



星光传动
STARSHINE DRIVE

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SG2系列斜齿轮减速机

SG2 SERIES HELICAL GEAR MOTOR



广东星光传动股份有限公司

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广东星光传动股份有限公司前身是一家创建于1965年的国有军工企业——国营星光工模具厂，公司以“平台化产品、应用化设计、专业化服务”为宗旨，专为高端装备制造业提供行业应用整体传动解决方案。

公司技术力量雄厚，现有员工350余人，其中工程技术人员30多名，和各种先进的加工制造和检测设备，依托省级工程技术研究中心、减速机产品试验室和现代化研发和生产基地，为高端减变速机产品的行业应用开发和服务提供了良好的发展基础。

公司主导产品有：NCJ系列齿轮减速机、R/S/K/F系列高精度齿轮减速机、SNP系列行星减速机、SNKG系列齿轮减速机、JWB-X系列机械无级变速器、RV系列蜗杆减速机、B/JXJ系列摆线针轮减速机、XGK系列准双曲面齿轮减速机等八大系列产品可供选用，广泛服务于陶瓷、玻璃、木工、高压开关、食品饮料、包装印刷、仓储物流、起重运输等装备制造和应用行业，专为中高端用户提供专业的产品和服务。产品畅销国内，远销欧美、中东、东南亚等20多个国家和地区。

在未来的发展中，星光将承载“成就客户、勤劳朴实、自我批判、创新进取、诚实守信、团队合作”的职业信条，以“品质创造价值”为经营理念，聚焦客户需求，提供有竞争力的传动解决方案，持续为客户创造价值，打造高端装备制造业和终端用户“替代进口、升级换代”的首选品牌！

动静之间，唯简不凡；携手同行，星光灿烂！

Guangdong Starshine Drive Co.,Ltd, the predecessor was a state-owned military mould enterprise, was established in 1965. Starshine specializes in the complete power transmission solution for high-end equipment manufacturing industries based on the aim of "Platform Product, Application Design and Professional Service".

Starshine have a strong technical force with over 350 employees at present, including over 30 engineering technicians, 30 quality inspectors, covering an area of 80000 square meters and kinds of advanced processing machines and testing equipments. We have a good foundation for the industry application development and service of high-end speed reducers & variators owning to the provincial engineering technology research center, the lab of gear speed reducers, and the base of modern R&D.

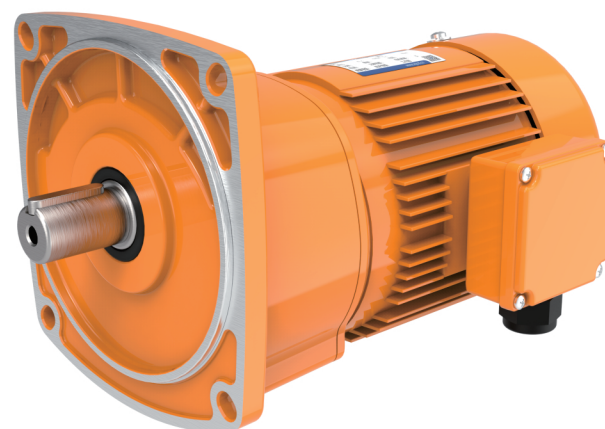
Our main products are R/S/K/F series helical geared motor, SNP series planetary gearboxes, SNKG series bevel-helical gearmotor, NCJ series gear motor, RV series worm gearboxes, JWB-X series speed variators, B/JXJ series cycloidal gearboxes, XGK series helical-hypoid Gearboxes, which widely used for a variety of industries such as ceramic, glass, woodworking machinery, high voltage switch, food & beverage, packaging & printing, Storage & logistics, hoisting & transportation facilities...etc, and Starshine technically provide the professional product & service for the medium and high-end customers, and our gearboxes are best-selling in to Europe, North America, South America, Middle East, South Asia, Southeast Asia, Africa...etc.

In the future, Starshine will hold the creed of "serving customer, diligence & simplicity, self-criticism, innovation, honesty, teamwork", and the concept of "quality creates value" to focus on the customers' requirements and provide them the competitive transmission solution and create value for them constantly, and make It is expected to be preferred brand of "import substitution and product upgrading", for the high end equipment manufacturing industries and end users.

Between Dynamic and Static, Simple is Extraordinary, let's go forward hand in hand and make a brilliant future!

SG2系列斜齿轮减速机

SG2 SERIES HELICAL GEAR MOTOR



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1 总体简介

结构特点

- 铝合金和铸铁两种箱体，外型美观，分为底脚安装和法兰安装两种机座，适应全方位的安装；
- 高强度合金材料的斜齿轮，结构更紧凑，箱体体积更小，效率更高，输出扭矩更大；
- 精密加工的硬齿面传动齿轮，变形小，精度高，平稳运转，噪音低，能适应在恶劣环境中长期连续工作；
- 输出轴直径分为Φ18、Φ22、Φ28、Φ32、Φ40、Φ50六种规格；
- 两级或三级传动，速比范围大，每个机座具有从5:1到200:1的14种减速比；
- 采用优质轴承，延长使用寿命；
- 高性能的油封可防止润滑油回漏电机内部；
- 三相电机：采用标准全封闭型专用铝壳电机，具较佳防水性，易散热及运转效率高；

表面涂装

- 抛丸处理后，特种防腐处理(保持银白金属感，并耐汽油、二甲苯等有机溶剂的腐蚀)；
- 磷化处理后，喷涂灰色RAL9157涂料。

1 GENERAL INTRODUCTION

FEATURE

- Housing type: Aluminum alloy and cast iron housing, beautiful appearance foot and flange mounting available suitable for a variety of installation.
- High-strength helical gear with alloy, compact structure small volume, high efficiency and large torque.
- Hardened tooth surface gear by precise process with few deform, high precision, stable running low noise adapt to the continuous duty and harsh working condition.
- Output shaft diameter: Φ 18, Φ 22, Φ 28, Φ 32, Φ 40, Φ 50.
- Two or three-stage transmission, wide ratio range, There are 14 ratios ranging from 5:1 to 200 for each size.
- Use fine quality bearing to prolong service life.
- Use fine quality oil seal to prevent oil back into the motor.
- Adopt standard full close special aluminum three-phase motor with good waterproof, easy heat dissipation and high running efficiency.

SURFACE PAINTING

- After shot blasting treatment, the special anti-corrosion treatment maintain a silver, white metallic feel, and against corrosion for organic solvents suck as petrol and xy lene
- After phosphating treatment, It is painted grey RAL9157.

2 选型指南

型号标记

- SG2系列减速器

SG2 F M - 28 - 030 - T040
 ① ②③ ④ ⑤ ⑥

| No | 说明 |
|----|--|
| 1 | 型号代码 |
| 2 | 安装方式： 1) F: 法兰安装 2) L: 底脚安装 |
| 3 | 动力方式 1) M: 标准型 (电机不带制动器) 2) B: 制动型 (电机带制动器) 3) S: IEC输入 4) 无字符表示轴输入 |
| 4 | 输出轴直径(Φ18;Φ22;Φ28;Φ32;Φ40;Φ50) |
| 5 | 减速器速比 (i=5; 10; 15; 20; 25; 30; 40; 50; 60; 80; 100; 120; 160; 200) |
| 6 | 电机功率(010; 020; 040; 075; 150; 220W) 1) .T: 三相电机 2) .不带T表示单相电机 3) . (...) : IEC 电机功率 |

2 GUIDE OF TYPE SELECTION

MODEL MARK

- SG2 Series Reducer

SG2 F M - 28 - 030 - T040
 ① ②③ ④ ⑤ ⑥

| No | Explanation |
|----|--|
| 1 | Model code |
| 2 | Mounting Type: 1). F: Flange mounted 2). L: Foot-mounted |
| 3 | Input Method 1) M: Standard model (motor without brake) 2) B: Brake model (motor with brake) 3) S: IEC input 4) None means shaft input |
| 4 | Output shaft diameter(Φ18;Φ22;Φ28;Φ32;Φ40;Φ50) |
| 5 | Ratio=5; 10; 15; 20; 25; 30; 40; 50; 60; 80; 100; 120; 160; 200; |
| 6 | Motor power(010;020;040;075;150;220W) 1). With T: three phase motor 2). Without T means single phase motor 3). (...) means IEC Motor |

减速机机型选定



-  底脚式带三相电机减速机 12
SG2LM
-  法兰式带三相电机减速机 13
SG2FM
-  底脚式IEC输入型减速机 14
SG2LS
-  法兰式IEC输入型减速机 15
SG2FS

定货须知

用户在订购本公司SG2系列减速机产品时，请向本公司说明以下产品信息：

- 1) 减速器的基本参数(包括型号代码、安装方式、动力方式、输出轴直径、速比、电机功率)；
- 2) 外壳喷涂：所有本公司的SG2系列减速机和电机外壳均为灰色RAL9157。

Type Selection

-  foot-mounted reducer with 3 phase inline motor 12
SG2LM
-  flange-mounted reducer with 3 phase inline motor 13
SG2FM
-  foot-mounted reducer with IEC flange input 14
SG2LS
-  flange-mounted reducer with IEC flange input 15
SG2FS

Ordering Instruction

Please provide us with information below before place an order:

- 1) Parameters of Reducer (includes model code, mounting type, input method, output shaft diameter, ratio, motor power etc.
- 2) Standard color: gray RAL9157.

2.1 技术资料
2.1.1 相关参数

- 1) 功率

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

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

P_1 输入功率
 P_2 输出功率
 P_{1n} 选用电机功率
 f_s 使用系数
 η 传动效率

SG2 系列齿轮减速器的传动效率为 $\eta = 95\%$

- 2) 转速
 - n_1 减速器输入转速
 - n_2 减速器输出转速

选择表中输入转速指的是电机转速为1400 r/min，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) 传动比 $i = \frac{n_1}{n_2}$

传动比通常为小数，在选择表中保留两位小数。

- 4) 扭矩

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

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

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

- 5) 使用系数 f_s

减速器上的从动机构的受驱动效果是用使用系数 f_s 这个系数来衡量的。该使用系数根据每天的运转时间和启动频率Z而定的。三种负载分类取决于惯性加速系数，在下图中可以读取实际应用的使用系数，按这图表选取的使用系数必须小于或者等于性能参数表中提供的使用系数。

2.1 TECHNICAL DATA
2.1.1 RELEVANT PARAMETER

- 1) Power

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

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

P_1 Input power
 P_2 Output power
 P_{1n} Motor power
 f_s Service factor
 η Efficiency

SG2 Efficiency $\eta = 95\%$

- 2) Rotation speed
 - n_1 Input speed
 - n_2 Output speed

Input speed in charts is 1400 r/min. Input speed 1400 rpm is preferred in order to optimize working condition and enhance service life. Higher input speed is allowed, but the rated torque M_2 will be less in this condition than before.

- 3) Ratio $i = \frac{n_1}{n_2}$

The ratio is decimal as usual, with two decimal places in selection table.

- 4) Torque

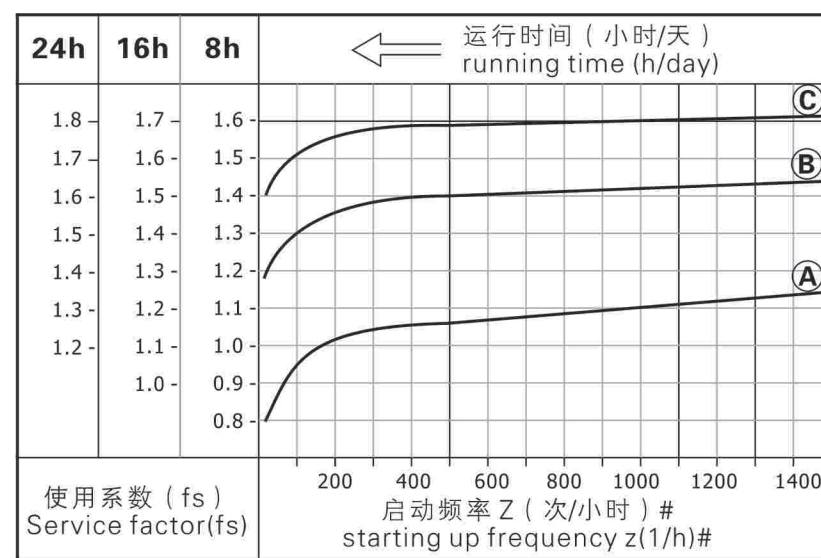
$$M_2 = \frac{9550 \cdot P_1 \cdot \eta}{n_2} \text{ [Nm]}$$

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

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

- 5) Service factor f_s

The driven effect of the working machine is measured by service factor f_s . And the service factor is determined by the daily running time and starting-up frequency Z. The three load classifications depend on the inertial acceleration coefficient. You can read off the service factor of the application in following Figure. The service factor selected from this diagram must be less than or equal to one as given in performance chart.



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。

Starting up frequency(Z): The cycles include all starting and braking times as well as changing time of gear motor from low to high speed.

负载类型:

- A. 均匀冲击负载, 允许惯性加速系数 ≤ 0.2
- B. 中等冲击负载, 允许惯性加速系数 ≤ 3
- C. 重冲击负载, 允许惯性加速系数 ≤ 10

负载类型见附录。

惯性加速系数计算如下:

$$f_a = \frac{J_c}{J_m}$$

fa 惯性加速系数
Jc 所有外部转动惯量
Jm 驱动电机的转动惯量

如果惯性加速系数 $f_a > 10$, 请与我们技术部联系。

为了保持减速机的使用寿命, 从产品样本中所选择的使用系数 f_s 应等于或略高于计算出来的使用系数 f_s 。

loading Type:

- A. Uniform impact load, coefficient of allowable inertia acceleration ≤ 0.2
- B. Moderate impact load, coefficient of allowable inertia acceleration ≤ 3
- C. Heavy impact load, coefficient of allowable inertia acceleration ≤ 10

Loading type refer to the appendix.

Inertia acceleration coefficient is calculated as follows:

$$f_a = \frac{J_c}{J_m}$$

fa Inertia acceleration coefficient
Jc All the external rotary inertia (Kgm²)
Jm Rotary inertia of the driving motor (Kgm²)

If the inertia acceleration coefficient is over 10, please contact with our engineering dept.

In order to prolong service-life, the service factor selected from catalogue should be equal or more than one calculated.

6) 径向载荷和轴向载荷 F_{r2}

在决定影响径向载荷时, 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

6) Radial and axial loads F_{r2}

When determining the influence of radial load, the transmission parts which are installed on the shaft end must be taken into consideration. Different transmission parts correspond to different additional coefficient f_z please refer to the chart as below:

| 传动件 Transmission parts | 传动附加系数 F_z Coefficient F_z | 注释 Explanation |
|------------------------------|-----------------------------------|--|
| 齿轮 Gears | 1.00 | ≥ 17齿 ≥ 17 teeth |
| | 1.15 | < 17齿 < 17 teeth |
| 链轮 Chain sprockets | 1.00 | ≥ 20齿 ≥ 20 teeth |
| | 1.25 | < 20齿 < 20 teeth |
| | 1.40 | < 13齿 < 13 teeth |
| V带轮 Narrow V-belt pulleys | 1.75 | 有预紧力作用 Influence of pretightening force |
| 平带轮 Flat belt pulleys | 2.50 | 有预紧力作用 Influence of pretightening force |
| 齿带轮 Toothed belt pulleys | 2.50 | 有预紧力作用 Influence of pretightening force |

作用在电机和齿轮轴上的径向载荷按如下公式计算:

$$F_{r2} = \frac{M_d \cdot 2000 \cdot f_z}{d_0} \text{ [N]}$$

F_{r2} 径向载荷[N]
 M_d 扭矩[Nm]
 d_0 所安装传动件的平均直径[mm]
 F_z 传动附加系数

2.1.2 选型举例

1) 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, 即可选使用系数 $f_s = 1.3$, 输出转速 $n_2 = 47r/min$, 减速机要求底脚安装, 则:

$$i = \frac{n_1}{n_2} = \frac{1400}{47} = 30$$

$$P_{1n} \geq P_1 \cdot f_s = \frac{P_2}{\eta} \cdot f_s = \frac{1}{0.95} \times 1.3 = 1.37 \text{ [kW]}$$

查SG2系列性能参数表可确定减速电机型号为:

SG2LM - 40 - 030 - 150

The radial load on the motor and shaft is calculated as below:

$$F_{r2} = \frac{M_d \cdot 2000 \cdot f_z}{d_0} \text{ [N]}$$

F_{r2} Radial loads [N]
 M_d Torque [Nm]
 d_0 Average diameter of the mounted transmission parts[mm]
 F_z Additional coefficient of transmission

2.1.2 EXAMPLE

1) Geared motor

Example: Motor power of driven machine 1KW, working for 8 hours per day, moderate loading impact, $f_s = 1.3$, $n_2 = 47r/min$, and foot mounting requested, so:

$$i = \frac{n_1}{n_2} = \frac{1400}{47} = 30$$

$$P_{1n} \geq P_1 \cdot f_s = \frac{P_2}{\eta} \cdot f_s = \frac{1}{0.95} \times 1.3 = 1.37 \text{ [kW]}$$

Type chosen as:

SG2LM - 40 - 030 - 150

2) 减速器

例：被驱动设备所需扭矩为20Nm，工作6小时/天，均匀冲击负载，可选使用系数 $f_s=1.1$ ，输出转速 $n_2=144$ r/min，减速机要求法兰安装，IEC输入。

$$i = \frac{n_1}{n_2} = \frac{1400}{144} = 9.72$$

$$M_{2n} \geq M_2 \cdot f_s = 20 \times 1.1 = 22 \text{ [Nm]}$$

$$P_{1n} \geq P_1 \cdot f_s = \frac{M_2 \cdot n_1}{9550 \cdot \eta \cdot i} \cdot f_s = \frac{20 \times 1400}{9550 \times 0.95 \times 9.72} \times 1.1 = 0.349 \text{ [kW]}$$

查SG2系列性能参数表可确定减速电机型号为：

SG2FS - 22 - 010 - (037)

2.1.3 电动机接线法

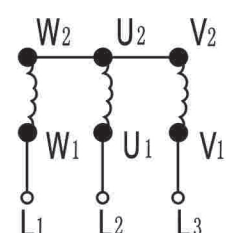
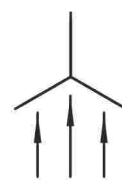
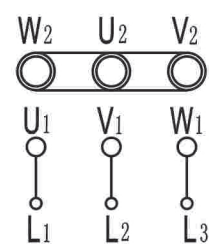
电动机的接线板上有6个接线柱，采用星行和三角形接线法接线时，输入的三相电压也不相同，(如下图所示。)任意两根线对调，减速机反转。

接法：

$$Y = \sqrt{3} \Delta$$

connection:

$$Y = \sqrt{3} \Delta$$

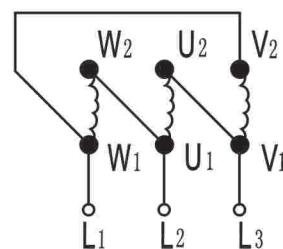
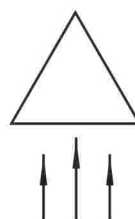
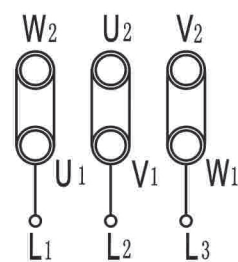


接法：

$$\Delta = Y/\sqrt{3}$$

connection:

$$\Delta = Y/\sqrt{3}$$


2) Gear reducer

Example: output torque requested is 20Nm, working for 6 hours per day, uniform loading impact, $f_s=1.1$, output speed $n_2=144$ r/min, flange mounting and IEC input type.

$$i = \frac{n_1}{n_2} = \frac{1400}{144} = 9.72$$

$$M_{2n} \geq M_2 \cdot f_s = 20 \times 1.1 = 22 \text{ [Nm]}$$

$$P_{1n} \geq P_1 \cdot f_s = \frac{M_2 \cdot n_1}{9550 \cdot \eta \cdot i} \cdot f_s = \frac{20 \times 1400}{9550 \times 0.95 \times 9.72} \times 1.1 = 0.349 \text{ [kW]}$$

Type chosen as:

SG2FS - 22 - 010 - (037)

2.1.3 MOTOR CONNECTION

There are six terminal posts on the connection of motor board, the three-phase voltage input is different when star-line and delta-line are used (please refer to the drawing). Any two wires are switched, the reducer is reversed.

2.1.4 性能参数 PERFORMANCE

| 公称速比 Normal ratio | 5 | 10 | 15 | 20 | 25 | 30 | 40 | 50 | 60 | 80 | 100 | 100 | 120 | 160 | 200 | |
|-------------------------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|------|--------|--------|--------|-------|
| 输出轴(mm) output shaft | Ø18 | | | | | | | | Ø22 | | | | | | | |
| 实际速比 actual ratio | 4.97 | 10.12 | 15.16 | 20.08 | 24.89 | 30.46 | 40.11 | 50.14 | 62.17 | 79.12 | 98.18 | - | 122.27 | 155.62 | 194.52 | |
| n_2^* (1/min) | 282 | 138 | 92 | 70 | 56 | 46 | 35 | 28 | 23 | 18 | 14 | - | 11 | 9 | 7 | |
| M_2 (Nm) | 50Hz | 3.2 | 6.5 | 9.8 | 12.9 | 16.1 | 19.6 | 25.7 | 31.1 | 37.5 | 49.5 | 62.9 | - | 76.1 | 100.7 | 125.4 |
| | 60Hz | 3 | 5 | 8 | 11 | 13 | 17 | 21 | 26 | 31 | 41 | 52 | - | 63 | 84 | 105 |
| Fr_1 (N) | 588 | 882 | 980 | 1180 | 1270 | 1370 | 1470 | 1570 | 2160 | 2450 | 2450 | - | 2450 | 2450 | 2450 | |
| Fr_2 (N) | 176 | | | | | | | | | | | | | | | |

| 输出轴(mm) output shaft | Ø18 | | | | | | Ø22 | | | | | | Ø28 | | | |
|-------------------------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--------|--------|------|--------|-------|
| 实际速比 actual ratio | 4.97 | 10.12 | 15.16 | 20.08 | 24.89 | 30.86 | 39.56 | 49.09 | 62.17 | 79.12 | 98.18 | 104.08 | 120.88 | 165 | 196.43 | |
| n_2^* (1/min) | 282 | 138 | 92 | 70 | 56 | 45 | 35 | 29 | 23 | 18 | 14 | 13 | 12 | 8 | 7 | |
| M_2 (Nm) | 50Hz | 6.5 | 12.6 | 19.1 | 26.3 | 32.6 | 38.9 | 50.4 | 63 | 75.6 | 100.8 | 103.9 | 125.40 | 150 | 200.4 | 250 |
| | 60Hz | 5.4 | 10.5 | 16.6 | 21.9 | 27.1 | 32.4 | 42 | 52.5 | 63 | 84 | 86.6 | 104.50 | 125 | 167 | 208.9 |
| Fr_1 (N) | 588 | 882 | 980 | 1180 | 1270 | 1760 | 1860 | 1960 | 2160 | 2450 | 2450 | 2840 | 3330 | 3430 | 3430 | |
| Fr_2 (N) | 196 | | | | | | | | | | | | | | | |

| 输出轴(mm) output shaft | Ø22 | | | | | Ø28 | | | | | Ø32 | | | | | |
|-------------------------|------|------|-------|-------|-------|------|-------|-------|-------|-------|-------|-------|--------|--------|-------|-------|
| 实际速比 actual ratio | 4.86 | 9.71 | 15.27 | 19.43 | 24.29 | 30 | 38.96 | 48.29 | 58.22 | 79.48 | 98.51 | 98.29 | 121.56 | 158.48 | 202.5 | |
| n_2^* (1/min) | 288 | 144 | 92 | 72 | 58 | 47 | 36 | 29 | 24 | 18 | 14 | 14 | 12 | 9 | 7 | |
| M_2 (Nm) | 50Hz | 12.9 | 25 | 38.6 | 51.4 | 65.4 | 78.2 | 100.7 | 125.4 | 150 | 200.4 | 206.8 | 250.7 | 301.1 | 400.7 | 461.8 |
| | 60Hz | 10.7 | 20.8 | 32.1 | 42.9 | 54.5 | 65.2 | 83.9 | 104.5 | 125.0 | 167.0 | 172.3 | 208.9 | 250.9 | 333.9 | 384.8 |
| Fr_1 (N) | 882 | 1180 | 1370 | 1470 | 1670 | 2550 | 2840 | 3140 | 3430 | 3430 | 3430 | 4900 | 5880 | 5880 | 5880 | |
| Fr_2 (N) | 245 | | | | | | | | | | | | | | | |

| 输出轴(mm) output shaft | Ø28 | | | | | Ø32 | | | | | Ø40 | | | | | |
|-------------------------|------|------|-------|------|-------|-------|-------|-------|-------|-------|-------|-------|--------|--------|--------|-----|
| 实际速比 actual ratio | 5.04 | 10 | 14.95 | 20.4 | 24.29 | 30.67 | 39.69 | 49.09 | 59.54 | 79.38 | 98.18 | 98.90 | 122.08 | 155.56 | 194.44 | |
| n_2^* (1/min) | 278 | 140 | 94 | 69 | 58 | 46 | 35 | 29 | 24 | 18 | 14 | 14 | 11 | 9 | 7 | |
| M_2 (Nm) | 50Hz | 24.6 | 48.2 | 72.9 | 97.5 | 122.1 | 145.7 | 187.5 | 235.7 | 282.9 | 376.1 | 387.9 | 439 | 527 | 703 | 764 |
| | 60Hz | 20.5 | 40.2 | 60.7 | 81.3 | 201.8 | 121.4 | 156.3 | 196.4 | 235.7 | 313.4 | 323.2 | 366 | 439 | 585 | 732 |
| Fr_1 (N) | 1270 | 1760 | 2160 | 2350 | 2450 | 4020 | 4210 | 4610 | 5490 | 5880 | 5880 | 7060 | 7060 | 7060 | 7060 | |
| Fr_2 (N) | 294 | | | | | | | | | | | | | | | |

(* : $n_1=1400$ r/min 50Hz)

| 1.5kW | 输出轴(mm) output shaft | Ø32 | | | | | Ø40 | | | | | Ø50 | | | | |
|------------------------|-------------------------|------|------|-------|-------|-------|------|-------|-------|-------|-------|--------|--------|--------|--------|--------|
| | 实际速比 actual ratio | 5 | 10 | 15 | 20 | 25.56 | 30 | 41.54 | 51.27 | 59.34 | 83.08 | 102.55 | 104.72 | 116.79 | 165.88 | 194.44 |
| n2* (1/min) | | 280 | 140 | 93 | 70 | 55 | 47 | 34 | 27 | 24 | 17 | 14 | 13 | 12 | 8 | 7 |
| M ₂ (Nm) | 50Hz | 48.2 | 97.5 | 145.7 | 193.9 | 242.1 | 272 | 351 | 439 | 527 | 703 | 724 | 878 | 1060 | 1230 | 1230 |
| | 60Hz | 40.2 | 81.3 | 121.4 | 161.8 | 201.8 | 226 | 293 | 366 | 439 | 585 | 603 | 732 | 878 | 1170 | 1230 |
| Fr ₁ (N) | | 1760 | 2450 | 2840 | 3230 | 3820 | 5100 | 5880 | 7060 | 7060 | 7060 | 7060 | 9800 | 9800 | 9800 | 9800 |
| Fr ₂ (N) | | 343 | | | | | | | | | | | | | | |

| 2.2kW | 输出轴(mm) output shaft | Ø40 | | | | | Ø50 | | | | | |
|------------------------|-------------------------|------|-------|-------|-------|-------|------|-------|-------|-------|-------|--------|
| | 实际速比 actual ratio | 5.14 | 10.29 | 14.69 | 20.57 | 25.71 | 30.8 | 38.82 | 50.73 | 59.27 | 77.45 | 100.76 |
| n2* (1/min) | 272 | 136 | 95 | 68 | 54 | 45 | 36 | 28 | 24 | 18 | 14 | |
| M ₂ (Nm) | 50Hz | 67 | 133 | 200 | 266 | 332 | 399 | 515 | 644 | 773 | 1029 | 1230 |
| | 60Hz | 56 | 111 | 167 | 221 | 277 | 332 | 429 | 537 | 644 | 858 | 1080 |
| Fr ₁ (N) | | 2160 | 3140 | 3530 | 4020 | 4700 | 6960 | 7250 | 8620 | 9800 | 9800 | 9800 |
| Fr ₂ (N) | | 392 | | | | | | | | | | |

(“*” : n₁=1400r/min 50Hz)

2.1.5 IEC输入型减速机输出扭矩 OUTPUT TORQUE OF REDUCER WITH IEC INPUT FLANGE

| 公称速比 Normal ratio | | 5 | 10 | 15 | 20 | 25 | 30 | 40 | 50 | 60 | 80 | 100 | 100 | 120 | 160 | 200 | |
|----------------------|-------------------------|------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 0.12kW | 输出轴(mm) output shaft | Ø18 | | | | | | | | | | Ø22 | | | | | |
| | M ₂ (Nm) | 50Hz | 3.9 | 7.8 | 11.7 | 15.4 | 19.3 | 23.5 | 30.9 | 37.3 | 45.0 | 59.4 | 75.5 | — | 91.3 | 120.9 | 150.4 |
| | | 60Hz | 3.2 | 6.5 | 9.8 | 12.9 | 16.1 | 20.4 | 25.7 | 31.1 | 37.5 | 49.5 | 62.9 | — | 76.1 | 100.7 | 125.4 |
| 0.18kW | 输出轴(mm) output shaft | Ø18 | | | | | Ø22 | | | | | Ø28 | | | | | |
| | M ₂ (Nm) | 50Hz | 5.9 | 11.4 | 17.2 | 23.6 | 29.3 | 35 | 45.3 | 56.7 | 68.1 | 90.7 | 93.5 | 112.8 | 135 | 180.3 | 225.6 |
| | | 60Hz | 4.9 | 9.5 | 14.9 | 19.7 | 24.4 | 29.2 | 37.8 | 47.3 | 56.7 | 75.6 | 77.9 | 94 | 112.5 | 150.3 | 188 |
| 0.37kW | 输出轴(mm) output shaft | Ø22 | | | | | Ø28 | | | | | Ø32 | | | | | |
| | M ₂ (Nm) | 50Hz | 11.9 | 23.1 | 35.7 | 47.6 | 60.5 | 72.3 | 93.2 | 116 | 138.8 | 185.3 | 191.3 | 231.9 | 278.5 | 370.7 | 427.2 |
| | | 60Hz | 9.9 | 19.2 | 29.7 | 39.6 | 50.4 | 60.3 | 77.6 | 96.6 | 115.6 | 154.4 | 159.4 | 193.3 | 232.1 | 308.9 | 356 |
| 0.75kW | 输出轴(mm) output shaft | Ø28 | | | | | Ø32 | | | | | Ø40 | | | | | |
| | M ₂ (Nm) | 50Hz | 24.6 | 48.2 | 72.9 | 97.5 | 122.1 | 145.7 | 187.5 | 235.7 | 282.9 | 376.1 | 387.9 | 439 | 527 | 703 | 764 |
| | | 60Hz | 20.5 | 40.2 | 60.7 | 81.3 | 201.8 | 121.4 | 156.3 | 196.4 | 235.7 | 313.4 | 323.2 | 366 | 439 | 585 | 732 |
| 1.5kW | 输出轴(mm) output shaft | Ø32 | | | | | Ø40 | | | | | Ø50 | | | | | |
| | M ₂ (Nm) | 50Hz | 48.2 | 97.5 | 145.7 | 193.9 | 242.1 | 272 | 351 | 439 | 527 | 703 | 724 | 878 | 1060 | 1230 | 1230 |
| | | 60Hz | 40.2 | 81.3 | 121.4 | 161.6 | 201.8 | 226 | 293 | 366 | 439 | 585 | 603 | 732 | 878 | 1170 | 1230 |
| 2.2kW | 输出轴(mm) output shaft | Ø40 | | | | | Ø50 | | | | | | | | | | |
| | M ₂ (Nm) | 50Hz | 67 | 133 | 200 | 266 | 332 | 399 | 515 | 644 | 773 | 1029 | 1230 | | | | |
| | | 60Hz | 56 | 111 | 167 | 221 | 277 | 332 | 429 | 537 | 644 | 858 | 1080 | | | | |

2.1.6 制动型减速机特点和应用

制动型减速机是带有制动电机的减速机。电机制动装置由弹簧、摩擦片、制动板、整流器、线圈等组成,实现通电运转,断电即时制动。电机与制动器一体化设计,结构精巧;摩擦片采用进口高效非石棉材质,可耐高频率使用,磨损率低且环保,使用次数可达100万次以上;整流器实现了一个开关就能控制电机启动和紧急停止,制动响应时间短;硬齿面斜齿轮减速机,延长使用寿命,适合用于制动频率高,紧急停止和启动的自动化场合。

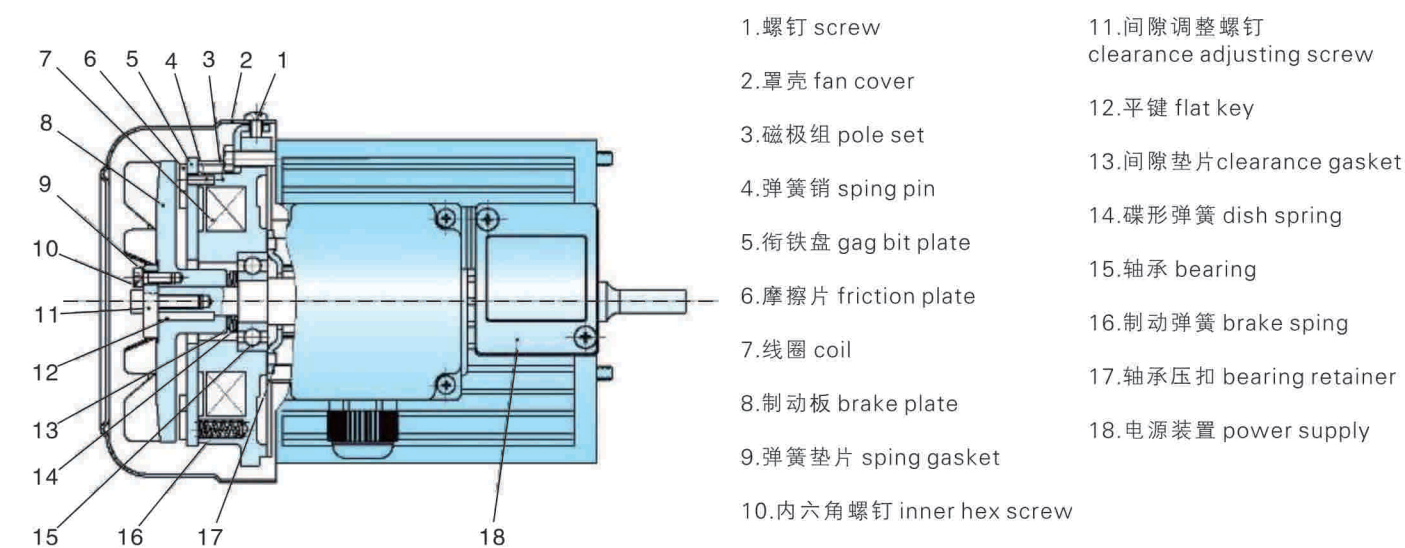
2.1.6 FEATURE AND APPLICATION OF BRAKE TYPE REDUCER

Brake reducer is with brake motor. It consists of spring, friction plate, brake plate, rectifier, coil etc. It realizes running when power-on and brake while power-off. The structure of motor is compact to integrate brake the friction plate is made of imported non-asbestos material, which is resistant to high frequency. low wear rate and environmental protection. It can be used for more than 1,000,000 times; The rectifier implements a switch that can control the motor start-up as well as emergency stop; to shorten braking response time, helical gear reducer with hardened teeth surface, can prolong service life, suitable for automatic occasions with high braking frequency, emergency stop and start-up.

特性表 CHARACTERISTIC TABLE

| 功率 power (kW) | 额定力矩 rated torque (Nm) | 励磁电压 excitation pressure (V) | 励磁功率 excitation pressure (W) | 间隙调整工作量 clearance adjust (J) | 总工作量 overall workload (J) | 吸引时间 magnetize time (ms) | 释放时间 release time (ms) | 间隙 clearance | |
|---------------------|------------------------------|---------------------------------------|---------------------------------------|---------------------------------------|------------------------------------|-----------------------------------|---------------------------------|-----------------------------|------------------------------|
| | | | | | | | | 规定值 stated value (mm) | 界限值 limited value (mm) |
| 0.2 | 2 | 90 | 20 | 9 × 10 ⁷ | 45 × 10 ⁷ | 30 | 80 | 0.3 | 0.7 |
| 0.4 | 4 | 90 | 26 | 15 × 10 ⁷ | 75 × 10 ⁷ | 30 | 100 | 0.3 | 0.7 |
| 0.75 | 8 | 90 | 39.4 | 30 × 10 ⁷ | 100 × 10 ⁷ | 60 | 120 | 0.3 | 1 |
| 1.5 | 15 | 90 | 48 | 30 × 10 ⁷ | 100 × 10 ⁷ | 90 | 140 | 0.4 | 1 |
| 2.2 | 30 | 90 | 52.2 | 50 × 10 ⁷ | 160 × 10 ⁷ | 90 | 150 | 0.4 | 1 |

制动器结构图 BRAKE STRUCTURAL VIEW



SG2系列减速机已添加壳牌 Alvania GL00合成润滑油,在正常条件下首次运转20,000小时可不必更换润滑油,但在特殊环境条件下运转时,如高温、长时间运转、重冲击载荷等,则换油频率为10,000-15,000小时。

SG3 series reducer is filled with, synthetic lubricant grease, SHELL Alvania GLOO before delivery. It can run for 20,000 hours without changing lubrication at the first time., But it work under the bad condition such as high temperature, long time running, heavy impact load, It should be changed oil after working for 10,000-15,000 working hours.

2.1.7 润滑油 LUBRICANT GREASE

| | | | | | | | |
|--------|------------------------|-------|---------------|--------------------|---------------------|----------|-------------------|
| | | | | | | | |
| | 标准 Standard -15 +40 | 000-0 | Alvania GL 00 | Mobilux EP 00 | Energrease LS-EP 00 | 3023N320 | 合成油 Synthetic oil |
| SG2... | -25 +50 | 00 | Tivela GL 00 | Glygoyle Grease 00 | | | 合成油 Synthetic oil |

油量 QUANTITY OF LUBRICANT

| | | | | | | |
|-------------------------------------|-----|-----|-----|-----|-----|------|
| 输出轴 output shaft dia(mm) | Ø18 | Ø22 | Ø28 | Ø32 | Ø40 | Ø50 |
| 油量 (g) quantity of lubricant (g) | 140 | 200 | 400 | 600 | 900 | 1600 |

2.1.8 使用环境:

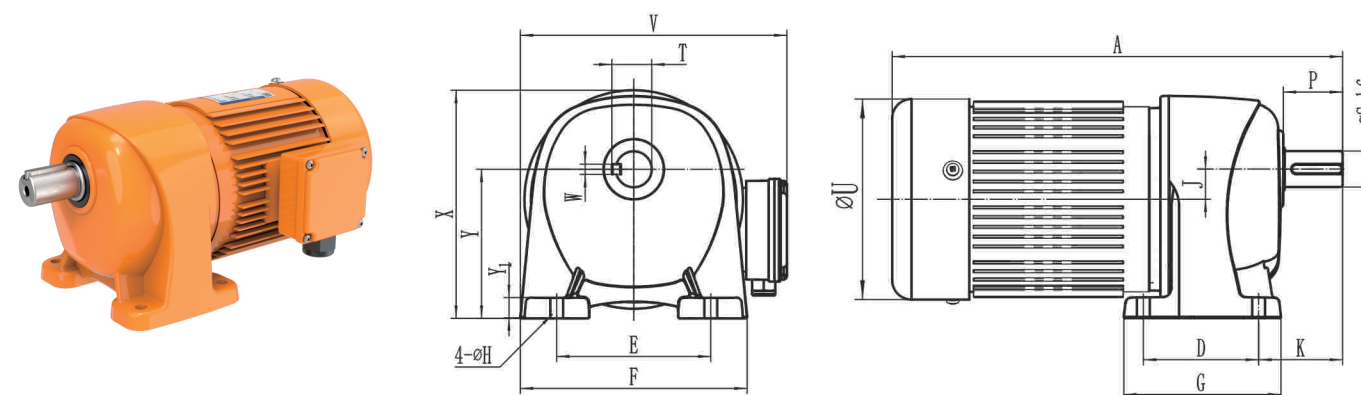
周围环境温度介于-10~40℃, 周围环境湿度在85%以下, 海拔1,000m以下, 无腐蚀性, 爆炸气体或液体或多灰尘环境中, 安装在建筑物内。

2.1.8 WORKING ENVIRONMENT:

The geared motor installed in the indoor to work under the condition of the temperature from -10°C to 40°C, humidity less 85%, sea level less 1000metres, without corrosion and explosive gas or liquid or dusty.

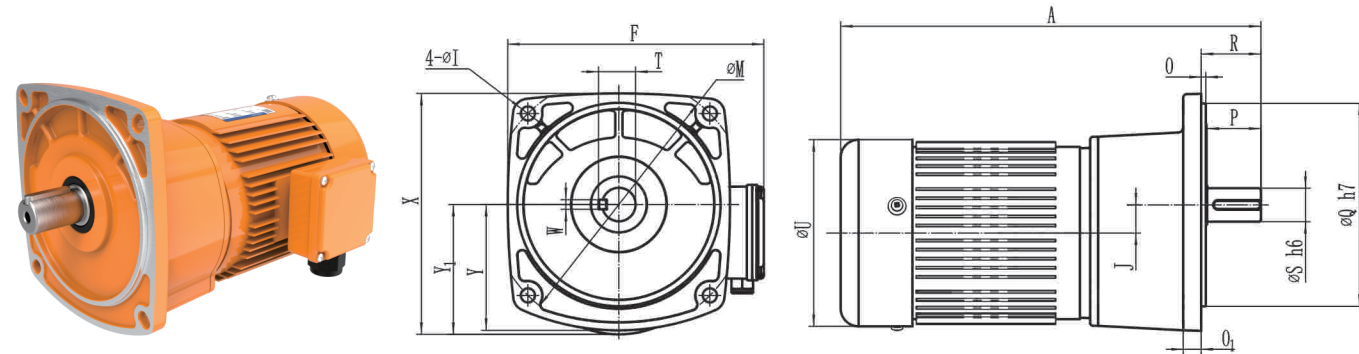
3 外形尺寸图表 DIMENSION

SG2LM 底脚式带三相电机减速机 SG2LM foot mounted reducer with 3 phase motor



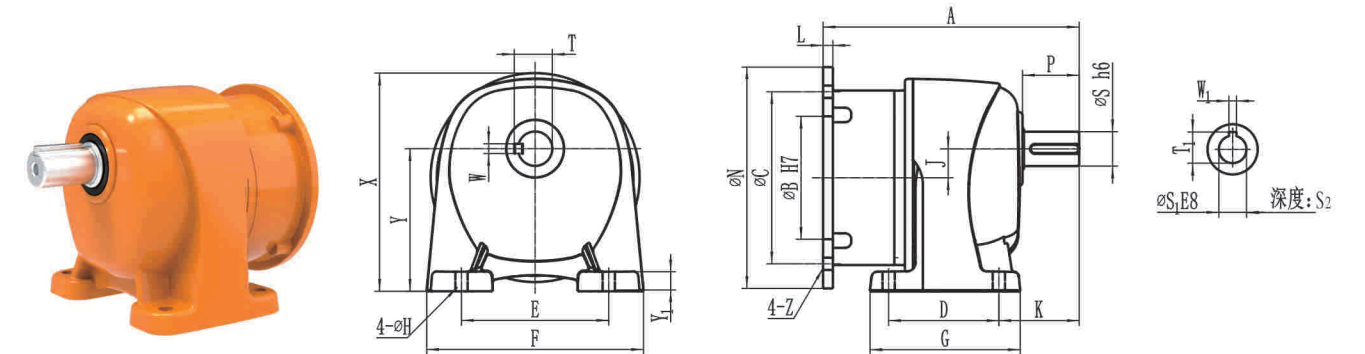
电机转速1400 r / min motor rotate speed 1400 r / min

| 功率 power [kW] | 输出轴 output shaft [mm] | 减速比 ratio | 主要外形及安装尺寸 outline dimension | | | | | | | | | | | | | | | | | |
|---------------------|--------------------------------|-------------------------------|-----------------------------|--------------|-----|-----|-----|------|-----|----|-----|----|----|------|-----|-------|----|-----|------|----|
| | | | A | | D | E | F | J | G | H | K | P | S | T | U | V | W | X | Y | Y1 |
| | | | 标准型 standard | 制动型 brake | | | | | | | | | | | | | | | | |
| 0.1 | Ø18 | 5, 10, 15, 20, 25, 30, 40, 50 | 236 | 270 | 40 | 110 | 135 | 16 | 65 | 9 | 45 | 30 | 18 | 20.2 | 129 | 183 | 5 | 132 | 88.5 | 10 |
| | Ø22 | 60, 80, 100, 120, 160, 200 | 262 | 296 | 65 | 130 | 163 | 18.2 | 90 | 11 | 56 | 40 | 22 | 25 | 129 | 193 | 7 | 152 | 97.5 | 12 |
| 0.2 | Ø18 | 5, 10, 15, 20, 25 | 267 | 270 | 40 | 110 | 135 | 16 | 65 | 9 | 45 | 30 | 18 | 20.2 | 129 | 183 | 5 | 132 | 88.5 | 10 |
| | Ø22 | 30, 40, 50, 60, 80, 100 | 293 | 296 | 65 | 130 | 163 | 18.2 | 90 | 11 | 56 | 40 | 22 | 25 | 129 | 193 | 7 | 152 | 97.5 | 12 |
| 0.4 | Ø28 | 100, 120, 160, 200 | 306 | 309.5 | 90 | 140 | 180 | 20.8 | 122 | 11 | 65 | 45 | 28 | 31.1 | 129 | 203 | 7 | 180 | 116 | 15 |
| | Ø22 | 5, 10, 15, 20, 25 | 314 | 324.5 | 65 | 130 | 163 | 18.2 | 90 | 11 | 56 | 40 | 22 | 25 | 139 | 199.5 | 7 | 152 | 97.5 | 12 |
| 0.75 | Ø28 | 30, 40, 50, 60, 80, 100 | 330 | 337.5 | 90 | 140 | 180 | 20.8 | 122 | 11 | 65 | 45 | 28 | 31.1 | 139 | 210 | 7 | 180 | 116 | 15 |
| | Ø32 | 100, 120, 160, 200 | 349 | 357 | 130 | 170 | 215 | 30.2 | 160 | 13 | 76 | 55 | 32 | 35.5 | 139 | 226 | 10 | 210 | 140 | 18 |
| 1.5 | Ø28 | 5, 10, 15, 20, 25 | 350.5 | 343.5 | 90 | 140 | 180 | 20.8 | 122 | 11 | 65 | 45 | 28 | 31.1 | 159 | 222 | 7 | 180 | 116 | 15 |
| | Ø32 | 30, 40, 50, 60, 80, 100 | 379.5 | 387 | 130 | 170 | 215 | 30.2 | 160 | 13 | 76 | 55 | 32 | 35.5 | 159 | 238.5 | 10 | 210 | 140 | 18 |
| 2.2 | Ø40 | 100, 120, 160, 200 | 401.5 | 408.5 | 150 | 210 | 260 | 34.2 | 185 | 15 | 80 | 65 | 40 | 43.5 | 185 | 249 | 10 | 248 | 162 | 20 |
| | Ø32 | 5, 10, 15, 20, 25 | 420.5 | 441 | 130 | 170 | 215 | 30.2 | 160 | 13 | 76 | 55 | 32 | 35.5 | 185 | 250.5 | 10 | 210 | 140 | 18 |
| 2.2 | Ø40 | 30, 40, 50, 60, 80, 100 | 457.5 | 478 | 150 | 210 | 260 | 34.2 | 185 | 15 | 80 | 65 | 40 | 43.5 | 185 | 260 | 10 | 248 | 162 | 20 |
| | Ø50 | 100, 120, 160, 200 | 485.5 | 506 | 170 | 265 | 330 | 51.7 | 220 | 18 | 104 | 80 | 50 | 54 | 185 | 288 | 14 | 315 | 200 | 25 |
| 2.2 | Ø40 | 5, 10, 15, 20, 25 | 466.5 | 487 | 150 | 210 | 260 | 34.2 | 185 | 15 | 80 | 65 | 40 | 43.5 | 185 | 260 | 10 | 248 | 162 | 20 |
| | Ø50 | 30, 40, 50, 60, 80, 100 | 510.5 | 531 | 170 | 265 | 330 | 51.7 | 200 | 18 | 104 | 80 | 50 | 54 | 185 | 288 | 14 | 315 | 200 | 25 |

SG2FM 法兰式带三相电机减速器 SG2FM Flange mounted reducer with 3 phase motor


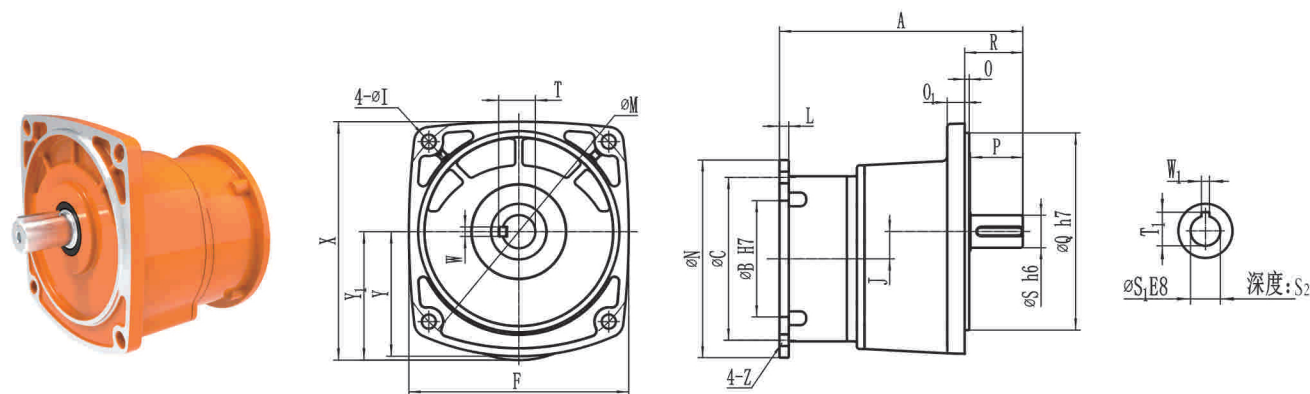
电机转速 1400 r/min motor rotate speed 1400 r/min

| 功率 power [kW] | 输出轴 output shaft [mm] | 减速比 ratio | 主要外形及安装尺寸 outline dimension | | | | | | | | | | | | | | | | | |
|---------------------|--------------------------------|-------------------------------|-----------------------------|--------------|-------|----|------|-----|---|----|----|-----|----|----|------|-----|----|-----|-------|-------|
| | | | A | | F | I | J | M | O | O1 | P | Q | R | S | T | U | W | X | Y | Y1 |
| | | | 标准型 standard | 制动型 brake | | | | | | | | | | | | | | | | |
| 0.1 | φ18 | 5, 10, 15, 20, 25, 30, 40, 50 | 236 | 270 | 192.5 | 11 | 16 | 140 | 4 | 12 | 30 | 50 | 38 | 18 | 20.2 | 129 | 5 | 132 | 80 | 81 |
| | φ22 | 60, 80, 100, 120, 160, 200 | 262 | 296 | 197.5 | 11 | 18.2 | 185 | 4 | 12 | 40 | 148 | 49 | 22 | 25 | 129 | 7 | 152 | 89.5 | 83.5 |
| 0.2 | φ18 | 5, 10, 15, 20, 25 | 267 | 270 | 192.5 | 11 | 16 | 140 | 4 | 12 | 30 | 50 | 38 | 18 | 20.2 | 129 | 5 | 132 | 80 | 81 |
| | φ22 | 30, 40, 50, 60, 80, 100 | 293 | 296 | 197.5 | 11 | 18.2 | 185 | 4 | 12 | 40 | 148 | 49 | 22 | 25 | 129 | 7 | 152 | 89.5 | 83.5 |
| | φ28 | 100, 120, 160, 200 | 306 | 309.5 | 208.5 | 11 | 20.8 | 220 | 4 | 15 | 45 | 170 | 57 | 28 | 31.1 | 139 | 7 | 180 | 105.5 | 88 |
| 0.4 | φ22 | 5, 10, 15, 20, 25 | 314 | 324.5 | 197.5 | 11 | 18.2 | 185 | 4 | 12 | 40 | 148 | 49 | 22 | 25 | 129 | 7 | 152 | 89.5 | 88.5 |
| | φ28 | 30, 40, 50, 60, 80, 100 | 330 | 337.5 | 208.5 | 11 | 20.8 | 220 | 4 | 15 | 45 | 170 | 57 | 28 | 31.1 | 139 | 7 | 180 | 105.5 | 93 |
| | φ32 | 100, 120, 160, 200 | 349 | 357 | 229.5 | 13 | 30.2 | 255 | 4 | 17 | 55 | 185 | 67 | 32 | 35.5 | 159 | 10 | 210 | 126 | 98 |
| 0.75 | φ28 | 5, 10, 15, 20, 25 | 350.5 | 343.5 | 227.5 | 11 | 20.8 | 220 | 4 | 15 | 45 | 170 | 57 | 28 | 31.1 | 139 | 7 | 180 | 105.5 | 103 |
| | φ32 | 30, 40, 50, 60, 80, 100 | 379.5 | 387 | 242 | 13 | 30.2 | 255 | 4 | 17 | 55 | 185 | 67 | 32 | 35.5 | 159 | 10 | 210 | 126 | 108 |
| | φ40 | 100, 120, 160, 200 | 401.5 | 408.5 | 270 | 18 | 34.2 | 310 | 5 | 20 | 65 | 230 | 79 | 40 | 43.5 | 185 | 10 | 248 | 149 | 126.5 |
| 1.5 | φ32 | 5, 10, 15, 20, 25 | 420.5 | 441 | 254 | 13 | 30.2 | 255 | 4 | 17 | 55 | 185 | 67 | 32 | 35.5 | 159 | 10 | 210 | 126 | 121 |
| | φ40 | 30, 40, 50, 60, 80, 100 | 457.5 | 478 | 270 | 18 | 34.2 | 310 | 5 | 20 | 65 | 230 | 79 | 40 | 43.5 | 185 | 10 | 248 | 149 | 126.5 |
| | φ50 | 100, 120, 160, 200 | 485.5 | 506 | 300 | 22 | 51.7 | 390 | 5 | 20 | 80 | 280 | 90 | 50 | 54 | 185 | 14 | 315 | 173.5 | 132.5 |
| 2.2 | φ40 | 5, 10, 15, 20, 25 | 466.5 | 487 | 270 | 18 | 34.2 | 310 | 5 | 20 | 65 | 230 | 79 | 40 | 43.5 | 185 | 10 | 248 | 149 | 126.5 |
| | φ50 | 30, 40, 50, 60, 80, 100 | 510.5 | 531 | 300 | 22 | 51.7 | 390 | 5 | 20 | 80 | 280 | 90 | 50 | 54 | 185 | 14 | 315 | 173.5 | 132.5 |

SG2LS 底脚式IEC输入型减速器 SG2LS Foot mounted reduce with IEC input flange


电机转速 1400 r/min motor rotate speed 1400 r/min

| 功率 power [kW] | 输出轴 output shaft [mm] | 减速比 ratio | 主要外形及安装尺寸 outline dimension | | | | | | | | | | | | | | | | | | | | | | | |
|---------------------|--------------------------------|-------------------------|-----------------------------|-----|-------------------------------|-----|-----|-----|-----|------|------|-----|-----|-----|----|-----|-----|------|------|------|------|------|------|-------|-------|-----|
| | | | A | B | C | D | E | F | G | H | J | K | L | N | P | S | S1 | S2 | T | T1 | W | W1 | X | Y | Y1 | Z |
| | | | 0.12 | φ18 | 5, 10, 15, 20, 25, 30, 40, 50 | 147 | 95 | 115 | 40 | 110 | 135 | 65 | 9 | 16 | 45 | 4.5 | 140 | 30 | 18 | 11 | 25.5 | 20.2 | 12.8 | 5 | 4 | 132 |
| φ22 | 60, 80, 100, 120, 160, 200 | 173 | 95 | 115 | 65 | 130 | 163 | 90 | 11 | 18.2 | 56 | 4.5 | 140 | 40 | 22 | 11 | 25 | 12.8 | 7 | 4 | | 152 | 97.5 | 83.5 | M8 | |
| 0.18 | φ18 | 5, 10, 15, 20, 25 | 147 | 95 | 115 | 40 | 110 | 135 | 65 | 9 | 16 | 45 | 4.5 | 140 | 30 | 18 | 11 | 25.5 | 20.2 | 12.8 | 5 | 4 | 132 | 88.5 | 81 | M8 |
| | φ22 | 30, 40, 50, 60, 80, 100 | 173 | 95 | 115 | 65 | 130 | 163 | 90 | 11 | 18.2 | 56 | 4.5 | 140 | 40 | 22 | 11 | | 25 | 12.8 | 7 | 4 | 152 | 97.5 | 83.5 | M8 |
| | φ28 | 100, 120, 160, 200 | 186.5 | 95 | 115 | 90 | 140 | 180 | 122 | 11 | 20.8 | 65 | 4.5 | 140 | 45 | 28 | 11 | 31.1 | 12.8 | 7 | 4 | 180 | 116 | 88 | M8 | |
| 0.37 | φ22 | 5, 10, 15, 20, 25 | 181.5 | 110 | 130 | 65 | 130 | 163 | 90 | 11 | 18.2 | 56 | 4.5 | 160 | 40 | 22 | 14 | 31.5 | 25 | 16.3 | 7 | 5 | 152 | 97.5 | 88.5 | M8 |
| | φ28 | 30, 40, 50, 60, 80, 100 | 198 | 110 | 130 | 90 | 140 | 180 | 122 | 11 | 20.8 | 65 | 4.5 | 160 | 45 | 28 | 14 | | 31.1 | 16.3 | 7 | 5 | 180 | 116 | 93 | M8 |
| | φ32 | 100, 120, 160, 200 | 216.5 | 110 | 130 | 130 | 170 | 215 | 160 | 13 | 30.2 | 76 | 4.5 | 160 | 55 | 32 | 14 | 35.5 | 16.3 | 10 | 5 | 210 | 140 | 98 | M8 | |
| 0.75 | φ28 | 5, 10, 15, 20, 25 | 206.5 | 130 | 165 | 90 | 140 | 180 | 122 | 11 | 20.8 | 65 | 4.5 | 200 | 45 | 28 | 19 | 42 | 31.1 | 21.8 | 7 | 6 | 180 | 116 | 103 | M10 |
| | φ32 | 30, 40, 50, 60, 80, 100 | 235 | 130 | 165 | 130 | 170 | 215 | 160 | 13 | 30.2 | 76 | 4.5 | 200 | 55 | 32 | 19 | | 35.5 | 21.8 | 10 | 6 | 210 | 140 | 108 | M10 |
| | φ40 | 100, 120, 160, 200 | 260.5 | 130 | 165 | 150 | 210 | 260 | 185 | 15 | 34.2 | 80 | 4.5 | 200 | 65 | 40 | 19 | 43.5 | 21.8 | 10 | 6 | 248 | 162 | 126.5 | M10 | |
| 1.5 | φ32 | 5, 10, 15, 20, 25 | 252 | 130 | 165 | 130 | 170 | 215 | 160 | 13 | 30.2 | 76 | 4.5 | 200 | 55 | 32 | 24 | 52.5 | 35.5 | 27.3 | 10 | 8 | 210 | 140 | 121 | M10 |
| | φ40 | 30, 40, 50, 60, 80, 100 | 293.5 | 130 | 165 | 150 | 210 | 260 | 185 | 15 | 34.2 | 80 | 4.5 | 200 | 65 | 40 | 24 | | 43.5 | 27.3 | 10 | 8 | 248 | 162 | 126.5 | M10 |
| | φ50 | 100, 120, 160, 200 | 321.5 | 130 | 165 | 170 | 265 | 330 | 220 | 18 | 51.7 | 104 | 4.5 | 200 | 80 | 50 | 24 | 54 | 27.3 | 14 | 8 | 315 | 200 | 132.5 | M10 | |
| 2.2 | φ40 | 5, 10, 15, 20, 25 | 290 | 180 | 215 | 150 | 210 | 260 | 185 | 15 | 34.2 | 80 | 5.5 | 250 | 65 | 40 | 28 | 62 | 43.5 | 31.3 | 10 | 8 | 248 | 162 | 126.5 | M12 |
| | φ50 | 30, 40, 50, 60, 80, 100 | 334 | 180 | 215 | 170 | 265 | 330 | 220 | 18 | 51.7 | 104 | 5.5 | 250 | 80 | 50 | 28 | | 54 | 31.3 | 14 | 8 | 315 | 200 | 132.5 | M12 |

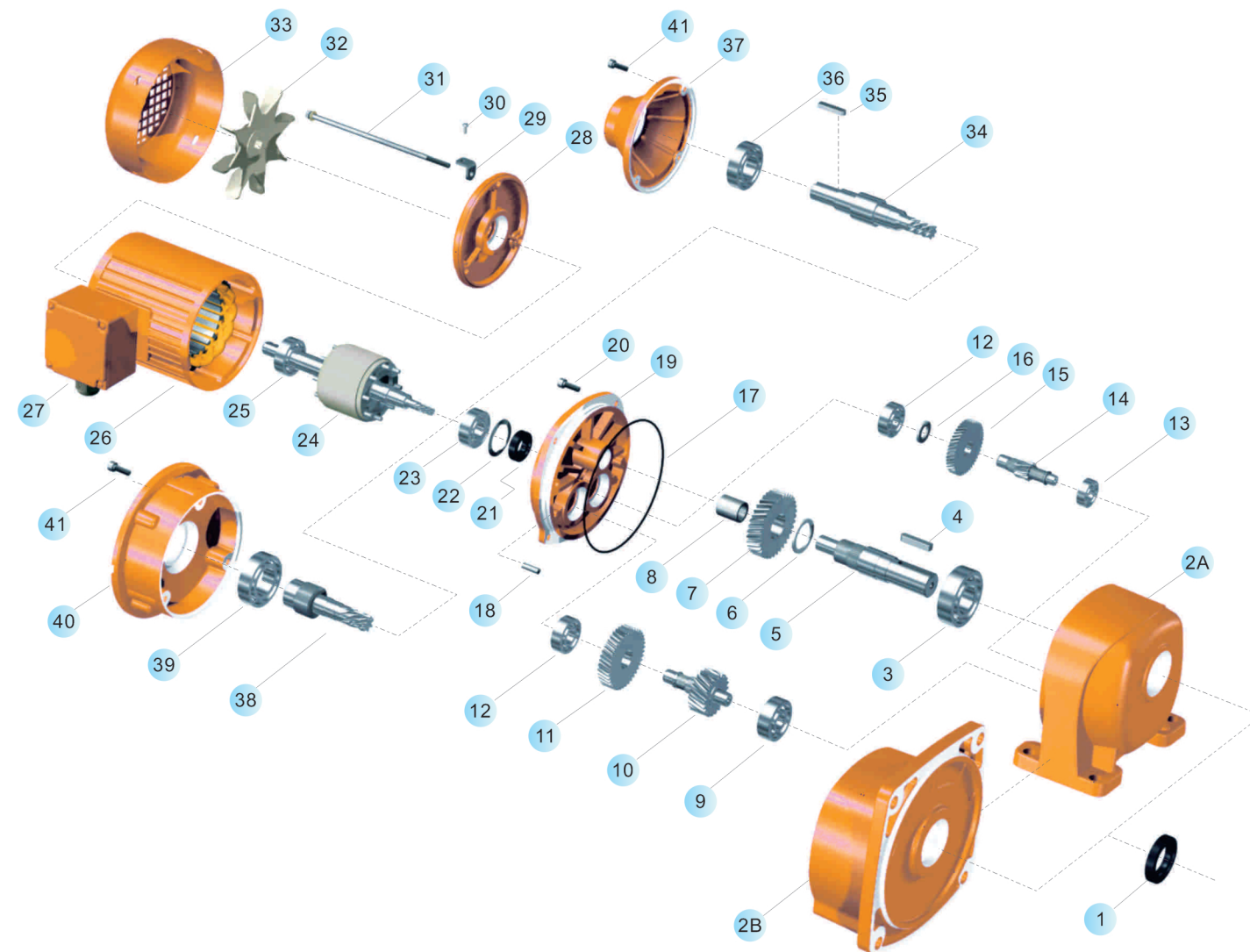
SG2FS 法兰式IEC输入型减速器 SG2FS Flange mounted reducer with IEC Input flange


电机转速1400 r/min motor rotate speed 1400 r/min

| 功率 power [kW] | 输出轴 output shaft [mm] | 减速比 ratio | 主要外形及安装尺寸 outline dimension | | | | | | | | | | | | | | | | | | | | | | | | |
|---------------------|--------------------------------|-------------------------------|-----------------------------|-----|-----|-------|----|------|-----|-----|-----|---|----|----|-----|----|----|----|------|------|------|----|-------|-------|-------|-------|-----|
| | | | A | B | C | F | I | J | L | M | N | O | P | Q | R | S | S1 | S2 | T | T1 | W | W1 | X | Y | Y1 | Z | |
| 0.12 | φ18 | 5, 10, 15, 20, 25, 30, 40, 50 | 147 | 95 | 115 | 192.5 | 11 | 16 | 4.5 | 140 | 140 | 4 | 12 | 30 | 50 | 38 | 18 | 11 | 25.5 | 20.2 | 12.8 | 5 | 4 | 157 | 80 | 81 | M8 |
| | φ22 | 60, 80, 100, 120, 160, 200 | 173 | 95 | 115 | 197.5 | 11 | 18.2 | 4.5 | 185 | 140 | 4 | 12 | 40 | 148 | 49 | 22 | 11 | 25 | 12.8 | 7 | 4 | 171.5 | 89.5 | 83.5 | M8 | |
| 0.18 | φ18 | 5, 10, 15, 20, 25 | 147 | 95 | 115 | 192.5 | 11 | 16 | 4.5 | 140 | 140 | 4 | 12 | 30 | 50 | 38 | 18 | 11 | 20.2 | 12.8 | 5 | 4 | 161 | 80 | 81 | M8 | |
| | φ22 | 30, 40, 50, 60, 80, 100 | 173 | 95 | 115 | 197.5 | 11 | 18.2 | 4.5 | 185 | 140 | 4 | 12 | 40 | 148 | 49 | 22 | 11 | 25 | 12.8 | 7 | 4 | 171.5 | 89.5 | 83.5 | M8 | |
| | φ28 | 100, 120, 160, 200 | 186.5 | 95 | 115 | 208.5 | 11 | 20.8 | 4.5 | 220 | 140 | 4 | 15 | 45 | 170 | 57 | 28 | 11 | 31.1 | 12.8 | 7 | 4 | 198.5 | 105.5 | 88 | M8 | |
| 0.37 | φ22 | 5, 10, 15, 20, 25 | 181.5 | 110 | 130 | 197.5 | 11 | 18.2 | 4.5 | 185 | 160 | 4 | 12 | 40 | 148 | 49 | 22 | 14 | 25 | 16.3 | 7 | 5 | 171.5 | 89.5 | 88.5 | M8 | |
| | φ28 | 30, 40, 50, 60, 80, 100 | 198 | 110 | 130 | 208.5 | 11 | 20.8 | 4.5 | 220 | 160 | 4 | 15 | 45 | 170 | 57 | 28 | 14 | 31.5 | 16.3 | 7 | 5 | 198.5 | 105.5 | 93 | M8 | |
| 0.75 | φ32 | 100, 120, 160, 200 | 216.5 | 110 | 130 | 229.5 | 13 | 30.2 | 4.5 | 255 | 160 | 4 | 17 | 55 | 185 | 67 | 32 | 14 | 35.5 | 16.3 | 10 | 5 | 234 | 126 | 98 | M8 | |
| | φ28 | 5, 10, 15, 20, 25 | 206.5 | 130 | 165 | 227.5 | 11 | 20.8 | 4.5 | 220 | 200 | 4 | 15 | 45 | 170 | 57 | 28 | 19 | 31.1 | 21.8 | 7 | 6 | 198.5 | 105.5 | 103 | M10 | |
| 1.5 | φ32 | 30, 40, 50, 60, 80, 100 | 235 | 130 | 165 | 242 | 13 | 30.2 | 4.5 | 255 | 200 | 4 | 17 | 55 | 185 | 67 | 32 | 19 | 42 | 35.5 | 21.8 | 10 | 6 | 234 | 126 | 108 | M10 |
| | φ40 | 100, 120, 160, 200 | 260.5 | 130 | 165 | 270 | 18 | 34.2 | 4.5 | 310 | 200 | 5 | 20 | 65 | 230 | 79 | 40 | 19 | 43.5 | 21.8 | 10 | 6 | 284 | 149 | 126.5 | M10 | |
| 2.2 | φ32 | 5, 10, 15, 20, 25 | 252 | 130 | 165 | 254 | 13 | 30.2 | 4.5 | 255 | 200 | 4 | 17 | 55 | 185 | 67 | 32 | 24 | 35.5 | 27.3 | 10 | 8 | 234 | 126 | 121 | M10 | |
| | φ40 | 30, 40, 50, 60, 80, 100 | 293.5 | 130 | 165 | 270 | 18 | 34.2 | 4.5 | 310 | 200 | 5 | 20 | 65 | 230 | 79 | 40 | 24 | 52.5 | 43.5 | 27.3 | 10 | 8 | 284 | 149 | 126.5 | M10 |
| | φ50 | 100, 120, 160, 200 | 321.5 | 130 | 165 | 300 | 22 | 51.7 | 4.5 | 390 | 200 | 5 | 20 | 80 | 280 | 90 | 50 | 24 | 54 | 27.3 | 14 | 8 | 325 | 173.5 | 132.5 | M10 | |
| 2.2 | φ40 | 5, 10, 15, 20, 25 | 290 | 180 | 215 | 270 | 18 | 34.2 | 5.5 | 310 | 250 | 5 | 20 | 65 | 230 | 79 | 40 | 28 | 62 | 43.5 | 31.3 | 10 | 8 | 284 | 149 | 126.5 | M12 |
| | φ50 | 30, 40, 50, 60, 80, 100 | 334 | 180 | 215 | 300 | 22 | 51.7 | 5.5 | 390 | 250 | 5 | 20 | 80 | 280 | 90 | 50 | 28 | 62 | 54 | 31.3 | 14 | 8 | 325 | 173.5 | 132.5 | M12 |

**4 零件爆炸视图及名称
EXPLODED VIEW**

2级/3级爆炸图 2/3 Stages



| 序号 ItemNo | 零件名称 Name | 序号 ItemNo | 零件名称 Name | 序号 ItemNo | 零件名称 Name |
|--------------|--|--------------|---|--------------|--|
| 1 | 输出轴油封 oil seal on output shaft | 14 | 二级小齿轴 2 nd stage pinion shaft | 28 | 电机后盖 back cover of motor |
| 2A | 底脚式箱体 foot type housing | 15 | 一级大齿轮 1 st stage gear | 29 | 支架 bracket |
| 2B | 法兰式箱体 flange type housing | 16 | 垫片 spacer | 30 | 风罩螺钉 screw of fan cover |
| 3 | 输出轴轴承 bearing of output shaft | 17 | O形圈 O-ring | 31 | 电机长螺栓 long bolt of motor |
| 4 | 输出轴平键 key of output shaft | 18 | 定位销 pin | 32 | 风叶 cooling fan |
| 5 | 输出轴 output shaft | 19 | 电机法兰 motor flange | 33 | 风罩 fan cover of motor |
| 6 | 垫片 spacer | 20 | 内六角螺钉 inner hexangular screw | 34 | 轴输入齿轮轴 gear shaft of shaft input |
| 7 | 三级大齿轮 3 rd stage gear | 21 | 电机轴油封 oil seal-motor shaft | 35 | 输入轴平键 key-input shaft |
| 8 | 含油轴承 oil bearing | 22 | 弹性垫片 spring gasket | 36 | 轴输入齿轮轴轴承 Bearing of gear at input end |
| 9 | 三级齿轴轴承 bearing of 3 rd pinion shaft | 23 | 三级齿轴轴承 bearing of 3 rd pinion shaft | 37 | 输入端盖 input cover |
| 10 | 三级小齿轴 3 rd stage pinion shaft | 24 | 转子 rotor | 38 | 孔输入齿轮轴 input hole gear shaft |
| 11 | 二级大齿轮 2 nd stage gear | 25 | 电机轴轴承 bearing of motor | 39 | 孔输入齿轮轴轴承 bearing of input hole gear shaft |
| 12 | 电机法兰轴承 bearing of motor flange | 26 | 电机定子 motor stator | 40 | 输入端法兰 input flange |
| 13 | 二级小齿轴轴承 bearing of 2 nd stage pinion shaft | 27 | 铝接线盒 wiring box | 41 | 内六角螺钉 Inner hexagon screw |

5 故障排除 FAILURE AND SOLUTION

| 不良原因 Failure | 原因分析 Reason | 解决方式 Solution |
|---|--|--|
| 噪音 noise | 齿轮敲击声 knocking | 齿轮表面受伤 gear surface damaged 请与厂家联系，更换受伤齿轮组 pls contact manufacturer to replace gear set |
| | 连续性杂音 continuous noise | 轴承损坏 bearing damaged 更换损坏轴承 replace the damaged bearing |
| | 周期性杂音 periodic noise | 异物附着齿面 particle on the gear surface 检查齿轮齿面 check gear surface |
| | 嘶嘶声 fizz | 油量不足 lack of lubricant 添加润滑油 fill with lubricant |
| | 断续性杂音 intermittent noise | 润滑油不洁 inferior oil 更换新的润滑油 replace the new lubricant |
| 震动 vibration | 固定底座振动 fixed base vibration | 安装平面歪斜 installation surface uneven 重新调整固定底座 re-adjust fixed base |
| | 输出轴振动 output shaft vibration | 轴承损坏 bearing damaged 更换损坏的轴承 replace the damaged bearing |
| | 内部齿轮零件振动 internal gear parts vibration | 齿轮损坏 gear damaged 更换受伤齿轮 replace the damaged gear |
| | 箱体振动 housing vibration | 齿轮组安装不良 defective gear assembly 重新调整齿轮组 re-adjust the gear set |
| 漏油 oil leakage | 油封漏油 oil seal leakage | 油封硬化 oil seal vulcanization 更换损坏油封 replace the damaged oil seal |
| | 箱体漏油 housing leakage | 箱体有砂孔 housing with sand hole 更换砂孔箱体 replace housing with the sand hole |
| | 结合面漏油 combined surface leakage | O形圈损坏 o-ring damaged 更换损坏O-型圈 replace the damaged o-ring |
| 过热 over-heating | 油封损坏 oil seal damaged | 油封太紧 over-tighten oil seal 更换太紧油封 replace over-tighten oil seal |
| | 箱体过热 housing over-heating | 过负载 over-loading 重新计算负载马力 re-calculate load |
| | 缺润滑油 lack of lubricant | 测量不足 lcw lubricant mismeasurement 加入润滑油 fill with lubricant |
| | 电机过热 motor over-heating | 1.环境温度过高。 too high ambient temperature. 1.采取降温措施。 take measure to reduce the temperature. 2.电动机通风不良。 bad air ness. 2.清除通风道，检查电机风叶是否损坏。 clear air duct and check fan damage. 3.电压过高或过低 too high or too low voltage. 3.调整电源电压 adjust electrical power |
| 电动机不动 motor can't work | 电源未接通 power is close 检查开关插头是否松动，熔丝是否断了，电动机引线是否断裂。 check switch chosen or not, the fuse interrupted or not, and motor lead is broken or not. | |
| 输出轴转速过低 low speed of output shaft | 1.外部控制线路接线有错误 miswired connection | 1.按正确接法改正 revise right connection |
| | 2.负载过重 over loading | 2.减轻负载 reduce the loading |
| | 3.减速比不正确 wrong ratio | 3.手动检查风叶与输出轴转速比 check ratio of cooling fan and output shaft by hand |
| | 4.电源电压过低 low voltage | 4.调整电源电压 adjust electrical volutage |
| | 5.负载过重 over-loading | 5.减轻负载 reduce loading |
| 电机旋转 输出轴不动 motor run output shaft don't work | 内部齿轮组损伤 internal damaged 请与厂家联系，更换齿轮组 please contact the manufacture to replace the gear set | |

