ENTPLAN

英特普伦传动

行星减速机选型手册
Planetary Gear Selection Manual

Ep 系列 Series

江苏英德普兰传动技术有限公司

JIANSU ENTPLAN DRIVE HI-TECH CO.,LTD

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企业简介

江苏英德普兰传动技术有限公司是一家在传动机械行业中充满活力的公司。通过武进国家高新区管委会审查认定符合高新科技企业条件，批准入驻武进国家高新区“科技企业加速器”武进国家高新区创新产业园。

公司拥有优秀的团队、先进的管理理念，团队核心成员拥有丰富的行业研发、制造、管理经验，是行业标准的主要起草成员，并拥有二十余项核心技术和专利。公司定位于集研发、制造、销售、服务于一体的高 新技术企业。

公司以“三大体系”作为日常工作的标准，于2017年顺利通过ISO9001:2015质量管理体系、ISO14001：2015环境管 理体系、OHSAS18001:2007职业健康安全管理体系的认证。

公司以务实、高效、求精、创新的核心价值观;以客户至上、优质高效、精益求精、追求卓越的质量方针，为客户提 供四大系列减速机、行星减速机、光伏跟踪回转驱动装置等各类减速及传动装置，产品广泛应用于工程机械、机器人、太阳能光伏发电跟踪系统、雷达跟踪传动、各类工业设备及环境保护等领域，并对外承接高端机加工业务。

面向未来，江苏英德普兰传动技术有限公司将秉承工匠精神，打造精品公司，为广大客户提供更优、更精的产品及服务。

Jiangsu entplan drive Hi- techCo,LTD is an energetic company in transmission mechanical industry. Passed the audition of management committee in Wujin national high-tech zone, which believes Entplan is qualfied to be a high-tech company. Entplan is approved to enter the accelerator of high-tech company,which is Wuin national high-tech zone.

Entplan owns excellent team and advanced management idea. The core team of Entplan have sufficient experience of R&D、manufacture and management, which are the drafters of production standard in the reducer industry. Entolan has more than twenty core technologies and patents, which is positioned to be a hi- tech company with R&D、 manufacture、selling and service.

Entplan to "three system" as a standard of daily work, in 2017 passed the IS09001:2015 quality management system, IS014001:2015 environmental management system, OHSAS18001:2007 occupational health and safety management system certification.

Entplan is led by pragmatic、Hi- -efficient、continual improvement and innovation value. With the guidance of customer orientation、high-quality、high-efficient and excellence pursuit pilicies,Entplan provides different kinds of reduce and drive devices, such as four series reducer、planetary reducer、photovoltaic tracking slewing driver, which are widely used in different fields, such as engineering machinery、robot、solar photovoltaic tracking system、radar tracking transmission、industrial tool and environmental protection area. also carry on high-precise spare parts machining business.

Facing to future, Jiangsu entplan drive Hi-tech Co.,LTD will inherit the craftsman' S spirit to become excellent company, and will provide more outstanding and more precise products and first-class service.

目　录

1.1 概述

为了准确地选择出合适的行星齿轮箱，请注意本产品样本中所提供的各种技术资料。

行星齿轮箱是应用于不同工业领域的、可靠的传动部件，其合理而经济的设计方案在各种应用条件下已得到证实。

划分较细的系列化产品可以覆盖从 22000 到 2600000Nm 的额定扭矩范围。

模块化设计使得许多基本零部件标准化，其中不仅包括行星齿轮级，而且也包括箱体以及输入、输出侧的各种零部件。这样，就能保证高质量标准的前提下减小复杂程度，并且在批量生产中更加经济。

同样，标准系列不能满足客户的需要时，我公司人员和设计人员完全可以保证在技术上和经济上迅速提供量体定制的最佳方案。

1.2 说明

型号和传动比

我们能够提供的标准型号及相应传动比范围见第 5 页的附表。

实际传动比，见第 36~38 页。

齿轮

齿轮时根据给定的额定扭矩按持久寿命设计的。

这样只要应用系数正确及合理的使用与维护，轮齿在理论上就可以持久承载。

在可变载荷、恒定转速应用的情况下，齿轮箱的设计按当量扭矩进行。

对某些特定的应用，按有限抗疲劳寿命选择的齿轮箱可以满足要求，如偶尔动作或慢速输出（N_2<4 min^{-1}）

只要已知精确的使用系数，我们可以帮助您校核您的选型是否合理。

输入端

轴的结构适用于与联轴器或皮带轮等相连接。

1.1 General information

For careful selection of suitable planetary gear units please observe the details given in this brochure.

Planetary gear units are reliable drive component for the use in different industry sectors, appropriate economical design solutions proved themselves under different operating conditions.

A fine-progression series covers a nominal torque range between 22000 and 2600000Nm.

The modular design permits standardization of many basic components, including both planetary gear stages and housing parts as well as input side and output side components. Thus, complexity is reduced and manufacture in economical lot sizes is made possible at high quality standards.

A team of planning and design engineers makes sure that optimum solutions with regard to technology and efficiency are quickly realized for customer requirement which cannot be met with the standard product range.

1.2 Description

Types and transmission ratios

The representation on page 5 illustrate possible standard types and the respective transmission ratio ranges. For actual ratios, see page 36~38.

Gear teeth

The gear teeth are designed to be long-life fatigue-resistant for the stated nominal torques.

The teeth can thus, if the application factors are correct, appropriate application and maintenance theoretically be placed under load as often as required.

In case of applications, where the torque is variable but the speed constant the gear unit can be designed on the basis of the so-called equivalent torque.

A gear unit design which is finite-life fatigue-resistant can be sufficient for certain applications, for example, sporadic operation or low output speeds (n_2<4min^{-1}).

We would be pleased to help you check whether your selection in correct, in so far as the precise application factors are known.

Input side

The shafts are designed for taking up, for example, couplings or pulleys.

输出端

除标准的输出型式外，空心轴和实心轴均可以采用渐开线花键连接，见 40-43 页

输出轴旋转方向

旋转方向是指面向输出轴 d_2 端面的旋转方向。

密封

输入和输出轴端的标准密封方式为径向油封。对于特殊的应用情况，我们采用可重复注入油脂的迷宫式密封方式，其原理见第 34 页

中心孔

在两侧轴伸上的中心孔尺寸详见第 34 页

润滑/注油量

齿轮箱标准润滑方式为油池润滑

Output side

In addition to standard designs， it is possible to design hollow and solid shafts also with involute splines, see page 39~42

Direction rotation of output shaft

The specified directions of rotation refer to output shaft d_2 viewing on the shaft end face.

Seals

Input and output shafts have radical shaft seal as standard.

For special applications we provide seals with refillable labyrinth. For function , see page 33

Central holes

For details on the center holes in the shaft ends, see page 34

Lubrication /Oil quantities

The gear units are provided with bath lubrication as a standard feature.

在 40℃时的粘度（GB3141）Viscosity GB3141 at 40℃ mm²/s(cSt)	油池润滑容许的最低临界温度℃ Permissible temperature limit in ℃ for bath lubrication		在泵速为 1500min⁻¹ 时强制润滑容许的最低临界温度℃ Permissible temperature limit in ℃ for forced feed lubrication at a pump speed of 1500min⁻¹	
	矿物油 Mineral oil	合成油 Synthetic oil	矿物油 Mineral oil	合成油 Synthetic oil
N320	-12	-25	+5	-5

如需采用强制润滑或需在极端温度下工作，或其他特殊情况，请向我们咨询。

润滑油确切用量请见油标上的标记。

齿轮箱可以适用于任何安装装置。为了保证充分的润滑，客户在订货时需说明齿轮箱各自的安装位置，见第 6 页

安装位置

关于齿轮箱 L11、L21、L31、V00(01)、V10(11)、V20（21）及 V30（31）安装位置时的润滑见 55 页。

冷却

在达到热功率的散热极限之前（见第 19-32），齿轮箱的冷却是通过箱体表面的热辐射和空气对流进行的。

噪音

为降低噪音，我们对齿轮箱做了优化设计。噪音值可根据额定功率按照 VD12159 衡量。

重量、尺寸

所给出的重量时一个平均值。附图和尺寸并不同实物完全一致。

In case of forced lubrication, extreme ambient temperatures and other specific feature, please refer to us.

The exact quantity of oil depends on the marks on the oil level monitoring equipment.

The gear units can be operated in any mounting position. In order to guarantee adequate lubrication, the respective mounting position must be stated (page 6)

Mounting positions

For L11、L21、L31、V00 (11)、V20 (21) and V30 (31), the lubrication see page 54.

Cooling

Up to the limited of thermal capacity (see page 18~31) the units are cooled by radiation and convection from the surface of the housing.

Noise

The gear units are optimized with regard to noise emission and can be weighted to VD12159 depending on the power rating.

Weights dimensions

The stated weights are mean values. Illustrations and dimensions are not strictly binding.

应用环境

当进行热功率计算时，我们必须考虑环境温度，因此客户必须提供环境温度值。

环境温度低于-10℃时，影响油品的一些因素和齿轮箱零部件材料均需充分考虑，敬请垂询。应用环境的影响诸如盐水，含盐空气，侵蚀性物质，粉尘，污泥，石块冲击，超大气压，强烈振动和极端冲击载荷等事先加以说明。

起动、维护、保养及安全提示

应严格遵照有效的相关操作说明中给出的信息。

供货

我们提供的行星齿轮箱可直接安装，但是不含润滑油。
齿轮箱已做了防腐处理，表面喷有防锈油漆。
轴装式齿轮箱标准配备中带缩紧盘，但不带防护装置。
我们还可随同齿轮箱一起提供（可选）：
1）单侧扭力臂支撑，相应的连接杆和2个自调心滑动轴承以及销轴、垫圈和弹性挡圈均包括在供货范围内。
2）双侧扭力臂支撑，相应的金属橡胶结合型衬套包括在供货范围内。

防锈

齿轮箱内部防锈性能与所使用的润滑油有关。
经过防锈处理的齿轮箱标准防锈有效期6个月。

其他说明

对配置扭力臂支撑的轴装式齿轮箱，因工作机轴可能需发生移动，扭力臂在基础上的连接须允许齿轮箱随时作出相应的位移调整，不允许其它约束力作用到齿轮箱上。
对于实心轴输入且采用地脚安装的齿轮箱，与齿轮箱和原动机连接的联轴器，同样应具有适当的位移调节能力。

Operating conditions

The ambient temperatures must be known so that they can be taken into consideration when designing for thermal conditions.
Where ambient temperatures are lower than -10℃, the factors affecting the oil to be use and the materials to be use for the gear unit components must be sufficiently taken into consideration. Please refer to us. Environmental conditions such as salt water, salt-laden air, aggressive sub stances, dust, mud, falling or flying stones, excessive pressure, heavy vibrations and extreme shock loads must be disclosed.

Starting up、maintenance and safety notes

Information given in the operating instructions in effect at the time is binding.

Delivery

Planetary gear units are supplied ready for installation, but without oil.
The gear housings are protected against corrosion and sprayed anti-rust paint.
Shaft-mounted gear units are supplied with a shrink disk as standard, but without a guard.
On gear units supplied with (optional):
1) a torque arm on one side, the coupling rod and the two self-aligning plain bearings as well as pins, spacers and circlips are included in the delivery.
2) a torque arm on two sides, the Metalastic bushes are included in the delivery.

Preservation

The internal preservation of planetary gear units is dependent on the oil used .
The effective period of preservation would up to 6 months.

Further notes

For shaft-mounted gear units with torque reaction arm, the connection of the torque reaction arm on the foundation must permit the gear unit to move corresponding to the displacement of the machine shaft at any time, without constraining forces acting on the gear unit.
In case of foot mounted gear units with solid shaft, the provided coupling between gear unit and prime mover must also be suitable for movability.

符号说明			Key to Symbol		
E_D	-	每小时工作周期，以%表示	E_D	-	Operating cycle per hour in %
i	-	实际传动比	i	-	Actual ratio
i_N	-	公称传动比	i_N	-	Nominal ratio
i_s	-	要求传动比	i_s	-	Required ratio
n_1		输入转速（min^{-1}）	n_1		Input speed(min^{-1})
n_2	-	输出转速（min^{-1}）	n_2	-	Output speed(min^{-1})
F_{R2}	-	容许作用在轴D_2上的径向力（kN）	F_{R2}	-	Permissible radial forces (kN)on the shaft D_2
f_1	-	工作机系数（表1），见第10~11页	f_1	-	Factor for driven machine (table 1),page10~11
f_2	-	原动机系数（表2），见第11页	f_2	-	Factor for prime move(table 2),page 11
f_3	-	峰值扭矩系数（表3），见第11页	f_3	-	Peaking torque factor(table 3),page 11
f_4	-	环境温度系数（表4），见第11页	f_4	-	Thermal factor (table 4),page 11
f_{14}	-	载荷利用率系数（表5），见第11页	f_{14}	-	Utilization factor (table 5) page 11
f_A	-	可靠度系数（表6），见第11页	f_A	-	Reliability factor (table 6) page 11
P_G	-	所需热功率（kW）	P_G	-	Required thermal capacity(kW)
P_{G1}	-	不带辅助冷却装置的齿轮箱热功率（kW）	P_{G1}	-	Thermal capacity (kW) for gear units without auxiliary cooling
P_N	-	齿轮箱额定功率（kW），见功率表	P_N	-	Nominal power rating of gear unit(kW),see rating tables
P_2	-	工作机功率（kW）	P_2	-	Power rating of driven machine (kW)
P_C	-	所需功率（kW）	P_C	-	Required power rating (kW)
P_A	-	起动功率（kW）	P_A	-	Starting power rating (kW)
P_{2a}	-	当量功率（kW）	P_{2a}	-	Equivalent power rating (kW)
P_I,P_{II},P_n	-	与载荷谱对应的功率分量（kW）	P_I,P_{II},P_n	-	Fractions of power rating（kW) obtained from service classification
t	-	环境温度（℃）	t	-	Ambient temperature (℃)
T_A	-	输入轴最大扭矩，例如峰值工作扭矩，起动扭矩或制动扭矩（Nm）	T_A	-	Max. torque occurring on input shaft, e.g. peak operating, starting-or braking torque (Nm)
T_{2N}	-	额定输出扭矩（Nm）	T_{2N}	-	Nominal output torque (Nm)
T_2	-	工作机扭矩(Nm)	T_2	-	Torque of driven machine (Nm)
T_{2a}	-	当量扭矩(Nm)	T_{2a}	-	Equivalent power rating (Nm)
T_I,T_{II},T_n	-	与载荷谱对应的扭矩分量（Nm）	T_I,T_{II},T_n	-	Fractions of torque (Nm) obtained from service classification
X_I,X_{II},X_n	-	与载荷谱对应的时间分量（%）	X_I,X_{II},X_n	-	Fractions of time (%) obtained from service classification
L_{h10}	-	额定轴承寿命(小时)	L_{h10}	-	Nominal bearing life (h)
n_{2LN}	-	标准轴承的参考输出转速（min^{-1}）	n_{2LN}	-	Reference output speed for standard bearing (min^{-1})
n_{2LV}	-	加强轴承的参考输出转速（min^{-1}）	n_{2LV}	-	Reference output speed for increased bearing （min^{-1}）
尺寸以mm为单位，重量以kg为单位，注油量以升为单位			Dimensions in mm, weights in kg, oil quantities in litres		

1.3 产品型号表示 / Product description

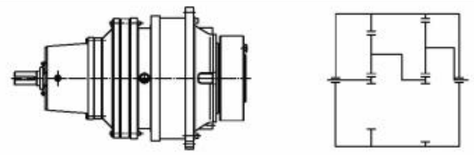
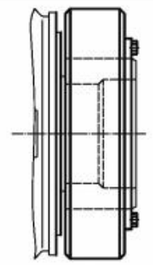
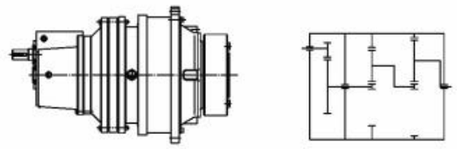
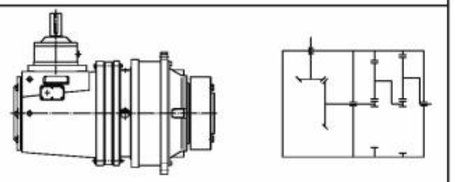
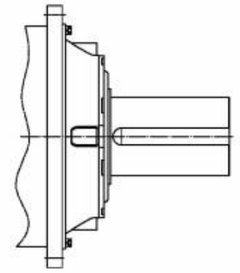
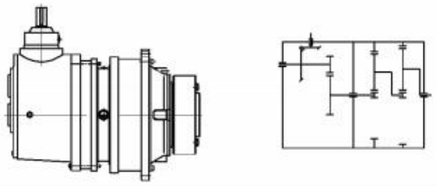
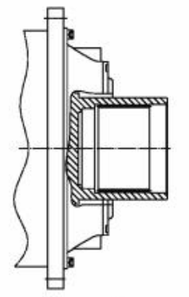
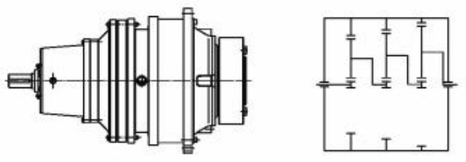
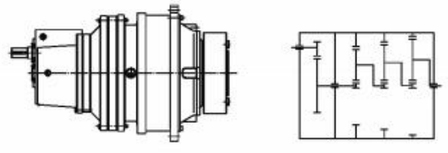
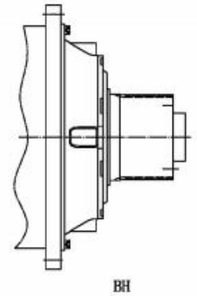
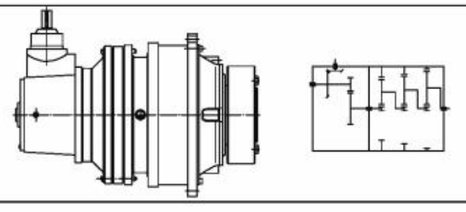
EP — 2 — S — AS — 11 — 80 — L12 — FJ03

- EP — 行星齿轮箱/Planetary gear units
- 2 — 行星齿轮级数/Number of planetary gear stages:
  2……两级行星齿轮/Two planetary gear stages
  3……三级行星齿轮/Three planetary gear stages
- S — 基本类型/Basic type:
  N……标准（同轴）/Standard (coaxial)
  S……一级斜齿平行轴/Bevel gear stage
  L……一级锥齿直交轴/Helical gear stage
  K……一级锥齿-斜齿直交轴
- AS — 出轴型式(见 39~42 页) /Output shaft type(See page 39~42)
  AS……带锁紧盘的空心轴输出/Hollow shaft with shrink disk
  AH……渐开线花键的空心轴输出/Hollow shaft with involute splines
  BJ……带平键的实心轴输出/Solid shaft with parallel key
  BH……渐开线花键的实心轴输出/Solid shaft with involute splines
- 11 — 规格/Size
- 80 — 传动比/Ratio
- L12 — 减速机安装形式型式 Identifications of Shaft Arrangements 见第 7 页/see page 7
- FJ03 — 附件/Add-on pieces 见第 56 页/see page 56 附件扭力臂、底座布置型式 Identifications of the torque reaction arm of the gear housing base Arrangements

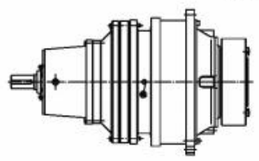
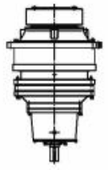
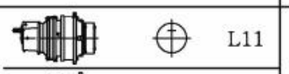
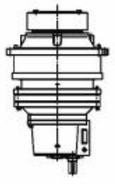
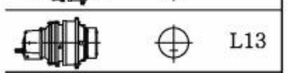
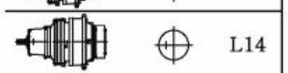
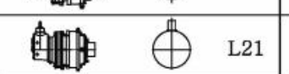
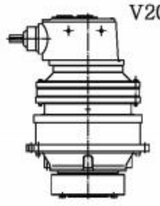
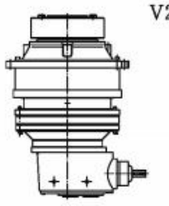
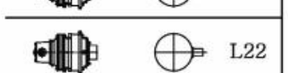
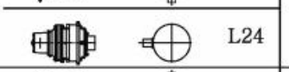
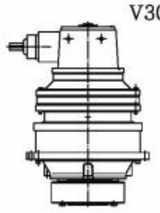
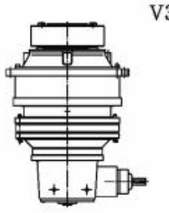
注：选型细节请咨询英德普兰技术部 。

Note：For selection details, please consult ENTPLAN'S Technical Service.

1.4 基本类型 1.4 Basic type

型号 Type / 传动比范围 Range of ratio	附图 Representation	输出轴连接方式 Connecting Structure of Output Shaft
EP2N iN=45-40		 AS Hollow shaft for shrink disk
EP2S iN=45~125		
EP2L iN=31.5-100		 BJ Hollow shaft with involute splines
EP2K iN=112-500		 AH shaft with parallel key
EP3N iN=140-280		
EP3S iN=280-900		 BH Hollow shaft with involute splines
EP3K iN=560-4000		

1.5 轴和附件的布置形式[1)] 1.5 Identifications of Shaft and Add-on Pieces Arrangements[1)]

齿轮箱卧式安装 Horizontal gear unit position				齿轮箱竖直安装[2)] Vertical gear unit position	
同轴式行星齿轮箱 Coaxial planetary gear units	0	EP.N	L00 	V00 	V01 
斜齿轮平行轴行星齿轮箱 Combined helical gear planetary gear units	1	EP.S	L11 	V10 	V11 
			L12 		
			L13 		
			L14 		
带锥齿轮和斜齿轮直交轴行星齿轮箱 Combined bevel-helical gear planetary gear units	2	EP.K	L21 	V20 	V21 
			L22 		
			L23 		
			L24 		
锥齿轮直交轴行星齿轮箱 Combined bevel gear planetary gear units	3	EP.L	L31 	V30 	V31 
			L32 		
			L33 		
			L34 		
扭力壁支撑；底座式 Torque reaction arm; gear housing base	5		T51 	T61 	T62 
			T52 		
			T53 	T63 	T64 
			T54 		
			T55 	1). 从d1轴段观察 Viewing on shalf d1 2). 必须检查润滑油供给情况，请咨询我司 Lubricant supply must be checked ,please consult us	
			T56 		

2.1 选型指南 2.1 Guidelines for the selection

恒定功率 Constant mechanical power

1) 确定齿轮箱的类型和规格 Determination of gear unit type and size

a) 确定传动比 / Find the transmission ratio

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

b) 确定齿轮箱额定功率 / Determine nominal power rating of the gear unit

$$P_N \geqslant P_C = P_2 \times f_1 \times f_2 \times f_A$$

c) 检验是否满足下列条件 / Check for over dimensioning

如果不满足下列条件请与我们联系 / It is not necessary to consult us, if:

$$P_2 \geqslant 30\% \times P_N$$

d) 校核最大扭矩，例如峰值工作扭矩，起动扭矩和制动扭矩 / Check for maximum torque, e.g. peak operating, starting or braking torque

$$P_N \geqslant P_A = \frac{T_A \times n_1}{9550} \times f_3$$

根据 i_N 和 P_N 在额定功率表中确定齿轮箱的规格和传动级数 / Gear unit sizes and number of reduction stages are given in rating tables depending on i_N and P_N

e) 校核实际传动比 i 是否适合，见 36~38 页 / Check whether the actual ratio i as per tables on pages 36~38 is acceptable

2) 确定齿轮箱载荷利用率和所需的热功率 Determination of gear unit utilization and required thermal capacity

a) 用于热功率计算的齿轮箱载荷利用率 / Gear unit utilization for the determination of the thermal capacity

$$\text{载荷利用率} = P_2/P_N \times 100$$

根据载荷利用率由第 11 页表 5 查得系数 f_{14} / The f_{14} factor can be calculated from table 5,page 11, as a function of the percentage utilization

b) 齿轮箱不带辅助冷却装置可以满足要求，如果： / Adequate for gear units without auxiliary cooling, if:

$$P_2 \leqslant P_G = P_{G1} \times f_4 \times f_{14}$$

c) 为了达到较高的热功率，需要通过气-油冷却器或水-油冷却器进行冷却，敬请垂询 / For higher thermal capacities, cooling by external air cooler or water on request

变功率

在以恒定转速和可变功率运行的工作机上，其齿轮箱是根据当量功率配置的。因此在一个工作周期中，其不同阶段Ⅰ，Ⅱ，…n需要的功率分别为$P_Ⅰ$,$P_Ⅱ$,…P_n，这些功率分量与各自的时间分量$X_Ⅰ$,$X_Ⅱ$,…X_n相对应。根据这些数据按下列公式计算当量功率P_{2a}:

Variable Power Rating

For driven machine with constant speeds and variable power rating the gear unit can be designed according to the equivalent power rating. For this, a working cycle where phase Ⅰ,Ⅱ,...n require power $P_Ⅰ$,$P_Ⅱ$,...P_n and the respective power ratings operate for time fractions

$X_Ⅰ$,$X_Ⅱ$,...X_n is taken as a basis. The equivalent power rating can be calculated from these specification with the following formula:

$$P_{2a} = \sqrt[6.6]{P_{Ⅰ}^{6.6} \times \frac{X_Ⅰ}{100} + P_{Ⅱ}^{6.6} \times \frac{X_Ⅱ}{100} + \cdots P_n^{6.6} \times \frac{X_n}{100}}$$

然后确定齿轮箱规格，需满足：

The size of the gear unit can then be determined analogously as following:

$$P_N \geq P_C = P_{2a} \times f_1 \times f_2 \times f_A$$

然后，在P_N确定后，按照以下条件检验各个时间分量及其相应的功率分量：

Then, when P_N has been determined, the power and the time fractions must be checked by applying the following requirements:

a) 各个功率分量$P_Ⅰ$,$P_Ⅱ$，…P_n应大于0.4×PN

a) The individual power fractions $P_Ⅰ$,$P_Ⅱ$,...P_n must be greater than $0.4\times P_N$.

b) 各个功率分量$P_Ⅰ$,$P_Ⅱ$，…P_n不能超过1.4×PN

b) The individual power fractions $P_Ⅰ$,$P_Ⅱ$,...P_n must not exceed $1.4\times P_N$.

c) 功率分量$P_Ⅰ$,$P_Ⅱ$，…P_n中大于P_N的分量所对应的时间分量$X_Ⅰ$,$X_Ⅱ$，…X_n总和不超过10%

c) If power fractions $P_Ⅰ$,$P_Ⅱ$,...P_n are greater than PN, the sum of time fraction $X_Ⅰ$,$X_Ⅱ$,...X_n must not exceed 10%.

如果以上三个条件中的任何一项不满足，则必须重新计算P_{2a}和P_C

特别应加以注意的是在计算P_{2a}时没有计入的短时峰值功率不能大于 $P_{max}=2\times P_N$

If any one of the three requirements is not met, P2a and Pc must be calculated.

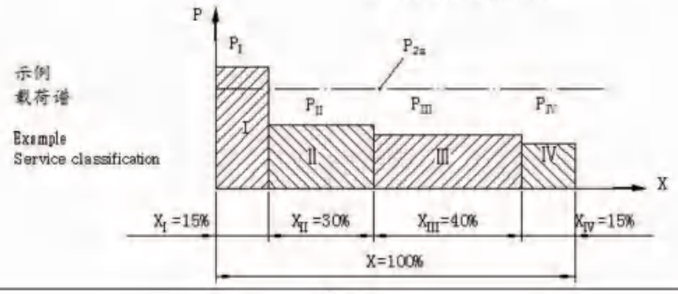
It must be borne in mind that a brief peak power rating not included in the calculation of P_{2a} must not greater than $P_{max}=2\times P_N$

在以可变扭矩和恒定转速运行的情况下。齿轮箱应按当量扭矩计算。

In applications where the torque is variable but the speed constant the gear unit can be designed on the basis of the so-called equivalent torque.

对某些特定应用，按有限寿命选择的齿轮箱就足以满足应用了，如果偶尔动作(闸门锁定机构)或慢速输出($n_2<4min^{-1}$)等。

A gear unit design which is finite-life fatigue-resistant can be sufficient for certain applications, for example, sporadic operation (lock-gate drive)or slow output speeds($n_2<4min^{-1}$)



2.2 应用及载荷分类 2.2 Load classification symbols

表1 工作系数f_1 / Table 1 Factor for driven machine f_1

工作机 Driven machines		1) 每天负载运行时间，以小时计算 Effective daily operating period under load		
		≤0.5	0.5-10h	>10h
污水处理	**Waste water treatment**			
浓缩器（中心传动）	Thickeners (central drive)	–	–	1.2
压滤机	Filter presses	1.0	1.3	1.5
絮凝器	Flocculation apparat	0.8	1	1.3
曝光机	Aerators	–	1.8	2.0
搂集设备	Raking equipment	1.0	1.2	1.3
纵向，回转组合式搂集装置	Combined longitudinal and rotary rakes	1.0	1.3	1.5
预浓缩器	Pre-thickeners	–	1.1	1.3
螺杆泵	Screw pumps	–	1.3	1.5
水轮机	Water turbines	–	–	2.0
离心泵	Centrifugal pumps	1.0	1.2	1.3
容积式泵	Positive-displacement pumps			
1个活塞	1 piston	1.3	1.4	1.8
>1个活塞	> 1piston	1.2	1.4	1.5
挖泥机	**Dredgers**			
斗式输送机	Bucket conveyors	–	1.6	1.6
倾卸装置	Dumping devices	–	1.3	1.5
履带式行走机构	Carterpillar traveling gears	1.2	1.6	1.8
斗轮式挖掘机	**Bucket wheel excavators**			
用于料堆捡拾	As pick-up	–	1.7	1.7
用于原生岩土	For primitive material	–	2.2	2.2
采掘机机头	Cutter heads	–	2.2	2.2
采掘臂回转*	Traversing gears*	–	1.4	1.8
弯板机*	**Plate bending machines***	–	1.0	1.0
化学工业	**Chemical industry**			
挤出机	Extruders	–	–	1.6
调浆机	Dough mils	–	1.8	1.8
橡胶研光机	Rubber calenders	–	1.5	1.5
冷却圆筒	Cooling drums	–	1.3	1.4
混匀机，用于	**Mixers for**			
均匀介质	Uniform media	1.0	1.3	1.4
非均匀介质	Non-uniform media	1.4	1.6	1.7
搅拌机，用于	**Agitators for media with**			
均匀介质	Uniform density	1.0	1.3	1.5
不均匀介质	Non-uniform density	1.2	1.4	1.6
不均匀气体吸收	Non-uniform gas absorption	1.4	1.6	1.8
烘炉	Toasters	1.0	1.3	1.5
离心机	Centrifuges	1.0	1.2	1.3
金属加工	**Mental working mills**			
翻板机	Plate tilters	1.0	1.0	1.2
推钢机	Ingot pushers	1.0	1.2	1.2
绕线机	Winding machines	–	1.6	1.6
冷床横移架	Cold bed transfer frames	–	1.5	1.5
辊式校直机	Roller straighteners	–	1.6	1.6
轨道	**Roller tables**			
连续式	Continuous	–	1.5	1.5
间歇式	Intermittent	–	2.0	2.0
可逆式管轧机	Reversing tube mills	–	1.8	1.8
剪切机	**Shears**			
连续式*	Continuous*	–	1.5	1.5
曲柄式*	Crank type*	1.0	2.0	1.0
连铸机驱动装置*	Continuous casting drivers*	–	1.8	1.4
轧机	**Rolls**			
可逆式开坯机	Reversing blooming mills	–	2.5	2.5

可逆式穿孔机	Reversing piercing mills	–	2.5	2.5
可逆式板坯轧机	Reversing slabbing mills	–	2.5	2.5
可逆式线材轧机	Reversing wires mills	–	1.8	1.8
可逆式薄板轧机	Reversing sheet mills	–	2.0	2.0
可逆式中厚板轧机	Reversing plate mills	–	1.8	1.8
辊缝调节驱动装置	Roll adjustment drives	0.9	1.0	–
输送机械	**Conveyors**			
斗式输送机	Bucket conveyors	–	1.2	1.5
绞车	Hauling winches	1.4	1.6	1.6
卷扬机	Hoists	–	1.5	1.8
皮带输送机≤150kW	Belt conveyors ≤150kW	1.0	1.2	1.3
皮带输送机≥150kW	Belt conveyors≥150kW	1.1	1.3	1.4
货运电梯*	Goods lifts*	–	1.2	1.5
客运电梯*	Passenger lifts*	–	1.5	1.8
刮板式输送机	Apron conveyors	–	1.2	1.5
自动扶梯	Escalators	–	1.2	1.4
轨道行走机构	Rail traveling gears	–	1.5	–
变频装置	**Frequency converters**	–	1.8	2.0
柱塞式压缩机	**Reciprocating compressors**	–	1.8	1.9
起重机械**	Cranes**			
回转机构****	Slewing gears****	1.0	1.4	1.8
俯仰机构	Luffing gears	1.0	1.1	1.4
行走机构	Traveling gears	1.1	1.6	2.0
起升机构	Hoisting gears	1.0	1.1	1.4
转臂式起动机	Derricking jib cranes	1.0	1.2	1.6
冷却塔	**Cooling towers**			
冷却塔风扇	Cooling tower fans	–	–	2.0
风机（轴流和离心式）	Blowers (axial and radial)	–	1.4	1.5
食品工业	**Food industry**			
蔗糖生产	Cane sugar production			
甘蔗切碎机*	Cane knives*	–	–	1.7
甘蔗碾磨机	Cane mills	–	–	1.7
甜菜生产	Beet sugar production			
甜菜搅碎机	Beet cossettes macerators	–	–	1.2
榨取机	Extraction plants,			
机械制冷机	Mechanical Refrigerator			
蒸煮机	Juice boilers	–	–	1.4
甜菜清洗机	Sugar beet washing machines			
甜菜切割机	Sugar beet cutters	–	–	1.5
造纸机械	**Building**			
各种类型***	Of all kind***	–	1.8	2.0
碎浆机驱动装置	Pulper drives	敬请垂询 / On request		
离心式压缩机	**Centrifugal compressors**	–	1.4	1.5
索道缆车	**Cableways**			
运货索道	Material ropeways	–	1.3	1.4
往复式空中索道	To- and fro system aerial ropeways	–	1.6	1.8
拖牵式索道	T- bar lifts	–	1.3	1.4
循环式索道	Continuous ropeways	–	1.4	1.6
水泥工业	**Cement industry**			
混凝土搅拌机	Concrete mixers	–	1.5	1.5
破碎机*	Breakers*	–	1.2	1.4
回转窑	Rotary kilns	–	–	2.0
管式磨机	Tube mills	–	–	2.0
选粉机	Separators	–	1.6	1.6
辊压机	Roll crushers	–	–	2.0

工作机额定功率 P_2 的确定
*）按最大扭矩确定额定功率
**）可将载荷准确地分类
***）检验热功率是绝对必要的
****）载荷精确分类可以参考相关的回转机构资料

Design for power rating driven machine P_2
*) Designed power corresponding to max. torque
**) Load can be exactly classified
***) A check for thermal capacity is absolutely essential
****) Load can be exactly classified according to the slewing gear specification

所列各项系数均为经验值，使用这些系数的前提条件是所述机械设备应符合通常的设计规范和载荷条件。
如遇特殊情况，请及时与我们联系

对于未列入此表的工作机械，请与我们联系。

The listed factors are empirical values. Prerequisite for their application is that the machine and equipment mentioned correspond to generally accepted design and load specifications. In case of deviations form standard conditions, please refer to us.
For driven machines which are not listed in this table, please refer to us.

2.3 服务系数

表 2 原动机系数	f_2
电动机、汽轮机、液压马达	1.0
4-6 缸活塞发动机 周期变化 1:100 至 1:200	1.25
1-3 缸活塞发动机 周期变化最高达 1:100	1.5

2.3 Service factors

Table2 Factor for prime mover	f_2
Electric motors, hydraulic motors, turbines	1.0
Piston engines 4~6 cylinders Cyclic variation 1:100 to 1:200	1.25
Piston engines 1~3 cylinders Cyclic variation up to 1:100	1.5

表 3 峰值扭矩系数				f_3
	每小时峰值载荷次数			
	1-5	6-30	31-100	>100
单向载荷	0.5	0.65	0.7	0.85
交变载荷	0.7	0.95	1.10	1.25

Table 3 Peak torque factor				f_3
	Number of peak torque per hour			
	1-5	6-30	31-100	>100
Steady direction of load	0.5	0.65	0.7	0.85
Alternating direction of load	0.7	0.95	1.10	1.25

表 4 环境温度系数					f_4
不带辅助冷却装置					
环境温度	每小时工作周期（ED），以%表示				
	100	80	60	40	20
10°C	1.14	1.20	1.32	1.54	2.04
20°C	1.00	1.06	1.16	1.35	1.79
30°C	0.87	0.93	1.00	1.18	1.56
40°C	0.71	0.75	0.82	0.96	1.27
50°C	0.55	0.58	0.64	0.74	0.98

Table4 Thermal factor					f_4
Without auxiliary cooling					
Ambient temperature	Operating cycle per hour (ED) , in %				
	100	80	60	40	20
10°C	1.14	1.20	1.32	1.54	2.04
20°C	1.00	1.06	1.16	1.35	1.79
30°C	0.87	0.93	1.00	1.18	1.56
40°C	0.71	0.75	0.82	0.96	1.27
50°C	0.55	0.58	0.64	0.74	0.98

表 5 载荷利用率系数								f_{14}
30%	40%	50%	60%	70%	80%	90%	100%	
0.66	0.77	0.83	0.90	0.90	0.95	1.0	1.0	

Table5 Utilization factor								f_{14}
30%	40%	50%	60%	70%	80%	90%	100%	
0.66	0.77	0.83	0.90	0.90	0.95	1.0	1.0	

表 6 / Table6 可靠度系数 / Reliability factor			f_A
重要性与安全要求 Essentiality and safe requirement	一般设备或辅助传动，减速器失效仅引起单机停产且易更换备件 The common auxiliary devices, the gear units is broken to stop single machine and easily replaced	重要设备，减速器失效引起机组、生产线停产 The important equipment, the gear units is broken to shop engine sets and product line	高度安全要求，减速器失效引起全厂停产或人身事故 The high safe requirement, the gear units is broken to stop all parts in the factory and cause life accidents
f_A	1.0	1.05-1.3	1.5-1.7

2.4 计算示例

计算示例 1

已知		Known criteria:	
原动机		**Prime mover**	
电动机功率	P_1 = 630 kW	Electric motor	P_1=630kW
转速	n_1 = 740 r/min	Motor speed	n_1=740r/min
最大起动转矩	T_A = 14600 Nm	Max starting torque	T_A=1460Nm
从动机		**Driven machine**	
Φ2.2×11m 管磨机		Φ2.2×11m Grinding cylinders	
转速	n_2 = 20.7 r/min	Speed	n_2=20.7r/min
每天运行时间	24 小时/天	Duty	24h/day
连续工作		Continuous working	
每小时工作周期	E_D = 100%	Operating cycle per hour	E_D=100%
环境温度	t = 30℃	Ambient temperature	t=30℃
较高温度可靠度要求		Higher reliability	
室内大空间安装		Installation in large halls	

1）确定齿轮箱的类型和规格

a）计算传动比

1） Determination of gear unit type and size

a） Calculation the transmission ratio

$$i_s = \frac{n_1}{n_2} = \frac{740\text{min}^{-1}}{20.7\text{min}^{-1}} = 35.7 \qquad i_N=35.5$$

b）确定齿轮箱类型

选择类型 EP2L.（依据实际传动比和所需基本类型）

b） Determination the gear unit type

Type EP2L. selected (for actual ratio and required basic type)

c）确定齿轮箱额定功率

c） Determine nominal power rating of the gear unit

$$P_N \geqslant P_C = P_2 \times f_1 \times f_2 \times f_A = 630 \times 2.0 \times 1 \times 1.15 = 1449\text{kW} \leqslant P_N = 1513\text{kW}$$

从功率表中选择类型 EP2L.,齿轮箱规格 25，额定功率 P_N=1513kW（见第 21 页）

Selected from power rating table: Type EP2L., gear unit size 25,with P_N=1513kW(see page 21)

$$P_2 \geqslant P_N \times 30\% \qquad P_2 = 630\text{kW} \geqslant 1513 \times 30\% = 453.9\text{kW}$$

d）校核起动功率

d） Checking the starting power rating

$$P_N \geqslant P_A = \frac{T_A \times n_1}{9550} \times f_3 = \frac{14600 \times 740}{9550} \times 0.7 = 792\text{kW} \qquad P_N = 1513\text{kW} > P_A = 792\text{kW}$$

2）确定齿轮箱热功率

a）确定公称功率利用率

2） Check required thermal capacity

a） Determine nominal power utilization

$$\text{公称功率利用率\%} = P_2/P_N \times 100\% = 630/1513 \times 100\% = 41\%$$

b）从类型 EP2L 参数表中得到热功率（见第 21 页）

b） Thermal capacity acc. To table type EP2L.(see page 21)

$$P_2 \leq P_G = P_{G1} \times f_4 \times f_{14} = 198 \times 0.87 \times 0.77 = 132.6\text{kW} \qquad P_2 = 630\text{kW} > P_G = 132.6\text{kW}$$

需要辅助冷却装置，请与我们联系！

Auxiliary cooling required, please refer to us!

3）确定安装形式和供油方式

一级锥齿轮行星齿轮箱：EP2L

出轴型式：AS 见第 39~42 页

3） Determination of design and oil supply

Bevel planetary gear unit: EP2L.

Variant: AS see page 39~42

安装方式：卧式安装

输入轴 d_1 装配形式：L32，见第 6 页

输入轴 d_1 旋转方向：逆时针，从轴端面观察

Mounting position: horizontal

Pos: of the input shaft d_1: e.g. "L32" see page 6

Direct. of rotation of input shaft d_1: L, viewing on shaft end face

d_2 输出型式：带锁紧盘，地脚安装

润滑方式：强制润滑

选用的减速器型号：

EP2LAS-25-35.5-L32-FJ01

Design d_2: hollow shaft for disk, with feet

Lubrication: forced

Selected type of gear unit:

EPⅡLAS-25-35.5-L32-FJ01

计算示例 2

Calculation example 2

已知		Known criteria:	
原动机		**Prime mover**	
电动机功率	P_1 = 75 kW	Electric motor	P_1=75kW
转速	n_1 = 1500 r/min	Motor speed	n_1=1500r/min
最大起动转矩	T_A = 830 Nm	Max starting torque	T_A=830Nm
从动机		**Driven machine**	
皮带输送机		Belt conveyors	
转速	n_2 = 2.38 r/min	Speed	n_2=2.38r/min
输送机转矩	T_2 = 240000 Nm	Conveyors torque	T_2=240000Nm
每天运行时间	24 小时/天	Duty	24h/day
每小时启动次数	≤5 次	Starting numbers per hour	≤ 5
每小时工作周期	E_D = 60%	Operating cycle per hour	E_D = 60%
环境温度	t = 30℃	Ambient temperature	t=30℃
较高可靠度要求		Higher reliability	
室内大空间安装		Installation in large halls	

1）确定齿轮箱的类型和规格

1） Determination of gear unit type and size

a)计算传动比

a） Calculation the transmission ratio

$$i_S = \frac{n_1}{n_2} = \frac{1500\text{min}^{-1}}{2.38\text{min}^{-1}} = 630.2 \qquad i_N = 630$$

b)确定齿轮箱类型

选择类型 EP3S（依据实际传动比和所需基本类型）

b） Determination of gear unit type

Type EP3S. selected (for actual ratio and required basic type)

c)确定工作机额定功率

c) Determine power rating of driven machine

$$P_2 = \frac{T_2 \times n_2}{9550} = \frac{240000 \times 2.38}{9550} = 59.8\,\text{kW}$$

d)确定齿轮箱额定功率

d) Determine nominal power rating of the gear unit

$$P_N \geqslant P_C = P_2 \times f_1 \times f_2 \times f_A = 59.8 \times 1.3 \times 1 \times 1.2 = 93.29\text{kW} \quad P_N = 98\text{kW} \geqslant P_C = 93.29\text{kW}$$

从功率表中选择类型 EP3S.，齿轮箱规格 21，额定功率 P_N=98kW(见第 29 页)

Selected from power rating table: Type EP3S. gear unit size 21,with P_N=98kW(see page 29)

$$P_2 \geqslant P_N \times 30\% \qquad P_2 = 59.8\text{kW} \geqslant 93.29 \times 30\% = 28\text{kW}$$

e)校核起动功率

e） Checking the starting power rating

$$P_N \geqslant P_A = \frac{T_A \times n_1}{9550} \times f_3 = \frac{830 \times 1500}{9550} \times 0.5 = 65.2\text{kW} \qquad P_N = 98\text{kW} > P_A = 65.2\text{kW}$$

2）确定齿轮箱热功率

2） Check required thermal capacity

a）确定公称功率利用率

a） Determine nominal power utilization

公称功率利用率% nominal power utilization in%=P_2/P_N X100%=59. 8/98X100%=61%

b）从类型 EP3S 参数表中得到热功率（见第 29 页）

b） Thermal capacity acc. To table type EP3S (see page 29).

$$P_2 \leqslant P_G = P_{G1} \times f_4 \times f_{14} = 114 \times 1 \times 0.9 = 102.6\text{kW} \qquad P_2 = 59.8\text{kW} < P_G = 102.6\text{kW}$$

不需要辅助冷却装置！

No auxiliary cooling required!

3）确定安装形式和供油方式

3） Determination of design and oil supply

平行轴行星齿轮箱：EP3S

Helical planetary gear unit: EP3S

出轴型式：BJ 见第 39~42 页

Variant: BJ see page 39~42

安装方式：卧式安装

Mounting position: horizontal

输入轴 d_1 装配形式：L13，见第 6 页

Pos. of the input shaft d_1: e.g."L13"see page 6

润滑方式：油池润滑

Lubrication: dip lubrication

输出轴 d_2 输出型式：带平键的实心轴

Design d_2: solid shaft with parallel key

选用的减速器型号：

Selected type of gear unit:

EP3SBJ-21-630-L13

EP3SBJ-21-630-L13

计算示例 3 | **Calculation example 3**

已知 | Known criteria

原动机 | **Prime mover**

电动机功率	P_1 = 132kW	Electric motor	P_1=132kW
转速	n_1 = 1000r/min	Motor speed	n_1=1000r/min
最大起动扭矩	T_A = 2000Nm	Max. starting torque	T_A=2000Nm

从动机 | **Driven machine**

均与介质混匀机		Mixers uniform media	
转速	n_2 = 12.5r/min	Speed	n_2=12.5r/min
每天运行时间	10 小时/天	Duty	10h/day
每小时工作周期	E_D = 60%	Loading persistent per hour	E_D=60%
环境温度	t = 20℃	Ambient temperature	t=20℃
较高可靠度要求		Higher reliability	
室外安装		Installation in the open	
载荷谱		Service classification	
P_I 在 10%时间分量中为 130kW		P_I 130kW at 10% of time	
P_{II} 在 30%时间分量中为 69kW		P_{II} 69kW at 30% of time	
P_{III} 在 40%时间分量中为 65kW		P_{III} 65kW at 40% of time	
P_{IV} 在 20%时间分量中为 62kW		P_{IV} 62kW at 20% of time	

1) 确定齿轮箱的类型和价格 | **1) Determination of gear unit type and size**

a) 计算传动比 | a) Calculation the transmission ratio

$$i_S = \frac{n_1}{n_2} = \frac{1000\text{min}^{-1}}{12.5\text{min}^{-1}} = 80 \qquad i_N = 80$$

b) 确定齿轮箱类型 | b) Determination of gear unit type

选择类型 EP2S（依据实际传动比和所需基本类型） | Type EP2S. selected (for actual ratio and required basic type)

c) 从给出的载荷谱中确定当量功率 | c) Determination of equivalent torque from the given service classification

$$P_{2a} = \sqrt[6.6]{(P_I^{6.6} \times \frac{X_I}{100} + P_{II}^{6.6} \times \frac{X_{II}}{100} + \cdots P_n^{6.6} \times \frac{X_n}{100})} =$$

$$P_{2a} = \sqrt[6.6]{130^{6.6} \times \frac{\{10\%\}}{100} + 69^{6.6} \times \frac{\{30\%\}}{100} + 65^{6.6} \times \frac{\{40\%\}}{100} + 62^{6.6} \times \frac{\{20\%\}}{100}} = 93\text{kW}$$

请注意 8 页选型指南的条件 a),b),c) | Observe condition a),b),c), of the guidelines for the section page 8

d) 确定齿轮箱额定功率 | d) Determine nominal power rating of the gear unit

$$P_N \geqslant P_C = P_{2a} \times f_1 \times f_2 \times f_A = 93 \times 1.3 \times 1 \times 1.2 = 145\text{kW} \leqslant P_N = 149\text{kW}$$

从功率表中选择类型 EP2S.，齿轮箱规格 14，额定功率 P_N=149kW（见第 24 页） | Selected from power rating table: Type EP2S. gear unit size 14, with P_N=146kW(see page 24)

$$P_{2a} \geqslant P_N \times 30\% \qquad P_{2a} = 93\text{kW} \geqslant 149 \times 30\% = 44.7\text{kW}$$

e) 校核起动扭矩 | e) Checking the starting torque

$$P_N \geqslant P_A = \frac{T_A \times n_1}{9550} \times f_3 = \frac{2000 \times 1000}{9550} \times 0.5 = 104.7\text{kW} \qquad P_N = 149\text{kW} \geqslant P_A = 104.7\text{kW}$$

2) 确定齿轮箱热功率 | **2) Check required thermal capacity**

a) 确定公称功率利用率 | a) Determine nominal power utilization

公称利用率%/ nominal power utilization in % = P_{2a} / P_N × 100% = 93/149 × 100% = 62%

b) 从类型 EP2S 参数表中得到热功率（见第 23 页） | b) Thermal capacity acc. To table type EP2S(see page 23).

$$P_G = P_{G1} \times f_4 \times f_{14} = 90 \times 1.16 \times 0.9 = 94\text{kW} \qquad P_{2a} = 93\text{kW} \leqslant P_G = 94\text{kW}$$

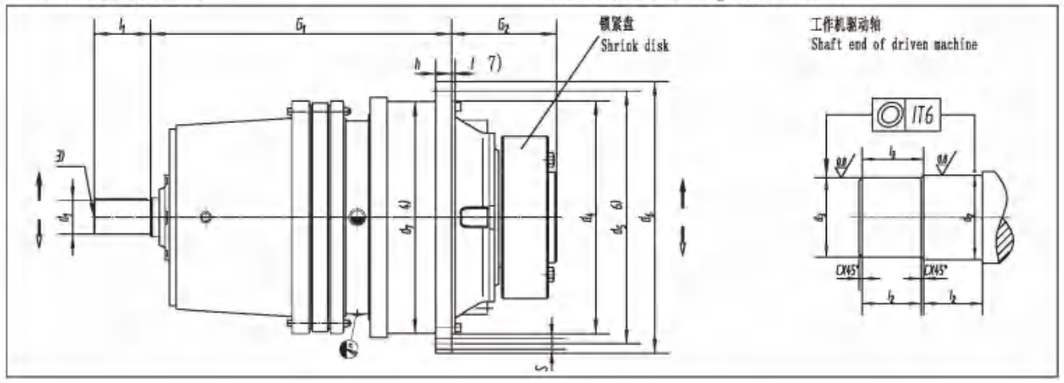
不需要辅助冷却装置 | No auxiliary cooling required

3) 确定安装形式和供油方式 | **3) Determination of design and oil supply**

平行轴行星齿轮箱：EP2S	Helical planetary gear unit: EP2S
出轴型式：BH 见第 39~42 页	Variant: BH see page 39~42
安装方式：卧式安装	Mounting position: horizontal
输入轴 d_1 装配形式：L13，见第 6 页	Pos. of the input shaft d_1:e.g. “L13” see page 6
d_2 输出型式：带渐开线花键的实心轴	Design d_2:solid shaft with involute splines
润滑方式：油池润滑	Lubrication: dip lubrication
选用的减速器型号：	Selected type of gear unit:
EP2SBH-14-80-L13	**EP2SBH-14-80-L13**

3.1 EP2NAS型
EP2NAS安装尺寸和重量

3.1 Type EP2NAS
Dimensions and weights of EP II NAS



规格 Size	额定输出扭矩 Nominal output torque T_{2S} (Nm)	输入轴 Shaft end input side d_1 1)	l_1	工作机驱动轴 Driven machine shaft d_2 h6 5)	d_3 h6 5)	l_2	C	l_3	d_4 h7	d_5	d_6	d_7	G_1	G_2	h	t	法兰螺栓孔 Flange bolts S	数量 No.	重量 Weight 2) ca. kg	注油量 Oil quantity ca. l
		mm	mm	mm	mm	mm	m	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm			
9	22000	55	90	120	115	65	2.5	67.5	350	388	428	356	469	165	24	6±1.5	18	24	240	6
10	31000	55	90	130	125	70	2.5	72.5	394	436	472	400	489	174	28	8±1.5	18	28	290	8
11	42000	70	120	140	135	82.5	2.5	85	425	485	525	436	579	204	32	8±1.5	22	20	350	12
12	60000	70	120	160	155	90	2.5	92.5	495	555	605	510	593	224	34	9±1.5	26	20	490	16
13	83000	80	140	180	175	95	2.5	97.5	535	595	645	554	714	241	39	11±1.5	26	24	590	20
14	114000	80	140	210	205	105	2.5	107.5	610	665	720	629	737	278	42	9	26	32	820	32
16	160000	95	160	230	225	110	2.5	112.5	660	715	770	680	851	285	44	10	26	36	1030	40
17	202000	95	160	250	245	120	2.5	122.5	750	830	895	775	877	294	50	10	33	24	1500	56
18	244000	110	180	260	255	120	2.5	122.5	785	865	930	815	1006	303	50	10	33	32	1900	66
19	295000	110	180	280	275	135	2.5	137.5	840	915	980	870	1029.5	327.5	56	12	33	36	2000	82
20	354000	110	180	300	295	135	2.5	137.5	840	915	980	870	1029.5	327.5	56	12	33	36	2100	75
21	392000	120	210	310	305	152	2.5	154.5	935	1025	1115	960	1046	354	62	24	39	32	2650	110
22	450000	120	210	330	325	152	2.5	154.5	935	1025	1115	960	1046	354	62	24	39	32	2800	95
23	513000	130	210	350	345	164	2.5	166.5	1025	1120	1210	1056	1150	380	68	28	39	36	3450	130
24	592000	130	210	360	355	164	2.5	166.5	1025	1120	1210	1056	1150	380	68	28	39	36	3900	125
25	684000	140	240	380	375	180	2.5	182.5	1115	1220	1320	1150	1241	407	74	29	45	36	4750	190
26	763000	140	240	400	395	180	2.5	182.5	1115	1220	1320	1150	1241	407	74	29	45	36	5150	160
27	852000	150	240	430	425	191	2.5	193.5	1215	1345	1460	1248	1379	453	81	31	52	32	6100	245
28	950000	150	240	450	445	191	2.5	193.5	1215	1345	1460	1248	1379	453	81	31	52	32	6550	205
29	1060000	160	270	460	450	197.5	5	202.5	1320	1450	1565	1355	1457	483	87	34	52	36	7800	305
30	1200000	160	270	480	470	197.5	5	202.5	1320	1450	1565	1355	1457	483	87	34	52	36	8300	255
31	1330000	170	270	480	470	232	5	237	1400	1545	1665	1443	1607	538	94	36	62	32	10200	380
32	1500000	170	270	510	500	232	5	237	1400	1545	1665	1443	1607	538	94	36	62	32	10700	315
33	1680000	180	310	530	520	242	5	247	1495	1635	1755	1536	1683	573	100	36	62	36	12350	460
34	1920000	180	310	570	560	242	5	247	1495	1635	1755	1536	1683	573	100	36	62	36	13150	380
35	2240000	190	310	600	590	272	5	277	1685	1825	1945	1720	1899	656	112	40	62	40	17300	645
36	2600000	190	310	640	630	272	5	277	1685	1825	1945	1720	1899	656	112	40	62	40	18400	535

1) 轴径d1≤100,公差为m6
轴径d1>100,公差为n6
2) 重量不包含锁紧盘和润滑油的重量
3) 轴伸d1带平键按照标准GB1096，相关细节见35頁，中心孔见34頁
4) 所需安装空间
5) >160时g6
6) 法兰连接孔见33頁
7) 注意连接螺栓和凸缘

1)Shaft diameter d1≤100, Tolerance m6
Shaft diameter d1>100, Tolerance n6
2)Weight without shrink disk and oil
3)For shaft end d1 with parallel key acc.to GB1096, For detail see page 35 and center hole,see page 34
4)Space required
5)>160 g6
6)For hole patterns, see page 33
7)Observe bolted connection and boss

EP2N传动比、转速及功率

Ratios,speeds,power ratings of EP2N

i_N	n_1	n_2	传动比i_N, 转速n_1和n_2, 额定功率P_N / Ratios i_N, speeds n_1 and n_2, nominal power ratings P_N 额定功率/P_N kW / Nominal power ratings P_N in kW 齿轮箱规格 / Gear unit sizes																											
	min^{-1}		9	10	11	12	13	14	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36
25	1500	60	136	192	263	376	521	716	987	1269	1532	1853	2142	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	1000	40	91	128	175	251	347	477	645	846	1021	1235	1428	1641	1855	2148	2497	2864	3074	3560	3811	4439	4816	5528	5863	7036	7832	9382	10680
	750	30	68	96	131	188	260	358	483	634	766	926	1071	1231	1391	1611	1859	2148	2305	2670	2858	3329	3612	4146	4397	5277	5874	7036	8010
28	1500	54	121	171	235	336	465	639	863	1133	1368	1654	1912	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	1000	36	81	114	157	224	310	426	575	755	912	1103	1275	1466	1656	1918	2213	2558	2744	3178	3403	3964	4300	4936	5235	6282	6993	8377	9536
	750	27	61	86	117	168	232	319	431	566	684	827	956	1099	1242	1438	1660	1918	2058	2384	2552	2973	3225	3702	3926	4712	5244	6282	7152
32	1500	48	108	152	209	299	413	568	767	1007	1216	1471	1700	1954	2208	2558	2951	3410	3659	4238	4537	5285	5734	6581	6980	8376	9324	11169	12715
	1000	32	72	101	139	199	275	378	511	671	811	980	1133	1303	1472	1705	1967	2273	2439	2825	3025	3523	3822	4387	4653	5584	6216	7446	8476
	750	24	54	76	104	149	206	284	383	503	608	735	850	977	1104	1279	1475	1705	1829	2119	2268	2642	2867	3290	3490	4188	4662	5584	6357
36	1500	42	96	135	185	265	367	504	681	893	1079	1305	1508	1734	1960	2269	2619	3026	3247	3760	4026	4689	5088	5480	6194	7433	8273	9910	11282
	1000	28	64	90	123	176	244	336	454	595	719	870	1005	1156	1306	1513	1746	2017	2165	2507	2684	3126	3392	3893	4129	4955	5515	6607	7521
	750	21	48	68	93	132	183	252	340	446	539	652	754	867	980	1134	1309	1513	1623	1880	2013	2344	2544	2920	3097	3716	4136	4955	5641
40	1500	38	85	120	164	235	325	447	604	793	958	1158	1339	1539	1739	2014	2324	2685	2882	3337	3573	4162	4515	5183	5497	6596	7342	8795	10013
	1000	25	57	80	109	157	217	298	403	528	638	772	892	1026	1159	1342	1549	1790	1921	2225	2382	2774	3010	3455	3664	4397	4895	5863	6675
	750	19	43	60	82	117	163	223	302	396	479	579	669	769	869	1007	1162	1342	1441	1668	1786	2081	2257	2591	2748	3298	3671	4398	5006

-敬请垂询

-On request

	热功率 P_{G1} kW / Thermal capacities P_{G1} in kW *) 齿轮箱规格 / Gear unit sizes																	
	9	10	11	12	13	14	16	17	18	19/20	21/22	23/24	25/26	27/28	29/30	31/32	33/34	35/36
1)PG1室内小空间安装 PG1 For small confined spaces	21	25	32	40	49	62	75	91	100	119	139	164	199	240	278	315	362	437
2)PG1室内大空间安装 PG1 For large halls #orkshops	29	36	45	60	69	89	106	130	142	169	198	235	284	342	386	450	517	619
3)PG1室外安装 PG1 in the open	39	49	60	76	93	118	142	172	190	226	264	312	378	456	530	600	690	838

*) 表中数据仅适用于卧式安装形式，其他安装形似请与我们联系

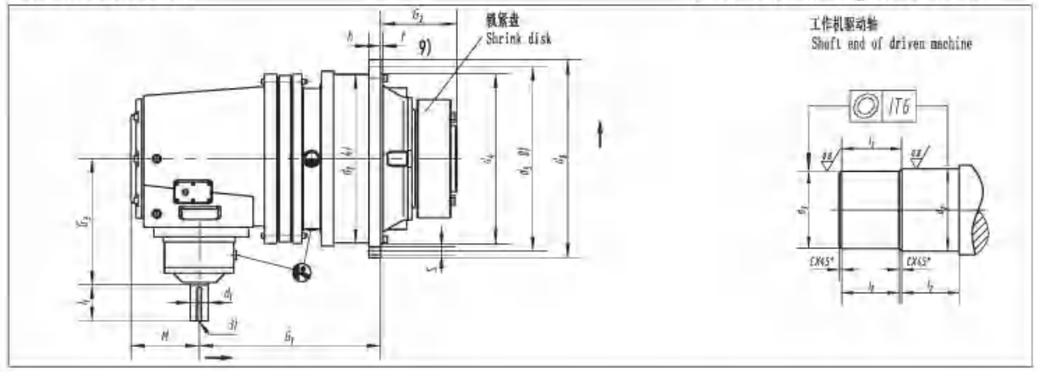
*) Values apply to horizontal mounting position, For other mounting position please refer to us

1) 环境气流速度≥0.5m/s
2) 环境气流速度≥1.4m/s
3) 环境气流速度≥3.7m/s

1) Wind velocity≥0.5m/s
2) Wind velocity≥1.4m/s
3) Wind velocity≥3.7m/s

3.2 EP2LAS型
EP2LAS安装尺寸和重量

3.2 Type EP2LAS
Dimensions and weights of EP2LAS



机座 Size	额定输出扭矩 Nominal output torque T_{2N} (Nm)	输入轴 Shaft and input side d_1 1) 5) mm	l_1 5) mm	d_2 1) 6) mm	l_2 6) mm	工作机驱动轴 Driven machine shaft d_2 h6 7) mm	d_3 h6 7) mm	t_7 mm	C mm	l_3 mm	d_4 H7 mm	d_5 mm	d_6 mm	d_7 mm	G_1 mm	G_2 mm	G_3 mm	M mm	h mm	t mm	法兰螺栓孔 Flange bolts S mm	数量 No	重量 Weight 2) ca. kg	注油量 Oil quantity ca. l
9	22000	45	100	35	80	120	115	65	2.5	67.5	350	388	428	356	425	165	305	185	24	6±1.5	18	24	260	6
10	31000	45	100	35	80	130	125	70	2.5	72.5	394	436	472	400	446	174	305	185	28	8±1.5	18	28	310	8
11	42000	55	110	40	100	140	135	82.5	2.5	85	425	485	525	436	501	204	350	210	32	8±1.5	22	20	380	12
12	60000	55	110	40	100	160	155	90	2.5	92.5	495	555	605	510	514	224	350	210	34	9±1.5	26	20	520	16
13	83000	70	135	50	110	180	175	95	2.5	97.5	535	595	645	554	619	241	415	250	39	11±1.5	26	24	650	20
14	114000	70	135	50	110	210	205	105	2.5	107.5	610	665	720	629	642	278	415	250	42	9	26	32	910	32
16	160000	80	165	60	140	230	225	110	2.5	112.5	660	715	770	680	705	285	490	295	44	10	26	36	1140	40
17	202000	80	165	60	140	250	245	120	2.5	122.5	750	830	895	775	731	294	490	295	50	10	33	24	1660	56
18	244000	90	165	70	140	260	255	120	2.5	122.5	785	865	930	815	882	303	605	350	50	10	33	32	2100	66
19	295000	90	165	70	140	280	275	135	2.5	137.5	840	915	980	870	905.5	327.5	605	350	56	12	33	36	2700	82
20	364000	90	165	70	140	300	295	135	2.5	137.5	840	915	980	870	905.5	327.5	605	350	56	12	33	36	2300	75
21	392000	110	205	80	170	310	305	152	2.5	154.5	935	1025	1115	960	996	354	700	400	62	24	39	32	2930	110
22	450000	110	205	80	170	330	325	152	2.5	154.5	935	1025	1115	960	996	354	700	400	62	24	39	32	3100	95
23	513000	110	205	80	170	350	345	164	2.5	166.5	1025	1120	1210	1056	1055	380	700	400	68	28	39	36	3800	130
24	592000	110	205	80	170	360	355	164	2.5	166.5	1025	1120	1210	1056	1055	380	700	400	68	28	39	36	4300	125
25	684000	130	245	100	210	380	375	180	2.5	182.5	1115	1220	1320	1150	1138	407	835	475	74	29	45	36	5250	190
26	763000	130	245	100	210	400	395	180	2.5	182.5	1115	1220	1320	1150	1138	407	835	475	74	29	45	36	5660	160
27	852000	130	245	100	210	430	425	191	2.5	193.5	1215	1345	1460	1248	1272	453	835	475	81	31	52	32	6680	245
28	950000	130	245	100	210	450	445	191	2.5	193.5	1215	1345	1460	1248	1272	453	835	475	81	31	52	32	7180	205
29	1060000	150	245	110	210	460	450	197.5	5	202.5	1320	1450	1565	1355	1367	483	945	530	87	34	52	36	8500	305
30	1200000	150	245	110	210	480	470	197.5	5	202.5	1320	1450	1565	1355	1367	483	945	530	87	34	52	36	9070	255
31-36	垦请查询/On request																							

1) 轴径$d_1 \leqslant 100$,公差为m6
轴径$d_1 > 100$,公差为n6
2) 重量不包含锁紧盘和润滑油的重量
3) 轴伸d_1带平键按照标准GB1096，相关细节见35页，中心孔见34页
4) 所需安装空间
5) 速比$i_N \leqslant 90:1$
6) 速比$i_N \geqslant 100:1$
7) >160时g6
8) 法兰连接孔见33页
9) 注意连接螺栓和马缘

1) Shaft diameter d1≤100, Tolerance m6
Shaft diameter d1>100, Tolerance n6
2) Weight without shrink disk and oil
3) For shaft end d1 with parallel acc. to GB1096, For detail see page 35 and center hole, see page 34
4) Space required
5) Up to and including iN=90:1
6) Above iN=100:1
7) >160 g6
8) For hole patterns, see page 33
9) Observe bolted connection and boss

EP2L传动比、转速及功率

Ratios, speeds, power ratings of EP2L

i_N	n_2	n_{2r}	传动比i_N,转速n_{1N}和n_{2r}，额定功率P_N / Ratios i_N, speeds n_{1N} and n_{2r}, nominal power ratings P_N 额定功率/P_N kW / Nominal power ratings P_N in kW 齿轮箱规格 / Gear unit sizes																					
	min^{-1}		9	10	11	12	13	14	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31-36
31.5	1600	47.6	108	152	209	299	413	568	767	1007	1216	1471	1700	1954	2208									
	1000	31.7	72	101	139	199	275	378	511	671	811	980	1133	1303	1472	1705	1967	2273	2439	2825	3025			
	750	23.8	54	76	104	149	206	284	383	503	608	735	850	977	1104	1279	1475	1705	1829	2119	2268			
35.5	1500	42.3	96	135	185	265	367	504	681	893	1079	1305	1508	1734	1960									
	1000	28.2	64	90	123	176	244	336	454	595	719	870	1005	1156	1306	1513	1746	2017	2165	2507	2684			
	750	21.1	48	68	93	132	183	252	340	446	539	652	754	867	980	1134	1309	1513	1623	1880	2013			
40	1500	37.5	85	120	164	235	325	447	604	793	958	1158	1339	1539	1739									
	1000	25	57	80	109	157	217	298	403	528	638	772	892	1026	1159	1342	1549	1790	1921	2325	2382			
	750	18.8	43	60	82	117	163	223	302	396	479	579	669	769	869	1007	1162	1342	1441	1668	1786			
45	1500	33.3	76	106	146	209	289	397	537	705	851	1029	1190	1368	1546	1790	2065							
	1000	22.2	50	71	98	139	193	265	358	470	567	686	793	912	1030	1193	1377	1591	1707	1977	2117			
	750	16.7	38	53	73	104	144	198	268	352	425	514	595	684	773	896	1033	1193	1280	1483	1588	1849	2006	
50	1500	30	68	96	131	188	260	358	483	634	766	926	1071	1231	1391	1611	1859							
	1000	20	45	64	88	125	173	238	322	423	510	617	714	820	927	1074	1239	1432	1537	1780	1905			
	750	15	34	48	66	94	130	179	241	317	383	463	535	615	695	805	929	1074	1152	1335	1429	1664	1806	
56	1500	26.8	61	86	117	168	232	319	431	566	684	827	956	1099	1242	1438	1660							
	1000	17.9	41	57	79	112	155	213	287	377	456	551	637	732	828	959	1106	1279	1372	1589	1701	1982	2150	
	750	13.4	30	43	59	84	116	159	215	283	342	413	478	549	621	719	830	959	1029	1192	1276	1486	1612	
63	1500	23.8	54	76	104	149	206	284	383	503	608	735	850	977	1104	1279	1475	1705	1829	2119	2268			
	1000	15.9	36	51	70	100	138	189	255	335	405	490	566	651	736	852	983	1136	1219	1412	1512	1761	1911	
	750	11.9	27	38	52	75	103	142	191	251	304	367	425	488	552	639	737	852	914	1059	1134	1321	1433	
71	1500	21.1	48	68	93	132	183	252	340	446	539	652	754	867	980	1134	1309	1513	1623	1880	2013			
	1000	14.1	32	45	62	88	122	168	227	297	359	435	502	578	653	756	873	1008	1082	1253	1342	1563	1696	
	750	10.6	24	34	46	66	92	126	170	223	269	326	377	433	490	567	654	756	811	940	1006	1172	1272	
80	1500	18.8	43	60	82	117	162	223	302	396	479	579	669	769	869	1007	1162	1342	1441	1668	1786			
	1000	12.5	28	40	55	79	108	148	201	264	319	386	446	513	579	671	774	895	960	1112	1191	1387	1505	
	750	9.4	21	30	41	59	81	111	151	198	239	289	334	384	434	503	581	671	720	834	893	1040	1128	
90	1500	16.7	38	53	73	104	144	198	268	352	425	514	595	684	773	896	1033	1193	1280	1483	1588			
	1000	11.1	25	36	49	70	97	132	179	235	283	343	396	456	515	596	688	795	853	988	1058	1233	1337	
	750	8.3	19	27	37	52	72	99	134	176	212	257	297	342	386	447	516	596	640	741	794	924	1003	
100	1500	15	34	48	66	94	130	179	241	317	383	463	535	615	695	805	929	1074	1152	1335	1429			
	1000	10	23	32	44	63	87	119	161	211	255	308	357	410	463	537	619	716	768	890	952	1109	1204	
	750	7.5	17	24	33	47	65	90	120	158	191	231	267	307	347	402	464	537	576	667	714	832	903	

0000需强制润滑

0000Forced lubrication requierd

	热功率 P_{G1} kW / Thermal capacities P_{G1} in kW *) 齿轮箱规格 / Gear unit sizes															
	9	10	11	12	13	14	16	17	18	19/20	21/22	23/24	25/26	27/28	29/30	31-36
1) PG1室内小空间安装 PG1 For small confined spaces	14	18	22	27	34	42	52	60	70	82	99	113	140	165	194	垦请查询 On request
2) PG1室内大空间安装 PG1 For large halls workshops	20	26	31	41	48	60	74	86	99	117	141	161	198	235	277	
3) PG1室外安装 PG1 In the open	27	35	42	52	65	80	100	115	133	157	190	217	268	317	372	

*) 表中数据仅适用于卧式安装形式，其他安装形似请与我们联系

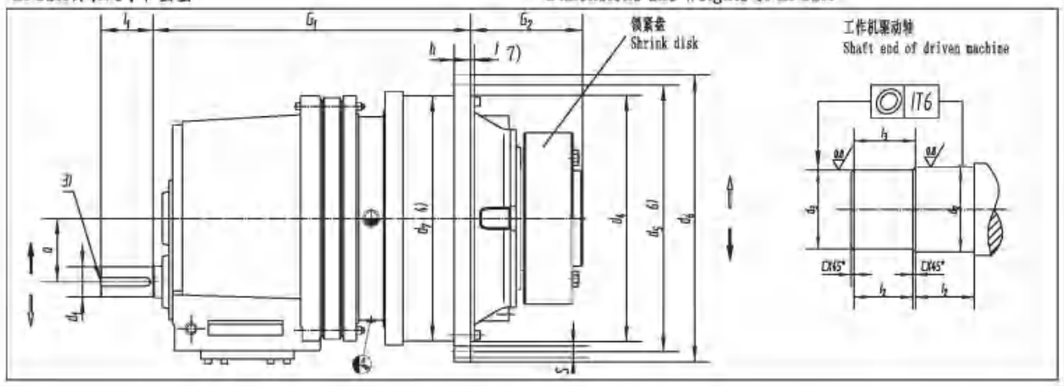
1) 环境气流速度≥0.5m/s
2) 环境气流速度≥1.4m/s
3) 环境气流速度≥3.7m/s

*) Values apply to horizontal mounting position, For other mounting position please refer to us

1) Wind velocity≥0.5m/s
2) Wind velocity≥1.4m/s
3) Wind velocity≥3.7m/s

3.3 EP2SA型 EP2SA安装尺寸和重量

3.3 Type EP2SA Dimensions and weights of EP2SA



规格 Size	额定输出扭矩 Nominal output torque T_{2n} (Nm)	输入轴 Shaft end input side d_1 1) mm	输入轴 Shaft end input side l_1 mm	工作机驱动轴 Driven machine shaft d_2 h6 5) mm	工作机驱动轴 Driven machine shaft d_3 h6 5) mm	工作机驱动轴 Driven machine shaft l_2 mm	工作机驱动轴 Driven machine shaft C m	工作机驱动轴 Driven machine shaft l_3 mm	a mm	d_4 h7 mm	d_5 mm	d_6 mm	d_7 mm	G_1 mm	G_2 mm	h mm	t mm	法兰螺栓孔 Flange holts S mm	法兰螺栓孔 Flange holts 数量 No.	重量 Weight 2) en. kg	注油量 Oil quantity ca. l
9	22000	38	60	120	115	65	2.5	67.5	90	350	388	428	356	469	165	24	6±1.5	18	24	260	6
10	31000	38	60	130	125	70	2.5	72.5	90	394	436	472	400	489	174	28	8±1.5	18	28	310	8
11	42000	55	90	140	135	82.5	2.5	85	115	425	485	525	436	579	204	32	8±1.5	22	20	380	12
12	60000	55	90	160	155	90	2.5	92.5	115	495	555	605	510	593	224	34	9±1.5	26	20	520	16
13	83000	70	120	180	175	95	2.5	97.5	140	535	595	645	554	714	241	39	11±1.5	26	24	660	20
14	114000	70	120	210	205	105	2.5	107.5	140	610	665	720	629	737	278	42	9	26	32	920	32
16	160000	80	140	230	225	110	2.5	112.5	170	660	715	770	680	851	285	44	10	26	36	1150	40
17	202000	80	140	250	245	120	2.5	122.5	170	750	830	895	775	877	294	50	10	33	24	1650	56
18	244000	90	160	260	255	120	2.5	122.5	200	785	865	930	815	1006	303	50	10	33	32	1950	66
19	295000	90	160	280	275	135	2.5	137.5	200	840	915	980	870	1029.5	327.5	56	12	33	36	2400	82
20	354000	90	160	300	295	135	2.5	137.5	200	840	915	980	870	1029.5	327.5	56	12	33	36	2500	75
21	392000	100	180	310	305	152	2.5	154.5	230	935	1025	1115	960	1076	354	62	24	39	32	2900	110
22	450000	100	180	330	325	152	2.5	154.5	230	935	1025	1115	960	1076	354	62	24	39	32	3100	95
23	513000	120	210	350	345	164	2.5	166.5	265	1025	1120	1210	1056	1175	380	68	28	39	36	3800	130
24	592000	120	210	360	355	164	2.5	166.5	265	1025	1120	1210	1056	1175	380	68	28	39	36	4100	125
25	684000	130	210	380	375	180	2.5	182.5	300	1115	1220	1320	1150	1291	407	74	29	45	36	4950	190
26	763000	130	210	400	395	180	2.5	182.5	300	1115	1220	1320	1150	1291	407	74	29	45	36	5350	160
27	852000	140	240	430	425	191	2.5	193.5	320	1215	1345	1460	1248	1429	453	81	31	52	32	6800	245
28	950000	140	240	450	445	191	2.5	193.5	320	1215	1345	1460	1248	1429	453	81	31	52	32	7200	205
29	1060000	150	240	460	450	197.5	5	202.5	360	1320	1450	1565	1355	1507	483	87	34	52	36	8500	305
30	1200000	150	240	480	470	197.5	5	202.5	360	1320	1450	1565	1355	1507	483	87	34	52	36	9000	255
31	1330000	160	270	480	470	232	5	237	400	1400	1545	1665	1443	1662	538	94	36	62	32	10500	380
32	1500000	160	270	510	500	232	5	237	400	1400	1545	1665	1443	1662	538	94	36	62	32	11200	315
33	1680000	170	270	530	520	242	5	247	400	1495	1635	1755	1536	1743	573	100	36	62	36	12700	460
34	1920000	170	270	570	560	242	5	247	400	1495	1635	1755	1536	1743	573	100	36	62	36	13500	380
35	2240000	180	310	600	590	272	5	277	442	1685	1825	1945	1720	1960	656	112	40	62	40	17800	645
36	2600000	180	310	640	630	272	5	277	442	1685	1825	1945	1720	1960	656	112	40	62	40	18900	535

1) 轴径d1≤100，公差为m6
轴径d1>100,公差为n6
2) 重量不包含锁紧盘和润滑油的重量
3) 轴径d1带平键按照标准GB1096，相关细节见35页，中心孔见34页
4) 所需安装空间
5) >160时g6
6) 法兰连接孔见33页
7) 注意连接螺栓和凸缘

1) Shaft diameter d1≤100, Tolerance m6
Shaft diameter d1>100, Tolerance n6
2) Weight without shrink disk and oil
3) For shaft end d1 with parallel acc.to GB1096,For detail see page 35 and center hole, see page 34
4) Space required
5) >160 g6
6) For hole patterns, see page 33
7) Observe bolted connection and boss

EP2S传动比、转速及功率 Ratios, speeds, power ratings of EP2S

i_R	n_1	n_2	传动比i_R，转速n_1和n_2，额定功率P_N / Ratios i_R, speeds n_1 and n_2, nominal power ratings P_N 额定功率/P_N kW / Nominal power ratings P_N in kW 齿轮箱规格 / Gear unit sizes																										
	min⁻¹		9	10	11	12	13	14	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36
45	1500	33.3	76	106	146	209	289	397	537	705	851	1029	1190	1368	1546	1790	2066	2387	2561										
	1000	22.2	50	71	98	139	193	265	358	470	567	686	793	912	1030	1193	1377	1591	1707	1977	2417	2466	2973	3071	3267	3909	4331	5215	5933
	750	16.7	38	53	73	104	144	198	268	352	425	514	595	684	773	895	1033	1192	1280	1483	1588	1849	2006	2303	2453	2931	3263	3909	4450
50	1500	30	68	96	131	188	260	358	483	634	766	926	1071	1231	1391	1611	1859	2148	2305	–	–	–	–	–	–	–	–	–	–
	1000	20	45	64	88	125	173	238	322	423	510	617	714	829	927	1074	1239	1432	1537	1780	1905	2219	2408	2764	2931	3518	3916	4691	5340
	750	15	34	48	66	94	130	179	241	317	383	463	535	615	695	805	929	1074	1152	1335	1429	1664	1805	2073	2198	2638	2937	3518	4005
56	1500	26.8	61	86	117	168	232	319	431	566	684	827	956	1099	1242	1438	1660	1918	2058	–	–	–	–	–	–	–	–	–	–
	1000	17.9	41	57	79	112	155	213	287	377	456	551	637	732	838	959	1106	1279	1372	1589	1701	1982	2150	2468	2617	3141	3496	4188	4768
	750	13.4	30	43	59	84	116	159	215	283	342	413	478	549	621	719	830	959	1029	1192	1276	1486	1612	1851	1963	2356	2622	3141	3576
63	1500	23.8	54	76	104	149	206	284	383	503	608	735	850	977	1104	1279	1475	1705	1829	–	–	–	–	–	–	–	–	–	–
	1000	15.9	36	51	70	100	138	189	255	335	405	490	566	651	736	852	983	1136	1219	1412	1513	1761	1911	2193	2326	2792	3108	3723	4236
	750	11.9	27	38	52	75	103	142	191	251	301	367	425	488	552	639	737	852	911	1059	1134	1321	1432	1645	1745	2091	2331	2792	3178
71	1500	21.1	48	68	93	132	183	252	340	446	539	652	754	867	980	1134	1309	1513	1623	–	–	–	–	–	–	–	–	–	–
	1000	14.1	32	45	62	88	122	168	227	297	359	435	502	578	653	756	873	1008	1082	1253	1342	1563	1696	1946	2064	2477	2757	3303	3760
	750	10.6	24	34	46	66	92	126	170	223	269	326	377	433	490	567	654	756	811	940	1006	1172	1272	1460	1548	1858	2068	2478	2820
80	1500	18.8	43	60	82	117	163	223	302	396	479	579	669	769	869	1007	1162	1342	1441										
	1000	12.5	28	40	55	78	108	149	201	264	319	386	446	513	579	671	774	895	960	1112	1191	1387	1505	1727	1832	2198	2447	2902	3337
	750	9.4	21	30	41	59	81	111	151	198	239	289	334	384	434	503	581	671	720	834	893	1040	1128	1295	1374	1649	1835	2199	2503
90	1500	16.7	38	53	73	104	144	198	268	352	425	514	595	684	773	895	1033	1192	1280	–	–	–	–	–	–	–	–	–	–
	1000	11.1	25	36	48	70	97	132	179	235	283	343	396	455	515	596	688	795	853	988	1058	1233	1337	1535	1628	1954	2175	2605	2966
	750	8.3	19	27	36	52	72	99	134	176	212	257	297	342	386	447	516	596	640	741	794	924	1002	1151	1221	1465	1631	1955	2225
100	1500	15	34	48	66	94	130	179	241	317	383	463	535	615	695	805	929	1074	1152	–	–	–	–	–	–	–	–	–	–
	1000	10	23	32	44	63	87	119	161	211	255	308	357	410	463	537	619	716	768	890	952	1109	1304	1382	1465	1759	1965	2345	2670
	750	7.5	17	24	33	47	65	90	120	158	191	231	267	307	347	402	464	537	576	667	714	832	903	1036	1099	1319	1468	1759	2002
112	1500	13.4	30	43	59	84	116	159	215	283	342	413	476	549	621	719	830	959	1029	–	–	–	–	–	–	–	–	–	–
	1000	8.9	20	29	39	56	78	106	143	188	228	275	318	366	414	479	553	639	686	794	850	991	1073	1234	1308	1570	1748	2094	2384
	750	6.7	15	21	29	42	58	80	107	141	171	206	239	274	310	359	415	479	514	596	638	743	806	925	981	1178	1311	1570	1788
125	1500	12	27	38	53	75	104	143	193	253	305	370	428	492	556	644	743	859	922	–	–	–	–	–	–	–	–	–	–
	1000	8	18	26	35	50	70	96	129	169	201	247	286	328	371	439	496	572	614	712	762	887	963	1105	1172	1407	1566	1876	2136
	750	6	14	19	26	38	52	72	97	126	153	185	214	245	278	322	371	429	461	534	571	665	722	829	879	1055	1174	1407	1602

	热功率 P_{G1} kW / Thermal capacities P_{G1} in kW*) 齿轮箱规格 / Gear unit sizes																	
	9	10	11	12	13	14	16	17	18	19/20	21/22	23/24	25/26	27/28	29/30	31/32	33/34	35/36
1)PG1室内小空间安装 PG1 for small confined spaces	15	20	24	30	36	47	56	68	75	89	106	123	151	182	212	226	260	325
2)PG1室内大空间安装 PG1 for large halls workshops	21	28	34	42	51	67	79	97	106	127	151	175	214	256	302	322	371	464
3)PG1室外安装 PG1 in the open	29	38	45	58	69	90	107	130	143	171	203	236	289	348	407	435	500	624

*) 表中数据仅适用于卧式安装形式，其他安装形似请与我们联系

1) 环境气流速度≥0.5m/s
2) 环境气流速度≥1.4m/s
3) 环境气流速度≥3.7m/s

*) Values apply to horizontal mounting position, For other mounting position please refer to us

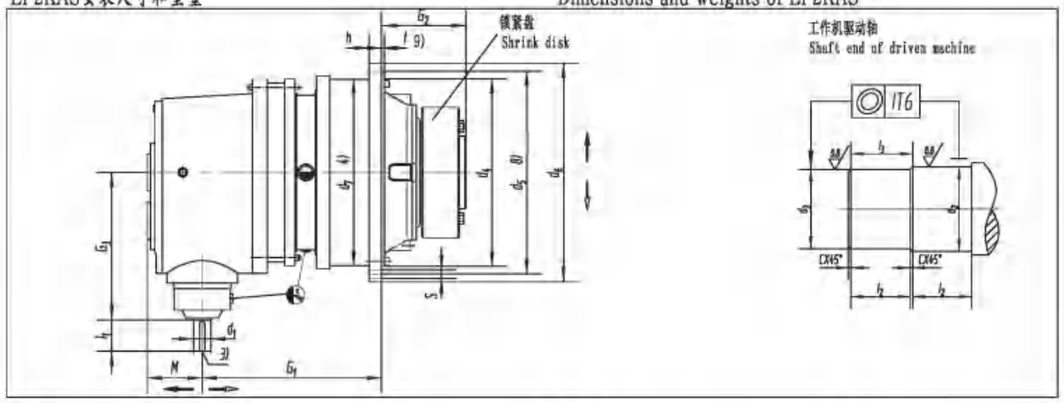
1) Wind velocity≥0.5m/s
2) Wind velocity≥1.4m/s
3) Wind velocity≥3.7m/s

3.4 EP2KAS型

EP2KAS安装尺寸和重量

3.4 Type EP2KAS

Dimensions and weights of EP2KAS



规格 Size	额定输出扭矩 Nominal output torque T_{2n}	输入轴 Shaft end input side d_1 1) 5)	l_1 5)	d_1 1) 6)	l_1 6)	工作机驱动轴 Driven machine shaft d_2 h8 7)	d_3 h8 7)	l_2	C	l_3	d_4 h7	d_5	d_6	d_7	G_1	G_2	G_3	M	h	t	法兰螺栓孔 Flange bolts S	数量	重量 Weight 2)	注油量 Oil quantity
	[Nm]	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm		kg	l
9	22000	30	70	25	60	120	115	65	2.5	67.5	360	398	428	356	339	165	320	119	24	8±1.5	18	24	370	8
10	31000	30	70	25	60	130	125	70	2.5	72.5	394	436	472	400	359	174	320	119	28	8±1.5	18	28	420	8
11	42000	35	80	28	60	140	135	82.5	2.5	85	425	485	525	436	419	204	375	137	32	8±1.5	22	20	560	12
12	60000	35	80	28	60	160	155	90	2.5	92.5	495	555	605	510	433	224	375	137	34	9±1.5	26	20	540	16
13	83000	45	100	35	80	180	175	95	2.5	97.5	535	595	645	554	518.5	241	445	172	39	11±1.5	26	24	690	20
14	114000	45	100	35	80	210	205	105	2.5	107.5	610	665	720	629	541.5	278	445	172	42	9	26	32	950	33
16	160000	55	110	40	100	230	225	110	2.5	112.5	660	715	770	680	632	285	520	194	44	10	26	36	1200	40
17	202000	55	110	40	100	250	245	120	2.5	122.5	750	830	895	775	658	294	520	194	50	10	33	24	1700	56
18	244000	70	135	50	110	260	255	120	2.5	122.5	785	865	930	815	741.5	303	615	240	50	10	33	32	2010	73
19	295000	70	135	50	110	280	275	135	2.5	137.5	840	915	980	870	764.5	327.5	615	240	56	12	33	36	2470	82
20	354000	70	135	50	110	300	295	135	2.5	137.5	840	915	980	870	764.5	327.5	615	240	56	12	33	36	2550	75
21	392000	80	165	60	140	310	305	152	2.5	154.5	935	1025	1115	960	813	364	720	270	62	24	39	32	2980	110
22	450000	80	165	60	140	330	325	152	2.5	154.5	935	1025	1115	960	813	354	720	270	62	24	39	32	3190	95
23	513000	80	165	60	140	350	345	164	2.5	166.5	1025	1120	1210	1056	898	380	755	270	68	28	39	36	3900	130
24	592000	80	165	60	140	360	355	164	2.5	166.5	1025	1120	1210	1056	898	380	755	270	68	28	39	36	4200	125
25	684000	90	165	70	140	380	375	180	2.5	182.5	1115	1220	1320	1150	975	407	905	310	74	29	45	36	5100	190
26	763000	90	165	70	140	400	395	180	2.5	182.5	1115	1220	1320	1150	975	407	905	310	74	29	45	36	5550	180
27	852000	90	165	70	140	430	425	191	2.5	193.5	1215	1345	1460	1248	1106	453	925	310	81	31	52	32	7000	245
28	950000	90	165	70	140	450	445	191	2.5	193.5	1215	1345	1460	1248	1106	453	925	310	81	31	52	32	7400	205
29	1060000	110	205	80	170	460	450	197.5	5	202.5	1320	1450	1565	1355	1152	483	1060	350	87	34	52	36	8700	305
30	1200000	110	205	80	170	480	470	197.5	5	202.5	1320	1450	1565	1355	1152	483	1060	350	87	34	52	36	9200	255

1) 轴径$d_1 \leqslant 100$,公差为m6
轴径$d_1 > 100$,公差为n6
2) 重量不包含锁紧盘和润滑油的重量
3) 轴伸d_3带平键按照标准GB1096，相关细节见35页，中心孔见34页
4) 所需安装空间
5) 速比$i_N \leqslant 360:1$
6) 速比$i_N \geqslant 400:1$
7) >160时g6
8) 法兰连接孔见33页
9) 注意连接螺栓和凸缘

1) Shaft diameter $d_1 \leqslant 100$, Tolerance m6
Shaft diameter $d_1 > 100$, Tolerance n6
2) Weight without shrink disk and oil
3) For shaft end d_3 with parallel acc.to GB1096,For detail see page 35 and center hole, see page 34
4) Space required
5) Up to and including i_N=360:1
6) Above i_N=400:1
7) >160 g6
8) For hole patterns, see page 33
9) Observe bolted connection and boss

EP2K传动比、转速及功率

Ratios, speeds, power ratings of EP2K

i_N	n_1	n_2	传动比i_N,转速n_1和n_2,额定功率P_N / Ratios i_N, speeds n_1 and n_2, nominal power ratings P_N 额定功率/P_N kW / Nominal power ratings P_N in kW 齿轮箱规格 / Gear unit sizes																				
			9	10	11	12	13	14	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
	min^{-1}																						
112	1500	13.5	30.4	42.9	59	84	116	159	215	283	342	413	478	549	621	719	830	956	1029	1193	1376	1486	1612
	1000	8.9	20.3	28.6	39.3	56	78	106	143	188	228	275	318	366	414	479	553	639	686	795	850	991	1075
	750	6.7	15.2	21.5	29.5	42	58	80	107	141	171	206	239	274	310	359	415	479	514	596	638	743	806
125	1500	12	27.3	38.5	52.8	75	104	143	193	253	306	370	428	492	556	644	743	859	922	1068	1143	1331	1445
	1000	8	18.2	25.6	35.2	50	70	96	129	169	204	247	285	328	371	429	495	572	614	712	762	887	963
	750	6	13.6	19.2	26.4	38	52	72	97	126	153	185	214	246	278	322	371	429	461	534	571	665	722
140	1500	10.7	24.4	34.3	47	67	93	127	172	226	273	330	382	439	497	575	664	767	823	953	1020	1189	1290
	1000	7.1	16.2	22.9	31.4	45	62	85	115	151	182	220	255	293	331	383	442	511	548	635	680	792	860
	750	5.4	12.2	17.2	23.6	34	47	64	86	113	136	165	191	219	248	287	332	383	411	476	510	594	645
160	1500	9.4	21.3	30	41.2	59	81	111	151	198	239	289	334	384	434	503	581	671	720	834	893	1040	1128
	1000	6.3	14.2	20	27.5	39	54	75	100	132	159	193	223	256	289	335	387	447	480	556	595	693	752
	750	4.7	10.7	15	20.6	30	41	56	76	99	119	144	167	192	217	251	290	335	360	417	446	520	564
180	1500	8.3	18.9	26.7	36.7	52	72	99	134	176	212	257	297	342	386	447	516	596	640	741	794	924	1003
	1000	5.6	12.6	17.8	24.4	35	48	66	90	117	141	171	198	228	257	298	344	397	426	494	529	616	668
	750	4.2	9.5	13.4	18.3	26	36	50	67	88	106	128	148	171	193	223	258	298	320	370	397	462	501
200	1500	7.5	17	24	33	47	65	90	120	158	191	231	267	307	347	402	464	537	576	667	714	832	903
	1000	5	11.4	16	22	31	43	60	81	105	127	154	178	205	231	268	309	358	384	445	476	554	602
	750	3.8	8.5	12	16.5	24	33	45	60	79	96	115	133	153	173	201	232	268	288	333	357	416	451
225	1500	6.7	15.2	21.4	29.3	42	58	80	107	141	170	205	238	273	309	358	413	477	512	593	635	739	802
	1000	4.4	10.1	14.2	19.6	28	39	53	72	94	113	137	158	182	206	238	275	318	341	395	423	493	535
	750	3.3	7.5	10.7	14.7	21	29	40	54	71	85	103	119	136	154	179	206	238	256	296	317	369	401
250	1500	6	13.6	19.2	26.4	38	52	72	97	126	153	185	214	246	278	322	371	429	461	534	571	665	722
	1000	4	9.1	12.8	17.6	25	35	48	65	85	102	123	142	164	185	214	247	286	307	356	381	443	481
	750	3	6.8	9.6	13.2	19	26	36	48	63	77	93	107	123	139	161	185	214	230	267	285	332	361
280	1500	5.4	12.2	17.2	23.6	34	47	64	86	113	136	165	191	219	248	287	332	383	411	476	510	594	645
	1000	3.6	8.1	11.4	15.7	22	31	43	58	76	91	110	127	146	165	191	221	255	274	317	340	396	430
	750	2.7	6.1	8.6	11.8	17	23	32	43	57	68	83	96	109	124	143	166	191	205	238	255	297	322
320	1500	4.7	10.7	15	20.6	29	41	56	76	99	119	144	167	192	217	251	290	335	360	417	446	520	564
	1000	3.1	7.1	10	13.7	20	27	37	50	66	80	97	111	128	144	167	193	225	240	278	297	346	376
	750	2.3	5.3	7.5	10.3	15	20	28	38	50	60	72	84	96	108	125	145	167	180	208	223	260	282
360	1500	4.2	9.5	13.4	18.3	26	36	50	67	88	106	128	148	171	193	223	258	298	320	370	397	462	501
	1000	2.8	6.3	8.9	12.2	17	24	33	45	59	71	86	99	114	128	149	172	198	213	247	264	308	334
	750	2.1	4.7	6.7	9.2	13	18	25	34	44	53	64	74	86	97	111	129	149	160	185	198	231	250
400	1500	3.8	8.5	12	16.5	24	33	45	60	79	96	115	133	153	173	201	232	268	288	333	357	416	451
	1000	2.5	5.7	8	11	16	22	30	40	53	64	77	89	102	115	134	154	179	192	222	238	277	301
	750	1.9	4.3	6	8.3	12	16	23	30	40	48	58	67	77	87	100	116	134	144	166	178	208	225
450	1500	3.3	7.6	10.7	14.7	21	29	40	54	71	85	103	119	136	154	179	206	238	256	296	317	369	401
	1000	2.2	5	7.1	9.8	14	19	27	36	47	57	69	79	91	103	119	137	159	170	197	211	246	267
	750	1.7	3.8	5.3	7.3	10	14	20	27	35	43	51	60	68	77	90	103	119	128	148	158	184	200
500	1500	3	6.8	9.6	13.2	19	26	36	48	63	77	93	107	123	139	161	185	214	230	267	285	332	361
	1000	2	4.5	6.4	8.8	13	17	24	32	42	51	62	71	82	93	107	123	143	153	178	190	221	240
	750	1.5	3.4	5.8	6.6	9	13	18	24	32	38	46	54	62	70	81	93	107	115	133	142	166	180
560	查询亚前 / On request																						

	热功率 P_{G1} kW / Thermal capacities P_{G1} in kW *) 齿轮箱规格 / Gear unit sizes														
	9	10	11	12	13	14	16	17	18	19/20	21/22	23/24	25/26	27/28	29/30
1)PG1室内小空间安装 PG1 For small confined	12	15	18	22	28	33	44	50	58	66	81	97	114	141	165
2)PG1室内大空间安装 PG1 For large halls workshops	17	21	26	31	40	47	62	71	82	94	115	138	162	200	235
3)PG1室外安装 PG1 in the open	23	29	34	42	54	63	83	96	111	127	155	186	218	270	315

*) 表中数据仅适用于卧式安装形式，其他安装形似请与我们联系

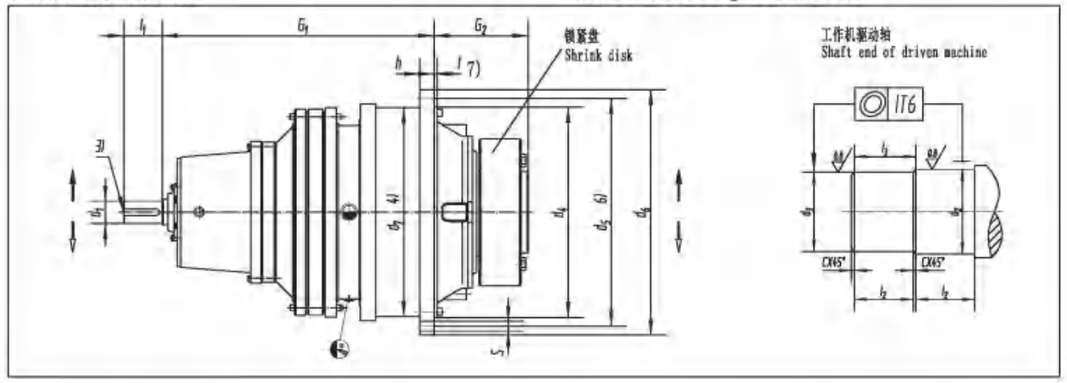
1) 环境气流速度≥0.5m/s
2) 环境气流速度≥1.4m/s
3) 环境气流速度≥3.7m/s

*) Values apply to horizontal mounting position, For other mounting position please refer to us

1) Wind velocity≥0.5m/s
2) Wind velocity≥1.4m/s
3) Wind velocity≥3.7m/s

3.5 EP3NAS型
EP3NAS安装尺寸和重量

3.3 Type EP3NAS
Dimensions and weights of EP3NAS



规格 Size	额定输出扭矩 Nominal output torque T_{2N}	输入轴 Shaft end Input side		工作机驱动轴 Driven machine shaft					d_1 h7	d_2	d_4	d_7	G_1	G_2	h	r	法兰螺栓孔 Flange bolts		重量 Weight 2)	注油量 Oil quantity
		d_1 1)	l_1	d_2 h6 5)	d_3 h6 5)	l_2	C	i_2									S	数量		
	(Nm)	mm	mm	mm	mm	mm	n	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	No.	ca. kg	ca. l
9	22000	55	90	120	115	65	2.5	67.5	350	388	428	356	565	165	24	6±1.5	18	24	250	7
10	31000	55	90	130	125	70	2.5	72.5	394	436	472	400	585	174	28	8±1.5	18	28	300	9
11	42000	55	90	140	135	82.5	2.5	85	425	485	525	436	616	204	32	8±1.5	22	20	370	13
12	60000	55	90	160	155	90	2.5	92.5	495	555	605	510	630	224	34	9±1.5	26	20	500	17
13	83000	55	90	180	175	95	2.5	97.5	535	595	645	554	688	241	39	11±1.5	26	24	620	21
14	114000	55	90	210	205	105	2.5	107.5	610	665	720	629	711	278	42	9	26	32	880	33
16	160000	70	120	230	225	110	2.5	112.5	660	715	770	680	853	285	44	10	26	36	1100	42
17	202000	70	120	250	245	120	2.5	122.5	750	830	895	775	879	294	50	10	33	24	1580	60
18	244000	80	140	260	255	120	2.5	122.5	785	865	930	815	1013.5	303	50	10	33	32	2000	70
19	295000	80	140	280	275	135	2.5	137.5	840	915	980	870	1036.5	327.5	56	12	33	36	2100	85
20	354000	80	140	300	295	135	2.5	137.5	840	915	980	870	1036.5	327.5	56	12	33	36	2200	75
21	392000	80	140	310	305	152	2.5	154.5	935	1025	1115	960	1093	354	62	24	39	32	2785	115
22	450000	80	140	330	325	152	2.5	154.5	935	1025	1115	960	1093	354	62	24	39	32	2950	105
23	513000	95	160	350	345	164	2.5	166.5	1025	1120	1210	1056	1222	380	68	28	39	36	3625	140
24	592000	95	160	360	355	164	2.5	166.5	1025	1120	1210	1056	1222	380	68	28	39	36	4100	135
25	684000	95	160	380	375	180	2.5	182.5	1115	1220	1320	1150	1284.5	407	74	29	45	36	5000	195
26	763000	95	160	400	395	180	2.5	182.5	1115	1220	1320	1150	1284.5	407	74	29	45	36	5400	170
27	852000	110	180	430	425	191	2.5	193.5	1215	1345	1460	1248	1470	453	81	31	52	32	6400	250
28	950000	110	180	450	445	191	2.5	193.5	1215	1345	1460	1248	1470	453	81	31	52	32	6875	220
29	1060000	110	180	460	450	197.5	5	202.5	1320	1450	1565	1355	1517	483	87	34	52	36	8190	310
30	1200000	110	180	480	470	197.5	5	202.5	1320	1450	1565	1355	1517	483	87	34	52	36	8715	280
31	1330000	120	210	480	470	232	5	237	1400	1545	1665	1443	1585	538	94	36	62	32	10700	390
32	1500000	120	210	510	500	232	5	237	1400	1545	1665	1443	1585	538	94	36	62	32	11200	360
33	1680000	130	210	530	520	242	5	247	1495	1635	1755	1536	1710	573	100	36	62	36	12950	470
34	1920000	130	210	570	560	242	5	247	1495	1635	1755	1536	1710	573	100	36	62	36	13800	430
35	2240000	140	240	600	590	272	5	277	1685	1825	1945	1720	1950	656	112	40	62	40	18200	620
36	2600000	140	240	640	630	272	5	277	1685	1825	1945	1720	1950	656	112	40	62	40	19300	510

1) 轴径$d_1 \leqslant 100$，公差为m6
轴径$d_1 > 100$,公差为n6
2) 重量不包含锁紧盘和润滑油的重量
3) 轴伸d_1带平键按照标准GB1096,相关细节见35页，中心孔见34页
4) 所需安装空间
5) >160时g6
6) 法兰连接孔见33页
7) 注意连接螺栓和凸缘

1)Shaft diameter $d_1 \leqslant 100$, Tolerance m6
Shaft diameter $d_1 > 100$, Tolerance n6
2) Weight without shrink disk and oil
3) For shaft end d_1 with parallel acc.to GB1096,For detail see page 35 and center hole, see page 34
4) Space required
5) >160 g6
6) For hole patterns, see page 33
7) Observe bolted connection and boss

EP3N传动比、转速及功率

Ratios, speeds, power ratings of EP3N

i_N	n_1	n_2	传动比i_N,转速n_1和n_2，额定功率P_N / Ratios i_N, speeds n_1 and n_2, nominal power ratings P_N																											
			额定功率/P_N kW / Nominal power ratings P_N in kW																											
			齿轮箱规格 / Gear unit sizes																											
	min^{-1}		9	10	11	12	13	14	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36
110	1500	10.7	24.4	34.2	47.1	67	93	127	172	226	273	330	382	439	497	575	664	767	823	–	–	–	–	–	–	–	–	–	–
	1000	7.1	16.2	22.8	31.4	45	62	85	115	151	182	220	253	293	331	383	442	511	548	635	680	792	860	987	1047	1256	1398	1675	1907
	750	5.4	12.2	17.1	23.6	34	46	64	86	113	136	165	191	219	248	287	332	383	411	476	510	594	645	740	785	942	1048	1256	1430
160	1500	9.4	21.3	30	41.2	59	81	111	151	198	239	289	334	384	434	503	581	671	720	–	–	–	–	–	–	–	–	–	–
	1000	6.3	14.2	20	27.5	39	54	75	100	132	159	193	223	256	289	335	387	447	480	556	595	693	752	863	916	1099	1223	1466	1668
	750	4.7	10.7	15	20.6	29	41	56	76	99	119	144	167	192	217	251	290	335	360	417	446	520	564	647	687	824	917	1099	1251
180	1500	8.3	18.9	26.6	36.7	52	72	99	134	176	212	257	297	342	386	447	516	596	640	–	–	–	–	–	–	–	–	–	–
	1000	5.6	12.6	17.8	24.4	35	48	66	90	117	141	171	198	228	257	298	344	397	426	494	529	616	668	767	814	977	1087	1303	1483
	750	4.2	9.5	13.4	18.3	26	36	50	67	88	106	128	148	171	193	223	258	298	320	370	397	462	501	575	610	732	815	977	1112
200	1500	7.5	17	24	33	47	65	90	120	158	191	231	267	307	347	402	464	537	576	–	–	–	–	–	–	–	–	–	–
	1000	5	11.4	16	22	31	43	60	81	105	127	154	178	205	231	268	309	358	384	445	476	554	602	691	732	879	979	1172	1335
	750	3.8	8.5	12	16.5	24	33	45	60	79	96	115	133	153	173	201	232	268	288	333	357	416	451	518	549	659	734	879	1001
225	1500	6.7	15.2	21.4	29.3	42	58	80	107	141	170	205	238	273	309	358	413	477	512	593	635	739	802	921	977	1173	1305	1563	1780
	1000	4.4	10.1	14.2	19.6	28	39	53	72	94	113	137	158	182	206	238	275	318	341	395	423	493	535	614	651	781	870	1042	1186
	750	3.3	7.6	10.7	14.7	21	29	40	54	71	85	102	119	136	154	179	206	238	256	296	317	369	401	460	488	586	652	781	890
250	1500	5	13.6	19.2	26.4	38	52	72	97	126	153	185	214	246	278	322	371	429	461	534	571	665	722	829	879	1055	1174	1407	1602
	1000	4	9.1	12.8	17.6	25	35	48	64	85	102	123	142	164	185	214	247	286	307	356	381	443	481	552	586	703	783	938	1068
	750	3	6.8	9.5	13.2	19	26	35	48	63	77	93	107	123	139	161	185	214	230	267	285	332	361	414	439	527	587	703	801
280	1500	5.4	12.2	17.2	23.6	34	47	64	86	113	136	165	191	219	248	287	332	383	411	476	510	594	645	740	785	942	1048	1256	1430
	1000	3.6	8.1	11.4	15.7	22	31	43	58	76	91	110	127	146	165	191	221	255	274	317	340	396	430	493	523	628	699	837	953
	750	2.7	6.1	8.5	11.8	17	23	32	43	57	68	83	96	109	124	143	166	191	205	238	255	297	322	370	392	471	524	628	715

	热功率 P_{G1} kW / Thermal capacities P_{th} in kW*)																
	齿轮箱规格 / Gear unit sizes																
	9	10	11	12	13	14	16	17	18	19/20	21/22	23/24	25/26	27/28	29/30	31/32	33/34	35/36
1)PG1室内小空间安装 PG1 For small confined spaces	14	18	22	29	34	41	52	62	70	83	97	118	136	166	193	216	250	305
2)PG1室内大空间安装 PG1 For large halls workshops	20	25	31	40	48	60	74	89	98	118	140	170	195	237	284	310	357	430
3)PG1室外安装 PG1 in the open	27	34	42	55	65	87	100	110	133	159	186	227	261	324	370	415	480	585

*) 表中数据仅适用于卧式安装形式，其他安装形似请与我们联系

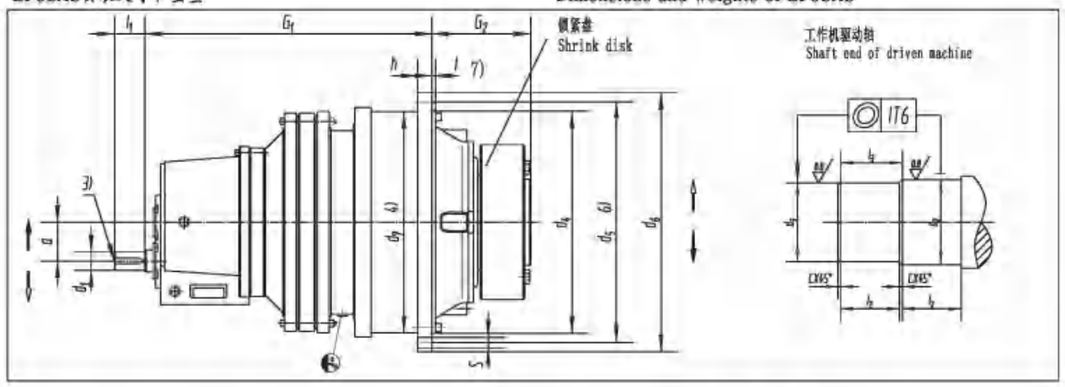
1) 环境气流速度≥0.5m/s
2) 环境气流速度≥1.4m/s
3) 环境气流速度≥3.7m/s

*) Values apply to horizontal mounting position, For other mounting position please refer to us

1) Wind velocity≥0.5m/s
2) Wind velocity≥1.4m/s
3) Wind velocity≥3.7m/s

3.6 EP3SAS型
EP3SAS安装尺寸和重量

3.6 Type EP3SAS
Dimensions and weights of EP3SAS



规格 Size	额定输出扭矩 Nominal output torque T_{2n}	输入轴 Shaft end input side		工作机驱动轴 Driven machine shaft					a	d_4 h7	d_5	d_6	d_7	G_1	G_2	h	t	法兰螺栓孔 Flange bolts		重量 Weight 2)	注油量 Oil quantity
		d_1 1)	l_1	d_2 b6 5)	d_3 b6 5)	l_2	C	l_3										S	数量		
	(Nm)	mm	mm	mm	mm	mm	a	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	No.	ca. Kg	ca. l
9	22000	38	60	120	115	65	2.5	67.5	90	350	388	428	356	565	165	24	6±1.5	18	24	270	7
10	31000	38	60	130	125	70	2.5	72.5	90	394	436	472	400	585	174	28	8±1.5	18	28	320	9
11	42000	38	60	140	135	82.5	2.5	85	90	425	485	525	436	616	204	32	8±1.5	22	20	390	13
12	60000	38	60	160	155	90	2.5	92.5	90	495	555	605	510	630	224	34	9±1.5	26	20	540	17
13	83000	38	60	180	175	95	2.5	97.5	90	535	595	645	554	688	241	39	11±1.5	26	24	670	21
14	114000	38	60	210	205	105	2.5	107.5	90	610	665	720	629	711	278	42	9	26	32	930	33
15	160000	55	90	230	225	110	2.5	112.5	115	660	715	770	680	853	285	44	10	26	36	1115	42
17	202000	55	90	250	245	120	2.5	122.5	115	750	830	895	775	879	294	50	10	33	24	1625	60
18	244000	70	120	260	255	120	2.5	122.5	140	785	865	930	815	1013.5	303	50	10	33	32	2060	70
19	296000	70	120	280	275	135	2.5	137.5	140	840	915	980	870	1036.5	327.5	56	12	33	36	2160	85
20	354000	70	120	300	295	135	2.5	137.5	140	840	915	980	870	1036.5	327.5	56	12	33	36	2260	75
21	392000	70	120	310	305	152	2.5	154.5	140	935	1025	1115	960	1093	354	62	24	39	32	2870	115
22	450000	70	120	330	325	152	2.5	154.5	140	935	1025	1115	960	1093	354	62	24	39	32	3040	105
23	513000	80	140	350	345	164	2.5	166.5	170	1025	1120	1210	1056	1222	380	68	28	39	36	3730	140
24	592000	80	140	360	355	164	2.5	166.5	170	1025	1120	1210	1056	1222	380	68	28	39	36	4220	135
25	684000	80	140	380	375	180	2.5	182.5	170	1115	1220	1320	1150	1284	407	74	29	45	36	5150	195
26	763000	80	140	400	395	180	2.5	182.5	170	1115	1220	1320	1150	1284	407	74	29	45	36	5560	170
27	852000	90	160	430	425	191	2.5	193.5	200	1215	1345	1460	1248	1470	453	81	31	52	32	6580	250
28	950000	90	160	450	445	191	2.5	193.5	200	1215	1345	1460	1248	1470	453	81	31	52	32	7080	220
29	1060000	90	160	460	450	197.5	5	202.5	200	1320	1450	1565	1355	1517	483	87	34	52	36	8400	310
30	1200000	90	160	480	470	197.5	5	202.5	200	1320	1450	1565	1355	1517	483	87	34	52	36	8970	280
31	1330000	100	180	480	470	232	5	237	230	1400	1545	1665	1443	1617	538	94	36	62	32	11000	390
32	1500000	100	180	510	500	232	5	237	230	1400	1545	1665	1443	1617	538	94	36	62	32	11500	360
33	1680000	120	210	530	520	242	5	247	265	1495	1635	1755	1536	1735	573	100	36	62	36	13300	470
34	1920000	120	210	570	560	242	5	247	265	1495	1635	1755	1536	1735	573	100	36	62	36	14200	430
35	2240000	130	210	600	590	272	5	277	300	1685	1825	1945	1720	1990	656	112	40	62	40	18600	520
36	2600000	130	210	640	630	272	5	277	300	1685	1825	1945	1720	1990	656	112	40	62	40	19800	480

1) 轴径$d_1 \leqslant 100$, 公差为m6
轴径$d_1 > 100$,公差为n6
2) 重量不包含锁紧盘和润滑油的重量
3) 轴伸d_1带平键按照标准GB1096,相关细节见35页, 中心孔见34页
4) 所需安装空间
5) >160时g6
6) 法兰连接孔见33页
7) 注意连接螺栓和凸缘

1)Shaft diameter $d_1 \leqslant 100$, Tolerance m6
Shaft diameter $d_1 > 100$, Tolerance n6
2) Weight without shrink disk and oil
3) For shaft end d_1 with parallel acc.to GB1096,For detail see page 35 and center hole, see page 34
4) Space required
5) >160 g6
6) For hole patterns, see page 33
7) Observe bolted connection and boss

EP3S传动比、转速及功率

Ratios, speeds, power ratings of EP3S

传动比i_N,转速n_{1N}和n_{2N}, 额定功率P_N / Ratios i_N, speeds n_{1N} and n_{2N}, nominal power ratings P_N																														
i_N	n_1	n_2	额定功率/P_N kW / Nominal power ratings P_N in kW 齿轮箱规格 / Gear unit sizes																											
	min^{-1}		9	10	11	12	13	14	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36
280	1500	5.4	12	17	24	34	47	64	86	113	136	165	191	219	248	287	332	383	411	476	510	594	645	740	785	943	1048	1256	1430
	1000	3.6	8.1	11	16	22	31	43	58	76	91	110	127	146	165	191	221	255	274	317	340	396	430	493	523	628	699	837	953
	750	2.7	6.1	8.6	12	17	23	32	43	57	68	83	96	109	124	143	166	191	205	238	255	297	322	370	392	471	524	628	715
315	1500	4.8	11	15	21	30	41	57	77	100	121	147	170	195	220	255	295	341	365	423	453	528	573	658	698	837	932	1116	1271
	1000	3.2	7.2	10	14	20	28	38	51	67	81	98	113	130	147	170	196	227	244	282	302	352	382	438	465	558	621	744	847
	750	2.4	5.4	7.6	11	15	21	28	38	50	61	74	85	98	110	127	147	170	183	211	226	261	286	329	349	418	466	558	635
356	1500	4.2	9.6	14	19	27	37	50	68	89	107	130	150	173	196	226	261	302	324	376	402	468	508	584	619	745	827	991	1128
	1000	2.8	6.4	9	12	18	24	34	45	60	72	87	100	115	130	151	174	201	216	250	268	312	339	389	412	495	551	660	752
	750	2.1	4.8	6.8	9.3	13	18	25	34	45	54	65	75	87	98	113	130	151	162	188	201	234	254	292	309	371	413	495	564
400	1500	3.8	8.5	12	17	24	33	45	60	79	96	115	133	153	173	201	232	268	288	333	357	416	451	518	549	659	734	879	1001
	1000	2.5	5.7	8	11	16	22	30	40	53	64	77	89	102	115	134	154	179	192	222	238	277	301	345	366	439	489	586	667
	750	1.9	4.3	6	8.3	12	16	22	30	40	48	58	67	77	87	100	116	134	144	166	178	208	225	259	274	329	367	439	500
450	1500	3.3	7.6	11	15	21	29	40	54	71	85	102	119	136	154	179	206	238	256	296	317	369	401	460	488	586	652	781	890
	1000	2.2	5	7.1	9.8	14	19	27	36	47	57	69	79	91	103	119	137	159	170	197	211	246	267	307	325	390	435	521	593
	750	1.7	3.8	5.3	7.3	10	14	20	27	35	43	51	60	68	77	90	103	119	128	148	158	184	200	230	244	293	326	390	445
500	1500	3.0	6.8	9.6	13	19	26	36	48	63	77	93	107	123	139	161	185	214	230	267	285	332	361	414	439	527	587	703	801
	1000	2.0	4.5	6.4	8.8	13	17	24	32	42	51	62	71	82	93	107	123	143	153	178	190	221	240	276	293	351	391	469	534
	750	1.5	3.4	4.8	6.6	9	13	18	24	32	38	46	54	62	70	81	93	107	115	133	142	166	180	207	219	263	293	351	400
560	1500	2.7	6.1	8.6	12	17	23	32	43	57	68	83	96	109	124	143	166	191	205	238	255	297	322	370	392	471	524	628	715
	1000	1.8	4.1	5.7	7.9	11	16	21	29	38	46	55	64	73	83	96	110	127	137	158	170	198	215	246	261	314	349	418	476
	750	1.3	3	4.3	5.9	8	12	16	22	28	34	41	48	55	62	72	83	96	102	119	127	148	161	185	196	235	262	314	357
630	1500	2.4	5.4	7.6	11	15	21	28	38	50	61	74	85	98	110	127	147	170	183	211	226	264	286	329	349	418	466	558	635
	1000	1.6	3.6	5.1	7	10	14	19	26	34	41	49	57	65	74	85	98	113	122	141	151	176	191	219	232	279	310	372	423
	750	1.2	2.7	3.8	5.2	7	10	14	19	25	30	37	42	49	55	64	74	85	92	105	113	132	143	164	174	209	233	279	317
710	1500	2.1	4.8	6.8	9.3	13	18	25	34	45	54	65	75	87	98	113	130	151	162	188	201	234	254	292	309	371	413	495	564
	1000	1.4	3.2	4.5	6.2	9	12	17	23	30	36	44	50	58	65	76	87	100	108	125	134	156	169	194	206	247	275	330	376
	750	1.1	2.4	3.4	4.7	7	9	13	17	23	27	33	38	43	49	57	65	76	81	94	100	117	127	146	154	185	206	247	282
800	1500	1.9	4.3	6	8.3	12	16	22	30	40	48	58	67	77	87	100	116	134	144	166	178	208	225	259	274	329	367	439	500
	1000	1.3	2.8	4	5.5	8	11	15	20	26	32	39	45	51	58	67	77	90	96	111	119	138	150	172	183	219	244	293	333
	750	0.9	2.1	3	4.1	6	8	11	15	20	24	29	33	38	43	50	58	67	72	83	89	104	112	129	137	164	183	219	250
900	1500	1.7	3.8	5.3	7.3	10	14	20	27	35	43	51	60	68	77	90	103	119	128	148	158	184	200	230	244	293	326	390	445
	1000	1.1	2.5	3.6	4.9	7	10	13	18	24	28	34	40	46	52	60	69	80	85	99	105	123	133	153	162	195	217	260	296
	750	0.8	1.9	2.7	3.7	5	7	10	13	18	21	26	30	34	39	45	52	60	64	74	79	93	100	115	122	146	163	195	222

热功率 P_{G1} kW / Thermal capacities P_{G2} in kW*)																		
	齿轮箱规格 / Gear unit sizes																	
	9	10	11	12	13	14	16	17	18	19/20	21/22	23/24	25/26	27/28	29/30	31/32	33/34	35/36
1)PG1室内小空间安装 PG1 For small confined spaces	12	15	18	24	28	34	43	51	57	68	80	96	112	137	163	180	208	252
2)PG1室内大空间安装 PG1 For large halls workshops	17	21	26	34	40	49	61	73	81	97	114	137	160	195	231	257	297	356
3)PG1室外安装 PG1 in the open	23	29	35	46	54	65	82	98	109	130	153	184	215	263	311	346	400	482

*) 表中数据仅适用于卧式安装形式, 其他安装形似请与我们联系

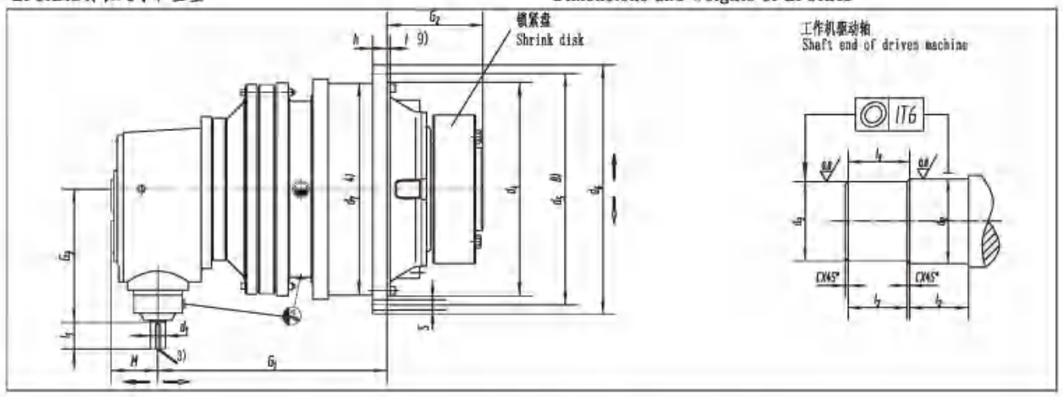
1) 环境气流速度≥0.5m/s
2) 环境气流速度≥1.4m/s
3) 环境气流速度≥3.7m/s

*) Values apply to horizontal mounting position, For other mounting position please refer to us

1) Wind velocity≥0.5m/s
2) Wind velocity≥1.4m/s
3) Wind velocity≥3.7m/s

3.7 EP3KAS型 EP3KAS安装尺寸和重量

3.3 Type EP3KAS Dimensions and weights of EP3KAS



规格 Size	额定输出扭矩 Nominal output torque T_{2N} (Nm)	输入轴 Shaft end input side d_1 1) 5) mm	l_1 5) mm	d_1 1) 6) mm	l_1 6) mm	工作机驱动轴 Driven machine shaft d_2 h6 7) mm	d_2 h6 7) mm	l_2 mm	C mm	l_3 mm	d_5 h7 mm	d_6 mm	d_7 mm	G_1 mm	G_2 mm	G_3 mm	M mm	N mm	t mm	法兰螺栓孔 Flange bolts S mm	数量 No.	重量 Weight 2) ca. kg	注油量 Oil quantity ca. l
9	22000	30	70	25	60	120	115	65	2.5	67.5	350	388	428	356	435	165	320	119	24	6±1.5	18	24	280	7
10	31000	30	70	25	60	130	125	70	2.5	72.5	394	436	472	400	455	174	320	119	28	8±1.5	18	28	330	9
11	42000	30	70	25	60	140	135	82.5	2.5	85	425	485	525	436	486	204	320	119	32	8±1.5	22	20	390	15
12	60000	30	70	25	60	160	155	90	2.5	92.5	495	555	605	510	560	224	320	119	34	9±1.5	26	20	530	20
13	83000	30	70	25	60	180	175	95	2.5	97.5	535	595	645	554	558	241	320	119	39	11±1.5	26	24	670	21
14	114000	30	70	25	60	210	205	105	2.5	107.5	610	665	720	629	581	278	320	119	42	9	26	32	940	33
16	160000	35	80	28	60	230	225	110	2.5	112.5	660	715	770	680	693	285	375	137	44	10	26	36	1137	42
17	202000	35	80	28	60	250	245	120	2.5	122.5	750	830	895	775	719	294	375	137	50	10	33	24	1660	60
18	244000	45	100	35	80	260	255	120	2.5	122.5	785	865	930	815	818	303	445	172	50	10	33	32	2100	70
19	295000	45	100	35	80	280	275	135	2.5	137.5	840	915	980	870	841	327.5	445	172	56	12	33	36	2200	85
20	354000	45	100	35	80	300	295	135	2.5	137.5	840	915	980	870	841	327.5	445	172	56	12	33	36	2300	75
21	392000	45	100	35	80	310	305	152	2.5	154.5	935	1025	1115	960	897.5	354	445	172	62	24	39	32	2930	115
22	450000	45	100	35	80	330	325	152	2.5	154.5	935	1025	1115	960	897.5	354	445	172	62	24	39	32	3100	105
23	513000	55	110	40	100	350	345	164	2.5	166.5	1025	1120	1210	1056	1003	380	520	194	68	28	39	36	3800	140
24	592000	55	110	40	100	360	355	164	2.5	166.5	1025	1120	1210	1056	1003	380	520	194	68	28	39	36	4300	135
25	684000	55	110	40	100	380	375	180	2.5	182.5	1115	1220	1320	1150	1065	407	520	194	74	29	45	36	5250	195
26	763000	55	110	40	100	400	395	180	2.5	182.5	1115	1220	1320	1150	1065	407	520	194	74	29	45	36	5660	170
27	852000	70	135	50	110	430	425	191	2.5	193.5	1215	1345	1460	1248	1205.5	453	615	240	81	31	52	32	6680	280
28	950000	70	135	50	110	450	445	191	2.5	193.5	1215	1345	1460	1248	1205.5	453	615	240	81	31	52	32	7180	220
29	1060000	70	135	50	110	460	450	197.5	5	202.5	1320	1450	1565	1355	1252.5	483	615	240	87	34	52	36	8500	310
30	1200000	70	135	50	110	480	470	197.5	5	202.5	1320	1450	1565	1355	1252.5	483	615	240	87	34	52	36	9070	280
31-36	敬请垂询 / On request																							

1) 轴径$d_1 \leqslant 100$，公差为m6
轴径$d_1 > 100$，公差为n6
2) 重量不包含锁紧盘和润滑油的重量
3) 轴伸d_1带平键按照标准GB1096，相关细节见35页，中心孔见34页
4) 所需安装空间
5) 速比$i_N \leqslant 2000:1$
6) 速比$i_N \geqslant 2240:1$
7) >160时g6
8) 法兰连接孔见33页
9) 注意连接螺栓和凸缘

1) Shaft diameter $d_1 \leqslant 100$, Tolerance m6
Shaft diameter $d_1 > 100$, Tolerance n6
2) Weight without shrink disk and oil
3) For shaft end d_1 with parallel acc.to GB1096,For detail see page 35 and center hole, see page 34
4) Space required
5) Up to and including i_N=2000:1
6) Above i_N=2240:1
7) >160 g6
8) For hole patterns, see page 33
9) Observe bolted connection and boss

EP3K传动比、转速及功率 Ratios, speeds, power ratings of EP3K

i_N	n_1	n_2	传动比i_N，转速n_{1N}和n_{2N}，额定功率P_N / Ratios i_N, speeds n_{1N} and n_{2N}, nominal power ratings P_N 额定功率/P_N kW / Nominal power ratings PN in kW 齿轮箱规格 / Gear unit sizes																					
	min^{-1}		9	10	11	12	13	14	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31-36
560	1500	2.68	6.1	8.6	11.8	16.8	23	32	43	57	68	83	96	109	124	143	166	191	205	238	265	297	322	
	1000	1.79	4.1	5.7	7.9	11.2	16	21	29	38	46	55	64	73	83	96	110	127	137	158	176	198	215	
	750	1.34	3	4.3	5.9	8.4	12	16	22	28	34	41	48	55	62	72	83	96	102	119	127	148	161	
630	1500	2.38	5.4	7.6	10.5	15	21	28	38	50	61	74	85	98	110	127	147	170	183	211	236	264	286	
	1000	1.59	3.6	5.1	7	10	14	19	26	34	41	49	57	65	74	85	98	113	122	141	157	176	191	
	750	1.19	2.7	3.8	5.2	7.5	10	14	19	25	30	37	43	49	55	64	74	85	92	106	113	132	143	
710	1500	2.11	4.8	6.8	9.3	13.3	18	25	34	45	54	65	75	87	98	113	130	151	162	188	201	234	254	
	1000	1.41	3.2	4.5	6.2	8.9	12	17	23	30	36	44	50	58	65	76	87	100	108	125	134	156	169	
	750	1.06	2.4	3.4	4.7	6.6	9	13	17	22	27	33	38	43	49	57	65	76	81	94	100	117	127	
800	1500	1.88	4.3	6	8.3	11.8	16.3	22	30	40	48	58	67	77	87	100	116	134	144	166	178	208	225	
	1000	1.25	2.8	4	5.5	7.9	10.9	15	20	26	32	38	45	51	58	67	77	90	96	111	119	138	150	
	750	0.94	2.1	3	4.1	5.9	8	11	15	20	24	29	33	38	43	50	58	67	72	83	89	104	112	
900	1500	1.67	3.8	5.3	7.3	10.5	14.5	20	27	35	43	51	60	68	77	90	103	119	128	148	158	184	200	
	1000	1.11	2.5	3.6	4.9	7	9.7	13.3	18	24	28	34	40	45	52	60	69	80	85	99	105	123	133	
	750	0.83	1.9	2.7	3.7	5.2	7.2	10	13	18	21	26	30	34	39	45	52	60	64	74	79	93	100	
1000	1500	1.5	3.4	4.8	6.6	9.4	13	17.9	24	32	38	46	54	62	70	81	93	107	115	133	142	166	180	
	1000	1	2.3	3.2	4.4	6.3	8.7	11.9	16	21	26	31	36	41	46	54	62	72	77	89	95	110	120	
	750	0.75	1.7	2.4	3.3	4.7	6.5	9	12	16	19	23	27	31	35	40	45	54	58	67	71	83	90	
1120	1500	1.34	3	4.3	5.9	8.4	11.6	16	22	28	34	41	48	55	62	72	83	96	102	119	127	148	161	
	1000	0.89	2	2.9	3.9	5.6	7.8	11	14	19	23	28	32	37	41	48	56	64	69	79	85	99	107	
	750	0.67	1.5	2.2	3	4.2	5.8	8	11	14	17	21	24	27	31	36	42	48	51	60	64	74	81	
1250	1500	1.2	2.7	3.9	5.3	7.5	10.4	14.3	19	25	31	37	43	49	56	64	74	86	93	106	114	133	144	
	1000	0.8	1.8	2.6	3.5	5	7	9.6	13	17	20	25	29	33	37	43	50	57	61	71	76	89	96	
	750	0.6	1.4	1.9	2.6	3.8	5.2	7.2	10	13	15	19	21	25	28	32	37	43	46	53	57	67	72	
1400	1500	1.07	2.5	3.4	4.7	6.7	9.3	12.8	17	23	27	33	38	44	50	58	66	77	82	95	102	118	129	敬请垂询 On request
	1000	0.71	1.6	2.3	3.1	4.5	6.2	8.5	12	15	18	22	26	29	33	38	44	51	55	64	68	79	86	
	750	0.53	1.2	1.7	2.4	3.4	4.7	6.4	9	11	14	17	19	22	25	29	33	38	41	48	51	59	65	
1600	1500	0.94	2.1	3	4.1	5.9	8.1	11.2	15	20	24	29	33	38	43	50	58	67	72	83	89	104	112	
	1000	0.63	1.4	2	2.8	3.9	5.4	7.5	10	13	16	19	22	26	29	34	39	45	48	56	60	69	75	
	750	0.47	1.1	1.5	2.1	3	4	5.6	8	10	12	14	17	19	22	25	29	34	36	42	45	52	56	
1800	1500	0.83	1.9	2.7	3.7	5.2	7.2	10	13	18	21	26	30	34	39	45	52	60	64	74	79	93	100	
	1000	0.56	1.3	1.8	2.4	3.5	4.8	6.6	9	12	14	17	20	23	26	30	34	40	43	49	53	62	67	
	750	0.42	1	1.3	1.8	2.6	3.6	5	7	9	11	13	15	17	19	22	26	30	32	37	40	46	50	
2000	1500	0.75	1.7	2.4	3.3	4.7	6.5	9	12	16	19	23	27	31	35	40	46	54	58	67	71	83	90	
	1000	0.5	1.1	1.6	2.2	3.1	4.4	6	8	11	13	15	18	21	23	27	31	36	38	45	48	56	60	
	750	0.38	0.9	1.2	1.7	2.4	3.3	4.5	6	8	10	12	13	15	17	20	23	27	29	33	36	42	45	
2240	1500	0.67	1.5	2.2	3	4.2	5.8	8	11	14	17	21	24	27	31	36	42	48	51	60	64	74	81	
	1000	0.45	1	1.4	2	2.8	3.9	5.3	7	9	11	14	16	18	21	24	28	32	34	40	43	50	54	
	750	0.33	0.8	1.1	1.5	2.1	2.9	4	5	7	9	10	12	14	16	18	21	24	26	30	32	37	40	
2500	1500	0.6	1.4	1.9	2.6	3.8	5.2	7.2	10	13	15	19	21	25	28	32	37	43	46	53	57	67	72	
	1000	0.4	0.9	1.3	1.8	2.5	3.5	4.8	6.5	8	10	12	14	16	19	21	25	29	31	36	38	44	48	
	750	0.3	0.7	1	1.3	1.9	2.6	3.6	5	6	7.7	9	11	12	14	16	19	21	23	27	29	33	36	
2800	1500	0.54	1.2	1.7	2.4	3.4	4.7	6.4	8.6	11	14	17	19	22	25	29	33	38	41	48	51	59	65	
	1000	0.36	0.8	1.1	1.6	2.3	3.1	4.3	5.8	7.6	9	11	13	15	17	19	22	26	27	32	34	40	43	
	750	0.27	0.6	0.9	1.2	1.7	2.3	3.2	4.3	5.7	6.8	8	10	11	12	14	17	19	21	24	26	30	32	
3150	1500	0.48	1.1	1.5	2.1	3	4.1	5.7	7.7	10	12.2	15	17	20	22	26	30	34	37	42	45	53	57	
	1000	0.32	0.7	1	1.4	2	2.8	3.8	5.1	6.7	8	10	11	13	15	17	20	23	24	28	30	35	38	
	750	0.24	0.5	0.8	1.1	1.5	2.1	2.8	3.8	5	6.1	7.4	8.5	10	11	13	15	17	18	21	23	26	29	
3550	1500	0.42	1	1.4	1.9	2.7	3.7	5	6.8	9	10.8	13	15	17	20	23	26	30	33	38	40	47	51	
	1000	0.28	0.6	0.9	1.2	1.8	2.5	3.4	4.5	6	7.2	8.7	10	12	13	15	17	20	22	25	27	31	34	
	750	0.21	0.5	0.7	0.9	1.3	1.8	2.5	3.4	4.5	5.4	6.5	7.5	8.7	10	11	13	15	16	19	20	23	25	
4000	1500	0.38	0.8	1.2	1.7	2.4	3.3	4.5	6.1	8	9.6	11.6	13.4	15.4	17	20	23	27	29	33	36	42	45	
	1000	0.25	0.5	0.8	1.1	1.6	2.2	3	4	5.3	6.4	7.7	8.9	10.3	12	13	15	18	19	22	24	28	30	
	750	0.19	0.4	0.6	0.8	1.2	1.6	2.2	3	4	4.8	5.8	6.7	7.7	9	10	12	13	14	17	18	21	23	

	热功率 P_{th} kW / Thermal capacities P_{th} in kW*) 齿轮箱规格 / Gear unit sizes															
	9	10	11	12	13	14	16	17	18	19/20	21/22	23/24	25/26	27/28	29/30	31-36
1)PG1室内小空间安装 PG1 For small confined spaces	10	12	15	19	23	27	34	41	47	54	63	76	89	109	125	敬请垂询 On request
2)PG1室内大空间安装 PG1 For large halls workshops	14	17	21	27	33	39	48	59	66	77	90	109	115	125	144	
3)PG1室外安装 PG1 in the open	19	23	28	36	44	52	65	79	90	104	121	146	166	195	225	

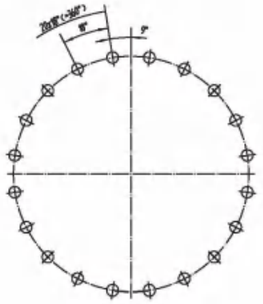
*) 表中数据仅适用于卧式安装形式，其他安装形似请与我们联系
1) 环境气流速度≥0.5m/s
2) 环境气流速度≥1.4m/s
3) 环境气流速度≥3.7m/s

*) Values apply to horizontal mounting position, For other mounting position please refer to us
1) Wind velocity≥0.5m/s
2) Wind velocity≥1.4m/s
3) Wind velocity≥3.7m/s

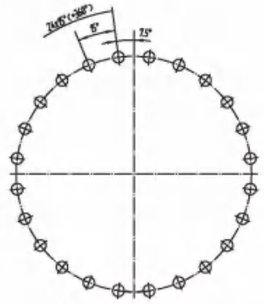
4.1输出端法兰联接孔型式

4.1 Hole patterns on output flanges

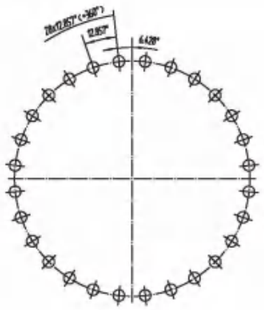
从输入轴侧看 / Viewing on input shaft



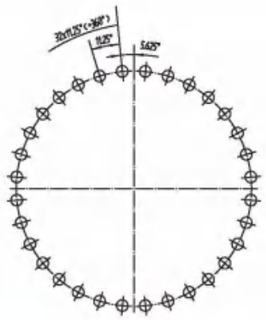
规格/Size 11,12



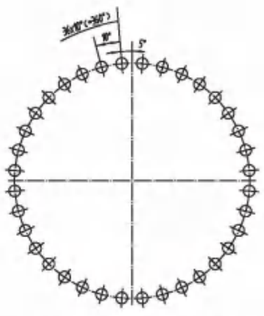
规格/Size 09,13,17



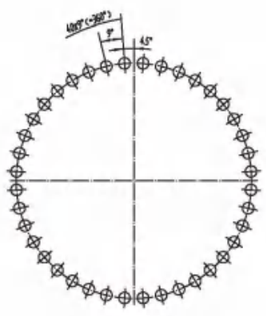
规格/Size 10



规格/Size 14, 18, 21, 22, 27, 28, 31, 32



规格/Size 16, 19, 20, 23, 24, 25, 26, 29, 30, 33, 34



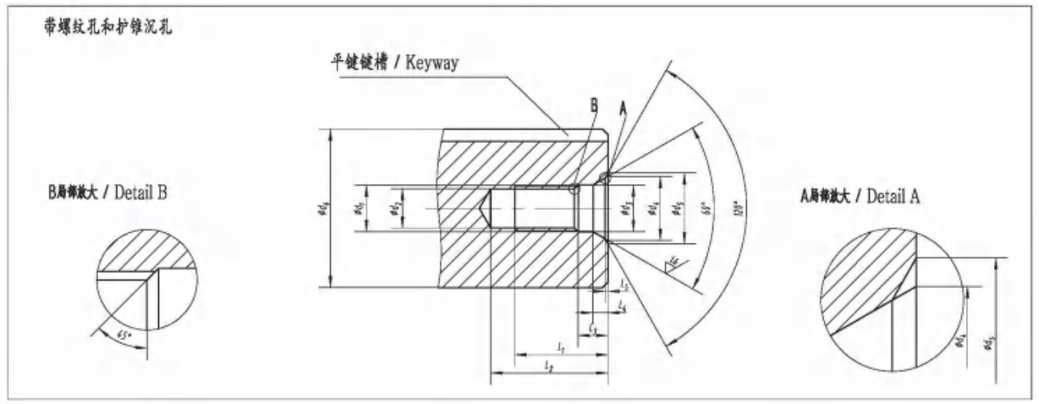
规格/Size 35,36

4.2 C型轴伸中心孔和轴密封

4.2 Center holes form c in shaft ends and shaft seals

C型中心孔

Form C

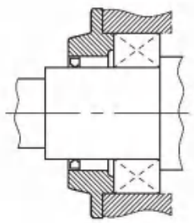
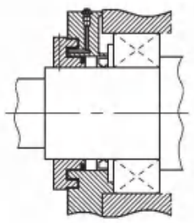


Φd_0推荐直径范围 Recommended diameter		C型 / Form C											
大于 Above	至 To	C型中心孔 C centering	d1 7H	d2 1)	d3	d4	d5	L1 +2	L_2 min	L_2 max	L_3 +1	L_4 ≈	L_5 ≈
16	21	CM6	M6	4.9	6.4	9.6	10.5	16	20	22	5	2.8	0.4
21	24	CM8	M8	6.6	8.4	12.2	13.2	20	25	28	6	3.3	0.4
24	30	CM10	M10	8.3	10.5	14.9	16.3	24	30	34	7.5	3.8	0.6
30	38	CM12	M12	10.1	13	18.1	19.8	28	37	42	9.5	4.4	0.7
38	50	CM16	M16	13.8	17	23	25.3	36	45	50	12	5.2	1
50	85	CM20	M20	17.2	21	28.4	31.3	42	53	59	15	6.4	1.3
85	130	CM24	M24	20.7	25	34.2	38	50	63	68	18	8	1.6
130[2]	225[2]	CM30	M30[2]	26.2	31	44	48	60	77	83	17	11	1.9
225[2]	320[2]	CM36	M36[2]	31.6	37	55	60	74	93	99	22	15	2.3
320[2]	500[2]	CM42	M42[2]	37.1	43	65	71	84	105	111	26	19	2.7
500[2]	710[2]	CM48	M48[2]	42.5	49	76	83	94	115	121	30	23	3.2

1) 螺纹底孔直径按GB196第一系列确定
2) 不是按照标准JB/ZQ4166确定的尺寸

1) Dril diameters for tapping-size holes acc.to GB196 PT.1
2) Dimension not acc.to JB/ZQ4166

轴密封 / Shaft seals

标准密封结构 / Standard seals	迷宫式密封结构 / Shaft seal with refillable labyrinth
	
当输入端采用迷宫密封和法兰安装时，请咨询我司	In case of refillable labyrinth an bell housing on input side,please contact us

4.3 ISO配合精度的选择 4.3 Selection of ISO fits

ISO配合精度的选择 / Selection of ISO Fits				
ISO配合精度的选择 Selection of ISO Fits	轴/Shaft d 大于 above	至 to	轴公差 Shaft tolerance	孔公差 Bore tolerance
	mm			
轴公差按照英德普兰标准 Shaft tolerance acc.to Entplan standard		25	k6	H7
	25	100	m6	
	100		n6	

对于重载工作条件，加带载反向回转，建议用比较紧密的配合，轮毂键槽宽度亦应选择ISO P9公差等级。

为此，用户应给出相关信息。

For heavy-duty operating conditions,e.g.reversing under load,it is recommended that a tighter fit and for hub keyway width the ISO P9 tolerance is selected.
In this case,the customer should give the relevant information.

4.4 平键和平键槽 4.4 Parallel keys and keyways

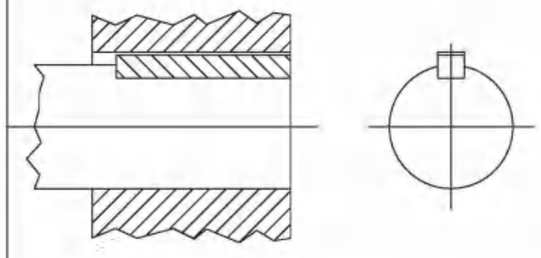
平键 / Parallel keys

平键紧固方式，采用无锥度连接

Drive type fastening without taper action

平键和平键槽按GB1096和GB1095

Parallel key and keyway acc.to GB1096 and GB1095



1). 轮毂平键槽宽度b的公差带ISO JS9确定，重载条件下按ISO P9 确定按GB1096和GB1095

2). 不是按照标准GB1096和GB1095确定的尺寸

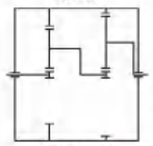
1). The tolerance zone for the hub keyway width b for parallel keys is ISO JS9 ,or ISO P9 for heavy-dutyoperating conditions.

2). Dimension not acc.to GB1096 and GB1095

平键 / Parallel keys					
直径 Diameter d 大于	至	宽度 Width b i)	高度 Height h	轴键槽深度 Depth of keyway in shaft t_1	轮毂键槽深度 Depth of keyway in hup $d+t_2$ GB1095
mm					
17	22	6	6	3.5	d+2.8
22	30	8	7	4	d+3.3
30	38	10	8	5	d+3.3
38	44	12	8	5	d+3.3
44	50	14	9	5.5	d+3.8
50	58	16	10	6	d+4.3
58	65	18	11	7	d+4.4
65	75	20	12	7.5	d+4.9
75	85	22	14	9	d+5.4
85	95	25	14	9	d+5.4
95	110	28	16	10	d+6.4
110	130	32	18	11	d+7.4
130	150	36	20	12	d+8.4
150	170	40	22	13	d+9.4
170	200	45	25	15	d+10.4
200	230	50	28	17	d+11.4
230	260	56	32	20	d+12.4
260	290	63	32	20	d+12.4
290	330	70	36	22	d+14.4
330	380	80	40	25	d+15.4
380	440	90	45	28	d+17.4
440	500	100	50	31	d+19.5
500[2)]	560[2)]	110[2)]	56[2)]	35	d+21.5
560[2)]	630[2)]	120[2)]	63[2)]	40	d+23.5
630[2)]	700[2)]	140[2)]	71[2)]	45	d+26.5

5.1 EP2N、EP2S实际传动比 5.1 Actual ratios EP2N and EP2S

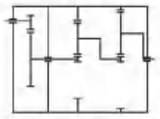
EP2N



iN=25~40

EHP II N 规格 Size	实际传动比 / Actual ratios i				
	25	28	31.5	35.5	40
9	25.634	28.058	31.142	35.201	40.781
10	25.634	28.058	31.142	35.201	40.781
11	25.875	28.233	31.207	35.072	40.309
12	27.983	27.26	30.130	33.863	38.912
13	24.958	27.318	30.321	34.727	39.706
14	24.958	27.318	30.321	34.727	39.706
16	24.750	27.090	30.068	33.987	39.735
17	24.750	27.090	30.068	33.987	39.735
18	24.958	27.318	30.321	34.727	39.706
19/20	26.622	29.139	32.342	36.557	42.353
21/22	26.622	29.139	32.342	36.557	42.353
23/24	26.872	29.321	32.409	36.424	41.855
25/26	26.872	29.321	32.409	36.424	41.855
27/28	26.622	29.139	32.342	36.557	42.353
2930	26.622	29.139	32.342	36.557	42.353
31/32	26.872	29.321	32.409	36.424	41.855
33/34	26.622	29.139	32.342	36.557	42.353
35/36	26.872	29.321	32.409	36.424	41.855

EP2S

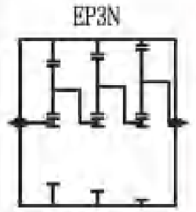


iN=45~125

EHP II S 规格 Size	实际传动比 / Actual ratios i									
	45	50	56	63	71	80	90	100	112	125
9	45.601	51.544	59.715	61.935	71.775	78.782	91.272	99.735	115.55	124.74
10	45.601	51.544	59.715	61.935	71.775	78.782	91.272	99.735	115.55	124.74
11	43.209	48.561	55.802	63.399	72.853	81.303	93.426	99.678	114.54	123.14
12	41.719	56.887	53.878	61.213	70.34	78.499	90.205	96.241	110.59	118.9
13	43.797	49.505	57.353	59.977	69.485	78.827	91.324	95.963	111.18	119.12
14	43.797	49.505	57.353	59.977	69.485	78.827	91.324	95.963	111.18	119.12
16	42.318	47.833	55.417	61.438	71.178	78.788	91.278	96.594	111.91	120.59
17	42.318	47.833	55.417	61.438	71.178	78.788	91.278	96.594	111.91	120.59
18	42.867	48.545	56.136	60.32	69.882	78.976	91.496	95.963	111.18	119.12
19/20	45.752	51.684	59.878	64.341	74.541	84.841	97.596	102.36	118.59	127.06
21/22	46.357	52.399	60.706	66.084	76.561	84.746	98.182	103.90	120.37	129.41
23/24	45.373	50.993	58.597	64.442	70.051	82.781	95.124	101.60	116.75	125.56
25/26	45.373	50.993	58.597	64.442	70.051	82.781	95.124	101.60	116.75	125.56
27/28	46.948	53.067	61.48	66.345	76.863	84.241	97.596	102.36	118.59	127.06
29/30	46.948	53.067	61.48	66.345	76.863	84.241	97.596	102.36	118.59	127.06
31/32	45.575	51.221	58.858	66.102	75.985	83.932	96.448	104.30	119.86	127.56
33/34	45.481	51.409	59.559	66.345	76.836	84.241	97.596	104.69	121.28	129.08
35/36	45.373	50.993	58.597	65.562	75.338	81.252	93.368	100.53	115.52	129.20

5.2 EP3N、EP3S实际传动比 5.2 Actual ratios EP3N and EP3S

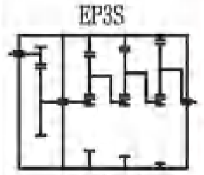
EP3N



iN=140~280

EHPIIIN 规格 Size	实际传动比 / Actual ratios i						
	140	160	180	200	225	250	280
9	146.81	165.59	192.25	210.43	233.57	264.01	305.86
10	146.81	165.59	192.25	210.43	233.57	264.01	305.86
11	147.12	165.34	189.99	207.96	230.82	260.90	302.26
12	142.04	156.64	183.44	200.79	222.86	251.9	291.84
13	142.94	161.57	187.19	204.88	227.41	257.04	297.79
14	142.94	161.57	187.19	204.88	227.41	257.04	297.79
16	143.08	161.73	187.37	204.45	225.98	253.97	291.84
17	143.08	161.73	187.37	204.45	225.98	253.97	291.84
18	142.94	161.57	187.19	204.88	227.41	257.04	297.79
19/20	152.47	172.34	199.66	218.54	242.57	274.18	317.65
21/22	152.47	172.34	199.66	218.54	242.57	274.18	317.65
23/24	152.79	171.71	197.32	215.97	239.71	270.95	313.91
25/26	152.79	171.71	197.32	215.97	239.71	270.95	313.91
27/28	152.47	172.34	199.66	218.54	242.57	274.18	317.65
29/30	152.47	172.34	199.66	218.54	242.57	274.18	317.65
31/32	152.79	171.71	197.32	215.97	239.71	270.95	313.91
33/34	153.90	173.96	201.54	219.91	243.07	273.18	313.91
35/36	154.22	173.33	199.17	217.32	240.21	269.96	310.22

EP3S

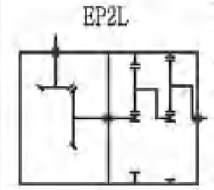


iN=280~900

EHPIIIS 规格 Size	实际传动比 / Actual ratios i										
	280	315	355	400	450	500	560	630	710	800	900
9	295.21	333.86	386.58	401.07	464.65	510.01	590.87	646.65	748.01	807.55	935.57
10	295.21	333.86	386.58	401.07	464.65	510.01	590.87	646.65	748.01	807.55	935.57
11	295.82	332.46	382.03	399.6	459.18	508.15	583.92	643.29	739.21	798.04	924.56
12	295.62	320.99	368.86	385.82	443.35	490.62	563.78	621.11	713.72	770.53	892.68
13	287.42	324.88	376.39	390.49	452.4	496.56	575.29	628.63	728.29	786.25	910.9
14	287.42	324.88	376.39	390.49	452.4	496.56	575.29	628.63	728.29	786.25	910.9
16	268.53	303.53	351.65	395.27	459.1	508.18	588.75	623.03	721.81	776.02	891.73
17	268.53	303.53	351.65	395.27	459.1	508.18	588.75	623.03	721.81	776.02	891.73
18	283.53	320.48	371.29	388.27	449.83	510.3	591.2	621.23	719.72	771.13	893.38
19/20	302.43	341.84	396.04	414.16	479.82	544.32	630.61	662.65	767.7	822.54	952.94
21/22	302.43	341.84	396.04	414.16	479.82	544.32	630.61	662.65	767.7	822.54	952.94
23/24	295.28	331.86	381.34	426.24	489.8	546.62	628.12	670.15	770.08	829.8	961.35
25/26	295.28	331.86	381.34	426.24	489.8	546.62	628.12	670.15	770.08	829.8	961.35
27/28	296.01	334.59	387.63	416.52	482.56	545.35	631.81	662.65	767.70	822.54	952.94
29/30	296.01	334.59	387.63	416.52	482.56	545.35	631.81	662.65	767.70	822.54	952.94
31/32	300.72	337.97	388.37	426.24	489.8	546.61	628.12	670.15	770.08	827.92	959.17
33/34	292.05	330.11	382.45	417.18	483.31	535.9	620.86	657.74	762.02	819.53	941.73
35/36	292.66	328.9	377.95	415.65	477.63	533.94	613.55	655.34	763.05	809.89	930.65

5.3 EP2L、EP2K 及 EP3K实际传动比 5.3 Actual ratios EP2L、EP2K and EP3K

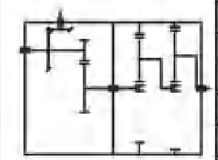
EP2L



iN=31.5~100

EHP II L规格 Size	实际传动比 / Actual ratios i										
	31.5	35.5	40	45	50	56	63	71	80	90	100
9	32.535	35.611	39.526	43.882	50.420	55.728	60.452	69.612	79.053	86.239	100.20
10	32.535	35.611	39.526	43.882	50.420	55.728	60.452	69.612	79.053	86.239	100.20
11	32.841	35.834	39.608	43.418	50.525	55.843	60.577	69.755	79.967	86.418	98.421
12	31.709	34.599	38.424	41.921	48.763	53.918	58.488	67.350	77.209	83.438	101.16
13	31.677	34.672	38.484	42.186	49.091	54.256	62.326	67.776	77.697	83.966	95.628
14	31.677	34.672	38.484	42.186	49.091	54.256	62.326	67.776	77.697	83.966	95.628
16	31.414	34.384	38.164	41.834	48.682	53.806	61.807	67.211	77.049	83.266	94.831
17	31.414	34.384	38.164	41.834	48.682	53.806	61.807	67.211	77.049	83.266	94.831
18	31.427	34.399	38.182	43.149	49.091	54.866	62.326	67.776	77.697	83.965	95.627
19/20	33.524	36.693	40.727	46.025	52.364	58.524	66.481	72.294	82.877	89.563	102.00
21/22	33.524	36.693	40.727	46.025	52.364	58.524	66.481	72.294	82.877	89.563	102.00
23/24	33.893	36.923	40.812	46.121	52.472	58.645	66.619	72.444	83.048	89.749	102.50
25/26	33.893	36.923	40.812	46.121	52.472	58.645	66.619	72.444	83.048	89.749	102.50
27/28	33.524	36.693	40.727	46.025	52.364	58.524	66.481	72.294	82.877	89.563	102.00
29/30	33.524	36.693	40.727	46.025	52.364	58.524	66.481	72.294	82.877	89.563	102.00

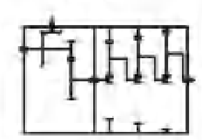
EP2K



iN=112~500

EHP II K规格 Size	实际传动比 / Actual ratios i													
	112	125	140	160	180	200	225	250	280	320	360	400	450	500
9	111.25	125.76	145.69	157.28	175.77	203.53	223.22	242.15	278.84	316.65	345.44	393.42	442.27	487.63
10	111.25	125.76	145.69	157.28	175.77	203.53	223.22	242.15	278.84	316.65	345.44	393.42	442.27	487.63
11	111.83	125.68	144.42	156.27	173.52	200.92	220.36	239.04	375.26	312.6	341.01	388.38	436.6	481.38
12	107.97	121.35	139.44	149.81	167.54	193.99	212.76	230.8	265.77	301.82	329.25	374.98	421.54	464.78
13	107.97	121.80	141.11	151.19	167.85	192.86	213.16	231.23	266.26	302.38	329.86	375.68	422.33	465.64
14	107.76	121.80	141.11	151.19	167.85	192.86	213.16	231.23	266.26	302.38	329.86	375.68	422.33	465.64
16	108.47	122.60	142.04	153.05	167.77	195.23	215.79	234.08	269.55	309.00	333.93	380.31	427.53	471.38
17	108.47	122.60	142.04	153.05	167.77	195.23	215.79	234.08	269.55	309.00	333.93	380.31	427.53	471.38
18	107.76	121.8	141.11	151.19	165.73	192.86	213.16	244.85	266.26	305.24	329.86	375.68	422.33	465.64
19/20	114.94	129.92	150.52	161.27	176.78	205.71	227.37	261.18	284.01	325.59	351.86	400.72	480.48	496.68
14/15	114.79	126.14	140.73	160.18	187.41	211.43	232.33	259.20	295.02	345.18	348.32	388.60	442.31	517.51
16/17	113.68	124.43	138.11	156.11	180.87	209.39	229.19	254.38	287.53	333.12	352.28	391.00	441.96	512.03
18/19	115.11	120.00	139.86	158.08	183.14	207.29	226.89	251.83	284.65	329.78	350.31	395.48	447.02	517.89
20/21	112.80	123.96	138.28	157.39	184.15	203.11	223.19	249.00	283.42	331.60	359.59	401.18	456.62	534.25
22/23	111.31	122.24	136.30	155.04	181.28	200.44	220.13	245.44	279.19	326.43	354.96	395.77	450.19	526.38

EP3K



iN=560~4000

EHPIIIK 规格 Size	实际传动比 / Actual ratios i																	
	560	630	710	800	900	1000	1120	1250	1400	1600	1800	2000	2240	2500	2800	3150	3550	4000
9	566.22	640.02	700.53	777.54	878.88	985.19	1137.3	1247.3	1353.1	1558.1	1750.4	1950.3	2158.4	2471.5	2724.5	3105.0	3597.2	4187.5
10	566.22	640.02	700.53	777.54	878.88	985.19	1137.3	1247.3	1353.1	1558.1	1750.4	1950.3	2158.4	2471.5	2724.5	3105.0	3597.2	4187.5
11	567.40	637.08	697.96	774.7	875.60	976.00	1139.1	1242.8	1348.1	1532.4	1752.3	1925.2	2190.3	2462.3	2714.8	3093.0	3584.1	4126.5
12	571.93	645.60	675.0	717.08	848.46	944.35	1060	1106.0	1301.6	1499.5	1702.1	1856.0	2111.5	2377.4	2621.2	2985.9	3460.3	3976.5
13	551.59	623.14	682.08	757.04	855.7	956.3	1107.3	1214.4	1317.4	1517.0	1742.5	1879.4	2140.4	2406.1	2652.9	3033.1	3505.4	4067.3
14	551.59	623.14	682.08	757.04	855.7	956.3	1107.3	1214.4	1317.4	1517.0	1742.5	1879.4	2140.4	2406.1	2652.9	3033.1	3505.4	4067.3
16	551.25	623.09	679.88	751.48	844.26	943.84	1098.9	1198.6	1300.2	1497.3	1700.3	1854.9	2112.5	2374.8	2616.4	2983.9	3490.7	3972.2
17	551.25	623.09	679.88	751.48	844.26	943.84	1098.9	1198.6	1300.2	1497.3	1700.3	1854.9	2112.5	2374.8	2616.4	2983.9	3490.7	3972.2
18	544.28	615.23	673.37	747.4	844.81	937.9	1077.8	1191.1	1292.1	1487.3	1699.5	1843.2	2099.2	2359.9	2601.2	2966.6	3435.0	3976.5
19/20	580.56	656.22	718.27	797.25	901.13	1000.4	1148.5	1270.5	1378.2	1587.0	1802.3	1966.1	2229.2	2517.2	2775.4	3162.6	3664.0	4244.3
21/22	580.56	656.22	718.27	797.25	901.13	1000.4	1148.5	1270.5	1378.2	1587.0	1802.3	1966.1	2229.2	2517.2	2775.4	3162.6	3664.0	4244.3
23/24	593.88	667.44	730.65	810.87	916.34	1004.7	1165.1	1292.2	1401.8	1614.3	1850.4	1999.7	2277.5	2560.2	2822.8	3216.7	3726.7	4282.4
25/26	593.88	667.44	730.65	810.87	916.34	1004.7	1165.1	1292.2	1401.8	1614.3	1850.4	1999.7	2277.5	2560.2	2822.8	3216.7	3726.7	4282.4
27/28	580.56	656.22	718.27	797.25	901.13	987.8	1148.5	1270.5	1459.4	1587.0	1819.3	1966.1	2229.2	2517.2	2775.4	3132.6	3664.0	4244.3
29/30	580.56	656.22	718.27	797.25	901.13	987.8	1148.5	1270.5	1459.4	1587.0	1819.3	1966.1	2229.2	2517.2	2775.4	3132.6	3664.0	4244.3

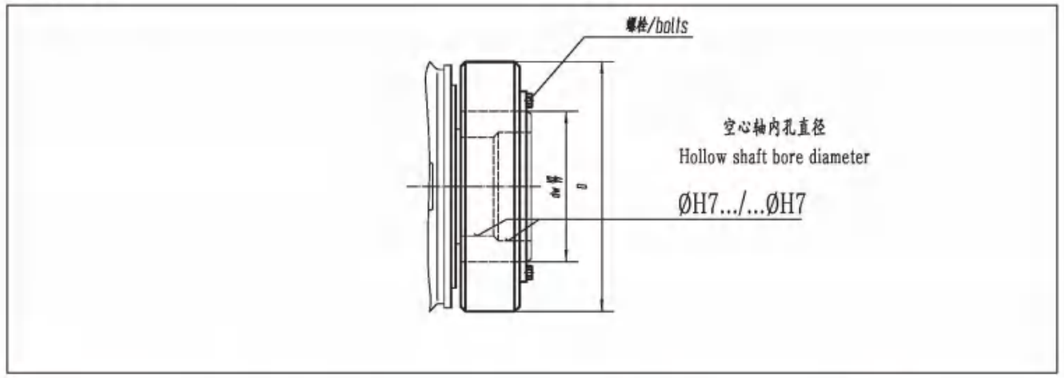
6.1 带锁紧盘的空心输出轴

EP..A

出轴形式：AS

6.1 Hollow shaft for shrink disk

Variant: AS



行星齿轮箱规格 Planetary gear unit size	齿轮箱公称输出扭矩 Gear unit nominal torque T_{2N}(Nm)	锁紧盘 Shrink disk 规格 Size dw	D mm	螺栓 Bolts	重量 Weight ca.kg
9	22000	155	263	M14	15
10	31000	165	290	M16	22
11	42000	185	320	M16	37
12	60000	220	370	M20	54
13	83000	240	405	M20	67
14	114000	280	460	M20	102
16	160000	300	485	M24	118
17	202000	320	520	M24	131
18	244000	340	570	M24	186
19	295000	360	590	M24	204
20	354000	380	640	M27	250
21	392000	390	650	M27	250
22	450000	420	670	M27	300
23	513000	440	720	M27	400
24	592000	460	760	M27	430
25	684000	480	800	M30	500
26	734000	500	835	M30	570
27	852000	530	865	M30	740
28	950000	560	920	M30	770
29	1060000	560	920	M30	770
30	1200000	590	960	M30	900
31	1330000	590	960	M30	900
32	1500000	620	970	M30	1080
33	1680000	660	1040	M33	1073
34	1920000	700	1100	M33	1196
35	2240000	750	1150	M33	1346
36	2600000	800	1230	M33	1646

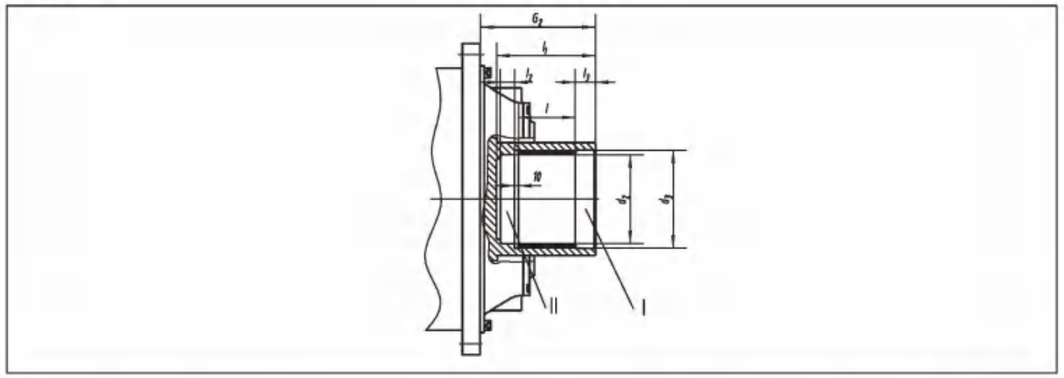
6.2 带渐开线花键空心输出轴，按照标准DIN 5480

EP..A

出轴形式：AH

6.2 Hollow shaft with involute splines acc.to DIN 5480

Variant: AH



行星齿轮箱规格 Planetary gear unit size	齿轮箱公称输出扭矩 Gear unit nominal torque T_{2N}(Nm)	渐开线花键按标准Din 5480 Involute splines acc.to.DIN 5480	有效齿长 Face-width I mm	内孔 I Center hole I d_5 H7 mm	内孔 I l_5 mm	内孔 II Center hole II d_2 H7 mm	内孔 II l_2 mm	G_2 mm	内孔总长 Overall dimension l_1 mm
9	22000	120×5×30×22×9H	70	122	40	107	20	165	150
10	31000	130×5×30×24×9H	80	132	40	117	20	174	160
11	42000	140×5×30×26×9H	90	142	45	125	25	204	180
12	60000	160×5×30×30×9H	100	162	45	145	25	223	190
13	83000	180×5×30×34×9H	110	182	45	165	25	237	200
14	114000	210×5×30×40×9H	125	212	45	195	25	264	215
16	160000	240×8×30×28×9H	140	242	50	220	25	285	235
17	202000	250×8×30×30×9H	150	252	50	230	30	290	250
18	244000	260×8×30×31×9H	160	262	50	240	30	303	260
19	295000	280×8×30×34×9H	170	282	50	260	30	327.5	270
20	354000	300×8×30×36×9H	180	302	50	280	30	327.5	280
21	392000	310×8×30×37×9H	190	312	60	290	40	354	310
22	450000	330×8×30×40×9H	200	332	60	310	40	354	320
23	513000	340×8×30×41×9H	200	342	60	320	40	348	320
24	592000	360×8×30×44×9H	220	362	60	340	40	368	340
25	684000	380×8×30×46×9H	230	382	60	360	40	372	350
26	734000	400×8×30×48×9H	240	402	60	380	40	382	360
27	852000	440×8×30×54×9H	250	442	60	420	40	423	370
28	950000	450×8×30×55×9H	260	452	65	430	40	428	385
29	1060000	460×8×30×56×9H	270	462	65	440	45	433	400
30	1200000	480×8×30×58×9H	285	482	65	460	45	448	415

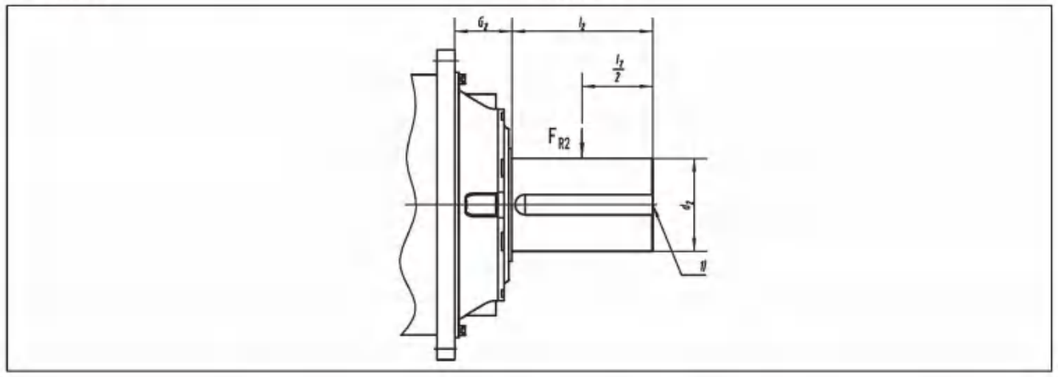
6.3 带平键的实心输出轴

EP..B

出轴形式：BJ

6.3 Hollow shaft with parallel key

Variant: BJ



行星齿轮箱规格 Planetary gear unit size	齿轮箱公称输出扭矩 Gear unit nominal torque T_{2N}(Nm)	d2 n6 mm	l_2 mm	G_2 mm	F_{R2} kN
9	22000	120	210	95	
10	31000	130	210	95	
11	42000	150	240	109	
12	60000	160	270	106	
13	83000	180	310	118	
14	114000	210	350	139	
16	160000	230	350	142	
17	202000	250	400	139	
18	244000	260	400	134	
19	295000	280	450	148.5	
20	354000	300	500	148.5	
21	392000	310	500	158	
22	450000	330	500	158	敬请垂询 On request
23	513000	350	550	175	
24	592000	360	590	175	
25	684000	380	590	182	
26	734000	400	650	182	
27	852000	430	690	196.5	
28	950000	450	750	196.5	
29	1060000	460	750	209	
30	1200000	480	790	209	
31	1330000	500	790	232	
32	1500000	510	850	232	
33	1680000	530	900	251	
34	1920000	570	950	251	
35	2240000	600	1000	276	
36	2600000	640	1000	276	

1)输出轴轴头带平键按照标准GB1096，相关细节见34页，中心孔尺寸见33页

1) For shaft end with parallel key acc.to GB1096,For detail see page 34,center hole see page 33

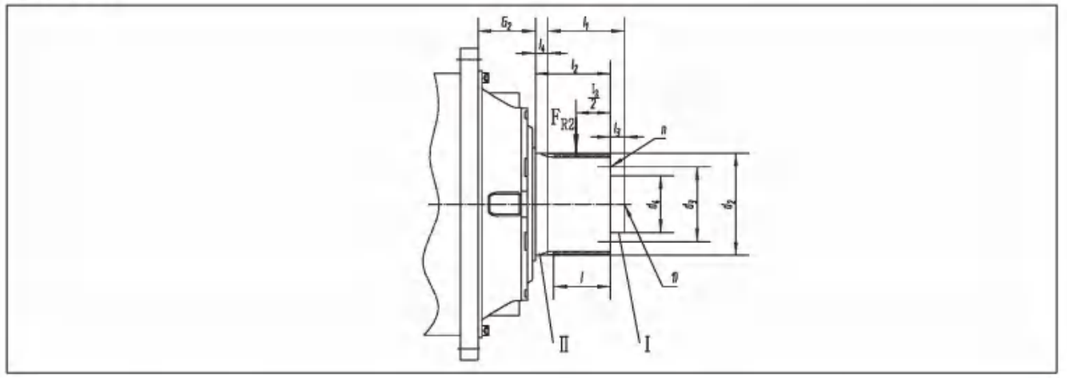
6.4 带渐开线花键实心输出轴，按照标准 DIN 5480

EP..B

出轴形式：BH

6.4 Hollow shaft with involute splines acc.to DIN 5480

Variant: BH



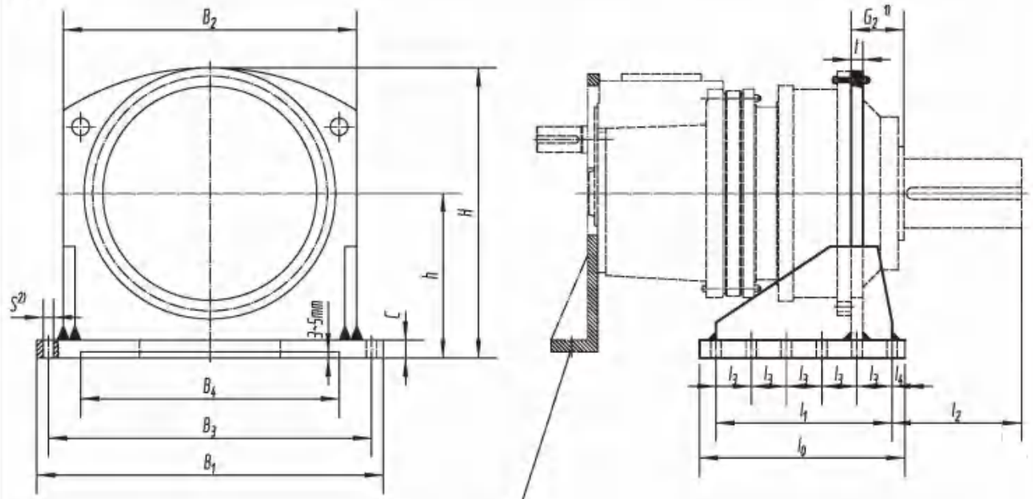
行星齿轮箱规格 Planetary gear unit size	齿轮箱公称输出扭矩 Gear unit nominal torque T_{2N}(Nm)	渐开线花键按照标准Din 5480 Involute splines acc. to DIN 5480	I mm	l_2 mm	外径I Diameter I Φd_3 k6 mm	l_3 mm	外径II Diameter II Φd_2 k6 mm	l_4 mm	l_1 mm	Φd_4 mm	n	G_2 mm	F_{R2} kN
9	22000	130×5×30×24×8m	70	80	110	20	132	20	120	80	3×M16×24	95	
10	31000	140×5×30×26×8m	80	90	120	20	142	20	130	90	3×M16×24	95	
11	42000	160×5×30×30×8m	90	100	140	25	162	25	150	110	3×M16×24	109	
12	60000	180×5×30×34×8m	100	110	90	25	182	25	160	130	3×M16×24	106	
13	83000	200×5×30×38×8m	110	120	100	30	202	25	175	140	3×M16×24	118	
14	114000	220×5×30×42×8m	125	135	120	30	222	30	195	160	3×M16×24	139	
16	160000	250×8×30×30×8m	140	155	140	35	252	30	220	185	3×M20×30	142	
17	202000	260×8×30×31×8m	150	165	155	40	262	35	240	200	3×M20×30	139	
18	244000	280×8×30×34×8m	160	175	170	40	282	35	250	215	3×M20×30	134	
19	295000	300×8×30×36×8m	170	185	180	40	302	35	260	225	3×M20×30	148.5	敬请垂询 On request
20	354000	310×8×30×37×8m	180	195	190	40	312	35	270	235	6×M20×30	148.5	
21	392000	320×8×30×38×8m	190	205	200	40	322	35	280	250	6×M20×30	158	
22	450000	340×8×30×41×8m	200	215	210	40	342	35	290	265	6×M20×30	158	
23	513000	360×8×30×44×8m	200	215	230	40	362	35	290	275	6×M20×30	175	
24	592000	380×8×30×46×8m	220	235	245	40	382	35	310	290	6×M20×30	175	
25	684000	400×8×30×48×8m	230	245	260	40	402	35	320	310	6×M24×36	182	
26	734000	420×8×30×51×8m	240	255	280	40	422	35	330	330	6×M24×36	182	
27	852000	440×8×30×54×8m	250	265	310	40	442	35	340	370	6×M24×36	196.5	
28	950000	450×8×30×55×8m	260	275	330	45	452	40	360	380	6×M24×36	196.5	
29	1060000	460×8×30×56×8m	270	285	340	45	462	40	370	390	6×M24×36	209	
30	1200000	480×8×30×58×8m	285	300	360	45	482	40	385	410	6×M24×36	209	

1)轴头中心孔见33

1) For shaft end with center hole see page 33

7.1 齿轮箱底座 7.1 Gear housing base

FJ01



视具体应用情况制定取决于作用在输出轴上的径向力

From case to case.dependent on the radial force acting on the output shaft.

尺寸 / Dimensions

行星齿轮箱规格 Planetary gear unit size	B_1	B_2	B_3	B_4	c	h	H	l_0	l_1	l_2	l_3	l_4	t	地脚螺栓 Foundation bolt	
														S	数量
	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	No
9	590	465	520	380	25	260	475	340	260	240	130	40	25	26	2×3
10	640	515	570	430	25	280	520	370	290	240	145	40	28	26	2×3
11	690	565	620	480	30	315	585	410	330	274	110	40	32	26	2×4
12	770	645	700	560	32	360	665	460	380	292	95	40	35	26	2×5
13	830	695	750	610	35	390	715	500	420	334	105	40	40	26	2×5
14	920	775	840	680	40	430	790	570	480	380	120	45	40	33	2×5
16	980	835	900	700	45	470	860	590	500	374	125	45	45	33	2×5
17	1130	960	1040	810	50	540	990	680	580	405	145	50	50	39	2×5
18	1180	1000	1080	830	50	560	1030	730	620	385	155	55	50	39	2×5
19	1270	1065	1160	880	55	590	1085	770	640	450	160	65	55	45	2×5
20	1270	1065	1160	880	55	590	1085	770	640	500	160	65	55	45	2×5
21	1450	1215	1320	1020	60	660	1220	850	700	513	175	75	60	52	2×5
22	1450	1215	1320	1020	60	660	1220	850	700	513	175	75	60	52	2×5
23	1560	1315	1420	1100	65	730	1340	920	750	567	150	85	70	52	2×6
24	1560	1315	1420	1100	65	730	1340	920	750	607	150	85	70	52	2×6
25	1710	1425	1550	1240	70	795	1460	1010	860	574	215	75	75	62	2×5
26	1710	1425	1550	1240	70	795	1460	1010	860	634	215	75	75	62	2×5
27	1860	1575	1700	1370	75	870	1605	1110	950	664	190	80	80	62	2×6
28	1860	1575	1700	1370	75	870	1605	1110	950	724	190	80	80	62	2×6
29	1990	1680	1820	1460	75	925	1710	1190	1000	731	250	95	85	70	2×5
30	1990	1680	1820	1460	75	925	1710	1190	1000	771	250	95	85	70	2×5
31	2150	1810	1950	1570	85	1000	1840	1310	1100	773	220	105	95	70	2×6
32	2150	1810	1950	1570	85	1000	1840	1310	1100	833	220	105	95	70	2×6
33	2240	1910	2050	1630	90	1050	1935	1360	1150	883	230	105	100	78	2×6
34	2240	1910	2050	1630	90	1050	1935	1360	1150	933	230	105	100	78	2×6
35	2460	2095	2255	1850	105	1180	2160	1410	1180	968	236	115	110	84	2×6
36	2460	2095	2255	1850	105	1180	2160	1410	1180	968	236	115	110	84	2×6

1) 输出轴尺寸 见39-42

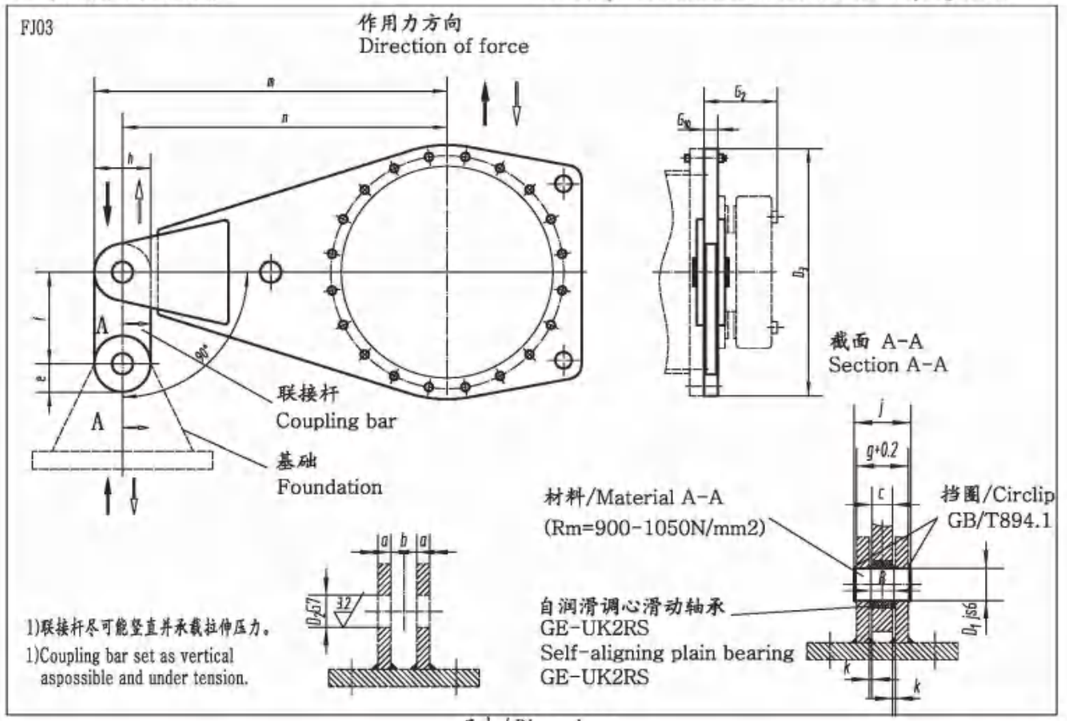
2) 见48页

1)For output shaft dimensions see page 39-42

2)see page 48

7.2 带联接杆的单侧扭力臂 7.2 Torque reaction arm on one side for coupling bar 1)

FJ03



1)联接杆尽可能竖直并承载拉伸压力。

1)Coupling bar set as vertical aspossible and under tension.

尺寸 / Dimensions

行星齿轮箱规格 Planetary gear unit size	齿轮箱公称输出扭矩 Gear unit nominal torque T_{2N}(Nm)	D_1 Js6	D_2 G7	D_3	G_2	G_{10}	a min	b	B 2)	c	e	f	g$^{+0.2}$	h	j	间隙 Clear-ancek	n	n	自调心滑动轴承 Self-aligning Plain bearing GE UK-2RS	重量 Weight ca. kg
		mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm		
9	22000	30	440	165	25	15	25	22	18	50	140	59.5	100	70	3.5	605	555	30	38
10	31000	35	485	174	30	15	30	25	20	52.5	140	64.5	105	75	5	667.5	615	35	51
11	42000	40	540	204	30	18	30	28	22	65	160	70.5	130	85	4	750	685	40	82
12	60000	40	620	224	30	18	30	28	22	65	160	70.5	130	85	4	850	785	40	85
13	83000	45	665	241	35	20	35	32	25	72.5	180	79.5	145	95	5	912.5	840	45	113
14	114000	50	740	278	40	20	40	35	30	72.5	200	85	145	100	5	1012.5	940	50	145
16	160000	60	790	285	50	25	50	44	35	77.5	240	105	155	120	7.5	1077.5	1000	60	206
17	202000	60	915	294	50	25	50	44	35	85	240	105	170	120	7.5	1250	1165	60	274
18	244000	70	955	303	55	30	55	49	40	105	280	120	210	135	7.5	1315	1210	70	365
19	295000	80	1005	327.5	60	30	60	55	45	105	320	125	210	145	7.5	1405	1300	80	423
20	354000	80	1005	327.5	60	30	60	55	45	105	320	125	210	145	7.5	1405	1300	80	423
21	392000	80	1140	354	60	30	60	55	45	113	320	125	225	145	7.5	1562.5	1450	80	530
22	450000	80	1140	354	60	30	60	55	45	113	320	125	225	145	7.5	1562.5	1450	80	530
23	513000	90	1235	380	65	30	65	60	50	125	360	130	250	150	7.5	1700	1575	90	665
24	592000	90	1235	380	65	30	65	60	50	125	360	130	250	150	7.5	1700	1575	90	665
25	684000	100	1350	407	75	35	75	70	55	138	400	150	275	170	10	1857.5	1720	100	940
26	734000	100	1350	407	75	35	75	70	55	138	400	150	275	170	10	1857.5	1720	100	940
27	852000	110	1490	453	75	35	75	70	55	150	440	150	300	175	10	2050	1900	110	1120
28	950000	110	1490	453	75	35	75	70	55	150	440	150	300	175	10	2050	1900	110	1120
29	1060000	110	1600	483	75	35	75	70	55	158	440	150	315	175	10	2192.5	2035	110	1260
30	1200000	110	1600	483	75	35	75	70	55	158	440	150	315	175	10	2192.5	2035	110	1260
31-36	敬请咨询 /On request																			

2) 公称尺寸B = 22-35 公差-0.12

公称尺寸B = 44-55 公差-0.15

公称尺寸B = 60-70 公差-0.20

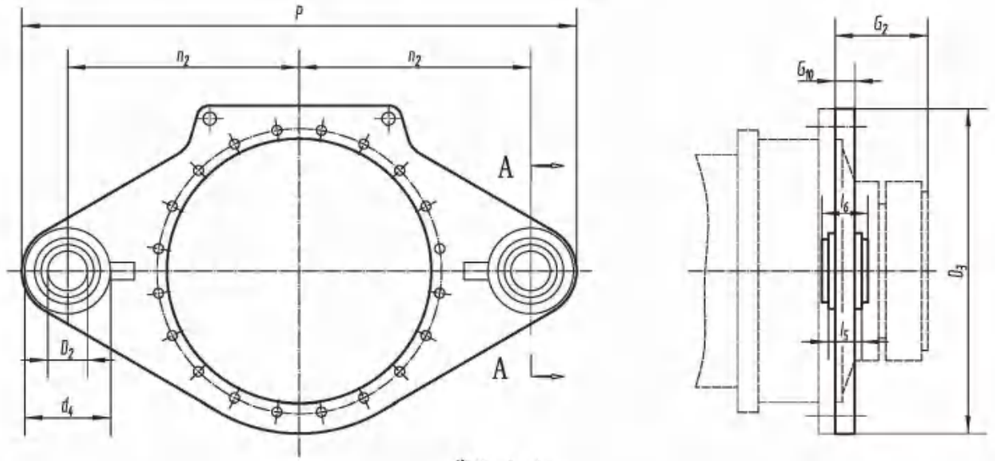
2)Nominal size B = 22-35 tolerance-0.12

Nominal size B = 45-55 tolerance-0.15

Nominal size B = 60-70 tolerance-0.20

7.3 带橡胶衬套的双侧扭力臂 / 7.3 Torque reaction arm on two sides with rubber bushes

FJ04



截面 A-A
Section A-A

金属橡胶结合型衬套
Fr eudenber g metalastic bush

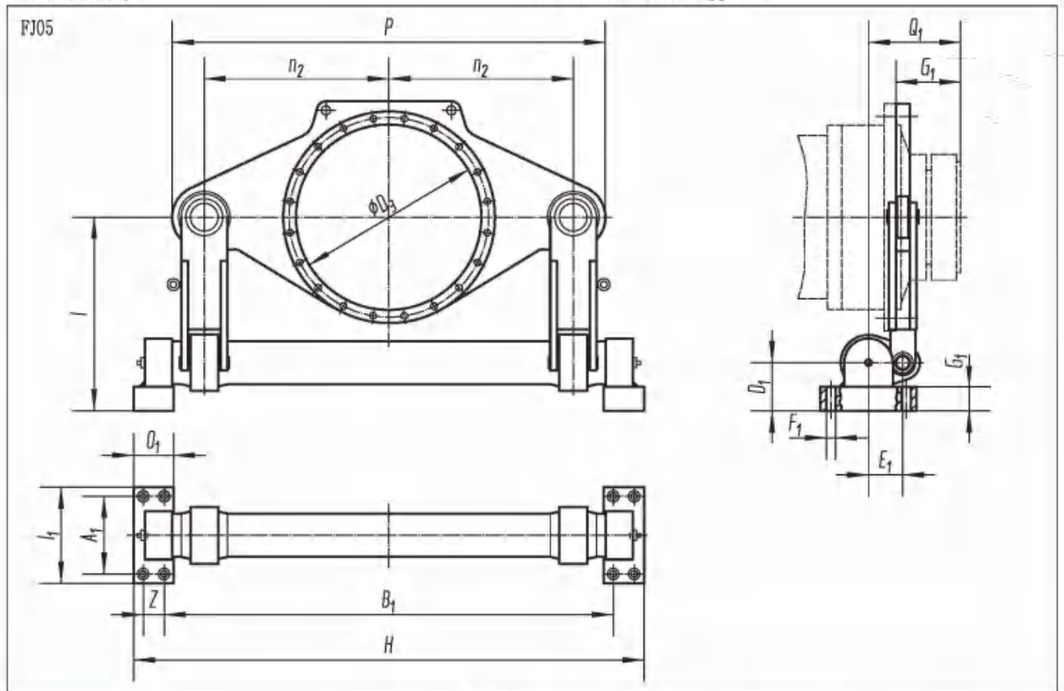
尺寸 / Dimensions

行星齿轮箱规格 Planetary gear unit size	齿轮箱公称输出扭矩 Gear unit nominal torque T_{2N}(Nm)	D2 *) ΦH9 mm	D_3 mm	d_4 mm	G_2 mm	G_{10} mm	I_5 mm	I_6 mm	n_2 mm	P mm	重量 Weight ca. kg
9	22000	50	440	115	165	30	100	110	500	1140	58
10	31000	50	485	115	174	30	100	110	550	1240	72
11	42000	100	540	180	204	30	110	120	575	1355	95
12	60000	100	620	180	224	35	110	120	625	1455	120
13	83000	110	665	210	241	35	170	180	600	1435	145
14	114000	110	740	210	278	40	170	180	650	1535	170
16	160000	124	790	240	285	40	220	230	700	1670	230
17	202000	124	915	240	288	40	220	230	750	1770	300
18	244000	124	955	240	303	50	220	230	900	2070	400

*) 销轴：Φh8 *) Pin:Φh8

7.4 扭力轴支撑 / 7.4 Torsion shaft support

FJ05



尺寸 / Dimensions

行星齿轮箱规格 Planetary gear unit size	齿轮箱公称输出扭矩 Gear unit nominal	A_1 mm	B_1 mm	D_3 mm	D_1 mm	E_1 mm	F1 2) mm	数量 No.	G_1 mm	G_2 mm	H mm	l 1) mm	l_1 mm	n_2 mm	Q_1 mm	P mm	Q_1 mm	Z mm	重量 Weight ca. kg
9	22000	250	1414	610	120	105	33	8	48.5	165	1619	560	330	550	140	1230	247.5	65	325
10	31000	250	1414	610	120	105	33	8	48.5	174	1619	560	330	550	140	1230	256.5	65	325
11	42000	250	1414	610	120	105	33	8	48.5	204	1619	560	330	550	140	1230	286.5	65	325
12	60000	250	1414	610	120	105	33	8	48.5	224	1619	560	330	550	140	1230	306.5	65	325
13	83000	280	1604	775	155	145	39	8	68.5	241	1837	620	380	650	158	1450	358.5	75	620
14	114000	280	1604	775	155	145	39	8	68.5	278	1837	620	380	650	158	1450	395.5	75	620
16	160000	280	1604	775	155	145	39	8	68.5	285	1837	620	380	650	158	1450	402.5	75	620
17	202000	315	1777	955	170	165	39	8	73.5	294	2041	700	400	750	180	1680	431.5	84	900
18	244000	315	1777	955	170	165	39	8	73.5	303	2041	700	400	750	180	1680	440.5	84	900
19	295000	350	2000	985	195	175	45	8	83.5	328	2300	860	450	850	200	1900	470.5	100	1200
20	354000	350	2000	985	195	175	45	8	83.5	328	2300	860	450	850	200	1900	470.5	100	1200
21	392000	400	2254	1120	210	190	45	8	88.5	354	2591	900	530	950	225	2110	506.5	113	1500
22	450000	400	2254	1120	210	190	45	8	88.5	354	2591	900	530	950	225	2110	506.5	113	1500
23	513000	450	2496	1215	235	220	45	8	98.5	380	2871	1060	590	1063	250	2385	562.5	125	2150
24	592000	450	2496	1215	235	220	45	8	98.5	380	2871	1060	590	1063	250	2385	562.5	125	2150
25	684000	500	2816	1350	275	245	52	8	118.5	407	3236	1200	650	1150	280	2600	614.5	140	2650
26	734000	500	2816	1350	275	245	52	8	118.5	407	3236	1200	650	1150	280	2600	614.5	140	2650
27	852000	530	2887	1490	300	255	52	8	128.5	453	3327	1250	700	1250	290	2820	670.5	150	3250
28	950000	530	2887	1490	300	255	52	8	128.5	453	3327	1250	700	1250	290	2820	670.5	150	3250
29	1060000	560	3200	1565	300	280	62	8	128.5	483	3673	1350	750	1360	315	3080	718	158	3900
30	1200000	560	3200	1565	300	280	62	8	128.5	483	3673	1350	750	1360	315	3080	718	158	3900
31	1330000	590	3408	1695	340	300	70	8	148.5	538	3906	1400	790	1450	330	3260	788	168	5050
32	1500000	590	3408	1695	340	300	70	8	148.5	538	3906	1400	790	1450	330	3260	788	168	5050
33	1680000	620	3588	1785	375	320	70	8	158.5	573	4116	1500	840	1550	350	3520	840.5	178	6800
34	1920000	620	3588	1785	375	320	70	8	158.5	573	4116	1500	840	1550	350	3520	840.5	178	6800
35-36	敬请垂询 / On request																		

1) 标准尺寸，最高可至2000mm。

2) 螺栓强度为6.8级，按照标准DIN 898.

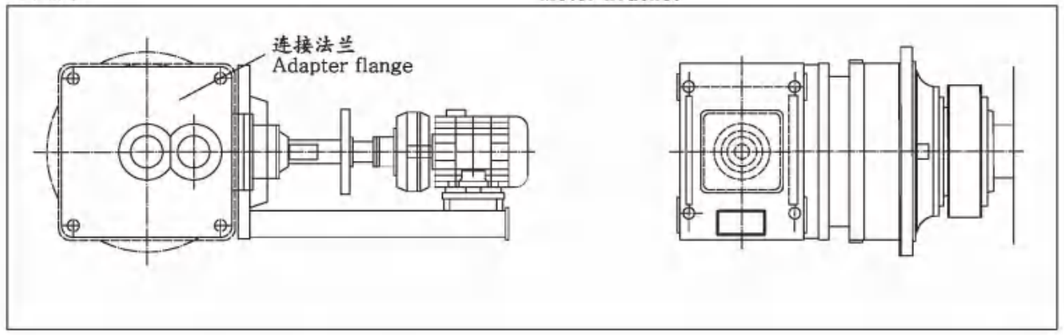
在标准设计型式，即DSD型中采用无需维护保养的、在轴承中内置密封装置的自调心滑动轴承。在特殊要求及特殊环境条件下，自调心滑动轴承可以通过附加的密封装置加以保护，在这种情况下应采用设计型式DDA。

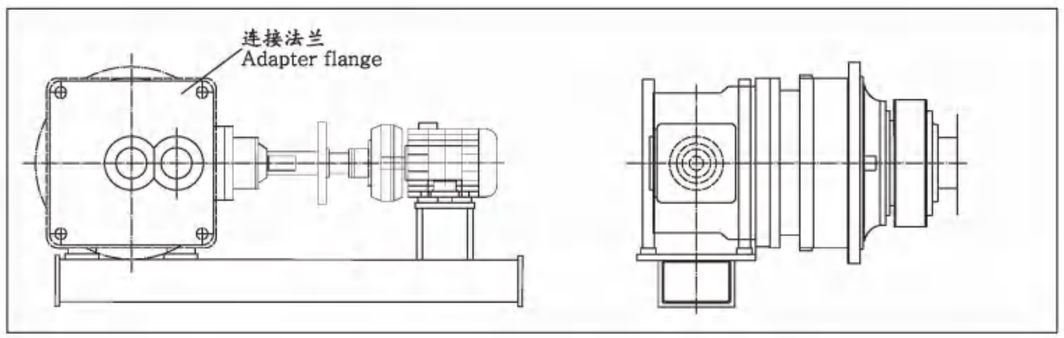
1) Standard dimension,overall height modifiable up to 2000 mm.

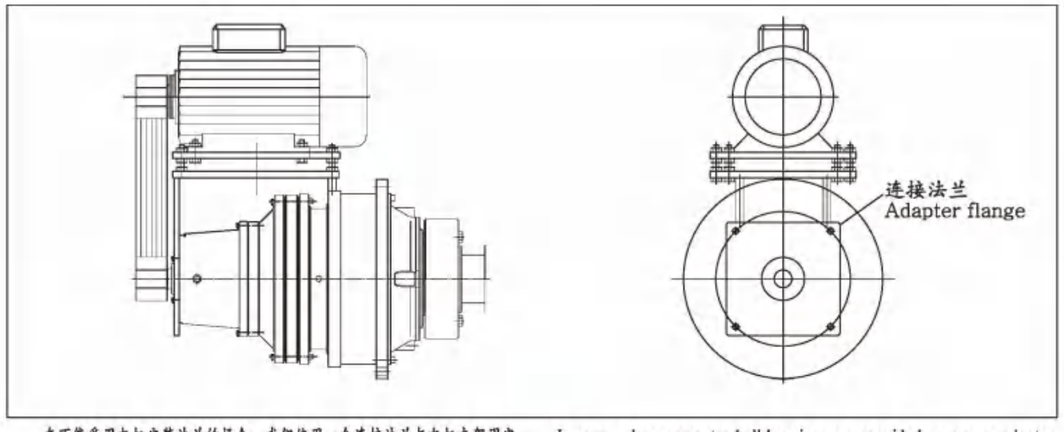
2) Use bolts of property class 6.8 acc.to DIN 898.

With the shandard design ,type DSD,mainte-nance-free self-aligning plain bearings with inte-grated seal are used. Where there are special requirements or special ambient conditions, the self-aligning plain bearings can be protected with an additional seal. In this case, the DDA design is required.

电机支架 Motor Bracket







在不能采用电机安装法兰的场合，我们使用一个连接法兰与电机支架固定。

标准箱体及其中间法兰是专门为了连接之用而准备的，并且时根据订单要求加工的。

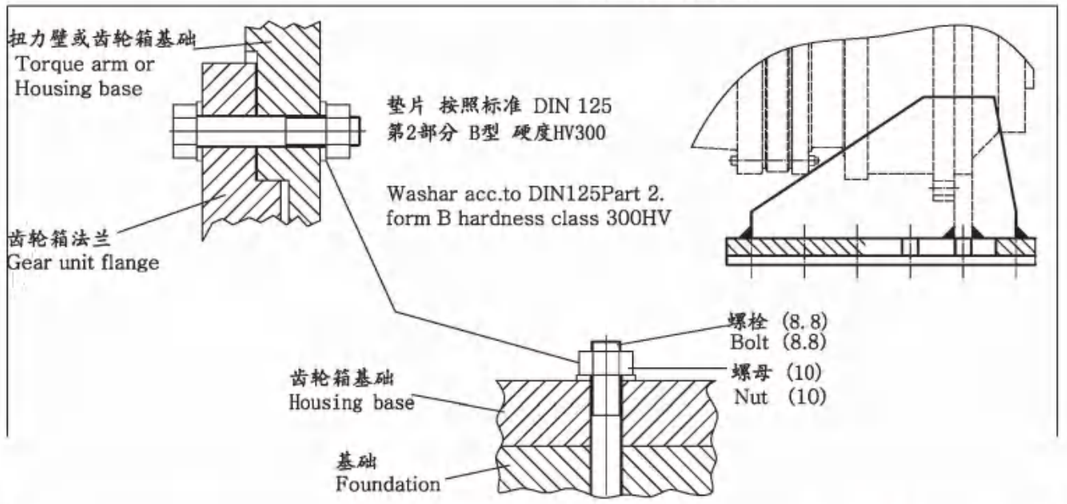
支架连接型式及结构如上图所示。对于每一种不同类型和规格的齿轮箱，所允许使用的电机规格需与设计部门进行确认。

In cases where no motor bell housings are provided we use an adapter flange to attach motor brackets.

The standard housings and intermediate flanges are specially prepared for attachment and are machined to order specifications.

Examples of the type and design of bracket attachment are shown in the above drawings. The permissible motor size for each gear unit size and design is to be agreed upon from case to case with the design department.

7.5 法兰连接和地脚安装的紧固力矩 7.5 Tightening torques for flange connections and foot-mounted design



齿轮箱规格 Gear unit size	法兰连接 Flange attachment		地脚连接[1] Base attachment	
	螺栓性能等级 (10.9) Thread strength class (10.9)	预紧力距[2] Tightening torque Nm	螺栓性能等级 (8.8) Thread strength class (8.8)	预紧力距[2] Tightening torque Nm
9	M16	210	M24	500
10	M16	210	M24	500
11	M20	409	M24	500
12	M24	705	M24	500
13	M24	705	M24	500
14	M24	705	M30	1004
16	M24	705	M30	1004
17	M30	1416	M36	1749
18	M30	1416	M36	1749
19/20	M30	1416	M42	2806
21/22	M36	2466	M48	4236
23/24	M36	2466	M48	4236
25/26	M42	3957	M56	6791
27/28	M48	5973	M56	6791
29/30	M48	5973	M64	10147
31/32	M56	9575	M64	10147
33/34	M56	9575	M64	10147
35/36	M56	9575	M72×6	14689

1) 用户需检查联接螺栓以确保其与基础上的联接孔相匹配。

2) 紧固力矩是指当螺纹摩擦系数为0.125，达到螺栓70%屈服极限时的力矩值。

1) The bolts must be checked by the user to ensure that they are suitable for the foundation design.

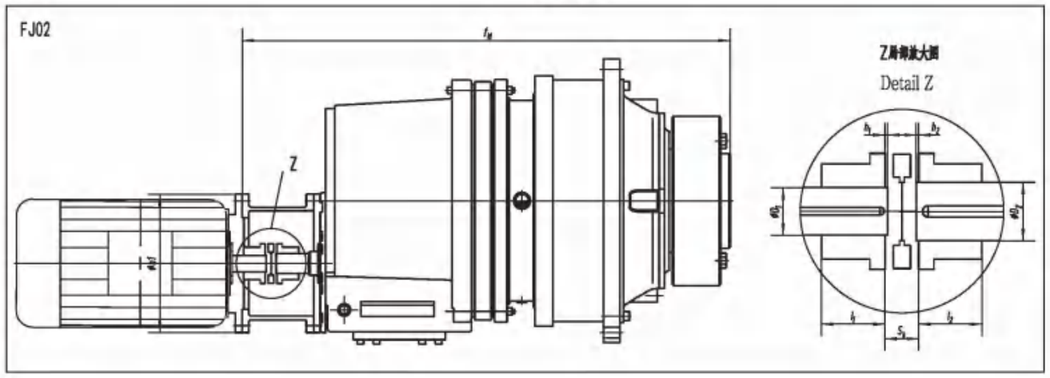
2) Tightening torque relate to friction values 0.125 in the thread and 70% utilization of yield Point.

7.6 带电机安装法兰和联轴器

EP2S型

7.6 With Motor Bell Housing and Couping

Type EP2S



尺寸 / Dimensions											
规格 Size	电动机 Motor 1)	联轴器 Coupling ML	S_x mm	I_1 mm	D_1 mm	I_2 mm	D_2 mm	h_x mm	h_2 mm	f_M mm	a_1 mm
9	160	ML4	27	100	42	72	38	-17	-12	860	350
	180	ML5	33	100	48	72	38	-17	-12	860	350
10	160	ML4	27	100	42	72	38	-17	-12	889	350
	180	ML5	33	100	48	72	38	-17	-12	889	350
11	160	ML6	39	100	42	90	55	10	0	1012	350
	180	ML6	39	100	48	90	55	10	0	1012	350
	200	ML6	39	100	55	90	55	4	0	1018	400
12	160	ML6	39	100	42	90	55	10	0	1046	350
	180	ML6	39	100	48	90	55	10	0	1046	350
	200	ML6	39	100	55	90	55	4	0	1052	400
13	225	ML8	48	125	60	120	70	-1	0	1264	450
	250	ML8	48	125	65	120	70	8	0	1271	550
14	225	ML8	48	125	60	120	70	-1	0	1324	450
	250	ML8	48	125	65	120	70	-8	0	1331	550
16	250	ML9	50	125	65	140	80	2	0	1468	550
	280	ML9	50	125	75	140	80	-2	0	1468	550
17	250	ML9	50	125	65	140	80	-2	0	1503	550
	280	ML9	50	125	75	140	80	-2	0	1503	550
18	315	敬请垂询 / On request									
19+20	315										

1) 如需配置单侧扭力臂，请与我们联系。

2) ΦD1为电机轴头。

1) For combinations with torque arm on one side, please refer to us.

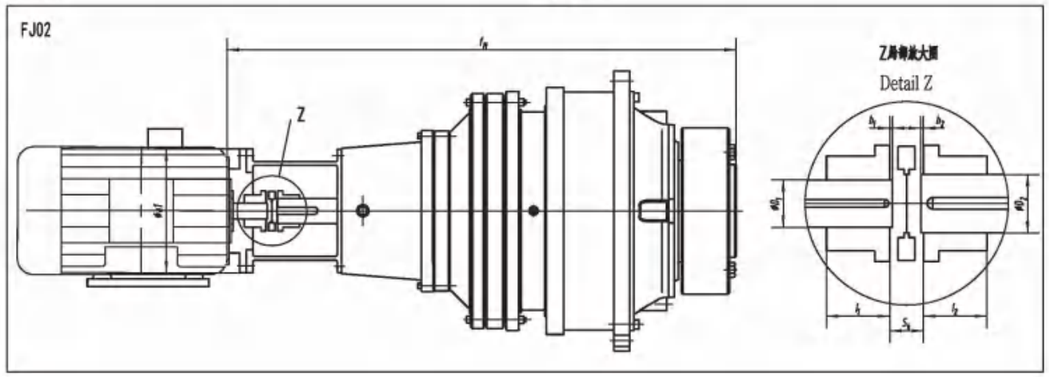
2) Motor shaft ΦD1.

7.6 带电机安装法兰和联轴器

EP3N型

7.6 With Motor Bell Housing and Couping

Type EP3N



尺寸 / Dimensions											
规格 Size	电动机 Motor 1)	联轴器 Coupling ML	S_x mm	I_1 mm	D_1 mm	I_2 mm	D_2 mm	h_x mm	h_2 mm	f_M mm	a_1 mm
3	132	ML6	39	70	38	90	55	10	0	929	300
	160	ML6	39	100	42	90	55	10	0	959	350
	180	ML6	39	100	48	90	55	10	0	959	350
4	132	ML6	39	70	38	90	55	10	0	958	300
	160	ML6	39	100	42	90	55	10	0	988	350
	180	ML6	39	100	48	90	55	10	0	988	350
5	132	ML6	39	70	38	90	55	10	0	1019	300
	160	ML6	39	100	42	90	55	10	0	1049	350
	180	ML6	39	100	48	90	55	10	0	1049	350
6	132	ML6	39	70	38	90	55	10	0	1053	300
	160	ML6	39	100	42	90	55	10	0	1083	350
	180	ML6	39	100	48	90	55	10	0	1083	350
7	160	ML6	39	100	42	90	55	10	0	1158	350
	180	ML6	39	100	48	90	55	10	0	1158	350
	200	ML6	39	100	55	90	55	4	0	1164	400
8	160	ML6	39	100	42	90	55	10	0	1218	350
	180	ML6	39	100	48	90	55	10	0	1218	350
	200	ML6	39	100	55	90	55	4	0	1224	400
9	200	ML8	48	100	55	120	70	8	0	1408	400
	225	ML8	48	125	60	120	70	2	0	1444	450
10	200	ML8	48	100	55	120	70	8	0	1443	400
	225	ML8	48	125	60	12	70	2	0	1479	450
11	250	ML9	50	125	65	140	80	15	0	1631.5	550
	280	ML9	50	125	75	140	80	15	0	1631.5	550
12+13	250	ML9	50	125	65	140	80	15	0	1679	550
	280	ML9	50	125	75	140	80	15	0	1679	550

1) 如需配置单侧扭力臂，请与我们联系。

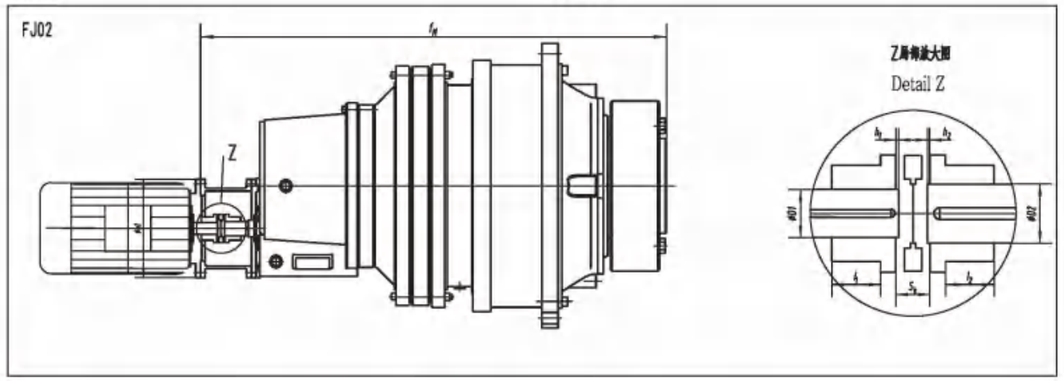
2) ΦD1为电机轴头。

1) For combinations with torque arm on one side, please refer to us.

2) Motor shaft ΦD1.

7.6 带电机安装法兰和联轴器 7.6 With Motor Bell Housing and Couping

EP3S型 Type EP3S



尺寸 / Dimensions											
规格 Size	电动机 Motor 1)	联轴器 Coupling ML	S_k mm	T_1 mm	D_1 mm	T_2 mm	D_2 mm	h_1 mm	h_2 mm	f_K mm	a_1 mm
9	100	ML3	24	60	28	72	38	0	12	886	250
	112	ML3	24	60	28	72	38	0	-12	886	250
	132	ML3	24	70	38	72	38	0	-12	906	300
	160	ML4	27	100	42	72	38	-17	-12	936	350
10	100	ML3	24	60	28	72	38	0	12	915	250
	112	ML3	24	60	28	72	38	0	-12	915	250
	132	ML3	24	70	38	72	38	0	-12	935	300
	160	ML4	27	100	42	72	38	-17	-12	965	350
11	112	ML3	24	60	28	72	38	0	-12	976	250
	132	ML3	24	70	38	72	38	0	-12	996	300
	160	ML4	27	100	42	72	38	-17	-12	1046	350
	180	ML5	33	100	48	72	38	-17	-12	1046	350
12	112	ML3	24	60	28	72	38	0	12	1010	250
	132	ML3	24	70	38	72	38	0	-12	1030	300
	160	ML4	27	100	42	72	38	-17	-12	1080	350
	180	ML5	33	100	48	72	38	-17	-12	1080	350
13	132	ML3	24	70	38	72	38	0	-12	1105	300
	160	ML4	27	100	42	72	38	-17	-12	1155	350
	180	ML5	33	100	48	72	38	-17	-12	1155	350
14	132	ML3	24	70	38	72	38	0	-12	1165	300
	160	ML4	27	100	42	72	38	-17	-12	1215	350
	180	ML5	33	100	48	72	38	-17	-12	1215	350
16	160	ML6	39	100	42	90	55	10	0	1367	350
	180	ML6	39	100	48	90	55	10	0	1367	350
	200	ML6	39	100	55	90	55	4	0	1373	400
17	160	ML6	39	100	42	90	55	10	0	1402	350
	180	ML6	39	100	48	90	55	10	0	1402	350
	200	ML6	39	100	55	90	55	4	0	1408	400
18	180	ML8	48	100	48	120	70	11	0	1583.5	350
	200	ML8	48	100	55	120	70	5	0	1589.5	400
	225	ML8	48	125	60	120	70	-1	0	1625.5	450
	250	ML8	48	125	65	120	70	-8	0	1632.5	550
19+20	180	ML8	48	100	48	120	70	11	0	1631	350
	200	ML8	48	100	55	120	70	5	0	1637	400
	225	ML8	48	125	60	120	70	1	0	1673	450
	250	ML8	48	125	65	120	70	-8	0	1680	550

1) 如需配置单侧扭力臂，请与我们联系。

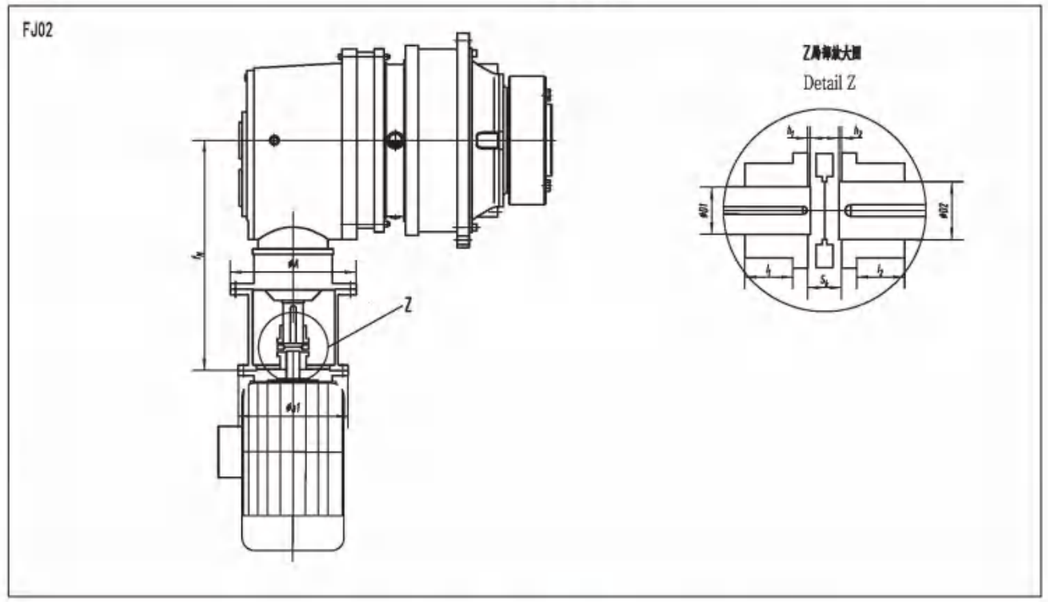
2) ΦD1为电机轴头。

1) For combinations with torque arm on one side, please refer to us.

2) Motor shaft ΦD1.

7.6 带电机安装法兰和联轴器 7.6 With Motor Bell Housing and Couping

EP2K型 Type EP2K



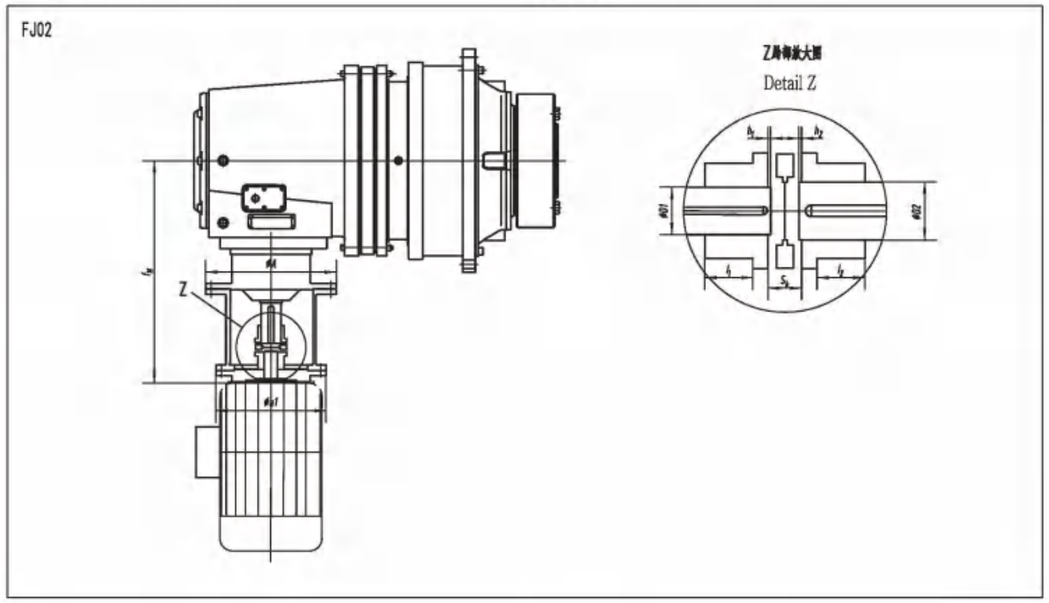
尺寸 / Dimensions																						
规格 Size	电动机 Motor 1)	联轴器 Coupling ML	传动比范围 / Transmission ratio range i_S=112…360									联轴器 Coupling ML	传动比范围 / Transmission ratio range i_S=400…500									a_1
			D_2 mm	T_2 mm	D_1 mm	T_1 mm	h_2 mm	h_1 mm	S_k mm	f_K mm	A mm		D_2 mm	T_2 mm	D_1 mm	T_1 mm	h_2 mm	h_1 mm	S_k mm	f_K mm	A mm	mm
9, 10	132											ML3	25	60	38	70	0	-9	24	473	280	300
	160	ML4	30	70	42	100	0	4	27	523	280	ML4	25	60	42	100	0	-6	27	523	280	350
11, 12	160	ML4	35	80	42	100	0	4	27	588	350	ML4	28	60	42	100	0	-16	27	588	350	350
	180	ML5	35	80	48	100	0	10	33	588	350	ML5	28	60	48	100	0	10	33	588	350	350
	200	ML6	35	80	55	100	0	10	39	594	350	ML6	28	60	55	100	0	-10	39	594	350	400
13, 14	160											ML4	35	80	42	100	0	-16	27	678	420	350
	180											ML5	35	80	48	100	0	-10	33	678	420	350
	200	ML6	45	100	55	100	0	10	39	684	420	ML6	35	80	55	100	0	-10	39	684	420	400
	225	ML7	45	100	60	125	0	4	39	720	420	ML7	35	80	60	125	0	-16	39	720	420	450
	250	ML7	45	100	65	125	0	3	39	727	420	ML7	35	80	65	125	0	-23	39	727	420	550
16, 17	200											ML6	40	100	55	100	0	8	39	751	420	400
	225	ML7	55	110	60	125	0	12	39	797	420	ML7	40	100	60	125	0	2	39	797	420	450
	250	ML7	55	110	65	125	0	5	39	804	420	ML7	40	100	65	125	0	-5	39	804	420	550
	280	ML8	55	110	75	125	0	14	48	804	420	ML8	40	100	75	125	0	4	48	804	420	550
18, 19, 20	225											ML7	50	110	60	125	0	-14	39	918	510	450
	250	ML8	70	120	65	125	0	-2	48	925	510	ML7	50	110	65	125	0	-21	39	925	510	550
	280	ML8	70	135	75	125	0	15	48	925	510	ML8	50	110	75	125	0	-12	48	925	510	550
	315	敬请垂询 / On request																				

1) ΦD1为电机轴头。

1) Motor shaft ΦD1.

7.6 带电机安装法兰和联轴器 7.6 With Motor Bell Housing and Couping

EP2L型 Type EP2L

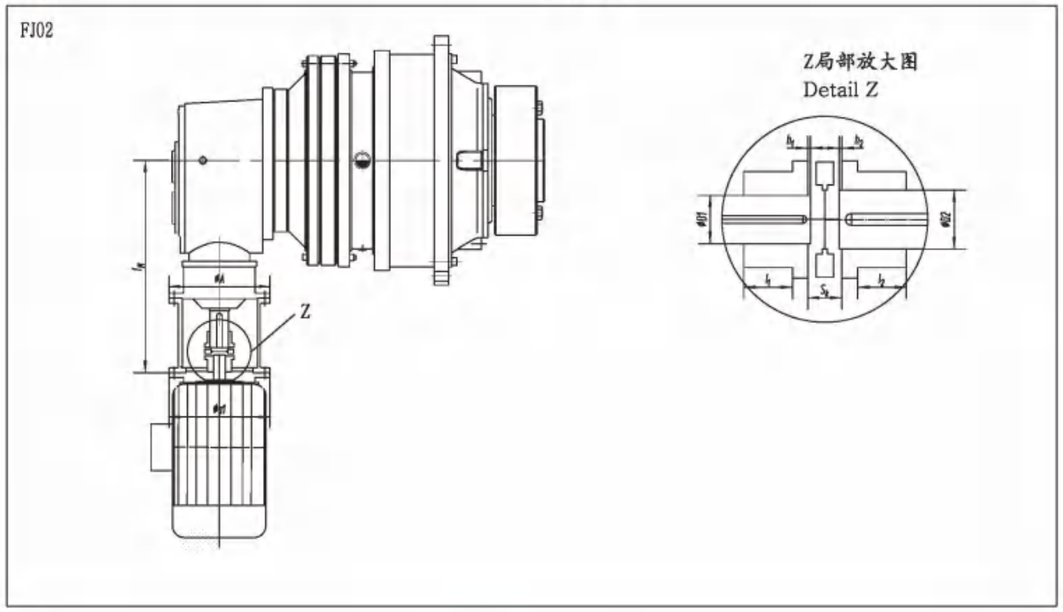


尺寸 / Dimensions																					
规格 Size	电动机 Motor	联轴器 Coupling ML	传动比范围 / Transmission ratio range i_N=112…360									联轴器 Coupling ML	传动比范围 / Transmission ratio range i_N=400…500									a_1
			D_2	T_2	D_1	T_1	h_2	h_1	S_k	f_M	A		D_2	T_2	D_1	T_1	h_2	h_1	S_k	f_M	A	
			mm	mm	mm	mm	mm	mm	mm	mm	mm		mm	mm	mm	mm	mm	mm	mm	mm	mm	mm
9, 10	160											ML4	35	80	42	100	0	16	27	538	420	350
	180											ML5	35	80	48	100	0	-10	33	538	420	350
	200	ML6	45	100	55	100	0	10	39	544	420	ML6	35	80	55	100	0	-10	39	544	420	400
	225	ML7	45	100	60	125	0	4	39	580	420	ML7	35	80	60	125	0	-16	39	580	420	450
11, 12	200											ML6	40	100	55	100	0	8	39	591	420	400
	225	ML7	55	110	60	125	0	12	39	627	420	ML7	40	100	60	125	0	2	39	627	420	450
	250	ML7	55	110	65	125	0	5	39	634	420	ML7	40	100	65	125	0	5	39	634	420	550
13, 14	225											ML7	50	110	60	125	0	-14	39	718	510	450
	250	ML8	70	120	65	125	15	-2	48	725	510	ML7	50	110	65	125	0	-21	39	725	510	550
	280	ML8	70	135	75	125	0	15	48	725	510	ML8	50	110	75	125	0	-12	48	725	510	550
16, 17	280											ML8	60	140	75	125	0	10	48	808	510	550
	315	敬请垂询 / On request																				
18, 19, 20	315																					
21, 22	315																					
23, 24	355																					

1) ΦD1为电机轴头。 1) Motor shaft ΦD1.

7.6 带电机安装法兰和联轴器 7.6 With Motor Bell Housing and Couping

EP3K型 Type EP3K



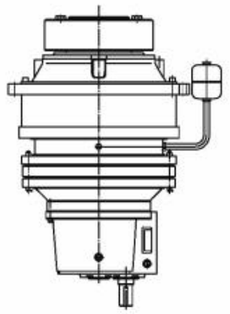
尺寸 / Dimensions																					
规格 Size	电动机 Motor	联轴器 Coupling ML	传动比范围 / Transmission ratio range i_N=112…360									联轴器 Coupling ML	传动比范围 / Transmission ratio range i_N=400…500									a_1
			D_2	I_2	D_1	I_1	h_2	h_1	S_k	f_M	A		D_2	I_2	D_1	I_1	h_2	h_1	S_k	f_M	A	
			mm	mm	mm	mm	mm	mm	mm	mm	mm		mm	mm	mm	mm	mm	mm	mm	mm	mm	mm
9, 10 11, 12 13, 14	132											ML3	25	60	38	70	0	-9	24	473	280	300
	160	ML4	30	70	42	100	0	4	27	523	280	ML4	25	60	42	100	0	-6	27	523	280	350
	180	ML5	30	70	48	100	0	10	33	523	280	ML5	25	60	48	100	0	0	33	523	280	350
	200	ML6	30	70	55	100	0	10	39	529	280											400
16, 17	160	ML4	35	80	42	100	0	4	27	588	350	ML4	28	60	42	100	0	-16	27	588	350	350
	180	ML5	35	80	48	100	0	10	33	588	350	ML5	28	60	48	100	0	-10	33	588	350	350
	200	ML6	35	80	55	100	0	10	39	594	350	ML6	28	60	55	100	0	-10	39	594	350	400
	225	ML7	35	80	60	125	0	4	39	630	350											450
18, 19, 20, 21, 22	160											ML4	35	80	42	100	0	-16	27	678	420	350
	180											ML5	35	80	48	100	0	-10	33	678	420	350
	200	ML6	45	100	55	100	0	10	39	684	420	ML6	35	80	55	100	0	-10	39	684	420	400
	225	ML7	45	100	60	125	0	4	39	720	420	ML7	35	80	60	125	0	-16	39	720	420	450
	250	ML7	45	100	65	125	0	3	39	727	420	ML7	35	80	65	125	0	-23	39	727	420	550
	280	ML8	45	100	75	125	0	6	48	727	420											550
23, 24, 25, 26	200											ML6	40	100	55	100	0	8	39	761	420	400
	225	ML7	55	110	60	125	0	12	39	797	420	ML7	40	100	60	125	0	2	39	797	420	450
	250	ML7	55	110	65	125	0	5	39	804	420	ML7	40	100	65	125	0	-5	39	804	420	550
	280	ML8	55	110	75	125	0	14	48	804	420	ML8	40	100	75	125	0	4	48	804	420	550
27, 28, 29, 30	225											ML7	50	110	60	125	0	-14	39	918	510	450
	250	ML8	70	120	65	125	0	-2	48	925	510	ML7	50	110	65	125	0	-21	39	925	510	550
	280	ML8	70	135	75	125	0	15	48	925	510	ML8	50	110	75	125	0	-12	48	925	510	550
	315	敬请垂询 / On request																				

1) ΦD1为电机轴头。 1) Motor shaft ΦD1.

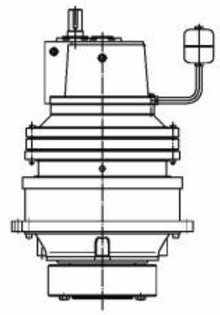
7.7 在竖直安装时通过补油箱供油润滑

7.7 Oil supply by compensating tank for vertical mounting position

V00/V01, V10/V11, V20/V21, V30/V31



V00/V01, V10/V11, V20/V21, V30/V31



在竖直安装时，标准配置中不包括用于为上方滚柱轴承供油的强制润滑。

In case of vertical mouting position, no forced lubrication is provided as standard to feed the overhead rolling bearing.

为了保证供油，油位已作了相应的提升。

To ensure the lubricant supply, the oil leverl is increased accordingly.

对于卧式安装的齿轮箱，其油量可以根据齿轮箱类型在相应的产品样本中查得。

For horizontal mouting position of the gear unit, please derive the oil quantity, depending on the type, from the respective page of the brochure.

对于竖直安装的齿轮箱，其所需油量约为上述油量的一倍。

For vertical mounting position, approximately twice the oil quantity is required.

齿轮箱油位可通过单独配置的补油箱观察，且补油箱的设计容积已经提前考虑到了运行状态下润滑油体积的变化，齿轮箱同时也通过补油箱透气。补油箱既可固定在齿轮箱体上，也可固定在用户设备的机架上。

The oil level is checked via an oil compensating tank fitted separately. The dimensions are set to accommodate the anticipated change in the volume of the oil in the operating condition. The unit is also vented via the tank... The oil tank can be attached either to the gear unit or to the customer's machine frame.

补油箱底面大约在如下位置：

D2向上：输出端法兰的安装面
D1向上：齿轮箱箱体的上缘

The bottom of the oil compensating tank is set at approximately the following level: if
D2 upwards: Mounting surface output flange
D1 upwards: Upper edge primary gear housing

补油箱的实际容积和最低位置应在订单中确定。

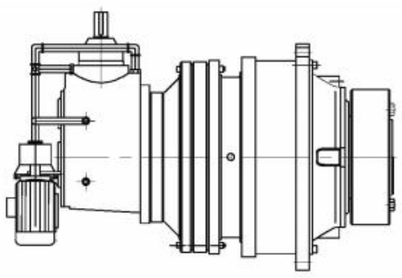
The actual dimension and final position will be decided when the order is placed.

在卧式安装和上方驱动时通过电动泵供油润滑。

L21, L31[1]（所有机座号）和L11[1]（从机座号11起）

Oil supply be motor pumps for horizontal mounting position and drive from above

L21, L31[1] (all size) and L11[1] (above size 11)

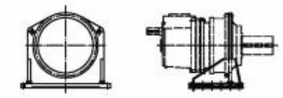
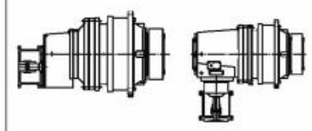
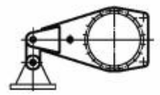
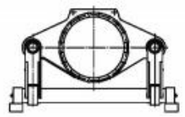


1）轴的布置形式见第7页。

1) For shaft arrangement, see page 7.

7.8 附件综览

7.8 Summary of add-on pieces

标记 Identification	附件 Add-on piece		附图 Representation
FJ01	齿轮箱基座 Gear housing base	见第43頁 See page 43	
FJ02	电机安装法兰（输入端） Motor bell housing (input)	见第49-54頁 See page 49-54	
FJ03	（单侧）扭力臂 Torque reaction arm (on one side	见第44頁 See page 44	
FJ04	（双侧）扭力臂 Torque reaction arm (on both sides)	见第45頁 See page 45	
FJ05	扭力轴支撑 Torsion shaft support	见第46頁 See page 46	
FJ06	逆止器（EP2K./EP3K） Backstop (EP2K./EP3K)