



GREENSKY POWER



## SHAFT MOUNTED REDUCER

轴装式减速机

杭州绿天新能源科技有限公司  
Greensky Power Company Limited



HÖFLER HELIX 700



三坐标测量仪  
Three dimensional measure instrument



齿轮测量中心  
Gear machining center



蜗杆磨床  
Worm grinding machine



加工中心  
Machining center



数控磨齿机  
Numerical control gear grinding machine



## SMR 轴装式减速机特性 SMR Reducer Specification

### 1、轴出空心轴

标准轴可选空心轴孔径适合于ISO标准轴径尺寸。

### 2、高精度齿轮

计算机设计斜齿轴、高强度合金钢材料、渗碳淬火、磨齿工艺（部分中间齿轴剃齿工艺），渐开线齿形修形，符合ISO1328-1997标准，每级齿轮传动效率高达98%，传动平稳、噪音低。

### 3、高强度箱体

高强度铸铁精度铸造，优良的减振缓冲冲击能力，轴承孔径精密加工，定位精准确定，保证齿轮的平稳啮合。

### 4、高强度合金钢输入齿轴

高强度合金钢，淬硬处理，轴承档、油封档、输入轴外圆精密磨削，可以承受最大的径向载荷及扭矩。较长输入键槽设计，可以承受较大的冲击，完全符合ISO标准。

### 5、附加箱体支撑角（不包括H、J）

支撑扭力臂螺栓，防止螺栓过紧而拉坏箱体。控制标准扭力臂的安装位置在推荐的范围内。

### 6、逆止器

可选附件，用于减速机不能反转的使用条件下（仅用于13:1及20:1减速机，5:1减速机不推荐使用）。

### 7、轴承及油封

所有轴承均符合ISO标准，油封均为骨架式双唇油封。

### 8、橡胶油封盖

使用橡胶油封盖来密封中间齿轴孔，ISO标准孔径尺寸。

### 9、扭力臂附件

用扭力臂来安装调整减速机的空间位置及皮带的松紧。



### 1、Output Hubs

Standard or alternative hubs with metric bores are available to suit international shaft diameters.

### 2、Precision High Quality Gearing

Computer Designed Helical Gear. Strong Alloy Materials for High Load Capacity, Case Carburized for long life, Ground Profile (some intermediate pinions are shaved), Crown tooth Profile, In Conformance with ISO 1328-1997, 98% Efficiency for per Stage, Smooth Quiet Operation with Teeth in Mesh.

### 3、Maximum Capacity Housing Design

Close Grain Cast Iron Construction, Excellent Vibration Dampening & shock Resistance features, Precision Bored and Dowelled to Ensure Accurate In-line Assembly.

### 4、Strong Alloy Steel Shafts

Strong Alloy Steel, Hardened, Ground on journals, Gear Seatings and Extensions, for Maximum Load and Maximum Torsional Loads, Generous Sizes Shaft Keys for Shock Loading and Conform to ISO Standards.

### 5、Additional Case Lugs(Except H and J Gear Case)

Eliminates the Need for Critical Tightening of Torque arm Bolts, Controls Position of Standard Torque Arm Mounting within Recommended limits.

### 6、BackStops

Alternative Parts, Anti-run Back Device, Are Available on all 13:1 and 20:1 Ratio units and do not recommend for 5:1 Units.

### 7、Bearing and Oil seals

Bearing are Adequately Proportioned and Conform to ISO dimension plan, Readily Available World-wide, Oil seals are Double Lipped Garter Spring Type, Ensuring Effective Oil Sealing.

### 8、Rubberised End Caps

Self Sealing Intermediate Cover Plates, to Standard ISO Housing Dimensions.

### 9、Torque Arm Assembly

For Easy Adjustment of the Belt.



## 减速机选型 Gearbox Selection

轴装式SMR系列是在国外先进的传动设备基础上改进的系列化减速机。轴装式齿轮减速机提供了一个非常方便的减速方法，可以直接固定在设备的驱动轴上，不需要把减速机固定在地基或其他基础上。这样可以少用一个或两个弹性联轴器以及内部的皮带松紧装置，用拉臂上的螺旋扣可以方便快捷的调整皮带的松紧。

轴装式SMR系列共有八种型号，从B至J，最大功率可达130kW，名义速比5:1、13:1以及20:1。可选择不同的输入皮带轮以达到各种各样的输出转速。

减速机用普通的润滑油进行润滑，也可以使用等效的合成油进行润滑。

Shaft Mount Reducers are metric in design throughout and have power ratings to AGMA standard. Shaft Mount Reducers provide a very convenient method of reducing speed, since it is mounted directly on the driven shaft instead of requiring foundations of its own. It eliminates the use of one, and sometimes two, flexible couplings and external belt take-up arrangements. A torque-arm anchors the reducer and provides quick, easy adjustment of the Wedge Belts by means of its turnbuckle.

Shaft Mount Reducers are manufactured in eight gear case sizes, nominal gear ratios are 5:1,13:1and 20:1. A very wide choice of final driven speeds can be determined by the use of an appropriate input Wedge Belt Drive.

The units will normally be oil lubricated, but they are equally suitable for long life synthetic lubricants.

## 使用系数 Service Factor

选出被驱动机械的减速机使用系数。

Select the service factor application to the drive.

使用系数表Service Factor

| 被驱动机器类型<br>Types of Driven Machine   | 每天工作小时数 Operation Hours Per Day |                     |                   |
|--|---------------------------------|---------------------|-------------------|
|  | 10小时以内<br>Under 10              | 10至16小时<br>Under 16 | 超过16小时<br>Over 16 |
| <b>均匀载荷 Uniform</b><br>搅拌机 and 混和机-液体或半液体 Agitators and Mixers-Liquid or Semi-Liquid<br>离心式鼓风机 Blowers-centrifugal<br>装瓶机 Bottling Machines<br>输送机 and 升降梯-均匀载荷 Conveyors and Elevators-uniformly loaded<br>煮煮器 Cookers<br>洗涤机(无正反转) Laundry Washing Machines (non-reversing)<br>动力轴 Line Shafts<br>离合泵和轮泵 Pumps-centrifugal and gear<br>拉丝机 Wire Drawing Machines   | 1.0                             | 1.12                | 1.25              |
| <b>中等冲击载荷 Moderate Shock</b><br>搅拌机 and 混和机-密度不均匀 Agitators and Mixers-variable density<br>输送机-非均匀载荷 Conveyors-not uniformly loaded<br>起重机械, 行走机构和提升机构 Cranes, travel motion and hoisting<br>拔管机 Drawbench<br>进给器-脉动载荷 Feeders-pulsating load<br>卷扬机 Hoists<br>水泥窑 Kilns<br>滚筒洗衣机 Laundry Tumblers<br>起升机 Lifts<br>三缸或多缸活塞泵 Piston Pumps-with 3 or more cylinders<br>制浆机和造纸机 Pulp and paper Making and Calenders<br>橡胶搅拌机和碾光机 Rubber Mixers and Calenders<br>旋转型过滤器 Rotary Screens<br>纺织机械 Textile Machinery | 1.25                            | 1.40                | 1.60              |
| <b>强冲击载荷 Heavy Shock</b><br>压砖机 Brick Presses<br>煤砖机 Briquetting Machines<br>往复式或抖式输送机 Conveyors-reciprocating and shaker<br>破碎机 Crushers<br>往复式给料机 Feeders-reciprocating<br>锤式破碎机 Hammer Mills<br>单缸或双缸活塞泵 Piston pumps-1 or 2 cylinders<br>橡胶割碎机 Rubber Masticators<br>振动机 Vibrating Machines  | 1.6                             | 1.6                 | 2.0               |



## 减速机选型 Gearbox Selection

### 设计功率及输出转速 Design power and output speed

确定减速机的输出转速，即被驱动机器的需求转速。用被驱动机器的需用功率乘以在第一步中选择的系数（若需用功率不知道，则可以乘以输入电机的功率）。

注意：减速机在启动或运转时可以瞬时承受两倍的额定扭矩或功率。

Determine the output speed of the gear units, multiply the absorbed power (or Motor power if absorbed power nit known) by the service factor chosen in step 1.

Note: Gear units are momentarily capable of transmitting twice (2X) the rated capacity on start or during operation.

### 选择减速机型号 Unit selection

根据减速机的输出转速及第二步中计算出的功率在第6页和第7页的额定功率表中选出需求的减速机。

选择单级减速或双级减速是根据被驱动机器的需求转速决定的，减速机的额定输出转速即功率表（第6页和第7页）和皮带驱动表（第12页到第15页）中的输出转速。表中没有的转速，欢迎咨询。

注意：当使用5:1减速机时，逆止器不推荐使用。

According to the output speed and design power value form step 2 refer to the power rating tables on page 6 to 7 and select the correct size unit.

The choice of single or double reduction gearbox will be determined by the output speed required. The normal operating speeds for each of the gearboxes may be observed in the power rating (page 6 to 7) and belt drive tables (page 12 to 15). For other speeds please consult us.

Note: when use 5:1 Gear Units, the Back stop do not recommended.

### 驱动皮带选择 Belt drive selection

#### 1440转交流电机驱动皮带选择 selection of associated belt drive for 1440 rpm electric motors

##### 1、输出转速

参考皮带选择表（第12页到第15页），在选出的减速机型号及速比下，找到等于或最接近的输出转速，推荐的速比在第一栏中。

##### 2、皮带轮直径

根据输出转速选择对应的电机皮带轮和减速机皮带轮的节圆直径，以及轮槽形式和合适的皮带根数。

注意：很多情况下，为了传递合适动力的目的，推荐用一根皮带；若客户倾向于用多根皮带时，欢迎咨询。

##### 3、中心距

皮带的长度和中心距可以在相应的手册中查出。

注意：12到15页已经给出了大部分最经济的转速需求。若需求比较特殊的转速，欢迎咨询。当减速机工作时，扭力臂应该在张紧状态。若有任何疑问，欢迎咨询。

#### 1. Output Speed

Refer to the Drive Selection Tables (page 12 to 15) and under the appropriate gear box size and ratio read down the column headed 'Output Speed' until an Output Speed equal or near to that required is found. The suggested gearbox ratio is given in the first column.

#### 2. Pulley Diameters

Read across from the chosen output speed to obtain both driving and driven pulley pitch diameters, groove section and the appropriate number of belts.

Note: in many instances one belt is recommended, being adequate for power transmission purposes; where customer preference is for multi-belt drives. Please consult us.

#### 3. Center Distance

Belt length and center distance can be found by referring to the appropriate pages of the "Wedge Belt Drives" catalogue.

Note: Wedge belt drives shown on pages 12 to 15 have given the most economical total drive package for the speed required. If it is necessary to design a special drive, please consult us. Torque arm should preferably be in tension when unit is in operation.



## 减速机选型 Gearbox Selection

### 非1440转交流电机驱动皮带选择 Selection of associated belt for driving speeds other than 1440 rpm

#### 1. 减速机的输入转速

用减速机的输出转速（即被驱动机器的需求转速）乘以减速机的精确速比（参考第9页）来确定减速机的输入转速。

#### 2. 选择‘V’带

根据手册查出相应的V型带。

#### 1、Gearbox input Shaft Speed

Multiply the gearbox output speed by the EXACT GEAR RATIO ( found in the table on page 9 ) to obtain the gearbox input shaft speed.

#### 2、Selection of ‘V’ Drive

The correct belt drive can now be selected referring to the 'wedgr Bely Drives' catalogue.

### 选型举例 Example

一均匀负载的升降机，输入转速50转每分，输入功率3.6kW，每天工作24小时，电机为4kW，1440转每分，电机和轴装机之间用皮带联接，中心距约700mm，试选择轴装机，皮带及皮带轮。

#### 减速机选择

##### 1、使用系数

从使用系数表中可得该升降机的服务系数是1.25；

##### 2、设计功率

升降机的输入功率为3.6kW，则设计功率为 $1.25 \times 3.6 = 4.5kW$ ；

##### 3、选择减速机

用4.5kW做为减速机选型的基础，查功率表（第7页）可以选出E13或E20减速机在输出50转每分钟时传递功率为5.81kW。

#### 选择皮带

##### 1. 输出转速

比较经济的皮带驱动应该选择20:1的速比，参考第13页中输出50转每分钟的配置。

##### 2. 皮带轮直径

参考第13页中输出50转每分钟一行中的主动皮带轮和被动皮带轮的直径及皮带的类型及根数，主动带轮直径100mm，被动带轮直径140mm，2根SPA的‘V’型皮带。

##### 3. 皮带选择

参考‘V型带’样本可以选择出SPA1800皮带的中心距可以达到711mm。

A shaft Mounted Speed Reducer is required for a uniformly loaded elevator which absorbs 3.6kW at 50 rpm. The prime mover is a 4kW 1440 rpm direct on line start electric motor. A belt drive is required between the motor and gearbox at approximately 700mm centers running for up to 24 hours/Day.

#### Gear Unit Selection

##### 1、Service factor

From table 1 the service factor is 1.25.

##### 2、Design Power

Using the elevator absorbed power of 3.6kW. Design power= $1.25 \times 3.6 = 4.5kW$

##### 3、Unit selection

Using 4.5kw as the basis for selection reference to the power rating tables (page 7) indicates that E13 or E20 gear unit will transmit 5.81 kw at 50 rpm.

#### Selection of associated belt drive

##### 1、Output speed

A more economic belt drive will be obtained if the 20:1 ratio gearbox is selected, any by reference to page 13 in the gearbox drive tables 50 rpm is obtainable.

##### 2、Pulley diameters

On the line giving the output speed of 50 rpm, read across and note the driving and driven pulley pitch diameters together with the numbers of belts required, which for this case is 100 mm and 140mm, using 2 SPA wedge belles.

##### 3、Belt selection

By reference to the 'wedge belt drives' can be seen that SPA 1800 belts give 711 mm centers.



## 额定功率表 Power Rating

额定功率表 (kW) 5:1 (单级减速)

Power rating (kW) table for single reduction 5:1 units

| 输出转速<br>Output (rpm)                 | SMR型号 (SMR size) |      |       |       |       |      |      |       |
|--------------------------------------|------------------|------|-------|-------|-------|------|------|-------|
|                                      | B5               | C5   | D5    | E5    | F5    | G5   | H5   | J5    |
| 100                                  | 2.68             | 4.20 | 6.62  | 10.29 | 15.12 | 25.2 | 36.2 | 62.2  |
| 110                                  | 2.87             | 4.62 | 7.08  | 11.03 | 16.07 | 27.6 | 38.9 | 67.2  |
| 120                                  | 3.13             | 5.04 | 7.46  | 11.76 | 17.01 | 29.9 | 41.4 | 72.5  |
| 130                                  | 3.36             | 5.31 | 7.77  | 12.34 | 17.85 | 31.5 | 43.4 | 76.7  |
| 140                                  | 3.56             | 5.54 | 8.11  | 12.71 | 18.59 | 32.6 | 45.2 | 79.2  |
| 150                                  | 3.62             | 5.78 | 8.30  | 13.13 | 19.22 | 33.6 | 47.3 | 81.9  |
| 160                                  | 3.73             | 5.88 | 8.51  | 13.55 | 19.95 | 34.7 | 48.3 | 85.1  |
| 170                                  | 3.83             | 5.90 | 8.72  | 13.76 | 20.37 | 35.1 | 49.9 | 88.2  |
| 180                                  | 3.94             | 6.09 | 8.93  | 14.18 | 21.00 | 35.7 | 51.5 | 90.3  |
| 190                                  | 4.04             | 6.30 | 9.14  | 14.49 | 21.53 | 36.8 | 52.5 | 93.5  |
| 200                                  | 4.20             | 6.49 | 9.45  | 14.91 | 22.05 | 37.8 | 53.6 | 96.6  |
| 210                                  | 4.31             | 6.53 | 9.66  | 15.23 | 22.47 | 38.5 | 54.6 | 98.7  |
| 220                                  | 4.41             | 6.72 | 9.87  | 15.75 | 23.10 | 39.3 | 56.2 | 101.9 |
| 230                                  | 4.53             | 6.87 | 10.06 | 16.07 | 23.63 | 40.0 | 57.3 | 104.0 |
| 240                                  | 4.66             | 7.04 | 10.29 | 16.49 | 24.26 | 41.1 | 58.8 | 107.1 |
| 250                                  | 4.78             | 7.14 | 10.71 | 16.80 | 25.04 | 42.1 | 60.4 | 109.2 |
| 260                                  | 4.89             | 7.35 | 10.92 | 17.01 | 25.41 | 43.1 | 61.3 | 111.3 |
| 270                                  | 5.04             | 7.46 | 11.13 | 18.85 | 26.25 | 44.1 | 63.0 | 113.4 |
| 280                                  | 5.20             | 7.56 | 11.55 | 18.38 | 26.78 | 45.2 | 64.1 | 115.5 |
| 290                                  | 5.36             | 7.77 | 11.76 | 18.90 | 27.41 | 46.2 | 65.1 | 116.6 |
| 300                                  | 5.46             | 7.98 | 12.08 | 19.43 | 27.83 | 47.4 | 66.2 | 118.7 |
| 310                                  | 5.62             | 8.17 | 12.34 | 19.95 | 28.67 | 48.6 | 67.7 | 122.9 |
| 320                                  | 5.78             | 8.30 | 12.60 | 20.27 | 29.61 | 49.4 | 69.4 | 123.9 |
| 330                                  | 5.88             | 8.51 | 13.02 | 20.90 | 30.35 | 50.9 | 70.9 | 125.0 |
| 340                                  | 6.09             | 8.72 | 13.44 | 21.11 | 31.08 | 52.3 | 71.6 | 125.5 |
| 350                                  | 6.30             | 8.82 | 13.76 | 21.84 | 31.71 | 53.3 | 73.5 | 126.0 |
| 360                                  | 6.41             | 9.03 | 14.18 | 22.26 | 32.60 | 54.6 | 74.6 | 128.1 |
| 370                                  | 6.62             | 9.24 | 14.44 | 22.79 | 33.60 | 55.7 | 75.6 | 129.2 |
| 380                                  | 6.72             | 9.45 | 14.70 | 23.10 | 34.49 | 56.7 | 77.7 | 130.2 |
| 390                                  | 6.93             | 9.56 | 15.23 | 23.52 | 35.07 | 58.8 | 79.8 | 131.3 |
| 400                                  | 7.14             | 9.66 | 15.65 | 23.57 | 35.91 | 59.9 | 81.9 | 134.2 |
| 输出100转/分时扭矩<br>Nm (torque at 100rpm) | 256              | 401  | 632   | 983   | 1444  | 2407 | 3457 | 5940  |

注意: 当使用5:1减速机时, 逆止器不推荐使用。

Note: Backstops do not recommended for 5:1 Units.



## 额定功率表 Power Rating

额定功率表 (kW) 13:1或20:1(双级减速)

Power rating (kW) table for double reduction 13:1 and 20:1 units

| 输出转速<br>Output (rpm)                | SMR型号 (SMR size) |         |         |         |         |         |         |         |
|-------------------------------------|------------------|---------|---------|---------|---------|---------|---------|---------|
|                                     | B13/B20          | C13/C20 | D13/D20 | E13/E20 | F13/F20 | G13/G20 | H13/H20 | J13/J20 |
| 10                                  | 0.29             | 0.49    | 0.82    | 1.25    | 1.97    | 3.11    | 4.9     | 7.8     |
| 12                                  | 0.36             | 0.58    | 0.96    | 1.48    | 2.45    | 3.71    | 5.9     | 9.2     |
| 14                                  | 0.42             | 0.67    | 1.11    | 1.73    | 2.71    | 4.30    | 6.8     | 10.7    |
| 16                                  | 0.47             | 0.77    | 1.27    | 1.97    | 3.09    | 4.89    | 7.7     | 12.1    |
| 18                                  | 0.53             | 0.86    | 1.41    | 2.20    | 3.44    | 5.48    | 8.7     | 13.6    |
| 20                                  | 0.59             | 0.96    | 1.58    | 2.43    | 3.82    | 6.08    | 9.5     | 15.1    |
| 22                                  | 0.63             | 1.04    | 1.73    | 2.67    | 4.18    | 6.63    | 10.4    | 16.4    |
| 24                                  | 0.69             | 1.13    | 1.86    | 2.89    | 4.55    | 7.22    | 11.3    | 17.9    |
| 26                                  | 0.75             | 1.22    | 2.02    | 3.13    | 4.91    | 7.79    | 12.1    | 19.3    |
| 28                                  | 0.81             | 1.32    | 2.18    | 3.36    | 5.27    | 8.35    | 13.1    | 20.6    |
| 30                                  | 0.86             | 1.41    | 2.32    | 3.58    | 5.63    | 8.92    | 13.9    | 22.5    |
| 32                                  | 0.92             | 1.50    | 2.47    | 3.81    | 4.98    | 9.49    | 14.8    | 23.6    |
| 34                                  | 0.98             | 1.60    | 2.63    | 4.04    | 6.34    | 10.04   | 15.7    | 25.1    |
| 38                                  | 1.10             | 1.79    | 2.91    | 4.48    | 7.05    | 11.12   | 17.4    | 27.6    |
| 40                                  | 1.16             | 1.87    | 3.07    | 4.71    | 7.41    | 11.87   | 18.2    | 29.0    |
| 42                                  | 1.20             | 1.96    | 3.19    | 4.92    | 7.75    | 12.39   | 19.3    | 30.1    |
| 46                                  | 1.30             | 2.13    | 3.48    | 5.37    | 8.28    | 13.65   | 21.1    | 32.6    |
| 50                                  | 1.42             | 2.30    | 3.78    | 5.81    | 9.07    | 14.60   | 22.8    | 35.0    |
| 52                                  | 1.47             | 2.37    | 4.00    | 6.03    | 9.14    | 15.23   | 23.4    | 35.6    |
| 54                                  | 1.52             | 2.47    | 4.14    | 6.23    | 9.42    | 15.86   | 24.4    | 36.3    |
| 58                                  | 1.64             | 2.61    | 4.43    | 6.66    | 10.02   | 16.80   | 25.8    | 38.0    |
| 62                                  | 1.76             | 2.77    | 4.71    | 7.23    | 10.61   | 17.96   | 27.5    | 40.2    |
| 66                                  | 1.86             | 2.94    | 5.01    | 7.68    | 11.24   | 19.01   | 29.7    | 42.5    |
| 70                                  | 1.96             | 3.07    | 5.13    | 8.11    | 11.76   | 20.16   | 30.6    | 44.7    |
| 74                                  | 2.06             | 3.18    | 5.42    | 8.54    | 12.39   | 21.11   | 32.0    | 47.0    |
| 78                                  | 2.15             | 3.32    | 5.70    | 8.97    | 12.92   | 22.26   | 33.6    | 49.2    |
| 80                                  | 2.23             | 3.39    | 5.81    | 9.19    | 13.23   | 22.47   | 34.3    | 50.2    |
| 85                                  | 2.34             | 3.58    | 6.14    | 9.71    | 13.97   | 23.31   | 36.2    | 52.8    |
| 90                                  | 2.48             | 3.79    | 6.49    | 10.24   | 14.60   | 24.57   | 37.9    | 55.3    |
| 95                                  | 2.61             | 4.00    | 6.81    | 10.50   | 15.44   | 23.83   | 39.0    | 58.0    |
| 100                                 | 2.73             | 4.19    | 7.15    | 11.03   | 16.17   | 27.09   | 40.7    | 60.5    |
| 105                                 | 2.85             | 4.41    | 7.48    | 11.55   | 17.01   |         |         |         |
| 110                                 | 2.98             | 4.62    | 7.81    |         |         |         |         |         |
| 115                                 | 3.11             |         |         |         |         |         |         |         |
| 输出100转/分时扭矩<br>Nm(Torque at 100rpm) | 277              | 468     | 783     | 1194    | 1881    | 2970    | 4680    | 7449    |

注意：表格中划线的上方配置适合20:1减速机，较大的输出转速，推荐使用13:1或5:1减速机。

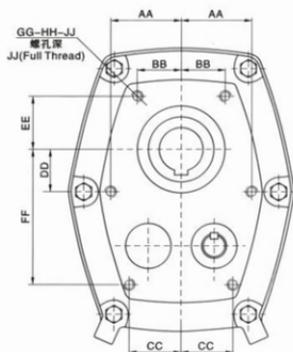
Note: The line shows the limit of recommended output speed for reducers with 20:1 ratio. For higher speeds use a 13:1 or 5:1 reducer.



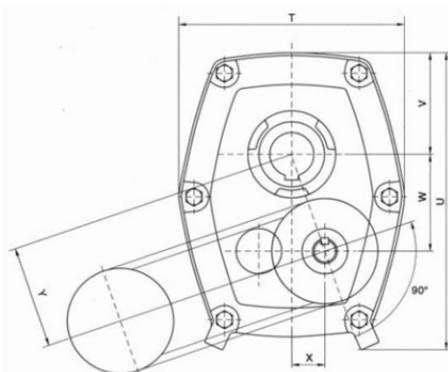
## 减速机尺寸 Dimensions

### 轴装式减速机外形尺寸

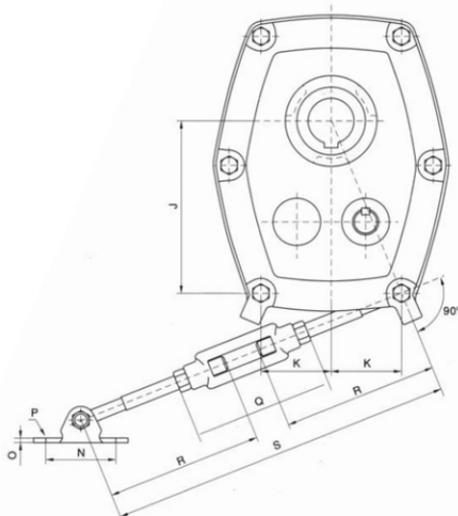
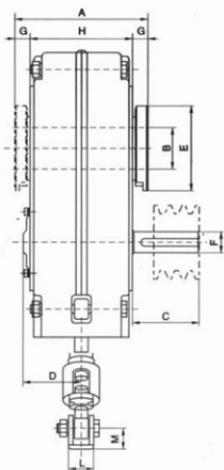
### Shaft Mounted Reducer Dimensions



法兰安装 (Flange mounted)



轴装式(SHAFT MOUNTED)





## 减速机尺寸 Dimensions

## 轴装式减速机外形尺寸 Shaft Mounted Reducer Dimension

| 尺寸<br>Dimension              |                  | SMR型号 (SMR size)          |              |            |            |             |             |                |              |        |
|------------------------------|------------------|---------------------------|--------------|------------|------------|-------------|-------------|----------------|--------------|--------|
|                              |                  | B                         | C            | D          | E          | F           | G           | H              | J            |        |
| A                            |                  | 134                       | 142          | 152        | 170        | 189         | 212         | 242            | 257          |        |
| B                            | 标准轴径 standard    | 30                        | 40           | 50         | 55         | 65          | 75          | 85             | 100          |        |
|                              | 可选轴径 Alternative | 40                        | 50           | 55         | 65         | 75          | 85          | 100            | 120          |        |
| C                            |                  | 63                        | 72           | 77         | 85         | 90          | 105         | 116            | 135          |        |
| D                            |                  | 59                        | 65           | 68         | 76         | 87          | 110         | 115            | 119          |        |
| E                            |                  | 80                        | 90           | 100        | 115        | 130         | 145         | 170            | 200          |        |
| F                            |                  | 19                        | 22           | 25         | 28         | 32          | 42          | 48             | 55           |        |
| 输入轴键槽(Input Shaft Keyway)    |                  | 6 × 3.5 × 50              | 6 × 3.5 × 59 | 8 × 6 × 63 | 8 × 4 × 70 | 10 × 5 × 70 | 12 × 5 × 90 | 14 × 5.5 × 100 | 16 × 6 × 100 |        |
| G                            |                  | 15                        | 17           | 17         | 20         | 20          | 20          | 26             | 30           |        |
| H                            |                  | 104                       | 108          | 118        | 130        | 149         | 172         | 190            | 197          |        |
| J                            |                  | 131                       | 156          | 188        | 222        | 242         | 277         | 330            | 424          |        |
| K                            |                  | 55                        | 59           | 76         | 90         | 98          | 110         | 88             | 102          |        |
| L                            |                  | 24                        | 24           | 28         | 28         | 34          | 34          | 70             | 70           |        |
| M                            |                  | 20                        | 20           | 24         | 24         | 30          | 30          | 50             | 50           |        |
| N                            |                  | 65                        | 65           | 75         | 75         | 100         | 100         | 120            | 120          |        |
| O                            |                  | 5                         | 5            | 5          | 5          | 6           | 6           | 18             | 18           |        |
| P                            |                  | 10                        | 10           | 12         | 12         | 16          | 16          | 16             | 16           |        |
| Q                            |                  | 200                       | 200          | 216        | 216        | 216         | 216         | 222            | 222          |        |
| R                            |                  | 300                       | 300          | 350        | 350        | 375         | 375         | 375            | 375          |        |
| S                            | 最小 Min           | 600                       | 600          | 700        | 700        | 750         | 750         | 750            | 750          |        |
|                              | 最大 Max           | 750                       | 750          | 850        | 850        | 900         | 900         | 900            | 900          |        |
| T                            |                  | 186                       | 218          | 258        | 278        | 317         | 365         | 434            | 542          |        |
| U                            |                  | 241                       | 282          | 338        | 386        | 419         | 475         | 550            | 700          |        |
| V                            |                  | 81                        | 96           | 117        | 129        | 143         | 162         | 195            | 254          |        |
| W                            |                  | 75                        | 90           | 110        | 125        | 141         | 156         | 189            | 255          |        |
| X                            |                  | 25                        | 31           | 37         | 43         | 50          | 56          | 62             | 75           |        |
| Y                            |                  | 79                        | 95           | 116        | 133        | 150         | 166         | 200            | 266          |        |
| AA                           |                  | 53                        | -            | -          | 90         | 100         | 115         | 150            | 200          |        |
| BB                           |                  | 34                        | 40           | 50         | 57         | 67          | 74          | 64             | 74           |        |
| CC                           |                  | -                         | 44           | 59         | 57         | 76          | 86          | 79             | -            |        |
| DD                           |                  | 33                        | 40           | 48         | 61         | 64          | 74          | 81             | 98           |        |
| EE                           |                  | 41                        | 52           | 61         | 62         | 76          | 87          | 122            | 164          |        |
| FF                           |                  | -                         | 132          | 155        | 188        | 197         | 224         | 281            | 330          |        |
| GG                           |                  | 4                         | 4            | 4          | 6          | 6           | 6           | 6              | 5            |        |
| HH                           |                  | M8                        | M10          | M12        | M12        | M16         | M16         | M20            | M20          |        |
| JJ                           |                  | 15                        | 15           | 17         | 18         | 19          | 24          | 29             | 32           |        |
| 重量<br>Weight(kg)             | 5:1              | 15                        | 21           | 30         | 41         | 53          | 82          | 133            | 194          |        |
|                              | 13:1-20:1        | 16                        | 22           | 32         | 46         | 58          | 92          | 144            | 208          |        |
| 名义<br>传动比<br>Normal<br>Ratio |                  | 实际传动比 (Exact gear ratios) |              |            |            |             |             |                |              |        |
|                              |                  | 5:1                       | 5.05         | 5.05       | 5.047      | 5.047       | 5.047       | 5.047          | 5.047        | 5.047  |
|                              |                  | 13:1                      | 13.984       | 13.596     | 13.589     | 13.589      | 13.589      | 13.589         | 13.589       | 13.589 |
|                              |                  | 20:1                      | 20.997       | 20.466     | 20.456     | 20.456      | 20.456      | 20.456         | 20.456       |        |



## 工程技术参数 Engineering / Technical Data

### 标准输出轴孔 Standard Hub Bores

输出轴孔公差为ISO F7, 和其配合的轴径公差推荐用h7。轴键槽尺寸必须符合ISO标准。

比标准输出轴孔径小的输出孔也可以根据客户需要进行加工。尺寸表中可以选输出轴孔径是每种规格最大的输出孔径。

Hubs are bored to F7 limits, A shaft tolerance grade h7 is recommended. Shaft keyways must be to appropriate standard dimensions. Smaller bores are available to customer requirements. The Alternative hub bore is the maximum bore available in each unit size.

### 标准输出轴孔键槽 Standard Hub Keyways

输出轴孔键槽是根据ISO标准加工的, 发货时输出轴孔用键不提供。

和输出轴相配的轴上键槽也必须根据ISO标准加工, 如下表。

Keyways for the standard output hubs are machined in accordance with ISO standards, Output hub keys are not supplied.

Shaft keyways should be machined to suit the standard key size shown below.

|                        |         |         |         |         |         |         |         |
|------------------------|---------|---------|---------|---------|---------|---------|---------|
| 轴径 Shaft diameter (mm) | 20      | 25      | 30      | 32      | 35      | 38      | 40      |
| 键 key size(mm)         | 6 × 6   | 8 × 7   | 8 × 7   | 10 × 8  | 10 × 8  | 10 × 10 | 12 × 8  |
| 轴径 Shaft Diameter (mm) | 42      | 45      | 50      | 55      | 60      | 65      | 70      |
| 键 key size (mm)        | 12 × 8  | 14 × 9  | 14 × 9  | 16 × 10 | 18 × 11 | 18 × 11 | 20 × 12 |
| 轴径 Shaft Diameter (mm) | 75      | 80      | 85      | 90      | 95      | 100     | 110     |
| 键 key size (mm)        | 20 × 12 | 22 × 14 | 22 × 14 | 25 × 14 | 25 × 14 | 28 × 16 | 28 × 16 |
| 轴径 Shaft Diameter (mm) | 120     | 125     | -       | -       | -       | -       | -       |
| 键 key size (mm)        | 32 × 18 | 32 × 18 |         |         |         |         |         |

### 标准输入轴和键 Standard Input Shaft and Keys

输入轴为精磨的ISO h6公差, 和其配合的皮带轮或其他轮孔推荐用ISO H7公差。轴键符合ISO标准, 参考尺寸表, 发货时提供输入轴用平键。

Input shafts are ground to h6 limits, the pulley or other bores' tolerance grade H7 is recommended. Shaft keyways are milled in accordance with ISO standards, see the dimensions in the table, the key is supplied.



## 减速机订购 ordering instructions

### SMR轴装机订购 how to order the SMR gear box

#### SMR轴装机代号 Gearbox Coding

##### 轴装机代号

前三个字母为: SMR

第四个字母为减速机型号: B C D E F G H J

第五、第六个字母为减速机速比代号: 05 13 20

第七个字母为减速机的安装固定方式: 0为轴装式 2为法兰安装

第八个字母为减速机的输出孔径: 1为标准输出轴孔径 2为可选输出轴孔径

##### Gearbox coding

First three letters: **SMR**

Fourth letter, unit size: B C D E F G H J

Fifth and sixth digits, ratio code: 05 13 20

Seventh digit. Indicates assembly: 0 shaft mounted speed reducer 2 flange mount

Eighth digit: indicates output hub bore required: 1 standard metric bore. 2 alternative metric bore

##### 例如

型号为E 名义速比为20:1, 轴装式, 标准公制输出孔径 (55mm): **SMR-E2001**

若需要安装逆止器, 则必须单独订购, 还必须指明输出轴的旋转方向。如: SMR-E2001带逆止器, 输出轴一侧, 输出空心轴为顺时针转动。

##### Example

Size e unit 20:1 nominal gear ratio, shaft mounted with standard metric hub bore (55mm): **SMR-E2001**

If backstop are required, these should be order separately. and must specify the output hub rotation. E.g.: SMR-E2001 complete with backstop. In the input shaft side, the output hub's rotation is in clockwise.

### 可选特性 optional Extras

#### 逆止器

当减速机需要反向止动时, 可以使用逆止器。打开输入轴另一侧的逆止器盖, 可以很方便的安装逆止器。

**注意:** 当使用5:1减速机时, 不推荐使用逆止器。

#### 法兰安装

SMR轴装机也可以直接用螺栓固定在支撑架上。这种法兰安装的形式允许设计者在应用设计时省掉一个轴承或支座, 但是, 当然也就把轴装机可以自由调节皮带的松紧的特性消除了, 参考第8页。

**注意:** 标准SMR齿轮箱没有钻这些安装孔, 若需要这种法兰安装方式, 则订购时需特别指明。

#### Backstops

A backstop may be incorporated on applications where it is necessary to prevent reversal of rotation. it is quickly installed within the reducer, by simply removing a cover plate.

**Note:** For ratio 5:1 gear box, backstop do not recommended.

#### Flange mounting

SMR case design is such that the reducer can be bolted direct to supporting framework. this flange mounting use of the reducer may permit designers to omit a bearing or pillow block, but it does. of course. eliminate the easy belt adjustment feature characteristic of shaft mount. see page 8.

**Note:** Standard SMR gear box do not drill mount screws. when customer need these kinds mount, please specify in the order.



## 皮带驱动 Belt Drives

1440rpm 电机 1440 rpm Motors

| 减速机<br>Unit | 名义输出转速<br>Monnet<br>Output<br>rpm | 皮带轮速比<br>Puley Ratio | 皮带轮名义直径<br>Puley Pitch Diameters<br>(mm) |         | 皮带轮数<br>及规格<br>Number of Belts |
|-------------|-----------------------------------|----------------------|--|---------|--------------------------------|
|             |                                   |                      | Motor                                    | Gearbox |                                |
|             |                                   |                      |  |         |                                |
| B20         | 10                                | 6.67                 | 75                                       | 500     | 1SPZ                           |
|             | 12                                | 5.63                 | 71                                       | 400     | 1SPZ                           |
|             | 14                                | 5.00                 | 63                                       | 315     | 1SPZ                           |
|             | 16                                | 4.20                 | 75                                       | 315     | 1SPZ                           |
|             | 18                                | 3.73                 | 75                                       | 280     | 1SPZ                           |
|             | 20                                | 3.50                 | 90                                       | 315     | 1SPZ                           |
|             | 22                                | 3.13                 | 80                                       | 250     | 1SPZ                           |
|             | 24                                | 2.82                 | 71                                       | 200     | 1SPZ                           |
|             | 26                                | 2.63                 | 95                                       | 250     | 1SPA                           |
|             | 27                                | 2.54                 | 63                                       | 160     | 1SPZ                           |
|             | 30                                | 2.25                 | 71                                       | 160     | 1SPZ                           |
|             | 32                                | 2.13                 | 75                                       | 160     | 1SPZ                           |
|             | 34                                | 2.00                 | 80                                       | 160     | 1SPZ                           |
|             | 36                                | 1.88                 | 80                                       | 150     | 1SPZ                           |
|             | 38                                | 1.80                 | 100                                      | 180     | 1SPZ                           |
|             | 39                                | 1.76                 | 71                                       | 125     | 1SPZ                           |
|             | 41                                | 1.67                 | 75                                       | 125     | 1SPZ                           |
|             | 44                                | 1.56                 | 90                                       | 140     | 1SPZ                           |
|             | 46                                | 1.49                 | 75                                       | 112     | 1SPZ                           |
|             | 49                                | 1.41                 | 71                                       | 100     | 1SPZ                           |
|             | 52                                | 1.33                 | 75                                       | 100     | 1SPZ                           |
|             | 55                                | 1.24                 | 90                                       | 112     | 1SPZ                           |
|             | 57                                | 1.20                 | 75                                       | 90      | 1SPZ                           |
|             | 60                                | 1.14                 | 140                                      | 160     | 1SPZ                           |
| 64          | 1.07                              | 140                  | 150                                      | 1SPZ    |                                |
| B13         | 66                                | 1.56                 | 90                                       | 140     | 1SPZ                           |
|             | 69                                | 1.50                 | 100                                      | 150     | 1SPZ                           |
|             | 70                                | 1.47                 | 85                                       | 125     | 1SPA                           |
|             | 72                                | 1.43                 | 140                                      | 200     | 1SPZ                           |
|             | 74                                | 1.39                 | 90                                       | 125     | 1SPZ                           |
|             | 76                                | 1.36                 | 118                                      | 160     | 1SPA                           |
|             | 77                                | 1.34                 | 150                                      | 180     | 1SPA                           |
|             | 78                                | 1.32                 | 95                                       | 125     | 1SPA                           |
|             | 80                                | 1.29                 | 140                                      | 180     | 1SPA                           |
|             | 83                                | 1.24                 | 90                                       | 112     | 1SPZ                           |
|             | 85                                | 1.21                 | 132                                      | 160     | 1SPA                           |
|             | 87                                | 1.18                 | 95                                       | 112     | 1SPA                           |
|             | 90                                | 1.14                 | 140                                      | 160     | 1SPZ                           |
|             | 92                                | 1.12                 | 125                                      | 140     | 1SPZ                           |
| 97          | 1.06                              | 132                  | 140                                      | 1SPZ    |                                |
| 103         | 1.00                              | 112                  | 112                                      | 1SPZ    |                                |
| 108         | 0.95                              | 118                  | 112                                      | 1SPA    |                                |
| 110         | 0.94                              | 106                  | 100                                      | 1SPA    |                                |
| 114         | 0.90                              | 125                  | 112                                      | 1SPA    |                                |
| B05         | 119                               | 2.40                 | 75                                       | 180     | 2SPZ                           |
|             | 127                               | 2.24                 | 125                                      | 280     | 2SPZ                           |
|             | 128                               | 2.23                 | 112                                      | 250     | 2SPZ                           |
|             | 135                               | 2.11                 | 95                                       | 200     | 1SPA                           |
|             | 143                               | 2.00                 | 80                                       | 160     | 2SPZ                           |
|             | 145                               | 1.97                 | 71                                       | 140     | 3SPZ                           |
|             | 151                               | 1.89                 | 95                                       | 180     | 1SPA                           |
|             | 160                               | 1.78                 | 90                                       | 160     | 2SPZ                           |
|             | 163                               | 1.75                 | 80                                       | 140     | 2SPZ                           |
|             | 171                               | 1.67                 | 90                                       | 150     | 2SPA                           |
|             | 180                               | 1.58                 | 95                                       | 150     | 2SPA                           |
|             | 183                               | 1.56                 | 90                                       | 140     | 2SPZ                           |
|             | 186                               | 1.53                 | 118                                      | 180     | 1SPA                           |
|             | 194                               | 1.47                 | 95                                       | 140     | 2SPA                           |
|             | 199                               | 1.43                 | 140                                      | 200     | 1SPZ                           |
|             | 210                               | 1.36                 | 118                                      | 160     | 1SPA                           |
|             | 211                               | 1.29                 | 140                                      | 180     | 1SPA                           |
|             | 228                               | 1.25                 | 112                                      | 140     | 2SPZ                           |
|             | 238                               | 1.20                 | 125                                      | 150     | 1SPA                           |
|             | 250                               | 1.14                 | 132                                      | 150     | 1SPA                           |
|             | 257                               | 1.11                 | 180                                      | 200     | 1SPA                           |
|             | 269                               | 1.06                 | 132                                      | 140     | 1SPA                           |
|             | 285                               | 1.00                 | 160                                      | 160     | 1SPA                           |
|             | 300                               | 0.95                 | 100                                      | 95      | 2SPA                           |
|             | 307                               | 0.93                 | 150                                      | 140     | 1SPA                           |
|             | 320                               | 0.89                 | 140                                      | 125     | 2SPZ                           |
|             | 324                               | 0.88                 | 160                                      | 140     | 1SPA                           |
|             | 344                               | 0.83                 | 180                                      | 150     | 1SPA                           |
| 356         | 0.80                              | 140                  | 112                                      | 2SPZ    |                                |
| 366         | 0.78                              | 180                  | 140                                      | 1SPA    |                                |
| 380         | 0.75                              | 200                  | 150                                      | 1SPA    |                                |
| 391         | 0.73                              | 180                  | 132                                      | 1SPA    |                                |
| 407         | 0.70                              | 200                  | 140                                      | 1SPA    |                                |

| 减速机<br>Unit | 名义输出转速<br>Monnet<br>Output<br>rpm | 皮带轮速比<br>Puley Ratio | 皮带轮名义直径<br>Puley Pitch Diameters<br>(mm) |         | 皮带轮数<br>及规格<br>Number of Belts |
|-------------|-----------------------------------|----------------------|--|---------|--------------------------------|
|             |                                   |                      | Motor                                    | Gearbox |                                |
|             |                                   |                      |  |         |                                |
| C20         | 10                                | 7.04                 | 71                                       | 500     | 1SPZ                           |
|             | 12                                | 5.63                 | 71                                       | 400     | 1SPZ                           |
|             | 13                                | 5.33                 | 75                                       | 400     | 1SPZ                           |
|             | 15                                | 4.73                 | 75                                       | 355     | 1SPZ                           |
|             | 16                                | 4.44                 | 71                                       | 315     | 1SPZ                           |
|             | 18                                | 3.94                 | 80                                       | 315     | 1SPZ                           |
|             | 20                                | 3.50                 | 90                                       | 315     | 1SPZ                           |
|             | 22                                | 3.13                 | 80                                       | 250     | 1SPZ                           |
|             | 23                                | 3.11                 | 90                                       | 280     | 1SPZ                           |
|             | 25                                | 2.78                 | 90                                       | 250     | 1SPZ                           |
|             | 29                                | 2.40                 | 75                                       | 180     | 1SPZ                           |
|             | 33                                | 2.13                 | 75                                       | 160     | 1SPZ                           |
|             | 35                                | 2.00                 | 80                                       | 160     | 1SPZ                           |
|             | 37                                | 1.66                 | 85                                       | 160     | 1SPA                           |
|             | 40                                | 1.75                 | 80                                       | 140     | 2SPZ                           |
|             | 43                                | 1.65                 | 85                                       | 140     | 1SPZ                           |
|             | 45                                | 1.56                 | 90                                       | 140     | 1SPZ                           |
|             | 47                                | 1.5                  | 100                                      | 150     | 1SPA                           |
| 51          | 1.39                              | 90                   | 125                                      | 1SPA    |                                |
| 53          | 1.33                              | 75                   | 100                                      | 1SPZ    |                                |
| 55          | 1.27                              | 71                   | 90                                       | 2SPZ    |                                |
| 59          | 1.19                              | 80                   | 95                                       | 1SPA    |                                |
| 63          | 1.12                              | 85                   | 95                                       | 1SPA    |                                |
| 66          | 1.07                              | 140                  | 150                                      | 2SPZ    |                                |
| C13         | 68                                | 1.56                 | 80                                       | 125     | 1SPA                           |
|             | 70                                | 1.52                 | 132                                      | 200     | 1SPZ                           |
|             | 72                                | 1.47                 | 95                                       | 140     | 1SPA                           |
|             | 74                                | 1.43                 | 140                                      | 200     | 1SPZ                           |
|             | 76                                | 1.38                 | 160                                      | 180     | 1SPA                           |
|             | 80                                | 1.32                 | 106                                      | 140     | 1SPA                           |
|             | 82                                | 1.29                 | 140                                      | 180     | 1SPZ                           |
|             | 85                                | 1.24                 | 90                                       | 112     | 2SPZ                           |
|             | 88                                | 1.21                 | 132                                      | 160     | 1SPA                           |
|             | 90                                | 1.18                 | 95                                       | 112     | 1SPA                           |
|             | 93                                | 1.14                 | 140                                      | 160     | 1SPZ                           |
| 95          | 1.12                              | 118                  | 132                                      | 1SPA    |                                |
| 100         | 1.06                              | 132                  | 140                                      | 1SPA    |                                |
| 106         | 1.00                              | 132                  | 132                                      | 1SPA    |                                |
| 111         | 0.95                              | 100                  | 95                                       | 1SPA    |                                |
| C05         | 113                               | 2.52                 | 125                                      | 315     | 1SPA                           |
|             | 119                               | 2.39                 | 132                                      | 315     | 1SPA                           |
|             | 127                               | 2.25                 | 140                                      | 315     | 1SPA                           |
|             | 128                               | 2.22                 | 180                                      | 400     | 1SPZ                           |
|             | 136                               | 2.10                 | 150                                      | 315     | 1SPA                           |
|             | 143                               | 2.00                 | 125                                      | 250     | 2SPZ                           |
|             | 145                               | 1.97                 | 160                                      | 315     | 1SPA                           |
|             | 151                               | 1.89                 | 95                                       | 180     | 2SPA                           |
|             | 159                               | 1.79                 | 140                                      | 250     | 1SPA                           |
|             | 163                               | 1.75                 | 180                                      | 315     | 1SPZ                           |
|             | 170                               | 1.68                 | 95                                       | 160     | 2SPA                           |
|             | 177                               | 1.61                 | 112                                      | 180     | 2SPZ                           |
|             | 180                               | 1.58                 | 200                                      | 315     | 1SPA                           |
|             | 183                               | 1.56                 | 90                                       | 140     | 3SPZ                           |
|             | 189                               | 1.51                 | 106                                      | 160     | 2SPA                           |
|             | 199                               | 1.43                 | 112                                      | 160     | 2SPA                           |
|             | 210                               | 1.36                 | 132                                      | 180     | 2SPA                           |
|             | 221                               | 1.29                 | 140                                      | 180     | 2SPZ                           |
| 228         | 1.25                              | 160                  | 200                                      | 1SPA    |                                |
| 242         | 1.18                              | 95                   | 112                                      | 2SPA    |                                |
| 250         | 1.14                              | 140                  | 160                                      | 2SPZ    |                                |
| 257         | 1.11                              | 180                  | 200                                      | 1SPA    |                                |
| 269         | 1.06                              | 125                  | 132                                      | 2SPA    |                                |
| 285         | 1.00                              | 140                  | 140                                      | 2SPZ    |                                |
| 300         | 0.95                              | 132                  | 125                                      | 1SPA    |                                |
| 317         | 0.90                              | 200                  | 180                                      | 1SPA    |                                |
| 320         | 0.89                              | 132                  | 118                                      | 2SPA    |                                |
| 339         | 0.84                              | 140                  | 118                                      | 2SPA    |                                |
| 344         | 0.83                              | 160                  | 132                                      | 2SPA    |                                |
| 356         | 0.80                              | 140                  | 112                                      | 2SPA    |                                |
| 361         | 0.79                              | 150                  | 118                                      | 2SPA    |                                |
| 366         | 0.78                              | 180                  | 140                                      | 2SPZ    |                                |
| 375         | 0.76                              | 132                  | 100                                      | 3SPZ    |                                |
| 380         | 0.75                              | 200                  | 150                                      | 2SPA    |                                |
| 385         | 0.74                              | 160                  | 118                                      | 2SPA    |                                |
| 396         | 0.72                              | 250                  | 180                                      | 1SPA    |                                |
| 402         | 0.71                              | 140                  | 100                                      | 3SPZ    |                                |



## 皮带驱动 Belt Drives

1440rpm 电机 1440 rpm Motors

| 减速机<br>Unit | 名义输出转速<br>Monet<br>Output<br>rpm | 皮带轮速比<br>Puley Ratio | 皮带轮名义直径<br>Puley Pitch Diameters<br>(mm) |         | 皮带根数<br>及皮带<br>Number<br>of Belts |
|-------------|----------------------------------|----------------------|--|---------|-----------------------------------|
|             |                                  |                      | Motor                                    | Gearbox |                                   |
| D20         | 10                               | 7.04                 | 71                                       | 500     | 1SPZ                              |
|             | 13                               | 5.63                 | 71                                       | 400     | 1SPZ                              |
|             | 14                               | 5.00                 | 63                                       | 315     | 1SPZ                              |
|             | 16                               | 4.44                 | 71                                       | 315     | 1SPZ                              |
|             | 18                               | 3.97                 | 63                                       | 250     | 2SPZ                              |
|             | 20                               | 3.52                 | 71                                       | 250     | 2SPZ                              |
|             | 22                               | 3.13                 | 80                                       | 250     | 1SPA                              |
|             | 24                               | 2.94                 | 85                                       | 250     | 1SPA                              |
|             | 27                               | 2.63                 | 95                                       | 250     | 1SPA                              |
|             | 28                               | 2.50                 | 100                                      | 250     | 1SPA                              |
|             | 30                               | 2.35                 | 85                                       | 200     | 1SPA                              |
|             | 32                               | 2.22                 | 90                                       | 200     | 2SPZ                              |
|             | 33                               | 2.11                 | 95                                       | 200     | 1SPA                              |
|             | 37                               | 1.89                 | 95                                       | 180     | 1SPA                              |
|             | 39                               | 1.80                 | 100                                      | 180     | 1SPA                              |
|             | 40                               | 1.75                 | 80                                       | 140     | 2SPZ                              |
|             | 41                               | 1.70                 | 106                                      | 180     | 1SPA                              |
|             | 44                               | 1.61                 | 112                                      | 180     | 1SPA                              |
|             | 47                               | 1.50                 | 100                                      | 150     | 2SPA                              |
|             | 49                               | 1.44                 | 125                                      | 180     | 1SPZ                              |
| 50          | 1.42                             | 106                  | 150                                      | 2SPA    |                                   |
| 52          | 1.36                             | 118                  | 160                                      | 1SPA    |                                   |
| 53          | 1.32                             | 106                  | 140                                      | 2SPA    |                                   |
| 56          | 1.25                             | 112                  | 140                                      | 2SPA    |                                   |
| 59          | 1.20                             | 125                  | 150                                      | 1SPA    |                                   |
| 60          | 1.18                             | 85                   | 100                                      | 2SPA    |                                   |
| 63          | 1.12                             | 118                  | 132                                      | 2SPA    |                                   |
| 63          | 1.11                             | 90                   | 100                                      | 3SPZ    |                                   |
| 66          | 1.07                             | 140                  | 150                                      | 1SPA    |                                   |
| D13         | 67                               | 1.58                 | 200                                      | 315     | 1SPA                              |
|             | 70                               | 1.52                 | 132                                      | 200     | 1SPA                              |
|             | 72                               | 1.47                 | 95                                       | 140     | 2SPA                              |
|             | 74                               | 1.43                 | 140                                      | 200     | 2SPA                              |
|             | 77                               | 1.36                 | 132                                      | 180     | 2SPA                              |
|             | 80                               | 1.32                 | 106                                      | 140     | 2SPA                              |
|             | 82                               | 1.29                 | 140                                      | 180     | 1SPA                              |
|             | 85                               | 1.25                 | 160                                      | 200     | 1SPA                              |
|             | 88                               | 1.21                 | 132                                      | 160     | 2SPA                              |
|             | 90                               | 1.18                 | 95                                       | 112     | 2SPA                              |
|             | 93                               | 1.14                 | 140                                      | 160     | 2SPZ                              |
|             | 95                               | 1.11                 | 180                                      | 200     | 1SPA                              |
|             | 99                               | 1.07                 | 150                                      | 160     | 2SPA                              |
| 101         | 1.05                             | 95                   | 100                                      | 2SPA    |                                   |
| 106         | 1.00                             | 125                  | 125                                      | 2SPZ    |                                   |
| D05         | 114                              | 2.5                  | 160                                      | 400     | 1SPA                              |
|             | 119                              | 2.39                 | 132                                      | 315     | 1SPA                              |
|             | 127                              | 2.25                 | 140                                      | 315     | 2SPZ                              |
|             | 128                              | 2.23                 | 112                                      | 250     | 2SPA                              |
|             | 135                              | 2.12                 | 118                                      | 250     | 2SPA                              |
|             | 143                              | 2.00                 | 125                                      | 250     | 2SPA                              |
|             | 151                              | 1.89                 | 132                                      | 250     | 2SPA                              |
|             | 159                              | 1.80                 | 100                                      | 180     | 3SPA                              |
|             | 159                              | 1.79                 | 140                                      | 250     | 2SPZ                              |
|             | 163                              | 1.75                 | 180                                      | 315     | 1SPA                              |
|             | 170                              | 1.68                 | 95                                       | 160     | 3SPA                              |
|             | 177                              | 1.61                 | 112                                      | 180     | 2SPA                              |
|             | 181                              | 1.58                 | 200                                      | 315     | 1SPA                              |
|             | 188                              | 1.52                 | 132                                      | 200     | 2SPA                              |
|             | 200                              | 1.43                 | 140                                      | 200     | 2SPA                              |
|             | 204                              | 1.40                 | 100                                      | 140     | 4SPZ                              |
|             | 210                              | 1.36                 | 132                                      | 180     | 2SPA                              |
|             | 221                              | 1.29                 | 140                                      | 180     | 2SPA                              |
|             | 228                              | 1.25                 | 160                                      | 200     | 2SPA                              |
|             | 238                              | 1.20                 | 150                                      | 180     | 2SPA                              |
|             | 250                              | 1.14                 | 140                                      | 160     | 2SPA                              |
|             | 267                              | 1.07                 | 150                                      | 160     | 2SPA                              |
|             | 285                              | 1.00                 | 140                                      | 140     | 2SPA                              |
| 300         | 0.95                             | 132                  | 125                                      | 3SPA    |                                   |
| 317         | 0.90                             | 200                  | 180                                      | 2SPA    |                                   |
| 324         | 0.88                             | 160                  | 140                                      | 3SPZ    |                                   |
| 344         | 0.83                             | 180                  | 150                                      | 2SPA    |                                   |
| 357         | 0.80                             | 200                  | 160                                      | 2SPA    |                                   |
| 366         | 0.78                             | 180                  | 140                                      | 2SPA    |                                   |
| 380         | 0.75                             | 200                  | 150                                      | 2SPA    |                                   |
| 391         | 0.73                             | 180                  | 132                                      | 3SPA    |                                   |
| 396         | 0.72                             | 250                  | 180                                      | 2SPA    |                                   |

| 减速机<br>Unit | 名义输出转速<br>Monet<br>Output<br>rpm | 皮带轮速比<br>Puley Ratio | 皮带轮名义直径<br>Puley Pitch Diameters<br>(mm) |         | 皮带根数<br>及皮带<br>Number<br>of Belts |
|-------------|----------------------------------|----------------------|--|---------|-----------------------------------|
|             |                                  |                      | Motor                                    | Gearbox |                                   |
| E20         | 10                               | 7.04                 | 71                                       | 500     | 1SPZ                              |
|             | 13                               | 5.63                 | 71                                       | 400     | 2SPZ                              |
|             | 14                               | 5.00                 | 80                                       | 400     | 1SPZ                              |
|             | 16                               | 4.44                 | 90                                       | 400     | 1SPZ                              |
|             | 18                               | 4.00                 | 100                                      | 400     | 1SPZ                              |
|             | 20                               | 3.50                 | 90                                       | 315     | 2SPZ                              |
|             | 22                               | 3.15                 | 100                                      | 315     | 1SPZ                              |
|             | 25                               | 2.82                 | 71                                       | 200     | 2SPZ                              |
|             | 26                               | 2.67                 | 75                                       | 200     | 2SPZ                              |
|             | 28                               | 2.50                 | 100                                      | 250     | 2SPZ                              |
|             | 29                               | 2.40                 | 75                                       | 180     | 3SPZ                              |
|             | 31                               | 2.25                 | 80                                       | 180     | 3SPZ                              |
|             | 33                               | 2.11                 | 71                                       | 150     | 3SPZ                              |
|             | 35                               | 2.00                 | 80                                       | 160     | 3SPZ                              |
|             | 37                               | 1.88                 | 85                                       | 160     | 2SPA                              |
|             | 40                               | 1.75                 | 80                                       | 140     | 3SPZ                              |
|             | 42                               | 1.68                 | 95                                       | 160     | 1SPA                              |
|             | 44                               | 1.60                 | 125                                      | 200     | 2SPZ                              |
|             | 46                               | 1.52                 | 132                                      | 200     | 1SPA                              |
|             | 49                               | 1.44                 | 125                                      | 180     | 2SPA                              |
| 50          | 1.40                             | 140                  | 140                                      | 2SPA    |                                   |
| 52          | 1.36                             | 132                  | 180                                      | 2SPA    |                                   |
| 55          | 1.29                             | 140                  | 180                                      | 2SPA    |                                   |
| 56          | 1.25                             | 100                  | 125                                      | 3SPZ    |                                   |
| 59          | 1.20                             | 150                  | 150                                      | 1SPA    |                                   |
| 60          | 1.18                             | 106                  | 125                                      | 2SPA    |                                   |
| 62          | 1.14                             | 140                  | 160                                      | 2SPZ    |                                   |
| 63          | 1.11                             | 90                   | 100                                      | 4SPZ    |                                   |
| 66          | 1.06                             | 118                  | 125                                      | 2SPA    |                                   |
| E13         | 70                               | 1.52                 | 132                                      | 200     | 2SPZ                              |
|             | 74                               | 1.44                 | 125                                      | 180     | 2SPA                              |
|             | 76                               | 1.39                 | 180                                      | 250     | 1SPA                              |
|             | 78                               | 1.36                 | 118                                      | 160     | 2SPA                              |
|             | 80                               | 1.32                 | 132                                      | 160     | 2SPA                              |
|             | 82                               | 1.29                 | 140                                      | 180     | 2SPA                              |
|             | 85                               | 1.24                 | 90                                       | 112     | 5SPZ                              |
|             | 88                               | 1.21                 | 132                                      | 160     | 2SPA                              |
|             | 90                               | 1.18                 | 112                                      | 140     | 4SPA                              |
|             | 93                               | 1.14                 | 140                                      | 160     | 2SPA                              |
| 95          | 1.12                             | 125                  | 140                                      | 3SPZ    |                                   |
| 100         | 1.06                             | 132                  | 140                                      | 2SPA    |                                   |
| 106         | 1.00                             | 125                  | 125                                      | 3SPZ    |                                   |
| E05         | 107                              | 2.67                 | 150                                      | 400     | 2SPA                              |
|             | 114                              | 2.50                 | 160                                      | 400     | 2SPA                              |
|             | 119                              | 2.39                 | 132                                      | 315     | 2SPA                              |
|             | 127                              | 2.25                 | 140                                      | 315     | 3SPZ                              |
|             | 129                              | 2.23                 | 112                                      | 250     | 400                               |
|             | 136                              | 2.10                 | 150                                      | 315     | 2SPA                              |
|             | 143                              | 2.00                 | 125                                      | 250     | 3SPA                              |
|             | 151                              | 1.89                 | 132                                      | 250     | 3SPA                              |
|             | 154                              | 1.85                 | 170                                      | 315     | 2SPA                              |
|             | 159                              | 1.79                 | 140                                      | 250     | 3SPA                              |
|             | 163                              | 1.75                 | 180                                      | 315     | 2SPA                              |
|             | 168                              | 1.70                 | 132                                      | 224     | 2SPZ                              |
|             | 173                              | 1.65                 | 170                                      | 280     | 2SPB                              |
|             | 178                              | 1.60                 | 125                                      | 200     | 3SPA                              |
|             | 188                              | 1.52                 | 132                                      | 200     | 3SPA                              |
|             | 200                              | 1.43                 | 140                                      | 200     | 3SPA                              |
|             | 210                              | 1.36                 | 132                                      | 180     | 3SPA                              |
|             | 221                              | 1.29                 | 140                                      | 180     | 3SPA                              |
|             | 228                              | 1.25                 | 200                                      | 250     | 2SPA                              |
|             | 238                              | 1.20                 | 180                                      | 180     | 2SPA                              |
|             | 250                              | 1.14                 | 140                                      | 160     | 3SPA                              |
|             | 257                              | 1.11                 | 180                                      | 200     | 2SPA                              |
|             | 269                              | 1.06                 | 212                                      | 224     | 2SPB                              |
| 285         | 1.00                             | 200                  | 200                                      | 2SPA    |                                   |
| 300         | 0.95                             | 236                  | 224                                      | 2SPB    |                                   |
| 304         | 0.94                             | 160                  | 150                                      | 3SPA    |                                   |
| 317         | 0.90                             | 250                  | 224                                      | 2SPB    |                                   |
| 324         | 0.88                             | 160                  | 140                                      | 2SPA    |                                   |
| 344         | 0.83                             | 180                  | 150                                      | 3SPA    |                                   |
| 357         | 0.80                             | 250                  | 200                                      | 2SPA    |                                   |
| 375         | 0.76                             | 236                  | 180                                      | 2SPB    |                                   |
| 380         | 0.75                             | 200                  | 150                                      | 3SPA    |                                   |
| 391         | 0.73                             | 180                  | 132                                      | 4SPA    |                                   |
| 402         | 0.71                             | 280                  | 200                                      | 2SPB    |                                   |



## 皮带驱动 Belt Drives

1440rpm 电机 1440 rpm Motors

| 减速机<br>Unit | 名义输出转速<br>Moninet<br>Output<br>rpm | 皮带轮对比<br>Puley Ratio | 皮带轮名义直径<br>Pulley Pitch<br>Diameters<br>(mm) |         | 皮带根数<br>及类型<br>Number<br>of Belts |
|-------------|------------------------------------|----------------------|--|---------|-----------------------------------|
|             |                                    |                      | Motor  | Gearbox |                                   |
| F20         | 10                                 | 7.04                 | 71   | 500     | 2SPZ                              |
|             | 13                                 | 5.63                 | 71   | 400     | 2SPZ                              |
|             | 14                                 | 5.00                 | 100  | 500     | 1SPA                              |
|             | 17                                 | 4.20                 | 75   | 315     | 2SPZ                              |
|             | 18                                 | 3.94                 | 80   | 315     | 2SPZ                              |
|             | 19                                 | 3.77                 | 106  | 400     | 1SPA                              |
|             | 20                                 | 3.57                 | 112  | 400     | 1SPA                              |
|             | 22                                 | 3.20                 | 125  | 400     | 1SPA                              |
|             | 25                                 | 2.86                 | 140  | 400     | 1SPA                              |
|             | 26                                 | 2.67                 | 118  | 315     | 2SPZ                              |
|             | 28                                 | 2.50                 | 160  | 400     | 1SPZ                              |
|             | 30                                 | 2.35                 | 85   | 200     | 2SPA                              |
|             | 33                                 | 2.12                 | 85   | 180     | 2SPA                              |
|             | 35                                 | 2.00                 | 125  | 250     | 2SPZ                              |
|             | 37                                 | 1.89                 | 95   | 180     | 2SPA                              |
|             | 40                                 | 1.75                 | 180  | 315     | 1SPA                              |
|             | 42                                 | 1.68                 | 95   | 160     | 3SPA                              |
|             | 44                                 | 1.60                 | 125  | 200     | 2SPA                              |
|             | 45                                 | 1.58                 | 200  | 315     | 1SPA                              |
|             | 49                                 | 1.44                 | 125  | 180     | 2SPA                              |
|             | 51                                 | 1.40                 | 100  | 140     | 3SPA                              |
|             | 52                                 | 1.36                 | 118  | 160     | 2SPA                              |
|             | 55                                 | 1.29                 | 140  | 180     | 2SPZ                              |
|             | 56                                 | 1.25                 | 100  | 125     | 4SPZ                              |
|             | 59                                 | 1.20                 | 150  | 250     | 3SPA                              |
|             | 60                                 | 1.18                 | 106  | 125     | 3SPA                              |
| 62          | 1.14                               | 132                  | 150  | 2SPA    |                                   |
| 63          | 1.11                               | 106                  | 118  | 3SPA    |                                   |
| 66          | 1.07                               | 150                  | 160  | 2SPA    |                                   |
| F13         | 67                                 | 1.58                 | 200  | 315     | 2SPZ                              |
|             | 70                                 | 1.52                 | 132  | 200     | 2SPA                              |
|             | 72                                 | 1.48                 | 160  | 236     | 2SPB                              |
|             | 74                                 | 1.43                 | 140  | 200     | 2SPB                              |
|             | 76                                 | 1.39                 | 180  | 250     | 3SPA                              |
|             | 78                                 | 1.36                 | 118  | 160     | 3SPA                              |
|             | 80                                 | 1.33                 | 150  | 200     | 2SPA                              |
|             | 82                                 | 1.29                 | 140  | 180     | 2SPB                              |
|             | 86                                 | 1.20                 | 150  | 180     | 2SPB                              |
|             | 88                                 | 1.21                 | 132  | 160     | 2SPA                              |
|             | 93                                 | 1.14                 | 132  | 150     | 3SPA                              |
|             | 93                                 | 1.14                 | 140  | 160     | 3SPA                              |
|             | 95                                 | 1.12                 | 125  | 140     | 4SPA                              |
|             | 100                                | 1.06                 | 132  | 140     | 3SPA                              |
| 106         | 1.00                               | 125                  | 125  | 4SPA    |                                   |
| F05         | 112                                | 2.54                 | 140  | 355     | 2SPB                              |
|             | 114                                | 2.50                 | 200  | 500     | 2SPA                              |
|             | 119                                | 2.39                 | 132  | 315     | 4SPA                              |
|             | 127                                | 2.25                 | 140  | 315     | 3SPA                              |
|             | 137                                | 2.09                 | 170  | 355     | 2SPB                              |
|             | 142                                | 2.00                 | 200  | 400     | 2SPA                              |
|             | 151                                | 1.89                 | 212  | 400     | 2SPB                              |
|             | 154                                | 1.85                 | 170  | 315     | 3SPA                              |
|             | 159                                | 1.79                 | 224  | 400     | 2SPB                              |
|             | 163                                | 1.75                 | 180  | 315     | 2SPB                              |
|             | 171                                | 1.67                 | 212  | 355     | 2SPB                              |
|             | 181                                | 1.58                 | 224  | 355     | 2SPB                              |
|             | 183                                | 1.56                 | 180  | 280     | 2SPB                              |
|             | 190                                | 1.5                  | 236  | 355     | 2SPB                              |
|             | 200                                | 1.43                 | 140  | 200     | 4SPA                              |
|             | 210                                | 1.36                 | 132  | 180     | 5SPA                              |
|             | 215                                | 1.33                 | 160  | 212     | 4SPA                              |
|             | 221                                | 1.29                 | 140  | 180     | 4SPA                              |
|             | 228                                | 1.25                 | 224  | 280     | 2SPB                              |
|             | 240                                | 1.19                 | 236  | 280     | 2SPB                              |
|             | 250                                | 1.14                 | 160  | 160     | 4SPB                              |
|             | 257                                | 1.11                 | 180  | 200     | 3SPA                              |
|             | 269                                | 1.06                 | 212  | 224     | 2SPB                              |
|             | 285                                | 1.00                 | 200  | 200     | 3SPA                              |
|             | 300                                | 0.95                 | 236  | 224     | 2SPB                              |
|             | 317                                | 0.9                  | 250  | 224     | 2SPB                              |
| 340         | 0.84                               | 280                  | 236  | 2SPB    |                                   |
| 357         | 0.8                                | 250                  | 200  | 3SPA    |                                   |
| 375         | 0.76                               | 236                  | 180  | 3SPB    |                                   |
| 380         | 0.75                               | 315                  | 236  | 2SPB    |                                   |
| 396         | 0.72                               | 236                  | 3SPB   | 2SPB    |                                   |
| 402         | 0.71                               | 315                  | 224  | 2SPB    |                                   |
| G20         | 10                                 | 7.04                 | 71   | 500     | 3SPZ                              |
|             | 12                                 | 5.94                 | 106  | 630     | 2SPA                              |
|             | 14                                 | 5.04                 | 125  | 630     | 1SPA                              |
|             | 16                                 | 4.44                 | 90   | 400     | 3SPZ                              |
|             | 18                                 | 4.00                 | 100  | 400     | 2SPA                              |
|             | 20                                 | 3.57                 | 112  | 400     | 2SPZ                              |
|             | 22                                 | 3.20                 | 125  | 400     | 2SPZ                              |
|             | 25                                 | 2.86                 | 140  | 400     | 2SPA                              |
|             | 26                                 | 2.67                 | 118  | 315     | 2SPA                              |
|             | 28                                 | 2.50                 | 160  | 400     | 2SPZ                              |
|             | 30                                 | 2.35                 | 85   | 200     | 3SPA                              |
|             | 32                                 | 2.23                 | 112  | 250     | 3SPZ                              |
|             | 34                                 | 2.10                 | 150  | 315     | 2SPA                              |
|             | 37                                 | 1.89                 | 132  | 250     | 2SPA                              |
|             | 40                                 | 1.75                 | 180  | 315     | 2SPZ                              |
|             | 42                                 | 1.67                 | 150  | 250     | 2SPA                              |
|             | 46                                 | 1.53                 | 118  | 180     | 3SPA                              |
|             | 51                                 | 1.39                 | 180  | 250     | 2SPA                              |
| 55          | 1.28                               | 160                  | 450  | 4SPA    |                                   |
| 58          | 1.21                               | 132                  | 160  | 4SPA    |                                   |
| 62          | 1.14                               | 132                  | 150  | 4SPA    |                                   |
| 66          | 1.07                               | 150                  | 160  | 3SPA    |                                   |
| G13         | 67                                 | 1.58                 | 200  | 315     | 2SPA                              |
|             | 70                                 | 1.52                 | 132  | 200     | 4SPA                              |
|             | 72                                 | 1.47                 | 170  | 250     | 2SPB                              |
|             | 75                                 | 1.41                 | 224  | 315     | 2SPB                              |
|             | 78                                 | 1.36                 | 132  | 180     | 5SPA                              |
|             | 81                                 | 1.31                 | 160  | 236     | 3SPB                              |
|             | 82                                 | 1.29                 | 140  | 180     | 4SPA                              |
|             | 85                                 | 1.25                 | 200  | 250     | 2SPB                              |
|             | 88                                 | 1.21                 | 132  | 160     | 5SPA                              |
|             | 90                                 | 1.18                 | 180  | 212     | 3SPB                              |
|             | 93                                 | 1.14                 | 140  | 160     | 5SPA                              |
|             | 95                                 | 1.11                 | 180  | 236     | 3SPB                              |
|             | 100                                | 1.06                 | 236  | 250     | 2SPB                              |
|             | G05                                | 107                  | 2.67   | 236     | 630                               |
| 113         |                                    | 2.52                 | 250  | 630     | 2SPB                              |
| 114         |                                    | 2.50                 | 200  | 500     | 3SPA                              |
| 122         |                                    | 2.36                 | 212  | 500     | 3SPB                              |
| 127         |                                    | 2.25                 | 280  | 630     | 2SPA                              |
| 129         |                                    | 2.22                 | 180  | 400     | 4SPA                              |
| 136         |                                    | 2.10                 | 150  | 315     | 3SPB                              |
| 143         |                                    | 2.00                 | 250  | 500     | 2SPB                              |
| 145         |                                    | 1.97                 | 180  | 350     | 3SPA                              |
| 151         |                                    | 1.89                 | 212  | 400     | 3SPB                              |
| 154         |                                    | 1.85                 | 170  | 315     | 3SPB                              |
| 159         |                                    | 1.79                 | 280  | 500     | 2SPB                              |
| 169         |                                    | 1.69                 | 236  | 400     | 3SPB                              |
| 171         |                                    | 1.67                 | 212  | 355     | 3SPB                              |
| 178         |                                    | 1.60                 | 250  | 400     | 2SPB                              |
| 181         |                                    | 1.58                 | 200  | 315     | 3SPB                              |
| 190         |                                    | 1.50                 | 236  | 355     | 3SPB                              |
| 191         |                                    | 1.49                 | 212  | 315     | 3SPB                              |
| 200         | 1.43                               | 280                  | 400  | 2SPB    |                                   |
| 202         | 1.41                               | 224                  | 315  | 3SPB    |                                   |
| 215         | 1.33                               | 236                  | 315  | 3SPB    |                                   |
| 225         | 1.27                               | 315                  | 400  | 2SPB    |                                   |
| 228         | 1.25                               | 224                  | 280  | 3SPB    |                                   |
| 240         | 1.19                               | 236                  | 280  | 3SPB    |                                   |
| 252         | 1.13                               | 315                  | 355  | 2SPB    |                                   |
| 255         | 1.12                               | 224                  | 250  | 3SPB    |                                   |
| 269         | 1.06                               | 236                  | 250  | 3SPB    |                                   |
| 285         | 1.00                               | 315                  | 315  | 2SPB    |                                   |
| 304         | 0.94                               | 250                  | 236  | 3SPB    |                                   |
| 321         | 0.89                               | 280                  | 250  | 3SPB    |                                   |
| 321         | 0.89                               | 355                  | 315  | 3SPB    |                                   |
| 340         | 0.84                               | 280                  | 236  | 3SPB    |                                   |
| 357         | 0.80                               | 224                  | 180  | 4SPB    |                                   |
| 361         | 0.79                               | 315                  | 250  | 3SPB    |                                   |
| 375         | 0.76                               | 236                  | 180  | 5SPB    |                                   |
| 380         | 0.75                               | 315                  | 236  | 3SPB    |                                   |
| 396         | 0.72                               | 236                  | 170  | 5SPB    |                                   |
| 402         | 0.71                               | 315                  | 224  | 4SPB    |                                   |



## 皮带驱动 Belt Drives

1440rpm 电机 1440 rpm Motors

| 减速机<br>Unit | 名义输出功率<br>Moninout<br>Output<br>rpm | 皮带轮速比<br>Puley Ratio | 皮带轮名义直径<br>Puley Pitch Diameters<br>(mm) |         | 皮带根数<br>及类型<br>Number of<br>Belts |
|-------------|-------------------------------------|----------------------|--|---------|-----------------------------------|
|             |                                     |                      | Motor                                    | Gearbox |                                   |
|             |                                     |                      |  |         |                                   |
| H20         | 10                                  | 7.00                 | 90                                       | 630     | 3SPZ                              |
|             | 12                                  | 5.88                 | 85                                       | 500     | 2SPA                              |
|             | 14                                  | 5.04                 | 125                                      | 630     | 2SPZ                              |
|             | 16                                  | 4.44                 | 90                                       | 400     | 4SPZ                              |
|             | 18                                  | 4.00                 | 100                                      | 400     | 3SPA                              |
|             | 20                                  | 3.57                 | 140                                      | 500     | 2SPA                              |
|             | 22                                  | 3.20                 | 125                                      | 400     | 3SPA                              |
|             | 25                                  | 2.86                 | 140                                      | 400     | 2SPA                              |
|             | 26                                  | 2.67                 | 150                                      | 400     | 2SPA                              |
|             | 29                                  | 2.39                 | 132                                      | 315     | 3SPA                              |
|             | 34                                  | 2.10                 | 150                                      | 315     | 2SPB                              |
|             | 36                                  | 1.97                 | 160                                      | 315     | 2SPB                              |
|             | 38                                  | 1.85                 | 170                                      | 315     | 2SPB                              |
|             | 39                                  | 1.79                 | 140                                      | 250     | 3SPB                              |
|             | 42                                  | 1.67                 | 150                                      | 250     | 3SPA                              |
|             | 45                                  | 1.58                 | 200                                      | 315     | 2SPA                              |
|             | 46                                  | 1.52                 | 132                                      | 200     | 4SPA                              |
|             | 51                                  | 1.39                 | 180                                      | 250     | 3SPB                              |
| 52          | 1.31                                | 180                  | 236                                      | 3SPB    |                                   |
| 60          | 1.18                                | 200                  | 236                                      | 3SPB    |                                   |
| 62          | 1.13                                | 160                  | 180                                      | 4SPA    |                                   |
| 66          | 1.06                                | 236                  | 250                                      | 2SPB    |                                   |
| H13         | 67                                  | 1.58                 | 200                                      | 315     | 3SPA                              |
|             | 68                                  | 1.56                 | 180                                      | 280     | 3SPB                              |
|             | 71                                  | 1.50                 | 236                                      | 355     | 2SPB                              |
|             | 72                                  | 1.47                 | 170                                      | 250     | 4SPB                              |
|             | 75                                  | 1.41                 | 224                                      | 315     | 3SPA                              |
|             | 76                                  | 1.39                 | 180                                      | 450     | 2SPA                              |
|             | 80                                  | 1.33                 | 236                                      | 315     | 3SPB                              |
|             | 83                                  | 1.27                 | 280                                      | 355     | 2SPB                              |
|             | 85                                  | 1.24                 | 180                                      | 224     | 4SPB                              |
|             | 89                                  | 1.19                 | 236                                      | 280     | 3SPB                              |
|             | 90                                  | 1.18                 | 180                                      | 212     | 4SPB                              |
|             | 95                                  | 1.12                 | 250                                      | 280     | 3SPA                              |
| 100         | 1.06                                | 200                  | 212                                      | 3SPB    |                                   |
| H05         | 102                                 | 2.81                 | 224                                      | 630     | 3SPB                              |
|             | 107                                 | 2.67                 | 236                                      | 630     | 3SPB                              |
|             | 113                                 | 2.52                 | 250                                      | 630     | 3SPA                              |
|             | 121                                 | 2.36                 | 212                                      | 500     | 3SPB                              |
|             | 127                                 | 2.25                 | 280                                      | 630     | 2SPB                              |
|             | 136                                 | 2.10                 | 150                                      | 315     | 4SPB                              |
|             | 143                                 | 2.00                 | 315                                      | 630     | 2SPB                              |
|             | 149                                 | 1.91                 | 236                                      | 450     | 3SPC                              |
|             | 151                                 | 1.89                 | 212                                      | 400     | 4SPB                              |
|             | 159                                 | 1.79                 | 224                                      | 400     | 3SPC                              |
|             | 163                                 | 1.75                 | 180                                      | 315     | 5SPB                              |
|             | 169                                 | 1.69                 | 236                                      | 400     | 3SPB                              |
|             | 173                                 | 1.65                 | 170                                      | 280     | 5SPB                              |
|             | 178                                 | 1.60                 | 250                                      | 400     | 3SPB                              |
|             | 181                                 | 1.58                 | 200                                      | 315     | 3SPA                              |
|             | 190                                 | 1.50                 | 236                                      | 355     | 4SPB                              |
|             | 191                                 | 1.49                 | 212                                      | 315     | 4SPB                              |
|             | 200                                 | 1.43                 | 280                                      | 400     | 3SPB                              |
|             | 215                                 | 1.33                 | 236                                      | 315     | 4SPB                              |
|             | 216                                 | 1.32                 | 212                                      | 280     | 4SPB                              |
|             | 225                                 | 1.27                 | 280                                      | 355     | 4SPB                              |
|             | 228                                 | 1.25                 | 224                                      | 280     | 4SPB                              |
|             | 242                                 | 1.18                 | 212                                      | 250     | 4SPC                              |
|             | 252                                 | 1.13                 | 315                                      | 355     | 3SPB                              |
| 257         | 1.11                                | 212                  | 236                                      | 5SPB    |                                   |
| 272         | 1.05                                | 224                  | 236                                      | 4SPC    |                                   |
| 285         | 1.00                                | 280                  | 280                                      | 3SPC    |                                   |
| 300         | 0.95                                | 236                  | 224                                      | 4SPC    |                                   |
| 317         | 0.90                                | 250                  | 224                                      | 4SPB    |                                   |
| 321         | 0.89                                | 315                  | 280                                      | 3SPB    |                                   |
| 336         | 0.85                                | 265                  | 224                                      | 3SPB    |                                   |
| 340         | 0.84                                | 280                  | 236                                      | 4SPB    |                                   |
| 357         | 0.80                                | 280                  | 224                                      | 4SPB    |                                   |
| 361         | 0.79                                | 355                  | 280                                      | 3SPB    |                                   |
| 375         | 0.76                                | 236                  | 180                                      | 5SPB    |                                   |
| 380         | 0.75                                | 315                  | 236                                      | 3SPC    |                                   |
| 396         | 0.72                                | 250                  | 180                                      | 6SPB    |                                   |
| 402         | 0.71                                | 315                  | 224                                      | 4SPB    |                                   |

| 减速机<br>Unit | 名义输出功率<br>Moninout<br>Output<br>rpm | 皮带轮速比<br>Puley Ratio | 皮带轮名义直径<br>Puley Pitch Diameters<br>(mm) |         | 皮带根数<br>及类型<br>Number of<br>Belts |
|-------------|-------------------------------------|----------------------|--|---------|-----------------------------------|
|             |                                     |                      | Motor                                    | Gearbox |                                   |
|             |                                     |                      |  |         |                                   |
| J20         | 10                                  | 7.00                 | 90                                       | 630     | 4SPZ                              |
|             | 12                                  | 5.88                 | 85                                       | 500     | 4SPA                              |
|             | 14                                  | 5.00                 | 100                                      | 500     | 4SPZ                              |
|             | 16                                  | 4.44                 | 140                                      | 630     | 3SPZ                              |
|             | 17                                  | 3.94                 | 160                                      | 630     | 2SPA                              |
|             | 20                                  | 3.57                 | 140                                      | 500     | 4SPZ                              |
|             | 22                                  | 3.20                 | 125                                      | 400     | 4SPZ                              |
|             | 25                                  | 2.86                 | 140                                      | 400     | 3SPA                              |
|             | 26                                  | 2.67                 | 150                                      | 400     | 3SPA                              |
|             | 29                                  | 2.39                 | 132                                      | 315     | 4SPA                              |
|             | 30                                  | 2.35                 | 170                                      | 400     | 3SPB                              |
|             | 34                                  | 2.10                 | 150                                      | 315     | 4SPA                              |
|             | 37                                  | 1.89                 | 212                                      | 400     | 2SPB                              |
|             | 40                                  | 1.75                 | 180                                      | 315     | 3SPB                              |
|             | 42                                  | 1.67                 | 212                                      | 355     | 2SPC                              |
|             | 47                                  | 1.50                 | 236                                      | 355     | 2SPB                              |
|             | 47                                  | 1.49                 | 212                                      | 315     | 2SPC                              |
|             | 50                                  | 1.41                 | 224                                      | 315     | 3SPB                              |
| 54          | 1.31                                | 180                  | 236                                      | 3SPB    |                                   |
| 60          | 1.18                                | 200                  | 236                                      | 3SPB    |                                   |
| 63          | 1.11                                | 212                  | 236                                      | 3SPB    |                                   |
| 66          | 1.06                                | 212                  | 224                                      | 3SPC    |                                   |
| J13         | 67                                  | 1.58                 | 200                                      | 315     | 3SPC                              |
|             | 68                                  | 1.56                 | 180                                      | 280     | 4SPB                              |
|             | 71                                  | 1.49                 | 212                                      | 315     | 3SPC                              |
|             | 72                                  | 1.47                 | 170                                      | 250     | 4SPB                              |
|             | 75                                  | 1.41                 | 224                                      | 315     | 3SPC                              |
|             | 76                                  | 1.39                 | 180                                      | 250     | 5SPB                              |
|             | 80                                  | 1.32                 | 170                                      | 224     | 5SPB                              |
|             | 83                                  | 1.27                 | 315                                      | 400     | 2SPC                              |
|             | 85                                  | 1.25                 | 200                                      | 250     | 3PC                               |
|             | 89                                  | 1.11                 | 236                                      | 280     | 3PC                               |
|             | 90                                  | 1.18                 | 212                                      | 250     | 4SPC                              |
|             | 95                                  | 1.12                 | 250                                      | 280     | 3PC                               |
| 100         | 1.06                                | 212                  | 224                                      | 4PC     |                                   |
| J05         | 107                                 | 2.57                 | 236                                      | 630     | 4SPB                              |
|             | 113                                 | 2.52                 | 250                                      | 630     | 4SPB                              |
|             | 121                                 | 2.36                 | 212                                      | 500     | 5SPB                              |
|             | 128                                 | 2.23                 | 224                                      | 500     | 5SPB                              |
|             | 135                                 | 2.12                 | 236                                      | 500     | 5SPB                              |
|             | 143                                 | 2.00                 | 250                                      | 500     | 4PC                               |
|             | 149                                 | 1.91                 | 236                                      | 450     | 4PC                               |
|             | 151                                 | 1.89                 | 265                                      | 500     | 4PC                               |
|             | 153                                 | 1.87                 | 300                                      | 560     | 3PC                               |
|             | 159                                 | 1.80                 | 250                                      | 450     | 4PC                               |
|             | 168                                 | 1.70                 | 265                                      | 450     | 4PC                               |
|             | 171                                 | 1.67                 | 300                                      | 500     | 3PC                               |
|             | 177                                 | 1.61                 | 280                                      | 450     | 4PC                               |
|             | 178                                 | 1.59                 | 315                                      | 500     | 4PC                               |
|             | 189                                 | 1.51                 | 265                                      | 400     | 3PC                               |
|             | 191                                 | 1.49                 | 212                                      | 315     | 3PC                               |
|             | 200                                 | 1.43                 | 315                                      | 450     | 3PC                               |
|             | 202                                 | 1.41                 | 355                                      | 500     | 4PC                               |
|             | 213                                 | 1.34                 | 265                                      | 355     | 5PC                               |
|             | 215                                 | 1.33                 | 400                                      | 530     | 3PC                               |
|             | 225                                 | 1.27                 | 315                                      | 400     | 3PC                               |
|             | 230                                 | 1.24                 | 450                                      | 560     | 4PC                               |
|             | 240                                 | 1.19                 | 355                                      | 315     | 5PC                               |
|             | 252                                 | 1.13                 | 280                                      | 315     | 5PC                               |
| 255         | 1.12                                | 236                  | 265                                      | 5PC     |                                   |
| 269         | 1.06                                | 236                  | 250                                      | 5PC     |                                   |
| 272         | 1.05                                | 224                  | 236                                      | 5PC     |                                   |
| 285         | 1.00                                | 265                  | 355                                      | 4PC     |                                   |
| 300         | 0.95                                | 280                  | 265                                      | 5PC     |                                   |
| 304         | 0.94                                | 250                  | 236                                      | 5PC     |                                   |
| 307         | 0.93                                | 150                  | 140                                      | 5PC     |                                   |
| 321         | 0.89                                | 450                  | 400                                      | 4PC     |                                   |
| 336         | 0.85                                | 265                  | 224                                      | 5PC     |                                   |
| 340         | 0.84                                | 400                  | 335                                      | 3PC     |                                   |
| 357         | 0.80                                | 280                  | 224                                      | 5PC     |                                   |
| 361         | 0.79                                | 400                  | 315                                      | 3PC     |                                   |
| 380         | 0.75                                | 355                  | 265                                      | 5PC     |                                   |
| 402         | 0.71                                | 500                  | 355                                      | 4PC     |                                   |



## 安装 Installation

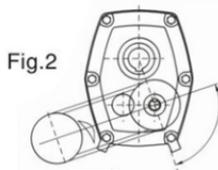
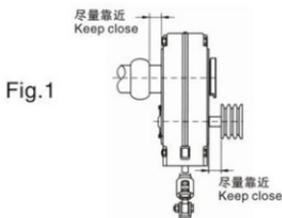
### 齿轮箱安装 Gearbox Installation

正确的安装，润滑和维护是满意使用的前提，因此仔细阅读并严格按照使用说明进行操作是非常必要的。皮带安装及扭力臂安装要注意以下方面。

Satisfactory performance depends on proper installation. lubrication and maintenance. therefore it is important that the instructions in the installation and maintenance leaflet, supplied with each gearbox, are followed carefully. some of the important aspects of belt and torque-arm installation are listed below.

- 1、输入轴上的皮带轮安装时尽可能的靠近减速机，安装减速机到被驱动机时也应该使减速机尽可能的靠近被驱动机，若安装得太远会使减速机的轴承承受较大的径向力，造成轴承的过早损坏（如图1所示）。
- 2、安装电机时，电机带轮和减速机的输入轴带轮中心的连线应该和减速机输出轴与输入轴中心的连线成大约 $90^\circ$ 关系（参考图2），这样可以用扭力臂拉紧皮带。如果输出轴是逆时针旋转，扭力臂最好被固定在减速机的右边（参考图3）。
- 3、把扭力臂支座安装在一个固定支撑上，以便使用减速机输出轴中心与扭力臂箱体螺栓的连线与扭力臂成大约 $90^\circ$ 直角关系（参考图4）。确保扭力臂的调节空间以便正确的调节皮带的松紧。

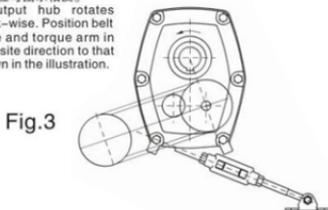
1. Install pulley on gearbox input shaft as close to the reducer possible, and mount reducer on driven shaft as close to bearing as practical (see figure 1). failure to do this will cause excess loads in the input shaft bearings and output bearings and could cause their premature failure.
2. Install motor and wedge belt drive with the belt pull at approximately  $90^\circ$  to the center line between driven and input shafts(see fig.2). this will permit tensioning of the wedge belt drive with the torque arm which should preferably be in tension. If output hub runs anti-clockwise, torque arm should be positioned the right (see fig.3).
3. Install torque-arm fulcrum on a rigid support so that the torque-arm will be at approximately right angles to the center line through the driven shaft and the torque arm case bolt (see fig.5). make sure there is sufficient take up in the turnbuckle for belt tension adjustment.



驱动皮带可以放置于任何方便的位置着扭力臂调节皮带的松紧，则驱动皮带应该输出轴和输入轴的连接大致垂直。  
Belt drive may be located in any convenient position. If the torque arm is to be used to tighten the belts, the drive should be at about right angle to the line between the input and output shafts.

若需要的话，则驱动皮带也可以放在右边。  
Belt drive may be located to the right if desired.

若输出轴为逆时针旋转，则驱动皮带和扭力臂的安装方位与图示相反。  
If output hub rotates clock-wise, Position belt drive and torque arm in opposite direction to that shown in the illustration.



这个角度大致为直角，但在两侧均可以有30度的变动。  
This angle should be a right angle but may vary up to a maximum of  $30^\circ$  either way.



扭力臂及皮带拿起  
Torque arm and belt take up.

若需要，扭力臂也可以安装在右侧  
Torque arm may be mounted to the right if desired.



## 润滑和安装方位 Lubrication And Mounting Positions

### 润滑-加油量和推荐润滑油等级

#### LUBRICATION - QUANTITIES & RECOMMENDED GRADES

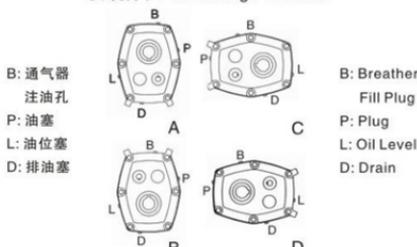
由于轴装式齿轮减速机供货状态为不加润滑油，因此必须在使用前加入合适牌号适量的油，建议用高等级防锈防氧化矿物油。

Shaft mounted reducer is dispatched without oil, it is necessary to fill the proper amount of oil before running, use a high-grade petroleum base rust and oxidation inhibited (R&O) gear oil.

### 加油量 oil quantities(liters)

| 减速机型号<br>Unitsize            | 大致加油量(升)Approximate Capacity-Lofers |      |      |      |             |      |      |      |
|------------------------------|-------------------------------------|------|------|------|-------------|------|------|------|
|                              | 5:1                                 |      |      |      | 13:1 & 20:1 |      |      |      |
| 安装方位<br>Mounting<br>Position | A                                   | B    | C    | D    | A           | B    | C    | D    |
| B                            | 0.4                                 | 0.4  | 0.4  | 0.5  | 0.3         | 0.4  | 0.5  | 0.5  |
| C                            | 0.6                                 | 0.6  | 0.7  | 0.8  | 0.5         | 0.6  | 0.7  | 0.7  |
| D                            | 1.0                                 | 1.2  | 1.4  | 1.5  | 0.8         | 1.2  | 1.5  | 1.8  |
| E                            | 1.9                                 | 1.8  | 2.0  | 1.9  | 1.7         | 1.8  | 2.0  | 1.6  |
| G                            | 2.6                                 | 2.5  | 2.5  | 2.6  | 2.8         | 2.5  | 2.5  | 2.5  |
| F                            | 3.3                                 | 3.3  | 4.1  | 4.6  | 3.0         | 3.4  | 4.3  | 3.9  |
| H                            | 4.8                                 | 5.0  | 7.1  | 7.1  | 4.5         | 5.0  | 7.0  | 6.8  |
| J                            | 9.3                                 | 12.0 | 16.0 | 16.0 | 7.5         | 11.0 | 14.0 | 13.0 |

### 安装方位 Mounting Positions



注意：输出转速低于15转每分钟时，油位塞必须调整到P油塞处。  
Note: Below 15 rpm output speed, oil level must be adjusted to reach the highest oil level plug(P).

### 矿物油 Mineral Oil

| ISO<br>Viscosity<br>Grade | Environment<br>Temperature | 5:1 RATIO GEARBOXES |        |                |        |                |        | 13:1 and 20:1 RATIO GEARBOXES |       |              |       |               |       |
|---------------------------|----------------------------|---------------------|--------|----------------|--------|----------------|--------|-------------------------------|-------|--------------|-------|---------------|-------|
|                           |                            | 0-100<br>rpm        |        | 101-200<br>rpm |        | 201-400<br>rpm |        | 0-20<br>rpm                   |       | 21-50<br>rpm |       | 51-120<br>rpm |       |
|                           |                            | BC                  | DEFGHJ | BC             | DEFGHJ | BC             | DEFGHJ | BCD                           | EFGHJ | BCD          | EFGHJ | BCD           | EFGHJ |
| -10~+5                    |                            | 100                 |        | 100            |        | 100            | 68     | 150                           | 150   | 150          | 100   | 100           |       |
| 6-25                      |                            | 460                 |        | 320            |        | 320            | 220    | 680                           | 680   | 460          | 460   | 320           |       |
| 26-40                     |                            | 800                 |        | 680            |        | 680            | 460    | 800                           | 800   | 800          | 680   | 460           |       |

### 推荐润滑油品牌 Manufacturers and Types

|                         |                              |                           |                |                  |
|-------------------------|------------------------------|---------------------------|----------------|------------------|
| B.P<br>ENERGOL<br>CR-XP | CASTROL<br>ALPHA<br>ZN OR SP | MOBIL<br>MOBILGEAR<br>OIL | SHELL<br>OMALA | TEXACO<br>MEROPA |
|-------------------------|------------------------------|---------------------------|----------------|------------------|

### 合成油 Synthetic oil

|                     |   |
|---------------------|---|
| DARMEX<br>9140 NMND | 适用于所有的环境温度和输入转速<br>SUITABLE FOR ALL AMBIENT<br>TEMPERATURES AND ALL INPUT<br>SPEEDS |
|---------------------|---|

注意：正常情况下一般不推荐使用极压润滑油，除非使用逆止器时推荐使用。

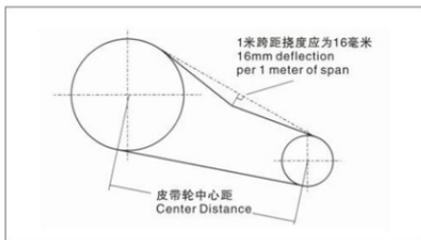
Note: Do not use E. P. mineral oils other than those recommended when using a backstop.



## 皮带安装和减速机应用 Belt Installation And Reducer Application

### 压紧力 tensioning Forces

| 皮带<br>Belt | 1米跨距16毫米挠时所需压力<br>Force required to 16mm per meter of span |                   |
|------------|--|-------------------|
|            | 皮带轮直径<br>Small Pulley Diameter(mm)                         | 所需压力<br>Newton(N) |
| SPZ        | 56-95  | 13-20             |
|            | 100-140  | 20-25             |
| SPA        | 80-132   | 25-35             |
|            | 140-200  | 35-45             |
| SPB        | 112-224  | 45-65             |
|            | 236-315  | 65-85             |
| SPC        | 224-355  | 85-115            |
|            | 375-560  | 115-150           |



### 皮带紧张调节方法 Method of Belt Tensioning

- 1、根据皮带轮中心距计算皮带所要挠度值。中心距(米) × 16 = 所需挠度(毫米)。
- 2、用弹簧秤和直尺进行测量其所需压力, 若其值在上述表格中, 则表示皮带松紧合适。否则, 旋转扭力臂的螺旋扣调节。(注意, 施力方向和皮带垂直)

1. Calculate the deflection distance in mm on a basis of 16mm per meter of span. Center distance(m) × 16 = Deflection(mm).
2. Use a spring balance and rule measure the force of the belt, if the value falls within the values given, the drive should be satisfactory. Otherwise, use the Torque arm's turnbuckle adjust the tension of the belt. (Note, the force direction and the belt should be a right angle).

| 设备类型 Machine Type          | 典型工业 Typical Industries  | 应用举例 Application Example  |
|----------------------------|--|---|
| 输送机<br>Conveyors           | 沙石输送 Sand & Gravel<br>动物饲养 Animal Feeds<br>污水处理 Water Treatment<br>农业 Agriculture<br>采矿 Quarrying<br>行李处理 Baggage Handling<br>散装货物处理 Beggage Handling<br>港务局 Port Authorities<br>邮包处理 Post & Parcel<br>谷物干燥 Grain Dryers | <ol style="list-style-type: none"> <li>1、筛式进给器主驱动 Head drum drive for screen feeder.</li> <li>2、倾斜岩石输送带主驱动 Main drive on are inclined basalt conveyor.</li> <li>3、轮船装卸升降机 Ship loading elevator.</li> <li>4、螺旋输送机主驱动 Main drive to screw conveyor.</li> <li>5、陆路散货输送带驱动 Overland buck conveyor drives.</li> <li>6、动物饲料输送带主驱动 Main drive for transporting animal floods.</li> <li>7、机场行李处理输送带 Airport baggage handling conveyors.</li> </ol> |
| 混合机和磨粉机<br>Mixers & Mills  | 动物饲养 Animal Feeds<br>食品工业 Food Industry<br>农业 Agriculture<br>石化 Petrochemical<br>油漆 Paint<br>过程处理 Process<br>工业 Industries<br>搅拌机 Agitator<br>通风机 Aerators   | <ol style="list-style-type: none"> <li>1、饼干面粉混合机 Biscuit dough mixer.</li> <li>2、动物饲料磨粉机主驱动 Main drive to animal feed mill.</li> <li>3、沥青搅拌机主驱动 Main drive for Asphalt agitator.</li> <li>4、动物饲养工厂用(浆状)搅拌机驱动 Paddle drive on animal feed processing plant.</li> </ol>   |
| 其他应用<br>Other Applications | 起重机和卷扬机 Cranes & Hoists<br>绞车 Winches<br>制革和过程处理 Tanning & Processing<br>纺织机械 Textile Machinery<br>洗涤机械 Laundry Machines<br>机床工具、剪板机等<br>Machine tools, shears, etc.   | <ol style="list-style-type: none"> <li>1、正反转工业洗涤机 Reversing duty on an industrial washing machine.</li> <li>2、集装箱起吊设备 Container lifting equipment.</li> <li>3、气动马达驱动水下绞车系统 Driven by an air motor on an under water winch system.</li> <li>4、风力涡轮机驱动—用来增速产生电能 Wind turbine drive—used as speed increasing drive to generate electricity.</li> </ol>   |



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