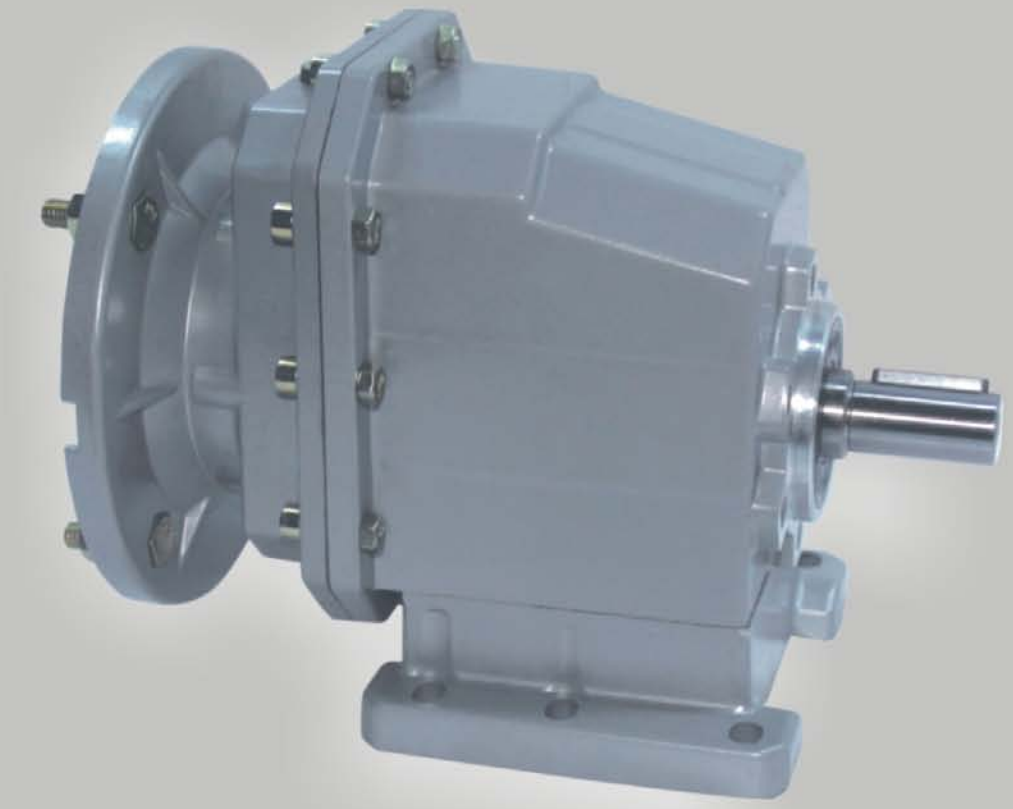
HANGZHOU HONY TRANSMISSION CO.,LTD.

PC系列斜齿轮减速器

PC SERIES HELICAL GEARBOX



www.hony-transmission.com

PC系列斜齿轮减速器
PC SERIES HELICAL GEARBOX

产品图片 / PRODUCT PICTURE

PC..P(IEC)
底脚安装斜齿轮减速器
Foot-mounted helical gearbox

PC..HS
轴输入底脚安装斜齿轮减速器
Shaft input foot-mounted helical gearbox

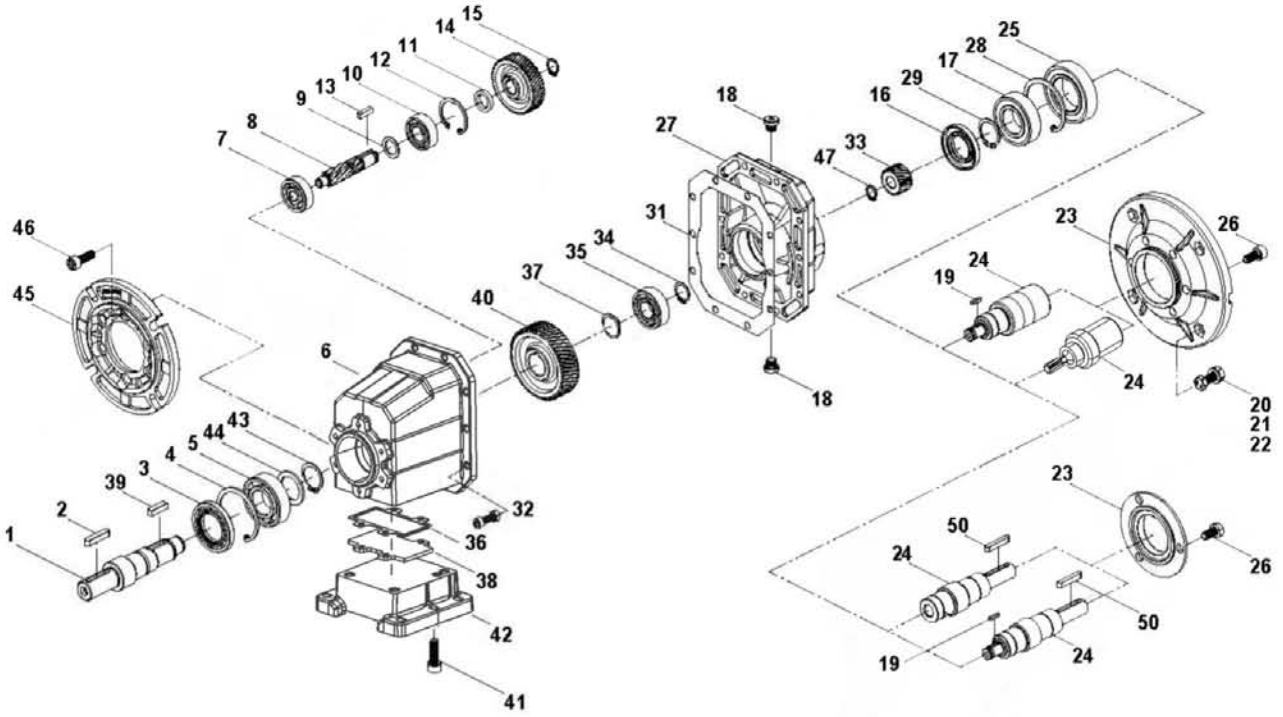
PCZ..P(IEC)
法兰安装斜齿轮减速器
Flange-mounted helical gearbox

PCF..HS
轴输入法兰安装斜齿轮减速器
Shaft input flange-mounted helical gearbox

PCZ..P(IEC)
B14形式法兰安装斜齿轮减速器
B14 Flange-mounted helical gearbox

PCZ..HS
轴输入B14形式法兰安装斜齿轮减速器
Shaft input B14 flange-mounted helical gearbox

结构图 / STRUCTURE



1	输出轴	25	轴承
2	键	26	内六角螺钉
3	油封	27	输入盖
4	孔用挡圈	28	孔用挡圈
5	轴承	29	轴用挡圈
6	齿轮箱体	30	六角螺母
7	轴承	31	密封垫
8	主动齿轮轴	32	内六角螺钉
9	挡圈	33	主动齿轮
10	轴承	34	轴用挡圈
11	间隔环	35	轴承
12	孔用挡圈	36	支承座
13	键	37	轴用挡圈
14	从动齿轮	38	圆柱销
15	轴用挡圈	39	键
16	油封	40	从动齿轮
17	轴承	41	内六角螺钉
18	油塞	42	底座
19	键	43	轴用挡圈
20	六角头螺栓	44	垫圈
21	垫圈	45	输入法兰
22	六角螺母	46	内六角花形螺钉
23	输入法兰	47	轴用挡圈
24	输入轴	50	键

1	Output shaft	25	Bearing
2	Key	26	Socket head cap screw
3	Oil seal	27	Input cover
4	Hole circlip	28	Hole circlip
5	Bearing	29	Shaft circlip
6	Housing	30	Hex nut
7	Bearing	31	Housing gasket
8	Drving gear shaft	32	Socket head cap screw
9	Circlips retaining rings	33	Driving pinion
10	Bearing	34	Shaft circlip
11	Spacer ring	35	Bearing
12	Hole circlip	36	Support seat
13	Key	37	Shaft circlip
14	Driven gear	38	Cylindrical pin
15	Shaft circlip	39	Key
16	Oil seal	40	Driven gear
17	Bearing	41	Socket head cap screw
18	Oil plug	42	Foot
19	Key	43	Shaft circlip
20	Hex head bolt	44	Washer
21	Washer	45	Output flange
22	Hex nut	46	Hex socket screws
23	Input flange	47	Shaft circlip
24	Input shaft	50	Key

1. 概述

KPC系列小型齿轮减速器是一种模块组合的产品，共有四种型号，功率范围0.12kw~4.0kw，速比范围3.66~58.09，最大扭矩范围120Nm~500Nm。广泛用于纺织、食品、饮料、烟草、物流等工业领域。

1. SUMMARIZE

KPC series helical gearbox is a modular construction product, it has 4 types, power from 0.12kw to 4.0kw, ratio from 3.66 to 58.09, Max torque from 120Nm to 500Nm. This product widely used in textile, food, beverage, tobacco, logistics industrial fields,etc.

1.1 产品特点

- 模块化组合
- 高效率
- 低噪音
- 优良结构
- 持久耐用

1.1 Products characteristics

- Modular construction
- High efficiency
- Low noise
- Fine structure
- Durable

2. 型号说明 / MODEL INSTRUCTION

2.1 减速器 / Gearbox

PC F 02 II – 28.88 – M6

① ② ③ ④ ⑤ ⑥

NO	说　　明	Instruction
1	**PC**：减速器系列代号	**PC**：code for gearbox
2	1). 无代号表示底脚安装 2). **F: B5**形式法兰安装 3). **Z: B14**形式法兰安装	1). No code means foot-mounted 2). **F: B5** flange mounted 3). **Z: B14** flange mounted
3	减速器规格号 01、02、03、04	Specification code of gearbox **01,02,03,04**
4	1). **B01**、**M01**无代号表示底脚安装,无法兰 2). **I**、**II**、**III: B5**形式输出法兰规格,默认 I 可以不写	1). **B01**、**M01**..... means foot code,without flange 2). **I, II, III: B5** Output flange specification, default I not to write out is ok
5	减速器传动比 i	Ratio
6	**M1:** 安装方位，默认安装方位**M1**可以不写	**M1:** Mounting position,default mounting position **M1** not to write out is ok

示例 Example: **PC01B01 - 28.50 - M1**
PCZ03 - HS - 6.31

3. 选型相关参数

3.1 功率 P

$$P_1 = \frac{P_2}{\eta} \text{ [kW]}$$

$$P_{1n} \geqslant P_1 \cdot f_s \text{ [kW]}$$

P_1	输入功率
P_2	输出功率
P_{1n}	输入电机额定功率
f_s	使用系数
η	传动效率

KPC系列斜齿轮减速器的传动是2级齿轮传动，其效率为96%。

3.2 转速 n

n_1	减速器输入转速
n_2	减速器输出转速

若是齿轮箱外部传动装置驱动，为了优化工作条件和提高使用寿命，建议使用1400r/min或更低转速。允许输入较高的输入转速，但在这种情况下，额定扭矩M_2会下降。

3.3 传动比 i

$$i = \frac{n_1}{n_2}$$

传动比通常为小数，在选型表中保留两位小数。

3.4 扭矩 M

$$M_2 = \frac{9550 \cdot P_1 \cdot \eta}{n_2} \text{ [Nm]}$$

$$M_{2n} \geqslant M_2 \cdot f_s \text{ [Nm]}$$

M_2	输出扭矩
M_{2n}	额定输出扭矩
P_1	输入功率
η	传动效率
f_s	使用系数

3. RELEVANT PARAMETER

3.1 Power P

$$P_1 = \frac{P_2}{\eta} \text{ [kW]}$$

$$P_{1n} \geqslant P_1 \cdot f_s \text{ [kW]}$$

P_1	Input power
P_2	Output power
P_{1n}	Rated input motor power
f_s	Service factor
η	Efficiency

KPC Series helical gearbox has **2 stage** and the efficiency is about **96%**.

3.2 Rotation speed n

n_1	Gearbox input speed
n_2	Gearbox output speed

For optimizing working condition and improving the life when the gearbox driven by the external device, please use the speed at 1400rpm or lower. High input speed is allowed but the rated torque M_2 will be decreased under such case.

3.3 Transmission ratio i

$$i = \frac{n_1}{n_2}$$

Generally ratio is decimal fraction with 2 radix points tagged in selecting table.

3.4 Torque M

$$M_2 = \frac{9550 \cdot P_1 \cdot \eta}{n_2} \text{ [Nm]}$$

$$M_{2n} \geqslant M_2 \cdot f_s \text{ [Nm]}$$

M_2	Output torque
M_{2n}	Rated output torque
P_1	Input power
η	Efficiency
f_s	Service factor

3.5 使用系数 f_s

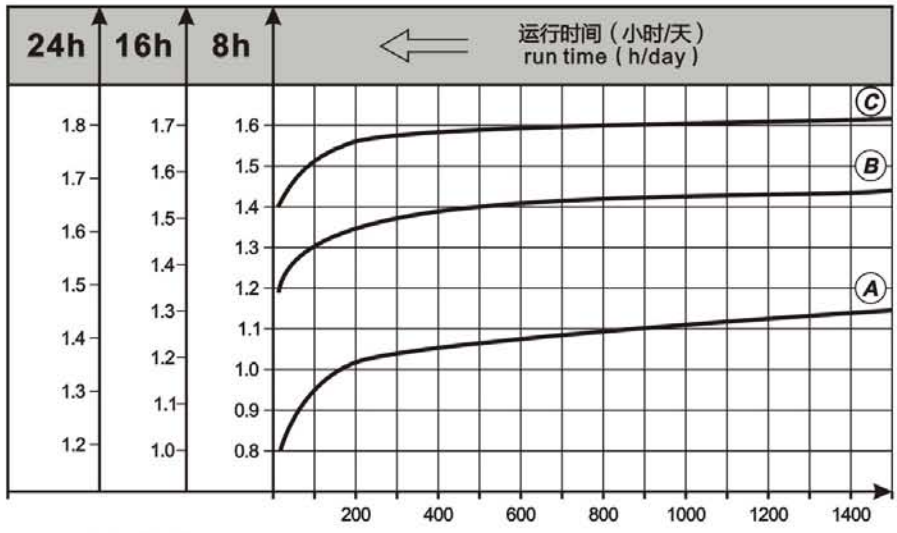
使用减速器时，应考虑一定的使用系数f_s，它是根据每天的运转时间和启停频率Z确定的。

根据惯性加速系数确定三种负载类型，在下图中可以读取实际应用的使用系数，按下图选取的使用系数必须小于或等于从性能参数表中提供的使用系数。

3.5 Service factor f_s

Please consider the service factor f_s when used the gearbox, the service factor is decided by running time and frequency of on-off **Z** per day.

Confirming the 3 kind of load types according to the inertial accelerating factor, the practical application service factors (fs) can be read in the below table, the selected fs from the below table must be less than or equal to the fs provided in the performance parameter table.



图：使用系数（f_S）
Fig:Service factor (f_S)

启动频率 Z（次/小时）#
start up frequency Z (1/h)#

启动频率 Z：周期包括所有启动、制动的次数以及变速电机高低速变化时的次数。

Start up frequency **Z**: The cycle includes all start and brake times,also the times of speed changing on geared motor.

3.5.1 负载类型

Ⓐ 均匀冲击负载，允许惯性加速系数≤0.2

Ⓑ 中等冲击负载，允许惯性加速系数≤3

Ⓒ 重冲击负载，允许惯性加速系数≤10

3.5.1 Load classifications

Ⓐ Uniformshock load, permitted mass accel eration factor ≤0.2

Ⓑ Moderate shock load, permitted mass acceleration factor ≤3

Ⓒ Heavy shock load, permitted mass accel eration factor ≤10

3.5.2 惯性加速系数

惯性加速系数计算如下：

$$fa = \frac{Jc}{Jm}$$

3.5.2 Inertial accelerating factor

The Inertial accelerating factor is calculated as follows:

$$fa = \frac{Jc}{Jm}$$

fa 惯性加速系数
Jc 所有外部传动惯量 [kgm²]
Jm 驱动电机的传动惯量 [kgm²]

如果惯性加速系数 **fa**>10，请与我们技术部联系。

为了保持减速器的使用寿命，从产品样本中所选择的使用系数**fs**应等于或略高于计算出的使用系数**fs**。

fa Inertial accelerating factor
Jc All external mass moments of inertia [kgm²]
Jm Mass moment of inertia on the motor end [kgm²]

If mass acceleration factors **fa**>10, please call our Technical Service.

To keep the service-life of gearbox, the use factor **fs** selected from the catalogue must be equal or slightly higher than the calculated use factor **fs** .

3.6 径向载荷 Fr

在确定影响径向载荷时，安装在轴端上的传动件类型必须考虑在内，不同类型的传动件对应不同传动附加系数**fz**，列表如下:

3.6 Radial loads Fr

When determining the resulting radial loads, the type of transmission elements, mounted on the shaft end must be considered. Various transmission elements are corresponding with following transmission element factors **fz**:

传动件 Transmission element	传动附加系数 Fz Transmission element factor Fz	注释 Comments
齿轮 / Gears	1.00	≥17 齿 teeth
	1.15	<17 齿 teeth
链轮 / Chain sprockets	1.00	≥20 齿 teeth
	1.25	<20 齿 teeth
	1.40	<13 齿 teeth
V带轮 Narrow V-belt pulleys	1.75	有预紧力作用 Influence of the tensile force
平带轮 Flat belt pulleys	2.50	有预紧力作用 Influence of the tensile force
齿带轮 Toothed belt pulleys	2.50	有预紧力作用 Influence of the tensile force

作用在轴上的径向载荷按如下公式计算：

$$F_r = \frac{M \cdot 2000 \cdot f_z}{d_0} [N]$$

F_r 作用在轴上的载荷 [N]
M 作用在轴上的扭矩 [Nm]
d_0 安装在轴上传动件的平均直径 [mm]
f_z 传动附加系数

当径向负荷不作用在轴中点时，按以下公式计算有效负荷:

$$FxL \leqslant \frac{Fr2 \cdot a}{(b+x)} [N]$$

Fr2 依据下面表格给出中底脚安装式齿轮减速器的许可径向载荷(x = L / 2) [N]

a,b 减速器径向转化常量 [mm]

The overhung loads exerted on the motor or gear shaft is then calculated as follows:

$$F_r = \frac{M \cdot 2000 \cdot f_z}{d_0} [N]$$

F_r Resulting radial load [N]
M Torque on the shaft [Nm]
d_0 Average diameter of the mounted transsmission element in [mm]
f_z Transmission element factor

The allowed radial load force on the shaft is calculated with the following formula:

$$FxL \leqslant \frac{Fr2 \cdot a}{(b+x)} [N]$$

Fr2 Permitted overhung load (x = L/2) for foot-mounted gear units according to the selection tables in [N]

a,b Gearbox constant for overhung load conversion [mm]

x　　轴肩到实际作用点的距离 [mm]

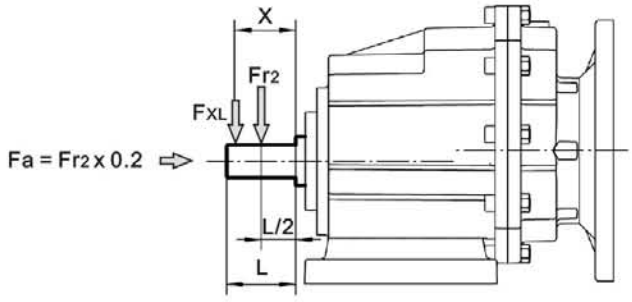
a，b，Fr2 的数值在下面表格给出:

x　　Distance from the shaft shoulder to the force application point in (mm)

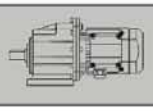
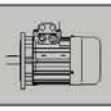
The values of a , b , Fr2 are given in the following tables:

	PC01	PC02	PC03	PC04
a	103	116.5	130	147
b	83	91.5	100	112

输出轴径向载荷和轴向载荷 Fr2, Fa　/　Output shafts radial loads & axial loads Fr2, Fa



3.7 选型表说明 / Selection tables instruction

P_{1n} [kW]	n_2 [r/min]	M_{2n} [Nm]	i	F_{r2} [N]	fs	 Page	  Page

表示IEC与减速器的组合是可行的

表示IEC与减速器的组合是不可行的

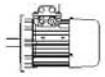
Combination with the IEC in the header row is possible

Combination with the IEC in the header row is not possible

P_{1n}	输入电机额定功率 [kW];
n_2	输出转速 [r/min];
M_{2n}	额定输出扭矩 [Nm];
$M_{2\,max}$	最大允许输出扭矩 [Nm];
i	减速器传动比;
f_S	使用系数;

P_{1n}	Rated input motor power **[kW]**;
n_2	Output speed **[r/min]**;
M_{2n}	Rated output torque **[Nm]**;
$M_{2\,max}$	Permissible output torque **[Nm]**;
i	Gearbox ratio;
f_S	Service factor;

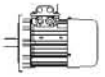
 　减速器型号;

 　电机型号;

page　外型尺寸表页码;

*　表示速比可除尽。

 　Gearbox type;

 　Motor type;

page　Dimension sheet page no;

*　Ratio is divisible.

4. 选型举例 / SELECTION EXAMPLE

4.1 减速器

例：被驱动设备所需扭矩为400Nm，工作6小时时/天，均匀冲击负载，启动频率400次/小时，输出转速n_2=30 r/min，要求减速器Φ200mm输出法兰安装。

查表，选使用系数f_s=1.05

$$M_{2n} \geqslant M_2 \cdot f_s = 400 \times 1.05 = 420[Nm]$$

$$i = \frac{n_1}{n_2} = \frac{1400}{30} = 46.67$$

查KPC系列选型表可选定减速器为:

KPCF04 II - P90B5 - 44.18

4.1 Gearbox

Example: The required torque on driven machine is 400Nm, works for 6 hours per day, Uniform shock load, start-up frequency is 400 times per hour, Φ200mm output flange-mounted, n_2=30 r/min.

see tables, f_s=1.05

$$M_{2n} \geqslant M_2 \cdot f_s = 400 \times 1.05 = 420[Nm]$$

$$i = \frac{n_1}{n_2} = \frac{1400}{30} = 46.67$$

Choose type:

KPCF04 II - P90B5 - 44.18

4.2 减速电机

例：被驱动设备所需功率1kW，工作8小时/天，中等冲击，连续启动，输出转速n_2=95r/min，减速电机要求**M6**底脚安装。

查表，选使用系数f_s=1.35

$$i = \frac{n_1}{n_2} = \frac{1400}{95} = 14.74$$

$$P_{1n} \geqslant P_1 \cdot f_s = \frac{P_2}{\eta} \cdot f_s = \frac{1}{0.96} \times 1.35 = 1.41[kW]$$

查KPC系列选型表可选定减速电机型号为:

PC02 - P90B5 - 14.81- M6 - 1.5-4

4.2 Geared motor

Example: The required power on driven machine 1kW, works for 8 hours per day, moderate shock load, start-up cootinnously, **M6** foot-mounted,n_2=95 r/min.5r/min.

see tables, f_s=1.35

$$i = \frac{n_1}{n_2} = \frac{1400}{95} = 14.74$$

$$P_{1n} \geqslant P_1 \cdot f_s = \frac{P_2}{\eta} \cdot f_s = \frac{1}{0.96} \times 1.35 = 1.41[kW]$$

Choose type:

PC02 - P90B5 - 14.81- M6 - 1.5-4

5. 减速器选型表 / GEARBOX SELECTING

5.1 减速器组合表 / Possible geometrical combinations

PC01.. n_1=1400r/min **120Nm**

n_2 [r/min]	M_2 max [Nm]	F_{r2} [N]	i	齿数比 Proportion	63B5	71B5/B14	80B5/B14	90B5/B14
26	120	2600	53.33	160/3				
31	120	2600	45.89	413/9				
35	120	2600	40.10	3248/81				
39	120	2560	35.47	532/15				
49	120	2380	28.50	770/27				
59	120	2230	23.56	212/9				
71	120	2100	19.83	119/6				
78	90	2030	17.86	1357/76				
96	120	1900	14.62	658/45				
101	90	1860	13.80*	69/5				
118	120	1770	11.90	2464/207				
143	120	1660	9.81	1148/117				
153	80	1630	9.17	1219/133				
181	80	1540	7.72	1173/152				
246	70	1390	5.69	1081/190				
302	70	1290	4.63	88/19				
366	70	1210	3.82	943/247				

PC02.. n_1=1400r/min **200Nm**

n_2 [r/min]	M_2 max [Nm]	F_{r2} [N]	i	齿数比 Proportion	63B5	71B5/B14	80B5/B14	90B5/B14
26	200	4500	54.00*	54/1				
30	200	4500	46.46*	3717/80				
34	200	4500	40.60*	203/5				
39	200	4270	35.91*	3591/100				
48	200	3970	28.88*	231/8				
59	200	3730	23.85*	477/20				
70	200	3520	20.08*	3213/160				
82	140	3330	17.10	3009/176				
95	200	3180	14.81*	2961/200				
106	140	3060	13.21	2907/220				
116	200	2970	12.05	1386/115				
141	200	2780	9.93	2583/260				
159	120	2670	8.78	2703/308				
189	120	2520	7.39	2601/352				
257	100	2280	5.45	2397/440				
316	100	2120	4.43	102/23				
383	80	1990	3.66	2091/572				

PC03..

n_1=1400r/min

300Nm

n_2 [r/min]	M_2 max [Nm]	F_{r2} [N]	i	齿数比 Proportion	71B5/B14	80B5/B14	90B5/B14	100B5/B14	112B5/B14
24	300	6000	58.09	639/11					
28	300	6000	50.02	2201/44					
32	300	6000	43.75	4331/99					
36	300	6000	38.73	426/11					
40	300	5860	34.62	4189/121					
49	300	5480	28.30	4047/143					
64	280	5020	21.78	1917/88					
81	280	4660	17.33	3621/209					
93	260	4440	15.06	497/33					
113	260	4160	12.37	1633/132					
136	240	3910	10.28	3053/297					
177	180	3590	7.93	1269/160					
222	180	3320	6.31	2397/380					
255	150	3170	5.48	329/60					
311	150	2970	4.50	1081/240					
374	150	2790	3.74	2021/540					

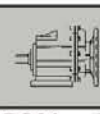
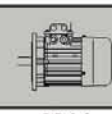
PC04..

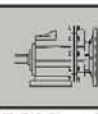
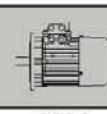
n_1=1400r/min

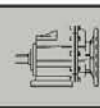
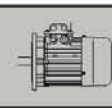
500Nm

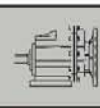
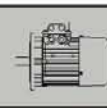
n_2 [r/min]	M_2 max [Nm]	F_{r2} [N]	i	齿数比 Proportion	80B5/B14	90B5/B14	100B5/B14	112B5/B14
24	500	8000	58.09	639/11				
28	500	8000	50.02	2201/44				
32	500	8000	43.75	4331/99				
36	500	8000	38.73	426/11				
40	500	7950	34.62	4189/121				
49	500	7430	28.30	4047/143				
64	480	6810	21.78	1917/88				
81	480	6310	17.33	3621/209				
93	460	6020	15.06	497/33				
113	460	5640	12.37	1633/132				
136	440	5300	10.28	3053/297				
177	260	4860	7.93	1269/160				
222	260	4510	6.31	2397/380				
255	230	4300	5.48	329/60				
311	230	4030	4.50	1081/240				
374	200	3780	3.74	2021/540				

5.2 PC..P(IEC)..性能参数 / Performance parameter

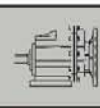
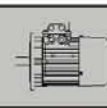
P_{1n} [kW]	n_2 [r/min]	M_{2n} [Nm]	i	F_{r2} [N]	fs			Page
0.12	26	42	53.33	2600	2.9	**PC01 63B5**	**6314**	25
	31	36	45.89	2600	3.3	**PCF01 63B5**	**6314**	25
	35	32	40.10	2600	3.8	**PCZ01 63B5**	**6314**	25
	39	28	35.47	2560	4.3			
	49	22	28.50	2380	5.4			
	59	18.5	23.56	2230	6.5			
	71	15.6	19.83	2100	7.7			
	78	14.0	17.86	2030	6.4			
	96	11.5	14.62	1900	10.4			
	101	10.8	13.80*	1860	8.3			
	118	9.4	11.90	1770	12.8			
	143	7.7	9.81	1660	15.6			
	153	7.2	9.17	1630	11.1			
	181	6.1	7.72	1540	13.2			
	246	4.5	5.69	1390	15.7			
	302	3.6	4.63	1290	19.2			
	366	3.0	3.82	1210	23.3			
	16.9	65	53.33	2600	1.8	**PC01 63B5**	**6326**	25
	19.6	56	45.89	2600	2.1	**PCF01 63B5**	**6326**	25
	22	49	40.10	2600	2.4	**PCZ01 63B5**	**6326**	25
	25	43	35.47	2560	2.8			
	32	35	28.50	2380	3.4			
	38	29	23.56	2230	4.2			
	45	24	19.83	2100	5.0			
	50	22	17.86	2030	4.1			
	62	17.9	14.62	1900	6.7			
	65	16.9	13.80*	1860	5.3			
	76	14.5	11.90	1770	8.2			
	92	12.0	9.81	1660	10.0			
	98	11.2	9.17	1630	7.1			
	117	9.4	7.72	1540	8.5			
	158	7.0	5.69	1390	10.1			
	194	5.7	4.63	1290	12.4			
	236	4.7	3.82	1210	15.0			
0.18	26	63	53.33	2600	1.9	**PC01 63B5**	**6324**	25
	31	54	45.89	2600	2.2	**PCF01 63B5**	**6324**	25
	35	47	40.10	2600	2.5	**PCZ01 63B5**	**6324**	25
	39	42	35.47	2560	2.9			
	49	34	28.50	2380	3.6			
	59	28	23.56	2230	4.3			
	71	23	19.83	2100	5.1			
	78	21	17.86	2030	4.3			
	96	17.2	14.62	1900	7.0			
	101	16.3	13.80*	1860	5.5			
	118	14.0	11.90	1770	8.6			
	143	11.6	9.81	1660	10.4			
	153	10.8	9.17	1630	7.4			
	181	9.1	7.72	1540	8.8			
	246	6.7	5.69	1390	10.4			
	302	5.5	4.63	1290	12.8			
	366	4.5	3.82	1210	15.5			
	16.9	98	53.33	2600	1.2	**PC01 71B5/B14**	**7116**	25
	19.6	84	45.89	2600	1.4	**PCF01 71B5/B14**	**7116**	25
	22	74	40.10	2600	1.6	**PCZ01 71B5/B14**	**7116**	25
	25	65	35.47	2600	1.8			
	32	52	28.50	2600	2.3			
	38	43	23.56	2580	2.8			
	45	36	19.83	2440	3.3			
	50	33	17.86	2360	2.7			

P_{1n} [kW]	n_2 [r/min]	M_{2n} [Nm]	i	F_{r2} [N]	fs			Page
0.18	26	64	54.00*	4500	3.1	**PC02**	**63B5**	**6324**	27
	30	55	46.46*	4500	3.7	**PCF02**	**63B5**	**6324**	27
	34	48	40.60*	4500	4.2	**PCZ02**	**63B5**	**6324**	27
	39	42	35.91*	4270	4.7				
	16.7	99	54.00*	4500	2.0	**PC02**	**71B5/B14**	**7116**	27
	19.4	85	46.46*	4500	2.3	**PCF02**	**71B5/B14**	**7116**	27
	22	74	40.60*	4500	2.7	**PCZ02**	**71B5/B14**	**7116**	27
	25	66	35.91*	4500	3.0				
	31	53	28.88*	4500	3.8				
0.25	26	87	53.33	2600	1.4	**PC01**	**71B5/B14**	**7114**	25
	31	75	45.89	2600	1.6	**PCF01**	**71B5/B14**	**7114**	25
	35	66	40.10	2600	1.8	**PCZ01**	**71B5/B14**	**7114**	25
	39	58	35.47	2560	2.1				
	49	47	28.50	2380	2.6				
	59	39	23.56	2230	3.1				
	71	32	19.83	2100	3.7				
	78	29	17.86	2030	3.1				
	96	24	14.62	1900	5.0				
	101	23	13.80*	1860	4.0				
	118	19.5	11.90	1770	6.2				
	143	16.1	9.81	1660	7.5				
	153	15.0	9.17	1630	5.3				
	181	12.6	7.72	1540	6.3				
	246	9.3	5.69	1390	7.5				
	302	7.6	4.63	1290	9.2				
	366	6.3	3.82	1210	11.2				
	16.9	136	53.33	2600	0.88	**PC01**	**71B5/B14**	**7126**	25
	19.6	117	45.89	2600	1.0	**PCF01**	**71B5/B14**	**7126**	25
	22	102	40.10	2600	1.2	**PCZ01**	**71B5/B14**	**7126**	25
	25	90	35.47	2600	1.3				
	32	73	28.50	2600	1.7				
	38	60	23.56	2580	2.0				
	45	51	19.83	2440	2.4				
	50	45	17.86	2360	2.0				
	62	37	14.62	2200	3.2				
	65	35	13.80*	2160	2.6				
	76	30	11.90	2060	4.0				
	92	25	9.81	1930	4.8				
	98	23	9.17	1890	3.4				
	117	19.7	7.72	1780	4.1				
	158	14.5	5.69	1610	4.8				
	194	11.8	4.63	1500	5.9				
	236	9.7	3.82	1410	7.2				
	26	88	54.00*	4500	2.3	**PC02**	**71B5/B14**	**7114**	27
	30	76	46.46*	4500	2.6	**PCF02**	**71B5/B14**	**7114**	27
	34	66	40.60*	4500	3.0	**PCZ02**	**71B5/B14**	**7114**	27
	39	59	35.91*	4270	3.4				
	16.7	138	54.00*	4500	1.5	**PC02**	**71B5/B14**	**7126**	27
	19.4	118	46.46*	4500	1.7	**PCF02**	**71B5/B14**	**7126**	27
	22	103	40.60*	4500	1.9	**PCZ02**	**71B5/B14**	**7126**	27
	25	91	35.91*	4500	2.2				
	31	74	28.88*	4500	2.7				

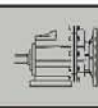
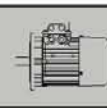
P_{1n} [kW]	n_2 [r/min]	M_{2n} [Nm]	i	F_{r2} [N]	fs			Page
0.37	26	129	53.33	2600	0.93	**PC01**	**71B5/B14**	**7124**	25
	31	111	45.89	2600	1.1	**PCF01**	**71B5/B14**	**7124**	25
	35	97	40.10	2600	1.2	**PCZ01**	**71B5/B14**	**7124**	25
	39	86	35.47	2560	1.4				
	49	69	28.50	2380	1.7				
	59	57	23.56	2230	2.1				
	71	48	19.83	2100	2.5				
	78	43	17.86	2030	2.1				
	96	35	14.62	1900	3.4				
	101	33	13.80*	1860	2.7				
	118	29	11.90	1770	4.2				
	143	24	9.81	1660	5.0				
	153	22	9.17	1630	3.6				
	181	18.7	7.72	1540	4.3				
	246	13.8	5.69	1390	5.1				
	302	11.2	4.63	1290	6.2				
	366	9.3	3.82	1210	7.6				
	25	134	35.47	2600	0.90	**PC01**	**80B5/B14**	**8016**	25
	32	107	28.50	2600	1.1	**PCF01**	**80B5/B14**	**8016**	25
	38	89	23.56	2580	1.4	**PCZ01**	**80B5/B14**	**8016**	25
	45	75	19.83	2440	1.6				
	50	67	17.86	2360	1.3				
	62	55	14.62	2200	2.2				
	65	52	13.80*	2160	1.7				
	76	45	11.90	2060	2.7				
	92	37	9.81	1930	3.2				
	98	35	9.17	1890	2.3				
	117	29	7.72	1780	2.7				
	26	131	54.00*	4500	1.5	**PC02**	**71B5/B14**	**7124**	27
	30	113	46.46*	4500	1.8	**PCF02**	**71B5/B14**	**7124**	27
	34	98	40.60*	4500	2.0	**PCZ02**	**71B5/B14**	**7124**	27
	39	87	35.91*	4270	2.3				
	48	70	28.88*	3970	2.9				
	59	58	23.85*	3730	3.5				
	70	49	20.08*	3520	4.1				
	82	41	17.10*	3330	3.4				
	95	36	14.81*	3180	5.6				
	16.7	204	54.00*	4500	1.0	**PC02**	**80B5/B14**	**8016**	27
	19.4	175	46.46*	4500	1.1	**PCF02**	**80B5/B14**	**8016**	27
	22	153	40.60*	4500	1.3	**PCZ02**	**80B5/B14**	**8016**	27
	25	135	35.91*	4500	1.5				
	31	109	28.88*	4500	1.8				
	38	90	23.85*	4320	2.2				
	45	76	20.08*	4080	2.6				
	53	64	17.10*	3860	2.2				
	68	50	13.21*	3550	2.8				
	24	141	58.09	6000	2.1	**PC03**	**71B5/B14**	**7124**	29
	28	121	50.02	6000	2.5	**PCF03**	**71B5/B14**	**7124**	29
	32	106	43.75	6000	2.8	**PCZ03**	**71B5/B14**	**7124**	29
	36	94	38.73	6000	3.2				
	40	84	34.62	5860	3.6				
	15.5	219	58.09	6000	1.4	**PC03**	**80B5/B14**	**8016**	29
	18.0	189	50.02	6000	1.6	**PCF03**	**80B5/B14**	**8016**	29
	21	165	43.75	6000	1.8	**PCZ03**	**80B5/B14**	**8016**	29
	23	146	38.73	6000	2.1				
	26	130	34.62	6000	2.3				
	32	107	28.30	6000	2.8				
	41	82	21.78	5820	3.4				

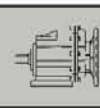
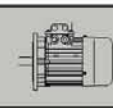
P_{1n} [kW]	n_2 [r/min]	M_{2n} [Nm]	i	F_{r2} [N]	fs			Page
0.55	53	96	53.33	2320	1.2	**PC01**	**71B5/B14**	**7122**	25
	61	83	45.89	2210	1.5	**PCF01**	**71B5/B14**	**7122**	25
	70	72	40.10	2110	1.7	**PCZ01**	**71B5/B14**	**7122**	25
	79	64	35.47	2030	1.9				
	98	51	28.50	1880	2.3				
	119	42	23.56	1770	2.8				
	141	36	19.83	1670	3.4				
	157	32	17.86	1610	2.8				
	203	25	13.80*	1480	3.6				
	39	128	35.47	2560	0.94	**PC01**	**80B5/B14**	**8014**	25
	49	103	28.50	2380	1.2	**PCF01**	**80B5/B14**	**8014**	25
	59	85	23.56	2230	1.4	**PCZ01**	**80B5/B14**	**8014**	25
	71	71	19.83	2100	1.7				
	78	64	17.86	2030	1.4				
	96	53	14.62	1900	2.3				
	101	50	13.80*	1860	1.8				
	118	43	11.90	1770	2.8				
	143	35	9.81	1660	3.4				
	153	33	9.17	1630	2.4				
	181	28	7.72	1540	2.9				
	246	20	5.69	1390	3.4				
	302	16.7	4.63	1290	4.2				
	366	13.8	3.82	1210	5.1				
	38	132	23.56	2580	0.91	**PC01**	**80B5/B14**	**8026**	25
	45	111	19.83	2440	1.1	**PCF01**	**80B5/B14**	**8026**	25
	62	82	14.62	2200	1.5	**PCZ01**	**80B5/B14**	**8026**	25
	65	77	13.80*	2160	1.2				
	76	67	11.90	2060	1.8				
	92	55	9.81	1930	2.2				
	98	51	9.17	1890	1.6				
	117	43	7.72	1780	1.8				
	158	32	5.69	1610	2.2				
	194	26	4.63	1500	2.7				
	236	21	3.82	1410	3.3				
	52	97	54.00*	3880	2.1	**PC02**	**71B5/B14**	**7122**	27
	60	84	46.46*	3690	2.4	**PCF02**	**71B5/B14**	**7122**	27
	69	73	40.60*	3530	2.7	**PCZ02**	**71B5/B14**	**7122**	27
	78	65	35.91*	3390	3.1				
	97	52	28.88*	3150	3.8				
	26	194	54.00*	4500	1.0	**PC02**	**80B5/B14**	**8014**	27
	30	167	46.46*	4500	1.2	**PCF02**	**80B5/B14**	**8014**	27
	34	146	40.60*	4500	1.4	**PCZ02**	**80B5/B14**	**8014**	27
	39	129	35.91*	4270	1.5				
	48	104	28.88*	3970	1.9				
	59	86	23.85*	3730	2.3				
	70	72	20.08*	3520	2.8				
	82	62	17.10	3330	2.3				
	95	53	14.81*	3180	3.7				
	106	48	13.21	3060	2.9				
	22	227	40.60*	4500	0.88	**PC02**	**80B5/B14**	**8026**	29
	25	201	35.91*	4500	1.0	**PCF02**	**80B5/B14**	**8026**	29
	31	162	28.88*	4500	1.2	**PCZ02**	**80B5/B14**	**8026**	29
	38	134	23.85*	4320	1.5				
	45	113	20.08*	4080	1.8				
	53	96	17.10	3860	1.5				
	61	83	14.81*	3680	2.4				
	68	74	13.21	3550	1.9				
	103	49	8.78	3090	2.4				

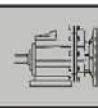
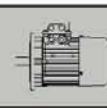
P_{1n} [kW]	n_2 [r/min]	M_{2n} [Nm]	i	F_{r2} [N]	fs				Page
0.55	24	209	58.09	6000	1.4	**PC03**	**80B5/B14**	**8014**	29
	28	180	50.02	6000	1.7	**PCF03**	**80B5/B14**	**8014**	29
	32	158	43.75	6000	1.9	**PCZ03**	**80B5/B14**	**8014**	29
	36	139	38.73	6000	2.2				
	40	125	34.62	5860	2.4				
	49	102	28.30	5480	2.9				
	64	78	21.78	5020	3.6				
	81	62	17.33	4660	4.5				
	15.5	325	58.09	6000	0.92	**PC03**	**80B5/B14**	**8026**	29
	18.0	280	50.02	6000	1.1	**PCF03**	**80B5/B14**	**8026**	29
	21	245	43.75	6000	1.2	**PCZ03**	**80B5/B14**	**8026**	29
	23	217	38.73	6000	1.4				
	26	194	34.62	6000	1.5				
	32	159	28.30	6000	1.9				
	41	122	21.78	5820	2.3				
	52	97	17.33	5400	2.9				
	60	84	15.06	5150	3.1				
	73	69	12.37	4820	3.8				
	24	209	58.09	8000	2.4	**PC04**	**80B5/B14**	**8014**	31
	28	180	50.02	8000	2.8	**PCF04**	**80B5/B14**	**8014**	31
	32	158	43.75	8000	3.2	**PCZ04**	**80B5/B14**	**8014**	31
	36	139	38.73	8000	3.6				
	40	125	34.62	7950	4.0				
	15.5	325	58.09	8000	1.5	**PC04**	**80B5/B14**	**8026**	31
	18.0	280	50.02	8000	1.8	**PCF04**	**80B5/B14**	**8026**	31
	21	245	43.75	8000	2.0	**PCZ04**	**80B5/B14**	**8026**	31
	23	217	38.73	8000	2.3				
	26	194	34.62	8000	2.6				
	32	159	28.30	8000	3.2				
	41	122	21.78	7890	3.9				
0.75	61	113	45.89	2210	1.1	**PC01**	**80B5/B14**	**8012**	25
	70	98	40.10	2100	1.2	**PCF01**	**80B5/B14**	**8012**	25
	79	87	35.47	2030	1.4	**PCZ01**	**80B5/B14**	**8012**	25
	98	70	28.50	1880	1.7				
	119	58	23.56	1770	2.1				
	141	49	19.83	1670	2.5				
	157	44	17.86	1610	2.1				
	192	36	14.62	1510	3.3				
	203	34	13.80*	1480	2.7				
	59	116	23.56	2230	1.0	**PC01**	**80B5/B14**	**8024**	25
	71	97	19.83	2100	1.2	**PCF01**	**80B5/B14**	**8024**	25
	78	88	17.86	2030	1.0	**PCZ01**	**80B5/B14**	**8024**	25
	96	72	14.62	1900	1.7				
	101	68	13.80*	1860	1.3				
	118	58	11.90	1770	2.1				
	143	48	9.81	1660	2.5				
	153	45	9.17	1630	1.8				
	181	38	7.72	1540	2.1				
	246	28	5.69	1390	2.5				
	302	23	4.63	1290	3.1				
	366	18.8	3.82	1210	3.7				
	62	112	14.62	2200	1.1	**PC01**	**90B5/B14**	**90S6**	25
	76	91	11.90	2060	1.3	**PCF01**	**90B5/B14**	**90S6**	25
	92	75	9.81	1930	1.6	**PCZ01**	**90B5/B14**	**90S6**	25
	98	70	9.17	1890	1.1				

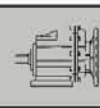
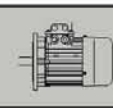
P_{1n} [kW]	n_2 [r/min]	M_{2n} [Nm]	i	F_{r2} [N]	fs			Page
0.75	117	59	7.72	1780	1.4	**PC01**	**90B5/B14**	**90S6**	25
	158	43	5.69	1610	1.6	**PCF01**	**90B5/B14**	**90S6**	25
	194	35	4.63	1500	2.0	**PCZ01**	**90B5/B14**	**90S6**	25
	236	29	3.82	1410	2.4				
	52	133	54.00*	3880	1.5	**PC02**	**80B5/B14**	**8012**	27
	60	114	46.46*	3690	1.8	**PCF02**	**80B5/B14**	**8012**	27
	69	100	40.60*	3530	2.0	**PCZ02**	**80B5/B14**	**8012**	27
	78	88	35.91*	3390	2.3				
	97	71	28.88*	3150	2.8				
	117	59	23.85*	2960	3.4				
	139	49	20.08*	2790	4.1				
	164	42	17.10*	2650	3.3				
	30	228	46.46*	4500	0.88	**PC02**	**80B5/B14**	**8024**	27
	34	199	40.60*	4500	1.0	**PCF02**	**80B5/B14**	**8024**	27
	39	176	35.91*	4270	1.1	**PCZ02**	**80B5/B14**	**8024**	27
	48	142	28.88*	3970	1.4				
	59	117	23.85*	3730	1.7				
	70	99	20.08*	3520	2.0				
	82	84	17.10	3330	1.7				
	95	73	14.81*	3180	2.7				
	106	65	13.21	3060	2.2				
	116	59	12.05	2970	3.4				
	141	49	9.93	2780	4.1				
	159	43	8.78	2670	2.8				
	189	36	7.39	2520	3.3				
	257	27	5.45	2280	3.7				
	38	182	23.85*	4320	1.1	**PC02**	**90B5/B14**	**90S6**	27
	45	153	20.08*	4080	1.3	**PCF02**	**90B5/B14**	**90S6**	27
	61	113	14.81*	3680	1.8	**PCZ02**	**90B5/B14**	**90S6**	27
	68	101	13.21	3550	1.4				
	75	92	12.05	3440	2.2				
	91	76	9.93	3220	2.6				
	103	67	8.78	3090	1.8				
	122	56	7.39	2920	2.1				
	165	42	5.45	2640	2.4				
	48	143	58.09	5530	2.1	**PC03**	**80B5/B14**	**8012**	29
	56	123	50.02	5260	2.4	**PCF03**	**80B5/B14**	**8012**	29
	64	107	43.75	5030	2.8	**PCZ03**	**80B5/B14**	**8012**	29
	72	95	38.73	4830	3.2				
	81	85	34.62	4650	3.5				
	24	285	58.09	6000	1.1	**PC03**	**80B5/B14**	**8024**	29
	28	246	50.02	6000	1.2	**PCF03**	**80B5/B14**	**8024**	29
	32	215	43.75	6000	1.4	**PCZ03**	**80B5/B14**	**8024**	29
	36	190	38.73	6000	1.6				
	40	170	34.62	5860	1.8				
	49	139	28.30	5480	2.2				
	64	107	21.78	5020	2.6				
	81	85	17.33	4660	3.3				
	93	74	15.06	4440	3.5				
	23	296	38.73	6000	1.0	**PC03**	**90B5/B14**	**90S6**	29
	26	264	34.62	6000	1.1	**PCF03**	**90B5/B14**	**90S6**	29
	32	216	28.30	6000	1.4	**PCZ03**	**90B5/B14**	**90S6**	29
	41	166	21.78	5820	1.7				
	52	132	17.33	5400	2.1				
	60	115	15.06	5150	2.3				

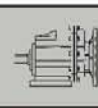
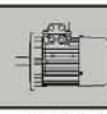
P_{1n} [kW]	n_2 [r/min]	M_{2n} [Nm]	i	F_{r2} [N]	fs				Page
0.75	73	95	12.37	4820	2.8	**PC03**	**90B5/B14**	**90S6**	29
	88	79	10.28	4530	3.1	**PCF03**	**90B5/B14**	**90S6**	29
	113	61	7.93*	4160	3.0	**PCZ03**	**90B5/B14**	**90S6**	29
	143	48	6.31	3850	3.7				
	164	42	5.48	3670	3.6				
	24	285	58.09	8000	1.8	**PC04**	**80B5/B14**	**8024**	31
	28	246	50.02	8000	2.0	**PCF04**	**80B5/B14**	**8024**	31
	32	215	43.75	8000	2.3	**PCZ04**	**80B5/B14**	**8024**	31
	36	190	38.73	8000	2.6				
	40	170	34.62	7950	2.9				
	49	139	28.30	7430	3.6				
	64	107	21.78	6810	4.5				
	15.5	444	58.09	8000	1.1	**PC04**	**90B5/B14**	**90S6**	31
	18.0	382	50.02	8000	1.3	**PCF04**	**90B5/B14**	**90S6**	31
	21	334	43.75	8000	1.5	**PCZ04**	**90B5/B14**	**90S6**	31
	23	296	38.73	8000	1.7				
	26	264	34.62	8000	1.9				
	32	216	28.30	8000	2.3				
	41	166	21.78	7890	2.9				
	52	132	17.33	7310	3.6				
1.1	98	103	28.50	1880	1.2	**PC01**	**80B5/B14**	**8022**	25
	119	85	23.56	1770	1.4	**PCF01**	**80B5/B14**	**8022**	25
	141	71	19.83	1670	1.7	**PCZ01**	**80B5/B14**	**8022**	25
	157	64	17.86	1610	1.4				
	192	53	14.62	1510	2.3				
	203	50	13.80*	1480	1.8				
	235	43	11.90	1410	2.8				
	285	35	9.81	1320	3.4				
	305	33	9.17	1290	2.4				
	363	28	7.72	1220	2.9				
	492	20	5.69	1100	3.4				
	605	16.7	4.63	1030	4.2				
	733	13.8	3.82	960	5.1				
	96	105	14.62	1900	1.1	**PC01**	**90B5/B14**	**90S4**	25
	118	86	11.90	1770	1.4	**PCF01**	**90B5/B14**	**90S4**	25
	143	71	9.81	1660	1.7	**PCZ01**	**90B5/B14**	**90S4**	25
	153	66	9.17	1630	1.2				
	181	56	7.72	1540	1.4				
	246	41	5.69	1390	1.7				
	302	33	4.63	1290	2.1				
	366	28	3.82	1210	2.5				
	92	110	9.81	1930	1.1	**PC01**	**90B5/B14**	**90L6**	25
	117	87	7.72	1780	0.92	**PCF01**	**90B5/B14**	**90L6**	25
	158	64	5.69	1610	1.1	**PCZ01**	**90B5/B14**	**90L6**	25
	194	52	4.63	1500	1.3				
	236	43	3.82	1410	1.6				
	52	194	54.00*	3880	1.0	**PC02**	**80B5/B14**	**8022**	27
	60	167	46.46*	3690	1.2	**PCF02**	**80B5/B14**	**8022**	27
	69	146	40.60*	3530	1.4	**PCZ02**	**80B5/B14**	**8022**	27
	78	129	35.91*	3390	1.5				
	97	104	28.88*	3150	1.9				
	117	86	23.85*	2960	2.3				
	139	72	20.08*	2790	2.8				
	164	62	17.10	2650	2.3				
	189	53	14.81*	2520	3.7				
	212	48	13.21	2430	2.9				

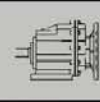
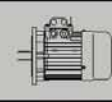
P_{1n} [kW]	n_2 [r/min]	M_{2n} [Nm]	i	F_{r2} [N]	fs			Page
1.1	48	208	28.88*	3970	0.96	**PC02**	**90B5/B14**	**90S4**	27
	59	172	23.85*	3730	1.2	**PCF02**	**90B5/B14**	**90S4**	27
	70	145	20.08*	3520	1.4	**PCZ02**	**90B5/B14**	**90S4**	27
	95	107	14.81*	3180	1.9				
	106	95	13.21	3060	1.5				
	116	87	12.05	2970	2.3				
	141	72	9.93	2780	2.8				
	159	63	8.78	2670	1.9				
	189	53	7.39	2520	2.3				
	257	39	5.45	2280	2.5				
	316	32	4.43	2120	3.1				
	383	26	3.66	1990	3.0				
	61	166	14.81*	3680	1.2	**PC02**	**90B5/B14**	**90L6**	27
	75	135	12.05	3440	1.5	**PCF02**	**90B5/B14**	**90L6**	27
	91	111	9.93	3220	1.8	**PCZ02**	**90B5/B14**	**90L6**	27
	103	98	8.78	3090	1.2				
	122	83	7.39	2920	1.4				
	165	61	5.45	2640	1.6				
	203	50	4.43	2460	2.0				
	246	41	3.66	2310	2.0				
	48	209	58.09	5530	1.4	**PC03**	**80B5/B14**	**8022**	29
	56	180	50.02	5260	1.7	**PCF03**	**80B5/B14**	**8022**	29
	64	158	43.75	5030	1.9	**PCZ03**	**80B5/B14**	**8022**	29
	72	139	38.73	4830	2.2				
	81	125	34.62	4650	2.4				
	99	102	28.30	4350	2.9				
	129	78	21.78	3990	3.6				
	32	315	43.75	6000	0.95	**PC03**	**90B5/B14**	**90S4**	29
	36	279	38.73	6000	1.1	**PCF03**	**90B5/B14**	**90S4**	29
	40	249	34.62	5860	1.2	**PCZ03**	**90B5/B14**	**90S4**	29
	49	204	28.30	5480	1.5				
	64	157	21.78	5020	1.8				
	81	125	17.33	4660	2.2				
	93	108	15.06	4440	2.4				
	113	89	12.37	4160	2.9				
	136	74	10.28	3910	3.2				
	177	57	7.93*	3590	3.2				
	222	45	6.31	3320	4.0				
	255	39	5.48	3170	3.8				
	311	32	4.50	2970	4.6				
	374	27	3.74	2790	5.6				
	32	317	28.30	6000	0.95	**PC03**	**90B5/B14**	**90L6**	29
	41	244	21.78	5820	1.1	**PCF03**	**90B5/B14**	**90L6**	29
	52	194	17.33	5400	1.4	**PCZ03**	**90B5/B14**	**90L6**	29
	60	169	15.06	5150	1.5				
	73	139	12.37	4820	1.9				
	88	115	10.28	4530	2.1				
	113	89	7.93*	4160	2.0				
	143	71	6.31	3850	2.5				
	164	61	5.48	3670	2.4				
	200	50	4.50	3440	3.0				
	241	42	3.74	3230	3.6				
	48	209	58.09	7500	2.4	**PC04**	**80B5/B14**	**8022**	31
	56	180	50.02	7130	2.8	**PCF04**	**80B5/B14**	**8022**	31
	64	158	43.75	6820	3.2	**PCZ04**	**80B5/B14**	**8022**	31
	72	139	38.73	6550	3.6				
	81	125	34.62	6310	4.0				

P_{1n} [kW]	n_2 [r/min]	M_{2n} [Nm]	i	F_{r2} [N]	fs			Page
1.1	24	418	58.09	8000	1.2	**PC04**	**90B5/B14**	**90S4**	31
	28	360	50.02	8000	1.4	**PCF04**	**90B5/B14**	**90S4**	31
	32	315	43.75	8000	1.6	**PCZ04**	**90B5/B14**	**90S4**	31
	36	279	38.73	8000	1.8				
	40	249	34.62	7950	2.0				
	49	204	28.30	7430	2.5				
	64	157	21.78	6810	3.1				
	81	125	17.33	6310	3.8				
	93	108	15.06	6020	4.2				
	21	490	43.75	8000	1.0	**PC04**	**90B5/B14**	**90L6**	31
	23	434	38.73	8000	1.2	**PCF04**	**90B5/B14**	**90L6**	31
	26	388	34.62	8000	1.3	**PCZ04**	**90B5/B14**	**90L6**	31
	32	317	28.30	8000	1.6				
	41	244	21.78	7890	2.0				
	52	194	17.33	7310	2.5				
	60	169	15.06	6980	2.7				
	73	139	12.37	6540	3.3				
	88	115	10.28	6150	3.8				
	113	89	7.93*	5640	2.9				
	143	71	6.31	5220	3.7				
	164	61	5.48	4980	3.7				
1.5	119	116	23.56	1770	1.0	**PC01**	**90B5/B14**	**90S2**	25
	141	97	19.83	1670	1.2	**PCF01**	**90B5/B14**	**90S2**	25
	192	72	14.62	1510	1.7	**PCZ01**	**90B5/B14**	**90S2**	25
	203	68	13.80*	1480	1.3				
	235	58	11.90	1410	2.1				
	285	48	9.81	1320	2.5				
	305	45	9.17	1290	1.8				
	363	38	7.72	1220	2.1				
	492	28	5.69	1100	2.5				
	605	23	4.63	1030	3.1				
	733	18.8	3.82	960	3.7				
	118	117	11.90	1770	1.0	**PC01**	**90B5/B14**	**90L4**	25
	143	96	9.81	1660	1.2	**PCF01**	**90B5/B14**	**90L4**	25
	153	90	9.17	1630	0.89	**PCZ01**	**90B5/B14**	**90L4**	25
	181	76	7.72	1540	1.1				
	246	56	5.69	1390	1.3				
	302	45	4.63	1290	1.5				
	366	38	3.82	1210	1.9				
	69	199	40.60*	3530	1.0	**PC02**	**90B5/B14**	**90S2**	27
	79	176	35.91*	3390	1.1	**PCF02**	**90B5/B14**	**90S2**	27
	97	142	28.88*	3150	1.4	**PCZ02**	**90B5/B14**	**90S2**	27
	117	117	23.85*	2960	1.7				
	139	99	20.08*	2790	2.0				
	189	73	14.81*	2520	2.7				
	212	65	13.21	2430	2.2				
	232	59	12.05	2350	3.4				
	282	49	9.93	2210	4.1				
	319	43	8.78	2120	2.8				
	379	36	7.39	2000	3.3				
	514	27	5.45	1810	3.7				
	95	145	14.81*	3180	1.4	**PC02**	**90B5/B14**	**90L4**	27
	116	118	12.05	2970	1.7	**PCF02**	**90B5/B14**	**90L4**	27
	141	98	9.93	2780	2.1	**PCZ02**	**90B5/B14**	**90L4**	27
	159	86	8.78	2670	1.4				
	189	73	7.39	2520	1.7				
	257	54	5.45	2280	1.9				
	316	44	4.43	2120	2.3				
	383	36	3.66	1990	2.2				

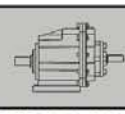
P_{1n} [kW]	n_2 [r/min]	M_{2n} [Nm]	i	F_{r2} [N]	fs			Page
1.5	48	285	58.09	5530	1.1	**PC03**	**90B5/B14**	**90S2**	29
	56	246	50.02	5260	1.2	**PCF03**	**90B5/B14**	**90S2**	29
	64	215	43.75	5030	1.4	**PCZ03**	**90B5/B14**	**90S2**	29
	72	190	38.73	4830	1.6				
	81	170	34.62	4650	1.8				
	99	139	28.30	4350	2.2				
	129	107	21.78	3990	2.6				
	162	85	17.33	3690	3.3				
	186	74	15.06	3530	3.5				
	40	340	34.62	5860	0.88	**PC03**	**90B5/B14**	**90L4**	29
	49	278	28.30	5480	1.1	**PCF03**	**90B5/B14**	**90L4**	29
	64	214	21.78	5020	1.3	**PCZ03**	**90B5/B14**	**90L4**	29
	81	170	17.33	4660	1.6				
	93	148	15.06	4440	1.8				
	113	122	12.37	4160	2.1				
	136	101	10.28	3910	2.4				
	177	78	7.93*	3590	2.3				
	222	62	6.31	3320	2.9				
	255	54	5.48	3170	2.8				
	311	44	4.50	2970	3.4				
	374	37	3.74	2790	4.1				
	52	265	17.33	5400	1.1	**PC03**	**100B5/B14**	**100L6**	29
	60	230	15.06	5150	1.1	**PCF03**	**100B5/B14**	**100L6**	29
	73	189	12.37	4820	1.4	**PCZ03**	**100B5/B14**	**100L6**	29
	88	157	10.28	4530	1.5				
	113	121	7.93*	4160	1.5				
	143	96	6.31	3850	1.9				
	164	84	5.48	3670	1.8				
	200	69	4.50	3440	2.2				
	241	57	3.74	3230	2.6				
	48	285	58.09	7500	1.8	**PC04**	**90B5/B14**	**90S2**	31
	56	246	50.02	7130	2.0	**PCF04**	**90B5/B14**	**90S2**	31
	64	215	43.75	6820	2.3	**PCZ04**	**90B5/B14**	**90S2**	31
	72	190	38.73	6550	2.6				
	81	170	34.62	6310	2.9				
	99	139	28.30	5900	3.6				
	24	571	58.09	8000	0.88	**PC04**	**90B5/B14**	**90L4**	31
	28	491	50.02	8000	1.0	**PCF04**	**90B5/B14**	**90L4**	31
	32	430	43.75	8000	1.2	**PCZ04**	**90B5/B14**	**90L4**	31
	36	380	38.73	8000	1.3				
	40	340	34.62	7950	1.5				
	49	278	28.30	7430	1.8				
	64	214	21.78	6810	2.2				
	81	170	17.33	6310	2.8				
	93	148	15.06	6020	3.1				
	113	122	12.37	5640	3.8				
	136	101	10.28	5300	4.4				
	177	78	7.93*	4860	3.3				
	222	62	6.31	4510	4.2				
	255	54	5.48	4300	4.3				
	26	529	34.62	8000	0.95	**PC04**	**100B5/B14**	**100L6**	31
	32	432	28.30	8000	1.2	**PCF04**	**100B5/B14**	**100L6**	31
	41	333	21.78	7890	1.4	**PCZ04**	**100B5/B14**	**100L6**	31
	52	265	17.33	7310	1.8				
	60	230	15.06	6980	2.0				
	73	189	12.37	6540	2.4				
	88	157	10.28	6150	2.8				
	113	121	7.93*	5640	2.1				

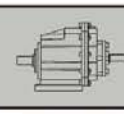
P_{1n} [kW]	n_2 [r/min]	M_{2n} [Nm]	i	F_{r2} [N]	fs			Page
1.5	143	96	6.31	5220	2.7	PC04	100B5/B14	100L6	31
	164	84	5.48	4980	2.7	PCF04	100B5/B14	100L6	31
	200	69	4.50	4660	3.3	PCZ04	100B5/B14	100L6	31
	241	57	3.74	4390	3.5				
2.2	97	208	28.88*	3150	0.96	PC02	90B5/B14	90L2	27
	117	172	23.85*	2960	1.2	PCF02	90B5/B14	90L2	27
	139	145	20.08*	2790	1.4	PCZ02	90B5/B14	90L2	27
	189	107	14.81*	2520	1.9				
	212	95	13.21	2430	1.5				
	232	87	12.05	2350	2.3				
	282	72	9.93	2210	2.8				
	319	63	8.78	2120	1.9				
	379	53	7.39	2000	2.3				
	514	39	5.45	1810	2.5				
	632	32	4.43	1680	3.1				
	765	26	3.66	1580	3.0				
	64	315	43.75	5030	0.95	PC03	90B5/B14	90L2	29
	72	279	38.73	4830	1.1	PCF03	90B5/B14	90L2	29
	81	249	34.62	4650	1.2	PCZ03	90B5/B14	90L2	29
	99	204	28.30	4350	1.5				
	129	157	21.78	3990	1.8				
	162	125	17.33	3690	2.2				
	186	108	15.06	3530	2.4				
	226	89	12.37	3300	2.9				
	272	74	10.28	3100	3.2				
	353	57	7.93*	2850	3.2				
	444	45	6.31	2640	4.0				
	511	39	5.48	2520	3.8				
	64	314	21.78	5020	0.89	PC03	100B5/B14	100LA4	29
	81	250	17.33	4660	1.1	PCF03	100B5/B14	100LA4	29
	93	217	15.06	4440	1.2	PCZ03	100B5/B14	100LA4	29
	113	178	12.37	4160	1.5				
	136	148	10.28	3910	1.6				
	177	114	7.93*	3590	1.6				
	222	91	6.31	3320	2.0				
	255	79	5.48	3170	1.9				
	311	65	4.50	2970	2.3				
	374	54	3.74	2790	2.8				
	73	277	12.37	4820	0.94	PC03	112B5/B14	112M6	29
	88	230	10.28	4530	1.0	PCF03	112B5/B14	112M6	29
	113	178	7.93*	4160	1.0	PCZ03	112B5/B14	112M6	29
	143	141	6.31	3850	1.3				
	164	123	5.48	3670	1.2				
	200	101	4.50	3440	1.5				
	241	84	3.74	3230	1.8				
	48	418	58.09	7500	1.2	PC04	90B5/B14	90L2	31
	56	360	50.02	7130	1.4	PCF04	90B5/B14	90L2	31
	64	315	43.75	6820	1.6	PCZ04	90B5/B14	90L2	31
	72	279	38.73	6550	1.8				
	81	249	34.62	6310	2.0				
	99	204	28.30	5900	2.5				
	129	157	21.78	5410	3.1				
	162	125	17.33	5010	3.8				
	40	499	34.62	7950	1.0	PC04	100B5/B14	100LA4	31
	49	408	28.30	7430	1.2	PCF04	100B5/B14	100LA4	31
	64	314	21.78	6810	1.5	PCZ04	100B5/B14	100LA4	31
	81	250	17.33	6310	1.9				
	93	217	15.06	6020	2.1				

P_{1n} [kW]	n_2 [r/min]	M_{2n} [Nm]	i	F_{r2} [N]	fs			Page
2.2	113	178	12.37	5640	2.6	**PC04**	**100B5/B14**	**100LA4**	31
	136	148	10.28	5300	3.0	**PCF04**	**100B5/B14**	**100LA4**	31
	177	114	7.93*	4860	2.3	**PCZ04**	**100B5/B14**	**100LA4**	31
	222	91	6.31	4510	2.9				
	255	79	5.48	4300	2.9				
	311	65	4.50	4030	3.5				
	374	54	3.74	3780	3.7				
	41	488	21.78	7890	1.0	**PC04**	**112B5/B14**	**112M6**	31
	52	388	17.33	7310	1.2	**PCF04**	**112B5/B14**	**112M6**	31
	60	338	15.06	6980	1.4	**PCZ04**	**112B5/B14**	**112M6**	31
	73	277	12.37	6540	1.7				
	88	230	10.28	6150	1.9				
	113	178	7.93*	5640	1.5				
	143	141	6.31	5220	1.8				
	164	123	5.48	4980	1.9				
	200	101	4.50	4660	2.3				
	241	84	3.74	4390	2.4				
3.0	99	278	28.30	4350	1.1	**PC03**	**100B5/B14**	**100L2**	29
	129	214	21.78	3990	1.3	**PCF03**	**100B5/B14**	**100L2**	29
	162	170	17.33	3690	1.6	**PCZ03**	**100B5/B14**	**100L2**	29
	186	148	15.06	3530	1.8				
	226	122	12.37	3300	2.1				
	272	101	10.28	3100	2.4				
	353	78	7.93*	2850	2.3				
	444	62	6.31	2640	2.9				
	511	54	5.48	2520	2.8				
	622	44	4.50	2350	3.4				
	749	37	3.74	2210	4.1				
	93	296	15.06	4440	0.88	**PC03**	**100B5/B14**	**100LB4**	29
	113	243	12.37	4160	1.1	**PCF03**	**100B5/B14**	**100LB4**	29
	136	202	10.28	3910	1.2	**PCZ03**	**100B5/B14**	**100LB4**	29
	177	156	7.93*	3590	1.2				
	222	124	6.31	3320	1.5				
	255	108	5.48	3170	1.4				
	311	88	4.50	2970	1.7				
	374	73	3.74	2790	2.0				
	81	340	34.62	6310	1.5	**PC04**	**100B5/B14**	**100L2**	31
	99	278	28.30	5900	1.8	**PCF04**	**100B5/B14**	**100L2**	31
	129	214	21.78	5410	2.2	**PCZ04**	**100B5/B14**	**100L2**	31
	162	170	17.33	5010	2.8				
	186	148	15.06	4780	3.1				
	226	122	12.37	4480	3.8				
	272	101	10.28	4210	4.4				
	353	78	7.93*	3860	3.3				
	444	62	6.31	3580	4.2				
	49	556	28.30	7430	0.90	**PC04**	**100B5/B14**	**100LB4**	31
	64	428	21.78	6810	1.1	**PCF04**	**100B5/B14**	**100LB4**	31
	81	340	17.33	6310	1.4	**PCZ04**	**100B5/B14**	**100LB4**	31
	93	296	15.06	6020	1.6				
	113	243	12.37	5640	1.9				
	136	202	10.28	5300	2.2				
	177	156	7.93*	4860	1.7				
	222	124	6.31	4510	2.1	**PC04**	**100B5/B14**	**100LB4**	31
	255	108	5.48	4300	2.1	**PCF04**	**100B5/B14**	**100LB4**	31
	311	88	4.50	4030	2.6	**PCZ04**	**100B5/B14**	**100LB4**	31
	374	73	3.74	3780	2.7				

P_{1n} [kW]	n_2 [r/min]	M_{2n} [Nm]	i	F_{r2} [N]	fs			Page
4.0	162	227	17.33	3690	1.2	**PC03**	**112B5/B14** **112M2**	29
	186	197	15.06	3530	1.3	**PCF03**	**112B5/B14** **112M2**	29
	226	162	12.37	3300	1.6	**PCZ03**	**112B5/B14** **112M2**	29
	272	135	10.28	3100	1.8			
	353	104	7.93*	2850	1.7			
	444	83	6.31	2640	2.2			
	511	72	5.48	2520	2.1			
	622	59	4.50	2350	2.5			
	749	49	3.74	2210	3.1			
	136	269	10.28	3910	0.89	**PC03**	**112B5/B14** **112M4**	29
	177	208	7.93*	3590	0.87	**PCF03**	**112B5/B14** **112M4**	29
	222	165	6.31	3320	1.1	**PCZ03**	**112B5/B14** **112M4**	29
	255	144	5.48	3170	1.0			
	311	118	4.50	2970	1.3			
	374	98	3.74	2790	1.5			
	81	453	34.62	6310	1.1	**PC04**	**112B5/B14** **112M2**	31
	99	371	28.30	5900	1.3	**PCF04**	**112B5/B14** **112M2**	31
	129	285	21.78	5410	1.7	**PCZ04**	**112B5/B14** **112M2**	31
	162	227	17.33	5010	2.1			
	186	197	15.06	4780	2.3			
	226	162	12.37	4480	2.8			
	272	135	10.28	4210	3.3			
	353	104	7.93*	3860	2.5			
	444	83	6.31	3580	3.1			
	511	72	5.48	3410	3.2			
	622	59	4.50	3190	3.9			
	749	49	3.74	3000	4.1			
	81	454	17.33	6310	1.1	**PC04**	**112B5/B14** **112M4**	31
	93	394	15.06	6020	1.2	**PCF04**	**112B5/B14** **112M4**	31
	113	324	12.37	5640	1.4	**PCZ04**	**112B5/B14** **112M4**	31
	136	269	10.28	5300	1.6			
	177	208	7.93*	4860	1.3			
	222	165	6.31	4510	1.6			
	255	144	5.48	4300	1.6			
	311	118	4.50	4030	2.0			
	374	98	3.74	3780	2.0			

6.3 PC..HS..性能参数 / Performance parameter

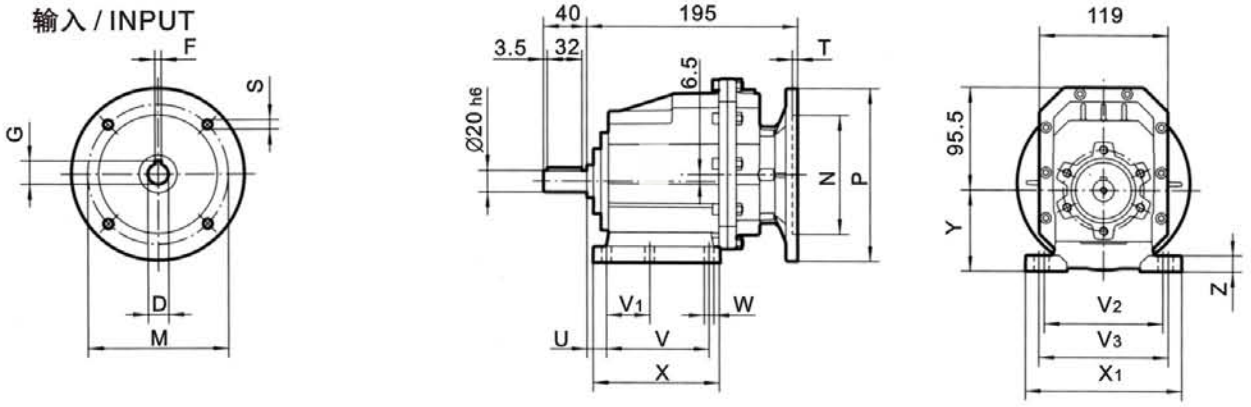
M_{2max} [Nm]	n_2 [r/min]	i	P_{1n} [kW]	n_1 [r/min]	F_{r2}	F_{r1}		Page
120	26.3	53.33	0.34	1400	2600	800	**PC01-HS**	26
120	30.5	45.89	0.40	1400	2600	800	**PCF01-HS**	26
120	34.9	40.10	0.46	1400	2600	800	**PCZ01-HS**	26
120	39.5	35.47	0.52	1400	2560	800		
120	49.1	28.50	0.64	1400	2380	800		
120	59.4	23.56	0.78	1400	2230	800		
120	70.6	19.83	0.92	1400	2100	800		
90	78.4	17.86	0.77	1400	2030	800		
120	95.8	14.62	1.25	1400	1900	800		
90	101	13.80	1.00	1400	1860	800		
120	118	11.90	1.54	1400	1770	800		
120	143	9.81	1.87	1400	1660	800		
80	153	9.17	1.33	1400	1630	800		
80	181	7.72	1.58	1400	1540	800		
70	246	5.69	1.88	1400	1390	800		
70	302	4.63	2.31	1400	1290	800		
70	366	3.82	2.80	1400	1210	800		

M_{2max} [Nm]	n_2 [r/min]	i	P_{1n} [kW]	n_1 [r/min]	F_{r2}	F_{r1}		Page
200	25.9	54.00	0.57	1400	4500	800	**PC02-HS**	28
200	30.1	46.46	0.66	1400	4500	800	**PCF02-HS**	28
200	34.5	40.60	0.75	1400	4500	800	**PCZ02-HS**	28
200	39.0	35.91	0.85	1400	4270	800		
200	48.5	28.88	1.06	1400	3970	800		
200	58.7	23.85	1.28	1400	3730	800		
200	69.7	20.08	1.52	1400	3520	800		
140	81.9	17.10	1.25	1400	3330	800		
200	94.5	14.81	2.06	1400	3180	800		
140	106	13.21	1.62	1400	3060	800		
200	116	12.05	2.53	1400	2970	800		
200	141	9.93	3.08	1400	2780	800		
120	159	8.78	2.09	1400	2670	800		
120	189	7.39	2.48	1400	2520	800		
100	257	5.45	2.80	1400	2280	800		
100	316	4.43	3.45	1400	2120	800		
80	383	3.66	3.34	1400	1990	800		
300	24.1	58.09	0.79	1400	6000	1200	**PC03-HS**	30
300	28.0	50.02	0.92	1400	6000	1200	**PCF03-HS**	30
300	32.0	43.75	1.05	1400	6000	1200	**PCZ03-HS**	30
300	36.1	38.73	1.18	1400	6000	1200		
300	40.4	34.62	1.32	1400	5860	1200		
300	49.5	28.30	1.62	1400	5480	1200		
280	64.3	21.78	1.96	1400	5020	1200		
280	81	17.33	2.47	1400	4660	1200		
260	93	15.06	2.64	1400	4440	1200		
260	113	12.37	3.21	1400	4160	1200		
240	136	10.28	3.57	1400	3910	1200		
180	177	7.93	3.47	1400	3590	1200		
180	222	6.31	4.36	1400	3320	1200		
150	255	5.48	4.18	1400	3170	1200		
150	311	4.50	5.09	1400	2970	1200		
150	374	3.74	6.12	1400	2790	1200		
500	24.1	58.09	1.31	1400	8000	1200	**PC04-HS**	32
500	28.0	50.02	1.53	1400	8000	1200	**PCF04-HS**	32
500	32.0	43.75	1.75	1400	8000	1200	**PCZ04-HS**	32
500	36.1	38.73	1.97	1400	8000	1200		
500	40.4	34.62	2.21	1400	7950	1200		
500	49.5	28.30	2.70	1400	7430	1200		
480	64.3	21.78	3.37	1400	6810	1200		
480	81	17.33	4.23	1400	6310	1200		
460	93	15.06	4.66	1400	6020	1200		
460	113	12.37	5.68	1400	5640	1200		
440	136	10.28	6.54	1400	5300	1200		
260	177	7.93	5.01	1400	4860	1200		
260	222	6.31	6.29	1400	4510	1200		
230	255	5.48	6.41	1400	4300	1200		
230	311	4.50	7.80	1400	4030	1200		
200	374	3.74	8.17	1400	3780	1200		

6. 外形尺寸 / OUTLINE DIMENSION

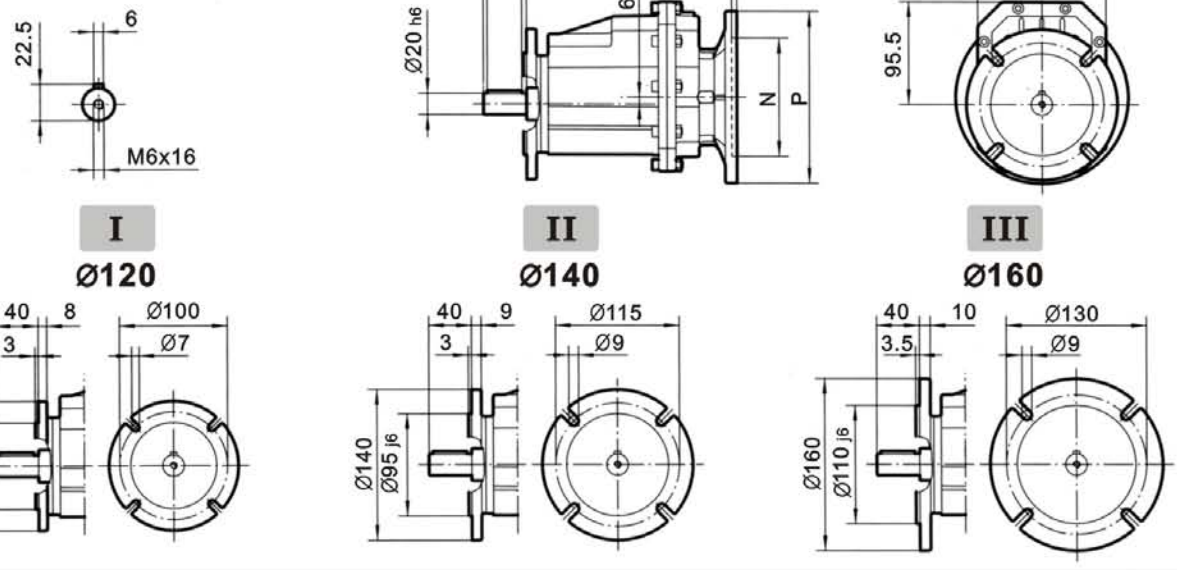
PC01..P(IEC)

输入 / INPUT

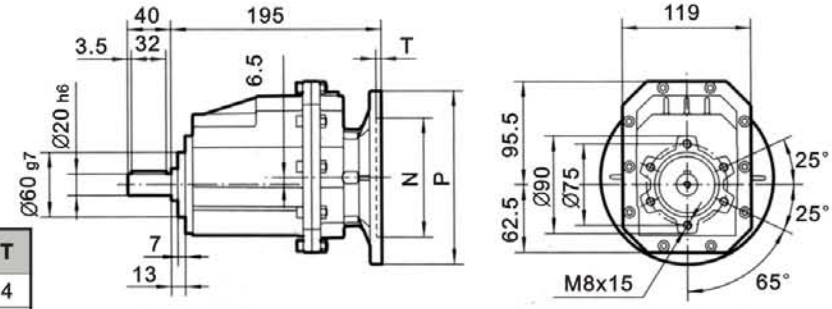


PCF01..P(IEC)

输出 / OUTPUT



PCZ01..P(IEC)

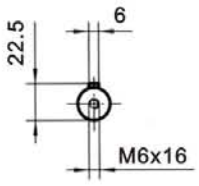


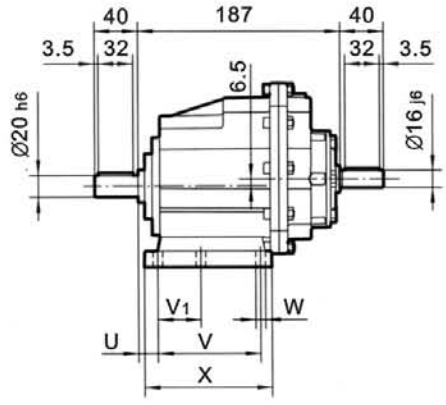
IEC	D_{E8}	F	G	P	M	N	S	T
P63B5	11	4	12.8	140	115	95	9	4
P71B5	14	5	16.3	160	130	110	9	4
P71B14	14	5	16.3	105	85	70	7	4
P80B5	19	6	21.8	200	165	130	11	4
P80B14	19	6	21.8	120	100	80	7	4
P90B5	24	8	27.3	200	165	130	11	4
P90B14	24	8	27.3	140	115	95	9	4

底脚代号 Foot Code	U	V	V_1	V_2	V_3	W	X	X_1	Y	Z
B01	18	87	50	110	-	9	118	130	85	15
M01	18	80	-	110	120	9	118	145	75	15
B02	18	107.5	60	130	-	11	136	155	95	17
M02	25	85	-	110	120	9	112	145	75	15

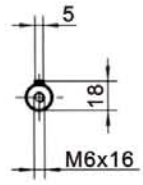
PC01..HS

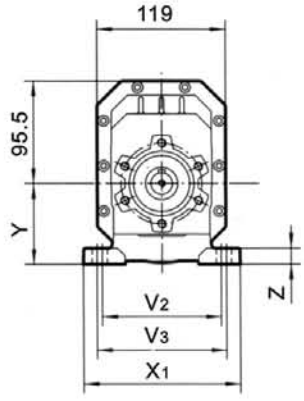
输出 / OUTPUT





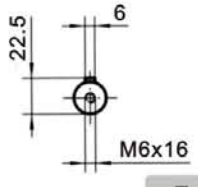
输入 / INPUT

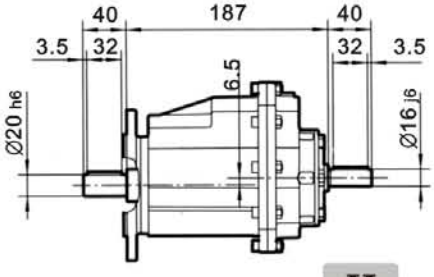




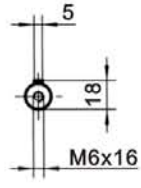
PCF01..HS

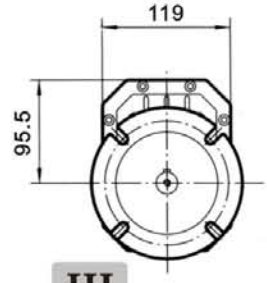
输出 / OUTPUT



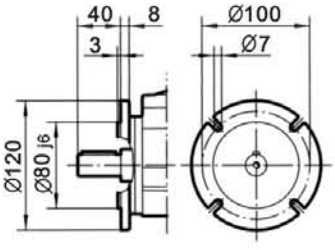


输入 / INPUT

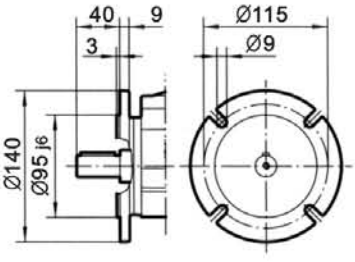




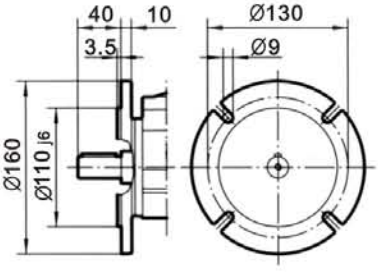
I **Ø120**



II **Ø140**

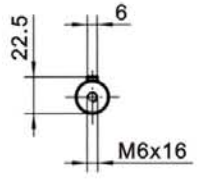


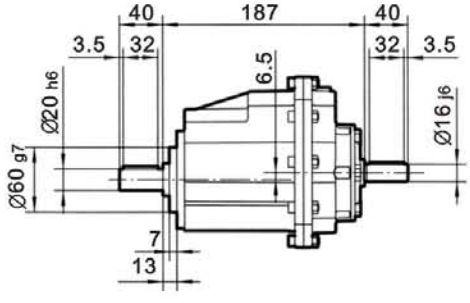
III **Ø160**



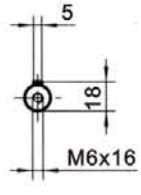
PCZ01..HS

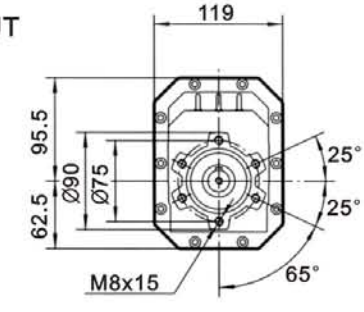
输出 / OUTPUT





输入 / INPUT

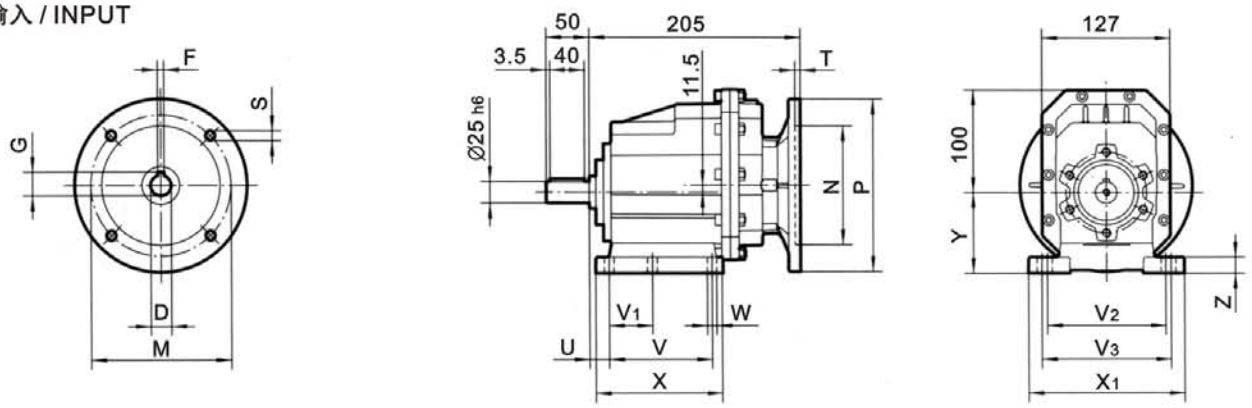




底脚代号 Foot Code	U	V	V1	V2	V3	W	X	X1	Y	Z
B01	18	87	50	110	-	9	118	130	85	15
M01	18	80	-	110	120	9	118	145	75	15
B02	18	107.5	60	130	-	11	136	155	95	17
M02	25	85	-	110	120	9	112	145	75	15

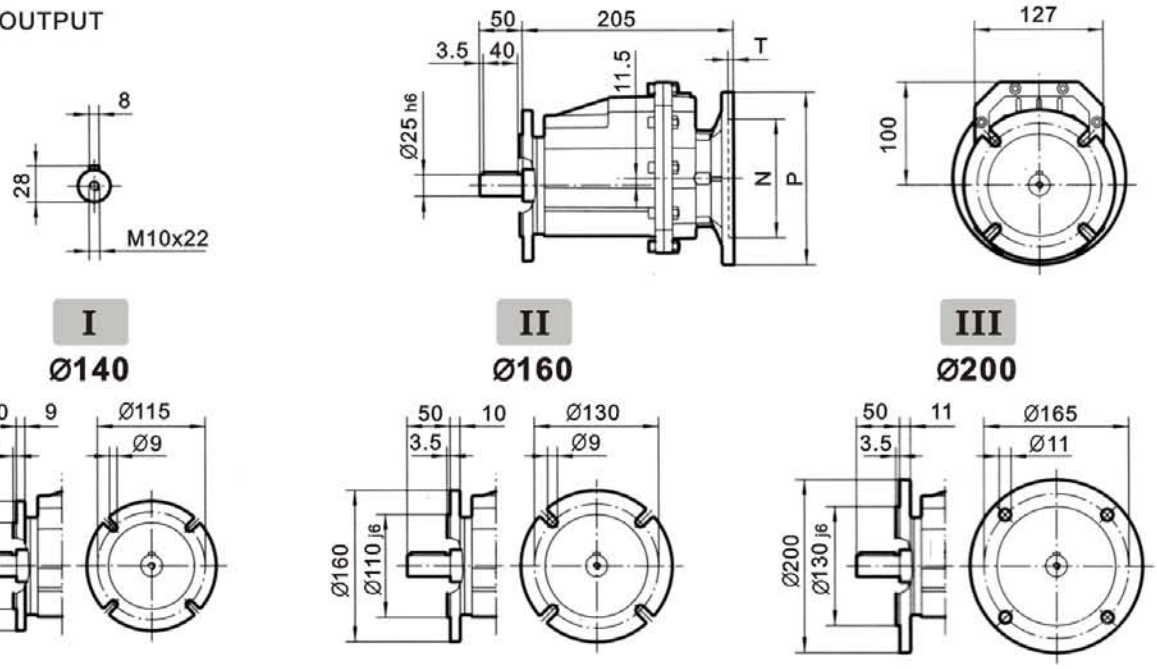
PC02..P(IEC)

输入 / INPUT

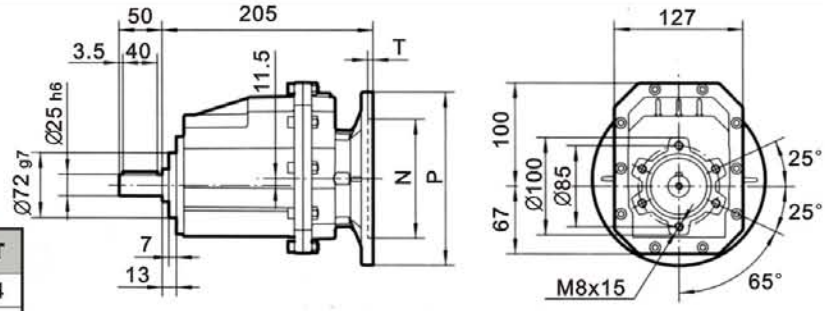


PCF02..P(IEC)

输出 / OUTPUT



PCZ02..P(IEC)

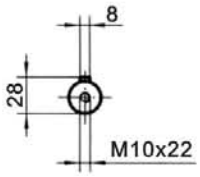


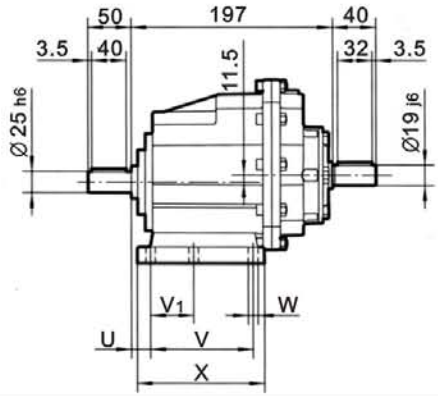
IEC	D_{E8}	F	G	P	M	N	S	T
P63B5	11	4	12.8	140	115	95	9	4
P71B5	14	5	16.3	160	130	110	9	4
P71B14	14	5	16.3	105	85	70	7	4
P80B5	19	6	21.8	200	165	130	11	4
P80B14	19	6	21.8	120	100	80	7	4
P90B5	24	8	27.3	200	165	130	11	4
P90B14	24	8	27.3	140	115	95	9	4

底脚代号 Foot Code	U	V	V_1	V_2	V_3	W	X	X_1	Y	Z
B02	18	107.5	60	130	-	11	136	155	100	17
M02	25	85	-	110	120	9	112	145	80	15
B01	18	87	50	110	-	9	118	130	90	15
M01	18	80	-	110	120	9	118	145	80	15

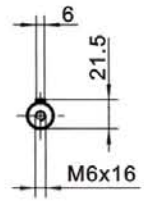
PC02..HS

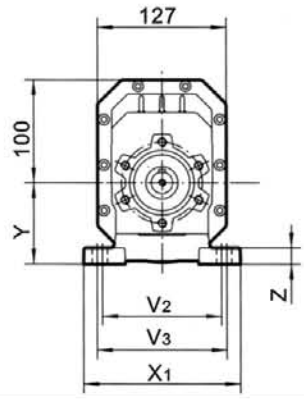
输出 / OUTPUT





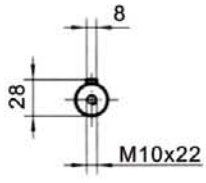
输入 / INPUT

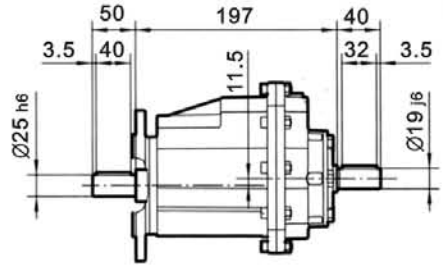




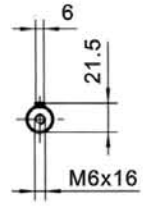
PCF02..HS

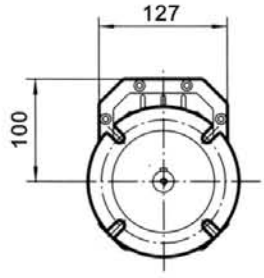
输出 / OUTPUT



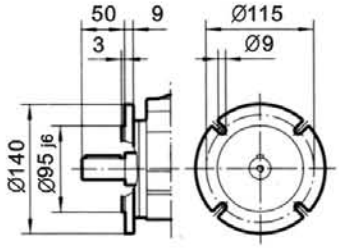


输出 / OUTPUT

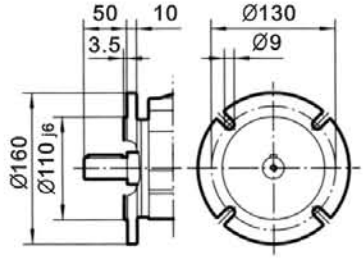




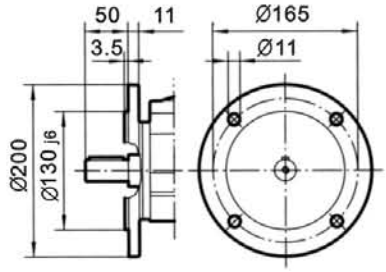
I **Ø140**



II **Ø160**

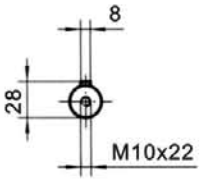


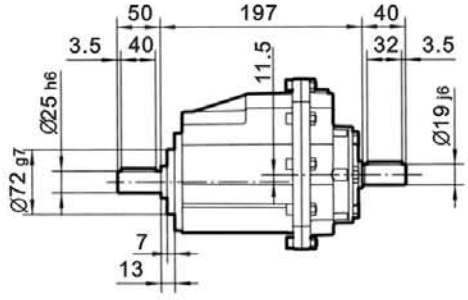
III **Ø200**



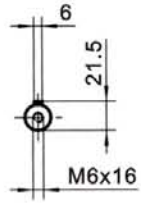
PCZ02..HS

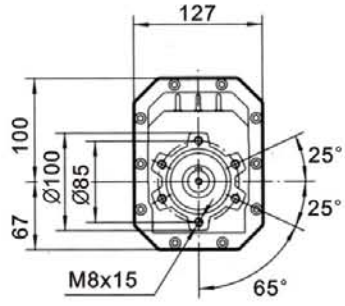
输出 / OUTPUT





输出 / OUTPUT

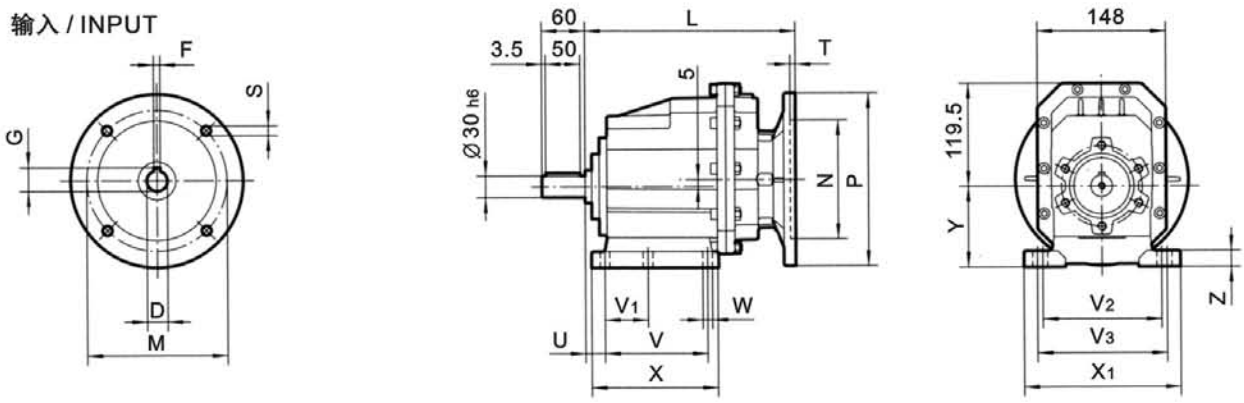




底脚代号 Foot Code	U	V	V1	V2	V3	W	X	X1	Y	Z
B02	18	107.5	60	130	-	11	136	155	100	17
M02	25	85	-	110	120	9	112	145	80	15
B01	18	87	50	110	-	9	118	130	90	15
M01	18	80	-	110	120	9	118	145	80	15

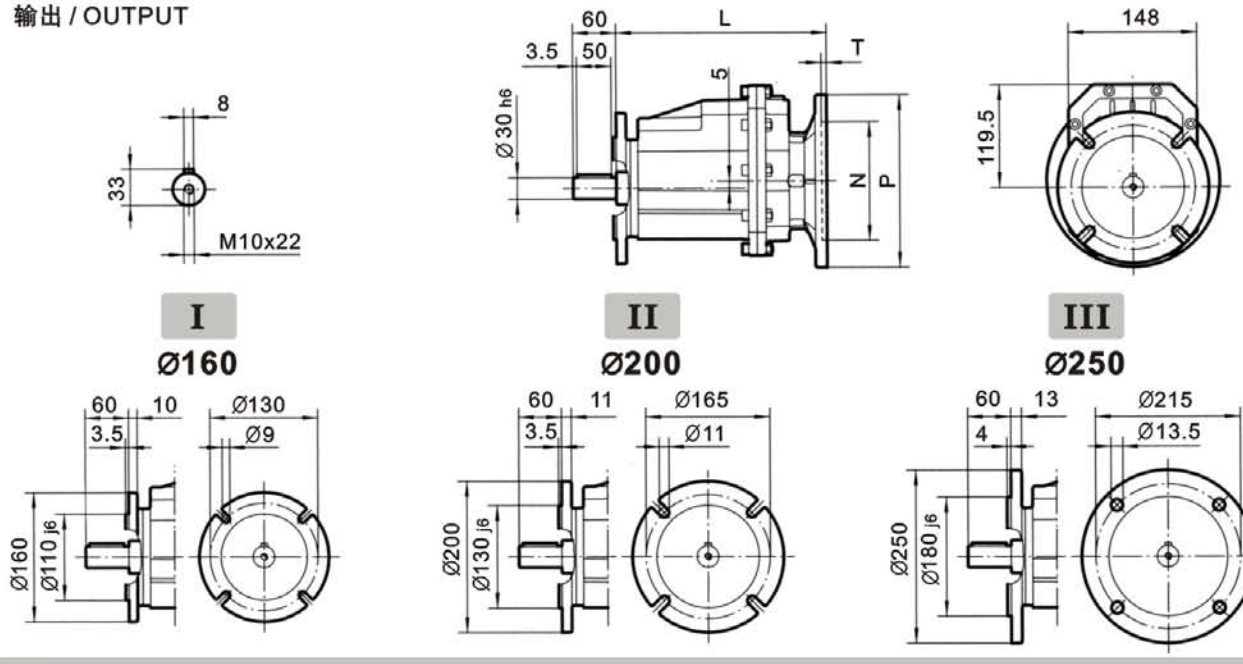
PC03..P(IEC)

输入 / INPUT

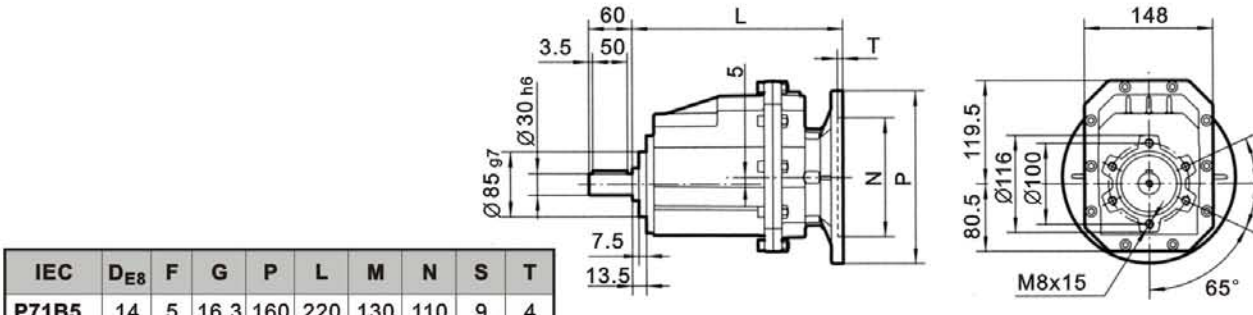


PCF03..P(IEC)

输出 / OUTPUT



PCZ03..P(IEC)

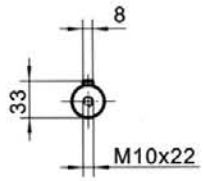


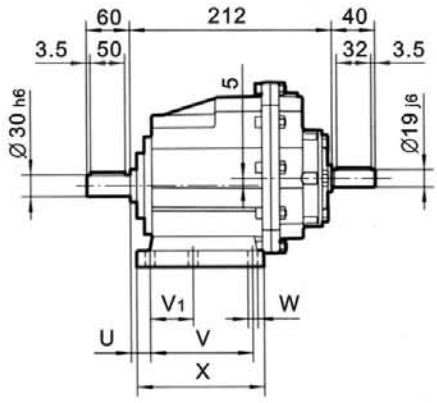
IEC	D_{E8}	F	G	P	L	M	N	S	T
P71B5	14	5	16.3	160	220	130	110	9	4
P80B5	19	6	21.8	200	220	165	130	11	4
P80B14	19	6	21.8	120	220	100	80	7	4
P90B5	24	8	27.3	200	220	165	130	11	4
P90B14	24	8	27.3	140	220	115	95	9	4
P100/112B5	28	8	31.3	250	237	215	180	13.5	4.5
P100/112B14	28	8	31.3	160	237	130	110	9	4.5

底脚代号 Foot Code	U	V	V_1	V_2	V_3	W	X	X_1	Y	Z
B03	18	130	70	160	-	11	156	190	110	20
M03	30	100	-	135	150	11	150	190	110	18
B04	20.5	130	-	170	-	14	168	205	105	20
M04	32	110	-	170	185	14	150	230	110	20

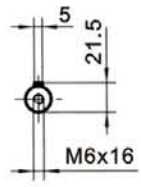
PC03..HS

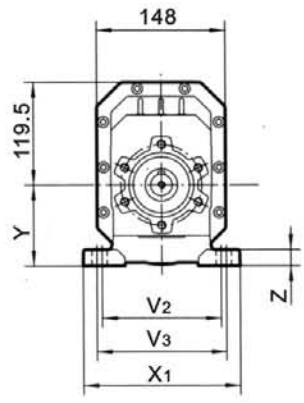
输出 / OUTPUT





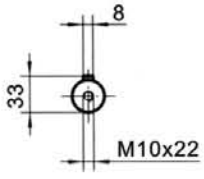
输入 / INPUT

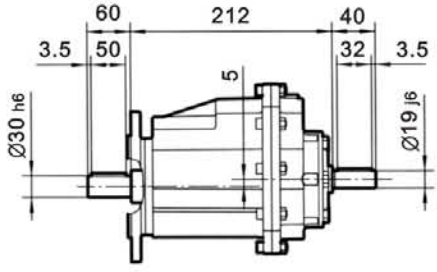




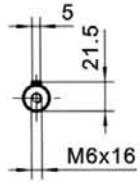
PCF03..HS

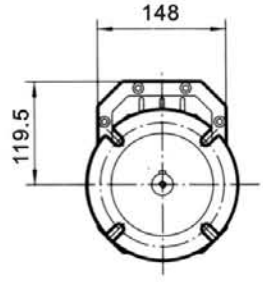
输出 / OUTPUT



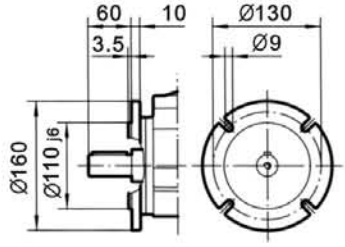


输入 / INPUT

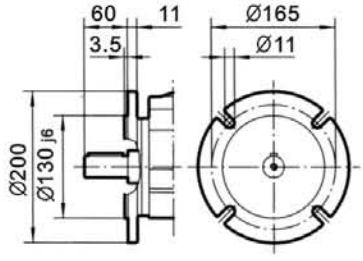




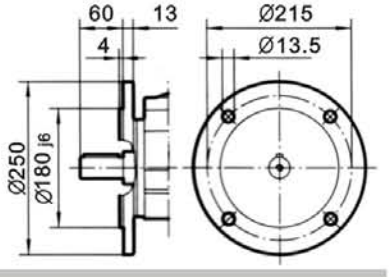
I **Ø160**



II **Ø200**

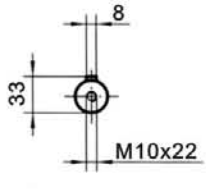


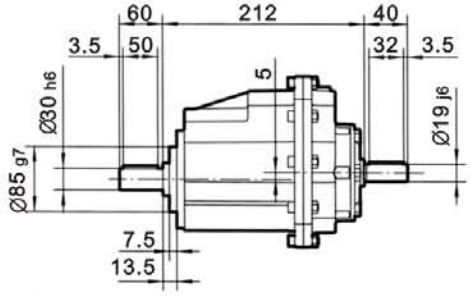
III **Ø250**



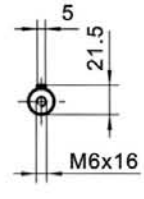
PCZ03..HS

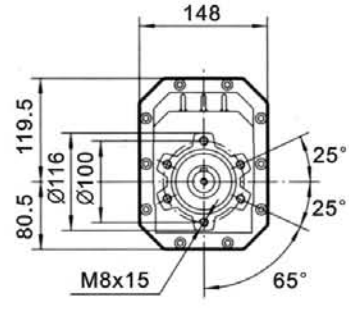
输出 / OUTPUT





输入 / INPUT

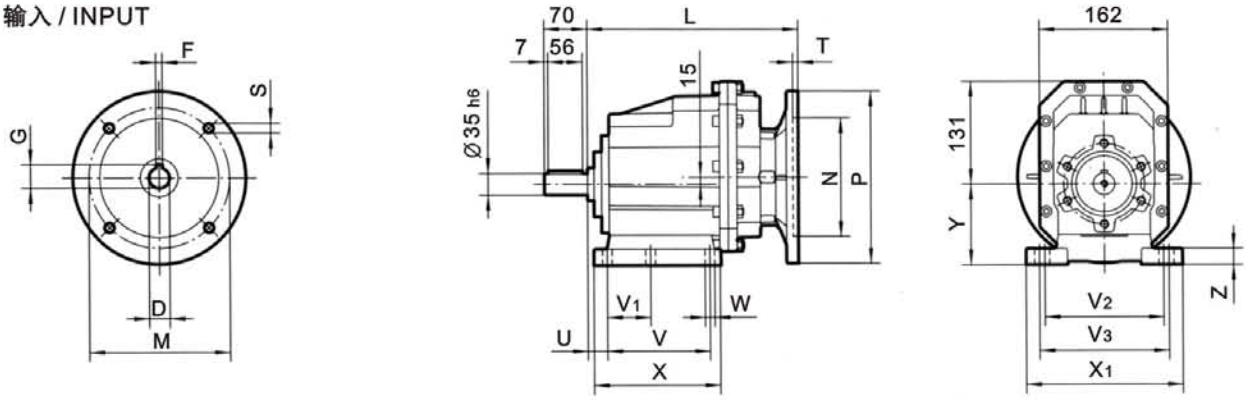




底脚代号 Foot Code	U	V	V1	V2	V3	W	X	X1	Y	Z
B03	18	130	70	160	-	11	156	190	110	20
M03	30	100	-	135	150	11	150	190	110	18
B04	20.5	130	-	170	-	14	168	205	105	20
M04	32	110	-	170	185	14	150	230	110	20

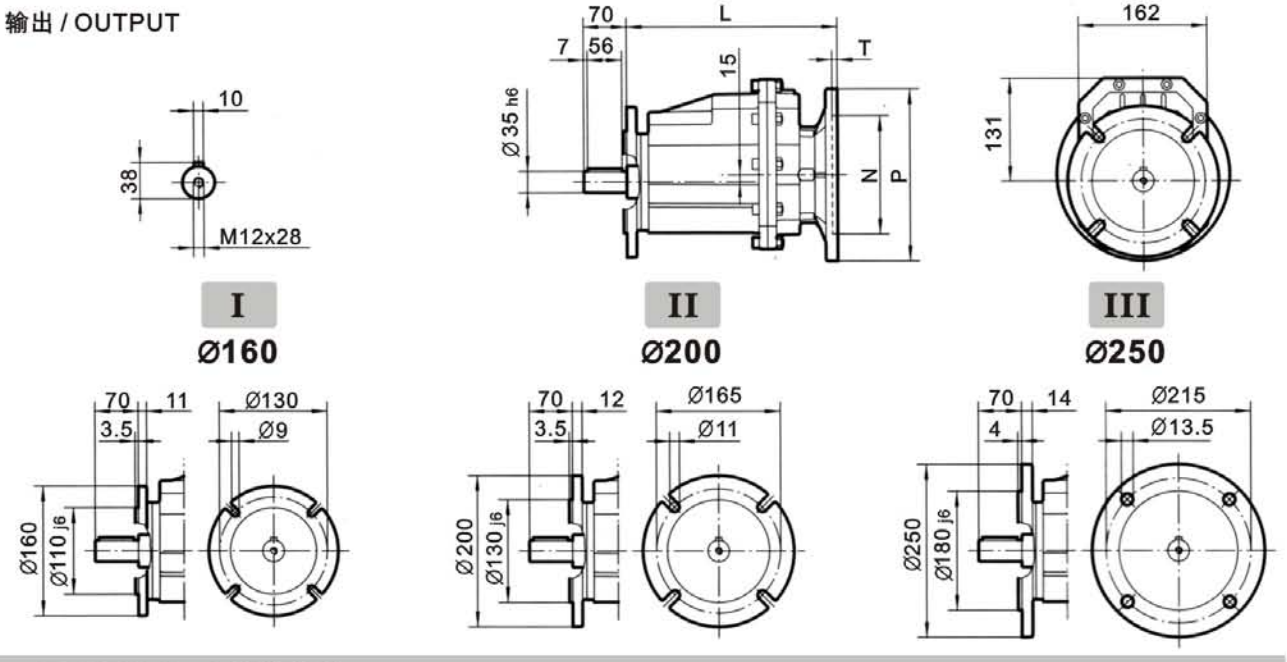
PC04..P(IEC)

输入 / INPUT

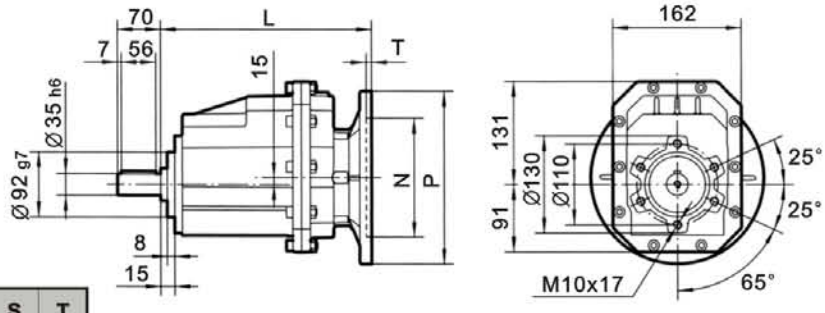


PCF04..P(IEC)

输出 / OUTPUT



PCZ04..P(IEC)

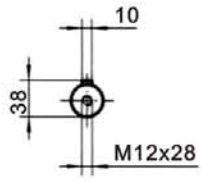


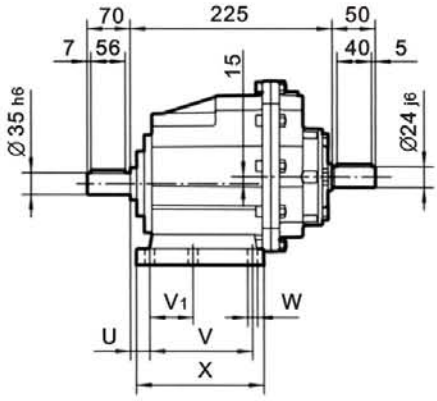
IEC	D_{E8}	F	G	P	L	M	N	S	T
P80B5	19	6	21.8	200	233	165	130	11	4
P80B14	19	6	21.8	120	233	100	80	7	4
P90B5	24	8	27.3	200	233	165	130	11	4
P90B14	24	8	27.3	140	233	115	95	9	4
P100/112B5	28	8	31.3	250	250	215	180	13.5	4.5
P100/112B14	28	8	31.3	160	250	130	110	9	4.5

底脚代号 Foot Code	U	V	V_1	V_2	V_3	W	X	X_1	Y	Z
B04	23.5	130	-	170	-	14	168	205	115	20
M04	35	110	-	170	185	14	150	230	120	20
B03	21	130	70	160	-	11	156	190	120	20
M03	33	100	-	135	150	11	150	190	120	18
B05	19.5	149.5	-	180	-	14	185	215	130	20

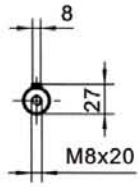
PC04..HS

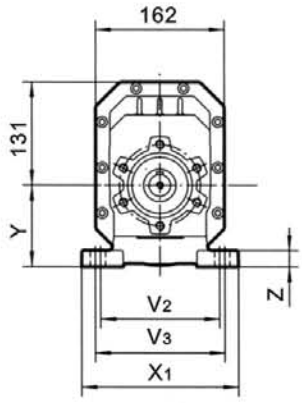
输出 / OUTPUT





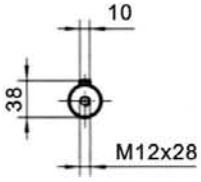
输入 / INPUT

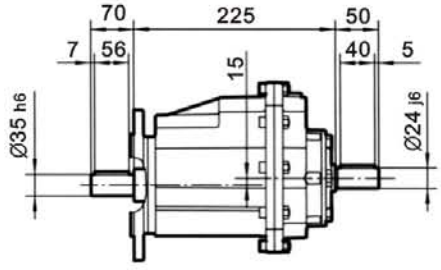




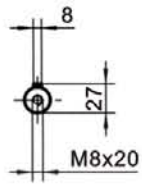
PCF04..HS

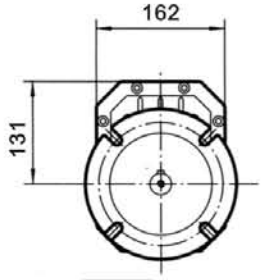
输出 / OUTPUT



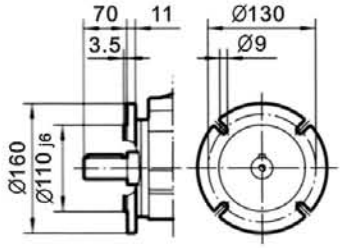


输入 / INPUT

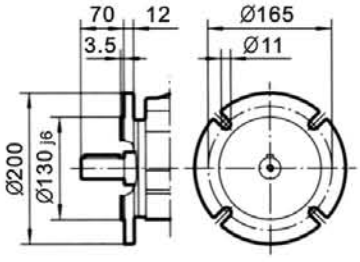




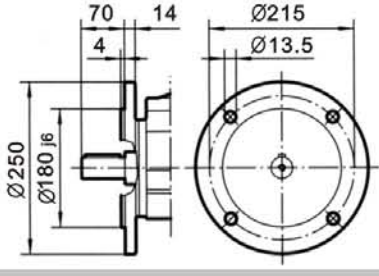
I **Ø160**



II **Ø200**

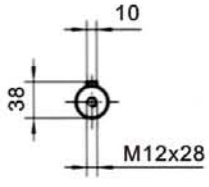


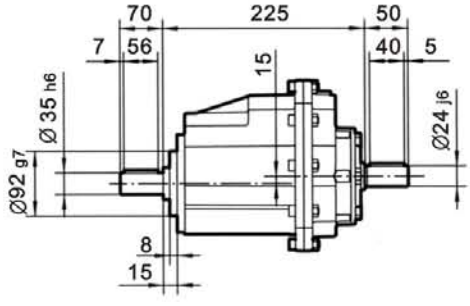
III **Ø250**



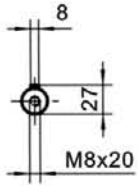
PCZ04..HS

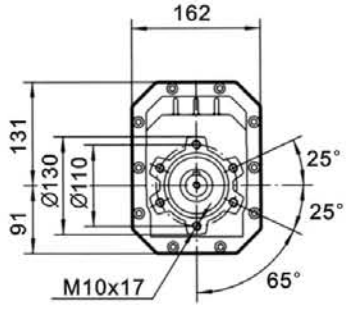
输出 / OUTPUT





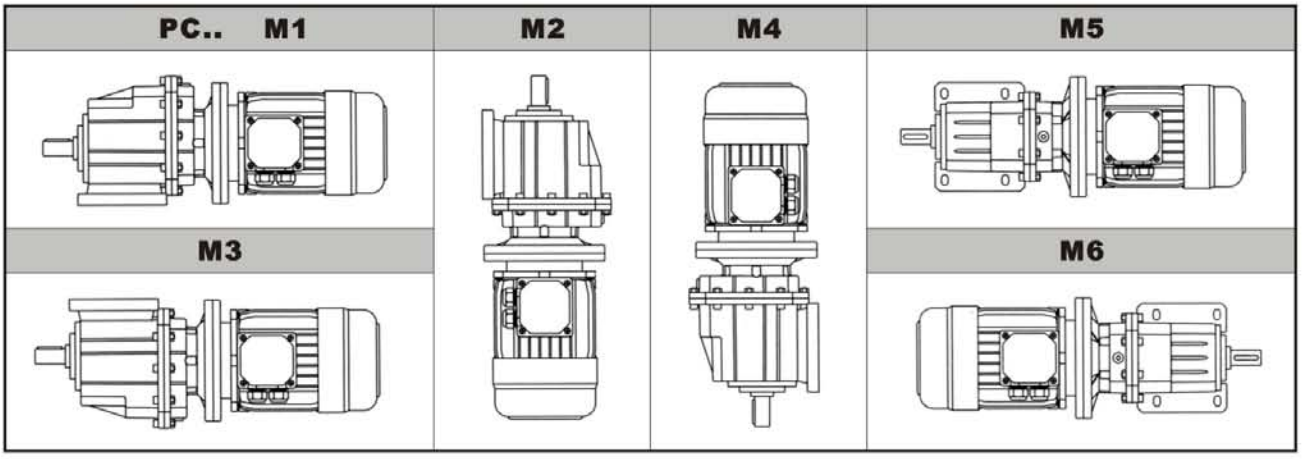
输入 / INPUT

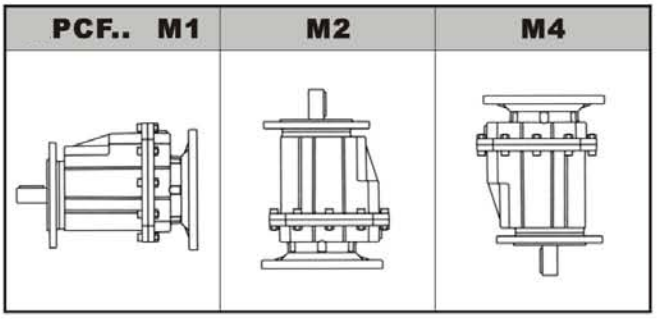


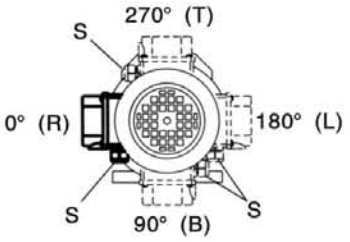


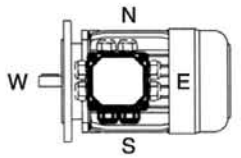
底脚代号 Foot Code	U	V	V_1	V_2	V_3	W	X	X_1	Y	Z
B04	23.5	130	-	170	-	14	168	205	115	20
M04	35	110	-	170	185	14	150	230	120	20
B03	21	130	70	160	-	11	156	190	120	20
M03	33	100	-	135	150	11	150	190	120	18
B05	19.5	149.5	-	180	-	14	185	215	130	20

7. 安装方位和接线盒位置 / MOUNTING POSITION AND TERMINAL BOX ORIENTATION









S：标准进线位置
normal position

8. 润滑油 / LUBRICATION

8.1 概述

如无特殊要求，我们的减速器都是按照指定的安装方位（**M1**）加注润滑油，所以在下订单时请注明安装方位。安装方位如有发生变化的，加油量也要随之变化（见加油量）。

8.1 General information

The lubicant was filled according to the specified mounting position(**M1**) if there is no special requirement. So please mark the mounting position when ordering. You must adapt the oil quantity after the mounting position was changed(see Oil quantity).

8.2 加油量 / Oil quantity

减速机型号 Gear units	加注量 Fill quantity in liters 单位 unit: 升（L）					
	M1	M2	M3	M4	M5	M6
PC..01..	0.4	0.6	0.4	0.3	0.3	0.3
PC..02..	0.5	0.7	0.5	0.4	0.4	0.4
PC..03..	0.8	1.1	0.8	0.6	0.6	0.6
PC..04..	1.2	1.6	1.0	1.0	0.9	0.9

表格规定的加注量为参考值，准确值的变化与传动比有关。KPC系列减速器在出厂前已加注了长寿命的润滑油，可长期使用，一般不需要换油。

The fill quantity in the table is referenced, the exact value velating to the ratio. All KPC Series helical gearbox are filled with life lubrication before deliveny, do not need to change it in general.

8.3 润滑油型号 / Types of lubrication

	℃ −50 0 +50 +100	ISO ISO	SHELL	Mobil MOBIL	bp BP	润滑油性质 Lubricant character
PC..	标准 Standard −10 +40	VG 220	Shell Omala 220	Mobilgear 630	BP Energol GR−XP 220	矿物油 Mineral oil
	−20 +25	VG 150 VG 100	shell Omala 100	Mobilgear 627	BP Energol GR−XP 100	
	−30 +10	VG 68−46 VG 32	Shell Tellus T 32	Mobil D.T.E 13M		
	−40 −20	VG 22 VG 15	Shell Tellus T 15	Mobil D.T.E 11M	BP Energol HLP−HM 15	
	−40 +80	VG 220	Shell Omala HD 220	Mobil SHC 630		合成油 Synthetic oil
	−40 +40	VG 150	Shell Omala HD 150	Mobil SHC 629		
	−40 +10	VG 32		Mobil SHC 624		

9. 安装方法 / INSTALLATION METHODS

9.1 安装前准备工作

1）.检查减速电机铭牌上的规定与电源是否一致。

2）.对于标准减速器，环境温度必须与润滑剂表中相应的润滑剂表相一致。

3）.动力安装不允许在油、爆炸气体、水蒸气、酸性腐蚀和放射线环境下进行。

4）.输出轴和法兰表面必须彻底清除掉防锈剂、污染物或者类似脏物。必须使用常用的溶剂。不得让溶剂进入到轴密封环的密封唇上，否则会损坏密封材料！

5）.支承结构必须满足平稳、防震、刚性好，不发生扭曲特性。

9.2 减速器的安装

1）.减速器安装时将底脚或法兰交错拧紧，注意其允许承受的横向力和轴向力！

2）.输出轴上安装传动件时，传动件如皮带轮，联轴器，小齿轮等绝对不能使用锤子敲击的方法套装到输出轴上，否则有可能损伤轴承，外壳以及轴。

3）.启动机器之前，检查放油塞是否利于操作，油镜是否利于观察油位，油位与减速器的安装位置是否一致，透气塞方位是否恰当。

9.1 Preparation before installation

1). Check if the data on the nameplates of the gearmotor matches the voltage supply system.

2). For standard gearbox, the ambient temperature must be in accordance with the corresponding lubricant table.

3). The drive must not be assembled in conditions such as oil, gas, vapors, acids, radiation and so on.

4). Output shaft and flange surfaces must thoroughly cleaned to ensure they are free of anti-corrosion agents, contamination or similar, Use a commercially available solvent.Do not let the solvent come into contact with the sealing lip of the oil seals, ro will damage the material!

5). The supporting structure must have the following characteristics: level, vibration damping and torsionally rigid.

9.2 The installation of the gearbox

1). Do not tighten the feet and mounting flanges against one another and ensure that you comply with the permitted radial load and axial load.

2). Never used hammer to knock belt pulley, coupling and pinion into the output shaft when the aeeembly is needed, otherwise the bearing, shaft and housing will be damaged.

3). Prior to startup, check that if the oil lveel is as specified for the mounting position, if the oil checking and drain screw and the breather valves are free accessible.

10. 故障排除 / CORRECT THE MALFUNCTION

故障	可能的原因	解决办法
异常、均匀的运转噪声。	A、滚动/碾压噪声：轴承损坏。 B、冲击型噪声：齿轮啮合不均匀	A、检测润滑油，更换轴承。 B、请向客户服务部咨询。
异常、不均匀的运转噪声。	机油中有异物。	· 检测润滑。 · 停止运转传动装置，向客户服务部咨询。
机油泄漏 1) · 在减速器盖上。 · 在电机凸缘上。 · 在电机轴密封圈上。 · 在减速器凸缘上。 · 在输出端轴密封圈上。	A、减速器底座上的橡胶密封发生渗漏。 B、密封圈损坏。 C、减速器没有排气。	A、拧紧各个外盖上的螺钉并且观察减速器。如果机油继续泄漏，请向客户服务部咨询。 B、请向客户服务部咨询。 C、给减速器排气（参见“安装方式”）。
机油从排气阀旁渗出。	A.机油太多 B.传动装置安装方式错误。 C.频繁冷起动（机油起泡沫）和/或者较高的油位。	A.修正油量（参见“润滑油”） B.正确安装排气阀并且矫正油位（参见“安装方式”）
尽管电机在运转或者传动轴已经被驱动，但是传动轴不转动。	减速器中的轴轮毂连接断裂。	减速器或减速电机送修。

1）在磨合试运转阶段（24小时的运转时间内），轴密封圈有可能出现短期内的漏油/油脂的现象。

Problem	Possible cause	Remedy
Unusaual, regular running noise	A. Meshing/grinding noise: Bearing damage. B. Knocking noise: Irregularity in the gearing	A. Check the oil,change bearings. B. Contact customer service
Unusual, irregular running noise	Foreign matter in the oil	· Check the oil · Stop the drive, contact customer service
Oil leaking1) · From the gear cover plate · From the motor flange · From the motor oil seal · From the gearbox flange · From the output end oil seal	A. Rubber seal on the gear cover plate leaking B. Seal defective C. Gearbox not vented	A. Tighten the bolts on the gear cover plate and observe the gear unit. Oil still leaking:Contact customer service B. Contact customer service C. Vent the gear unit (see "Mounting Positions")
Oil leaking from breaking valve	A. Too much oil B. Drive operated in incorrect mounting position C. Frequent cold starts(oil foams) and/or high oillevel	A. Correct the oil level (see Sec. "Lubrication") B. Mount the breather valve correctly (see Sec. "Mounting Positions")
Output shaft does not turn although the motor is running or the input shaft is rotated	Connection between shaft and hub in gearbox interrupted	Send the gearbox/geared motor for repair

1) Short-term oil/grease leakage at the oil seal is possible in the run-in phase (24 hours running time).