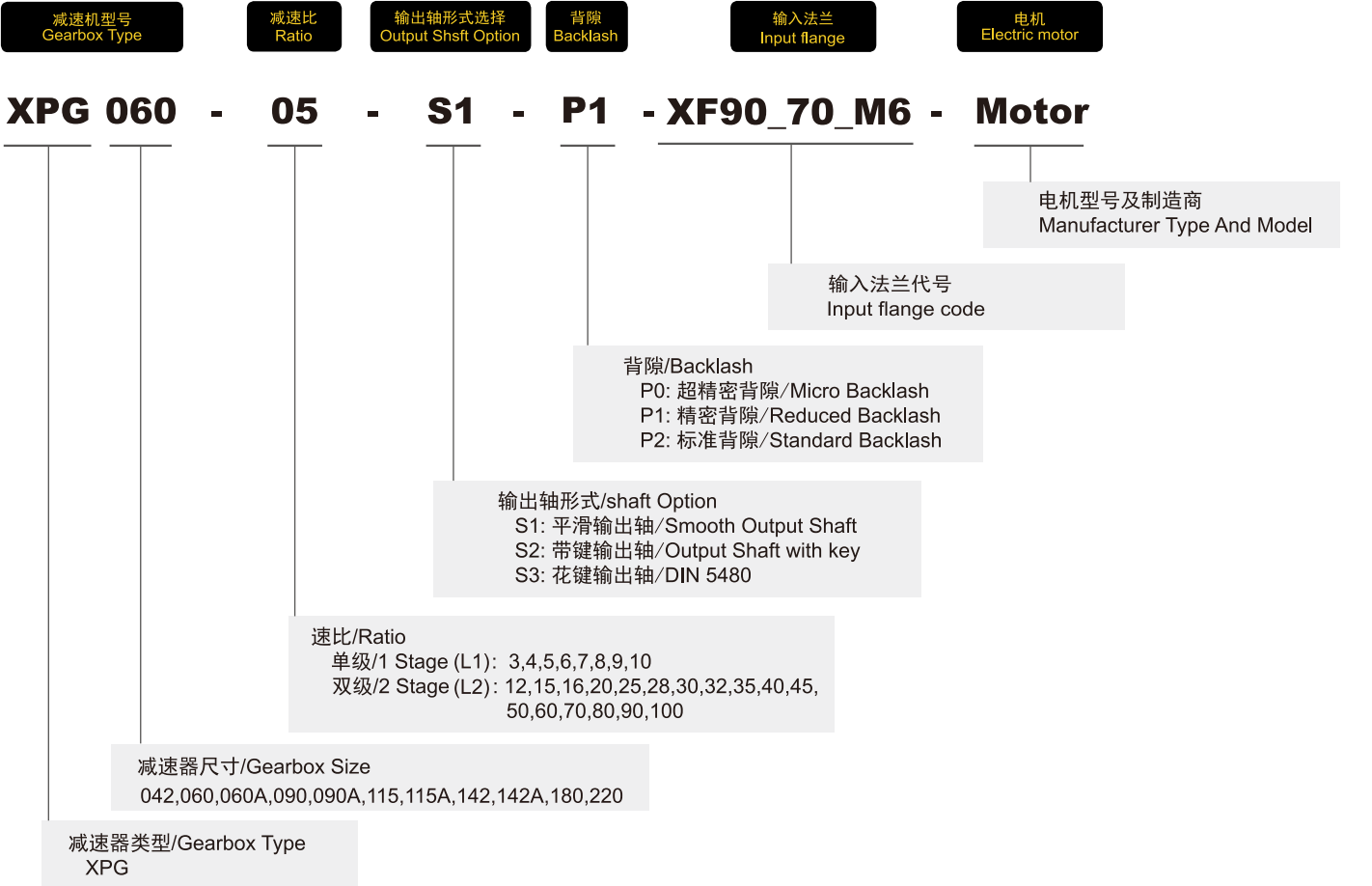
(1) Ratio (i=N_{in} /N_{out})

(2) MAX.acceleration torque T_{2B} = T_{2NOT} × 60%

(3) Applied to the output shaft cen ter at n₂ =100rpm

(4) Data is measured at i=10/i=100, n=3000r/min no-load state

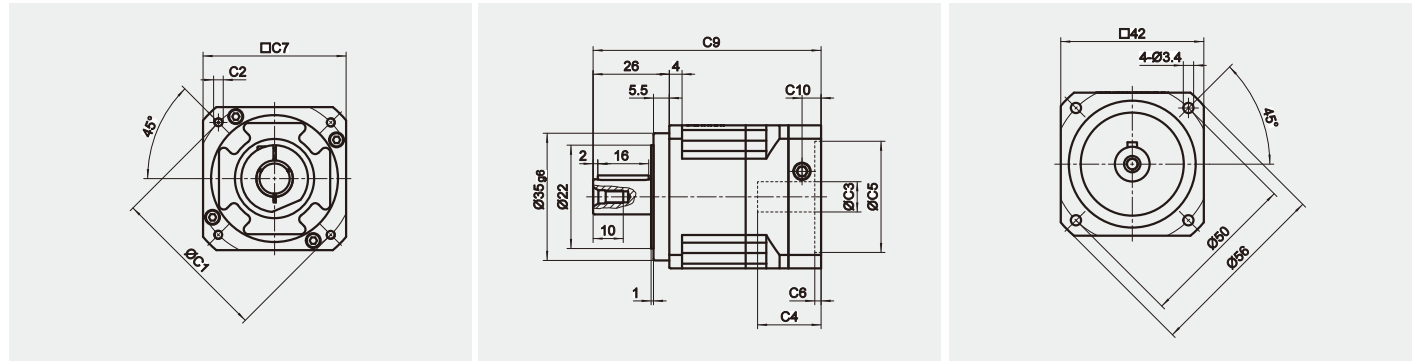
减速机参数 Gearbox characteristics			减速比 Rati0[ij] ⁽¹⁾	XPG 042	XPG 060	XPG 060A	XPG 090	XPG 090A	XPG 115	XPG 115A	XPG 142	XPG 142A	XPG 180	XPG 220	
	J ₁	1	3	0.03	0.16	—	0.61	—	3.25	—	9.21	—	28.98	69.61	
			4	0.03	0.14	—	0.48	—	2.74	—	7.54	—	23.67	54.37	
			5	0.03	0.13	—	0.47	—	2.71	—	7.42	—	23.29	53.27	
			6	0.03	0.13	—	0.45	—	2.65	—	7.25	—	22.75	51.72	
			7	0.03	0.13	—	0.45	—	2.62	—	7.14	—	22.48	50.97	
			8	0.03	0.13	—	0.44	—	2.58	—	7.07	—	22.59	50.84	
			9	0.03	0.13	—	0.44	—	2.57	—	7.04	—	22.53	50.63	
			10	0.03	0.13	—	0.44	—	2.57	—	7.03	—	22.51	50.56	
			2	12	0.03	0.03	0.16	0.16	0.61	0.61	3.25	3.25	9.21	9.21	28.98
				15	0.03	0.03	0.13	0.13	0.47	0.47	2.71	2.7 1	7.42	7.42	23.29
		16		0.03	0.03	0.14	0.14	0.48	0.48	2.74	2.74	7.54	7.54	23.67	
		20		0.03	0.03	0.13	0.13	0.47	0.47	2.71	2.71	7.42	7.42	23.29	
		25		0.03	0.03	0.13	0.13	0.47	0.47	2.71	2.71	7.42	7.42	23.29	
		28		0.03	0.03	0.14	0.14	0.48	0.48	2.74	2.74	7.54	7.54	23.67	
		30		0.03	0.03	0.13	0.13	0.47	0.47	2.71	2.71	7.42	7.42	23.29	
		32		0.03	0.03	0.14	0.14	0.48	0.48	2.74	2.74	7.54	7.54	23.67	
		35		0.03	0.03	0.13	0.13	0.47	0.47	2.71	2.71	7.42	7.42	23.29	
		40		0.03	0.03	0.13	0.13	0.47	0.47	2.71	2.71	7.42	7.42	23.29	
		45		0.03	0.03	0.13	0.13	0.47	0.47	2.71	2.71	7.42	7.42	23.29	
		50		0.03	0.03	0.13	0.13	0.44	0.44	2.57	2.57	7.03	7.03	22.51	
		60		0.03	0.03	0.13	0.13	0.44	0.44	2.57	2.57	7.03	7.03	22.51	
		70		0.03	0.03	0.13	0.13	0.44	0.44	2.57	2.57	7.03	7.03	22.51	
		80		0.03	0.03	0.13	0.13	0.44	0.44	2.57	2.57	7.03	7.03	22.51	
		90	0.03	0.03	0.13	0.13	0.44	0.44	2.57	2.57	7.03	7.03	22.51		
		100	0.03	0.03	0.13	0.13	0.44	0.44	2.57	2.57	7.03	7.03	22.51		



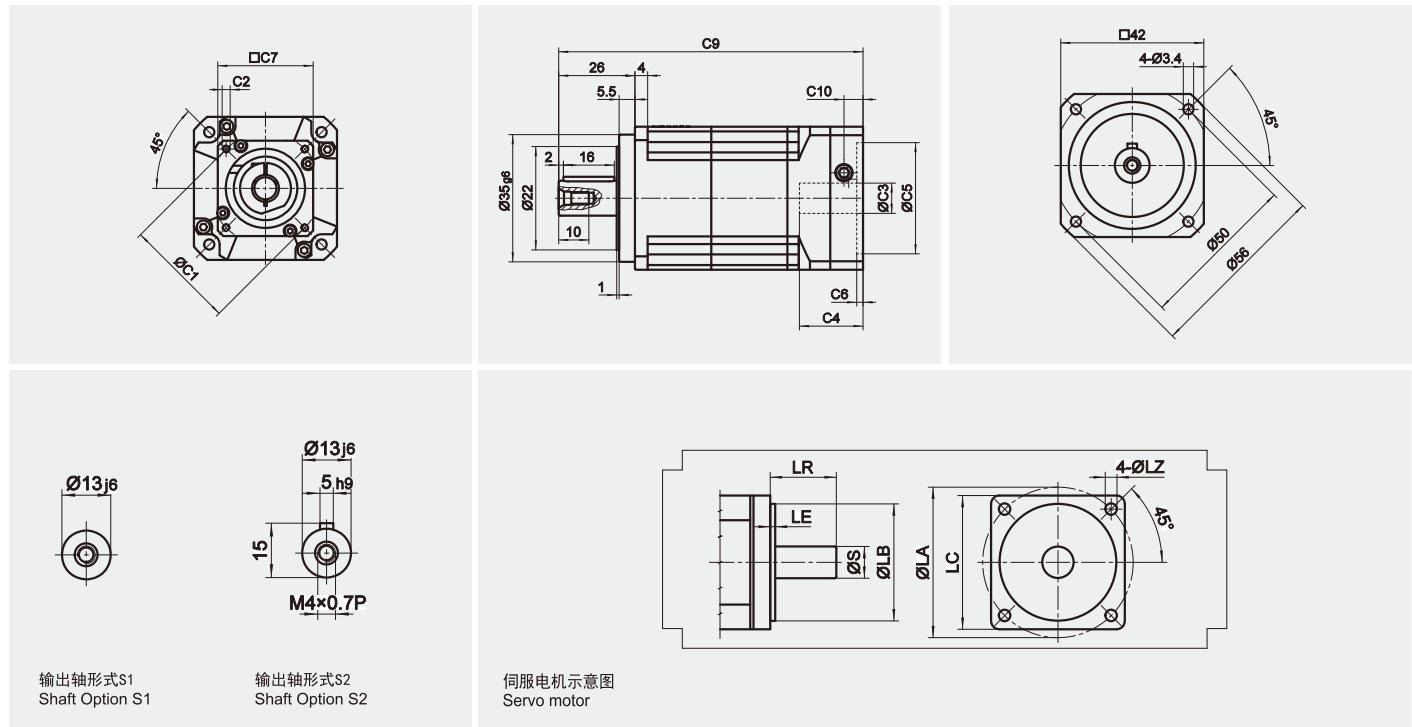
XPGR TECHNICAL DATA

XPGR 技术数据

XPG042 尺寸 Dimensions 单级/1-stage, 速比/Ratio i=3-10



XPG042(A) 尺寸 Dimensions 双级/2-stage, 速比/Ratio i=12-100

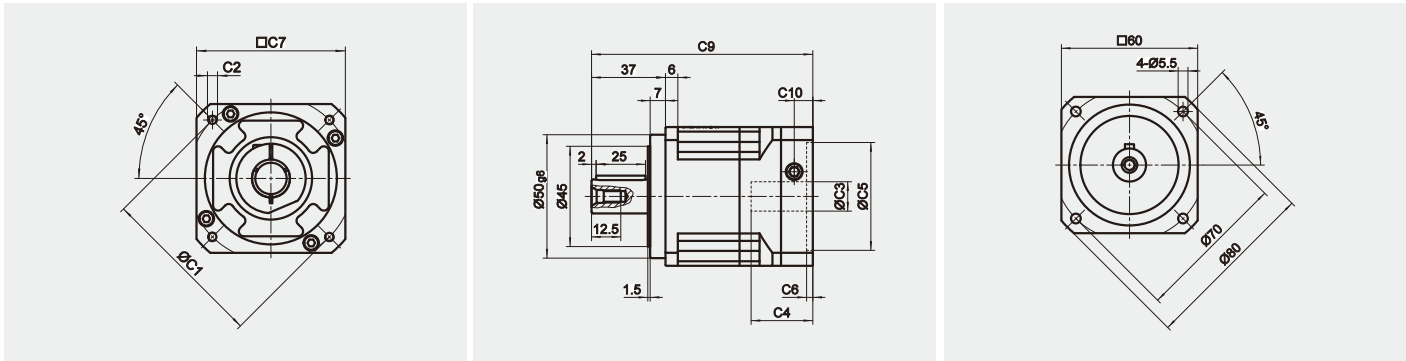


尺寸	Flange	C1	C2	C3	C4	C5	C6	C7	C9	C10
XPG042 单级 1-Stage	XF46/30/M4	Φ46	4-M4	Φ8	25	Φ30	3.5	42	86.5	8.75
	XF45/30/M4	Φ45	4-M3	Φ8	25	Φ30	3.5	42	86.5	8.75
XPG042 双级 2-Stage	XF46/30/M4	Φ46	4-M4	Φ8	25	Φ30	3.5	42	114	8.75
	XF45/30/M4	Φ45	4-M3	Φ8	25	Φ30	3.5	42	114	8.75
其它电机 Other motors	XFLA/LB/LZ	ΦLA	4-ΦLZ	ΦS	LR	ΦLB	LE+2	LC	*	*

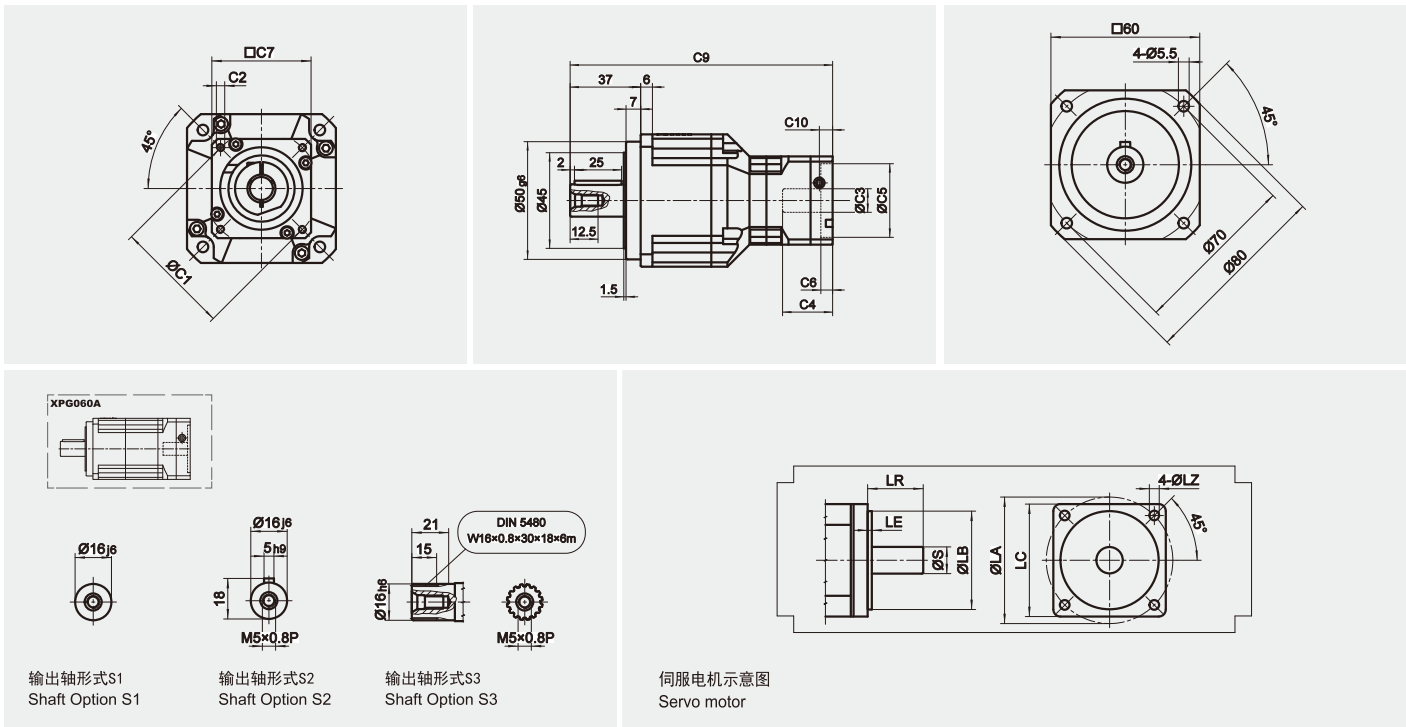
C1-C7:是常用公制电机接口尺寸，配其它电机，请联系本公司。
C1-C7: are motor specific dimensions (metricstd shown).
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*: please contact our sales department.

XPG060 尺寸 Dimensions 单级/1-stage, 速比/Ratio i=3-10



XPG060(A) 尺寸 Dimensions 双级/2-stage, 速比/Ratio i=12-100



尺寸	Flange	C1	C2	C3	C4	C5	C6	C7	C9	C10
XPG060 单级 1-Stage	XF-66.7/38.1/M4	Φ66.7	4-M4	Φ8	34	Φ38.1	8	60	117	13.5
	XF-70/50/M5	Φ70	4-M5	Φ11,Φ14	34	Φ50	8	60	117	13.5
XPG060 双级 2-Stage	XF-46/30/M4	Φ46	4-M4	Φ8	25	Φ30	3.5	42	138.5	8.75
	XF-45/30/M4	Φ45	4-M3	Φ8	25	Φ30	3.5	42	138.5	8.75
XPG060A 双级 2-Stage	XF-66.7/38.1/M4	Φ66.7	4-M4	Φ8	34	Φ38.1	8	60	154	13.5
	XF-70/50/M5	Φ70	4-M5	Φ11,Φ14	34	Φ50	8	60	154	13.5
其它电机 Other motors	XF-LA/LB/LZ	ΦLA	4-ΦLZ	ΦS	LR	ΦLB	LE+2	LC	*	*

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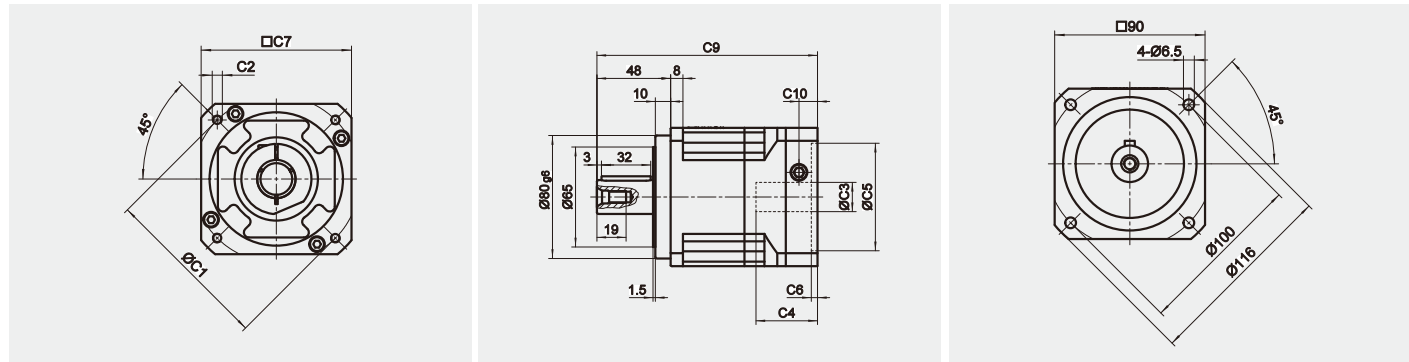
*:请联系公司确定
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XP

G090

尺寸 Dimensions

单级/1-stage, 速比/Ratio i=3-10

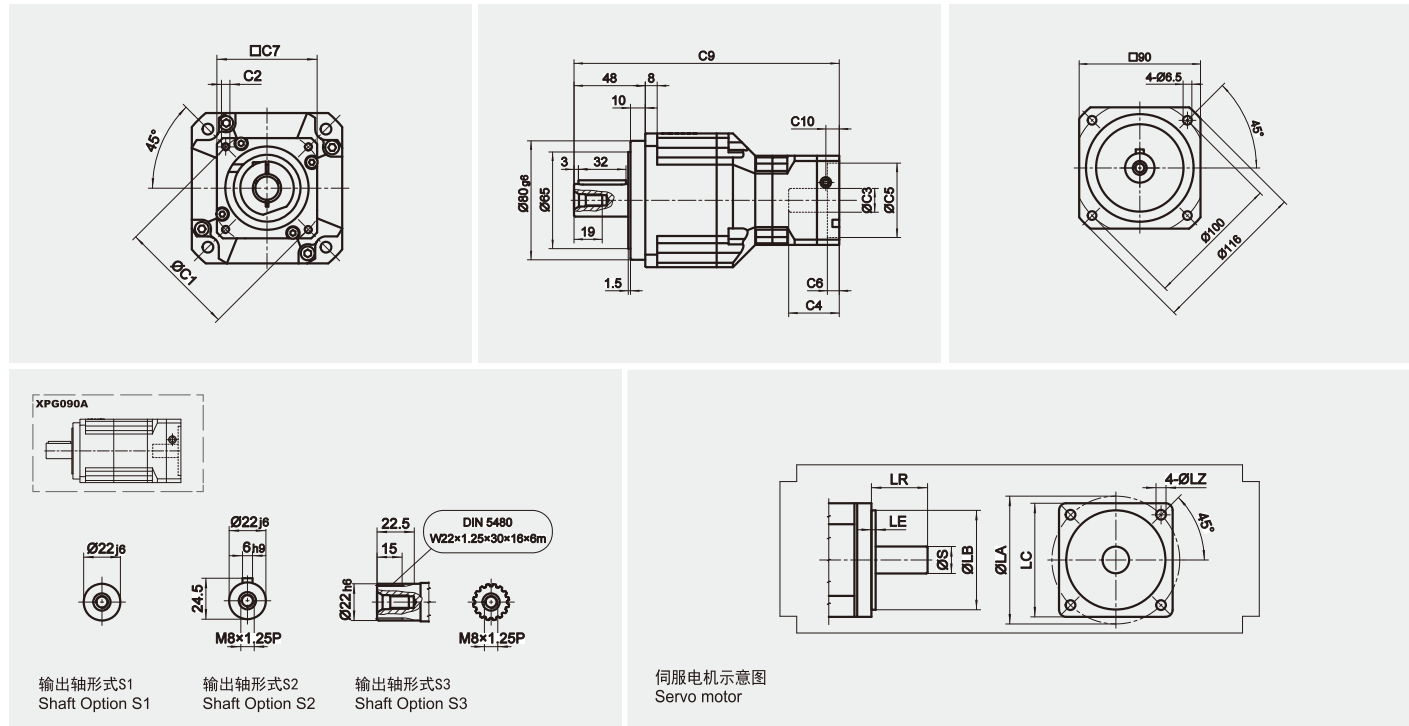


XP

G090(A)

尺寸 Dimensions

双级/2-stage, 速比/Ratio i=12-100



尺寸	Flange	C1	C2	C3	C4	C5	C6	C7	C9	C10
XP G090 单级 1-Stage	XF-90/70/M6	Φ90	4-M6	Φ19	40	Φ70	4	90	143.5	10.75
	XF-100/80/M6	Φ100	4-M6	Φ19	40	Φ80	6	90	143.5	10.75
	XF-75/60/M5	Φ75	4-M5	Φ14	40	Φ60	6	90	143.5	10.75
	XF-115/95/M8	Φ115	4-M8	Φ19,Φ22	50	Φ95	8	100	153.5	20.75
	XF-145/110/M8	Φ145	4-M8	Φ19,Φ22,Φ24	60	Φ110	8	130	163.5	30.75
XP G090 双级 2-Stage	XF-66.7/38.1/M4	Φ66.7	4-M4	Φ8	34	Φ38.1	8	60	178.5	13.5
	XF-70/50/M5	Φ70	4-M5	Φ11,Φ14	34	Φ50	8	60	178.5	13.5
XP G090A 双级 2-Stage	XF-90/70/M6	Φ90	4-M6	Φ19	40	Φ70	6	90	191.5	10.75
	XF-100/80/M6	Φ100	4-M6	Φ19	40	Φ80	6	90	191.5	10.75
其它电机 Other motors	XF-LA/LB/LZ	ΦLA	4-ΦLZ	ΦS	LR	ΦLB	LE+2	LC	*	*

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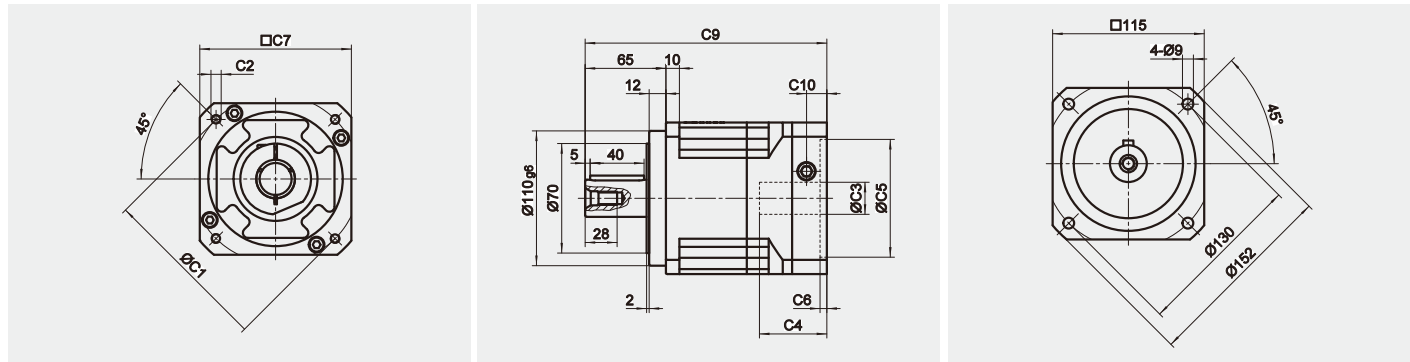
*:请联系公司确定
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XP

G115

尺寸 Dimensions

单级/1-stage, 速比/Ratio i=3-10

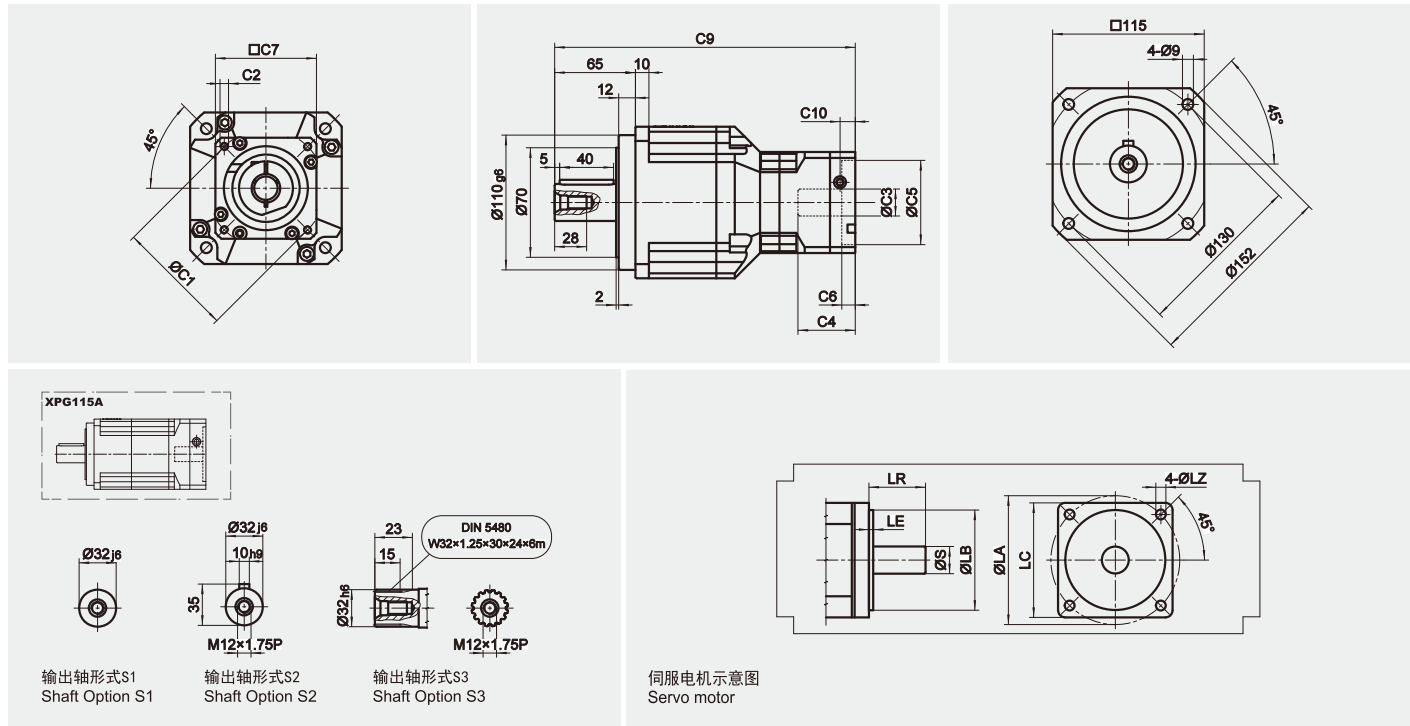


XP

G115(A)

尺寸 Dimensions

双级/2-stage, 速比/Ratio i=12-100



尺寸	Flange	C1	C2	C3	C4	C5	C6	C7	C9	C10
XP G115 单级 1-Stage	XF-130/110/M8	Φ130	4-M8	Φ22,Φ24,Φ28	50	Φ110	5	115	186.5	13
	XF-145/110/M8	Φ145	4-M8	Φ22,Φ24,Φ28	60	Φ110	8	130	196	23
	XF-165/110/M10	Φ165	4-M10	Φ32	60	Φ130	6	142	201	28.5
XP G115 双级 2-Stage	XF-90/70/M6	Φ90	4-M6	Φ19	40	Φ70	4	90	225.5	10.75
	XF-100/80/M6	Φ100	4-M6	Φ19	40	Φ80	6	90	225.5	10.75
XP G115A 双级 2-Stage	XF-115/95/M8	Φ115	4-M8	Φ24	50	Φ95	6	100	247.5	13
	XF-130/110/M8	Φ130	4-M8	Φ22,Φ24,Φ28	50	Φ110	5	115	247.5	13
	XF-145/110/M8	Φ145	4-M8	Φ22,Φ24,Φ28	60	Φ110	8	130	257	23
其它电机 Other motors	XF-LA/LB/LZ	ΦLA	4-ΦLZ	ΦS	LR	ΦLB	LE+2	LC	*	*

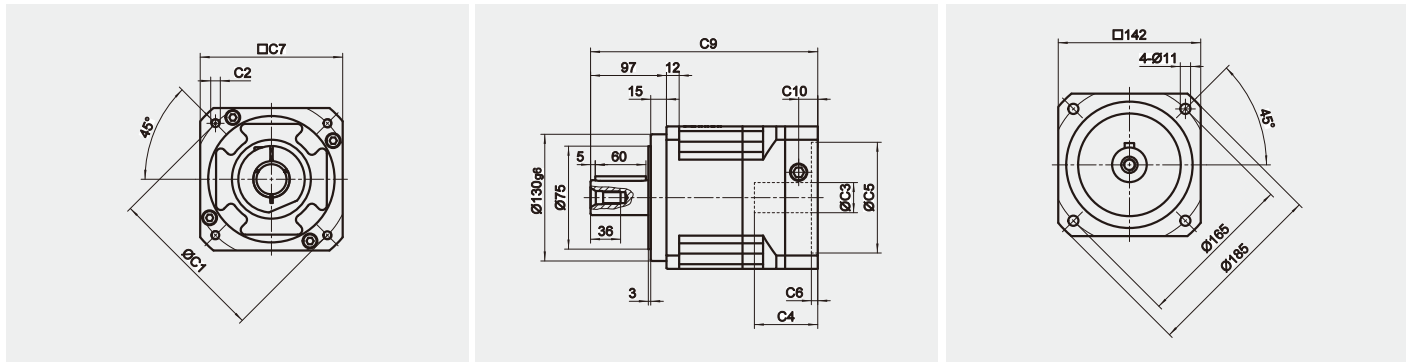
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XPG142

尺寸 Dimensions

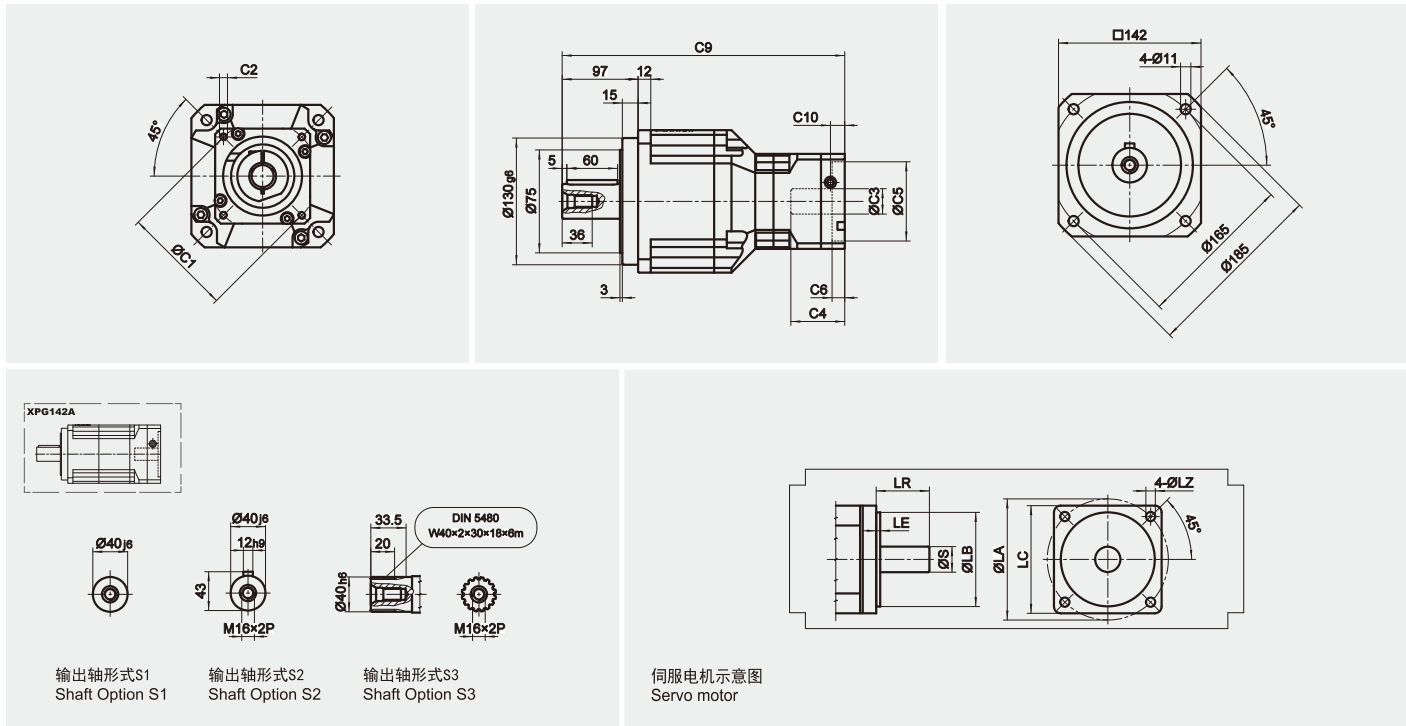
单级/1-stage, 速比/Ratio i=3-10



XPG142(A)

尺寸 Dimensions

双级/2-stage, 速比/Ratio i=12-100



尺寸	Flange	C1	C2	C3	C4	C5	C6	C7	C9	C10
XPGR142 单级 1-Stage	XF-145/110/M8	Φ145	4-M8	Φ22,Φ24,Φ28	60	Φ110	8	130	239	15
	XF-165/130/M10	Φ165	4-M10	Φ38	60	Φ130	6	142	239	15
	XF-200/114.3/M12	Φ200	4-M12	Φ35	80	Φ114.3	6	180	259	35
XPGR142 双级 2-Stage	XF-115/95/M8	Φ115	4-M8	Φ24	50	Φ95	6	100	292.5	13
	XF-130/110/M8	Φ130	4-M8	Φ22,Φ24,Φ28	50	Φ110	5	115	292.5	13
XPGR142A 双级 2-Stage	XF-145/110/M8	Φ145	4-M8	Φ22,Φ24,Φ28	60	Φ110	8	130	310.5	15
	XF-165/130/M10	Φ165	4-M10	Φ38	60	Φ130	6	142	310.5	15
其它电机 Other motors	XF-LA/LB/LZ	ΦLA	4-ΦLZ	ΦS	LR	ΦLB	LE+2	LC	*	*

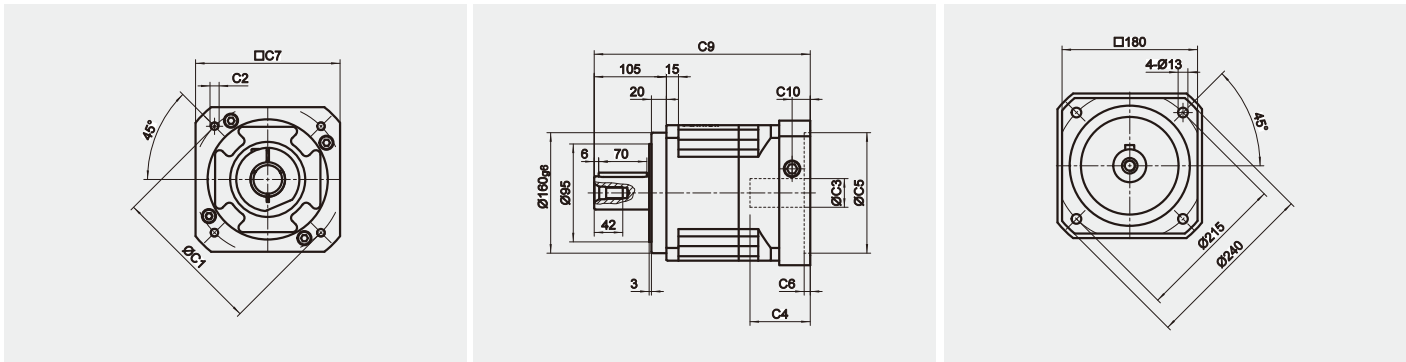
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XPGR180

尺寸 Dimensions

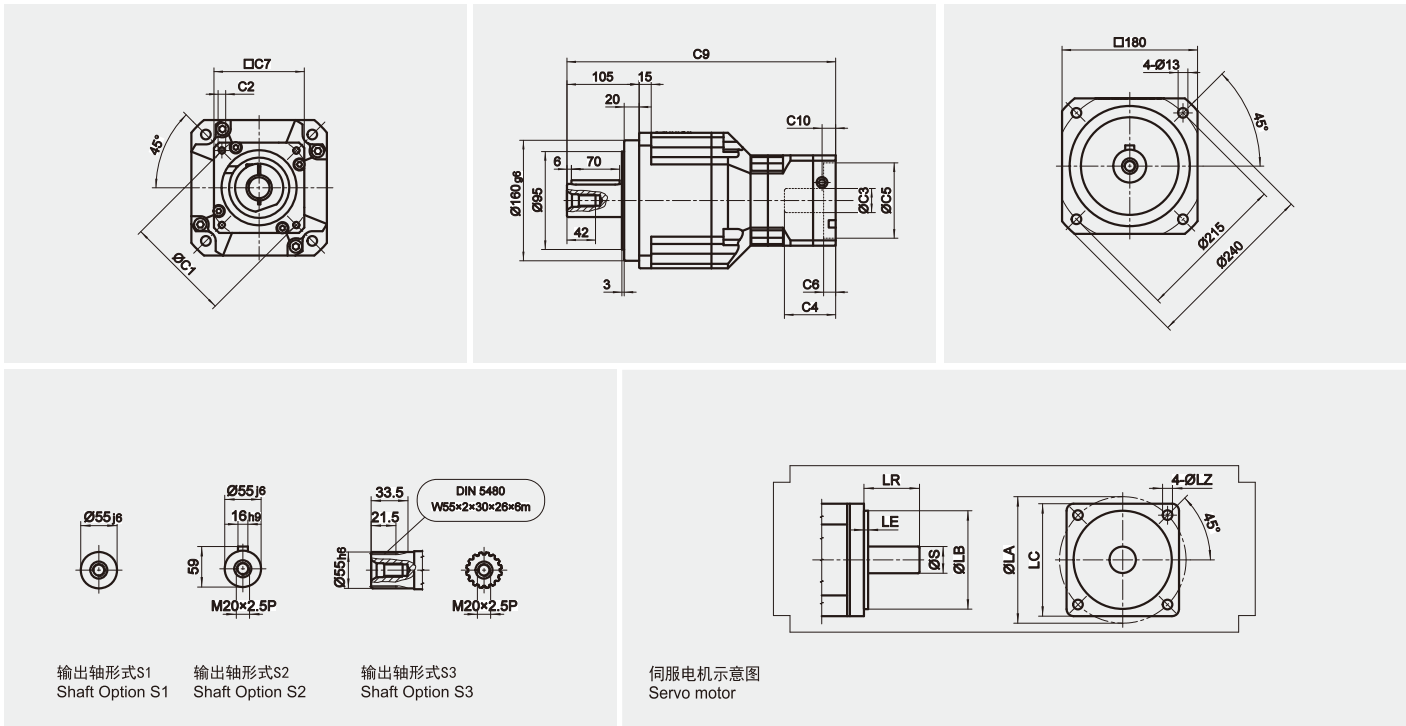
单级/1-stage, 速比/Ratio i=3-10



XPGR180(A)

尺寸 Dimensions

双级/2-stage, 速比/Ratio i=12-100



尺寸	Flange	C1	C2	C3	C4	C5	C6	C7	C9	C10
XPGR180 单级 1-Stage	XF-200/114.3/M12	Φ200	4-M12	Φ35	80	Φ114.3	6	180	288	20.75
	XF-215/180/M12	Φ215	4-M12	Φ48	85	Φ180	6	190	288	20.75
XPGR180 双级 2-Stage	XF-145/110/M8	Φ145	4-M8	Φ22,Φ24,Φ28	60	Φ110	8	130	337	15
	XF-165/130/M10	Φ165	4-M10	Φ38	60	Φ130	6	142	337	15
其它电机 Other motors	XF-LA/LB/LZ	ΦLA	4-ΦLZ	ΦS	LR	ΦLB	LE+2	LC	*	*

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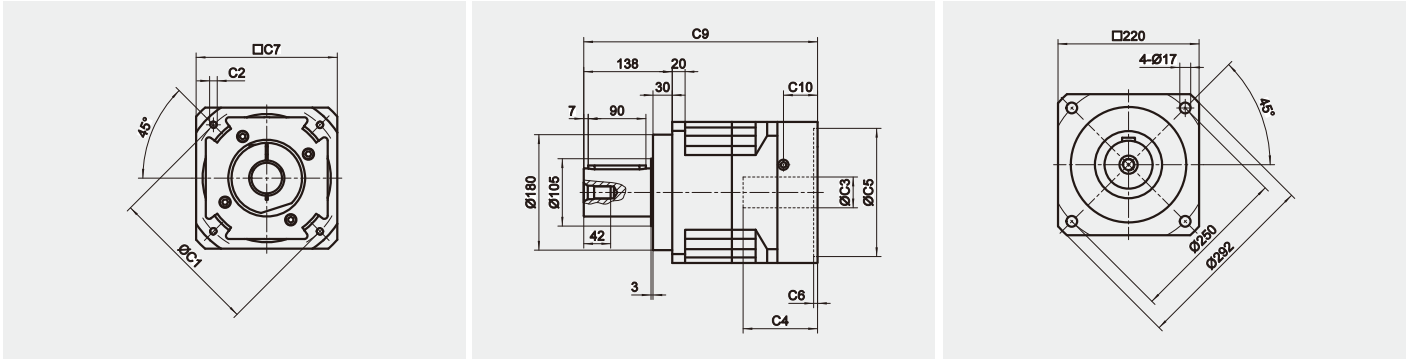
*:请联系公司确定
*: please contact our sales department.

XPG TECHNICAL DATA

XPG 技术数据

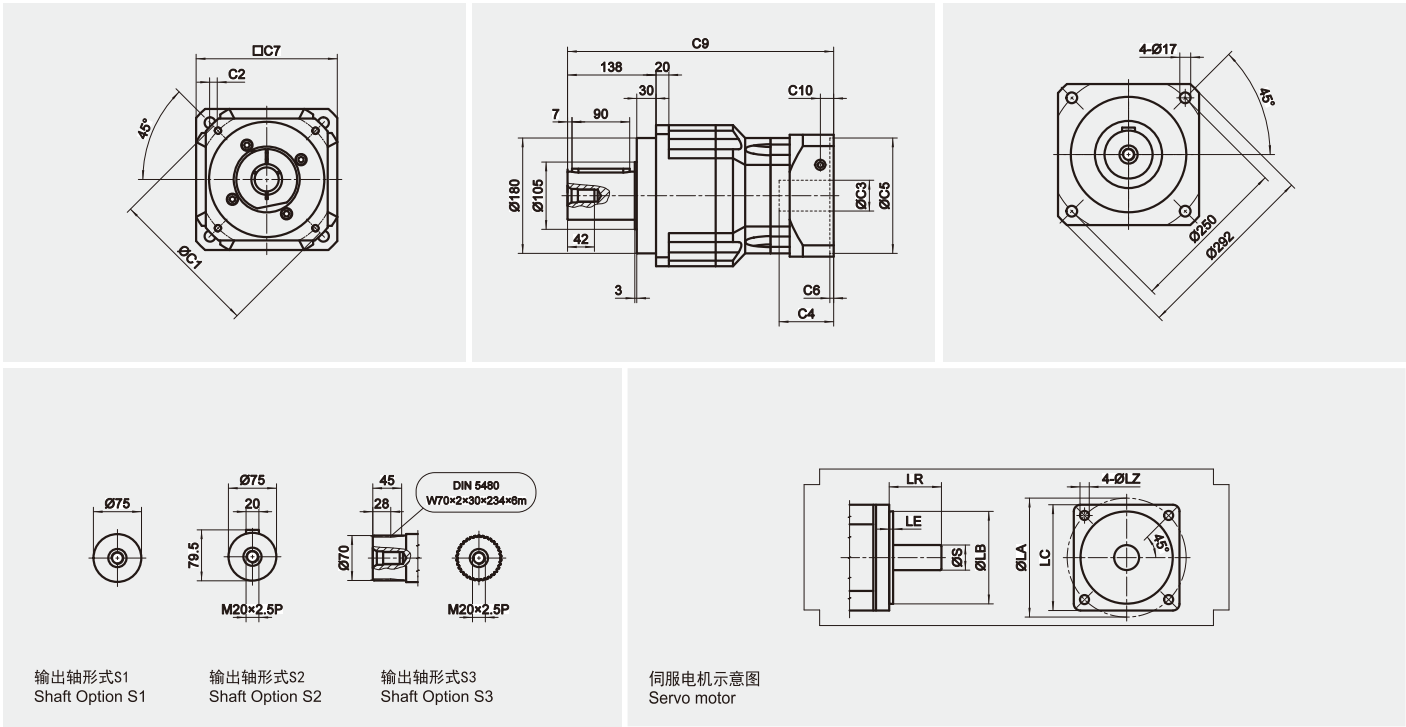
XPG220 尺寸 Dimensions

单级/1-stage, 速比/Ratio i=3-10



XPG220(A) 尺寸 Dimensions

双级/2-stage, 速比/Ratio i=12-100

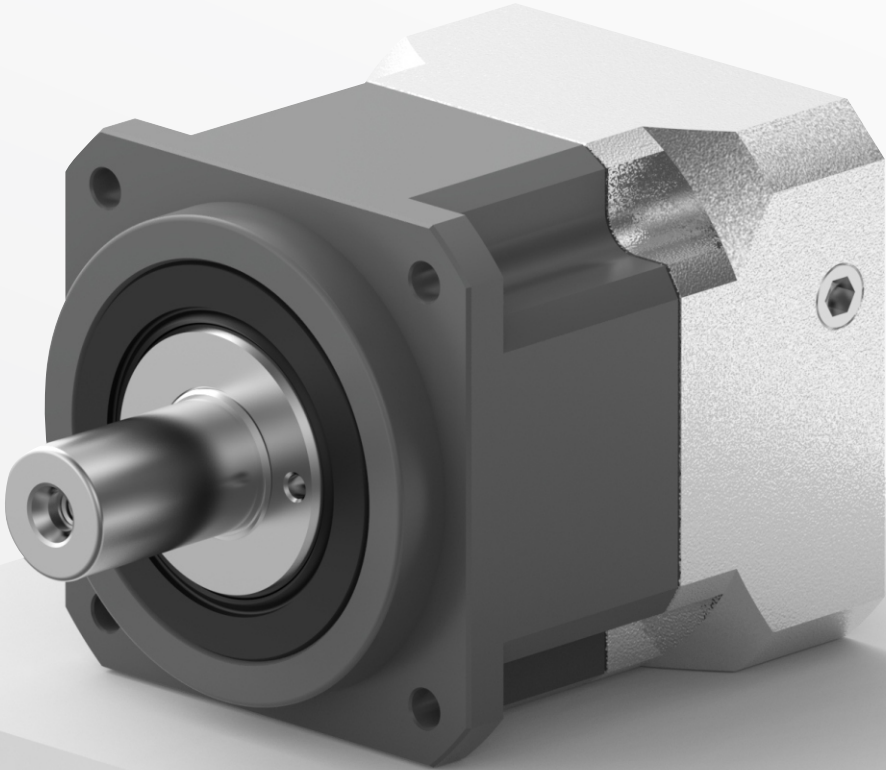


尺寸	Flange	C1	C2	C3	C4	C5	C6	C7	C9	C10
XPG220 单级 1-Stage	XF-235/200/M12	Φ235	4-M12	Φ42,Φ55	116	Φ200	6	220	364.5	53
XPG220 双级 2-Stage	XF-200/114.3/M12	Φ200	4-M12	Φ35	80	Φ114.3	6	180	415	20.75
	XF-215/180/M12	Φ215	4-M10	Φ48	85	Φ180	6	190	415	20.75
其它电机 Other motors	XF-LA/LB/LZ	ΦLA	4-ΦLZ	ΦS	LR	ΦLB	LE+2	LC	*	*

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XPG



XPGR

精准的来回往复运动定位

Accurate reciprocating motion positioning

XPGR 系列

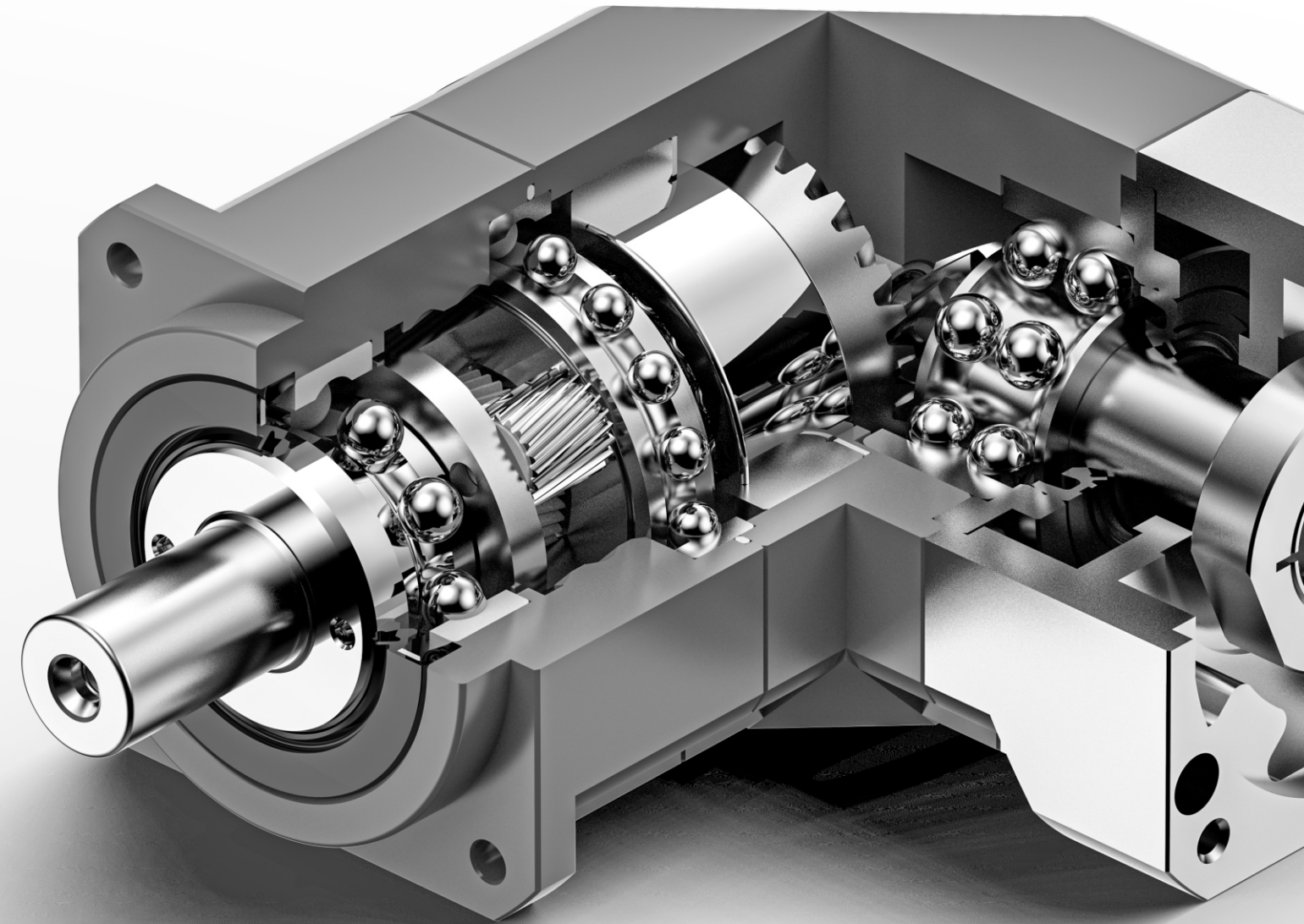
XPGR是高精度行星齿轮、高效螺旋伞齿轮和高效轴承科技完美结合的产物，专为需要保证高转速、低噪音的同时达到最优化性能的应用面而设计，借助高刚性的结构、高精密的斜齿、螺旋伞齿轮，运行平稳、安静，更具有强劲的性能。

- 1.采用螺旋伞齿轮设计，输出扭矩高，比直齿伞齿轮高30%以上
- 2.高容许输入转速，比直齿伞齿轮高8倍以上
- 3.螺旋伞齿轮的啮合齿印，经最佳化设计，接触齿面负载均一，运转寿命长
- 4.螺旋伞齿轮啮合，经最佳化运动误差分析与严格的制程控管，以确保高精度的运转背隙,最小运转背隙 $\leq 1\text{arcmin}$
- 5.螺旋伞齿轮的齿轮箱结构，采用高强度轻量化的铝合金设计，具有最高的刚性
- 6.免保养，无须更换润滑油，运转寿命长
- 7.高效率(95%以上)
- 8.低噪音(61dB以下)
- 9.减速比齐全，共有28种减速比， $i = 3, \dots, 200$

SERIES XPGR

XPGR series precision planetary gearbox is the perfect combination of high precision planetary gear and highefficiency bearing. It is designed for applications thatrequire high speed and low noise while achievingoptimized performance. With high stiffness structureand high precision helical gear, it runs smoothly,quietly, and has more powerful performance.

- 1.Higher output torque rating by using spiral bevel gear design.30% more than straight bevel gear.
- 2.Allows input speeds up to 8 times than with straight bevelgearing.
3. Improved load sharing through precision tooth design andlonger service life.
- 4.Ground gears verified with sophisticated software, ensuressmooth, quiet operation with reduced backlash($\leq 2\text{arcmin}$)
- 5.High tensile low weight single piece aluminum alloy housing forhighest stiffness.
- 6.Maintenance free lifetime lubrication.
- 7.High efficiency (above 95%)
- 8.Low noise (below 61dB)
- 9.Most ratios available from 3~200.



XPGR TECHNICAL DATA

XPGR 技术数据

减速机参数 Gearbox characteristics			级数 Stage	减速比 Ratio[i] ⁽¹⁾	XPGR 042	XPGR 060	XPGR 060A	XPGR 090	XPGR 090A	XPGR 115	XPGR 115A	XPGR 142	XPGR 142A	XPGR 180	XPGR 220
额定输出所扭矩 Nominal Output Torque	T _{2n}	N.m	1	3	9	36	—	90	—	195	—	342	—	588	1140
				4	12	48	—	120	—	260	—	520	—	1040	1680
				5	15	60	—	150	—	325	—	650	—	1200	2000
				6	18	55	—	150	—	310	—	600	—	1100	1900
				7	19	50	—	140	—	300	—	550	—	1100	1800
				8	17	45	—	120	—	260	—	500	—	1100	1600
				9	14	40	—	100	—	230	—	450	—	900	1500
				10	14	60	—	150	—	325	—	650	—	1200	2000
				12	—	55	—	150	—	310	—	600	—	1100	1900
				14	—	42	—	140	—	300	—	550	—	1100	1800
				16	—	45	—	120	—	260	—	500	—	1000	1600
				20	—	40	—	100	—	230	—	450	—	900	1500
			2	25	15	60	60	150	150	325	325	650	650	1200	2000
				28	19	50	50	140	140	300	300	550	550	1100	1800
				30	20	55	55	150	150	310	310	600	600	1100	1900
				32	17	45	45	120	120	260	260	500	s00	1000	1600
				35	19	50	50	140	140	300	300	550	550	1100	1800
				40	17	45	45	120	120	260	260	500	500	1000	1600
				45	14	40	40	100	100	230	230	450	450	900	1500
				48	—	—	55	150	150	310	310	600	600	1100	1900
		50		14	60	60	100	100	230	230	650	650	1200	2000	
		60		20	55	55	150	150	310	310	600	600	1100	1900	
		64		—	—	45	120	120	260	260	500	500	1000	1600	
		70		19	50	50	140	140	300	300	550	550	1100	1800	
		80	17	45	45	120	120	260	260	500	500	1000	1600		
		90	14	40	40	100	100	230	230	450	450	900	1500		
		100	14	40	60	150	150	325	325	650	650	1200	2000		
		120	—	—	55	150	150	310	310	600	600	1100	1900		
		140	—	—	50	140	140	300	300	550	550	1,100	1800		
		160	—	—	45	120	120	260	260	550	550	1000	1600		
		180	—	—	40	100	100	230	230	450	450	900	1500		
		200	—	—	40	100	100	230	230	450	450	900	1500		
急停力矩 Emergency stop Torque	T _{2NOT} ⁽²⁾	N.m	1,2	3-200	3倍额定扭矩 / 3 times of Nominal Output Torque										
额定输入转速 Nominal Input speed	n _{1N}	rpm	1,2	3-200	5000	5000	5000	4000	4000	4000	4000	3000	3000	3000	2000
最大输入转速 Input speed	n _{1B}		1,2	3-200	10000	10000	10000	8000	8000	8000	8000	6000	6000	6000	4000
超精密背隙 Micro Backlash	P _O	arcrcmin	1	3-20	—	—	—	≤2	—	≤2	—	—	—	≤2	≤2
精密背隙 Reduced Backlash	P ₁		2	12-200	—	—	—	≤4	≤4	≤4	≤4	≤4	≤4	≤4	≤4
标准背隙 Standard Backlash	P ₂		1	3-20	≤4	≤4	—	≤4	—	≤4	—	≤4	—	≤4	≤4
			2	12-200	≤7	≤7	≤7	≤7	≤7	≤7	≤7	≤7	≤7	≤7	
		N.m/ arcrcmin	1	3-20	≤6	≤6	—	≤6	—	≤6	—	≤6	—	≤6	≤6
			2	12-200	≤9	≤9	≤9	≤9	≤9	≤9	≤9	≤9	≤9	≤9	≤9
抗扭刚性 Torsional Rigidity			1,2	3-200	3	7	7	14	14	25	25	50	50	145	225
容许径向力 Max. Radial Load	F _{2rB} ⁽³⁾	N	1,2	3-200	780	1530	1530	3250	3250	6700	6700	9400	9400	14500	50000
容许轴向力 Max. Axial Load	F _{2aB} ⁽³⁾	N	1,2	3-200	390	765	765	1625	1625	3350	3350	4700	4700	7250	25000
效率 Efficiency	η	%	1	3-20	≥95%										
			2	12-200	≥92%										
重量 Weight		kg	1	3-20	0.9	2.1	—	6.4	—	13	—	24.5	—	51	83
			2	12-200	1.2	1.5	—	7.8	7.9	14.2	15.9	27.5	29.6	54	95
使用温度 Operating Temp		°C	1,2	3-200	-10°C—+90°C										
润滑 Lubrication			1,2	3-200	合成润滑油脂 / Synthetic lubrication oils										
防护等级 Degree of Gearbox Protection			1,2	3-200	IP65										
安装方向 Mounting positions			1,2	3-200	任意方向 / all directions										
噪音值 ⁽⁴⁾ Noise		dB(A)	1,2	3-200	≤61	≤63	≤65	≤65	≤68	≤68	≤70	≤70	≤72	≤72	≤74

减速机参数 Gearbox characteristics			级数 Stage	减速比 Ratio[i] ⁽¹⁾	XPGR 042	XPGR 060	XPGR 060A	XPGR 090	XPGR 090A	XPGR 115	XPGR 115A	XPGR 142	XPGR 142A	XPGR 180	XPGR 220
转动惯量 Mass moments of inertia	J ₁	kg- cm ²	1	3-10	0.09	0.35	-	2.25	-	6.84	-	23.4	-	68.9	135.4
				12-20	-	0.07		1.87	-	6.25		21.8	-	65.6	119.8
				12-20	0.09	-			-			-		-	
			2	25-90	0.09	0.09	0.35	0.35	2.25	2.25	6.84	6.84	23.4	23.4	68.9
				48,64	-	-	0.07	0.31	1.87	1.87	6.25	6.25	21.8	21.8	65.6
				100-200	-	-	0.07	0.31	1.87	1.87	6.25	6.25	21.8	21.8	65.6

- (1) 减速比 (i=N_{in} /N_{out})

(2) 最大加速扭矩 T_{2B} = T_{2NOT} × 60%

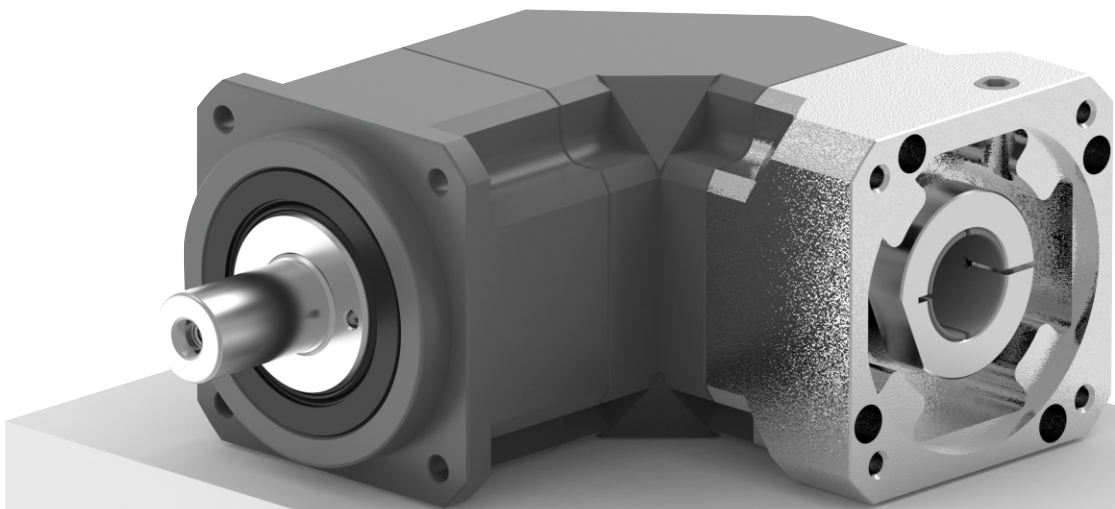
(3) 数据以 n₂ =100rpm，作用于输出轴中心位置为准

(4) 数据以 i=10 / i=100, n_i=3000r/min 空载状态测得
- (1) Ratio (i=N_{in} /N_{out})

(2) MAX.acceleration torque T_{2B} = T_{2NOT} × 60%

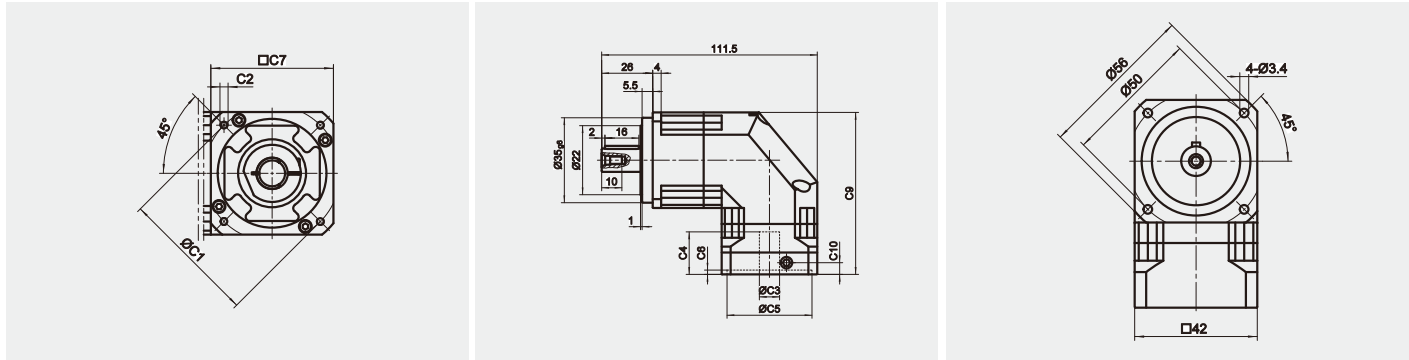
(3) Applied to the output shaft cen ter at n₂ =100rpm

(4) Data is measured at i=10/i=100, n=3000r/min no-load state



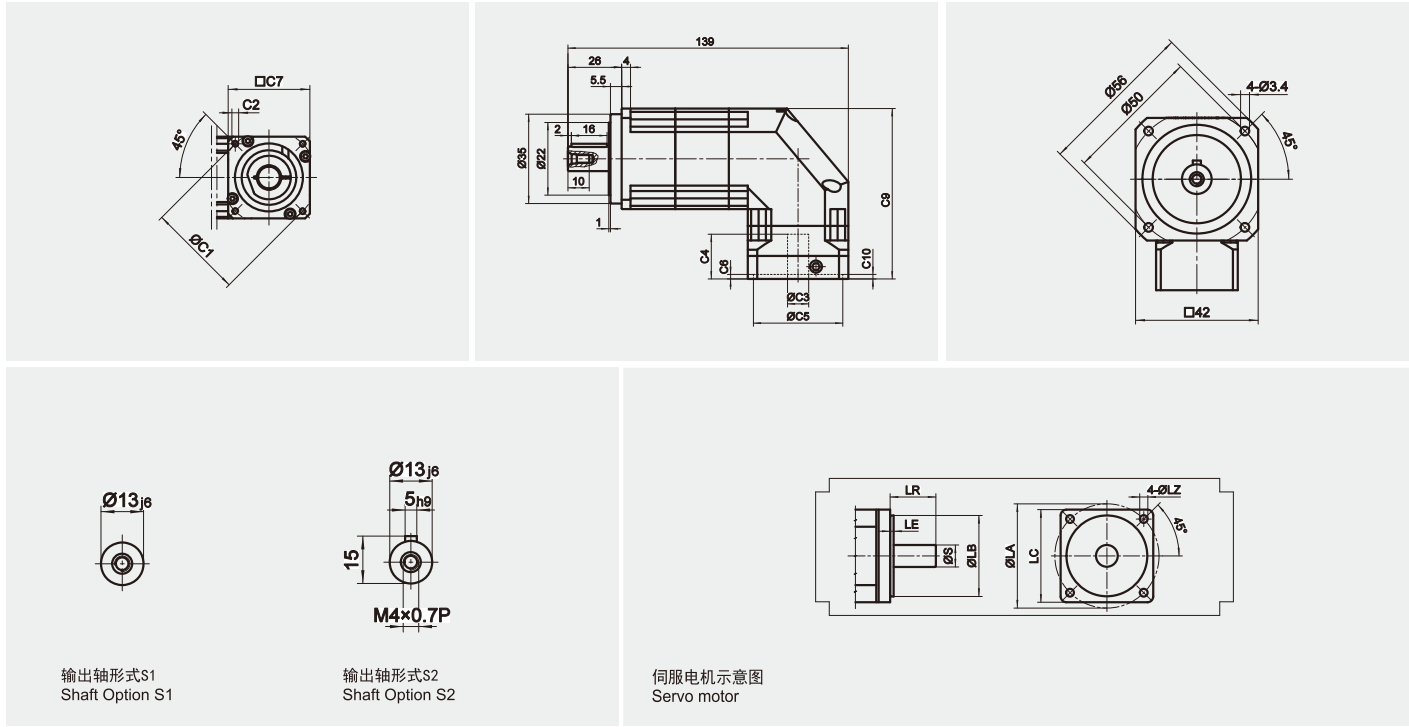
XPGR042 尺寸 Dimensions

单级/1-stage, 速比/Ratio i=3-20



XPGR042 尺寸 Dimensions

双级/2-stage, 速比/Ratio i=25-200



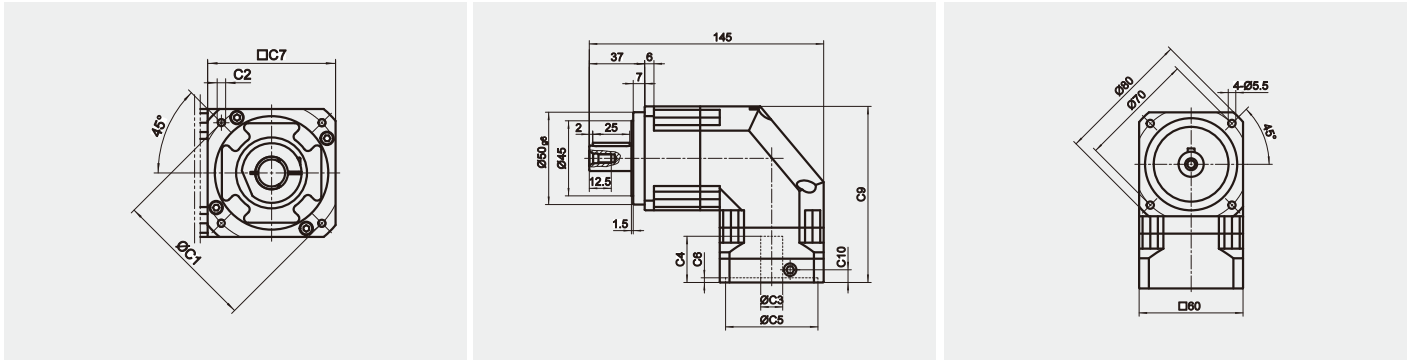
尺寸	Flange	C1	C2	C3	C4	C5	C6	C7	C9	C10
XPGR042 单级 1-Stage	XF-46/30/M4	Φ46	4-M4	Φ8	25	Φ30	3.5	42	90.5	8.75
	XF-45/30/M4	Φ45	4-M3	Φ8	25	Φ30	3.5	42	90.5	8.75
XPGR042 双级 2-Stage	XF-46/30/M4	Φ46	4-M4	Φ8	25	Φ30	3.5	42	90.5	8.75
	XF-45/30/M4	Φ45	4-M3	Φ8	25	Φ30	3.5	42	90.5	8.75
其它电机 Other motors	XF-LA/LB/LZ	ΦLA	4-ΦLZ	ΦS	LR	ΦLB	LE+2	LC	*	*

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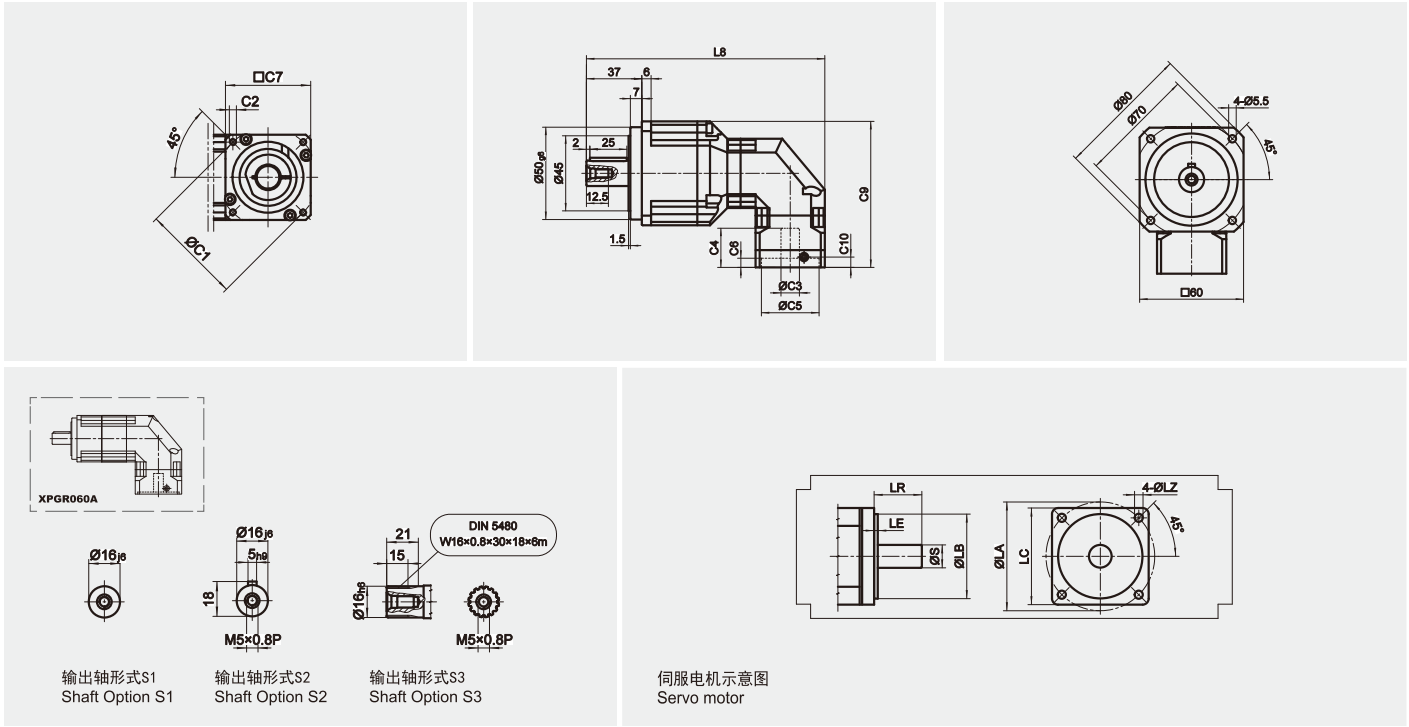
XPGR060 尺寸 Dimensions

单级/1-stage, 速比/Ratio i=3-20



XPGR060(A) 尺寸 Dimensions

双级/2-stage, 速比/Ratio i=25-200



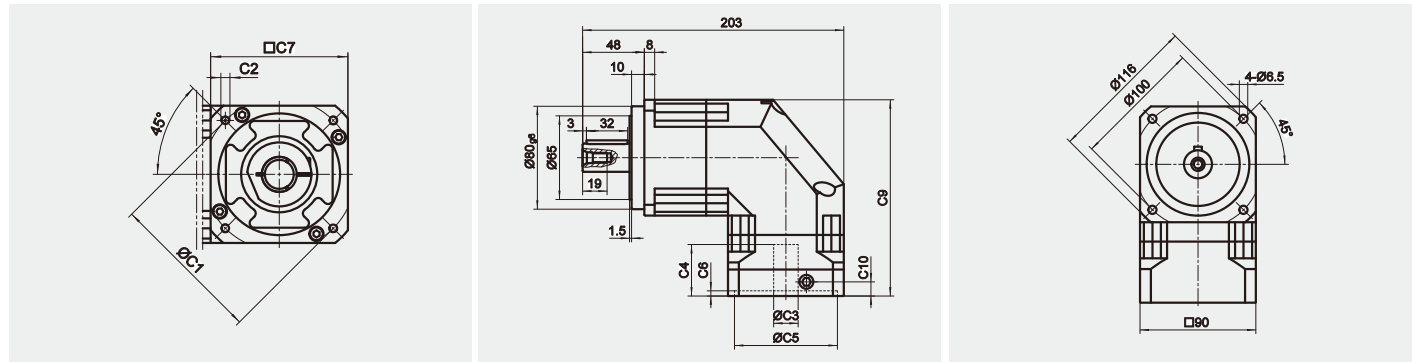
尺寸	Flange	C1	C2	C3	C4	C5	C6	C7	C9	C10	L8
XPGR060 单级 1-Stage	XF-66.7/38.1/M4	Φ66.7	4-M4	Φ8	34	Φ38.1	8	60	111.5	13.5	/
	XF-70/50/M5	Φ70	4-M5	Φ11,Φ14	34	Φ50	8	60	111.5	13.5	/
XPGR060 双级 2-Stage	XF-46/30/M4	Φ46	4-M4	Φ8	25	Φ30	3.5	42	99.5	8.75	163.5
	XF-45/30/M4	Φ45	4-M3	Φ8	25	Φ30	3.5	42	99.5	8.75	163.5
XPGR060A 双级 2-Stage	XF-66.7/38.1/M4	Φ66.7	4-M4	Φ8	34	Φ38.1	8	60	111.5	13.5	182
	XF-70/50/M5	Φ70	4-M5	Φ11,Φ14	34	Φ50	8	60	111.5	13.5	182
其它电机 Other motors	XF-LA/LB/LZ	ΦLA	4-ΦLZ	ΦS	LR	ΦLB	LE+2	LC	*	*	*

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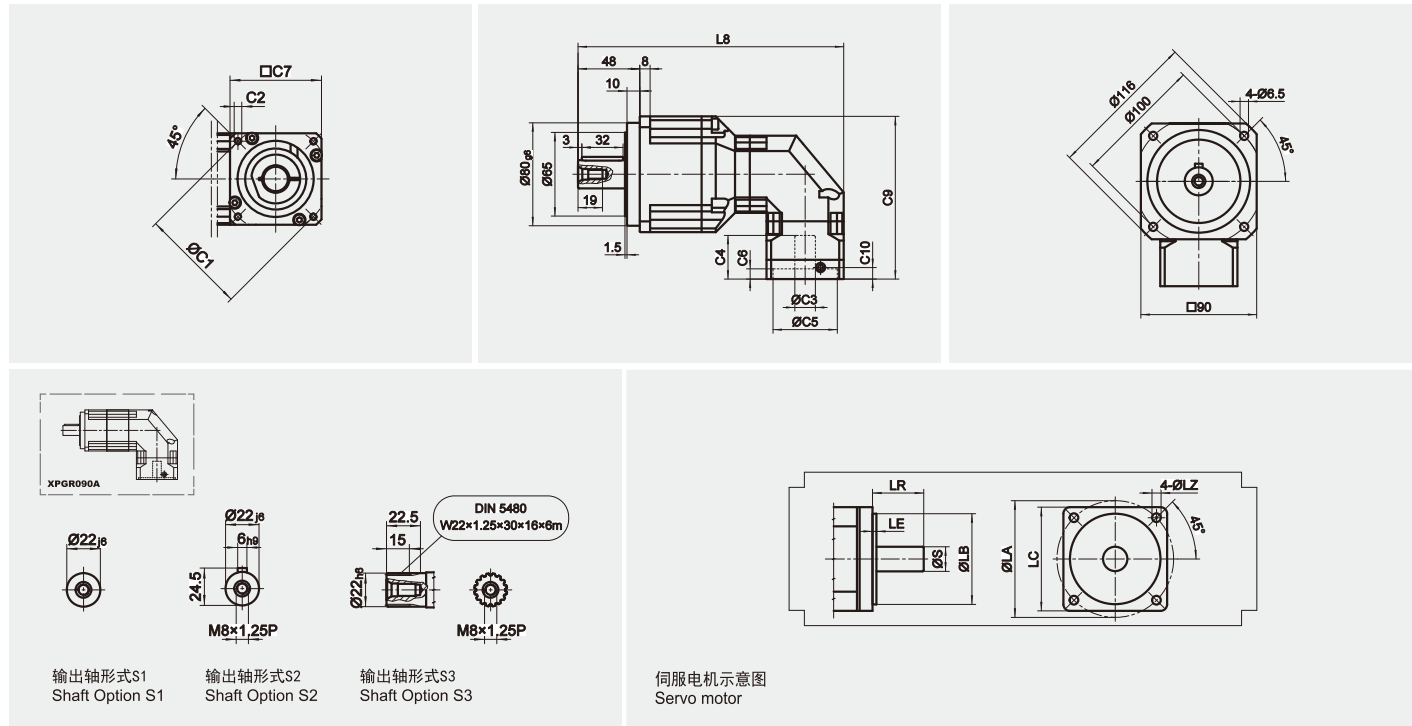
XPGR090 尺寸 Dimensions

单级/1-stage, 速比/Ratio i=3-20



XPGR090(A) 尺寸 Dimensions

双级/2-stage, 速比/Ratio i=25-200



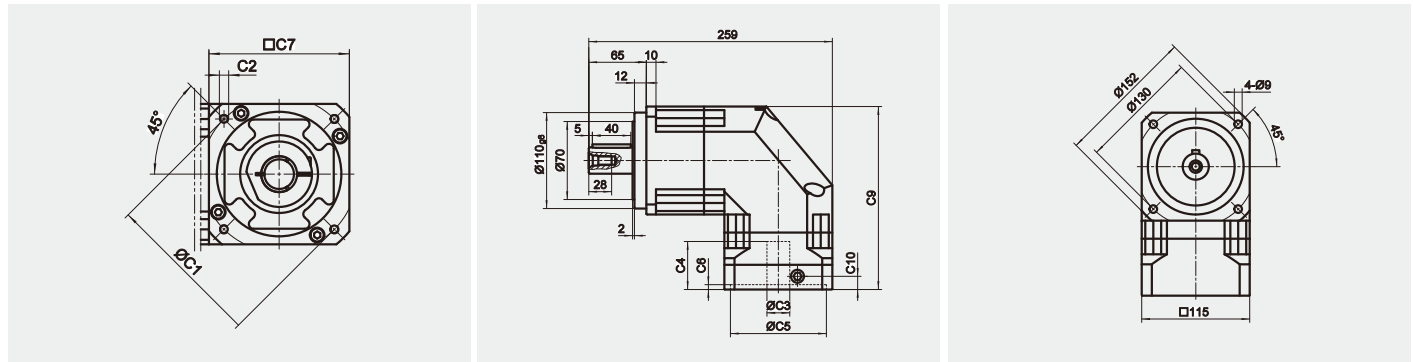
尺寸	Flange	C1	C2	C3	C4	C5	C6	C7	C9	C10	L8
XPGR090 单级 1-Stage	XF-90/70/M6	Φ90	4-M6	Φ19	40	Φ70	6	90	152.5	10.75	/
	XF-100/80/M6	Φ100	4-M6	Φ19	40	Φ80	6	90	152.5	10.75	/
	XF-75/60/M5	Φ75	4-M5	Φ14	40	Φ60	6	90	152.5	10.75	/
	XF-115/95/M8	Φ115	4-M8	Φ19,Φ22	50	Φ95	8	100	162.5	20.75	/
	XF-145/110/M8	Φ145	4-M8	Φ19,Φ22,Φ24	60	Φ110	8	130	172.5	30.75	/
XPGR090 双级 2-Stage	XF-66.7/38.1/M4	Φ66.7	4-M4	Φ8	34	Φ38.1	8	60	126.5	13.5	206.5
	XF-70/50/M5	Φ70	4-M5	Φ11,Φ14	34	Φ50	8	60	126.5	13.5	206.5
XPGR090A 双级 2-Stage	XF-90/70/M6	Φ90	4-M6	Φ19	40	Φ70	6	90	152.5	10.75	251
	XF-100/80/M6	Φ100	4-M6	Φ19	40	Φ80	6	90	152.5	10.75	251
其它电机 Other motors	XF-LA/LB/LZ	ΦLA	4-ΦLZ	ΦS	LR	ΦLB	LE+2	LC	*	*	*

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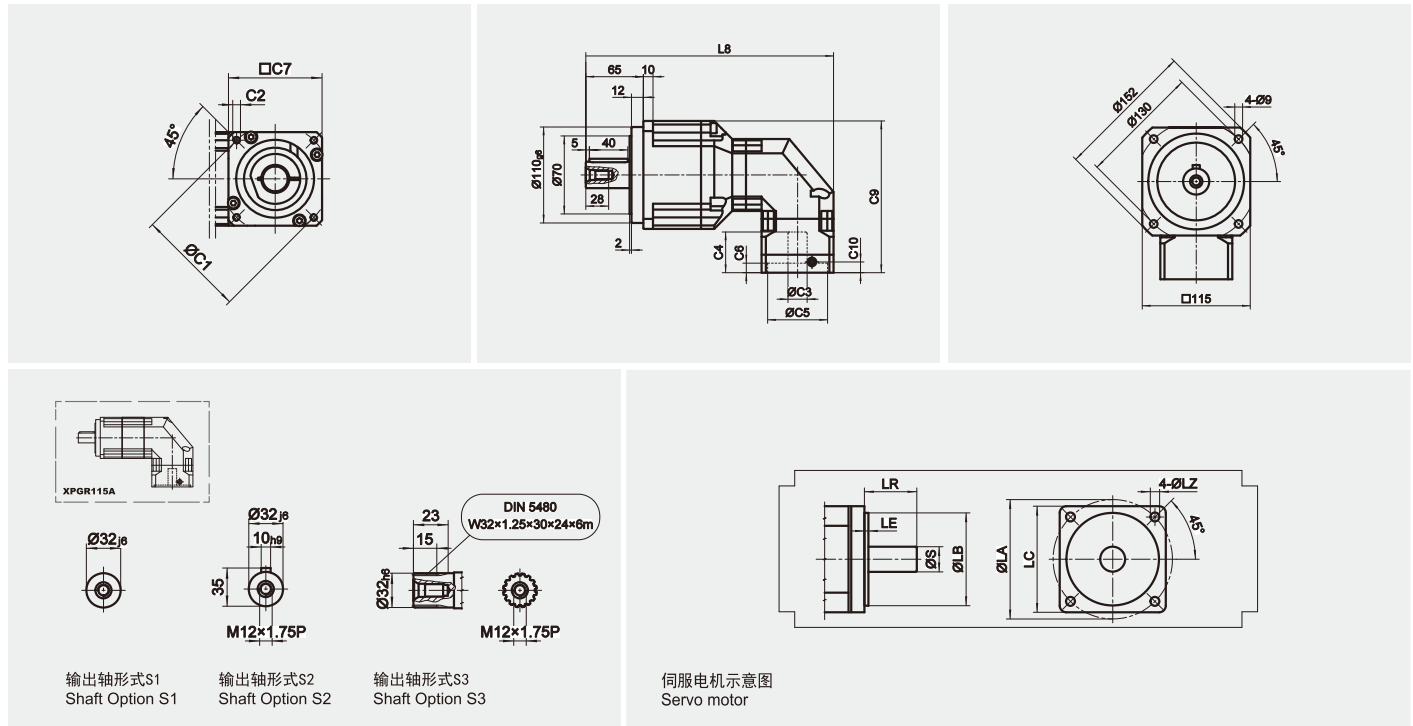
XPGR115 尺寸 Dimensions

单级/1-stage, 速比/Ratio i=3-20



XPGR115(A) 尺寸 Dimensions

双级/2-stage, 速比/Ratio i=25-200



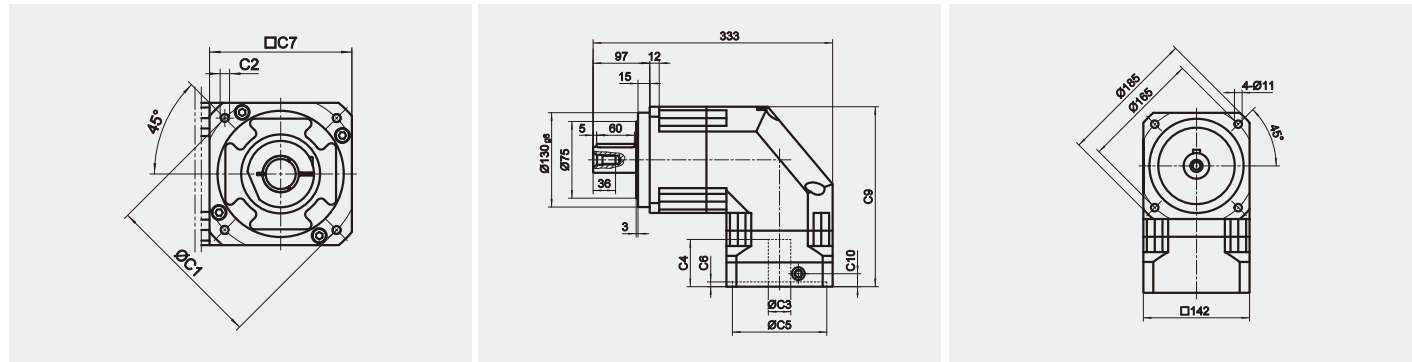
尺寸	Flange	C1	C2	C3	C4	C5	C6	C7	C9	C10	L8
XPGR060 单级 1-Stage	XF-66.7/38.1/M4	Φ66.7	4-M4	Φ8	34	Φ38.1	8	60	111.5	13.5	/
	XF-70/50/M5	Φ70	4-M5	Φ11,Φ14	34	Φ50	8	60	111.5	13.5	/
XPGR060 双级 2-Stage	XF-46/30/M4	Φ46	4-M4	Φ8	25	Φ30	3.5	42	99.5	8.75	163.5
	XF-45/30/M4	Φ45	4-M3	Φ8	25	Φ30	3.5	42	99.5	8.75	163.5
XPGR060A 双级 2-Stage	XF-66.7/38.1/M4	Φ66.7	4-M4	Φ8	34	Φ38.1	8	60	111.5	13.5	182
	XF-70/50/M5	Φ70	4-M5	Φ11,Φ14	34	Φ50	8	60	111.5	13.5	182
其它电机 Other motors	XF-LA/LB/LZ	ΦLA	4-ΦLZ	ΦS	LR	ΦLB	LE+2	LC	*	*	*

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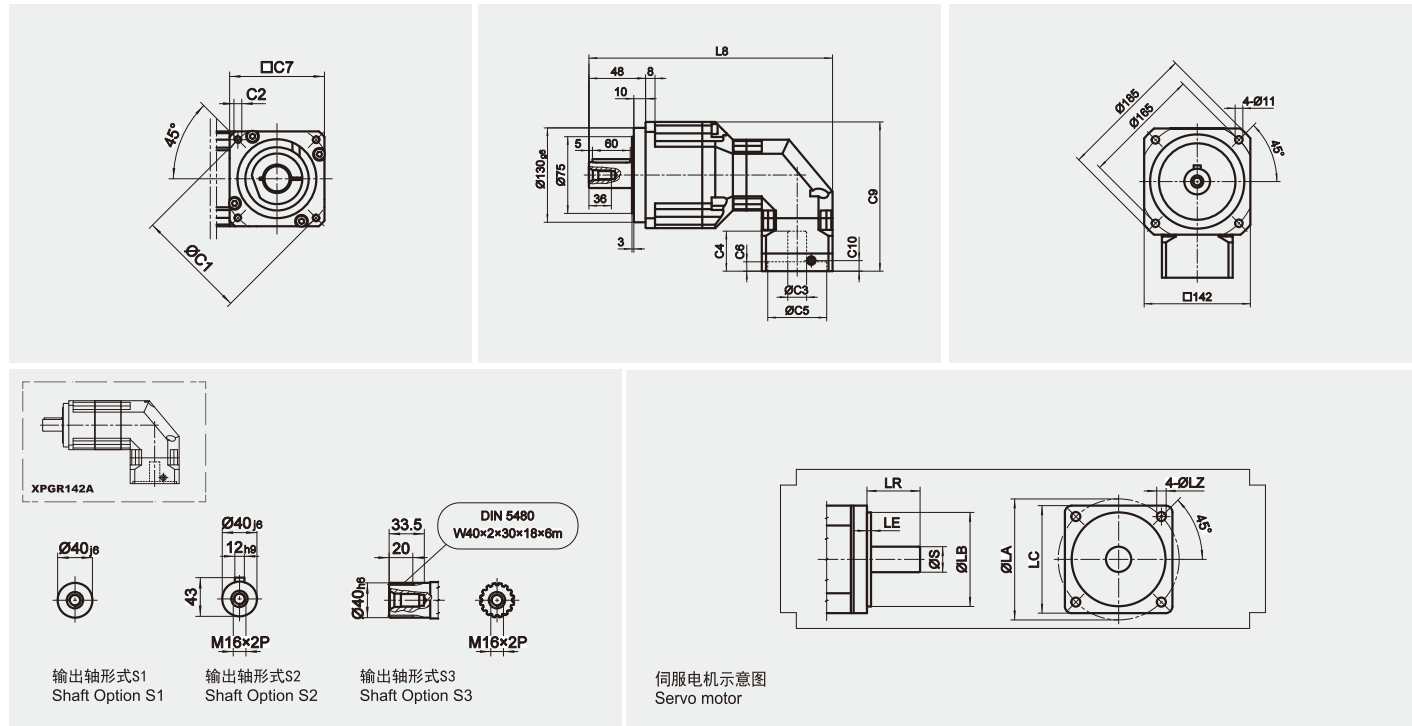
XPGR142 尺寸 Dimensions

单级/1-stage, 速比/Ratio i=3-20



XPGR142(A) 尺寸 Dimensions

双级/2-stage, 速比/Ratio i=25-200



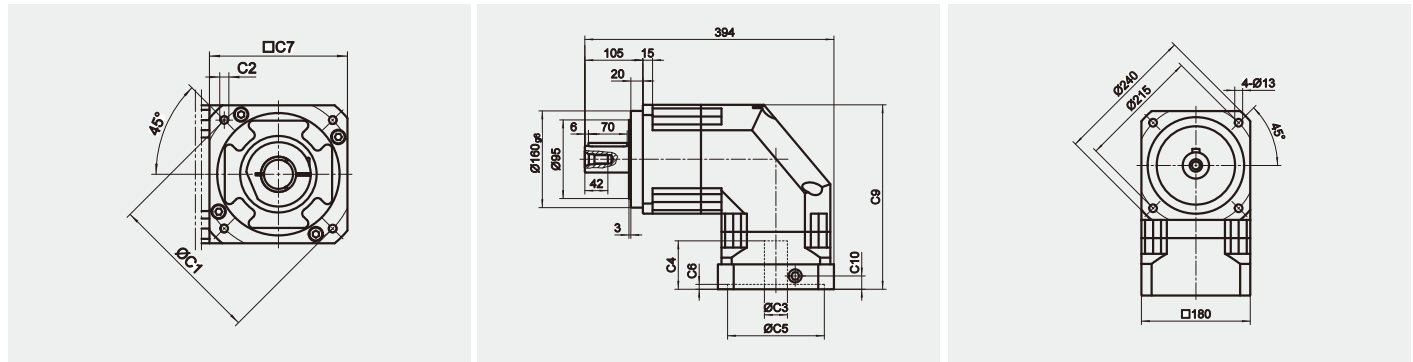
尺寸	Flange	C1	C2	C3	C4	C5	C6	C7	C9	C10	L8
XPGR142 单级 1-Stage	XF-145/110/M8	Φ145	4-M8	Φ22,Φ24,Φ28	60	Φ110	8	130	235.5	15	/
	XF-165/130/M10	Φ165	4-M10	Φ38	60	Φ130	6	142	235.5	15	/
	XF-200/114.3/M12	Φ200	4-M12	Φ35	80	Φ114.3	6	180	255.5	35	/
XPGR142 双级 2-Stage	XF-115/95/M8	Φ115	4-M8	Φ24	50	Φ95	6	100	205	13	365
	XF-130/110/M8	Φ130	4-M8	Φ22,Φ24,Φ28	50	Φ110	5	115	205	13	365
XPGR142A 双级 2-Stage	XF-145/110/M8	Φ145	4-M8	Φ22,Φ24,Φ28	60	Φ110	8	130	235.5	15	404.5
	XF-165/130/M10	Φ165	4-M10	Φ38	60	Φ130	6	142	235.5	15	404.5
其它电机 Other motors	XF-LA/LB/LZ	ΦLA	4-ΦLZ	ΦS	LR	ΦLB	LE+2	LC	*	*	*

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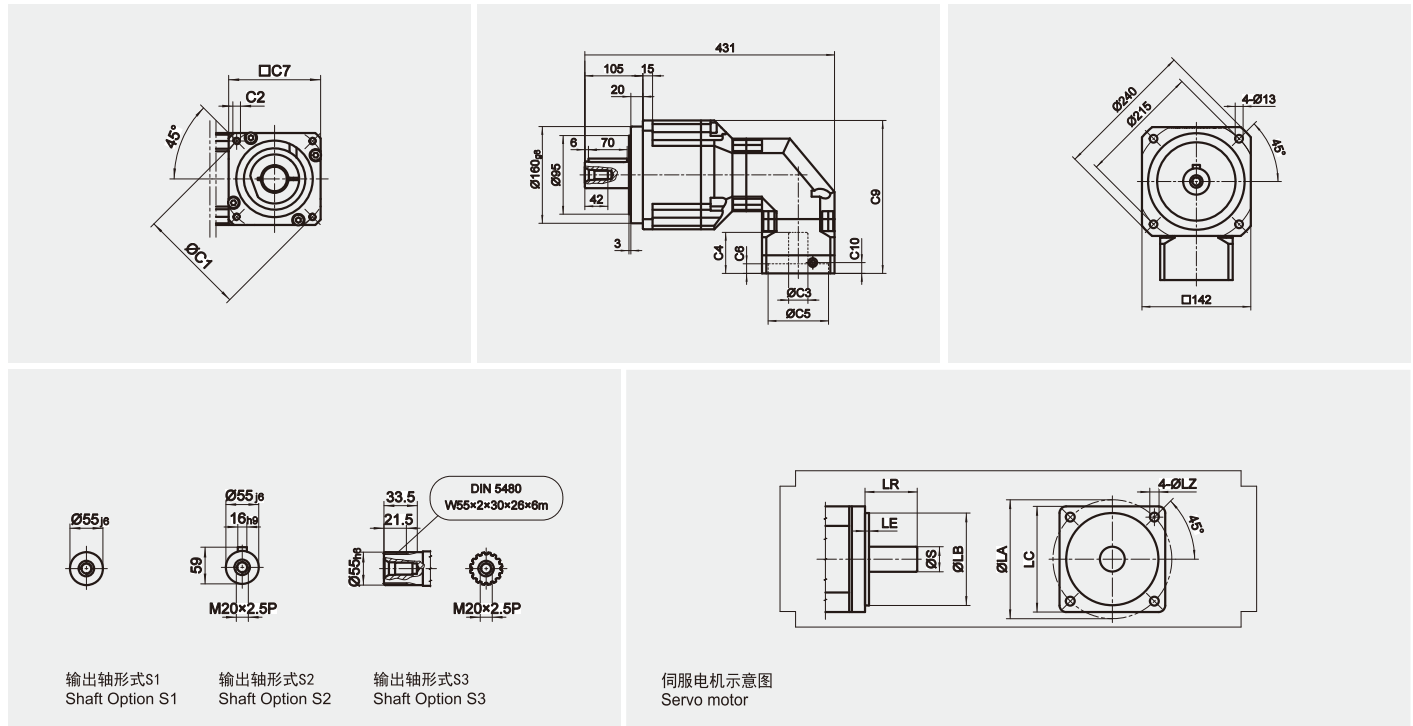
XPGR180 尺寸 Dimensions

单级/1-stage, 速比/Ratio i=3-20



XPGR180 尺寸 Dimensions

双级/2-stage, 速比/Ratio i=25-200



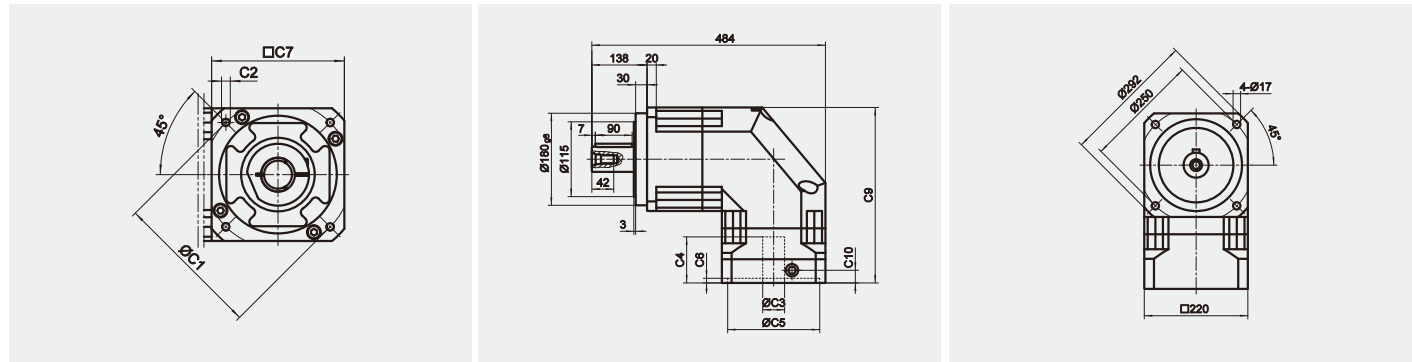
尺寸	Flange	C1	C2	C3	C4	C5	C6	C7	C9	C10
XPGR180 单级 1-Stage	XF-200/114.3/M12	Φ200	4-M12	Φ35	80	Φ114.3	6	180	303.5	20.75
	XF-215/180/M12	Φ215	4-M12	Φ48	85	Φ180	6	190	303.5	20.75
XPGR180 双级 2-Stage	XF-145/110/M8	Φ145	4-M8	Φ22,Φ24,Φ28	60	Φ110	8	130	254.5	15
	XF-165/130/M10	Φ165	4-M10	Φ38	60	Φ130	6	142	254.5	15
其它电机 Other motors	XF-LA/LB/LZ	ΦLA	4-ΦLZ	ΦS	LR	ΦLB	LE+2	LC	*	*

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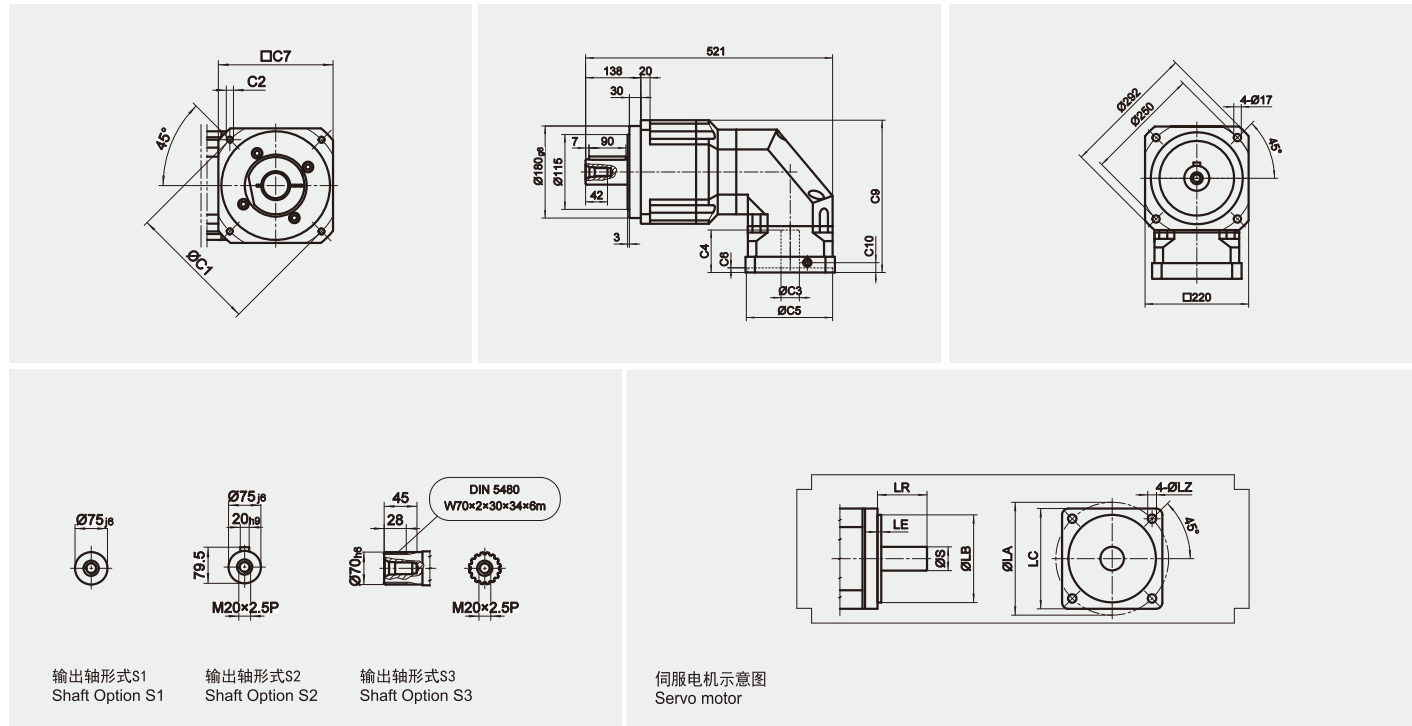
XPGR220 尺寸 Dimensions

单级/1-stage, 速比/Ratio i=3-20



XPGR220 尺寸 Dimensions

双级/2-stage, 速比/Ratio i=25-200



尺寸	Flange	C1	C2	C3	C4	C5	C6	C7	C9	C10
XPGR220 单级 1-Stage	XF-235/200/M12	Φ235	4-M12	Φ42,Φ55	116	Φ200	6	220	378.5	53
XPGR220 双级 2-Stage	XF-200/114.3/M12	Φ200	4-M12	Φ35	80	Φ114.3	6	180	323.5	20.75
	XF-215/180/M12	Φ215	4-M10	Φ48	85	Φ180	6	190	323.5	20.75
其它电机 Other motors	XF-LA/LB/LZ	ΦLA	4-ΦLZ	ΦS	LR	ΦLB	LE+2	LC	*	*

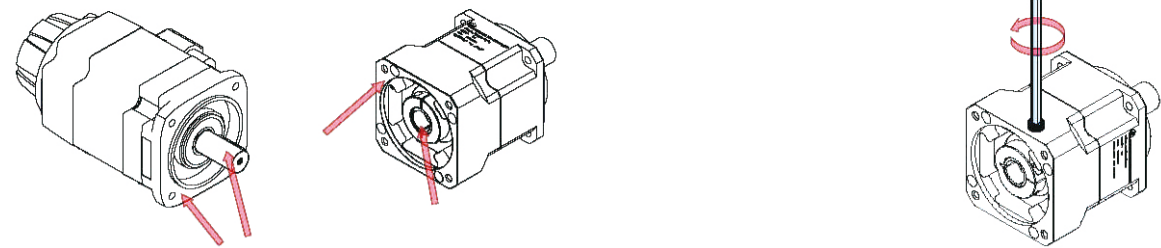
C1-C7:是常用公制电机接口尺寸, 配其它电机, 请联系本公司。
C1-C7: are motor specific dimensions (metricstd shown).
If you need to install other motors please contact our sales department.

*:请联系公司确定
*: please contact our sales department.

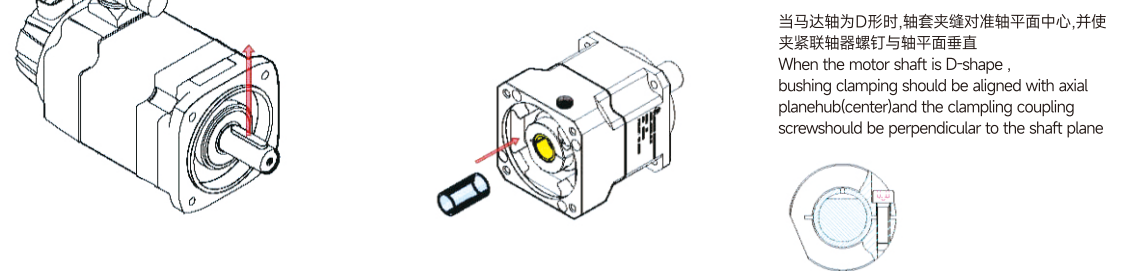
MOTOR INSTALL INSTRUCTIONS

马达安装说明

- 确认马达与减速器的规格,并将两个的安装面及配合处擦拭干净
After confirm the specifications of motor and reducer, keep themounting surface of them clean
- 将法兰密封螺钉取出, 然后转动电机锁紧联轴器, 直到锁紧螺钉对准密封螺钉安装孔Loosen and take out the sealing screw on the flange , then adjust themot or's locking coupling until the locking screw is aligned with thesealing screw mounting hole



- 取下马达轴上的平键
Take out the motor shaft key
- 确认马达轴径, 如直径不一致,可用轴套匹配
Confirm the motor shaft diameter. Given that it is inconsistent, you can use steel bushing on it



- 直立装入马达,以螺钉扭矩表一建议扭力的5%, 依1324的顺序, 用扳手将螺钉轻轻锁上Vertically install the motor, 5% torque of screw torque sheet one ,number 1324 in sequence, then use a wrench lightly lock the screws
- 马达及减速器直立摆放, 参照表二建议扭力值, 将电机锁紧联轴器锁紧Placed motor and reducer vertically, refer to the recommended torque value in sheet 2, then locking both motor and coupling



- 马达及减速器直立摆放,以螺钉扭矩表一建议的扭力, 依1324的顺序, 用扭力扳手将螺钉锁紧Placed motor and reducer vertically, torque according to screw torquesheet one , number 1324 in sequence, then tighten the screws
- 拧回密封螺钉
Reset and tighten the sealing screws



MOTOR LOCKING NUT TORQUE SHEET

马达锁紧螺钉扭矩建议值

螺钉尺寸 Screw dimension	内六角头尺寸 Hexagon Socket Head Size	螺钉锁紧扭矩[8.8级] Screw Tightening Torque [Grade 8.8]		螺钉锁紧扭矩[10.9级] Screw Tightening Torque [Grade 10.9]		螺钉锁紧扭矩[12.9级] Screw Tightening Torque [Grade 12.9]	
	[mm]	[N.m]	[In-lbs]	[N.m]	[In-lbs]	[N.m]	[In-lbs]
M3x0.5P	2.5	1.3	12	1.8	16	2.1	19
M4x0.7P	3	3	27	4.1	37	4.9	44
M5x0.8P	4	6.1	55	8.2	73	9.8	87
M6x1P	5	11	98	14	124	17	151
M8x1.25P	6	25	222	34	302	41	364
M10x1.5P	8	49	434	67	594	80	709
M12x1.75P	10	85	753	116	1028	139	1232
M14x2P	12	137	1214	186	1648	223	1976
M16x2P	14	210	1860	286	2534	343	3038

MOTOR COUPLING LOCK NUT TORQUE SHEET

马达锁紧联轴器螺钉扭矩建议值

减速器型号 Gearbox type		马达轴径 Motor shaft diamatr	螺钉尺寸 Screw dimension	内六角头尺寸 Ecounterbore for hexagon socket head bolt	锁紧扭矩 Locking torquc	
		[mm]	[mm]	[mm]	[N.m]	[In-lbs]
XPG042 XPGR042	单级/1-Stage	≤ 11	M3x0.5Px8L	2.5	2.1	19
	双级/2-Stage	≤ 11	M3x0.5Px8L	2.5	2.1	19
XPG060 XPGR060	单级/1-Stage	≤ 14	M4x0.7Px12L	3	4.9	44
	双级/2-Stage	≤ 11	M3x0.5Px8L	2.5	2.1	19
XPG060A、XPGR060A	双级/2-Stage	≤ 14	M4x0.7Px12L	3	4.9	44
XPG090 XPGR090	单级/1-Stage	≤ 19	M5x0.8Px14L	4	9.8	87
	双级/2-Stage	≤ 14	M4x0.7Px12L	3	4.9	44
XPG090A、XPGR090A	双级/2-Stage	≤ 19	M5x0.8Px14L	4	9.8	87
XPG115 XPGR115	单级/1-Stage	≤ 32	M6x1Px16L	5	17	151
	双级/2-Stage	≤ 19	M5x0.8Px14L	4	9.8	87
XPG115A、XPGR115A	双级/2-Stage	≤ 32	M6x1Px16L	5	17	151
XPG142 XPGR142	单级/1-Stage	≤ 38	M8x1.25Px20L	6	41	364
	双级/2-Stage	≤ 32	M6x1Px16L	5	17	151
XPG142A、XPGR142A	双级/2-Stage	≤ 38	M8x1.25Px20L	6	41	364
XPG180 XPGR180	单级/1-Stage	≤ 48	M10x1.5Px25L	8	80	709
	双级/2-Stage	≤ 38	M8x1.25Px20L	6	41	364
XPG220 XPGR220	单级/1-Stage	≤ 55	M12x1.75Px30L	10	139	1232
	双级/2-Stage	≤ 48	M10x1.5Px25L	8	80	709

注:螺钉锁紧扭力必须大于上表所示锁紧扭矩值,如有必要,可将上表中锁紧扭矩值增加20%,以免打滑。

Note: The screw tightening torque must be greater than the tightening torque shown in the above table. If necessary, the tightening torque value in the above table can be increased by 20% to avoid slipping.

Note: