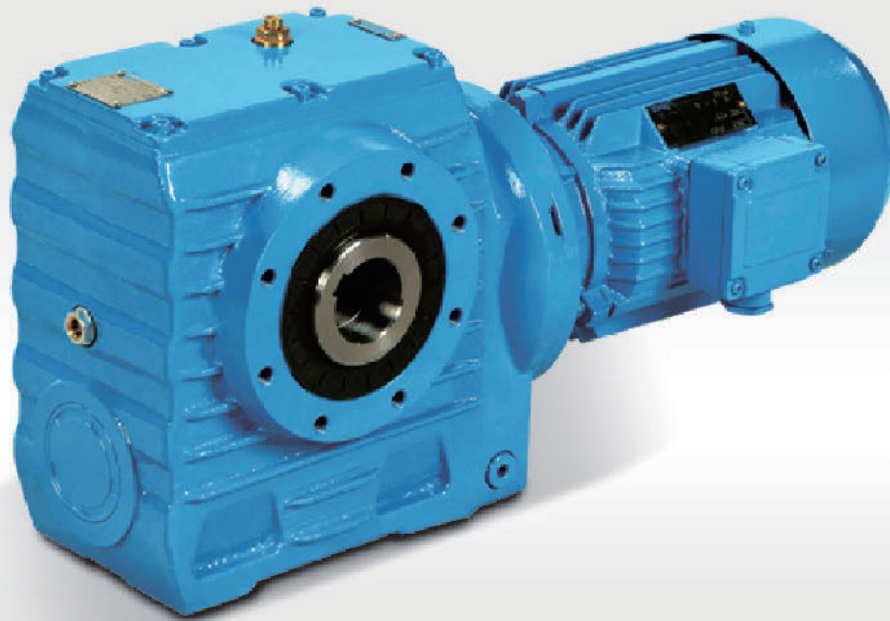


BONENG



博能 S斜齿-蜗轮齿轮马达
S Helical-Worm Gearmotor

05/2017

S斜齿-蜗轮齿轮马达 / Helical-worm Gearmotor



- ◆ 高度的模块化设计，零部件互换程度高，供货周期短，容易实现各机型间的组合连接。
- ◆ 传动比划分细，范围广，组合机型可获得较大的传动比。减速机适合在任意空间角度安装。
- ◆ 采用整体式铸造箱体，箱体结构刚好，易于提高轴的强度和轴承寿命。
- ◆ 齿轮采用低碳合金钢淬火磨齿工艺和修形技术使产品具有更高的承载能力，运行可靠，噪音低，效率高，寿命长。蜗轮采用锡青铜材质和离心浇铸工艺，保证其强度和耐磨性，提高了寿命。
- ◆ 斜齿轮和蜗轮组合，结构紧凑，减速比大。
- ◆ 安装方式：底座安装、法兰安装、扭力臂安装、小法兰安装。
- ◆ 输入方式：电机直联、轴输入、连接法兰输入。

- ◆ High modular design, high replacement spare parts and short delivery time. It's easy to get the combination type.
- ◆ The range of ratio is wide, combined type can obtain larger ratio. Gearbox is suitable for installation at any space angle.
- ◆ Adopt cast housing with high rigid structure, it's good for the shaft strength and bearing life.
- ◆ Gear wheels are made of steel alloy via quenching and grinding process, it improves the high load duty, stable running, low noise, high efficiency and long life time.
- ◆ Worm wheels are made of tin bronze via eccentric casting process which enhance the abrasion resistance and improve the life time.
- ◆ Helical-worm combination gearbox has the compact structure and big ratio.
- ◆ Mounting position: foot mounted, flange mounted, torque arm mounted, small flange mounted.
- ◆ Input mode: coupled with motor, input with shaft, input with flange.



公司产品广泛应用于港口船舶、冶金其中、物流运输、舞台行业、电力能源、煤炭矿山、水泥建材、林业造纸、农业机械、轻工纺织、化工塑料、节能环保等各个领域。公司总部和各大区域的技术专家、以及各区域办事处的应用工程师、售后服务技师竭诚为您提供全面的技术咨询和完美的服务。

Company products are widely used in ports, metallurgy, hoist, logistics, transportation, arena, electric power, coal mining, cement, building materials, paper & forestry, agricultural machinery, light industry, textile, chemical plastics, energy conservation, environmental protection and other fields. The technical experts from headquarter and large arena, the application engineer from the regional offices and the after-sales service technician will provide you with comprehensive technical advice and perfect service.



注意事项！ 必须严格遵守以下各项！

Note: You must conform to the following instructions

- ◆ 样本中的结构示意图、外形图及其他附图只属于范例，无严格比例要求。（未注尺寸单位均为mm）。
- ◆ 所注重量仅为平均值，并不具有约束力。
- ◆ 为防止意外事故发生，所有旋转部件均按照使用者所在的国家和地区的安全规范购置方加罩保护。
- ◆ 试车之前必须认真阅读使用说明书。
- ◆ 齿轮箱在供货时已处于准运行状态，运行前需要加注润滑油。
- ◆ 本样本中注油量只作为参考值，实际注油量应以油镜上的标记为准。
- ◆ 润滑油粘度齿轮箱使用工况及使用环境温度选取。
- ◆ 只能采用国际知名牌的润滑油。
- ◆ The structure scheme, appearance diagram and other attached diagrams in sample are examples, there is no strict proportion requirement. (The unmarked dimension units are mm).
- ◆ We can only refer to the marked weight in the manual.
- ◆ To prevent accidents, all the rotation parts should be added with protective covers according to local safety regulations and laws.
- ◆ Before testing, users should read instruction manual carefully.
- ◆ Gear unit has been tested before delivered, users should add lubrication oil before running.
- ◆ We can only refer to the marked oil in the manual, actual oil filling level should be the same with the mark on oil immersion lens.
- ◆ Lubrication oil viscosity should be selected according to working conditions and the temperature of local environment.
- ◆ Users can only use high quality lubrication oil.

产品功能标识/Product Function Mark





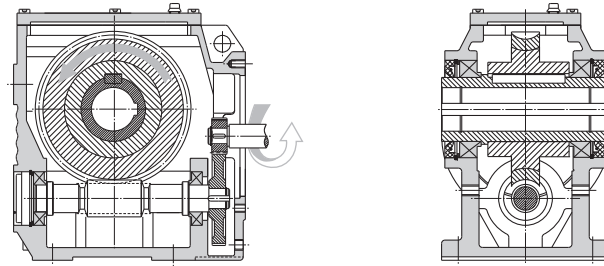
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1 结构示意图:

1 Sectional Drawings:



S..37-S..97

注:S..107、S..127敬请垂询。
Note: S107 and S127 are on request.

2 型号表示方法:

2 Type Designation

SF 97 A - 32.6 - M11+V68- B51 - 90

S系列安装形式/S Series

- S = 底座式平键实心轴
Foot-mounted solid shaft with parallel key
- SH = 底座式带锁紧盘空心轴
Foot-mounted hollow shaft with shrink disk
- SW = 底座式平键空心轴
Foot-mounted hollow shaft with parallel key
- SN = 底座式渐开线花键空心轴
Foot-mounted hollow shaft with involute spline
- SF = 法兰式平键实心轴
Flange-mounted solid shaft with parallel key
- SL = 法兰式平键空心轴
Flange-mounted hollow shaft with parallel key
- SHL = 法兰式带锁紧盘空心轴
Flange-mounted hollow shaft with shrink disk
- SNF = 法兰式渐开线花键空心轴
Flange-mounted hollow shaft with involute spline
- SA = 扭力臂式平键空心轴
Torque-arm-mounted hollow shaft with parallel key
- SHA = 扭力臂式带锁紧盘空心轴
Torque-arm-mounted hollow shaft with shrink disk
- SNA = 扭力臂式渐开线花键空心轴
Torque-arm-mounted hollow shaft with involute spline
- SZ = 小法兰式平键空心轴
Short-flange-mounted hollow shaft with parallel key
- SHZ = 小法兰式带锁紧盘空心轴
Short-flange-mounted hollow shaft with shrink disk
- SNZ = 小法兰式渐开线花键空心轴
Short-flange-mounted hollow shaft with involute spline

机座号/Size

- 输出轴方向/Out Shaft Direction
- A\B=单向/Unidirectional output shaft
 - S=双向/Bidirectional output shaft

公称减速比/Nominal Ratio

输入部分/Input Part

- M=电机/Motor
- AE=轴输入/Input Shaft
- AG=法兰连接/Connection Flange

附件和特殊要求/Accessories and Special Requests

安装方位/Mounting Positions

电机接线盒位置/Positions of Motor Terminal Box

组合型举例/Combi-type Designation: S87A/CRL47-284-M1.1+V68-B3-90



3 安装方位、电机接线盒位置和输出轴方向：

3 Mounting Positions, Positions of Motor Terminal Box and Output Shaft Direction:

<p>S..<i>ISH</i>..<i>ISN</i>..</p>	<p>B3</p>	<p>B61</p>	<p>B8</p>
	<p>B31</p>	<p>B62</p>	<p>B81</p>
	<p>B63</p>	<p>V5</p>	<p>V51</p>
<p>SF..<i>ISL</i>..<i>ISHL</i>..<i>ISNF</i>..</p>	<p>V6</p>	<p>V61</p>	
	<p>B51</p>	<p>B52</p>	<p>B53</p>
	<p>B54</p>	<p>V1</p>	
<p>SF..<i>ISL</i>..<i>ISHL</i>..<i>ISNF</i>..</p>	<p>B55</p>	<p>B56</p>	<p>B57</p>
	<p>B58</p>	<p>V3</p>	<p>V11</p>
	<p>H1</p>	<p>H2</p>	<p>H3</p>
<p>S=<i>ISHZ</i>..<i>ISNZ</i>..</p> <p>安装面 Mounting side</p>	<p>H4</p>	<p>H5</p>	<p>H6</p>
	<p>H11</p>	<p>H31</p>	<p>H41</p>
	<p>H21</p>	<p>H51</p>	<p>H61</p>
<p>SA..<i>ISHA</i>..<i>ISNA</i>..</p>	<p>H1</p>	<p>H2</p>	<p>H3</p>
	<p>H4</p>	<p>H5</p>	<p>H6</p>
	<p>H1</p>	<p>H2</p>	<p>H3</p>



4 选型及举例：

4 Type Selection and Example:

序号 Steps	说明 Description	代号 Symbols	参 数 计 算 Parameters Calculation and Guidelines							
1	被驱动设备系数 Driven Machine Factor	f ₁	负荷性质 Load Characteristic	每天使用时间（小时）Operating hours per day (h)						
			均匀负载 Uniform	≤2	2-10	10-24				
			一般冲击 Moderate	1.00 (1.00)	1.00 (1.25)	1.25 (1.50)	1.50 (1.75)			
			强烈冲击 Heavy	1.00 (1.25)	1.25 (1.50)	1.50 (1.75)	1.75 (2.00)			
注：当每小时启动、停止次数≥10次，请使用括号内数值。 Note: Apply values in the brackets when starts per hour are 10 times or more.										
2	环境温度系数 Ambient Temperature Factor	f _t	负荷性质 Load Characteristic	环境温度 Ambient Temperature						
			均匀负载 Uniform	20	25	30	35	40	45	50
			一般冲击 Moderate	1.00	1.00	1.00	1.03	1.06	1.12	1.20
			强烈冲击 Heavy	1.00	1.01	1.02	1.06	1.12	1.16	1.30
注：环境温度-10~+40℃，均匀和一般冲击，整机使用率≤90%，每天工作≤8小时，输入转速1800一下，若超过此范围，S57以上涡轮箱应在蜗杆轴端加风扇。 Note: The usual working condition is: ambient temperature -10~+40℃, uniform or moderate shock, utilization ratio ≤90%, working hours/d ≤8, and input speed ≤1800rpm. If not within this range, add fans to the worm shaft end of gear units type S57 and above.										
3	输入转速 Input Speed	n ₁	≤1800 r/min 更高转速请咨询 Consult us if higher speed required.							
4	确定减速比 Calculation of the Ratio	i	i=n ₁ /n ₂							
5	传动效率 Transmission Efficiency	η		i=23.8-67.8		i=73.7-389		S/CR组合 Combi-type		
			η	77%		62%		57%		
6	以被动设备所需的扭矩或功率，确定涡轮箱的输入功率 Calculation of the input power of the gear unit on basis of the torque and power required by the driven machine.	P ₁	P ₁ =T ₂ · n ₁ /(9550 · i · η) 或 P ₁ =P ₂ /η							
7	根据计算，查传动能力表，确定齿轮箱规格，直联电机时需查直联电机功率表 Determination of gear unit type referring to the table of transmission capacity after calculation, For directly-connected motor, require to refer to directly-connected motor power table.	T _{2N} 、P _{1N}	T _{2N} ≥T ₂ · f ₁ · f ₁ 或 P _{1N} ≥P ₁ · f ₁ · f ₁							
8	径向力、轴向力校核 Check the radial and axial forces on the shafts.	F _{r1} /F _{r2} F _{a1} /F _{a2}	查第12页，S系列Fr2表 See P 12							
9	确认润滑方式 Determination of Lubrication System		一般采用飞溅润滑 Generally Splash Lubrication							
10	确认冷却方式 Determination of Cooling System		自然冷却和风扇冷却 Generally Air Cooling or Fan cooling							
11	按型号表示方法确定各项 Determination of every item included in the Type Designation		型号表示方法见第1页 For details about Type Designation, see P 1.							
12	一般环境条件 Normal ambient conditions		环境温度：-10至40℃，空旷场地通风良好，海拔高度1000米一下，一般工厂灰尘。 Ambient temperature -10 to 40℃, ample space, good ventilation, altitude not exceeding 1000m and common plant dust.							
13	特殊环境条件 Special ambient conditions		高温、低温、灰尘多、化学作用（例：酸碱等），露天（直接日照、冰、水淋等），请咨询。 For higher or lower temperature, dusty sites, chemical reaction (acids, alkaline, etc), or open field (sunlight, ice, rain, etc), please consult us!							



选型举例/Example

1) 减速电机

已知条件:

- 1、被驱动设备所需功率 $P_2=1\text{kW}$ ，所需转速 $n_2=10.4\text{r/min}$;
- 2、普通电机：4级，转速 $n_1=1450\text{r/min}$;
- 3、负荷性质：一般冲击，工作8小时/天，环境温度 40°C ，启动频率10次/小时；
- 4、安装输出形式：单向实心输出轴A向，法兰安装，安装方位B51，接线盒位置为90。

选型步骤:

- 1、根据负荷性质查表可得出被驱动设备系数 $f_1=1.5$ ，环境温度系数 $f_t=1.2$;
- 2、确定速比 i_N :
 $i=N_1/N_2=1450/10.4=139.4$ ，取公称减速比 $i_N=139$;
- 3、计算输入功率并确定电机功率（查表得出齿轮传动效率 $\eta=62\%$ ）： $P_1=P_2/\eta=1/0.62=1.6\text{kW}$ ，取电机动率 2.2kW ；查直联电机功率表，可直联；
- 4、确定减速电机额定功率 P_{1N} ：
 $P_{1N}\geq P_2 \cdot f_1 \cdot f_t / \eta = 1 \times 1.5 \times 1.2 / 0.62 = 2.7\text{kW}$;
- 5、根据已知条件和以上数据，查传动能力表可选出减速电机型号为：

SF87A-139-M2.2-B51-90

2) 减速机

已知条件:

- 1、被驱动设备所需扭矩 $T_2=800\text{N}\cdot\text{m}$ ，所需转速 $n_2=5\text{r/min}$;
- 2、输入转速 $n_1=200\text{r/min}$;
- 3、负荷性质：均匀负载，连续工作12小时/天，环境温度 40°C ;
- 4、安装输出形式：平键空心轴输出A向，底脚安装，安装方位B8。

选型步骤:

- 1、根据负荷性质查表可得出被驱动设备系数 $f_1=1.25$ ， $f_t=1.06$;
- 2、确定速比 i_N :
 $i=N_1/N_2=200/5=40$ ，取公称减速比 $i_N=41.1$;
- 3、确定减速箱额定扭矩 T_{2N} 及额定功率 P_{1N} （传动效率 $\eta=77\%$ ）：
 $T_{2N}\geq T_2 \cdot f_1 \cdot f_t = 800 \times 1.25 \times 1.06 = 1060\text{N}\cdot\text{m}$;
 $P_{1N}\geq P_1 \cdot f_1 \cdot f_t \cdot n_1 / (9550 \cdot i_N \cdot \eta)$
 $= 800 \times 1.25 \times 1.06 \times 1450 / (9550 \times 41.1 \times 0.77)$
 $= 5.1\text{kW}$;
- 4、确定输入部分：
根据 $P_{1N}\geq P_1 = T_2 \cdot n_1 / (9550 \cdot i_N \cdot \eta)$
 $= 800 \times 1450 / (9550 \times 41.1 \times 0.77) = 3.84\text{kW}$
用户自配的电机功率取 4kW ，查轴输入尺寸图表选AE3即可；
根据已知条件和以上数据，可以选出减速机型号为：

SF87A-41.1-AE3-B8

1) Gear motor

Known Criteria:

1. The power required by the driven machine $P_2=1\text{kW}$, speed $n_2=10.4\text{r/min}$
2. Common motor: 4-pole, speed $n_1=1450\text{r/min}$
3. Load characteristics: moderate, working 8 hours/d, ambient temperature 40°C and starting 10 times/h
4. Mounting and output mode: One-way solid output shaft A direction, flange-mounted, mounting position B51, terminal box position 90.

Selection Steps:

1. By referring to the tables of Load Characteristic and Ambient Temperature, we get the driven machine factor $f_1=1.5$ and ambient temperature factor $f_t=1.12$
2. Calculation of the Ratio i_N :
As $i=N_1/N_2=1450/10.4=139.4$, nominal ratio $i_N=139$ is appropriate.
3. Calculation of the input power and determination of the motor power (transmission efficiency $\eta=62\%$):
 $P_1=P_2/\eta=1/0.62=1.6\text{kW}$, so 2.2kW motor is selected. Refer to the directly-connected motor power table, it can be directly-connected.
4. Determination of the nominal power of the geared motor P_{1N} :
 $P_{1N}\geq P_2 \cdot f_1 \cdot f_t / \eta = 1 \cdot 1.5 \cdot 1.12 / 0.62 = 2.7\text{kW}$
5. The type selected:
SF87A-139-M2.2-B51-90

2) GearBox

Known Criteria:

1. The torque required by the driven machine $T_2=800\text{N}\cdot\text{m}$ and speed $n_2=5\text{r/min}$
2. The input speed $n_1=200\text{r/min}$
3. Load characteristic: uniform, operating 12h/d continuously, ambient temperature 40°C
4. Mounting and output mode: Parallel key solid shaft output A direction, foot-mounted, mounting position B8.

Selection steps:

1. By referring to the table of Load Characteristic, we get the driven machine factor $f_1=1.25$, $f_t=1.06$.
2. Calculation of the ratio i_N :
As $i=N_1/N_2=200/5=40$, nominal ratio $i_N=41.1$ is appropriate
3. Determination of the nominal torque T_{2N} and nominal power P_{1N} of the gear unit (transmission efficiency $\eta=77\%$):
 $T_{2N}\geq T_2 \cdot f_1 \cdot f_t = 800 \cdot 1.25 \cdot 1.06 = 1060\text{N}\cdot\text{m}$;
 $P_{1N}\geq P_1 \cdot f_1 \cdot f_t = T_2 \cdot f_1 \cdot f_t \cdot n_1 / (9550 \cdot i_N \cdot \eta)$
 $= 800 \times 1.25 \times 1.06 \times 1450 / (9550 \times 41.1 \times 0.77)$
 $= 5.1\text{kW}$
In the table of Transmission Capacity, K08 meets the requirements ($T_{2N}=1600\text{N}\cdot\text{m}$, $P_{1N}=6.67\text{kW}$)
4. Determination of the input mode:
As $P_{1N}\geq P_1 = T_2 \cdot n_1 / (9550 \cdot i_N \cdot \eta) = 800 \cdot 1450 / (9550 \cdot 41.1 \cdot 0.77) = 3.84\text{kW}$
and power of the user-supplied motor is specified as 4kW , in the table of Dimensions the AE Input Shaft, AE3 is selected.
5. The type selected:
SW87A-41.1-AE3-B8



5 传动能力 :

5 Transmission Capacity:

5.1 S系列传动能力 :

5 S Series Transmission Capacity:

			S..37			S..47			S..57			S..67		
n ₁ (r/min)	n _{2N} (r/min)	i _N	T _{2N} (N·m)	i _{ex}	P _{1N} (kW)	T _{2N} (N·m)	i _{ex}	P _{1N} (kW)	T _{2N} (N·m)	i _{ex}	P _{1N} (kW)	T _{2N} (N·m)	i _{ex}	P _{1N} (kW)
1450	61	23.8	73	23.9	0.59	152	23.9	1.21	245	23.9	2	340	24.11	2.43
	50	29.1	76	29.46	0.51	155	29.4	1.01	245	29.4	1.64	480	28.8	3.05
	44	32.6	76	32.88	0.46	155	32.88	0.91	245	32.88	1.49	480	32.68	2.72
	39	36.9	79	36.88	0.43	155	36.88	0.82	245	36.88	1.33	480	36.35	2.45
	35	41.1	81	41.59	0.339	155	41.59	0.73	245	41.59	1.18	480	40.63	2.21
	31	46.5	81	47.25	0.35	155	47.25	0.65	245	47.25	1.05	480	45.68	1.97
	28.3	51.3	81	50.53	0.33	155	50.53	0.61	245	50.53	0.99	480	51.75	1.76
	25.2	57.5	81	58.24	0.29	155	58.24	0.54	265	58.24	0.95	480	56.74	1.61
	21.4	67.8	84	68	0.31	167	68	0.349	285	68	1.06	480	67.5	1.37
	19.7	73.7	84	71.22	0.3	155	71.22	0.53	290	71.22	1.05	480	72.32	1.28
	16.6	87.3	86	88.39	0.25	167	88.39	0.47	295	88.39	0.87	520	86.4	1.36
	14.7	98.5	87	98.65	0.23	168	98.65	0.44	295	98.65	0.8	520	98.04	1.22
	13.2	110	88	110.6	0.22	168	110.6	0.39	295	110.6	0.72	520	109	1.1
	11.8	123	91	124.8	0.2	168	124.8	0.35	295	124.8	0.65	520	121.9	1
	10.4	139	92	141.8	0.18	168	141.8	0.31	295	141.8	0.58	520	137.1	0.9
	9.4	154	92	151.6	0.17	170	151.6	0.3	295	151.6	0.56	520	155.3	0.81
	8.3	175	92	174.7	0.15	170	174.7	0.26	295	174.7	0.48	520	170.2	0.75
	7.1	203	92	204	0.13	170	204	0.23	295	204	0.41	520	202.5	0.64
	6.3	229										520	230	0.56
	5.8	252										520	246.2	0.53
5.1	283										520	285	0.45	
4.6	324													
4.2	346													
3.7	389													



	S..77			S..87			S..97			S..107			S..127		
	T _{2N} (N·m)	i _{ex}	P _{1N} (kW)	T _{2N} (N·m)	i _{ex}	P _{1N} (kW)	T _{2N} (N·m)	i _{ex}	P _{1N} (kW)	T _{2N} (N·m)	i _{ex}	P _{1N} (kW)	T _{2N} (N·m)	i _{ex}	P _{1N} (kW)
	1020	24.11	7.38	1600	23.44	11.4	2870	24.23	19.5	4085	22.4	34.4	7350	23.57	48.5
	1050	28.8	6.36	1600	28.93	9.44	3010	28.93	17.6	4280	2764	39.2	7700	28.16	52.7
	1090	32.68	5.82	1600	32.3	8.55	3200	32.31	16.7	4550	30.87	37.8	8200	31.88	49.6
	1100	36.35	5.34	1600	37.22	7.42	3300	37.22	15.1	4700	35.57	34.9	8600	36.67	45.2
	1100	40.63	4.78	1600	41.4	6.67	3300	41.4	13.6	4700	39.56	22.4	8600	40.62	40.8
	1100	45.68	4.25	1600	46.3	6.03	3300	46.3	12.2	4700	44.25	20	8100	45.22	35.4
	1100	51.75	3.8	1600	52.14	5.36	3300	52.14	10.8	4700	49.83	17.8	8600	50.67	36.7
	1100	56.74	3.26	1600	56.74	4.92	3300	56.74	10	4700	54.22	16.3	8600	55.48	32.7
	1040	67.5	2.77	1700	67.5	4.4	2900	67.5	7.41	4700	64.50	13.7	8600	66.00	29.9
	1100	72.32	2.78	1600	70.31	4.02	3300	72.69	7.83	4520	68.75	14.3	8600	72.32	25.1
	1100	86.4	2.68	1880	86.79	4.39	3240	86.79	7.36	4700	84.86	13.3	8420	86.40	23.7
	1140	98.04	2.45	1960	96.92	4.09	3240	96.92	6.68	4900	94.77	12.1	8770	97.83	21.5
	1170	109	2.3	2000	111.7	3.67	3510	111.7	6.28	5000	109.19	11.1	9000	112.50	19.9
	1200	121.9	2.14	2060	124.2	3.4	3510	124.2	5.65	5150	121.44	10.2	9200	124.62	18.3
	1210	137.1	1.91	2100	138.9	3.14	3650	138.9	5.25	5255	135.83	9.26	9500	138.75	16.8
	1240	155.3	1.76	2150	156.4	2.86	3840	156.4	4.97	5360	152.95	8.68	9600	155.46	15.5
	1260	170.2	1.63	2210	170.2	2.74	3840	170.2	4.57	5520	166.44	7.51	9900	170.22	13.5
	1270	202.5	1.44	2260	202.5	2.39	4000	202.5	4.05	5645	198.00	6.81	10120	202.50	12.2
	1270	235.7	1.24	2280	228.3	2.14	4000	228.3	3.64	5700	223.26	6.28	10200	228.33	11.2
	1270	249.8	1.17	2280	250.2	2.01	4000	250.2	3.37	5700	244.64	5.41	10200	250.20	9.67
	1270	282.5	1.03	2280	275.9	1.82	4000	290.5	2.9						
	1270	323.4	0.9	2280	324	1.55	4000	324	2.6						
	1270	348	0.84	2280	343.4	1.46	4000	343.4	2.46						
				2280	389.1	1.29	4000	389.3	2.17						



5.2 S../CR..组合型传动能力 :

5.2 S../CR.. Combi-type Transmission Capacity:

			S../37/CRL37			S../47/CRL37			S../57/CRL37			S../67/CRL37				
n ₁ (r/min)	n _{2N} (r/min)	i _N	T _{2N} (N·m)	i _{ex}	P _{1N} (kW)	T _{2N} (N·m)	i _{ex}	P _{1N} (kW)	T _{2N} (N·m)	i _{ex}	P _{1N} (kW)	T _{2N} (N·m)	i _{ex}	P _{1N} (kW)		
1450	6.35	222	92	226.2	0.11	185	226.2	0.15	300	226.2	0.35	570	224.8	0.61		
	5.78	251	92	253.5	0.1	185	253.5	0.14	300	253.5	0.31	570	252	0.55		
	5.11	284	92	288.4		185	288.4	0.12	300	288.4	0.27	570	286.6	0.48		
	4.15	349	92	355.1		185	355.1		300	355.1	0.22	570	352.9	0.39		
	3.68	394	92	396.5		185	396.5		300	396.5	0.2	570	394.1	0.35		
	3.27	443	92	444.5		185	444.5		300	444.5	0.18	570	441.8	0.31		
	2.95	492	92	501.4		185	501.4		300	501.4	0.16	570	498.4	0.28		
	2.41	601	92	607.7		185	607.7		300	607.7	0.13	570	603.9	0.23		
	2.16	670	92	678.7		185	678.7		300	678.7	0.12	570	674.5	0.2		
	1.91	758	92	760.6		185	760.6		300	760.6		570	755.9	0.18		
	1.69	857	92	865.2		185	865.2		300	865.2		570	859.8	0.16		
	1.38	1054	92	1065		185	1065		300	1065		570	1059	0.12		
	1.22	1192	92	1190		185	1190		300	1190		570	1182			
	1.08	1340	92	1334		185	1334		300	1334		570	1326			
	0.98	1487	92	1504		185	1504		300	1504		570	1495			
	0.87	1675	92	1710		185	1710		300	1710		570	1699			
	0.78	1862	92	1828		185	1828		300	1828		570	1817			
	0.71	2049	92	2106		185	2106		300	2106		570	2093			
	0.59	2443	92	2459		185	2459		300	2459		570	2444			
	0.54	2679	92	2680		185	2680		300	2680		570	2664			
	0.44	3260	92	3304		185	3304		300	3304		570	3283			
	0.40	3664	92	3688		185	3688		300	3688		570	3665			
	0.35	4157	92	4134		185	4134		300	4134		570	4109			
	0.31	4689	92	4702		185	4702		300	4702		570	4673			
	0.25	5880	92	5795		185	5795		300	5795		570	5759			
	0.22	6560	92	6467		185	6467		300	6467		570	6428			
	0.20	7358	92	7253		185	7253		300	7253		570	7208			
	0.17	8323	92	8180		185	8180		300	8180		570	8129			
	0.16	9298	92	9293		185	9293		300	9293		570	9235			
0.14	10244	92	9938		185	9938		300	9938		570	9877				
0.12	11746	92	1175		185	1175		300	1175		570	11368				
0.11	13122	92	13358		185	13358		300	13358		570	12915				
0.10	14456	92	14285		185	14285		300	14285		570	13811				
0.09	15985	92	16464		185	16464		300	16464		570	15919				
0.08	19043	92	19228		185	19228		300	19228		570	18591				
0.07	21823															
0.06	23630															
0.05	26688															



	S..77/CRL37			S..87/CRL47			S..97/CRL67			S..107/CRL77			S..127/CRL87		
	T _{2N} (N·m)	i _{ex}	P _{1N} (kW)	T _{2N} (N·m)	i _{ex}	P _{1N} (kW)	T _{2N} (N·m)	i _{ex}	P _{1N} (kW)	T _{2N} (N·m)	i _{ex}	P _{1N} (kW)	T _{2N} (N·m)	i _{ex}	P _{1N} (kW)
	1270	224.8	1.26	2500	221.9	3.29	4200	223.6	3.8	6000	208.7	6.94	10200	215.2	10.5
	1270	252	1.13	2500	244.2	2.99	4200	248.5	3.42	6000	231.8	6.25	10200	247.6	9.11
	1270	286.6	0.99	2500	282.6	2.58	4200	284	2.99	6000	259.2	5.59	10200	275.6	8.19
	1270	352	0.81	2500	336.9	2.17	4200	339.3	2.51	6000	325.5	4.45	10200	338.0	6.67
	1270	394.1	0.72	2500	386.6	1.89	4200	384.8	2.21	6000	369.5	3.92	10200	379.7	5.99
	1270	441.8	0.64	2500	425.7	1.71	4200	428.1	1.99	6000	410.2	3.53	10200	434.2	5.2
	1270	498.4	0.57	2500	495.5	1.47	4200	478.5	1.78	6000	459.5	3.15	10200	483.2	4.67
													S..127/CRL77		
	1270	603.9	0.47	2500	579.6	1.26	4200	591.2	1.44	6000	563.8	2.8	10200	582.0	4.72
	1270	674.5	0.42	2500	665.8	1.1	4200	670.7	1.27	6000	640.4	2.46	10200	661.1	4.16
	1270	755.9	0.38	2500	732.7	1	4200	745.3	1.14	6000	711.4	2.22	10200	734.3	3.74
	1270	859.8	0.33	2500	848.1	0.86	4200	851.9	1	6000	795.6	1.98	10200	821.2	3.35
	1270	1059	0.27	2500	1011	0.72	4200	1018	0.84	6000	999.0	1.58	10200	1031	2.67
	1270	1182	0.24	2500	1160	0.63	4200	1154	0.74	6000	1134	1.39	10200	1171	2.35
	1270	1326	0.21	2500	1277	0.57	4200	1284	0.66	6000	1259	1.25	10200	1300	2.12
	1270	1495	0.19	2500	1487	0.49	4200	1435	0.59	6000	1411	1.12	10200	1456	1.89
	1270	1699	0.17	2500	1655	0.44	4200	1614	0.53	6000	1587	0.99	10200	1639	1.68
	1270	1817	0.16	2500	1854	0.39	4200	1828	0.47	6000	1796	0.88	10200	1853	1.48
	1270	2093	0.14	2500	1968	0.37	4200	2004	0.42	6000	1967	0.8	10200	2030	1.35
	1270	2444	0.12	2500	2385	0.31	4200	2384	0.36	6000	2341	0.67	10200	2417	1.14
	1270	2664		2500	2684	0.27	4200	2649	0.32	6000	2611	0.6	10200	2695	1.02
	1270	3283		2500	3199	0.23	4200	3159	0.27	6000	3133	0.5	10200	3234	0.85
	1270	3665		2500	3674	0.2	4200	3626	0.23	6000	3558	0.44	10200	3673	0.75
	1270	4109		2500	4044	0.18	4200	3992	0.21	6000	3950	0.4	10200	4077	0.67
	1270	4673		2500	4707	0.16	4200	4646	0.18	6000	4423	0.36	10200	4565	0.6
	1270	5759		2500	5881	0.12	4200	5796	0.15	6000	5630	0.28	10200	5811	0.47
	1270	6428		2500	6552	0.11	4200	6467	0.13	6000	6272	0.25	10200	6474	0.42
	1270	7208		2500	7213		4200	7119	0.12	6000	6963	0.23	10200	7187	.38
	1270	8129		2500	8394		4200	8286		6000	7825	0.2	10200	8078	0.34
	1270	9235		2500	9346		4200	9225		6000	8746	0.18	10200	9028	0.3
	1270	9877		2500	10467		4200	10332		6000	9924	0.16	10200	10244	0.27
	1270	11368		2500	12030		4200	11875		6000	11247	0.14	10200	11465	0.25
	1270	12915		2500	13394		4200	13221		6000	12570	0.13	10200	12814	0.22
	1270	13811		2500	15001		4200	14807		6000	14262	0.11	10200	14539	0.19
	1270	15919		2500	15932		4200	15722		6000	15635		10200	15939	0.18
	1270	18591		2500	19307		4200	19057		6000	18613		10200	18974	0.15
				2500	22266		4200	21960		6000	21616		10200	21476	0.13
				2500	24044		4200	23724		6000	22624		10200	23063	0.12
										6000	26172		10200	26681	



6 直联电机功率 :

6 Directly connected motor power table:

P_m in (kW)	0.12	0.18	0.25	0.37	0.55	0.12	0.18	0.25	0.37	0.55	0.75	1.1	0.12	0.18	0.25	0.37	0.55	0.75	1.1	1.5	
23.8																					
29.1																					
32.6																					
36.9																					
41.1																					
46.5																					
51.3																					
57.5																					
67.8																					
73.7																					
87.3																					
98.5																					
110																					
123																					
139																					
154																					
175																					
203																					
229																					
252																					
283																					
324																					
346																					
389																					

P_m in (kW)	0.12	0.18	0.25	0.37	0.55	0.75	1.1	1.5	2.2	0.12	0.18	0.25	0.37	0.55	0.75	1.1	1.5	2.2	3	4	5.5
23.8																					
29.1																					
32.6																					
36.9																					
41.1																					
46.5																					
51.3																					
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139																					
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203																					
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324																					
346																					
389																					

注: 1. 符号表示可直联电机;
 2. 符号表示可直联电机 (电机功率大于减速机的额定输入功率, 即 $P_1 > P_{1N}$);
 3. 符号表示不可直联电机;
 4. 电机功率的选择应符合形影的被驱动设备系数及选型规定;
 5. 电机为4极电机。

Note: 1. Means permissible directly-connected motor;
 2. Means permissible directly-connected motor(The motor's power is more than nominal input power of gear unit, $P_1 > P_{1N}$);
 3. Means unallowed directly-connected motor;
 4. The selection of motor shall be suitable for driver machine factor and regulations of type selection;
 5. The motor is 4-pole motor.



P_m iN (kW)	0.55	0.75	1.1	1.5	2.2	3	4	5.5	7.5	11	0.75	1.1	1.5	2.2	3	4	5.5	7.5	11	15	18.5	
23.8																						
29.1																						
32.6																						
36.9																						
41.1																						
46.5																						
51.3																						
57.5																						
67.8																						
73.7																						
87.3																						
98.5																						
110																						
123																						
139																						
154																						
175																						
203																						
229																						
252																						
283																						
324																						
346																						
389																						

S87

S97

P_m iN (kW)	1.5	2.2	3	4	5.5	7.5	11	15	18.5	22	2.2	3	4	5.5	7.5	11	15	18.5	22	30	37	
23.8																						
29.1																						
32.6																						
36.9																						
41.1																						
46.5																						
51.3																						
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87.3																						
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139																						
154																						
175																						
203																						
229																						
252																						
283																						
324																						
346																						
389																						

S107

S127

- 注: 1. 符号表示可直联电机;
 2. 符号表示可直联电机 (电机功率大于减速机的额定输入功率, 即 $P_1 > P_{1N}$);
 3. 符号表示不可直联电机;
 4. 电机功率的选择应符合形影的被驱动设备系数及选型规定;
 5. 电机为4极电机。

- Note: 1. Means permissible directly-connected motor;
 2. Means permissible directly-connected motor(The motor's power is more than nominal input power of gear unit, $P_1 > P_{1N}$);
 3. Means unallowed directly-connected motor;
 4. The selection of motor shall be suitable for driver machine factor and regulations of type selection;
 5. The motor is 4-pole motor.



7 允许径向力和轴向力:

7 Permissible Radial Force and Axial Force on Shafts:

7.1 输入轴径向力Fr1表(N):

7.1 Radial Force on Input Shaft (Fr1)(N):

	Fr 1 (N)								
	S..37	S..47	S..57	S..67	S..77	S..87	S..97	S..107	S..127
AE2	803	803	803	803	803	803	/	/	/
AE3	/	/	1504	1504	1504	1504	1504	1504	/
AE4	/	/	/	/	/	2188	2188	2188	2188
AE5	/	/	/	/	/	/	4207	4207	4207
AE6	/	/	/	/	/	/	/	/	5664



7.2 输入轴径向力Fr1表(N) :

7.2 Radial Force on Output Shaft (Fr2)(N):

n _{2N} (r/min)	Fr2 (N)								
	S..37	S..47	S..57	S..67	S..77	S..87	S..97	S..107	S..127
56~ 80	2151	3035	5041	5007	5075	18530	21165	30345	42500
45~ 56	2380	3332	5542	5304	6265	20995	24650	35275	47600
40~ 45	2380	3502	5814	5559	6571	22100	25840	36975	49725
35.5~ 40	2550	3502	5950	6163	6919	23035	26605	38063	51255
31.5~ 35.5	2550	3766	6222	6163	7438	23970	27880	39950	53720
28~ 31.5	2550	4004	6392	6851	7659	24650	28985	41565	56100
26.5~ 28	2550	4123	6392	6851	8203	24650	29325	43095	60350
22.4~ 26.5	2550	4522	6392	7370	9860	24650	29325	43095	60350
≤ 22.4	2550	4556	6392	7378	10455	24650	29325	43095	60350

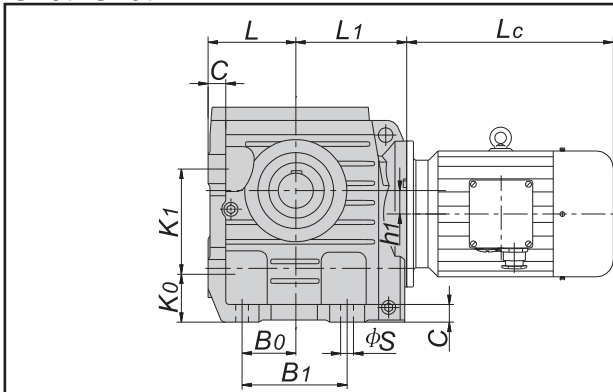
备注：各规格更低的输出转速按以上最大的Fr2值。

Note: For lower output speed, apply the largest Fr2 value in each type.

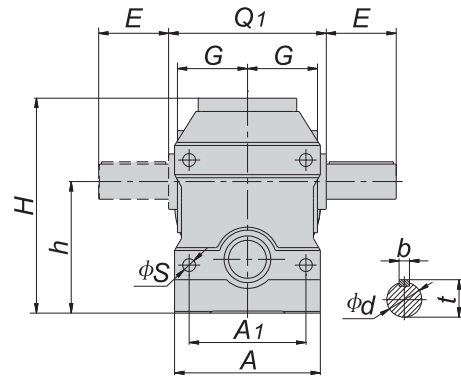


8 安装、输出形式及尺寸图表
S..37-S..97

8 Mounting, Output Modes and Dimensions:

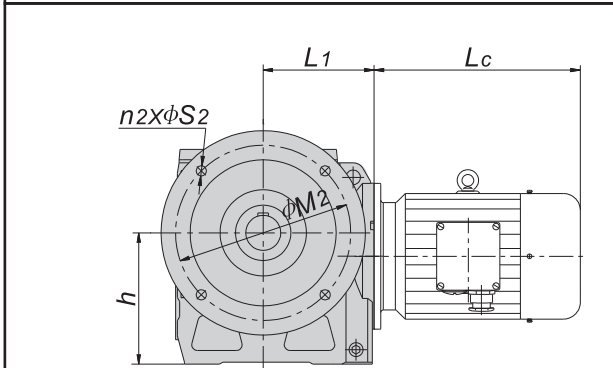


底脚式安装/Foot-mounted

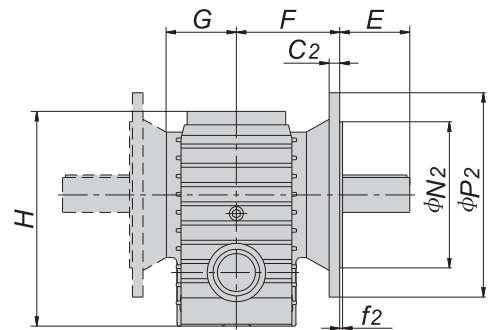


平键实心轴/Solid shaft with parallel key

S37~S97

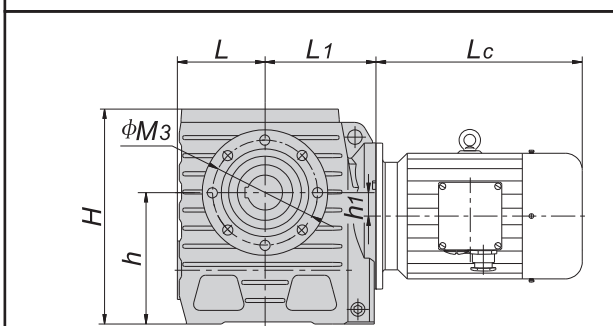


法兰式安装/Flange-mounted

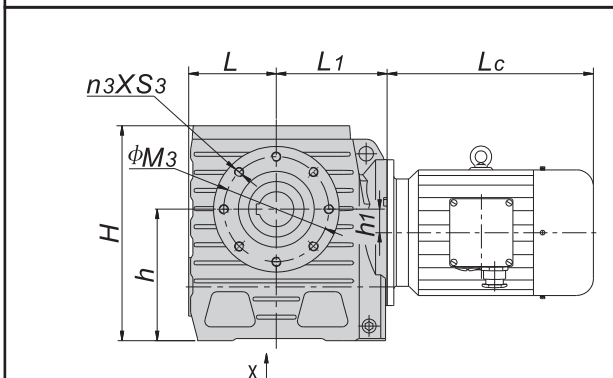
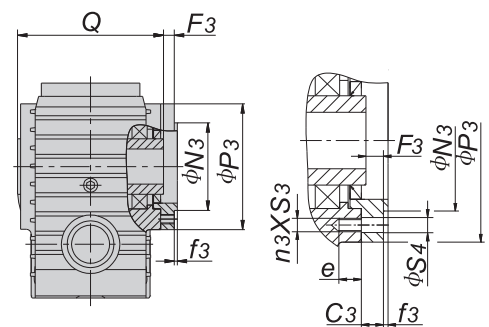
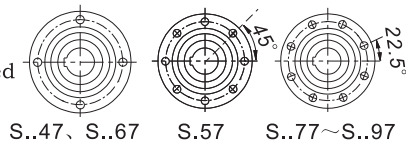


平键实心轴/Solid shaft with parallel key

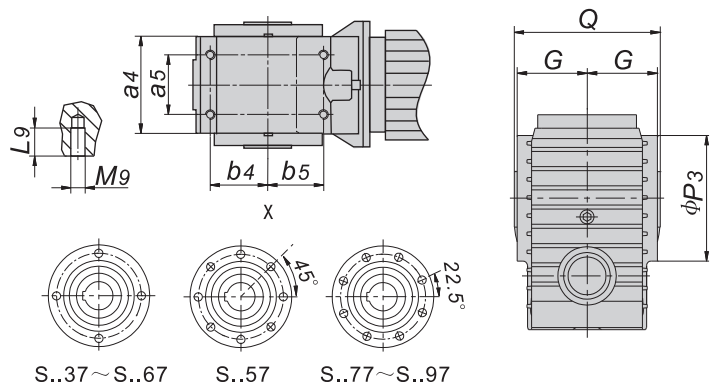
SF37~SF97



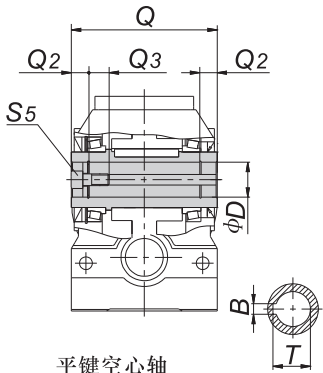
小法兰安装/Short Flange-mounted



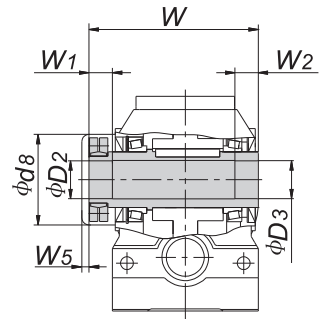
轴装式安装(可用于扭力臂安装)
Shaft-mounted(Applicable for torque arm mounted)



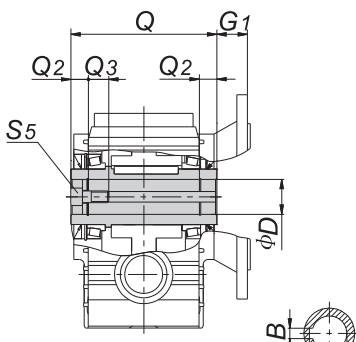
S..37~S..67 S..57 S..77~S..97



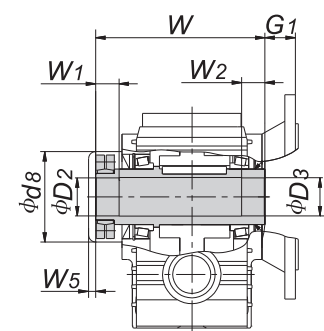
平键空心轴
Hollow shaft with parallel key
SW37 ~ SW97



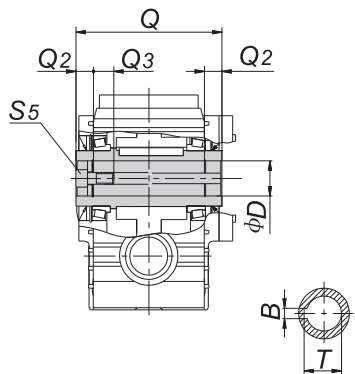
锁键盘空心轴*
Hollow shaft with shrink disk
SH37 ~ SH97



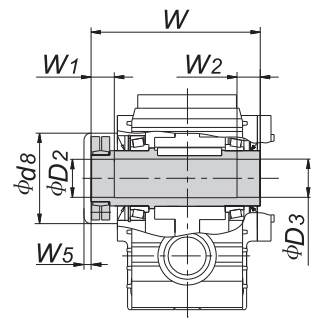
平键空心轴
Hollow shaft with parallel key
SL37 ~ SL97



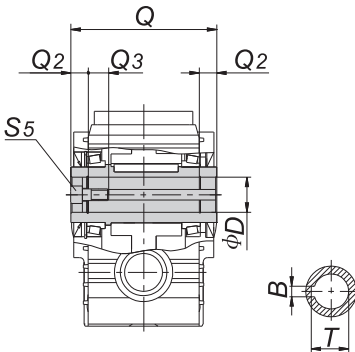
锁键盘空心轴*
Hollow shaft with shrink disk
SHL37 ~ SHL97



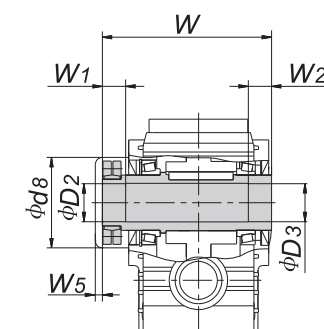
平键空心轴
Hollow shaft with parallel key
SZ47 ~ SZ97



锁键盘空心轴*
Hollow shaft with shrink disk
SHZ47 ~ SHZ97



平键空心轴
Hollow shaft with parallel key
SA37 ~ SA97



锁键盘空心轴*
Hollow shaft with shrink disk
SHA37 ~ SHA97

规格 Size	37	47	57	67	77	87	97
A	110	120	136	160	185	250	300
a4	86	90	105	128	154	194	236
a5	\	60	60	88	102	118	160
A1	90	100	110	130	150	200	250
b4	\	35	58.5	71.5	85	115	135
b5	\	52	58.5	80.5	85	110	113
B0	35	35	45	60	75	92	115
B1	63	80	100	130	135	180	235
C	10	15	16	20	25	30	35
C2	9	10	12	12	15	18	22
C3	\	11	11	13	18.5	23.5	23.5
e	\	12	12	20	20	28	28
F	74	84	100	126.5	150.5	177.5	205
F3	\	11	6	8	13.5	18.5	18.5
f2	3.5	3.5	3.5	3.5	4	5	5
f3	\	3	3	3.5	4	5	5
G	55	55	70	79	100	120	140
G1	14	24	25	42.5	45.5	52.5	60
H	151	165	188	239	300	368	456
h	88	100	112	140	180	225	280
h1	0	11	24	24	33	40	53
K0	40	35	35	40	70	82	90
K1	80	80	100	130	135	180	235
L	63	75	80	107	125	150	180
L1	96	113	117	142	173	198	245
L9	\	20	20	25	32	32	36
M2	130	130	165	165	215	300	400
M3	95	115	102	130	155	180	220
M9	\	M10	M1021	M12	M16	M16	M20
N2	110h7	110h7	130h7	130h7	180h7	250h7	350h7
N3	\	95h7	80h7	100h7	125h7	150h7	180h7
n2	4	4	4	4	4	4	8
n3	4	4	8	4	8	8	8
P2	160	160	200	200	250	350	450
P3	\	130	120	155	180	215	260
b	6	8	8	10	14	18	20
B	6	8	8	12	14	18	20
d	20k6	25k6	30k6	35k6	45k6	60m6	70m6
d8	58	87	87	96	122	150	160
D	20H7	25H7	30H7	40H7	50H7	60H7	70H7
D2	20H7	30H7	35H7	40H7	50H7	65H7	23.5
D3	20H7	30H7	35H7	40H7	50H7	65H7	28
E	40	50	60	70	90	120	205
Q	120	120	150	168	210	250	18.5
Q1	120	130	148	180	210	270	5
Q2	16	15	18	24	27	30	5
Q3	8	17	22	29	32	34	140
S	9	11	11	13.5	17.5	22	60
S2	9	9	11	11	13.5	17.5	456
S3	M6	M8	M8	M12	M12	M16	280
S4	\	9	9	13.5	13.5	17.5	53
S5	M6	M10	M10	M16	M16	M20	90
t	22.5	28	33	38	48.5	64	235
T	22.8	28.3	33.3	43.3	53.5	64.4	180
W	139	146	177	196	241	290	245
W1	25	31	32	38	36	41	36
W2	20	20	20	20	30	40	400
W5	8	11	10	12	9	10	220
重量Wt.(kg)**	7.2	10	13.5	25	43	85	149

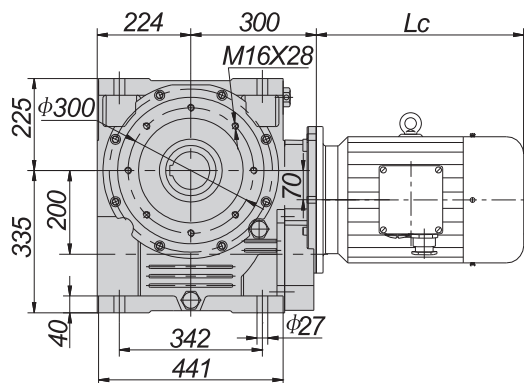
外形尺寸

输出轴尺寸

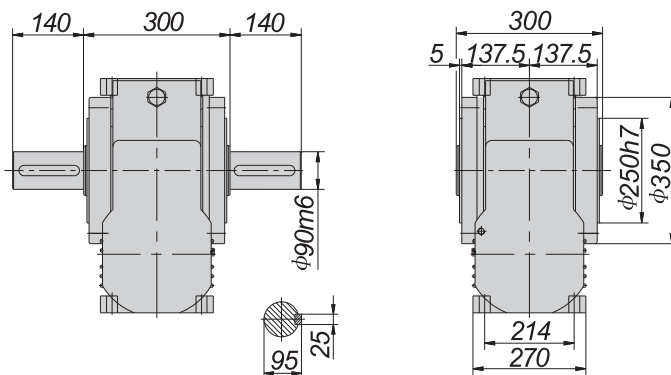
Note: For hollow shaft with involute spline, please consult us. 2) * Shrink disk should be installed on the opposite side of flange, short-flange and torque-arm. 3) **The weight of motor is not included.



S107

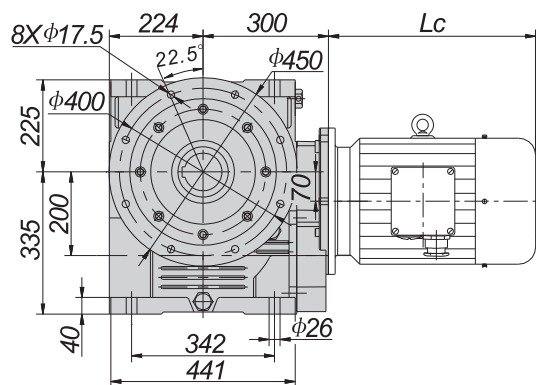
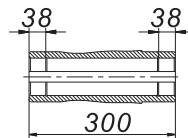
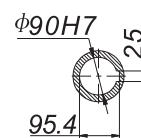


底脚式安装/Foot-mounted

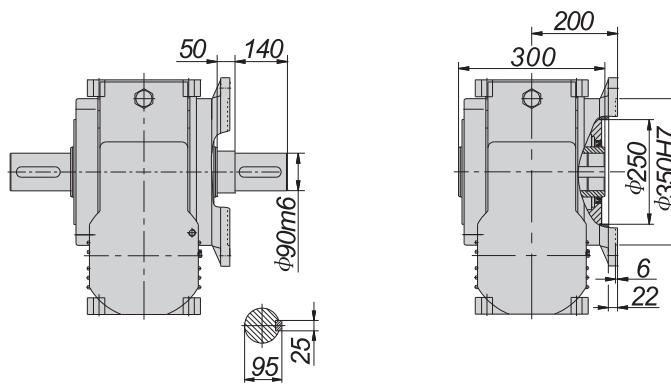


S107

SW107

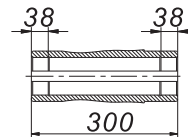
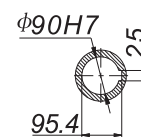


法兰式安装/Flange-mounted



SF107

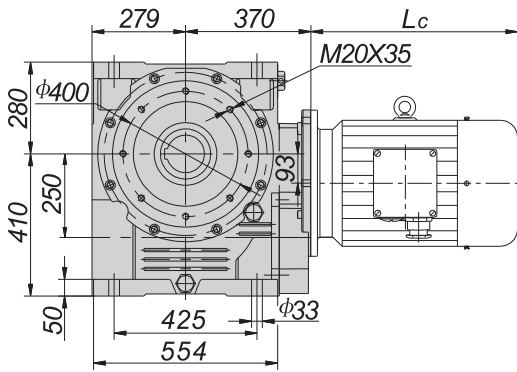
SL107



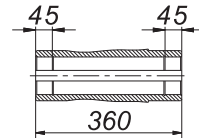
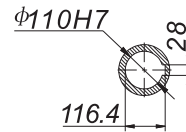
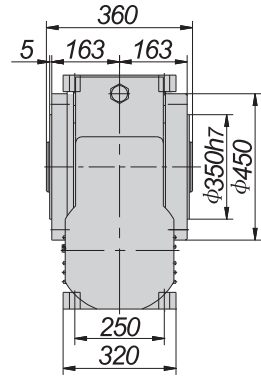
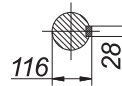
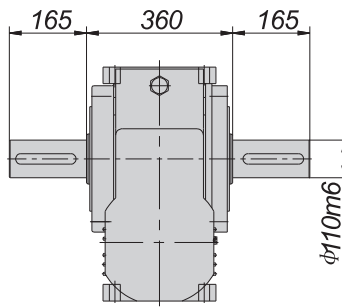
注: 1) 要求带花键空心轴和锁紧盘空心轴输出时请来电咨询。 Note: 1) For hollow shaft with involute spline or shrink disk, please consult us.
 2) S. 107重量为237kg, 重量不含电机和润滑油。 2) The weight of S.107 is 237kg, which do not include the weight of motor and lubricant..



S127

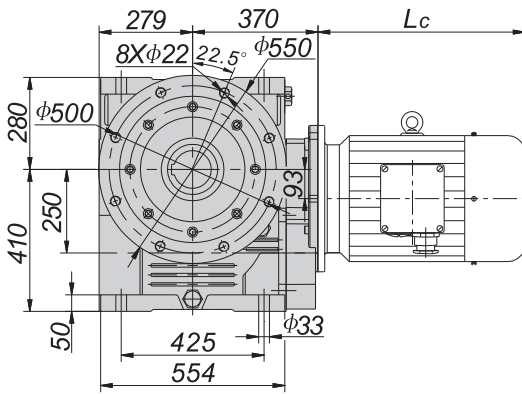


底脚式安装 / Foot-mounted

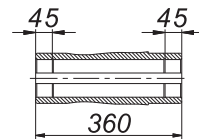
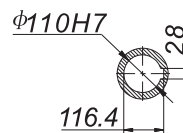
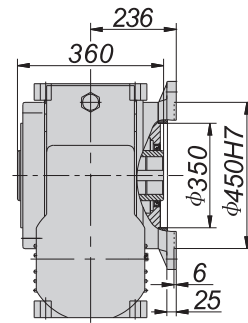
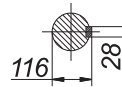
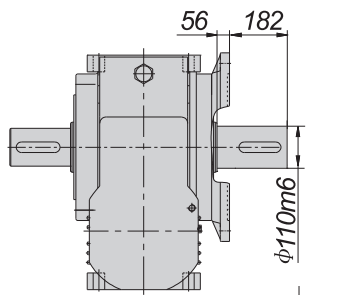


S127

SW127



法兰式安装 / Flange-mounted



SF127

SL127

注:1) 要求带花键空心轴和锁紧盘空心轴输出时请来电咨询。 Note:1) For hollow shaft with involute spline or shrink disk, please consult us.
 2) S.127重量为390kg, 重量不含电机和润滑油。 2) The weight of S.127 is 390kg, which do not include the weight of motor and lubricant..

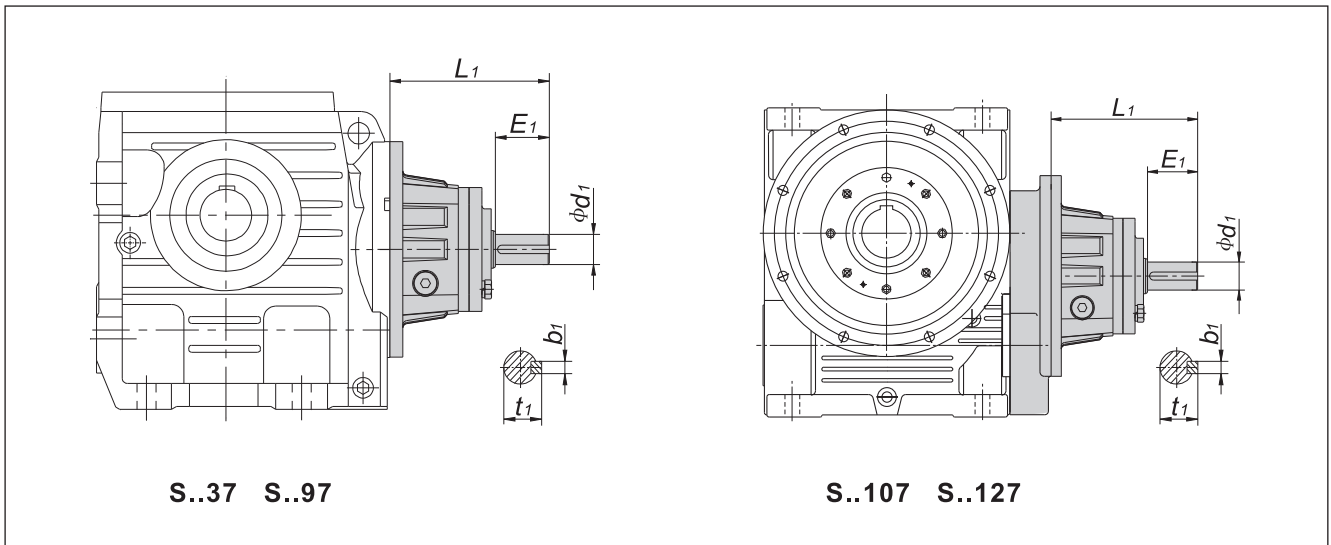


9 输入部分:

9 Input Part:

9.1 AE轴输入尺寸图表:

9.1 Dimensions of AE Input Shaft:

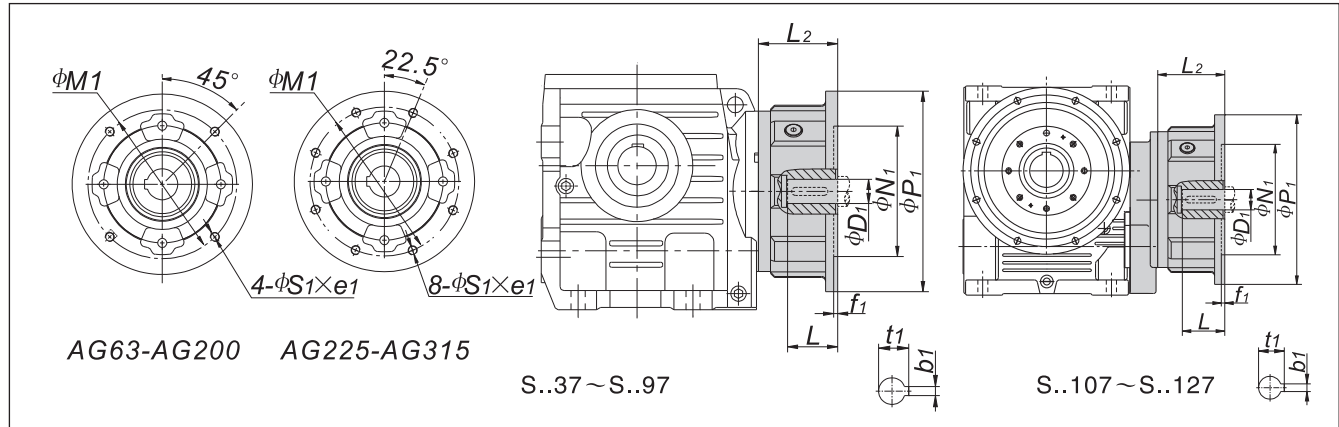


规格/Size	输入轴型号 Input Shaft	功率/Range of Power	d1	E1	L1	b1	t1	重量/Weight (kg)
37	AE2	0.12-0.55kW	19k6	40	117	6	21.5	3.2
47	AE2	0.12-1.1kW	19k6	40	117	6	21.5	3.2
57	AE2	0.12-1.1kW	19k6	40	119	6	21.5	3.9
	AE3	1.5-2.2kW	28k6	60	175	8	31	7.5
67	AE2	0.12-1.1kW	19k6	40	119	6	21.5	3.9
	AE3	1.5-2.2kW	28k6	60	175	8	31	7.5
77	AE2	0.12-1.1kW	19k6	40	111	6	21.5	4.7
	AE3	1.5-5.5kW	28k6	60	165	8	31	8.5
87	AE2	0.12-1.1kW	19k6	40	108	6	21.5	5.9
	AE3	1.5-5.5kW	28k6	60	158	8	31	9.9
	AE4	7.5-11kW	38k6	80	209	10	41	14.5
97	AE3	1.5-5.5kW	28k6	60	156	8	31	11.9
	AE4	7.5-11kW	38k6	80	203	10	41	17
	AE5	15-18.5kW	42k6	110	265	12	45	26.6
107	AE3	1.5-5.5kW	28k6	60	146	8	31	13.9
	AE4	7.5-11kW	38k6	80	190	10	41	19.3
	AE5	15-22kW	42k6	110	252	12	45	29.1
127	AE4	7.5-11kW	38k6	80	176	10	41	23.7
	AE5	15-22kW	42k6	110	238	12	45	37.3
	AE6	30-45kW	48k6	110	298	14	51.5	57.2



9.2 AG 连接法兰尺寸图：

9.2 Dimensions of AG Connection Flange:

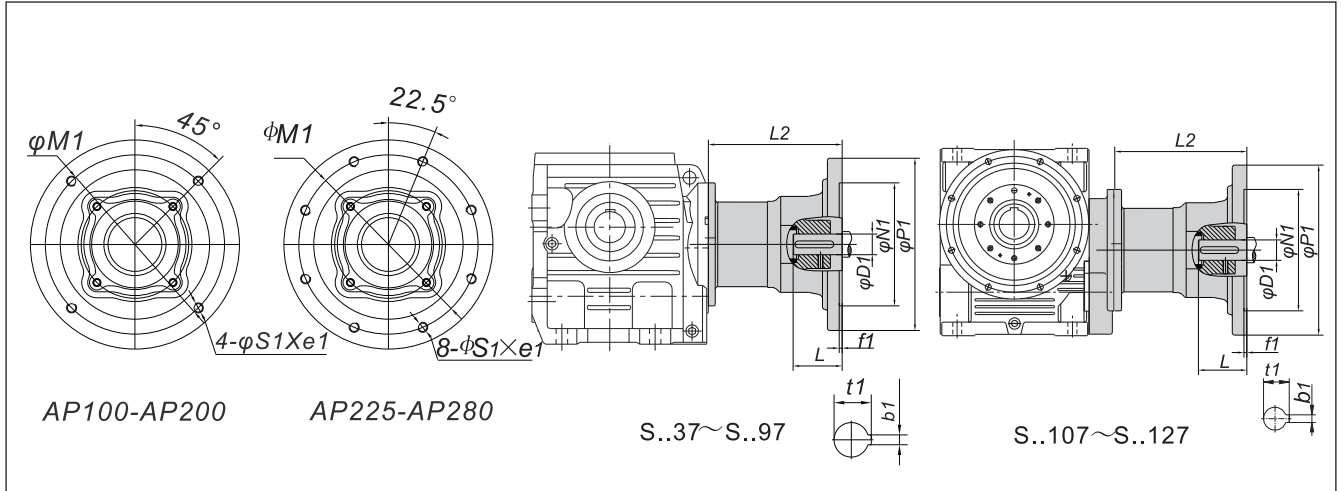


规格/Size	法兰型号 Flange Type	e1	D1	N1	M1	P1	f 1	b1	t 1	L	S1	L2	重量/Weight (kg)
37 47	AG63	14	11H7	95H7	115	140	4	4	12.8	23	M8	59	4.5
	AG71	14	14H7	110H7	130	160	4	5	16.3	30	M8	59	4.5
	AG80	18	19H7	130H7	165	200	4	6	21.8	40	M10	74	7.3
57	AG63	14	11H7	95H7	115	140	4	4	12.8	23	M8	61	4.6
	AG71	14	14H7	110H7	130	160	4	5	16.3	30	M8	61	4.6
	AG80	18	19H7	130H7	165	200	4	6	21.8	40	M10	76	8
	AG90	18	24H7	130H7	165	200	4	8	27.3	50	M10	81	9.1
67	AG63	14	11H7	95H7	115	140	4	4	12.8	23	M8	61	4.6
	AG71	14	14H7	110H7	130	160	4	5	16.3	30	M8	61	4.6
	AG80	18	19H7	130H7	165	200	4	6	21.8	40	M10	76	8
	AG90	18	24H7	130H7	165	200	4	8	27.3	50	M10	81	9.1
	AG100	21	28H7	180H7	215	250	5	8	31.3	60	M12	96	13.1
77	AG71	14	14H7	110H7	130	160	4	5	16.3	30	M8	53	5.5
	AG80	18	19H7	130H7	165	200	4	6	21.8	40	M10	68	9.7
	AG90	18	24H7	130H7	165	200	4	8	27.3	50	M10	73	10.6
	AG100\112	21	28H7	180H7	215	250	5	8	31.3	60	M12	86	13.9
	AG132	21	38H7	230H7	265	300	5	10	41.3	80	M12	103	19.7
87	AG80	18	19H7	130H7	165	200	4	6	21.8	40	M10	65	10.2
	AG90	18	24H7	130H7	165	200	4	8	27.3	50	M10	70	11.1
	AG100\112	21	28H7	180H7	215	250	5	8	31.3	60	M12	83	15.8
	AG132	21	38H7	230H7	265	300	5	10	41.3	80	M12	96	22.6
	AG160	28	42H7	250H7	300	350	6	12	45.3	110	M16	143	37.2
97	AG90	18	24H7	130H7	165	200	4	8	27.3	50	M10	64	14.1
	AG100\112	21	28H7	180H7	215	250	5	8	31.3	60	M12	78	17
	AG132	21	38H7	230H7	265	300	5	10	41.3	80	M12	94	24.5
	AG160	28	42H7	250H7	300	350	6	12	45.3	110	M16	137	40.4
	AG180	28	48H7	250H7	300	350	6	14	51.8	110	M16	137	40.4
107	AG100\112	21	28H7	180H7	215	250	5	8	31.3	60	M12	69	19.6
	AG132	21	38H7	230H7	265	300	5	10	41.3	80	M12	83	25.4
	AG160	28	42H7	250H7	300	350	6	12	45.3	110	M16	124	43.4
	AG180	28	48H7	250H7	300	350	6	14	51.8	110	M16	124	43.4
127	AG132	21	38H7	230H7	265	300	5	10	41.3	80	M12	71	33.1
	AG160	28	42H7	250H7	300	350	6	12	45.3	110	M16	110	50
	AG180	28	48H7	250H7	300	350	6	14	51.8	110	M16	110	50
	AG200	28	55H7	300H7	350	400	6	16	59.3	110	M16	138	60.3
	AG225	28	60H7	350H7	400	450	6	18	64.4	140	M16	166	98.6



9.3 AP连接法兰尺寸图表:

9.3 Series Dimensions of AP Connection Flange :



规格 Size	法兰型号 Flange	e1	D1	N1	M1	P1	f1	b1	t1	L	S1	S2	重量(kg) Weight
67	AP100	21	28H7	180H7	215	250	5	8	31.3	60	M12	191	15.5
77	AP100\112	21	28H7	180H7	215	250	5	8	31.3	60	M12	181	16.5
	AP132	21	38H7	230H7	265	300	5	10	41.3	80	M12	210	24.6
87	AP100\112	21	28H7	180H7	215	250	5	8	31.3	60	M12	171	17.9
	AP132	21	38H7	230H7	265	300	5	10	41.3	80	M12	203	26.3
	AP160	28	42H7	250H7	300	350	6	12	45.3	110	M16	272	48.5
97	AP100\112	21	28H7	180H7	215	250	5	8	31.3	60	M12	172	19.9
	AP132	21	38H7	230H7	265	300	5	10	41.3	80	M12	202	28.8
	AP160	28	42H7	250H7	300	350	6	12	45.3	110	M16	270	49.7
	AP180	28	48H7	250H7	300	350	6	14	51.8	110	M16	270	49.7
107	AP100\112	21	28H7	180H7	215	250	5	8	31.3	60	M12	161	21.9
	AP132	21	38H7	230H7	265	300	5	10	41.3	80	M12	189	31.1
	AP160	28	42H7	250H7	300	350	6	12	45.3	110	M16	257	52.2
	AP180	28	48H7	250H7	300	350	6	14	51.8	110	M16	257	52.2
127	AP132	21	38H7	230H7	265	300	5	10	41.3	80	M12	175	35.5
	AP160	28	42H7	250H7	300	350	6	12	45.3	110	M16	243	60.4
	AP180	28	48H7	250H7	300	350	6	14	51.8	110	M16	243	60.4
	AP200	28	55H7	300H7	350	400	6	16	59.3	110	M16	316	89.1
	AP225	28	60H7	350H7	400	450	7	18	64.4	140	M16	343	96.8

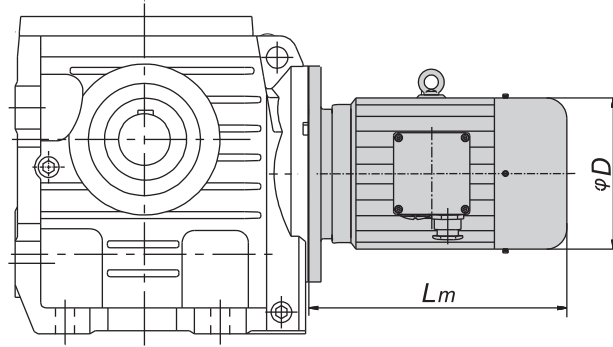
注：推荐用于化工搅拌等需24h连续运转以及电机频繁正反转等负载冲击场合。

Note: The recommended applications would be load impactive occasions, e.g. chemical mixing industry etc, where equipments keep working 24h a day and motors run with positive and reverse direction frequently.



9.4 S系列直联电机尺寸图 :

9.4 S series straight motor size chart:



4极功率/Power of 4P (kW)		0.12	0.18	0.25	0.37	0.55	0.75	1.1	1.5	2.2	3	4	5.5	7.5	11	15	18.5	22	30	37	45	55	75	90
Lm (mm)	M	249	249	249	249	313	313	358	358	409	409	454	482	517	594	637	652	652	710	797	797	836	946	946
	MH	/	/	/	/	/	291	309	341	387	407	429	522	558	584	629	642	688	725	732	757	/	/	/
	MP	/	/	/	/	/	311	341	369	407	442	464	522	558	629	659	642	688	725	732	757	/	/	/
	ME	287	287	287	287	358	358	403	403	474	474	519	555	592	689	734	747	747	805	887	887	966	1081	1081
	MEE	/	/	/	/	/	/	/	413	479	479	529	582	617	679	724	757	757	800	/	/	/	/	/
	MV	338	338	338	338	408	408	443	443	514	514	564	602	637	709	754	782	782	825	922	922	976	1091	1091
	MVE	338	338	338	338	408	408	443	443	514	514	564	602	637	709	754	782	830	870	872	897	941	1061	1061
D(mm)		147	147	147	147	159	159	176	176	200	200	220	259	259	314	314	356	356	397	446	446	485	547	547
重量 Weight (kg)	M	12	12	15	15	22	22	29	29	42	42	64	115	115	182	182	220	220	303	463	463	482	731	731
	MH	/	/	/	/	/	30	32	36	56	61	70	78	93	139	161	237	244	288	332	362	/	/	/
	MP	/	/	/	/	/	32	35	44	63	68	73	91	102	160	179	243	249	292	342	372	/	/	/
	ME	13	13	16	16	25	25	35	30	47	47	69	123	123	211	211	240	240	332	501	501	520	769	769
	MEE	/	/	/	/	/	/	/	39	55	55	76	134	134	223	223	260	260	358	521	521	540	800	800
	MV	13	13	16	16	24	24	40	30	44	44	66	117	117	184	184	223	223	307	394	394	489	742	742
	MVE	14	14	17	17	26	26	45	35	59	59	71	125	125	203	203	240	240	336	423	423	527	780	780

4极功率/Power of 4P (kW)		0.12	0.18	0.25	0.37	0.55	0.75	1.1	1.5	2.2	3	4	5.5	7.5	11	15	18.5	22	30	37	45	55	75	90
Lm (mm)	YZ	/	/	/	/	/	/	/	/	432	432	434	517	547	649	649	657	657	721	/	/	/	/	/
	YZE	/	/	/	/	/	/	/	/	507	507	509	592	652	744	744	743	743	803	/	/	/	/	/
	YZP	/	/	/	/	/	/	/	/	552	552	554	637	672	764	764	778	778	821	922	922	976	1091	1091
	YZPE	/	/	/	/	/	/	/	/	552	552	554	637	672	764	764	778	778	821	922	922	976	1091	1091
	YPG	/	/	/	/	/	/	/	/	432	432	434	517	547	649	649	657	657	721	797	797	836	946	946
D(mm)		/	/	/	/	/	/	/	/	259	259	259	259	259	314	314	356	356	356	446	446	485	547	547
重量 Weight (kg)	YZ	/	/	/	/	/	/	/	/	47	47	69	120	120	187	187	228	228	311	/	/	/	/	/
	YZE	/	/	/	/	/	/	/	/	52	52	74	128	128	216	216	248	248	340	/	/	/	/	/
	YZP	/	/	/	/	/	/	/	/	49	49	71	122	122	189	189	231	231	315	402	402	497	750	750
	YZPE	/	/	/	/	/	/	/	/	54	54	76	130	130	208	208	248	248	344	431	431	535	788	788
	YPG	/	/	/	/	/	/	/	/	47	47	69	120	120	187	187	228	228	311	463	463	482	731	731

注: (1)表中Lm尺寸为直联减速机时专用电机参考长度;
 (2)表中YB数据为标准防爆电机参考值;
 (3)若MV、MVE、YZP、YZPE配编码器时,“Lm”尺寸相应加长80mm;
 (4)电机未注明外形尺寸按IEC标准。

(1) Lm size is specific motor reference length for directly-connected gear units.
 (2) The above data of explosion-proof motor is reference value of standard explosion-proof motor.
 (3) If MV or MVE is equipped with encoder, "Lm" size should be respectively added 80mm.
 (4) Unspecified dimension size for motor complies with IEC standards.



10 组合型尺寸图 :

10 Combi-type Dimensions:

	型号Type	L9
	S..37/CRL37 S..47/CRL37	181
	S..57/CRL37 S..67/CRL37	183
	S..77/CRL37	173
	S..87/CRL47	180
	S..97/CRL67	225
	S..107/CRL77	238.5
	S..127/CRL77	227
S..127/CRL87	281	

11 附件:

11 Accessories:

11.1 扭力臂附件(附件代号T51\T52):

11.1 Torque-arm(Accessory code T51\T52):

<p>S\$ 37-S\$ 97</p> <p>T51 T52</p> <p>S\$ 107-S\$ 127</p> <p>T51 T52</p>	规格 Size	37	47	57	67	77	87	97	107	127
	C	10	15	15	18	18	24	26	30	32
	d2	10.4	10.4	10.4	10.4	16.4	16.4	25	25	40
	f3	31	31	31	31	54	54	72	92	110
	f6	15	20.5	18.5	22	23	28.5	33	50	66
	f8	36	36	36	36	60	60	80	100	126
	p	110	130	160	200	250	310	380	410	520
	W6	55	55	70	79	100	120	140	139	163
	W7	60	60	75	84	110	125	145	150	180



11.2 润滑油:

11.2 Oil:

油量 Oil level (L)					
安装方位 Mounting Position 规格 Size	B3 B61 B51 B55 H1 H11	B81 B63 B53 B57 H3 H31	B8 B54 B58 H2 H21	B31 B62 B52 B56 H4 H41	V5 V51 V6 V61 V3 V1 V31 V11 H5 H6 H51 H61
37	0.25	0.4	0.5	0.6	0.4
47	0.4	0.9	0.9	1.2	1.0
57	0.5	1.2	1	1.6	1.4
67	1	2.2	3.1	3.2	2.7
77	1.9	4.2	5.8	6.5	4.9
87	3.8	8.1	10.4	12	9.1
97	7.4	15	18.8	23.6	18
107	10.4	38	31.5		21.2
127	18.3	67	53		35.7

注：在环境温度-10℃~+40℃时，S系列润滑油牌号为VG680 (ISO粘度等级)，附件代号V68.

Note:When ambient temperature is -10℃~+40℃, for S series Products,lubricant brand is VG680(Iso viscosity class), accessory code is V68.

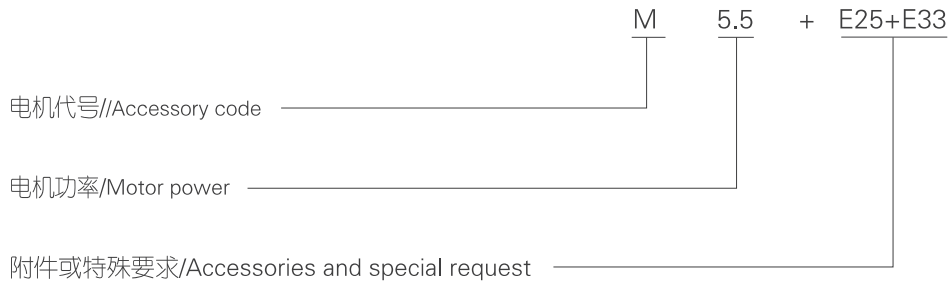


12 电机

12.1 型号表示方法

12 Motor

12.1 Type Designation



12.2 代号说明及标准配置

12.2 Code specification and standard allocation

系列 Series	电机种类 Motor type	标准配置参数/Standard configuration parameter		功率范围 Power
M	标准效率 三相异步电动机 (IE1) Standard efficiency various frequency speed-adjusting three-phase asynchronous motor	1.连续工作制 (S1) 2.绝缘等级: F 3.防护等级: IP55 4.额定电压: 400V (4kW及以下为“Y”接法, 5.5kW及以上为“Δ”接法) 5.额定频率: 50Hz (变频范围: 30-70 Hz) 6.冷却方式: IC411	1.Continuous working system(S1). 2.Class F insulation. 3.IP55 protecton degree. 4.Rated voltage:400V (" Y" conection for power less than 4kW," Δ" connection for power more than 5.5kW) 5.Rated frequency:50Hz. (Frequency range:30-70Hz) 6.Cooling method:IC411.	0.12-90kW
MH	高效率 三相异步电动机 (IE2) High efficiency various frequency speed-adjusting three-phase asynchronous motor	1.连续工作制 (S1) 2.绝缘等级: F 3.防护等级: IP55 4.额定电压: 380V (3kW及以下为“Y”接法, 4kW及以上为“Δ”接法) 5.额定频率: 50Hz 6.冷却方式: IC411	1.Continuous working system(S1). 2.Class F insulation. 3.IP55 protecton degree. 4.Rated voltage:380V (" Y" conection for power less than 3kW," Δ" connection for power more than 4kW) 5.Rated frequency:50Hz. 6.Cooling method:IC411.	0.75-45kW
MP	超高效率 三相异步电动机 (IE3) Premium efficiency various frequency speed-adjusting three-phase asynchronous motor	1.连续工作制 (S1) 2.绝缘等级: F 3.防护等级: IP55 4.额定电压: 380V (3kW及以下为“Y”接法, 4kW及以上为“Δ”接法) 5.额定频率: 50Hz 6.冷却方式: IC411	1.Continuous working system(S1). 2.Class F insulation. 3.IP55 protecton degree. 4.Rated voltage:380V (" Y" conection for power less than 3kW," Δ" connection for power more than 4kW) 5.Rated frequency:50Hz. 6.Cooling method:IC411.	0.75-45kW
ME	电磁制动 三相异步电动机 Three phase asynchronous electric motor with electro magnetic brake	1.连续工作制 (S1) 2.绝缘等级: F 3.防护等级: IP55 4.额定电压: 400V (4kW及以下为“Y”接法, 5.5kW及以上为“Δ”接法) 5.额定频率: 50Hz 6.4kW及以下,制动器额定电 压DC103V,整流器外接交流 电压AC230V; 5.5kW及以上,制动器额定电压 DC180V,整流器外接交流电压 AC400V 7.冷却方式: IC411	1.Continuous working system(S1). 2.Class F insulation. 3.IP55 protecton degree. 4.Rated voltage:400V (" Y" conection for power less than 4kW," Δ" connection for power more than 5.5kW) 5.Rated frequency:50Hz. 6.Forpower less than 4kW,brake rated voltage is DC103V,rectifier externam connection voltage is AC230V. For power more than 5.5kW,brake rated voltage is DC180V,rectifier external connection voltage is AC400V; 7.Cooling method:IC411.	0.12-90kW
MEE	双制动 三相异步电动机 Double-brake various frequency speed-adjusting three-phase asynchronous motor	1.断续工作制 (S3) 2.绝缘等级: F 3.防护等级: IP55 4.额定电压: 400V (4kW及以下为“Y” 接法, 5.5kW及以上为“Δ”接法) 5.基准频率: 50Hz 6.4kW及以下,制动器额定电压DC103V, 整流器外接交流电压AC230V; 5.5kW及以上,制动器额定电压 DC180V, 整流器外接交流电压AC400V 7.冷却方式: IC410	1.Intermittent cycle dut(S3). 2.Class F insulation. 3.IP55 protecton degree. 4.Rated voltage:400V (" Y" conection for power less than 4kW," Δ" connection for power more than 5.5kW) 5.Reference frrequency:50Hz 6.Forpower less than 4kW,brake rated voltage is DC103V,rectifier externam connection voltage is AC230V. For power more than 5.5kW,brake rated voltage is DC180V,rectifier external connection voltage is AC400V; 7.Cooling method:IC410	1.5-30kW
MV	变频调速 三相异步电动机 Three phase asynchronous electric motor with variable frequency adjustable speed	1.连续工作制 (S1) 2.绝缘等级: F 3.防护等级: IP55 4.额定电压: 400V (4kW及以下为“Y”接法, 5.5kW及以上为“Δ”接法) 5.基准频率: 50Hz (变频范围: 5-100 Hz) 6.冷却方式: IC416 (轴流风机强制冷却)	1.Continuous working system(S1). 2.Class F insulation. 3.IP55 protecton degree. 4.Rated voltage:400V (" Y" conection for power less than 4kW," Δ" connection for power more than 5.5kW) 5.Reference frrequency:50Hz (Frequency range:30-70Hz) 6.Cooling method:IC416(Forced cooling with axial-flow fan)	0.12-90kW



系列 Series	电机种类 Motor type	标准配置参数/Standard configuration parameter		功率范围 Power
MVE	变频制动 三相异步电动机 Various frequency speed-adjusting electromagnetetic brake three-phase asynchronous motor	1.连续工作制(S1) 2.绝缘等级: F 3.防护等级: IP55 4.额定电压: 400V (4kW及以下为“Y”接法, 5.5kW及以上为“Δ”接法) 5.基准频率: 50Hz (变频范围: 5-100 Hz) 6. 4kW及以下, 制动器额定电压DC103V, 整流器外接交流电压AC230V; 5.5kW及以上, 制动器额定电压DC180V, 整流器外接交流电压AC400V 7.冷却方式: IC416 (轴流风机强制冷却)	1.Continuous working system(S1). 2.Class F insulation. 3.IP55 protecton degree. 4.Rated voltage:400V (“Y” conection for power less than 4kW, “Δ” connection for power more than 5.5kW) 5.Reference frrequency:50Hz (Frequency range:5-100Hz) 6.Forpower less than 4kW,brake rated voltage is DC103V,rectifier externam connection voltage is AC230V. For power more than 5.5kW,brake rated voltage is DC180V,rectifier external connection voltage is AC400V; 7.Cooling method:IC416(Forced cooling with axial-flow fan)	0.12-90kW
YZ	起重及冶金 三相异步电动机 Common three-phase asynchronous motor for metallurgy and hosting industries	1.断续周期工作制(S3) 2.绝缘等级: F 3.防护等级: IP55 4.额定电压: 400V (“Δ”接法) 5.额定频率: 50Hz 6.冷却方式: IC411	1.Intermittent cycle dut(S3) 2.Class F insulation. 3.IP55 protecton degree. 4.Rated voltage:400V (“Δ” connection) 5.Rated frequency:50Hz. 6.Cooling method:IC411.	2.2-30kW
YZE	起重及冶金 电磁制动 三相异步电动机 Electromagnetic brake three-phase asynchronous motor for metallurgy and hoisting industries	1.断续周期工作制(S3) 2.绝缘等级: F 3.防护等级: IP55 4.额定电压: 400V (“Δ”接法) 5.额定频率: 50Hz 6.制动器额定电压DC180V, 整流器外接交流电压AC400V 7.冷却方式: IC411	1.Intermittent cycle dut(S3) 2.Class F insulation. 3.IP55 protecton degree. 4.Rated voltage:400V (“Δ” connection) 5.Rated frequency:50Hz. 6.Brake rated voltage DC180V,rectifier external connection voltage AC400V. 7.Cooling method:IC411.	2.2-30kW
YZP	起重及冶金 变频调速 三相异步电动机 Three-phase asynchronous motor for metallurgy and hoisting industries	1.断续周期工作制(S3) 2.绝缘等级: F 3.防护等级: IP55 4.额定电压: 400V (“Δ”接法) 5.基准频率: 50Hz (变频范围: 5-100 Hz) 6.冷却方式: IC416 (轴流风机强制冷却)	1.Intermittent cycle dut(S3) 2.Class F insulation. 3.IP55 protecton degree. 4.Rated voltage:400V (“Δ” connection) 5.Reference frequency:50Hz (Frequency range:5-100Hz) 6.Cooling method:IC416(Forced cooling with axial-flow fan)	2.2-90kW
YZPE	起重及冶金 变频制动 三相异步电动机 Three-phase asynchronous motor for metallurgy and hoisting industries	1. 断续周期工作制(S3) 2.绝缘等级: F 3.防护等级: IP55 4.额定电压: 400V (“Δ”接法) 5.基准频率: 50Hz (变频范围: 5-100 Hz) 6.制动器额定电压DC180V, 整流器外接交流电压AC400V 7.冷却方式: IC416 (轴流风机强制冷却)	1.Intermittent cycle dut(S3) 2.Class F insulation. 3.IP55 protecton degree. 4.Rated voltage:400V (“Δ” connection) 5.Reference frequency:50Hz (Frequency range:5-50Hz) 6.Brake rated voltage DC180V,rectifier external connection voltage AC400V. 7.Cooling method:IC416(Forced cooling with axial-flow fan)	2.2-90kW
YPG	变频辊道 三相异步电动机 Various frequency speed-adjusting electromangetic brake three-phase asynchronous motor for roller table	1.断续周期工作制(S3) 2.绝缘等级: F 3.防护等级: IP55 4.额定电压: 400V (“Δ”接法) 5.基准频率: 50Hz	1.Intermittent cycle dut(S3) 2.Class F insulation. 3.IP55 protecton degree. 4.Rated voltage:400V (“Δ” connection) 5.Reference frequency:50Hz	2.2-90kW
YB	隔爆型 三相异步电动机 Explosion proof three phase asynchronous electric motor	1.连续工作制(S1); 2.绝缘等级:F级; 3.防护等级:IP55; 4.额定电压:380V (3kW及以下为“Y”接法, 4kW及以上为“Δ”接法); 5.额定频率: 50Hz 6. 防爆等级: dIIBT4 7. 冷却方式: IC411	1.Continuous working system(S1). 2.Class F insulation. 3.IP55 protecton degree. 4.Rated voltage:380V (“Y” conection for power less than 3kW, “Δ” connection for power more than 4kW) 5.Rated frequency:50Hz. 6.Explosion proof class:d II BT4 7.Cooling method:IC411.	0.18-90kW



12.3 附件及特殊要求代号表

12.3 Attachment and special requirements code table

代号/Code	说明/Instruction	具体应用场合 Specified Applicable occasions
E01	防雨罩 /Rainproof cover	0.12kW~90kW
E02	防雨帽 /rainhat	0.12kW~90kW
E10	制动手柄释放/Brake with manual release	0.12kW~90kW (ME/MVE)
E11	螺栓释放/Bolt release	0.12kW~90kW (ME/MVE)
E13	微动开关/Microswitch	2.2kW~90kW (ME/MVE)
E25*	增量型编码器电源电压DC5~30V 防护等级IP54, 脉冲1024, 推挽输出 Incremental encoder power source voltage DC5~30V protection level IP54,pulsh 1024,Push-Pull output	0.12kW~90kW (MV/MVE)
E30	PTC热敏电阻 (120℃ ~ 135℃) / PTC thermistors (120℃ ~ 135℃)	0.12kW~90kW
E32	温度传感器 PT100 /Temperature sensor PT100	0.12kW~90kW
E33	加热带 /Heating belt	0.12kW~90kW
E34	热敏开关 /Thermal switch	0.12kW~90kW
E35	绝缘等级H级 /Insulation class H	0.12kW~90kW
E37	防尘、防盐雾、防霉三防要求, 已含防雨帽和加热带 Dustproof anti salt fog mildew Three proofing requirements, Already contains a rainhat and heating belt	0.12kW~90kW
E38	防护等级IP56 /Protection grade IP56	0.12kW~90kW
E60	风机电压单相220V /Fan single-phase voltage 220V	0.12kW~90kW (MV/MVE)
E62	制动器电压: AC400V /Brake external voltage: AC400V	0.12kW~4kW (ME/MVE)
E70	出线孔C号位 /Cable entry C	0.12kW~90kW
E71	出线孔B号位 /Cable entry B	0.12kW~7.5kW
E72	出线孔D号位 /Cable entry D	0.12kW~7.5kW

* M/ME/YZ/YZE 需配编码器请另咨询。

*其他特殊要求请另咨询。

*M / ME / YZ / YZE Please consult if you need encoder.

*Please consult if you have other special requirements.

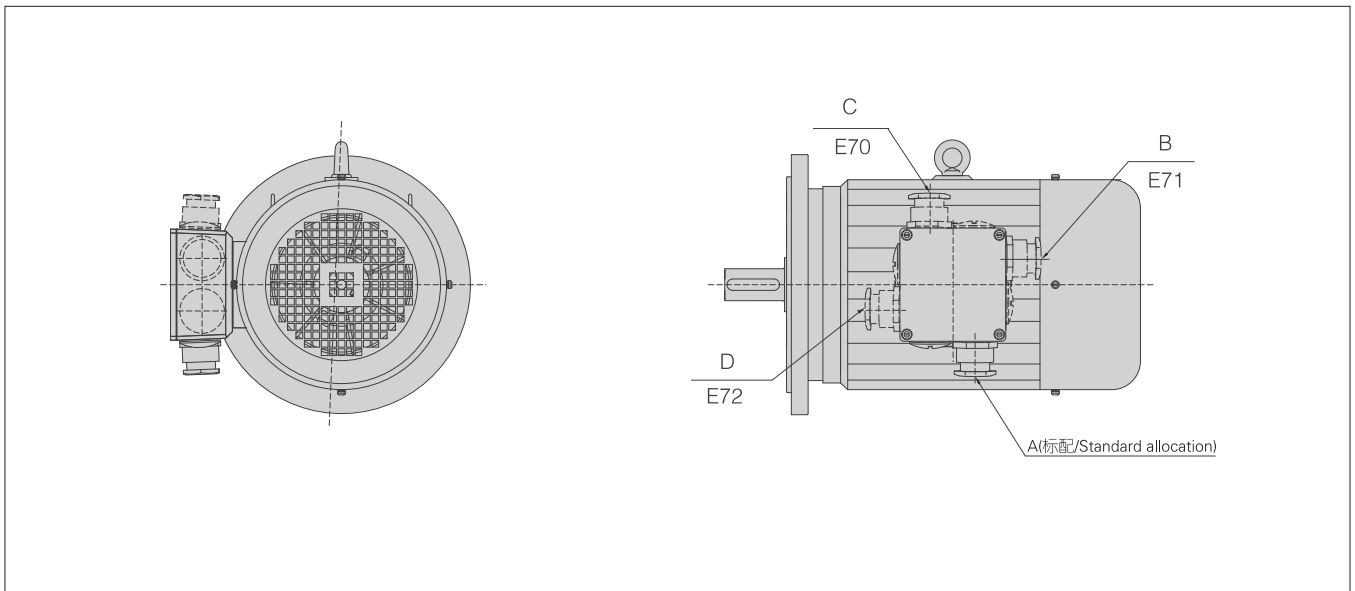


防雨罩 (附件代号E01)												
		Rain proof cover(accessory code E01)										
机座号	H71	H80	H90	H100	H112	H132	H160	H180	H200	H225	H250	H280
Lb	22	22	27	32	32	32	62	62	62	62	62	62
D	147	170	178	199	227	279	339	382	420	467	513	567

防雨帽 (附件代号E02)												
		Rain proof cap(accessory code E02)										
机座号	H71	H80	H90	H100	H112	H132	H160	H180	H200	H225	H250	H280
Lb	35	35	40	50	50	50	80	80	80	80	80	80
D	178	199	227	227	279	339	382	420	467	513	567	624

12.4 接线盒出线孔位置:

12.4 Terminal box and wiring outlet hole position:



注: 电机接线盒出线孔一般以A号位供货, 如图中所示(与减速机组合时)。

Note: In general, No. position wiring outlet hole for terminal box shall be supplied, as shown in the drawing. (when the motor combined with gear unit)

11.5 其它特殊电机另咨询。

11.5 Other specific motor on request.

11.6 客户自配电机:

11.6 Customers provided motor:

- 1) 购买带B5标准尺寸的联接法兰的产品时, 电机自配。
- 2) 对于配F系列的直联电机, 本公司提供尺寸图, 客户自购, 本公司给予组装。

- 1) To buy the product with adapter flange of B5 standard size, customers can provide motors by themselves.
- 2) To directly connected motor with F series products, we provide dimension drawing, and customers buy the motor by themselves, then we assemble them.

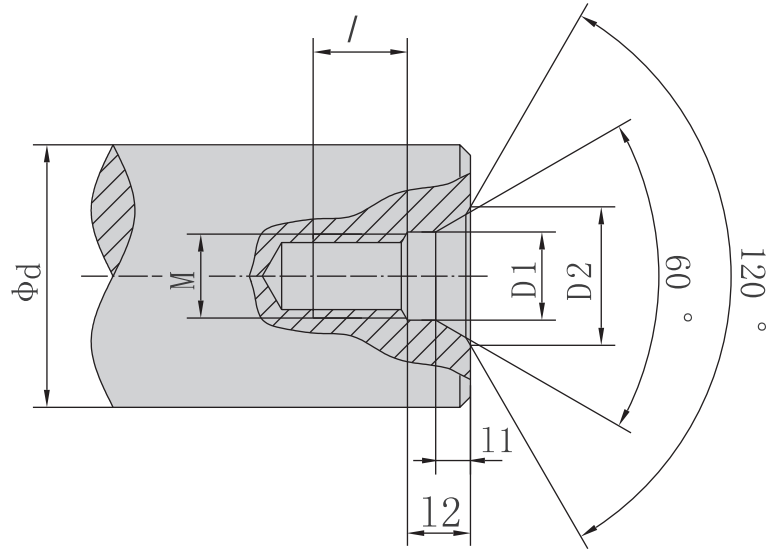


13 轴端中心孔：

13 Shaft end central hole:

轴端C型螺纹中心孔

Shaft end C Type screw central hole

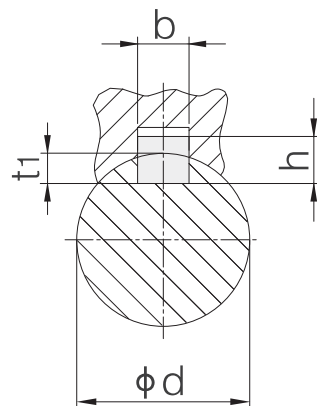
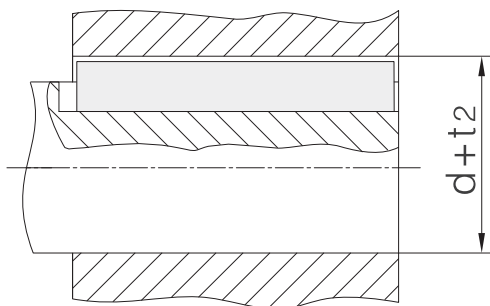


d	M	L	l2	l1	D1	D2
7<d≤10	M3	10	2.6	1.8	3.2	5.8
10<d≤13	M4	10	3.2	2.1	4.3	7.4
13<d≤16	M5	10	4	2.4	5.3	8.8
16<d≤21	M6	12	5	2.8	6.4	10.5
21<d≤24	M8	12	6	3.3	8.4	13.2
24<d≤30	M10	15	7.5	3.8	10.5	16.3
30<d≤38	M12	20	9.5	4.4	13	19.8
38<d≤50	M16	25	12	5.2	17	25.3
50<d≤85	M20	30	15	6.4	21	31.3
85<d≤130	M24	35	18	8	25	38
130<d≤225	M30	45	18	11	31	48



14 平键与键槽的尺寸:

14 Dimension of parallel key and keyway:



d	b	h	t1	d + t2
8<d≤10	3	3	1.8	d + 1.4
10<d≤12	4	4	2.5	d + 1.8
12<d≤17	5	5	3	d + 2.3
17<d≤22	6	6	3.5	d + 2.8
22<d≤30	8	7	4	d + 3.3
30<d≤38	10	8	5	d + 3.3
38<d≤44	12	8	5	d + 3.3
44<d≤50	14	9	5.5	d + 3.8
50<d≤58	16	10	6	d + 4.3
58<d≤65	18	11	7	d + 4.4
65<d≤75	20	12	7.5	d + 4.9
75<d≤85	22	14	9	d + 5.4
85<d≤95	25	14	9	d + 5.4
95<d≤110	28	16	10	d + 6.4
110<d≤130	32	18	11	d + 7.4
130<d≤150	36	20	12	d + 8.4
150<d≤170	40	22	13	d + 9.4
170<d≤200	45	25	15	d + 10.4
200<d≤230	50	28	17	d + 11.4
230<d≤260	56	32	20	d + 12.4