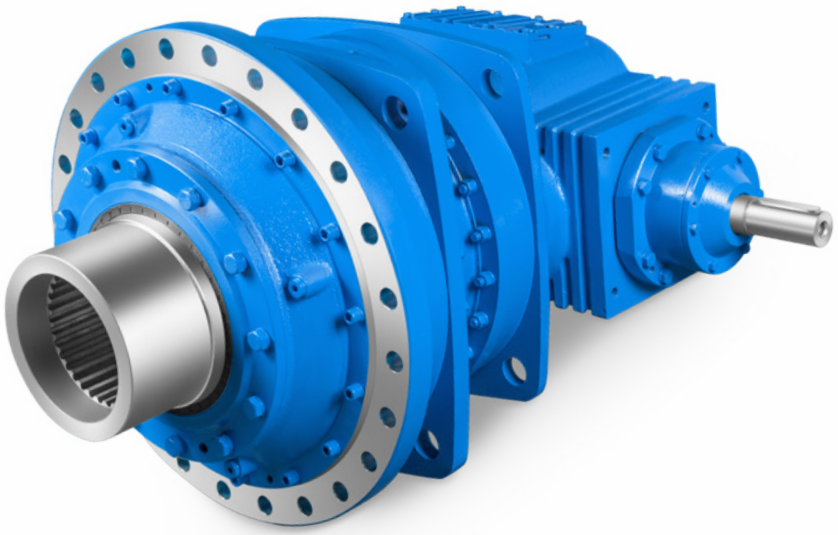
DONLY TRANSMISSION



东力齿轮箱

行星齿轮箱

PLANETARY GEAR UNITS

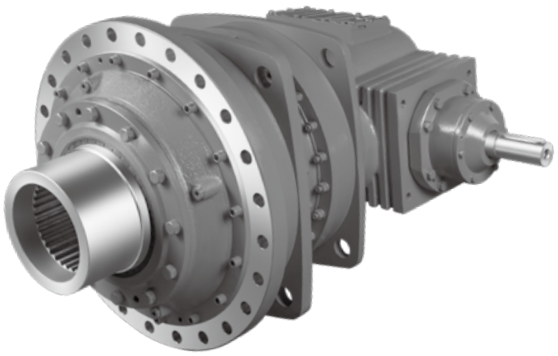
型号 Type DLP

版本 Edition 2021

DONLY

驱 动 无 限 可 能

DLP
行星齿轮箱
Planetary Gear Units



DONLY

5. 实际传动比
Actual Ratios

6. 低速轴联接方式
Connecting Structure Of Output Shaft

7. 附件及说明
Add-On Piece And Notes

产品说明

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，我公司的工程技术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

齿轮是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<4min^{-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。

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，见第 39~42 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 33 页。

中心孔

在两侧轴伸上的中心孔尺寸详见第 33 页。

Product Description

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 the oretically 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 is 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.

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 centre holes in the shaft ends, see page 33.

产品说明

润滑 / 注油量

齿轮箱标准润滑方式为油池润滑。

在 40℃时的粘度（GB3141）Viscosity GB3141 at 40℃ mm^2/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位置。为了保证充分的润滑，客户在订货时需说明所需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 54 页。

冷却

在达到热功率的散热极限之前（见第 18~31 页），齿轮箱的冷却是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。

在操作说明书中给出了相应的数值。

重量、尺寸

所给出的重量是一个平均值。附图和尺寸并不同实物完全一致。

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应事先加以说明。

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。

Product Description

Lubrication / Oil quantities.

The reducer are provided with bath lubrication as a standard feature.

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 (see page 6).

Mounting positions

For L11、L21、L31、V00 (01)、V10(11)、V20 (21) and V30 (31), the lubrication see page 54.

Cooling

Up to the limited of thermal capcity (see page 18~31)the gear units are cooled by radi ation 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. The relevant values are shown in the operating instructions.

Weights、dimensions

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

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 units components must be sufficiently taken into consideration. Please refer to us. Environmental conditions such as salt water, salt-laden air, aggressive substances, 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 install ation, but without oil.

The reducer 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.

产品说明

尺寸图上所用符号的说明


油标


透气帽


注油孔


放油孔

防锈

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。

其它说明

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。

Product Description

Explanation of symbols used in the dimensioned drawings


Oil sight glass


Breether


Oli filler


Oil drain

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 reducer with torque reaction arm, the connection of the torque reaction arm on the found-ation must permit the gear units to move corresponding to the displacement of the machine shaft at any time, without constraining forces acting on the gear units.

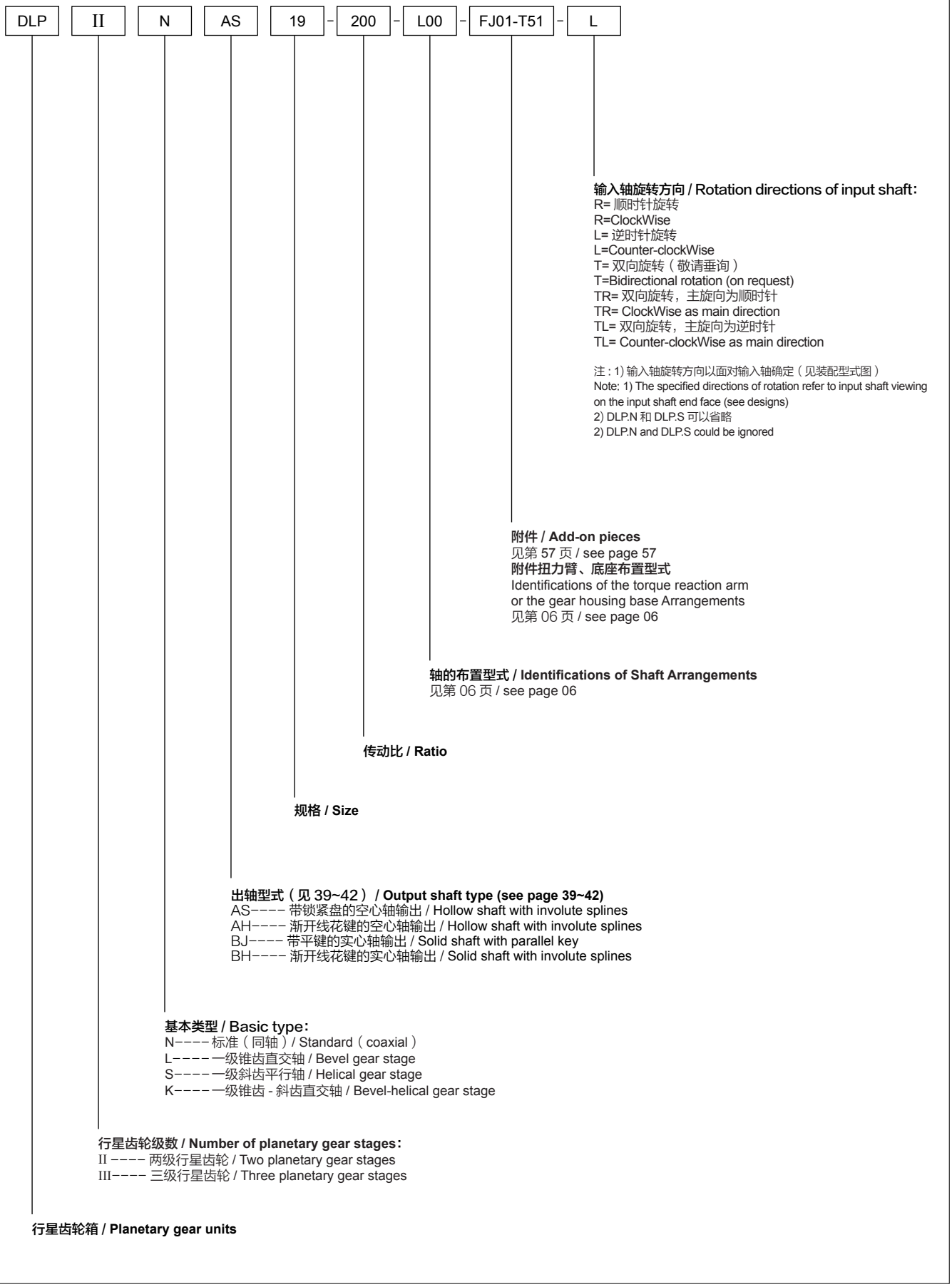
In case of foot mounted gear units with solid shaft, the provided coupling between gear units and prime mover must also be suitable for movability.

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 09~10 页	f_1	-	Factor for driven machine (table 1), page 09~10
f_2	-	原动机系数 (表 2)，见第 11 页	f_2	-	Factor for prime mover (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 reducer without auxiliary cooling
P_N	-	齿轮箱额定功率 (kW)，见功率表	P_N	-	Nominal power rating of reducer (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)
$P_{\text{I}}, P_{\text{II}}, P_n$	-	与载荷谱对应的功率分量 (kW)	$P_{\text{I}}, P_{\text{II}}, P_n$	-	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)
$T_{\text{I}}, T_{\text{II}}, T_n$	-	与载荷谱对应的扭矩分量 (Nm)	$T_{\text{I}}, T_{\text{II}}, T_n$	-	Fractions of torque (Nm)obtained from service classification
$X_{\text{I}}, X_{\text{II}}, X_n$	-	与载荷谱对应的时间分量 (%)	$X_{\text{I}}, X_{\text{II}}, X_n$	-	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})

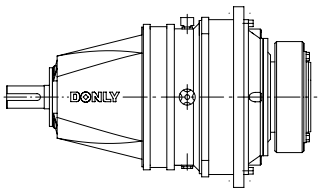
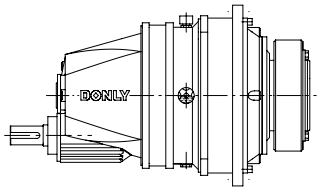
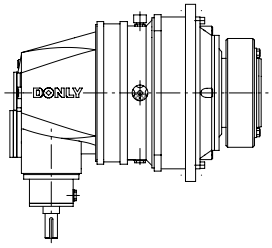
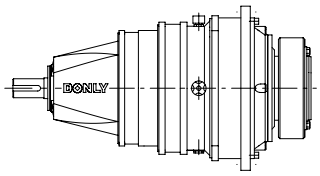
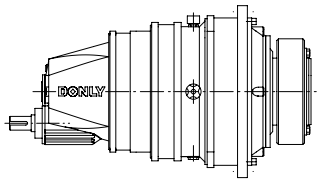
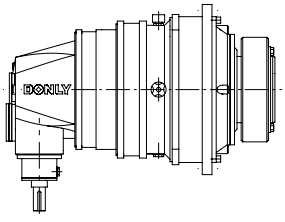
尺寸以 mm 为单位，重量以 kg 为单位，注油量以升为单位

Dimensions in mm, weights in kg, oil quantities in litres

1.3 产品型号表示 1.3 Product description

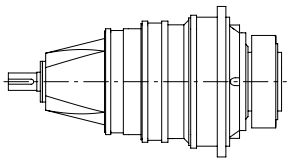
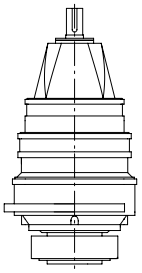
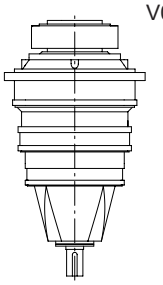
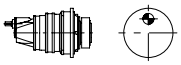
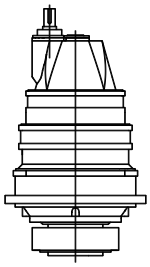
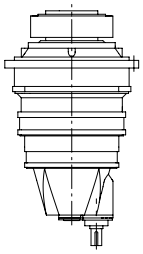
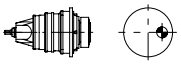
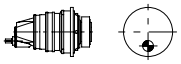
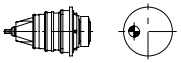
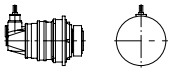
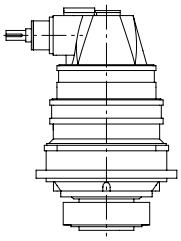
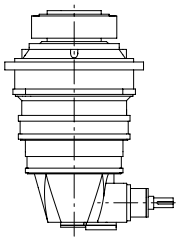
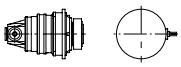
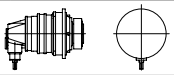
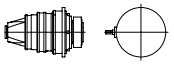
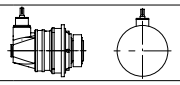
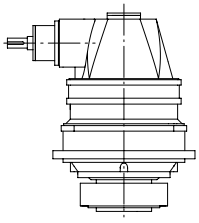
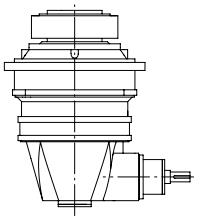
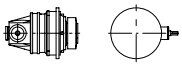
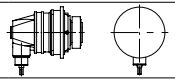
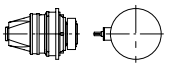
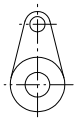
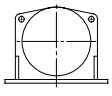
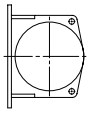
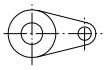
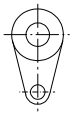
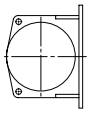
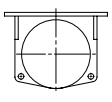
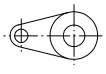
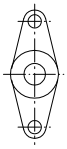
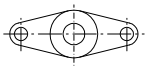


1.4 基本类型 1.4 Basic type

型号 Type	附图 Representation	传动比范围 Range of ratio
DLPII N..		25–40
DLPII S..		45–125
DLPII L.. DLPII K..		31.5–100(L) 112–500(K)
DLPIII N..		140–280
DLPIII S..		280–900
DLPIII K..		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 units position				齿轮箱齿轮箱竖直安装 [2)] Vertical gear units position	
同轴式行星齿轮箱 Coaxial planetary gear units	0	DLP.N	L00 	V00 	V01 
带斜齿轮级的平行轴行星齿轮箱 Combined helical gear planetary gear units	1	DLP.S	[2)] L11 	V10 	V11 
			L12 		
			L13 		
			L14 		
带锥齿轮级和斜齿轮级的直交轴行星齿轮箱 Combined bevel-helical gear planetary gear units	2	DLP.K	[2)] L21 	V20 	V21 
			L22 		
			L23 		
			L24 		
带锥齿轮级的直交轴行星齿轮箱 Combined bevel gear planetary gear units	3	DLP.L	[2)] L31 	V30 	V31 
			L32 		
			L33 		
			L34 		
扭力臂支撑、底座 Torque reaction arm、gear housing base	5		T51 	T61 	T62 
			T52 		
			T53 	T63 	T64 
			T54 		
			T55 	T56 	1）从 d_1 轴端观察 Viewing on shaft d_1 2）必须检查润滑油供给情况，请咨询我们 Lubricant supply must be checked, please consult us

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

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

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:

$$P_2 \geq 30\% \times P_N$$

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

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

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 size 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

$$\text{载荷利用率 / Utilization(\%)} = P_2 / P_N \times 100\ \%$$

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 unit without auxiliary cooling, if:

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

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 ratings the gear units 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 follows:

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

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：

a）各个功率分量 P_I，P_{II}，...P_n 应大于 0.4xP_n。

b）各个功率分量 P_I，P_{II}，...P_n 不能超过 1.4xP_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%。

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 $P_{max}=2 \times P_N$。

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。

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。

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

a) The individual power fractions P_I, P_{II},...P_n must be greater than 0.4xP_n.

b) The individual power fractions P_I, P_{II},...P_n. must not exceed 1.4xP_n.

c) If power fractions P_I, P_{II},...P_n are greater than P_n, the sum of time fraction X_I, X_{II},...X_n must not exceed 10%.

If any one of the three requirements is not met, P_{2a} and P_C must be calculated.

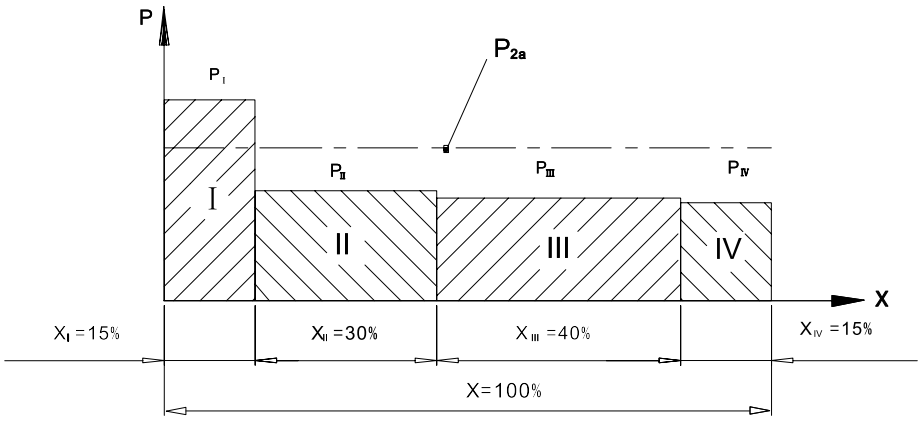
It must be borne in mind that a brief peak power rating not included in the calculation of P_{2a} must not greater than $P_{max}=2 \times P_N$.

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.

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($n_2<4min^{-1}$).

示例载荷谱

Example
Service classification



2.2 应用及载荷分类 2.2 Load classification symbols

表 1 工作机系数 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 apparata	0.8	1.0	1.3
曝气机	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 mills	-	1.8	1.8
橡胶砑光机	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	1.0	1.0
连铸机驱动装置 *	Continuous casting drives*	-	1.4	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 ≤150 kW	Belt conveyors ≤150 kW	1.0	1.2	1.3
皮带输送机 ≥150 kW	Belt conveyors ≥150 kW	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

2.2 应用及载荷分类 2.2 Load classification symbols

表 1 工作机系数 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
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

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。

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

The listed factors are empirical values. Prerequisite for their application is that the machinery and equipment mentioned correspond to generally accepted design and load specifications. In case of deviations from 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

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

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

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

表 6	可靠度系数		f_A
重要性与安全要求	一般设备或辅助传动，齿轮箱失效仅引起单机停产且易更换备件	重要设备，齿轮箱失效引起机组、生产线停产	高度安全要求，齿轮箱失效引起全厂停产或人身事故
f_A	1.0	1.05-1.3	1.5-1.7

2.3 Service factors

Table 2	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	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 dire-ction of load	0.7	0.95	1.10	1.25

Table 4	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

Table 5	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

Table 6	Reliability factor		f_A
Essentiality and safe requirement	The common auxiliary devices, the gear units is broken to stop single machine and easly replaced.	The important equipment, the gear units is broken to stop engine sets and product line.	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
原动机

电动机功率	P_1=630kW
转速	n_1=740r/min
最大启动扭矩	T_A=14600Nm

从动机
Ø2. 2x11m 管磨机

转速	n_2=20.7r/min
每天运行时间	24 小时 / 天
连续工作	
每小时工作周期	E_D=100%
环境温度	t=30℃
较高可靠度要求	
室内大空间安装	

1) 确定齿轮箱的类型和规格
a) 计算传动比

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

b) 确定齿轮箱类型
选择类型 DLPIIL. (依据实际传动比和所需基本类型)

c) 确定齿轮箱额定功率

$$P_N \geq P_C = P_2 \times f_1 \times f_2 \times f_A = 630 \times 2.0 \times 1 \times 1.15 = 1449\text{kW} \leq P_N = 1530\text{kW}$$

从功率表中选择类型 DLPIIL., 齿轮箱规格 18, 额定功率 P_N=1530kW(见第 21 页)

$$P_2 \geq P_N \times 30\% \qquad P_2 = 630\text{kW} \geq 1530 \times 30\% = 459\text{kW}$$

d) 校核起动功率

$$P_N \geq P_A = \frac{T_A \times n_1}{9550} \times f_3 = \frac{14600 \times 740}{9550} \times 0.7 = 792\ \text{kW} \quad P_N = 1530\text{kW} > P_A = 792\ \text{kW}$$

2) 确定齿轮箱热功率
a) 确定公称功率利用率

公称功率利用率 % / nominal power utilization in % $= P_2/P_N \times 100\% = 630/1530 \times 100\% = 41\%$

b) 从类型 DLPIIL 参数表中得到热功率 (见第 21 页)

$$P_2 \leq P_G = P_{G1} \times f_4 \times f_{14} = 199 \times 0.87 \times 0.77 = 133.3\text{kW} \quad P_2 = 630\text{kW} > P_G = 133.3\text{kW}$$

需要辅助冷却装置，请与我们联系!

2.4 Calculation examples

Calculation example 1

Known criteria:
Prime mover

Electric motor	P_1=630kW
Motor speed	n_1=740r/min
Max starting torque	T_A=14600Nm

Driven machine
Ø2. 2x11m Grinding cylinders

Speed	n_2=20.7r/min
Duty	24h/day
Continuous working	
Operating cycle per hour	E_D=100%
Ambient temperature	t=30℃
Higher reliability	
Intallation in large halls	

1) Determination of gear units 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) Determination of gear unit type
Type DLPII L. selected (for actual ratio and required basic type)

c) Determine nominal power rating of the gear unit

$$P_N \geq P_C = P_2 \times f_1 \times f_2 \times f_A = 630 \times 2.0 \times 1 \times 1.15 = 1449\text{kW} \leq P_N = 1530\text{kW}$$

Selected from power rating table: Type DLP II L., gear unit size 18, with P_N=1530kW (see page 21)

$$P_2 \geq P_N \times 30\% \qquad P_2 = 630\text{kW} \geq 1530 \times 30\% = 459\text{kW}$$

d) Checking the starting power rating

$$P_N \geq P_A = \frac{T_A \times n_1}{9550} \times f_3 = \frac{14600 \times 740}{9550} \times 0.7 = 792\ \text{kW} \quad P_N = 1530\text{kW} > P_A = 792\ \text{kW}$$

2) Check required thermal capacity gear units
a) Determine nominal power utilization

公称功率利用率 % / nominal power utilization in % $= P_2/P_N \times 100\% = 630/1530 \times 100\% = 41\%$

b) Thermal capacity acc. to table type DLP II L.(see page 21)

$$P_2 \leq P_G = P_{G1} \times f_4 \times f_{14} = 199 \times 0.87 \times 0.77 = 133.3\text{kW} \quad P_2 = 630\text{kW} > P_G = 133.3\text{kW}$$

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：DLPⅡL
出轴型式：AS 见第 39~42 页

安装方式：卧式安装
输入轴 d_1 装配形式：L32, 见第 06 页
输入轴 d_1 旋转方向：逆时针，从轴端面观察

d_2 输出型式：带锁紧盘，地脚安装
润滑方式：强制润滑
选用的齿轮箱型号：
DLPⅡL AS-18-35. 5-L32-FJ01-L

3) Determination of design and oil supply

Bevel planetary gear units: DLPⅡL.
Variant: AS see page 39~42

Mounting position: horizontal
Pos. of the input shaft d_1:e.g. "L32" see page 06
Direct. of rotation of input shaft d_1 : L, viewing on shaft end face

Design d_2 :hollow shaft for shrink disk, with feet
Lubrication: forced
Selected type of gear units:
DLPⅡL AS-18-35. 5-L32-FJ01-L

计算示例 2

2.4 Calculation examples

已知
原动机

电动机功率	P_1=75kW
转速	n_1=1500r/min
最大启动扭矩	T_A=830Nm

从动机
皮带输送机

转速	n_2=2.38r/min
输送机转矩	T_2=240000Nm
每天运行时间	24 小时 / 天
每小时启动次数	≤5 次
每小时工作周期	E_D=60%
环境温度	t=30℃
较高可靠度要求	
室内大空间安装	

Known criteria:
Prime mover

Electric motor:	P_1=75kW
Motor speed	n_1=1500r/min
Max. starting torque	T_A=830Nm

Driven machine
Belt conveyors

Speed	n_2=2.38r/min
Conveyors torque	T_2=240000Nm
Duty	24h/day
Starting numbers per hours	≤5
Operating cycle per hour	E_D=60%
Ambient temperature	t=30℃
Higher reliability	
Installation in the large halls	

1) 确定齿轮箱的类型和规格
a) 计算传动比

1) Determination of gear units type and size
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 DLPIIIS(依据实际传动比和所需基本类型)

b) Determination of gear unit type
Type DLPIIIS. 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

$$P_N \geq P_C = P_2 \times f_1 \times f_2 \times f_A = 59.8 \times 1.3 \times 1 \times 1.2 = 93.29\text{kW} \quad P_N = 99\text{kW} \geq P_C = 93.29\text{kW}$$

从功率表中选择类型 DLPIIIS, 齿轮箱规格 14, 额定功率 P_N=99kW(见第 29 页)

Selected from power rating table: Type DLPIII S. gear unit size 14,with P_N=99kW (see page 29)

$$P_2 \geq P_N \times 30\% \qquad P_2 = 59.8\text{kW} \geq 99 \times 30\% = 29.7\text{kW}$$

e) 校核起动功率

e) Checking the starting torque

$$P_N \geq P_A = \frac{T_A \times n_1}{9550} \times f_3 = \frac{830 \times 1500}{9550} \times 0.5 = 65.2\text{kW} \quad P_N = 99\text{kW} > P_A = 65.2\text{kW}$$

2) 确定齿轮箱热功率
a) 确定公称功率利用率

2) Check required thermal capacity gear units
a) Determine nominal power utilization

$$\text{公称功率利用率 \% / nominal power utilization in \%} = P_2 / P_N \times 100\% = 59.8 / 99 \times 100\% = 60.4\%$$

选型 | **Project Planning**

b) 从类型 DLPIII S 参数表中得到热功率（见第 29 页）

b) Thermal capacity acc. to table type DLPIIIS (see page 29).

$$P_2 \le P_G = P_{G1} \times f_4 \times f_{14} = 116 \times 1 \times 0.9 = 104.4\text{kW} \qquad P_2 = 59.8\text{kW} < P_G = 104.4\text{kW}$$

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

平行轴行星齿轮箱：DLPIIIS

出轴型式：BJ 见第 39~42 页

3) Determination of design and oil supply

Helical planetary gear units: DLPIIIS

Variant: BJ see page 39~42

安装方式：卧式安装

输入轴 d_1 装配形式：L13, 见第 06 页

Mounting position: horizontal

Pos.of the input shaft d_1 :e.g. "L13"see page 06

润滑方式：油池润滑

输出轴 d_2 输出型式：带平键的实心轴

选用的齿轮箱型号：

DLPIII **S BJ-14-630-L13**

Lubrication: dip lubrication

Design d_2 : solid shaft with parallel key

Selected type of gear units:

DLPIII **S BJ-14-630-L13**

计算示例 3

已知
原动机

电动机功率	P_1=132kW
转速	n_1=1000r/min
最大启动扭矩	T_A=2000Nm

从动机
均匀介质混匀机

转速	n_2=12.5r/min
每天运行时间	10 小时 / 天
每小时工作周期	E_D=60%
环境温度	t=20℃
较高可靠度要求	
室外安装	
载荷谱	

P_I 在 10% 时间分量中为 130kW
P_{II} 在 30% 时间分量中为 69kW
P_{III} 在 40% 时间分量中为 65kW
P_{IV} 在 20% 时间分量中为 62kW

1) 确定齿轮箱的类型和规格
a) 计算传动比

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

b) 确定齿轮箱类型
选择类型 DLPIIS(依据实际传动比和所需基本类型)
c) 从给出的载荷谱中确定当量功率

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

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

请注意 08 页选型指南的条件 a),b),c)
d) 确定齿轮箱额定功率

$$P_N \geq P_C = P_{2a} \times f_1 \times f_2 \times f_A = 93 \times 1.3 \times 1 \times 1.2 = 145\ \text{kW} \leq P_N = 153\,\text{kW}$$

从功率表中选择类型 DLPIIS., 齿轮箱规格 8, 额定功率 P_N=153kW(见第 23 页)

$$P_{2a} \geq P_N \times 30\% \qquad P_{2a} = 93\text{kW} \geq 153 \times 30\% = 45.9\text{kW}$$

e) 校核起动扭矩

$$P_N \geq P_A = \frac{T_A \times n_1}{9550} \times f_3 = \frac{2000 \times 1000}{9550} \times 0.5 = 104.7\text{kW} \qquad P_N = 153\,\text{kW} \geq P_A = 104.7\,\text{kW}$$

Calculation example 3

Known criteria:
Prime mover

Electric motor:	P_1=132kW
Motor speed	n_1=1000r/min
Max. starting torque	T_A=2000Nm

Driven machine
Belt conveyors

Speed	n_2=12.5r/min
Duty	10 h/day
Loading persistent per hour	E_D=60%
Ambient temperature	t=20℃
Higher reliability	
Installation in the open	
Service classification	

P_I 130 kW at 10% of time
P_{II} 69 kW at 30% of time
P_{III} 65 kW at 40% of time
P_{IV} 62 kW at 20% of time

1) Determination of gear units type and size
a) Calculation the transmission ratio

b) Determination of gear unit type
Type DLPIIS. selected (for actual ratio and required basic type)
c) Determination of equivalent torque from the given service classification

Observe condition a) ,b) ,c) , of the guidelines for the section, page 08
d) Determine nominal power rating of the gear unit

Selected from power rating table: Type DLPII S. gear unit size 8,with P_N=153kW (see page 23)

e) Checking the starting torque

2) 确定齿轮箱热功率

a) 确定公称功率利用率

公称功率利用率 % / nominal power utilization in %= $P_{2a} / P_N \times 100\% = 93/153 \times 100\% = 60.7\%$

b) 从类型 DLPIIS 参数表中得到热功率（见第 23 页）

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

不需要辅助冷却装置

3) 确定安装形式和供油方式

平行轴行星齿轮箱：DLPIIS

出轴型式：BH 见第 39~42 页

安装方式：卧式安装

输入轴 d1 装配形式：L13, 见第 06 页

d_2 输出型式：带渐开线花键的实心轴

润滑方式：油池润滑

选用的齿轮箱型号：

DLPII S BH-8-80-L13

2) Check required thermal capacity gear units

a) Determine nominal power utilization

b) Thermal capacity acc. to table type DLPIIS (see page 23).

No auxiliary cooling required

3) Determination of design and oil supply

Helical planetary gear units: DLPIIS

Variant: BH see page 39~42

Mounting position: horizontal

Pos. of the input shaft d1:e.g. "L13"see page 06

Design d_2 : solid shaft with involute splines

Lubrication: dip lubrication

Selected type of gear units:

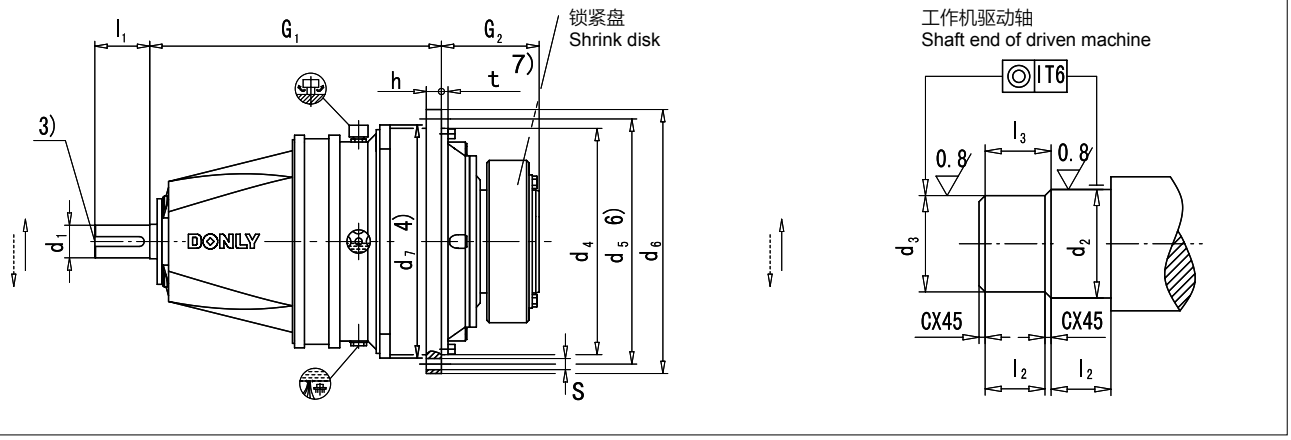
DLPII S BH-8-80-L13

3.1 DLPII NA 型

DLPII NA 安装尺寸和重量

3.1 Type DLPII NA

Dimensions and weights of DLPII NA



规格 Size	额定输出扭矩 Nominal output torque T_{2N} (Nm)	输入轴 Shaft end input side		工作机驱动轴 Driven machine shaft					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 h6 5)	d_3 h6 5)	l_2	C	l_3									S	数量 No.		
		mm																	ca.kg	ca.l
3	22000	55	90	120	115	65	2.5	67.5	350	388	428	356	469	165	24	6±1.5	18	24	240	6
4	31000	55	90	130	125	70	2.5	72.5	394	436	472	400	489	174	28	8±1.5	18	28	290	8
5	42000	70	120	140	135	82.5	2.5	85	425	485	525	436	579	204	32	8±1.5	22	20	350	12
6	60000	70	120	160	155	90	2.5	92.5	495	555	605	510	593	224	34	9±1.5	26	20	490	16
7	83000	80	140	180	175	95	2.5	97.5	535	595	645	554	714	241	39	11±1.5	26	24	590	20
8	117000	80	140	210	205	105	2.5	107.5	610	665	720	629	737	278	42	9	26	32	820	32
9	160000	95	160	230	225	110	2.5	112.5	660	715	770	680	851	285	44	10	26	36	1030	40
10	202000	95	160	250	245	120	2.5	122.5	750	830	895	775	877	294	50	10	33	24	1500	56
11	244000	110	180	260	255	120	2.5	122.5	785	865	930	815	1006	303	50	10	33	32	1900	66
12	295000	110	180	280	275	135	2.5	137.5	840	915	980	870	1029.5	327.5	56	12	33	36	2000	82
13	354000	110	180	300	295	135	2.5	137.5	840	915	980	870	1029.5	327.5	56	12	33	36	2100	75
14	392000	120	210	310	305	152	2.5	154.5	935	1025	1115	960	1046	354	62	24	39	32	2650	110
15	450000	120	210	330	325	152	2.5	154.5	935	1025	1115	960	1046	354	62	24	39	32	2800	95
16	513000	130	210	350	345	164	2.5	166.5	1025	1120	1210	1056	1150	380	68	28	39	36	3450	130
17	592000	130	210	360	355	164	2.5	166.5	1025	1120	1210	1056	1150	380	68	28	39	36	3900	125
18	684000	140	240	380	375	180	2.5	182.5	1115	1220	1320	1150	1241	407	74	29	45	36	4750	190
19	763000	140	240	400	395	180	2.5	182.5	1115	1220	1320	1150	1241	407	74	29	45	36	5150	160
20	852000	150	240	430	425	191	2.5	193.5	1215	1345	1460	1248	1379	453	81	31	52	32	6100	245
21	950000	150	240	450	445	191	2.5	193.5	1215	1345	1460	1248	1379	453	81	31	52	32	6550	205
22	1060000	160	270	460	450	197.5	5	202.5	1320	1450	1565	1355	1457	483	87	34	52	36	7800	305
23	1200000	160	270	480	470	197.5	5	202.5	1320	1450	1565	1355	1457	483	87	34	52	36	8300	255
24	1330000	170	270	480	470	232	5	237	1400	1545	1665	1443	1607	538	94	36	62	32	10200	380
25	1500000	170	270	510	500	232	5	237	1400	1545	1665	1443	1607	538	94	36	62	32	10700	315
26	1680000	180	310	530	520	242	5	247	1495	1635	1755	1536	1683	573	100	36	62	36	12350	460
27	1920000	180	310	570	560	242	5	247	1495	1635	1755	1536	1683	573	100	36	62	36	13150	380
28	2240000	190	310	600	590	272	5	277	1685	1825	1945	1720	1899	656	112	40	62	40	17300	645
29	2600000	190	310	640	630	272	5	277	1685	1825	1945	1720	1899	656	112	40	62	40	18400	535

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 34 页，中心孔见 33 页
4）所需安装空间
5）> 160 时 g6
6）法兰连接孔见 32 页
7）注意连接螺栓和凸缘

1) Shaft diameter $d_1 \leq 100$, Tolerance m6
　Shaft diameter $d_1 > 100$, Tolerance n6
2) Weight without shrink disk and oil
3) For shaft end d_1 with parallel key acc.to GB1096, For detail see page 34 and center hole, see page 33
4) Space required
5) >160 g6
6) For hole patterns, see page 32
7) Observe bolted connection and boss

外形及功率表

Dimensions And Power Ratings

3.1 DLPII NA 型

DLPII N 传动比、转速及功率

3.1 Type DLPII NA

Ratios,speeds,power ratings of DLPII N

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	齿轮箱规格 / Gear unit sizes																										
			3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29
	min^{-1}		额定功率 P_N kW / Nominal power ratings P_N in kW																										
25	1500	60	137	193	261	373	516	728	995	1256	1517	1834	2201	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	1000	40	91	129	174	249	344	485	663	837	1012	1223	1468	1625	1866	2127	2454	2863	3163	3532	3938	4394	4975	5514	6218	6965	7960	9286	10779
	750	30	68	26	131	187	258	364	497	628	759	917	1101	1219	1399	1595	1841	2127	2372	2649	2954	3296	3731	4135	4664	5223	5970	6965	8084
28	1500	54	123	173	235	336	465	655	895	1131	1366	1651	1981	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	1000	36	82	116	157	224	310	437	597	754	910	1101	1321	1463	1679	1914	2209	2552	2847	3179	3544	3955	4477	4962	5597	6268	7164	8358	9701
	750	27	62	87	118	168	232	327	448	565	683	825	991	1097	1259	1436	1657	1914	2135	2384	2658	2966	3358	3722	4197	4701	5373	6268	7276
31.5	1500	48	109	154	209	298	413	582	796	1005	1214	1468	1761	1950	2239	2552	2945	3430	3796	4238	4726	5273	5970	6616	7462	8358	9551	11143	12934
	1000	32	73	103	139	199	275	388	531	670	809	978	1174	1300	1492	1701	1963	2268	2530	2826	3151	3515	3980	4411	4975	5572	6368	7429	8623
	750	24	55	77	104	149	206	291	398	502	607	734	881	975	1119	1276	1473	1701	1898	2129	2363	2637	2985	3308	3731	4179	4776	5572	6467
35.5	1500	42	96	135	183	261	361	509	696	879	1062	1284	1541	1706	1959	2233	2577	2977	3321	3709	4135	4614	5223	5789	6529	7313	8358	9750	11317
	1000	28	64	90	122	174	241	340	464	586	708	856	1027	1138	1306	1489	1718	1985	2214	2472	2757	3076	3482	3860	4353	4875	5572	6500	7545
	750	21	48	67	91	131	181	255	348	440	531	642	770	853	979	1117	1288	1489	1661	1854	2068	2307	2612	2895	3265	3656	4179	4875	5659
40	1500	38	87	122	165	236	327	461	630	796	961	1162	1394	1544	1772	2020	2331	2694	3005	3355	3741	4175	4726	5238	5907	6616	7562	8822	10240
	1000	25	57	80	109	155	215	303	415	523	632	764	917	1016	1166	1329	1534	1772	1977	2208	2461	2746	3109	3446	3886	4353	4975	5804	6737
	750	19	43	61	83	118	163	230	315	398	480	581	697	772	886	1010	1166	1347	1502	1678	1871	2087	2363	2619	2954	3308	3781	4411	5120

– = 敬请垂询

- = On request

热容量 P_{G1}(kW) / Thermal capacities P_{G1} in kW *)																		
	齿轮箱规格 / Gear unit sizes																	
	3	4	5	6	7	8	9	10	11	12/13	14/15	16/17	18/19	20/21	22/23	24/25	26/27	28/29
	热容量 P_{G1}(kW) / Thermal capacities P_{G1} in kW																	
1) P_{G1} 室内小空间安装 P_{G1} for small confined spaces	21	26	32	42	49	65	75	92	100	119	142	174	201	242	287	326	366	437
2) P_{G1} 室内大空间安装 P_{G1} for large halls, workshops etc.	29	37	45	60	69	92	106	130	147	169	201	246	285	343	406	462	519	619
3) P_{G1} 室外安装 P_{G1} in the open	39	50	60	80	93	125	143	175	191	228	272	333	386	464	550	626	702	838

*）表中数值适用于卧式安装。对于其他安装位置请与我们联系。

1）风速≥ 0.5m/s

2）风速≥ 1.4m/s

3）风速≥ 3.7m/s

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

1) Wind velocity ≥ 0.5m/s

2) Wind velocity ≥ 1.4m/s

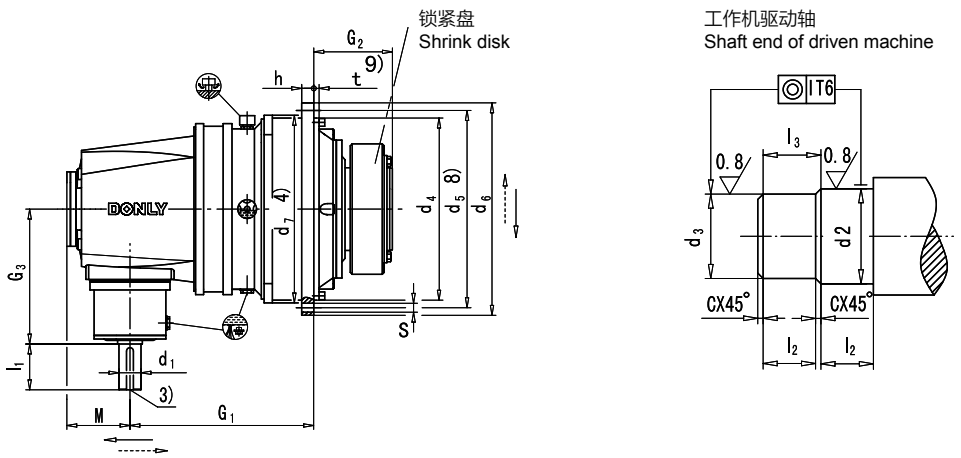
3) Wind velocity ≥ 3.7m/s

3.2 DLPII LA 型

DLPII LA 安装尺寸和重量

3.2 Type DLPII LA

Dimensions and weights of DLPII LA



规格 Size	额定输出扭矩 Nominal output torque T_{2N} (Nm)	输入轴 Shaft end input side				工作机动轴 Driven machine shaft					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		重量 Weight 2)	注油量 Oil quantity
		d_1 1) 5)	l_1 5)	d_1 1) 6)	l_1 6)	d_2 h6 7)	d_3 h6 7)	l_2	C	l_3											S	数量 No		
		mm																					ca.kg	ca.l
3	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
4	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
5	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
6	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
7	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
8	117000	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
9	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
10	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
11	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
12	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	2200	82
13	354000	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
14	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
15	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
16	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
17	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
18	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
19	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
20	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
21	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
22	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
23	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
24-29	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 34 页，中心孔见 33 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 32 页
9）注意连接螺栓和凸缘

1) Shaft diameter $d_1 \leq 100$, Tolerance m6
　Shaft diameter $d_1 > 100$, Tolerance n6
2) Weight without shrink disk and oil
3) For shaft end d_1 with parallel key acc.to GB1096,For detail see page 34 and center hole, see page 33
4) Space required
5) Up to and including i_N=90:1
6) Above i_N=100:1
7) >160g6
8) For hole patterns, see page 32
9) Observe bolted connection and boss

3.2 DLPII LA 型

DLPII L 传动比、转速及功率

3.2 Type DLPII LA

Ratios, speeds, power ratings of DLPII L

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	齿轮箱规格 / Gear unit sizes																				
			3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24-29
	min^{-1}		额定功率 P_N kW / Nominal power ratings P_N in kW																				
31.5	1500	47.6	111	156	212	302	418	510	806	865	1230*	1487*	1517*	1976*	2268*	-	-	-	-	-	-			敬请垂询 On request
	1000	31.7	74	104	141	202	279	340	538	577	820	991	1011	1317*	1512*	1724*	1989*	2298*	2564*	2863*	2937*			
	750	23.8	55	78	106	151	209	255	403	433	615	743	758	988	1134	1293	1492	1724	1923	2147	2203			
35.5	1500	42.3	98	139	188	268	345	487	716	858	1091*	1319*	1504*	1753*	2013*	-	-	-	-	-	-			
	1000	28.2	66	92	125	179	247	324	477	572	728	880	1003	1169*	1342*	1530*	1712*	2040*	2275*	2540*	2833*			
	750	21.1	49	69	94	134	173	243	358	429	546	660	752	877	1006	1147	1284	1530	1706	1905	2124			
40	1500	37.5	87	123	167	238	306	432	635	802	969*	1171*	1405*	1556*	1786*	-	-	-	-	-	-			
	1000	25.0	58	82	111	159	204	288	423	535	646	781	937	1037*	1191*	1358*	1567*	1810*	2019*	2255*	2514*			
	750	18.8	44	62	83	119	153	216	318	401	484	585	703	778	883	1018	1175	1358	1514	1691	1885			
45	1500	33.3	78	109	148	212	293	413	565	713	861*	1041*	1249*	1383*	1588*	1810*	2089*	-	-	-	-	-	-	
	1000	22.2	52	73	99	141	195	275	376	475	574	694	833	922*	1059*	1207*	1393*	1609*	1795*	2004*	2235*	-	-	
	750	16.7	39	55	74	106	146	206	282	356	430	520	625	692	794	905	1044	1207	1346	1503	1676	1870	2117	
50	1500	30.0	70	98	133	191	264	372	508	641	775	937	1124	1245*	1429*	1629*	1880*	-	-	-	-	-	-	
	1000	20.0	47	66	89	127	176	248	339	428	517	625	749	830	953	1086	1253	1448*	1615*	1804*	2011*	-	-	
	750	15.0	35	49	67	95	132	186	254	321	387	468	562	622	714	815	940	1086	1211	1353	1508	1683	1905	
56	1500	26.8	62	88	119	170	235	332	454	573	692	836	1004	1111*	1276*	1455*	1678*	-	-	-	-	-	-	
	1000	17.9	42	59	79	113	157	221	302	382	461	558	669	741	851	970	1119	1293*	1442*	1610*	1796*	2004*	2268*	
	750	13.4	31	44	60	85	118	166	227	286	346	418	502	556	638	727	839	970	1082	1208	1347	1503	1701	
63	1500	23.8	55	78	106	151	209	295	403	509	615	743	892	988	1134	1293	1492	1724*	1923*	2147*	2394*	-	-	
	1000	15.9	37	52	71	101	139	197	269	339	410	496	595	659	756	862	995	1149	1282	1432	1596	1781*	2016*	
	750	11.9	28	39	53	76	105	147	202	255	307	372	446	494	567	646	746	862	961	1074	1197	1336	1512	
71	1500	21.1	49	69	94	134	186	262	358	452	546	660	792	877	1006	1147	1324	1530	1706	1905	2124	-	-	
	1000	14.1	33	46	63	89	124	174	239	301	364	440	528	584	671	765	883	1020	1138	1270	1416	1580*	1789*	
	750	10.6	25	35	47	67	93	131	179	226	273	330	396	438	503	574	662	765	853	953	1062	1185	1342	
80	1500	18.8	44	62	83	119	165	232	318	401	484	585	703	778	893	1018	1175	1358	1514	1691	1885	-	-	
	1000	12.5	29	41	56	79	110	155	212	267	323	390	468	519	595	679	783	905	1010	1127	1257	1403*	1588*	
	750	9.4	22	31	42	60	82	116	159	200	242	293	351	389	447	509	587	679	757	845	943	1052	1191	
90	1500	16.7	39	55	74	106	146	206	282	356	430	520	625	692	794	905	1044	1207	1346	1503	1676	1870	2117	
	1000	11.1	26	36	49	71	98	138	188	238	287	347	416	461	529	603	696	804	897	1002	1117	1247	1411	
	750	8.3	19	27	37	53	73	103	141	178	215	260	312	346	397	453	522	603	673	752	838	935	1059	
100	1500	15.0	35	49	67	95	132	186	254	321	387	468	562	622	714	815	940	1086	1211	1353	1508	1683	1905	
	1000	10.0	23	33	44	64	88	124	169	214	258	312	375	415	476	543	627	724	808	902	1006	1122	1270	
	750	7.5	17	25	33	48	66	93	127	160	194	234	281	311	357	407	470	543	606	676	754	842	953	

– = 敬请垂询 **- = On request**

热容量 P_{G1}(kW) / Thermal capacities P_{G1} in kW *)																
	齿轮箱规格 / Gear unit sizes															
	3	4	5	6	7	8	9	10	11	12/13	14/15	16/17	18/19	20/21	22/23	24/29
	热容量 P_{G1}(kW) / Thermal capacities P_{G1} in kW															
1) P_{G1} 室内小空间安装 P_{G1} for small confined spaces	14	18	22	29	34	46	52	64	70	83	99	121	141	169	200	敬请垂询 On request
2) P_{G1} 室内大空间安装 P_{G1} for large halls, workshops etc.	20	26	31	41	48	64	74	91	99	118	140	172	199	240	284	
3) P_{G1} 室外安装 P_{G1} in the open	28	35	42	56	65	87	100	123	133	159	190	233	269	324	384	

*）表中数值适用于卧式安装。对于其他安装位置请与我们联系。

1）风速≥ 0.5m/s
2）风速≥ 1.4m/s
3）风速≥ 3.7m/s

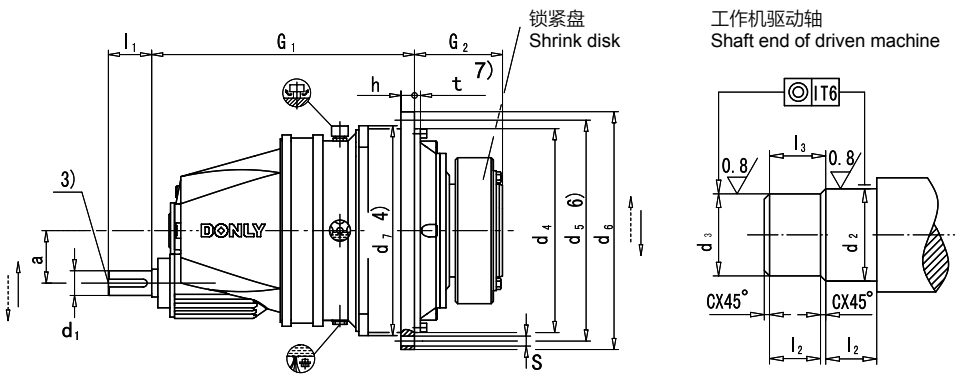
*) Values apply to horizontal mounting position. For other mounting positions please refer to us.
1) Wind velocity ≥ 0.5m/s
2) Wind velocity ≥ 1.4m/s
3) Wind velocity ≥ 3.7m/s

3.3 DLPII SA 型

DLPII SA 安装尺寸和重量

3.3 Type DLPII SA

Dimensions and weights of DLPII SA



规格 Size	额定输出扭矩 Nominal output torque T_{2N} (Nm)	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 h6 5)	d_3 h6 5)	l_2	C	l_3										S	数量 No.		
		mm																		ca.kg	ca.l
3	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
4	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
5	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
6	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
7	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
8	117000	70	120	210	205	105	2.5	107.5	140	610	665	720	629	737	278	42	9	26	32	920	32
9	160000	80	140	230	225	110	2.5	112.5	170	660	715	770	680	851	285	44	10	26	36	1150	40
10	202000	80	140	250	245	120	2.5	122.5	170	750	830	895	775	877	294	50	10	33	24	1650	56
11	244000	90	160	260	255	120	2.5	122.5	200	785	865	930	815	1006	303	50	10	33	32	1950	66
12	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
13	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
14	392000	100	180	310	305	152	2.5	154.5	230	935	1025	1115	960	1076	354	62	24	39	32	2900	110
15	450000	100	180	330	325	152	2.5	154.5	230	935	1025	1115	960	1076	354	62	24	39	32	3100	95
16	513000	120	210	350	345	164	2.5	166.5	265	1025	1120	1210	1056	1175	380	68	28	39	36	3800	130
17	592000	120	210	360	355	164	2.5	166.5	265	1025	1120	1210	1056	1175	380	68	28	39	36	4100	125
18	684000	130	210	380	375	180	2.5	182.5	300	1115	1220	1320	1150	1291	407	74	29	45	36	4950	190
19	763000	130	210	400	395	180	2.5	182.5	300	1115	1220	1320	1150	1291	407	74	29	45	36	5350	160
20	852000	140	240	430	425	191	2.5	193.5	320	1215	1345	1460	1248	1429	453	81	31	52	32	6800	245
21	950000	140	240	450	445	191	2.5	193.5	320	1215	1345	1460	1248	1429	453	81	31	52	32	7200	205
22	1060000	150	240	460	450	197.5	5	202.5	360	1320	1450	1565	1355	1507	483	87	34	52	36	8500	305
23	1200000	150	240	480	470	197.5	5	202.5	360	1320	1450	1565	1355	1507	483	87	34	52	36	9000	255
24	1330000	160	270	480	470	232	5	237	400	1400	1545	1665	1443	1662	538	94	36	62	32	10500	380
25	1500000	160	270	510	500	232	5	237	400	1400	1545	1665	1443	1662	538	94	36	62	32	11200	315
26	1680000	170	270	530	520	242	5	247	400	1495	1635	1755	1536	1743	573	100	36	62	36	12700	460
27	1920000	170	270	570	560	242	5	247	400	1495	1635	1755	1536	1743	573	100	36	62	36	13500	380
28	2240000	180	310	600	590	272	5	277	442	1685	1825	1945	1720	1960	656	112	40	62	40	17800	645
29	2600000	180	310	640	630	272	5	277	442	1685	1825	1945	1720	1960	656	112	40	62	40	18900	535

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 34 页，中心孔见 33 页
4）所需安装空间
5）>160 时 g6
6）法兰连接孔见 32 页
7）注意连接螺栓和凸缘

1) Shaft diameter $d_1 \leq 100$,Tolerance m6
Shaft diameter $d_1>100$,Tolerance n6
2) Weight without shrink disk and oil
3) For shaft end d_1 with parallel key acc.to GB1096, For detail see page 34 and center hole, see page 33
4) Space required
5) >160 g6
6) For hole patterns, see page 32
7) Observe bolted connection and boss

外形及功率表 **Dimensions And Power Ratings**

3.3 DLPII SA 型

DLPII S 传动比、转速及功率

3.3 Type DLPII SA

Ratios, speeds, power ratings of DLPII S

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	齿轮箱规格 / Gear unit sizes																										
			3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29
	min^{-1}		额定功率 P_N kW / Nominal power ratings P_N in kW																										
45	1500	33.3	77	108	147	209	290	408	558	705	852	1030	1236	1368	1571	1790	2066	2387	2663	-	-	-	-	-	-	-	-	-	-
	1000	22.2	51	72	98	140	193	272	372	470	568	686	824	912	1047	1194	1377	1592	1775	1982	2210	2466	2792	3095	3490	3909	4467	5212	6050
	750	16.7	38	54	73	105	145	204	279	353	426	515	618	684	785	895	1033	1194	1332	1487	1658	1850	2094	2321	2618	2932	3351	3909	4537
50	1500	30.0	69	97	132	188	261	368	503	635	766	927	1112	1231	1414	1611	1860	2149	2397	-	-	-	-	-	-	-	-	-	-
	1000	20.0	46	65	88	126	174	245	335	423	511	618	741	821	942	1074	1240	1432	1598	1784	1989	2220	2513	2785	3141	3518	4021	4691	5445
	750	15.0	35	49	66	94	130	184	251	317	383	463	556	616	707	806	930	1074	1198	1338	1492	1665	1885	2089	2356	2639	3016	3518	4084
56	1500	26.8	62	87	118	168	233	328	449	567	684	827	993	1099	1262	1439	1660	1918	2140	-	-	-	-	-	-	-	-	-	-
	1000	17.9	41	58	79	112	155	219	299	378	456	552	662	733	841	959	1107	1279	1427	1593	1776	1982	2244	2487	2805	3141	3590	4188	4861
	750	13.4	31	43	59	84	116	164	224	283	342	414	496	550	631	719	830	959	1070	1195	1332	1486	1683	1865	2103	2356	2692	3141	3646
63	1500	23.8	55	77	105	150	207	292	399	504	608	735	883	977	1122	1279	1476	1705	1902	-	-	-	-	-	-	-	-	-	-
	1000	15.9	37	52	70	100	138	194	266	336	406	490	588	651	748	853	984	1137	1268	1416	1579	1762	1994	2210	2493	2792	3191	3723	4321
	750	11.9	27	39	52	75	103	146	199	252	304	368	441	489	561	639	738	853	951	1062	1184	1321	1496	1658	1870	2094	2393	2792	3241
71	1500	21.1	49	69	93	133	184	259	354	447	540	653	783	867	995	1135	1310	1513	1688	-	-	-	-	-	-	-	-	-	-
	1000	14.1	32	46	62	88	122	173	236	298	360	435	522	578	664	757	873	1009	1125	1256	1401	1563	1770	1961	2212	2478	2831	3303	3834
	750	10.6	24	34	46	66	92	129	177	223	270	326	392	434	498	567	655	757	844	942	1051	1172	1327	1471	1659	1858	2124	2478	2876
80	1500	18.8	43	61	82	118	163	230	314	397	479	579	695	770	883	1007	1162	1343	1498	-	-	-	-	-	-	-	-	-	-
	1000	12.5	29	41	50	79	109	153	209	264	319	386	463	513	589	671	775	895	999	1115	1243	1387	1571	1741	1963	2199	2513	2932	3403
	750	9.4	22	30	41	59	81	115	157	198	240	290	347	385	442	504	581	671	749	836	933	1041	1178	1306	1472	1649	1885	2199	2552
90	1500	16.7	38	54	73	105	145	204	279	353	426	515	618	684	785	895	1033	1194	1332	-	-	-	-	-	-	-	-	-	-
	1000	11.1	26	36	49	70	97	136	186	235	284	343	412	456	524	597	689	796	888	991	1105	1233	1396	1547	1745	1954	2234	2606	3025
	750	8.3	19	27	37	52	72	102	140	176	213	257	309	342	393	448	517	597	666	743	829	925	1047	1160	1309	1466	1675	1954	2269
100	1500	15.0	35	49	66	94	130	184	251	317	383	463	556	616	707	806	930	1074	1198	-	-	-	-	-	-	-	-	-	-
	1000	10.0	23	32	44	63	87	123	168	212	255	309	371	410	471	537	620	716	799	892	995	1110	1256	1393	1571	1759	2010	2345	2722
	750	7.5	17	24	33	47	65	92	126	159	192	232	278	308	353	403	465	537	599	669	746	832	942	1044	1178	1319	1508	1759	2042
112	1500	13.4	31	43	59	84	116	164	224	283	342	414	496	550	631	719	830	959	1070	-	-	-	-	-	-	-	-	-	-
	1000	8.9	21	29	39	56	78	109	150	189	228	276	331	366	421	480	553	639	713	797	888	991	1122	1243	1402	1571	1795	2094	2431
	750	6.7	15	22	29	42	58	82	112	142	171	207	248	275	316	360	415	480	535	597	666	743	841	933	1052	1178	1346	1571	1823
125	1500	12.0	28	39	53	75	104	147	201	254	307	371	445	493	565	645	744	859	959	-	-	-	-	-	-	-	-	-	-
	1000	8.0	18	26	35	50	70	98	134	169	204	247	297	328	377	430	496	573	639	714	796	888	1005	1114	1256	1407	1608	1876	2178
	750	6.0	14	19	26	38	52	74	101	127	153	185	222	246	283	322	372	430	479	535	597	666	754	836	942	1055	1206	1407	1633

– = 敬请垂询 **- = On request**

热容量 P_{G1}(kW) / Thermal capacities P_{G1} in kW *)																		
	齿轮箱规格 / Gear unit sizes																	
	3	4	5	6	7	8	9	10	11	12/13	14/15	16/17	18/19	20/21	22/23	24/25	26/27	28/29
	热容量 P_{G1}(kW) / Thermal capacities P_{G1} in kW																	
1) P_{G1} 室内小空间安装 P_{G1} for small confined spaces	15	20	24	32	36	49	56	69	75	89	106	130	151	182	215	245	275	328
2) P_{G1} 室内大空间安装 P_{G1} for large halls, workshops etc.	22	28	34	45	52	69	79	97	106	127	151	185	214	257	305	347	389	464
3) P_{G1} 室外安装 P_{G1} in the open	29	38	45	60	70	94	107	132	143	171	204	250	289	348	412	469	527	628

* ）表中数值适用于卧式安装。对于其他安装位置请与我们联系。

1 ）风速≥ 0.5m/s
2 ）风速≥ 1.4m/s
3 ）风速≥ 3.7m/s

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

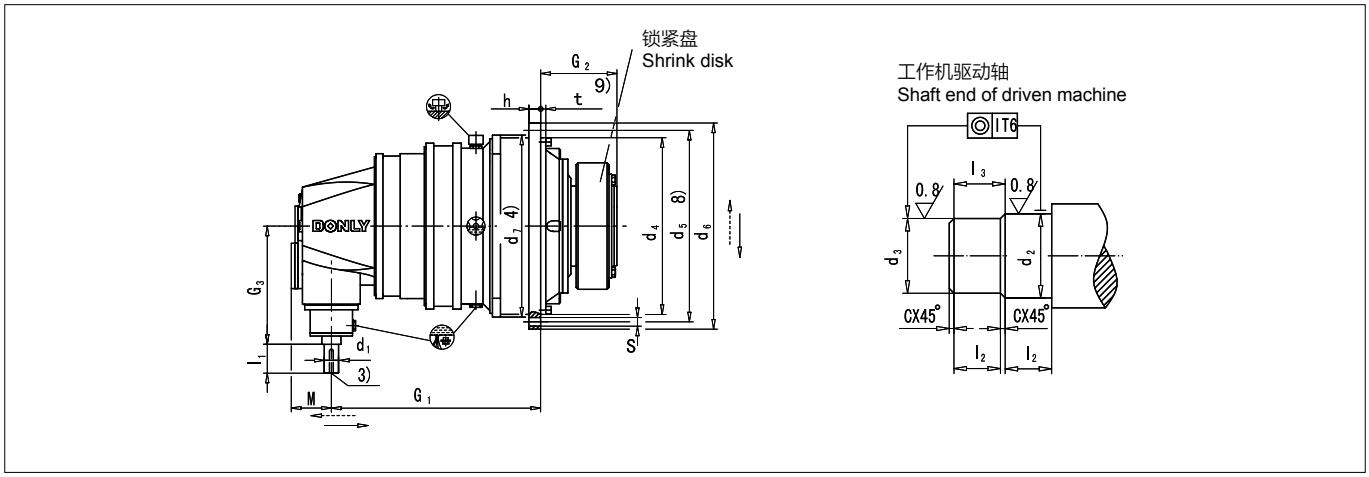
1) Wind velocity ≥ 0.5m/s
2) Wind velocity ≥ 1.4m/s
3) Wind velocity ≥ 3.7m/s

3.4 DLPII KA 型

DDLPII KA 安装尺寸和重量

3.4 Type DLPII KA

Dimensions and weights of DLPII KA



规格 Size	额定输出扭矩 Nominal output torque T_{2N} (Nm)	输入轴 Shaft end input side				工作机驱动轴 Driven machine shaft					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		重量 Weight 2)	注油量 Oil quantity
		d_1 1) 5)	l_1 5)	d_1 1) 6)	l_1 6)	d_2 h6 7)	d_3 h6 7)	l_2	C	l_3											S	数量 No.		
		mm																					ca.kg	ca.l
3	22000	30	70	25	60	120	115	65	2.5	67.5	350	388	428	356	339	165	320	119	24	6±1.5	18	24	270	6
4	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	320	8
5	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	390	12
6	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
7	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
8	117000	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	32
9	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
10	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
11	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
12	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
13	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
14	392000	80	165	60	140	310	305	152	2.5	154.5	935	1025	1115	960	813	354	720	270	62	24	39	32	2980	110
15	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
16	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
17	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
18	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
19	763000	90	165	70	140	400	395	180	2.5	182.5	1115	1220	1320	1150	975	407	905	310	74	29	45	36	5500	160
20	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
21	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
22	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
23	1200000	110	205	80	170	480	470	197.5	5	202.5	1320	1450	1565	1355	1152	483	1060	350	87	34	52	36	9300	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_1 带平键按照标准 GB1096，相关细节见 34 页，中心孔见 33 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 32 页
9）注意连接螺栓和凸缘

1) Shaft diameter $d_1 \leq 100$,Tolerance m6
　Shaft diameter $d_1 > 100$,Tolerance n6
2) Weight without shrink disk and oil
3) For shaft end d_1 with parallel key acc.to GB1096, For detail see page 34 and center hole, see page 33
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 32
9) Observe bolted connection and boss

3.4 DLPII KA 型

DLPII K 传动比、转速及功率

3.4 Type DLPII KA

Ratios, speeds, power ratings of DLPII K

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	齿轮箱规格 / Gear unit sizes																				
			3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
	min^{-1}		额定功率 P_N kW / Nominal power ratings P_N in kW																				
112	1500	13.4	30.9	43.6	59.0	84	117	164	225	284	343	415	498	549	621	719	830	959	1029	1192	1276	1486	1612
	1000	8.9	20.6	29.0	39.4	56	78	110	150	189	229	276	332	366	414	479	553	639	686	794	850	991	1075
	750	6.7	15.5	21.8	29.5	42	58	82	112	142	171	207	249	274	310	359	415	479	514	596	638	743	806
125	1500	12.0	27.7	39.0	52.9	76	105	147	201	254	307	372	446	492	556	644	743	859	922	1068	1143	1331	1445
	1000	8.0	18.5	26.0	35.3	50	70	98	134	170	205	248	297	328	371	429	495	572	614	712	762	887	963
	750	6.0	13.9	19.5	26.4	38	52	74	101	127	154	186	223	246	278	322	371	429	461	534	571	665	722
140	1500	10.7	24.7	34.9	47.2	67	93	132	180	227	274	332	398	439	497	575	664	767	823	953	1020	1189	1290
	1000	7.1	16.5	23.2	31.5	45	62	88	120	151	183	221	265	293	331	383	442	511	548	635	680	792	860
	750	5.4	12.4	17.4	23.6	34	47	66	90	114	137	166	199	219	248	287	332	383	411	476	510	594	645
160	1500	9.4	21.6	30.5	41.3	59	82	115	157	199	240	290	348	384	434	503	581	671	720	834	893	1040	1128
	1000	6.3	14.4	20.3	27.5	39	54	77	105	132	160	193	232	256	289	335	387	447	480	556	595	693	752
	750	4.7	10.8	15.3	20.7	30	41	58	79	99	120	145	174	192	217	251	290	335	360	417	446	520	564
180	1500	8.3	19.2	27.1	36.7	52	73	102	140	177	213	258	310	342	386	447	516	596	640	741	794	924	1003
	1000	5.6	12.8	18.1	24.5	35	48	68	93	118	142	172	206	228	257	298	344	397	426	494	529	616	668
	750	4.2	9.6	13.6	18.4	26	36	51	70	88	107	129	155	171	193	223	258	298	320	370	397	462	501
200	1500	7.5	17.3	24.4	33.1	47	65	92	126	159	192	232	279	307	347	402	464	537	576	667	714	832	903
	1000	5.0	11.5	16.3	22.0	31	44	61	84	106	128	155	186	205	231	268	309	358	384	445	476	554	602
	750	3.8	8.7	12.2	16.5	24	33	46	63	79	96	116	139	153	173	201	232	268	288	333	357	416	451
225	1500	6.7	15.4	21.7	29.4	42	58	82	112	141	171	206	248	273	309	358	413	477	512	593	635	739	802
	1000	4.4	10.3	14.5	19.6	28	39	55	75	94	114	138	165	182	206	238	275	318	341	395	423	493	535
	750	3.3	7.7	10.8	14.7	21	29	41	56	71	85	103	124	136	154	179	206	238	256	296	317	369	401
250	1500	6.0	13.9	19.5	26.4	38	52	74	101	127	154	186	223	246	278	322	371	429	461	534	571	665	722
	1000	4.0	9.2	13.0	17.6	25	35	49	67	85	102	124	149	164	185	214	247	286	307	356	381	443	481
	750	3.0	6.9	9.8	13.2	19	26	37	50	64	77	93	111	123	139	161	185	214	230	267	285	332	361
280	1500	5.4	12.4	17.4	23.6	34	47	66	90	114	137	166	199	219	248	287	332	383	411	476	510	594	645
	1000	3.6	8.2	11.6	15.7	22	31	44	60	76	91	111	133	146	165	191	221	255	274	317	340	396	430
	750	2.7	6.2	8.7	11.8	17	23	33	45	57	69	83	100	109	124	143	166	191	205	238	255	297	322
320	1500	4.7	10.8	15.3	20.7	30	41	58	79	99	120	145	174	192	217	251	290	335	360	417	446	520	564
	1000	3.1	7.2	10.2	13.8	20	76	38	52	66	80	97	116	128	144	167	193	223	240	278	297	346	376
	750	2.3	5.4	7.6	10.3	15	20	29	39	50	60	73	87	96	108	125	145	167	180	208	223	260	282
360	1500	4.2	9.6	13.6	18.4	26	36	51	70	88	107	129	155	171	193	223	258	298	320	370	397	462	501
	1000	2.8	6.4	9.0	12.2	17	24	34	47	59	71	86	103	114	128	149	172	198	213	247	264	308	334
	750	2.1	4.8	6.8	9.2	13	18	26	35	44	53	64	77	86	97	111	129	149	160	185	198	231	250
400	1500	3.8	8.7	12.2	16.5	24	33	46	63	79	96	116	139	153	173	201	232	268	288	333	357	416	451
	1000	2.5	5.8	8.1	11.0	16	22	31	42	53	64	77	93	102	115	134	154	179	192	222	238	277	301
	750	1.9	4.3	6.1	8.3	12	16	23	31	40	48	58	70	77	87	100	116	134	144	166	178	208	225
450	1500	3.3	7.7	10.8	14.7	21	29	41	56	71	85	103	124	136	154	179	206	238	256	296	317	369	401
	1000	2.2	5.1	7.2	9.8	14	19	27	37	47	57	69	83	91	103	119	137	159	170	197	211	246	267
	750	1.7	3.8	5.4	7.3	10	15	20	28	35	43	52	62	68	77	90	103	119	128	148	158	184	200
500	1500	3.0	6.9	9.8	13.2	19	26	37	50	64	77	93	111	123	139	161	185	214	230	267	285	332	361
	1000	2.0	4.6	6.5	8.8	13	17	25	34	42	51	62	74	82	93	107	123	143	153	178	190	221	240
	750	1.5	3.5	4.9	6.6	9	13	18	25	32	38	46	56	62	70	81	93	107	115	133	142	166	180
560	敬请垂询 / On request																						

热容量 P_{G1}(kW) / Thermal capacities P_{G1} in kW *)															
	齿轮箱规格 / Gear unit sizes														
	3	4	5	6	7	8	9	10	11	12/13	14/15	16/17	18/19	20/21	22/23
	热容量 P_{G1}(kW) / Thermal capacities P_{G1} in kW														
1) P_{G1} 室内小空间安装 P_{G1} for small confined spaces	12	15	18	24	28	38	44	53	58	69	81	97	114	141	165
2) P_{G1} 室内大空间安装 P_{G1} for large halls, workshops etc.	17	22	26	35	40	54	62	76	82	98	115	138	162	200	235
3) P_{G1} 室外安装 P_{G1} in the open	23	29	35	47	54	73	83	102	111	133	155	186	218	270	315

*）表中数值适用于卧式安装。对于其他安装位置请与我们联系。

1）风速≥ 0.5m/s
2）风速≥ 1.4m/s
3）风速≥ 3.7m/s

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

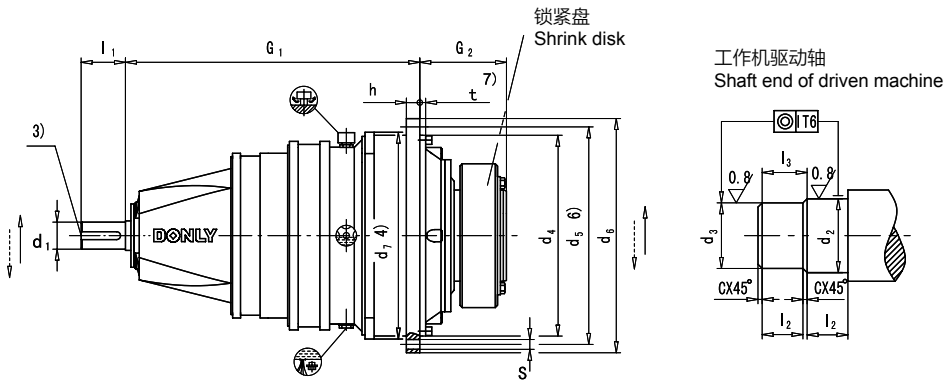
1) Wind velocity ≥ 0.5m/s
2) Wind velocity ≥ 1.4m/s
3) Wind velocity ≥ 3.7m/s

3.5 DLPIII NA 型

DLPIII NA 安装尺寸和重量

3.5 Type DLPIII NA

Dimensions and weights of DLPIII NA



规格 Size	额定输出扭矩 Nominal output torque T_{2N} (Nm)	输入轴 Shaft end input side		工作机驱动轴 Driven machine shaft					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 h6 5)	d_3 h6 5)	l_2	C	l_3									S	数量 No.		
		mm																	ca.kg	ca.l
3	22000	55	90	120	115	65	2.5	67.5	350	388	428	356	565	165	24	6±1.5	18	24	250	7
4	31000	55	90	130	125	70	2.5	72.5	394	436	472	400	585	174	28	8±1.5	18	28	300	9
5	42000	55	90	140	135	82.5	2.5	85	425	485	525	436	616	204	32	8±1.5	22	20	370	13
6	60000	55	90	160	155	90	2.5	92.5	495	555	605	510	630	224	34	9±1.5	26	20	500	17
7	83000	55	90	180	175	95	2.5	97.5	535	595	645	554	688	241	39	11±1.5	26	24	620	21
8	117000	55	90	210	205	105	2.5	107.5	610	665	720	629	711	278	42	9	26	32	880	33
9	160000	70	120	230	225	110	2.5	112.5	660	715	770	680	853	285	44	10	26	36	1100	42
10	202000	70	120	250	245	120	2.5	122.5	750	830	895	775	879	294	50	10	33	24	1580	60
11	244000	80	140	260	255	120	2.5	122.5	785	865	930	815	1013.5	303	50	10	33	32	2000	70
12	295000	80	140	280	275	135	2.5	137.5	840	915	980	870	1036.5	327.5	56	12	33	36	2100	85
13	354000	80	140	300	295	135	2.5	137.5	840	915	980	870	1036.5	327.5	56	12	33	36	2200	75
14	392000	80	140	310	305	152	2.5	154.5	935	1025	1115	960	1093	354	62	24	39	32	2785	115
15	450000	80	140	330	325	152	2.5	154.5	935	1025	1115	960	1093	354	62	24	39	32	2950	105
16	513000	95	160	350	345	164	2.5	166.5	1025	1120	1210	1056	1222	380	68	28	39	36	3625	140
17	592000	95	160	360	355	164	2.5	166.5	1025	1120	1210	1056	1222	380	68	28	39	36	4100	135
18	684000	95	160	380	375	180	2.5	182.5	1115	1220	1320	1150	1284.5	407	74	29	45	36	5000	195
19	763000	95	160	400	395	180	2.5	182.5	1115	1220	1320	1150	1284.5	407	74	29	45	36	5400	170
20	852000	110	180	430	425	191	2.5	193.5	1215	1345	1460	1248	1470	453	81	31	52	32	6400	250
21	950000	110	180	450	445	191	2.5	193.5	1215	1345	1460	1248	1470	453	81	31	52	32	6875	220
22	1060000	110	180	460	450	197.5	5	202.5	1320	1450	1565	1355	1517	483	87	34	52	36	8190	310
23	1200000	110	180	480	470	197.5	5	202.5	1320	1450	1565	1355	1517	483	87	34	52	36	8715	280
24	1330000	120	210	480	470	232	5	237	1400	1545	1665	1443	1585	538	94	36	62	32	10700	390
25	1500000	120	210	510	500	232	5	237	1400	1545	1665	1443	1585	538	94	36	62	32	11200	360
26	1680000	130	210	530	520	242	5	247	1495	1635	1755	1536	1710	573	100	36	62	36	12950	470
27	1920000	130	210	570	560	242	5	247	1495	1635	1755	1536	1710	573	100	36	62	36	13800	430
28	2240000	140	240	600	590	272	5	277	1685	1825	1945	1720	1950	656	112	40	62	40	18200	620
29	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 34 页，中心孔见 33 页
4）所需安装空间
5）> 160 时 g6
6）法兰连接孔见 32 页
7）注意连接螺栓和凸缘

1) Shaft diameter $d_1 \leq 100$,Tolerance m6
　Shaft diameter $d_1 > 100$,Tolerance n6
2) Weight without shrink disk and oil
3) For shaft end d_1 with parallel key acc.to GB1096,For detail see page 34 and center hole, see page 33
4) Space required
5) >160 g6
6) For hole patterns, see page 32
7) Observe bolted connection and boss

3.5 DLPIII NA 型

DLPIII N 传动比、转速及功率

3.5 Type DLPIII NA

Ratios,speeds,power ratings of DLPIII N

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	齿轮箱规格 / Gear unit sizes																											
			3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29
	min^{-1}		额定功率 P_N kW / Nominal power ratings P_N in kW																											
140	1500	10.7	24.8	34.9	47.3	68	94	132	180	228	275	332	399	442	507	578	667	711	860	-	-	-	-	-	-	-	-	-	-
	1000	7.1	16.5	23.3	31.5	45	62	88	120	152	183	222	266	294	338	385	445	514	573	640	714	796	901	999	1127	1262	1442	1682	1953
	750	5.4	12.4	17.5	23.7	34	47	66	90	114	137	166	199	221	253	289	333	385	430	480	535	597	676	749	845	946	1082	1262	1465
160	1500	9.4	21.7	30.6	41.4	59	82	115	158	199	241	291	349	386	444	506	584	674	752	-	-	-	-	-	-	-	-	-	-
	1000	6.3	14.5	20.4	27.6	39	55	77	105	133	160	194	233	258	296	337	389	450	501	560	624	697	789	874	986	1104	1262	1472	1709
	750	4.7	10.8	15.3	20.7	30	41	58	79	100	120	145	174	193	222	253	292	337	376	420	468	522	591	656	739	828	946	1104	1281
180	1500	8.3	19.3	27.2	36.8	53	73	103	140	177	214	258	310	343	394	450	519	599	669	-	-	-	-	-	-	-	-	-	-
	1000	5.6	12.9	18.1	24.5	35	48	68	93	118	143	172	207	229	263	300	346	400	446	498	555	619	701	777	876	981	1122	1309	1519
	750	4.2	9.6	13.6	18.4	26	36	51	70	88	107	129	155	172	197	225	259	300	334	373	416	464	526	583	657	736	841	981	1139
200	1500	7.5	17.3	24.4	33.1	47	65	92	126	159	192	233	279	309	355	405	467	539	602	-	-	-	-	-	-	-	-	-	-
	1000	5.0	11.6	16.3	22.1	32	44	62	84	106	128	155	186	206	237	270	311	360	401	448	499	557	631	699	789	883	1009	1178	1367
	750	3.8	8.7	12.2	16.6	24	33	46	63	80	96	116	140	155	177	202	233	270	301	336	375	418	473	524	591	662	757	883	1025
225	1500	6.7	15.4	21.7	29.4	42	58	82	112	142	171	207	248	275	315	360	415	479	535	597	666	743	841	932	1051	1178	1346	1570	1823
	1000	4.4	10.3	14.5	19.6	28	39	55	75	94	114	138	165	183	210	240	277	320	357	398	444	495	561	622	701	785	897	1047	1215
	750	3.3	7.7	10.9	14.7	21	29	41	56	71	86	103	124	137	158	180	207	240	267	299	333	372	421	466	526	589	673	785	911
250	1500	6.0	13.9	19.6	26.5	38	52	74	101	127	154	186	223	247	284	324	373	432	481	538	599	669	757	839	946	1060	1211	1413	1640
	1000	4.0	9.3	13.0	17.7	25	35	49	67	85	103	124	149	165	189	216	249	288	321	358	400	446	505	559	631	707	808	942	1094
	750	3.0	6.9	9.8	13.2	19	26	37	50	64	77	93	112	124	142	162	187	216	241	269	300	334	379	420	473	530	606	707	820
280	1500	5.4	12.4	17.5	23.7	34	47	66	90	114	137	166	199	221	253	289	333	385	430	480	535	597	676	749	845	946	1082	1262	1465
	1000	3.6	8.3	11.6	15.8	23	31	44	60	76	92	111	133	147	169	193	222	257	287	320	357	398	451	499	563	631	721	841	976
	750	2.7	6.2	8.7	11.8	17	23	33	45	57	69	83	100	110	127	144	167	193	215	240	268	299	338	375	422	473	541	631	732

– = 敬请垂询

- = On request

热容量 P_{G1}(kW) / Thermal capacities P_{G1} in kW *)																		
	齿轮箱规格 / Gear unit sizes																	
	3	4	5	6	7	8	9	10	11	12/13	14/15	16/17	18/19	20/21	22/23	24/25	26/27	28/29
	热容量 P_{G1}(kW) / Thermal capacities P_{G1}in kW																	
1) P_{G1} 室内小空间安装 P_{G1} for small confined spaces	14	18	22	29	34	46	52	64	70	83	99	121	141	169	200	228	256	305
2) P_{G1} 室内大空间安装 P_{G1} for large halls, workshops etc.	20	26	31	41	48	64	74	91	99	118	140	172	199	240	284	323	362	432
3) P_{G1} 室外安装 P_{G1} in the open	28	35	42	56	65	87	100	123	133	159	190	233	269	324	384	437	490	585

*）表中数值适用于卧式安装。对于其他安装位置请与我们联系。

1）风速≥ 0.5m/s
2）风速≥ 1.4m/s
3）风速≥ 3.7m/s

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

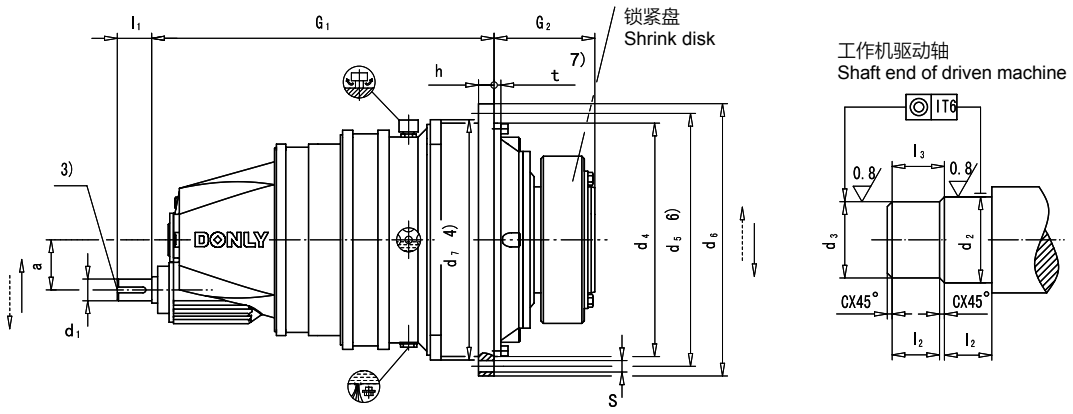
1) Wind velocity ≥ 0.5m/s
2) Wind velocity ≥ 1.4m/s
3) Wind velocity ≥ 3.7m/s

3.6 DLPIII SA 型

DLPIII SA 安装尺寸和重量

3.6 Type DLPIII SA

Dimensions and weights of DLPIII SA



规格 Size	额定输出扭矩 Nominal output torque T_{2N} (Nm)	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 h6 5)	d_3 h6 5)	l_2	C	l_3										S	数量 No.		
		mm																		ca.kg	ca.l
3	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
4	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
5	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
6	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
7	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
8	117000	38	60	210	205	105	2.5	107.5	90	610	665	720	629	711	278	42	9	26	32	930	33
9	160000	55	90	230	225	110	2.5	112.5	115	660	715	770	680	853	285	44	10	26	36	1115	42
10	202000	55	90	250	245	120	2.5	122.5	115	750	830	895	775	879	294	50	10	33	24	1625	60
11	244000	70	120	260	255	120	2.5	122.5	140	785	865	930	815	1013.5	303	50	10	33	32	2060	70
12	295000	70	120	280	275	135	2.5	137.5	140	840	915	980	870	1036.5	327.5	56	12	33	36	2160	85
13	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
14	392000	70	120	310	305	152	2.5	154.5	140	935	1025	1115	960	1093	354	62	24	39	32	2870	115
15	450000	70	120	330	325	152	2.5	154.5	140	935	1025	1115	960	1093	354	62	24	39	32	3040	105
16	513000	80	140	350	345	164	2.5	166.5	170	1025	1120	1210	1056	1222	380	68	28	39	36	3730	140
17	592000	80	140	360	355	164	2.5	166.5	170	1025	1120	1210	1056	1222	380	68	28	39	36	4220	135
18	684000	80	140	380	375	180	2.5	182.5	170	1115	1220	1320	1150	1284	407	74	29	45	36	5150	195
19	763000	80	140	400	395	180	2.5	182.5	170	1115	1220	1320	1150	1284	407	74	29	45	36	5560	170
20	852000	90	160	430	425	191	2.5	193.5	200	1215	1345	1460	1248	1470	453	81	31	52	32	6580	250
21	950000	90	160	450	445	191	2.5	193.5	200	1215	1345	1460	1248	1470	453	81	31	52	32	7080	220
22	1060000	90	160	460	450	197.5	5	202.5	200	1320	1450	1565	1355	1517	483	87	34	52	36	8400	310
23	1200000	90	160	480	470	197.5	5	202.5	200	1320	1450	1565	1355	1517	483	87	34	52	36	8970	280
24	1330000	100	180	480	470	232	5	237	230	1400	1545	1665	1443	1617	538	94	36	62	32	11000	390
25	1500000	100	180	510	500	232	5	237	230	1400	1545	1665	1443	1617	538	94	36	62	32	11500	360
26	1680000	120	210	530	520	242	5	247	265	1495	1635	1755	1536	1735	573	100	36	62	36	13300	470
27	1920000	120	210	570	560	242	5	247	265	1495	1635	1755	1536	1735	573	100	36	62	36	14200	430
28	2240000	130	210	600	590	272	5	277	300	1685	1825	1945	1720	1990	656	112	40	62	40	18600	520
29	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 34 页，中心孔见 33 页
4）所需安装空间
5）> 160 时 g6
6）法兰连接孔见 32 页
7）注意连接螺栓和凸缘

1) Shaft diameter $d_1 \leq 100$,Tolerance m6
　Shaft diameter $d_1 > 100$, Tolerance n6
2) Weight without shrink disk and oil
3) For shaft end d_1 with parallel key acc.to GB1096, For detail see page34 and center hole, see page 33
4) Space required
5) >160 g6
6) For hole patterns, see page 32
7) Observe bolted connection and boss

3.6 DLPIII SA 型

3.6 Type DLPIII SA

DLPIII S 速比、转速及功率

Ratios, speeds, power ratings DLPIII S

- 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	齿轮箱规格 / Gear unit sizes																											
			3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29
	min^{-1}		额定功率 P_NkW / Nominal power ratings P_N in kW																											
280	1500	5.4	13.5	17.6	24	34	47	67	91	115	139	168	202	223	256	292	337	389	434	485	541	603	683	757	854	956	1093	1275	1480
	1000	3.6	8.3	12	16	23	31	44	61	77	93	112	134	149	171	195	225	260	290	323	361	402	455	505	569	638	729	850	987
	750	2.7	6.3	8.8	12	17	24	33	46	57	69	84	101	112	128	146	168	195	217	242	270	302	342	379	427	478	546	638	740
315	1500	4.8	11	16	21	30	42	59	81	102	123	149	179	198	228	260	300	346	386	431	481	536	607	673	759	850	971	1133	1316
	1000	3.2	7.4	10.5	14	20	28	39	54	68	82	100	119	132	152	173	200	231	257	287	320	358	405	449	506	567	648	756	877
	750	2.4	5.6	7.8	11	15	21	30	40	51	62	75	90	99	114	130	150	173	193	216	240	268	304	336	379	425	486	567	658
355	1500	4.2	10	14	19	27	37	53	72	91	110	132	159	176	202	230	266	307	343	383	427	476	539	597	673	754	862	1006	1167
	1000	2.8	6.7	9.3	13	18	25	35	48	60	73	88	106	117	135	154	177	205	228	255	284	317	359	398	449	503	575	670	778
	750	2.1	5	7	9	13	19	26	36	45	55	66	79	88	101	115	133	154	171	191	213	238	269	299	337	377	431	503	584
400	1500	3.8	8.8	12.4	17	24	33	47	64	80	97	118	141	156	179	204	236	273	304	339	379	422	478	530	598	669	765	893	1036
	1000	2.5	5.8	8.2	11	16	22	31	43	54	65	78	94	104	120	136	157	182	203	226	252	282	319	353	398	446	510	595	694
	750	1.9	4.4	6.2	8	12	17	23	32	40	49	59	71	78	90	102	118	136	152	170	189	211	239	265	299	335	383	446	518
450	1500	3.3	7.8	11	15	21	29	41	57	72	86	104	125	139	159	182	210	242	270	302	336	375	425	471	531	595	680	793	921
	1000	2.2	5.2	7.3	10	14	20	28	38	48	58	70	84	93	106	121	140	162	180	201	224	250	283	314	354	397	453	529	614
	750	1.7	3.4	5.5	7.4	11	15	21	28	36	43	52	63	69	80	91	105	121	135	151	168	188	213	236	266	298	340	397	460
500	1500	3.0	7	10	13.4	19	26	37	51	64	78	94	113	125	143	164	189	218	243	272	303	338	383	424	478	536	612	714	829
	1000	2.0	4.7	6.6	8.9	13	18	25	34	43	52	63	75	83	96	109	126	145	162	181	202	225	255	283	319	357	408	476	553
	750	1.5	3.5	5	6.7	10	13	19	26	32	39	47	56	62	72	82	94	109	122	136	151	169	191	212	239	268	306	357	414
560	1500	2.7	6.3	8.8	12	17	24	33	46	57	69	84	101	112	128	146	168	195	217	242	270	302	342	379	427	478	546	638	740
	1000	1.8	4.2	6	8	11	16	22	30	38	46	56	67	74	85	97	112	130	145	162	180	201	228	252	285	319	364	425	493
	750	1.3	3.1	4.4	6	9	12	17	23	29	35	42	50	56	64	73	84	97	109	121	135	151	171	189	213	239	273	319	370
630	1500	2.4	5.6	7.8	10.6	15	21	30	40	51	62	75	90	99	114	130	150	173	193	216	240	268	304	336	379	425	486	567	658
	1000	1.6	3.7	5.2	7	10	14	20	27	34	41	50	60	66	76	87	100	115	129	144	160	179	202	224	253	283	324	378	439
	750	1.2	2.8	3.9	5.3	8	10	15	20	26	31	37	45	50	57	65	75	87	97	108	120	134	152	168	190	213	243	283	329
710	1500	2.1	4.5	7	9.4	13	19	26	36	45	55	66	79	88	101	115	133	154	171	191	213	238	269	299	337	377	431	503	584
	1000	1.4	3.3	4.5	6.3	9	12	18	24	30	37	44	53	59	67	77	89	102	114	128	142	159	180	199	224	251	287	335	389
	750	1.1	2.5	3.5	4.7	7	9	13	18	23	27	33	40	44	51	58	66	77	86	96	107	119	135	149	168	189	215	251	292
800	1500	1.9	4.4	6.2	8.4	12	17	23	32	40	49	59	71	78	90	102	118	136	152	170	189	211	239	265	299	335	383	446	518
	1000	1.3	2.9	4.1	5.6	8	11	16	21	27	32	39	47	52	60	68	79	91	110	113	126	141	159	177	199	223	255	298	345
	750	0.9	2.2	3.1	4.2	6	8	12	16	20	24	29	35	39	45	51	59	68	76	85	95	106	120	132	149	167	191	223	259
900	1500	1.7	3.4	5.5	7.4	11	15	21	28	36	43	52	63	69	80	91	105	121	135	151	168	188	213	236	266	298	340	397	460
	1000	1.1	2.6	3.7	5	7	10	14	19	24	29	35	42	46	53	61	70	81	90	101	112	125	142	157	177	198	227	264	307
	750	0.8	1.9	2.7	3.7	5	7	10	14	18	22	26	31	35	40	45	52	61	68	75	84	94	106	118	133	149	170	198	230

热容量 P_{G1}(kW) / Thermal capacities P_{G1} in kW *)																		
	齿轮箱规格 / Gear unit sizes																	
	3	4	5	6	7	8	9	10	11	12/13	14/15	16/17	18/19	20/21	22/23	24/25	26/27	28/29
	热容量 P_{G1}(kW) / Thermal capacities P_{G1} in kW																	
1) P_{G1} 室内小空间安装 P_{G1} for small confined spaces	12	15	18	24	28	40	43	53	57	69	82	100	116	139	165	188	211	252
2) P_{G1} 室内大空间安装 P_{G1} for large halls, workshops etc.	17	21	26	34	40	53	61	75	81	97	116	142	164	197	234	266	298	356
3) P_{G1} 室外安装 P_{G1} in the open	23	29	35	46	54	72	82	101	110	131	156	192	222	267	316	360	404	482

* ）表中数值适用于卧式安装。对于其他安装位置请与我们联系。

1）风速≥ 0.5m/s
2）风速≥ 1.4m/s
3）风速≥ 3.7m/s

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

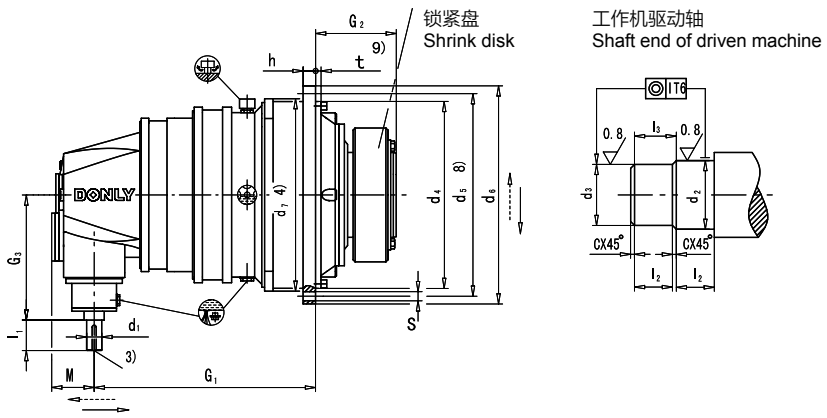
1) Wind velocity ≥ 0.5m/s
2) Wind velocity ≥ 1.4m/s
3) Wind velocity ≥ 3.7m/s

3.7 DLPIII KA 型

DLPIII KA 安装尺寸和重量

3.7 Type DLPIII KA

Dimensions and weights of DLPIII KA



规格 Size	额定输出扭矩 Nominal output torque T_{2N} (Nm)	输入轴 Shaft end input side				工作机驱动轴 Driven machine shaft					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		重量 Weight 2)	注油量 Oil quantity
		d_1 1) 5)	l_1 5)	d_1 1) 6)	l_1 6)	d_2 h6 7)	d_3 h6 7)	l_2	C	l_3											S	数量 No.		
		mm																					ca.kg	ca.l
3	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
4	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
5	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
6	60000	30	70	25	60	160	155	90	2.5	92.5	495	555	605	510	500	224	320	119	34	9±1.5	26	20	530	20
7	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
8	117000	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
9	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
10	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
11	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
12	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
13	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
14	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
15	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
16	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
17	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
18	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
19	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
20	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	250
21	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
22	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
23	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
24-29	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 34 页，中心孔见 33 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 32 页
9) 注意连接螺栓和凸缘

1) Shaft diameter $d_1 \leq 100$,Tolerance m6
Shaft diameter $d_1 > 100$,Tolerance n6
2) Weight without shrink disk and oil
3) For shaft end d_1, with parallel key acc.to GB1096, For detail see page 34 and center hole , see page 33
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 32
9) Observe bolted connection and boss

3.7 DLPIII KA 型

3.7 Type DLPIII KA

DLPIII K 传动比、转速及功率

Ratios, speeds, power ratings of DLPIII K

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	齿轮箱规格 / Gear unit sizes																					
			3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24-29
	min^{-1}		额定功率 P_NkW / Nominal power ratings P_N in kW																					
560	1500	2.68	6.3	9	12	17	24	33	46	58	70	84	101	112	128	146	169	195	218	243	271	303	342	敬请垂询 On request
	1000	1.79	4.2	6	8	11	16	22	30	38	46	56	67	75	86	98	113	130	145	162	181	202	228	
	750	1.34	3.1	4.4	6	9	12	17	23	29	35	42	51	56	64	73	84	98	109	122	136	151	171	
630	1500	2.38	5.6	7.8	11	15	24	30	41	51	62	75	90	99	114	130	150	174	194	216	241	269	304	
	1000	1.59	3.7	5.2	7	10	14	20	27	34	41	50	60	66	76	87	100	116	129	144	161	179	203	
	750	1.19	2.8	3.9	5	8	11	15	20	26	31	37	45	50	57	65	75	87	97	108	121	134	152	
710	1500	2.11	5.0	7	9	14	19	26	36	45	55	66	80	88	101	115	133	154	172	192	214	239	270	
	1000	1.41	3.3	4.5	6	9	12	18	24	30	37	44	53	59	68	77	89	103	115	128	143	159	180	
	750	1.06	2.5	3.5	5	7	9	13	18	23	27	33	40	44	51	58	67	77	86	96	107	119	135	
800	1500	1.88	4.4	6	8	12	17	23	32	40	49	59	71	78	90	102	118	137	152	170	190	212	240	
	1000	1.25	2.9	4	6	8	11	16	21	27	32	39	47	52	60	68	79	91	102	113	127	141	160	
	750	0.94	2.2	3	4	6	8	12	16	20	24	29	35	39	45	51	59	68	76	85	95	106	120	
900	1500	1.67	3.9	5.5	7.5	11	15	21	28	36	43	52	63	70	80	91	105	121	136	151	169	188	213	
	1000	1.11	2.6	3.7	5	7	10	14	19	24	29	35	42	46	53	61	70	81	90	101	112	125	142	
	750	0.83	2.0	2.7	3.7	5	7	10	14	18	22	26	31	35	40	46	53	61	68	76	84	94	107	
1000	1500	1.50	3.5	5	6.7	10	13	19	26	32	39	47	57	63	72	82	95	109	122	136	152	169	192	
	1000	1.00	2.3	3.3	4.5	6	9	12	17	22	26	31	38	42	48	55	63	73	81	91	101	113	128	
	750	0.75	1.8	2.5	3.4	5	7	9	13	16	19	24	28	31	36	41	47	55	61	68	76	85	96	
1120	1500	1.34	3.1	4.4	6	9	12	17	23	29	35	42	51	56	64	73	84	98	109	122	136	151	171	
	1000	0.89	2.1	2.9	4	6	8	11	15	19	23	28	34	37	43	49	56	65	73	81	90	101	114	
	750	0.67	1.6	2.2	3	4.5	6	8	11	14	17	21	25	28	32	37	42	49	54	61	68	76	86	
1250	1500	1.20	2.8	4.0	5.4	8	11	15	20	26	31	38	45	50	58	66	76	87	98	109	121	136	153	
	1000	0.80	1.9	2.6	3.6	5	7	10	14	17	21	25	30	33	38	44	50	58	65	73	81	90	102	
	750	0.60	1.4	2.0	2.7	4	5	7	10	13	16	19	23	25	29	33	38	44	49	54	61	68	77	
1400	1500	1.07	2.5	3.5	4.8	7	4.9	13	18	23	28	34	40	45	51	59	68	78	87	97	108	121	137	
	1000	0.71	1.7	2.4	3.2	5	6	9	12	15	19	22	27	30	34	39	45	52	58	65	72	81	91	
	750	0.54	1.3	1.8	2.4	3.5	4.5	7	9	12	14	17	20	22	26	29	34	39	44	49	54	61	68	
1600	1500	0.94	2.2	3.1	4.2	6	8	12	16	20	24	29	35	39	45	51	59	68	76	85	95	106	120	
	1000	0.63	1.5	2.1	2.8	4	6	8	11	13	16	20	24	26	30	34	39	46	51	57	63	71	80	
	750	0.47	1.1	1.5	2.1	3	4	6	8	10	12	15	18	20	22	26	30	34	38	43	47	53	60	
1800	1500	0.83	2.0	2.8	3.7	5	7	10	14	18	22	26	31	35	40	46	53	61	68	76	84	94	107	
	1000	0.56	1.3	1.8	2.5	4	5	7	9	12	14	17	21	23	27	30	35	40	45	50	56	63	71	
	750	0.42	1.0	1.4	1.9	2.7	3.7	5.2	7.1	9	11	13	16	17	20	23	26	30	34	38	42	47	53	
2000	1500	0.75	1.8	2.5	3.4	4.8	6.6	9.4	12.8	16	19	24	28	31	36	41	47	55	61	68	76	85	96	
	1000	0.50	1.2	1.7	2.2	3.2	4.4	6.2	8.5	11	13	16	19	21	24	27	32	36	41	45	51	56	64	
	750	0.38	0.9	1.2	1.7	2.4	3.3	4.7	6.4	8	10	12	14	16	18	20	24	27	30	34	38	42	48	
2240	1500	0.67	1.6	2.2	3.0	4.3	5.9	8.3	11.4	14	17	21	25	28	32	37	42	49	54	61	68	76	86	
	1000	0.45	1.0	1.5	2.0	2.9	3.9	5.6	7.6	10	12	14	17	19	21	24	28	33	36	41	45	50	57	
	750	0.33	0.8	1.1	1.5	2.1	3.0	4.2	5.7	7.2	8.7	10.5	12.6	14	16	18	21	24	27	30	34	38	43	
2500	1500	0.60	1.4	2.0	2.7	3.8	5.3	7.5	10.2	12.9	16	19	23	25	29	33	38	44	49	54	61	68	77	
	1000	0.40	0.9	1.3	1.8	2.6	3.5	5.0	6.8	8.6	10.4	12.6	15.1	17	19	22	25	29	33	36	20	45	51	
	750	0.30	0.7	1.0	1.3	1.9	2.7	3.7	5.1	6.5	7.8	9.4	11.3	13	14	16	19	22	24	27	30	34	38	
2800	1500	0.54	1.3	1.8	2.4	3.4	4.7	6.7	9.1	12	14	17	20	22	26	29	34	39	44	49	54	61	68	
	1000	0.36	0.8	1.2	1.6	2.3	3.2	4.5	6.1	7.7	9.3	11.2	13.5	15	17	20	23	26	29	32	36	40	46	
	750	0.27	0.6	0.9	1.2	1.7	2.4	3.3	4.6	5.8	7.0	8.4	10.1	11.2	13	15	17	20	22	24	27	30	34	
3150	1500	0.48	1.1	1.6	2.1	3.0	4.2	5.9	8.1	10.2	12	15	18	20	23	26	30	35	39	43	48	54	61	
	1000	0.32	0.7	1.0	1.4	2.0	2.8	4.0	5.4	6.8	8.3	10	12	13.3	15	17	20	23	26	29	32	36	41	
	750	0.24	0.6	0.8	1.1	1.5	2.1	3.0	4.1	5.1	6.2	7.5	9	9.9	11	13	15	17	19	22	24	27	30	
3550	1500	0.42	1.0	1.4	1.9	2.7	3.7	5.3	7.2	9.1	11	13	16	18	20	23	27	31	34	38	43	48	54	
	1000	0.28	0.7	0.9	1.3	1.8	2.5	3.5	4.8	6.1	7.3	8.9	10.6	11.8	14	15	18	21	23	26	29	32	36	
	750	0.21	0.5	0.7	0.9	1.4	1.9	2.6	3.6	4.5	5.5	6.6	8	8.8	10	12	13	15	17	19	21	24	27	
4000	1500	0.38	0.9	1.2	1.7	2.4	3.3	4.7	6.4	8.1	9.7	12	14	16	18	20	24	27	30	34	38	42	48	
	1000	0.25	0.6	0.8	1.1	1.6	4.2	3.1	4.6	5.4	6.5	7.9	9.4	10.4	12	14	16	18	20	23	25	28	32	
	750	0.19	0.4	0.6	0.8	1.2	1.7	2.3	3.2	4.0	4.9	5.9	7.1	7.8	9	10	12	14	15	17	19	21	24	

热容量 P_{G1}(kW) / Thermal capacities P_{G1} in kW *)																
	齿轮箱规格 / Gear unit sizes															
	3	4	5	6	7	8	9	10	11	12/13	14/15	16/17	18/19	20/21	22/23	24-29
	热容量 P_{G1}(kW) / Thermal capacities P_{G1} in kW															
1) P_{G1} 室内小空间安装 P_{G1} for small confined spaces	10	12	15	20	23	31	35	43	47	56	67	82	95	109	125	敬请垂询 On request
2) P_{G1} 室内大空间安装 P_{G1} for large halls, workshops etc.	14	17	21	28	33	44	50	61	66	79	95	116	106	125	144	
3) P_{G1} 室外安装 P_{G1} in the open	19	24	28	38	44	59	67	83	90	107	128	157	166	195	225	

*）表中数值适用于卧式安装。对于其他安装位置请与我们联系。

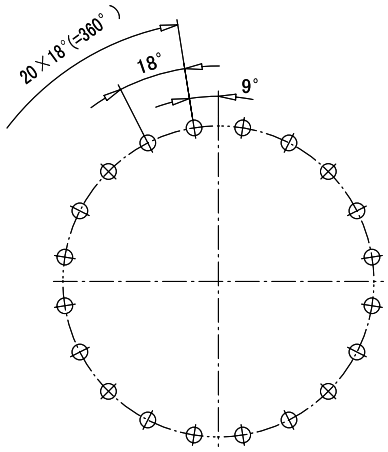
1）风速≥ 0.5m/s
2）风速≥ 1.4m/s
3）风速≥ 3.7m/s

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

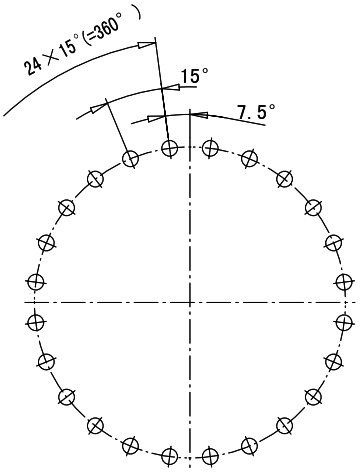
1) Wind velocity ≥ 0.5m/s
2) Wind velocity ≥ 1.4m/s
3) Wind velocity ≥ 3.7m/s

4.1 输出端法兰联接孔型式 4.1 Hole patterns on output flanges

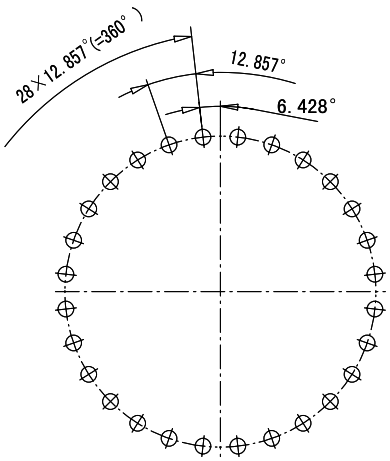
从输入轴侧看 / Viewing on input shaft



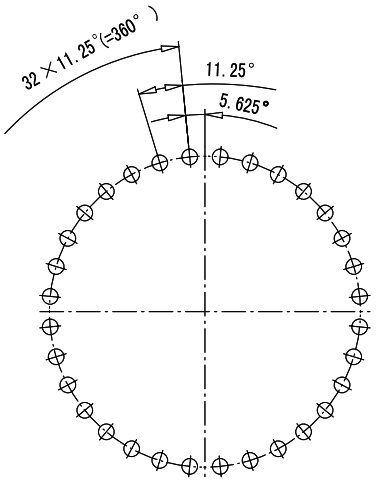
规格 /Size 5，6



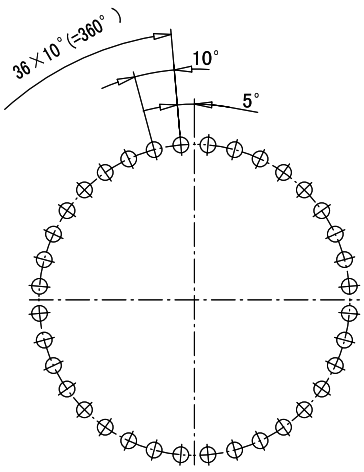
规格 /Size 3，7，10



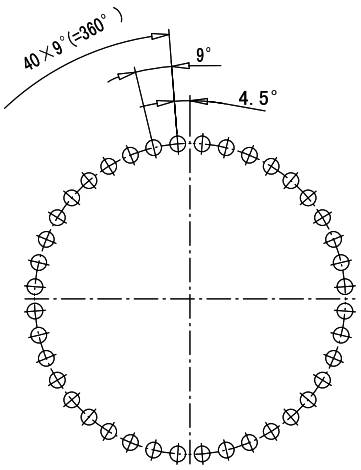
规格 /Size 4



规格 /Size 8，11，14，15，20，21，24，25



规格 /Size 9，12，13，16，17，18，19，22，23，26，27



规格 / Size28，29

4.2 C 型轴伸中心孔和轴密封

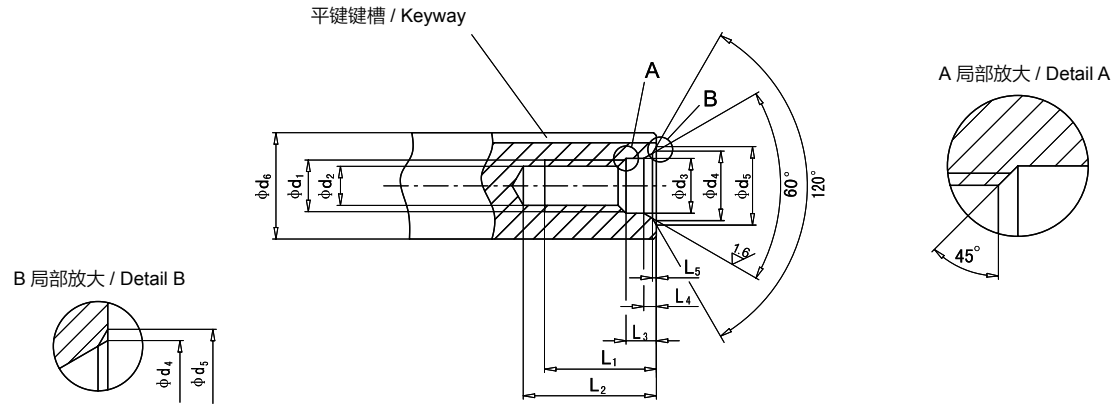
C 型中心孔

4.2 Center holes form c in shaft ends and shaft seals

Form C

带螺纹孔和护锥沉孔

Tapped hole,with straight running face and counterbore



Ød6 推荐直径范围 Recommended diameter		C 型 / From C											
大于 Above	至 To	C 型中心孔 C centering	d1 7H	d2 1)	d3	d4	d5	L1 +2	L2 min	L2 max	L3 +1	L4 ≈	L5 ≈
16	21	CM 6	M6	4.9	6.4	9.6	10.5	16	20	22	5	2.8	0.4
21	24	CM 8	M8	6.6	8.4	12.2	13.2	20	25	28	6	3.3	0.4
24	30	CM 10	M10	8.3	10.5	14.9	16.3	24	30	34	7.5	3.8	0.6
30	38	CM 12	M12	10.1	13	18.1	19.8	28	37	42	9.5	4.4	0.7
38	50	CM 16	M16	13.8	17	23	25.3	36	45	50	12	5.2	1
50	85	CM 20	M20	17.2	21	28.4	31.3	42	53	59	15	6.4	1.3
85	130	CM 24	M24	20.7	25	34.2	38	50	63	68	18	8	1.6
130 2)	225 2)	CM 30	M30 2)	26.2	31	44	48	60	77	83	17	11	1.9
225 2)	320 2)	CM 36	M36 2)	31.6	37	55	60	74	93	99	22	15	2.3
320 2)	500 2)	CM 42	M42 2)	37.1	43	65	71	84	105	111	26	19	2.7
500 2)	710 2)	CM 48	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

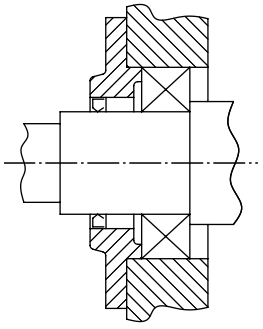
2) 不是按照标准 GB/T145-2001 确定的尺寸

1) Drill diameters for tapping-size holes acc.to GB196 PT.1

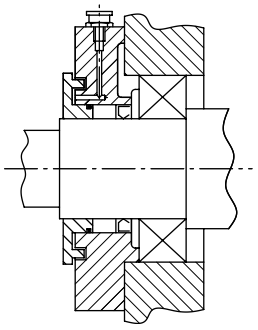
2) Dimension not acc.to GB/T145-2001

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



当输入侧需采用迷宫密封和法兰安装时，请与我们联系
In case of refillable labyrinth an bell housing on input side,
please refer to 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			
轴公差按照东力标准 Shaft tolerance acc. to Donly standard		25	k6	H7
	25	100	m6	
	100		n6	

对于重载工作条件，如带载反向回转，建议采用比较紧密的配合，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。

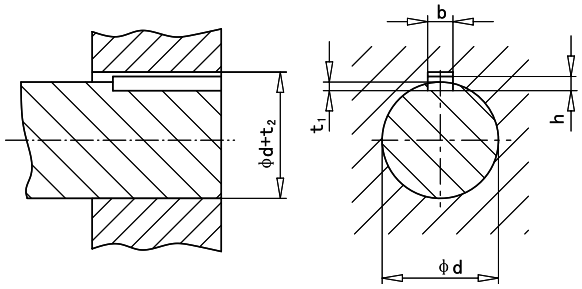
For heavy-duty operating conditions, e.g. reversing under load, it is recommended that a tighter fit and for the hub keyway width the ISO P9 tolerance is selected.
In this case, the customer should give the relevant information.

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

平键和平键槽按照 GB1096 和 GB1095
Parallel key and keyway acc. to GB1096 and GB1095



直径 Diameter d		宽度 Width	高度 Height	轴键槽深度 Depth of keyway in shaft	轮毂键槽深度 Depth of keyway in hup
大于 above	至 to	b 1)	h	t_1	$d+t_2$ 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

1) 轮毂平键槽宽度 b 的公差带应按照 ISO JS9 确定，重载条件下应按 ISO P9 确定
2) 不是按照标准 GB1096 和 GB 1095 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-duty operating conditions.
2) Dimension not acc.to GB1096 and GB1095

4.5 轴承寿命

在相应的参考输出转速下，轴承使用寿命为 10,000 小时（见下表）。

在具体应用情况中，标准轴承使用寿命按下式确定：

4.5 Bearing life

The bearing life for the respective reference output speed is 10,000 hours (see table).

For a specified application, the standard bearing life can be obtained from the following formula.

$$L_{h10}=\left[\frac{T_{2N}}{T_2}\right]^{3.33}\times\frac{10000\times n_{2LN}}{n_2}\ (std./h)$$

额定扭矩及参考转速与齿轮箱规格有关，可以下表查询。

如对轴承使用寿命有更高要求，请与我公司联系。

Dependent on the gear unit sizes, nominal torque and reference speed can be derived from the following table

If a longer bearing life is required, please refer to us

参考输出转速 / Reference output speed			
行星齿轮箱规格 Planetary gear unit sizes	齿轮箱公称输出扭矩 Gear units nominal toque T_{2N} Nm	标准轴承 Standard bearing arrangement n_{2LN} min^{-1}	加强型轴承 Reinforced bearing arrangement n_{2LV} min^{-1}
3	22000	-	敬请垂询 On request
4	31000	-	
5	42000	-	
6	60000	2.48	
7	83000	2.27	
8	117000	2.51	
9	160000	1.99	
10	202000	1.44	
11	244000	2.23	
12	295000	1.76	
13	354000	2.83	
14	392000	3.89	
15	450000	6.74	
16	513000	2.61	
17	592000	4.22	
18	684000	2.10	
19	763000	4.32	
20	852000	3.11	
21	950000	6.46	
22	1060000	3.34	
23	1200000	6.64	
24	1330000	3.19	
25	1500000	6.87	
26	1680000	3.38	
27	1920000	6.05	
28	2240000	2.19	
29	2600000	3.05	

*）关于 DLPIII.. 和 DLPII K.，请与我公司联系。

轴承使用寿命的确定，请参见 14 页，计算示例 2

要求轴承使用寿命 Lh10 > 60,000 小时，齿轮箱 DLPIII14

*）For types DLPIII .. and DLPII K., please refer to us.

For the determination of bearing life, see calculation example 2 on page 14

Required bearing life L_{h10}>60,000 hours, gear unit DLPIII14

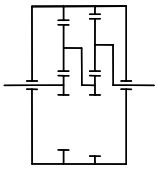
$$L_{h10}=\left[\frac{T_{2N}}{T_2}\right]^{3.33}\times\frac{10000\times n_{2LN}}{n_2}\qquad L_{h10}=\left[\frac{392000\ Nm}{240000\ Nm}\right]^{3.33}\times\frac{10000\times 3.89\,min^{-1}}{2.38\,min^{-1}}=83871\ Std./h$$

采用标准轴承即可满足所需的轴承使用寿命！

The standard bearing arrangement meets the bearing life requirement!

5.1 DLPII N、DLPII S 实际传动比 5.1 Actual ratios DLPII N and DLPII S

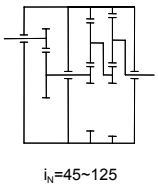
DLPII N



i_N=25~40

DLPII N 规格 Size	实际传动比 /Actual ratios i				
	25	28	31.5	35.5	40
3	24.812	27.158	30.144	34.072	39.474
4	24.812	27.158	30.144	34.072	39.474
5	24.812	27.158	30.144	34.072	39.474
6	24.812	27.158	30.144	34.072	39.474
7	24.844	27.300	30.457	34.667	40.560
8	24.844	27.300	30.457	34.667	40.560
9	25.481	28.000	31.238	35.556	41.600
10	25.481	28.000	31.238	35.556	41.600
11	24.844	27.300	30.457	34.667	40.560
12/13	24.889	27.333	30.476	34.667	40.533
14/15	25.481	28.000	31.238	35.556	41.600
16/17	25.143	27.520	30.545	34.526	40.000
18/19	25.143	27.520	30.545	34.526	40.000
20/21	24.844	27.300	30.457	34.667	40.560
22/23	24.889	27.333	30.476	34.667	40.533
24/25	25.146	27.632	30.827	35.088	41.053
26/27	25.481	28.000	31.238	35.556	41.600
28/29	25.143	27.520	30.545	34.526	40.000

DLPII S



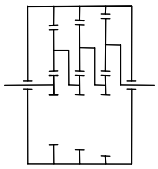
i_N=45~125

DLPII S 规格 Size	实际传动比 /Actual ratios i									
	45	50	56	63	71	80	90	100	112	125
3	44.661	48.884	54.258	61.329	71.052	77.981	85.353	94.737	107.08	124.06
4	44.661	48.884	54.258	61.329	71.052	77.981	85.353	94.737	107.08	124.06
5	45.806	50.137	55.649	62.902	72.874	80.344	87.940	97.608	110.32	127.82
6	45.806	50.137	55.649	62.902	72.874	80.344	87.940	97.608	110.32	127.82
7	46.008	50.555	56.402	64.197	75.111	81.632	89.700	100.07	113.90	133.26
8	46.008	50.555	56.402	64.197	75.111	81.632	89.700	100.07	113.90	133.26
9	46.569	51.172	57.090	64.980	76.027	83.394	91.636	102.23	116.36	136.14
10	46.569	51.172	57.090	64.980	76.027	83.394	91.636	102.23	116.36	136.14
11	46.008	50.555	56.402	64.197	75.111	76.899	84.500	94.272	107.30	125.54
12/13	46.090	50.617	56.437	64.197	75.061	77.037	84.603	94.331	107.30	125.46
14/15	47.675	52.387	58.445	66.523	77.832	82.511	90.667	101.15	115.13	134.70
16/17	46.095	50.453	56.000	63.298	73.333	81.714	89.440	99.273	112.21	130.00
18/19	46.818	51.244	56.878	64.290	74.483	80.894	88.543	98.277	111.08	128.69
20/21	45.682	50.197	56.002	63.742	74.578	79.266	87.100	97.173	110.60	129.40
22/23	44.961	49.376	55.054	62.624	73.222	78.222	85.905	95.782	108.95	127.39
24/25	46.940	51.579	57.544	65.497	76.632	80.905	88.902	99.183	112.89	132.08
26/27	47.565	52.267	58.311	66.370	77.653	81.984	90.087	100.50	114.39	133.84
28/29	46.095	50.453	56.000	63.298	73.333	81.714	89.440	99.273	112.21	130.00

5.2 DLPIII N、DLPIII S 实际传动比

5.2 Actual ratios DLPIII N and DLPIII S

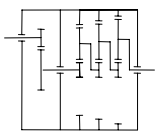
DLPIII N



i_N=140~280

DLPIII N 规格 Size	实际传动比 /Actual ratios i						
	140	160	180	200	225	250	280
3	145.15	158.87	176.34	199.32	215.32	238.99	270.14
4	145.15	158.87	176.34	199.32	215.32	238.99	270.14
5	145.15	158.87	176.34	199.32	215.32	238.99	270.14
6	145.15	158.87	176.34	199.32	215.32	238.99	270.14
7	145.51	159.90	178.39	203.04	212.94	237.56	270.40
8	145.51	159.90	178.39	203.04	212.94	237.56	270.40
9	149.24	164.00	182.96	208.25	218. 40	243.65	277.33
10	149.24	164.00	182.96	208.25	218. 40	243.65	277.33
11	145.67	160.07	178.59	203.27	209.86	234.13	266.50
12/13	145.60	159.90	178.28	202.80	216.71	241.63	274.85
14/15	149.41	164.18	183.16	208.48	215.25	240.14	273.33
16/17	147.42	161.36	179.10	202.45	211.56	234.81	265.42
18/19	147.42	161.36	179.10	202.45	211.56	234.81	265.42
20/21	145.51	159.90	178.39	203.04	212.94	237.56	270.40
22/23	145.60	159.90	178.28	202.80	216.71	241.63	274.85
24/25	144.01	158.25	176.55	200.95	207.23	231.20	263.15
26/27	145.93	160.36	178.90	203.63	210.00	234.28	266.66
28/29	147.26	161.18	178.90	202.22	214.65	238.25	269.30

DLPIII S

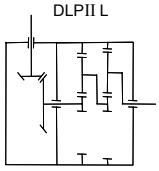


i_N=280~900

DLPIII S 规格 Size	实际传动比 /Actual ratios i										
	280	315	355	400	450	500	560	630	710	800	900
3	295.30	323.22	358.76	405.51	456.18	499.31	554.21	618.27	676.73	751.12	849.01
4	295.30	323.22	358.76	405.51	456.18	499.31	554.21	618.27	676.73	751.12	849.01
5	295.30	323.22	358.76	405.51	456.18	499.31	554.21	618.27	676.73	751.12	849.01
6	295.30	323.22	358.76	405.51	456.18	499.31	554.21	618.27	676.73	751.12	849.01
7	296.05	325.31	362.93	413.09	457.34	502.54	560.66	609.04	669.24	746.63	849.82
8	296.05	325.31	362.93	413.09	457.34	502.54	560.66	609.04	669.24	746.63	849.82
9	293.52	322.53	359.83	409.56	483.28	531.04	592.46	643.58	707.20	788.98	898.03
10	293.52	322.53	359.83	409.56	483.28	531.04	592.46	643.58	707.20	788.98	898.03
11	281.95	309.82	345.65	393.43	478.65	525.96	586.79	627.54	689.56	769.31	875.64
12/13	281.80	309.48	345.06	392.51	478.40	525.38	585.79	648.38	712.06	793.93	903.10
14/15	289.18	317.77	354.52	403.51	490.93	539.45	601.84	643.63	707.25	789.04	898.09
16/17	285.64	312.64	347.02	392.24	482.49	528.11	586.17	632.57	692.37	768.49	868.65
18/19	285.64	312.64	347.02	392.24	482.49	528.11	586.17	632.57	692.37	768.49	868.65
20/21	286.01	314.28	350.63	399.09	450.41	494.92	552.16	599.81	659.10	735.32	836.95
22/23	286.17	314.28	350.42	398.60	450.66	494.92	551.83	610.79	670.78	747.91	850.74
24/25	297.97	327.42	365.28	415.77	466.34	512.44	571.70	610.69	671.05	748.65	852.13
26/27	281.81	309.66	345.48	393.22	474.30	521.18	581.45	621.11	682.50	761.42	866.66
28/29	289.27	316.62	351.429	397.22	473.81	518.60	575.62	630.97	690.63	766.55	866.46

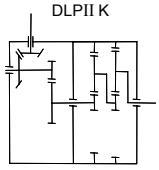
5.3 DLPII L、DLPII K 及 DLPIII K 实际传动比

5.3 Actual ratios DLPII L, DLPII K and DLPIII K



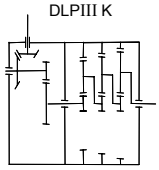
i_N=31.5~100

DLPII 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
3	31.492	34.470	38.259	44.400	48.598	53.941	62.984	68.939	76.518	86.491	100.20
4	31.492	34.470	38.259	44.400	48.598	53.941	62.984	68.939	76.518	86.491	100.20
5	31.492	34.470	38.259	44.400	48.598	53.941	63.581	69.592	77.243	87.310	101.15
6	31.492	34.470	38.259	44.400	48.598	53.941	63.581	69.592	77.243	87.310	101.15
7	31.533	34.650	38.657	44.458	48.853	54.502	63.664	69.956	78.046	88.833	103.93
8	31.533	34.650	38.657	44.458	48.853	54.502	63.664	69.956	78.046	88.833	103.93
9	32.342	35.538	39.648	45.598	50.105	55.900	65.296	71.750	80.084	91.111	106.60
10	32.342	35.538	39.648	45.598	50.105	55.900	65.296	71.750	80.084	91.111	106.60
11	31.286	34.378	38.353	44.957	49.400	55.113	63.664	69.956	78.046	88.833	103.93
12/13	31.342	34.420	38.377	45.037	49.460	55.147	63.778	70.042	78.095	88.833	103.86
14/15	31.273	34.364	38.338	46.109	50.667	56.526	65.296	71.750	80.048	91.111	106.60
16/17	30.857	33.775	37.488	45.497	49.798	55.273	64.429	70.520	78.273	88.474	102.50
18/19	31.661	34.655	38.465	45.497	49.798	55.273	64.429	70.520	78.273	88.474	102.50
20/21	31.286	34.378	38.353	44.957	49.400	55.113	63.664	69.956	78.046	88.833	103.93
22/23	31.342	34.420	38.377	45.037	49.460	55.147	63.778	70.042	78.095	88.833	103.86



i_N=280~500

DLPII 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
3	109.88	120.27	133. 49	150.69	174.81	197.95	216.66	240.48	271.82	314.92	352.68	391. 45	442.47	512.62
4	109.88	120.27	133. 49	150.69	174.81	197.95	216.66	240.48	271.82	314.92	352.68	391. 45	442.47	512.62
5	113.21	123.91	137.53	155.46	180.10	203.94	223.23	247.77	280.06	324.46	337.84	374.99	423.68	491.05
6	113.21	123.91	137.53	155.46	180.10	203.94	223.23	247.77	280.06	324.46	337.84	374.99	423.86	491.05
7	115.02	126.39	141.01	160.50	187.78	207.21	227.70	254.03	289.14	338.29	349.18	389.56	443.40	518.78
8	115.02	126.39	141.01	160.50	187.78	207.21	227.70	254.03	289.14	338.29	349.18	389.56	443.40	518.78
9	116.02	127.49	142.23	161.89	189.42	213.69	234.81	261.97	298.18	348.87	353.23	394.08	448.54	524.80
10	116.02	127.49	142.23	161.89	189.42	213.69	234.81	261.97	298.18	348.87	353.23	394.08	448.54	524.80
11	106.99	117.56	131.16	149.28	174.66	197.05	216.53	241.57	274.96	321.70	349.46	389.87	443.76	519.20
12/13	107.18	117.70	131.24	149.28	174.55	197. 40	216.79	241.72	274.96	321.49	349.89	390.12	443.76	518.86
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	126.00	139.85	158.08	183.14	207.29	226.89	251.83	284.65	329.78	356.31	395. 48	447.02	517.89
20/21	112.80	123.95	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



i_N=560~4000

DLPIII K 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
3	573.24	627.43	696.41	787.17	885.53	969.26	1075.8	1200.1	1313.6	1458.0	1648.0	1909.3	2290.0	2588.4	2796.2	3103.6	3508.1	4064.3
4	573.24	627.43	696.41	787.17	885.53	969.26	1075.8	1200.1	1313.6	1458.0	1648.0	1909.3	2290.0	2588.4	2796.2	3103.6	3508.1	4064.3
5	573.24	627.43	696.41	787.17	885.53	969.26	1075.8	1200.1	1313.6	1458.0	1648.0	1909.3	2290.0	2588.4	2796.2	3103.6	3508.1	4064.3
6	573.24	627.43	696.41	787.17	885.53	969.26	1075.8	1200.1	1313.6	1458.0	1648.0	1909.3	2290.0	2588.4	2796.2	3103.6	3508.1	4064.3
7	574.69	631.49	704.52	801.89	887.77	975.52	1088.3	1182.2	1299.1	1449.3	1649.6	1930.1	2316.6	2636.8	2765.3	3085.1	3511.5	4108.4
8	574.69	631.49	704.52	801.89	887.77	975.52	1088.3	1182.2	1299.1	1449.3	1649.6	1930.1	2316.6	2636.8	2765.3	3085.1	3511.5	4108.4
9	569.77	626.09	698.50	795.04	938.13	1030.8	1150.0	1249.3	1372.8	1531.5	1743.2	2039.5	2276.1	2590.7	2716.9	3031.1	3450.0	4036.5
10	569.77	626.09	698.50	795.04	938.13	1030.8	1150.0	1249.3	1372.8	1531.5	1743.2	2039.5	2276.1	2590.7	2716.9	3031.1	3450.0	4036.5
11	547.33	601.42	670.98	763.71	929.16	1020.9	1139.0	1218.1	1338.5	1493.3	1699.7	1988.7	2284.2	2599.9	2684.3	2994.7	3408.6	3988.1
12/13	547.03	600.76	669.84	761.94	928.65	1019.8	1137.1	1258.6	1382.2	1541.1	1753.0	2049.7	2280.3	2593.9	2771.9	3090.6	3515.5	4110.5
14/15	561.36	616.85	688.18	783.30	952.98	1047.1	1168.2	1249.4	1372.8	1531.6	1743.3	2039.7	2342.8	2666.6	2753.1	3071.5	3496.0	4090.4
16/17	587.15	642.66	713.32	806.28	991.79	1085.5	1204.9	1300.2	1423.2	1579.6	1785.5	2068.6	2259.5	2553.9	2668.9	2962.3	3348.3	3879.2
18/19	587.15	642.66	713.32	806.28	991.79	1085.5	1204.9	1300.2	1423.2	1579.6	1785.5	2068.6	2259.5	2553.9	2668.9	2962.3	3348.3	3879.2
20/21	587.92	646.03	720.74	820.35	925.84	1017.3	1135.0	1232.9	1354.8	1511.4	1720.4	2012.8	2283.5	2599.1	2725.8	3041.0	3461.3	4049.7
22/23	588.25	646.03	720.31	819.35	926.37	1017.3	1134.3	1255.5	1378.8	1537.3	1748.7	2044.7	2282.2	2596.0	2774.1	3093.1	3518.4	4113.8

低速轴联接方式

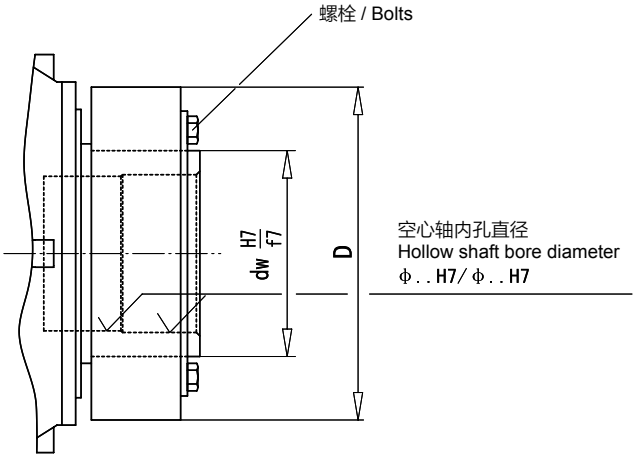
Connecting Structure Of Output Shaft

6.1 带锁紧盘的空心输出轴 DLP..A

出轴形式：AS

6.1 Hollow shaft for shrink disk

Variant:AS



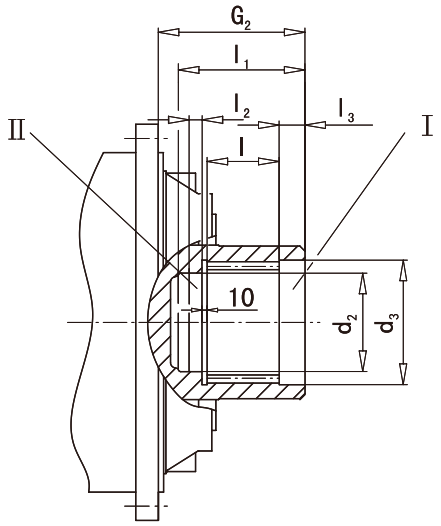
行星齿轮箱规格 Planetary gear unit sizes	齿轮箱公称输出扭矩 Gear units nominal torque T_{2N}(Nm)	锁紧盘 Shrink disk			重量 Weight ca.kg
		规格 Size dw	D mm	螺栓 Bolts	
3	22000	155	263	M14	15
4	31000	165	290	M16	22
5	42000	185	320	M16	37
6	60000	220	370	M20	54
7	83000	240	405	M20	67
8	117000	280	460	M20	102
9	160000	300	485	M24	118
10	202000	320	520	M24	131
11	244000	340	570	M24	186
12	295000	360	590	M24	204
13	354000	380	640	M27	250
14	392000	390	650	M27	250
15	450000	420	670	M27	300
16	513000	440	720	M27	400
17	592000	460	760	M27	430
18	684000	480	800	M30	500
19	763000	500	835	M30	570
20	852000	530	865	M30	740
21	950000	560	920	M30	770
22	1060000	560	920	M30	770
23	1200000	590	960	M30	900
24	1330000	590	960	M30	900
25	1500000	620	970	M30	1080
26	1680000	660	1040	M33	1073
27	1920000	700	1100	M33	1196
28	2240000	750	1150	M33	1346
29	2600000	800	1230	M33	1646

6.2 带渐开线花键空心输出轴，按照标准 DIN 5480 DLP..A

6.2 Hollow shaft with involute splines acc.to DIN 5480

出轴形式：AH

Variant: AH



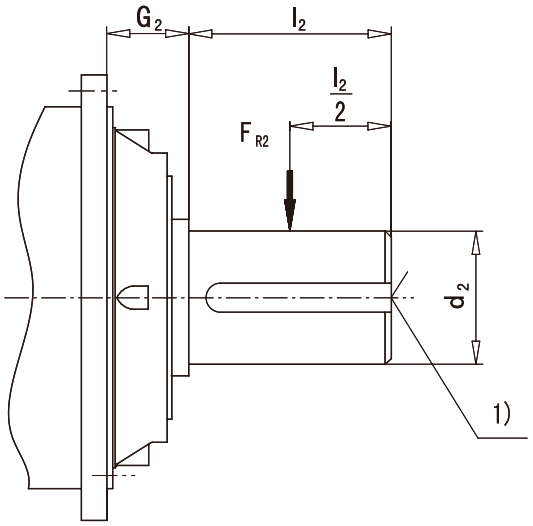
行星齿轮箱规格 Planetary gear Unit sizes	齿轮箱公称输出扭矩 Gear units nominal torque T_{2N} (Nm)	渐开线花键 按照标准 Din 5480 Involute splines acc.to DIN 5480	有效齿长 Facewidth l	内孔 I Center hole I		内孔 II Center hole II		G_2	内孔总长 Overall dimension l_1
				d_3 H7	l_3	d_2 H7	l_2		
			mm						
3	22000	120x5x30x22x9H	70	122	40	107	20	165	150
4	31000	130x5x30x24x9H	80	132	40	117	20	174	160
5	42000	140x5x30x26x9H	90	142	45	125	25	204	180
6	60000	160x5x30x30x9H	100	162	45	145	25	223	190
7	83000	180x5x30x34x9H	110	182	45	165	25	237	200
8	117000	210x5x30x40x9H	125	212	45	195	25	264	215
9	160000	240x8x30x28x9H	140	242	50	220	25	285	235
10	202000	250x8x30x30x9H	150	252	50	230	30	290	250
11	244000	260x8x30x31x9H	160	262	50	240	30	303	260
12	295000	280x8x30x34x9H	170	282	50	260	30	327.5	270
13	354000	300x8x30x36x9H	180	302	50	280	30	327.5	280
14	392000	310x8x30x37x9H	190	312	60	290	40	354	310
15	450000	330x8x30x40x9H	200	332	60	310	40	354	320
16	513000	340x8x30x41x9H	200	342	60	320	40	348	320
17	592000	360x8x30x44x9H	220	362	60	340	40	368	340
18	684000	380x8x30x46x9H	230	382	60	360	40	372	350
19	763000	400x8x30x48x9H	240	402	60	380	40	382	360
20	852000	440x8x30x54x9H	250	442	60	420	40	423	370
21	950000	450x8x30x55x9H	260	452	65	430	40	428	385
22	1060000	460x8x30x56x9H	270	462	65	440	45	433	400
23	1200000	480x8x30x58x9H	285	482	65	460	45	448	415

6.3 带平键的实心输出轴 DLP..B

出轴形式：BJ

6.3 Solid shaft with parallel key

Variant: BJ



行星齿轮箱规格 Planetary gear unit sizes	齿轮箱公称输出扭矩 Gear units nominal torque T_{2N} (Nm)	d_2 n6	l_2	G_2	F_{R2}
		mm			kN
3	22000	120	210	95	敬请垂询 On request
4	31000	130	210	95	
5	42000	150	240	109	
6	60000	160	270	106	
7	83000	180	310	118	
8	117000	210	350	139	
9	160000	230	350	142	
10	202000	250	400	139	
11	244000	260	400	134	
12	295000	280	450	148.5	
13	354000	300	500	148.5	
14	392000	310	500	158	
15	450000	330	500	158	
16	513000	350	550	175	
17	592000	360	590	175	
18	684000	380	590	182	
19	763000	400	650	182	
20	852000	430	690	196.5	
21	950000	450	750	196.5	
22	1060000	460	750	209	
23	1200000	480	790	209	
24	1330000	500	790	232	
25	1500000	510	850	232	
26	1680000	530	900	251	
27	1920000	570	950	251	
28	2240000	600	1000	276	
29	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

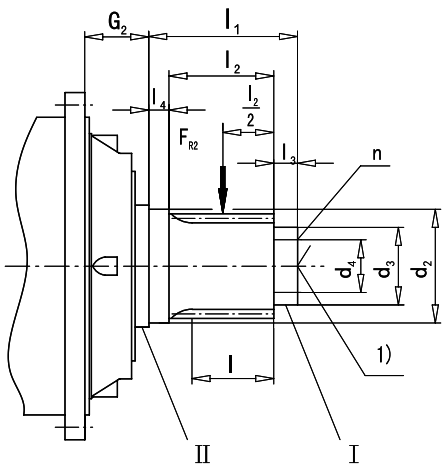
1) For shaft end with parallel key acc.to GB1096,For detail see page 34, center hole see page 33

6.4 带渐开线花键实心输出轴，按照标准 DIN 5480 DLP..B

6.4 Solid shaft with involute splines acc.to DIN 5480

出轴形式：BH

Variant: BH



行星齿轮箱规格 Planetary gear unit sizes	齿轮箱公称输出扭矩 Gear units nominal torque T_{2N} (Nm)	渐开线花键 按照标准 Din 5480 Involute splines acc.to DIN 5480	l	l_2	外径 I Diameter I		外径 II Diameter II		l_1	$Ød_4$	n	G_2	F_{R2}
					$Ød_3$ k6	l_3	$Ød_2$ k6	l_4					
			mm									mm	kN
3	22000	130x5x30x24x8m	70	80	110	20	132	20	120	80	3xM16x24	95	敬请垂询 On request
4	31000	140x5x30x26x8m	80	90	120	20	142	20	130	90	3xM16x24	95	
5	42000	160x5x30x30x8m	90	100	140	25	162	25	150	110	3xM16x24	109	
6	60000	180x5x30x34x8m	100	110	90	25	182	25	160	130	3xM16x24	106	
7	83000	200x5x30x38x8m	110	120	100	30	202	25	175	140	3xM16x24	118	
8	117000	220x5x30x42x8m	125	135	120	30	222	30	195	160	3xM16x24	139	
9	160000	250x8x30x30x8m	140	155	140	35	252	30	220	185	3xM20x30	142	
10	202000	260x8x30x31x8m	150	165	155	40	262	35	240	200	3xM20x30	139	
11	244000	280x8x30x34x8m	160	175	170	40	282	35	250	215	3xM20x30	134	
12	295000	300x8x30x36x8m	170	185	180	40	302	35	260	225	3xM20x30	148.5	
13	354000	310x8x30x37x8m	180	195	190	40	312	35	270	235	6xM20x30	148.5	
14	392000	320x8x30x38x8m	190	205	200	40	322	35	280	250	6xM20x30	158	
15	450000	340x8x30x41x8m	200	215	210	40	342	35	290	265	6xM20x30	158	
16	513000	360x8x30x44x8m	200	215	230	40	362	35	290	275	6xM20x30	175	
17	592000	380x8x30x46x8m	220	235	245	40	382	35	310	290	6xM20x30	175	
18	684000	400x8x30x48x8m	230	245	260	40	402	35	320	310	6xM24x36	182	
19	763000	420x8x30x51x8m	240	255	280	40	422	35	330	330	6xM24x36	182	
20	852000	440x8x30x54x8m	250	265	310	40	442	35	340	370	6xM24x36	196.5	
21	950000	450x8x30x55x8m	260	275	330	45	452	40	360	380	6xM24x36	196.5	
22	1060000	460x8x30x56x8m	270	285	340	45	462	40	370	390	6xM24x36	209	
23	1200000	480x8x30x58x8m	285	300	360	45	482	40	385	410	6xM24x36	209	

1）轴头中心孔见 33 页

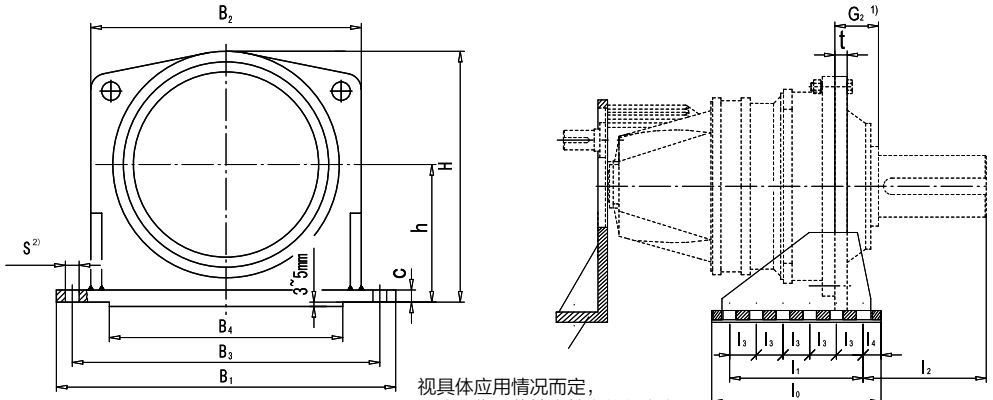
1) For shaft end with centre hole see page 33

附件及说明

Add-On Piece And Notes

7.1 齿轮箱底座

7.1 Gear units housing base



视具体应用情况而定，
取决于作用载输出轴上的径向力。

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

行星齿轮箱规格 Planetary gear unit sizes	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		重量 weight
														S	数量 No	
	mm															Ca.kg
3	590	465	520	380	25	260	475	340	260	240	130	40	25	26	2x3	60
4	640	515	570	430	25	280	520	370	290	240	145	40	28	26	2x3	85
5	690	565	620	480	30	315	585	410	330	274	110	40	32	26	2x4	125
6	770	645	700	560	32	360	665	460	380	292	95	40	35	26	2x5	162
7	830	695	750	610	35	390	715	500	420	334	105	40	40	26	2x5	215
8	920	775	840	680	40	430	790	570	480	380	120	45	40	33	2x5	285
9	980	835	900	700	45	470	860	590	500	374	125	45	45	33	2x5	365
10	1130	960	1040	810	50	540	990	680	580	405	145	50	50	39	2x5	540
11	1180	1000	1080	830	50	560	1030	730	620	385	155	55	50	39	2x5	600
12	1270	1065	1160	880	55	590	1085	770	640	450	160	65	55	45	2x5	750
13	1270	1065	1160	880	55	590	1085	770	640	500	160	65	55	45	2x5	750
14	1450	1215	1320	1020	60	660	1220	850	700	513	175	75	60	52	2x5	980
15	1450	1215	1320	1020	60	660	1220	850	700	513	175	75	60	52	2x5	980
16	1560	1315	1420	1100	65	730	1340	920	750	567	150	85	70	52	2x6	1325
17	1560	1315	1420	1100	65	730	1340	920	750	607	150	85	70	52	2x6	1325
18	1710	1425	1550	1240	70	795	1460	1010	860	574	215	75	75	62	2x5	1730
19	1710	1425	1550	1240	70	795	1460	1010	860	634	215	75	75	62	2x5	1730
20	1860	1575	1700	1370	75	870	1605	1110	950	664	190	80	80	62	2x6	2240
21	1860	1575	1700	1370	75	870	1605	1110	950	724	190	80	80	62	2x6	2240
22	1990	1680	1820	1460	75	925	1710	1190	1000	731	250	95	85	70	2x5	2660
23	1990	1680	1820	1460	75	925	1710	1190	1000	771	250	95	85	70	2x5	2660
24	2150	1810	1950	1570	85	1000	1840	1310	1100	773	220	105	95	70	2x6	3280
25	2150	1810	1950	1570	85	1000	1840	1310	1100	833	220	105	95	70	2x6	3280
26	2240	1910	2050	1630	90	1050	1935	1360	1150	883	230	105	100	78	2x6	3950
27	2240	1910	2050	1630	90	1050	1935	1360	1150	933	230	105	100	78	2x6	3950
28	2460	2095	2255	1850	105	1180	2160	1410	1180	968	236	115	110	84	2x6	4500
29	2460	2095	2255	1850	105	1180	2160	1410	1180	968	236	115	110	84	2x6	4500

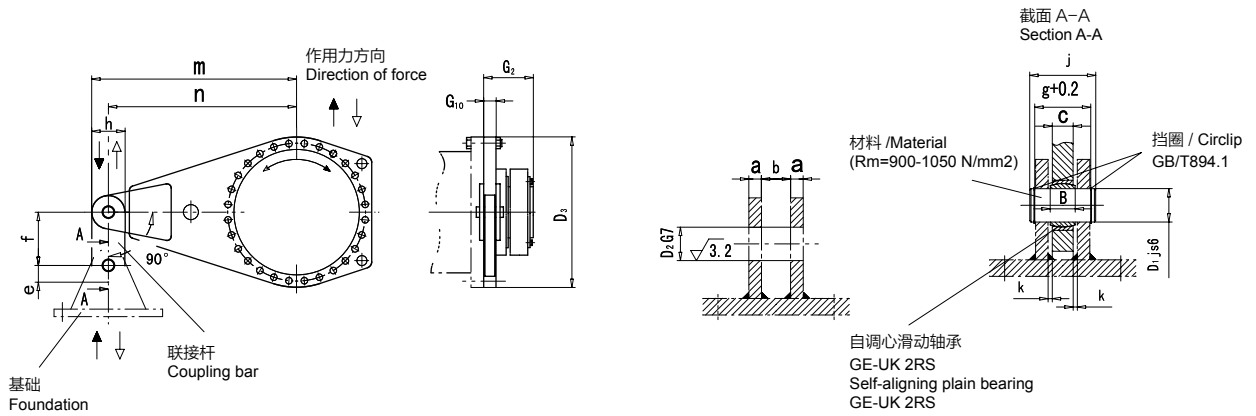
1）输出轴尺寸 见 39~42 页

2）见 47 页

1) For output shaft dimensions see page 39-42

2) see page 47

7.2 带连接杆的单侧扭力臂 7.2 Torque reaction arm on one side for coupling bar



1）连接杆尽可能竖直并承载拉伸应力

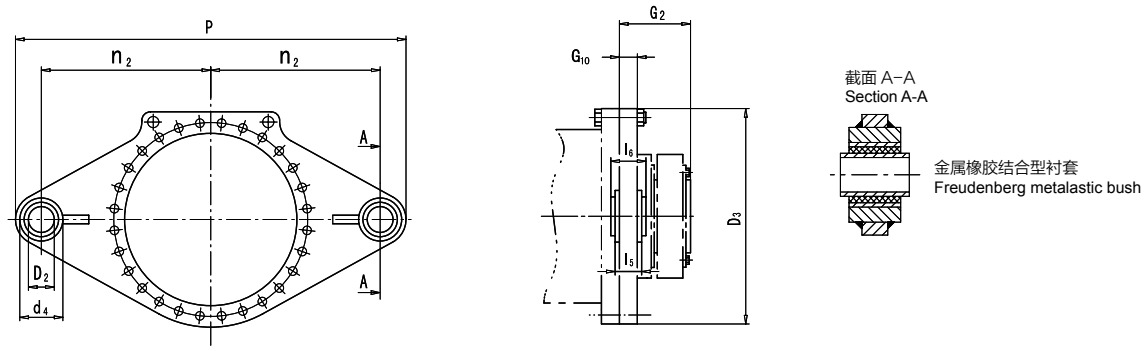
2）Coupling bar set as vertical aspossibl e and under tension

行星齿轮箱规格 Planetary gear unit sizes	齿轮箱公称输出扭矩 Gear units 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-ance k	m	n	自调心滑动轴承 Self-aligning Plain bearing GE UK-2RS	重量 Weight
		mm																		ca.kg
3	22000	30	440	165	25	15	25	22	18	50	140	59.5	100	70	3.5	605	555	30	38
4	31000	35	485	174	30	15	30	25	20	52.5	140	64.5	105	75	5	667.5	615	35	51
5	42000	40	540	204	30	18	30	28	22	65	160	70.5	130	85	4	750	685	40	82
6	60000	40	620	224	30	18	30	28	22	65	160	70.5	130	85	4	850	785	40	85
7	83000	45	665	241	35	20	35	32	25	72.5	180	79.5	145	95	5	912.5	840	45	113
8	117000	50	740	278	40	20	40	35	30	72.5	200	85	145	100	5	1012.5	940	50	145
9	160000	60	790	285	50	25	50	44	35	77.5	240	105	155	120	7.5	1077.5	1000	60	206
10	202000	60	915	294	50	25	50	44	35	85	240	105	170	120	7.5	1250	1165	60	274
11	244000	70	955	303	55	30	55	49	40	105	280	120	210	135	7.5	1315	1210	70	365
12	295000	80	1005	327.5	60	30	60	55	45	105	320	125	210	145	7.5	1405	1300	80	423
13	354000	80	1005	327.5	60	30	60	55	45	105	320	125	210	145	7.5	1405	1300	80	423
14	392000	80	1140	354	60	30	60	55	45	113	320	125	225	145	7.5	1562.5	1450	80	530
15	450000	80	1140	354	60	30	60	55	45	113	320	125	225	145	7.5	1562.5	1450	80	530
16	513000	90	1235	380	65	30	65	60	50	125	360	130	250	150	7.5	1700	1575	90	665
17	592000	90	1235	380	65	30	65	60	50	125	360	130	250	150	7.5	1700	1575	90	665
18	684000	100	1350	407	75	35	75	70	55	138	400	150	275	170	10	1857.5	1720	100	940
19	763000	100	1350	407	75	35	75	70	55	138	400	150	275	170	10	1857.5	1720	100	940
20	852000	110	1490	453	75	35	75	70	55	150	440	150	300	175	10	2050	1900	110	1120
21	950000	110	1490	453	75	35	75	70	55	150	440	150	300	175	10	2050	1900	110	1120
22	1060000	110	1600	483	75	35	75	70	55	158	440	150	315	175	10	2192.5	2035	110	1260
23	1200000	110	1600	483	75	35	75	70	55	158	440	150	315	175	10	2192.5	2035	110	1260
24-29	敬请垂询 / 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 = 44 - 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

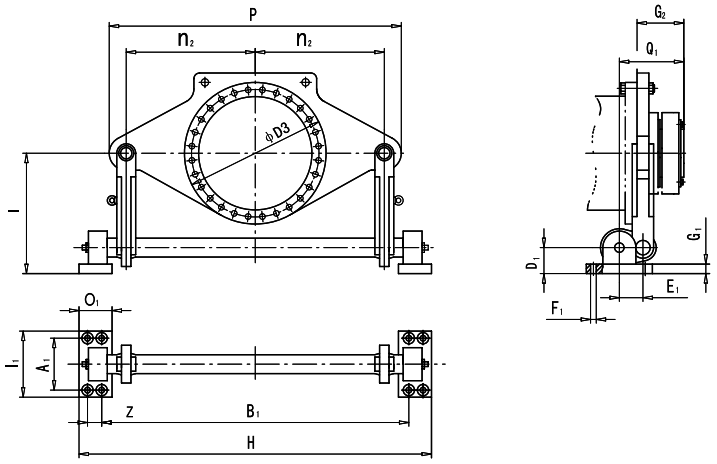


行星齿轮箱规格 Planetary gear unit sizes	齿轮箱公称输出扭矩 Gear units nominal torque T_{2N}(Nm)	D_2 *) ØH9	D_3	d_4	G_2	G_{10}	l_5	l_6	n_2	P	重量 Weight
		mm									ca.kg
3	22000	50	440	115	165	30	100	110	500	1140	58
4	31000	50	485	115	174	30	100	110	550	1240	72
5	42000	100	540	180	204	30	110	120	575	1355	95
6	60000	100	620	180	224	35	110	120	625	1455	120
7	83000	110	665	210	241	35	170	180	600	1435	145
8	117000	110	740	210	278	40	170	180	650	1535	170
9	160000	124	790	240	285	40	220	230	700	1670	230
10	202000	124	915	240	294	40	220	230	750	1770	300
11	244000	124	955	240	303	50	220	230	900	2070	400

*) 销轴 : Øh8

*) Pin: Øh8

7.4 扭力轴支撑 7.4 Torsion shaft support



行星齿轮箱规格 Planetary gear unit sizes	齿轮箱公称输出扭矩 Gear units nominal torque T_{2N}(Nm)	A_1	B_1	D_3	D_1	E_1	F_1 2)	数量 No.	G_1	G_2	H	I 1)	I_1	n_2	O_1	P	Q_1	Z	重量 Weight
		mm							mm										ca.kg
3	22000	250	1414	610	120	105	33	8	48.5	165	1619	560	330	550	140	1230	247.5	65	325
4	31000	250	1414	610	120	105	33	8	48.5	174	1619	560	330	550	140	1230	256.5	65	325
5	42000	250	1414	610	120	105	33	8	48.5	204	1619	560	330	550	140	1230	286.5	65	325
6	60000	250	1414	610	120	105	33	8	48.5	224	1619	560	330	550	140	1230	306.5	65	325
7	83000	280	1604	775	155	145	39	8	68.5	241	1837	620	380	650	158	1450	358.5	75	620
8	117000	280	1604	775	155	145	39	8	68.5	278	1837	620	380	650	158	1450	395.5	75	620
9	160000	280	1604	775	155	145	39	8	68.5	285	1837	620	380	650	158	1450	402.5	75	620
10	202000	315	1777	955	170	165	39	8	73.5	294	2041	700	400	750	180	1680	431.5	84	900
11	244000	315	1777	955	170	165	39	8	73.5	303	2041	700	400	750	180	1680	440.5	84	900
12	295000	350	2000	985	195	175	45	8	83.5	328	2300	860	450	850	200	1900	470.5	100	1200
13	354000	350	2000	985	195	175	45	8	83.5	328	2300	860	450	850	200	1900	470.5	100	1200
14	392000	400	2254	1120	210	190	45	8	88.5	354	2591	900	530	950	225	2110	506.5	113	1500
15	450000	400	2254	1120	210	190	45	8	88.5	354	2591	900	530	950	225	2110	506.5	113	1500
16	513000	450	2496	1215	235	220	45	8	98.5	380	2871	1060	590	1063	250	2385	562.5	125	2150
17	592000	450	2496	1215	235	220	45	8	98.5	380	2871	1060	590	1063	250	2385	562.5	125	2150
18	684000	500	2816	1350	275	245	52	8	118.5	407	3236	1200	650	1150	280	2600	614.5	140	2650
19	763000	500	2816	1350	275	245	52	8	118.5	407	3236	1200	650	1150	280	2600	614.5	140	2650
20	852000	530	2887	1490	300	255	52	8	128.5	453	3327	1250	700	1250	290	2820	670.5	150	3250
21	950000	530	2887	1490	300	255	52	8	128.5	453	3327	1250	700	1250	290	2820	670.5	150	3250
22	1060000	560	3200	1565	300	280	62	8	128.5	483	3673	1350	750	1360	315	3080	718	158	3900
23	1200000	560	3200	1565	300	280	62	8	128.5	483	3673	1350	750	1360	315	3080	718	158	3900
24	1330000	590	3408	1695	340	300	70	8	148.5	538	3906	1400	790	1450	330	3260	788	168	5050
25	1500000	590	3408	1695	340	300	70	8	148.5	538	3906	1400	790	1450	330	3260	788	168	5050
26	1680000	620	3588	1785	375	320	70	8	158.5	573	4116	1500	840	1550	350	3520	840.5	178	6800
27	1920000	620	3588	1785	375	320	70	8	158.5	573	4116	1500	840	1550	350	3520	840.5	178	6800
28-29	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。

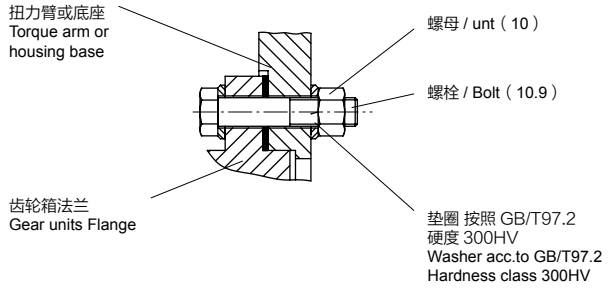
1) Standard dimension, overall height modifiable up to 2000 mm

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

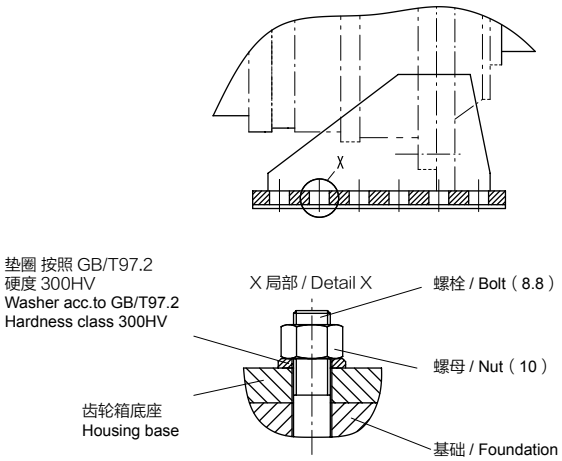
With the standard design, type DSD, mainte-nance-free self-aligning plain bearings with inte-grated seal are used. Where there are special requirements or special ambient, conditions, the self-aligning plain bearings can be protected with an additional seal. In this case, the DDA design is required

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



结合面除去油脂并用 LOCTITE640 粘接
Parting lines degreased and bonded with LOCTITE 640



齿轮箱规格 Gear unit sizes	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)	预紧力矩 [2] Tightening torque Nm	螺栓性能等级 (8.8) Thread strength class (8.8)	预紧力矩 [2] Tightening torque Nm
3	M16	210	M24	500
4	M16	210	M24	500
5	M20	409	M24	500
6	M24	705	M24	500
7	M24	705	M24	500
8	M24	705	M30	1004
9	M24	705	M30	1004
10	M30	1416	M36	1749
11	M30	1416	M36	1749
12/13	M30	1416	M42	2806
14/15	M36	2466	M48	4236
16/17	M36	2466	M48	4236
18/19	M42	3957	M56	6791
20/21	M48	5973	M56	6791
22/23	M48	5973	M64	10147
24/25	M56	9575	M64	10147
26/27	M56	9575	M64	10147
28/29	M56	9575	M72x6	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。

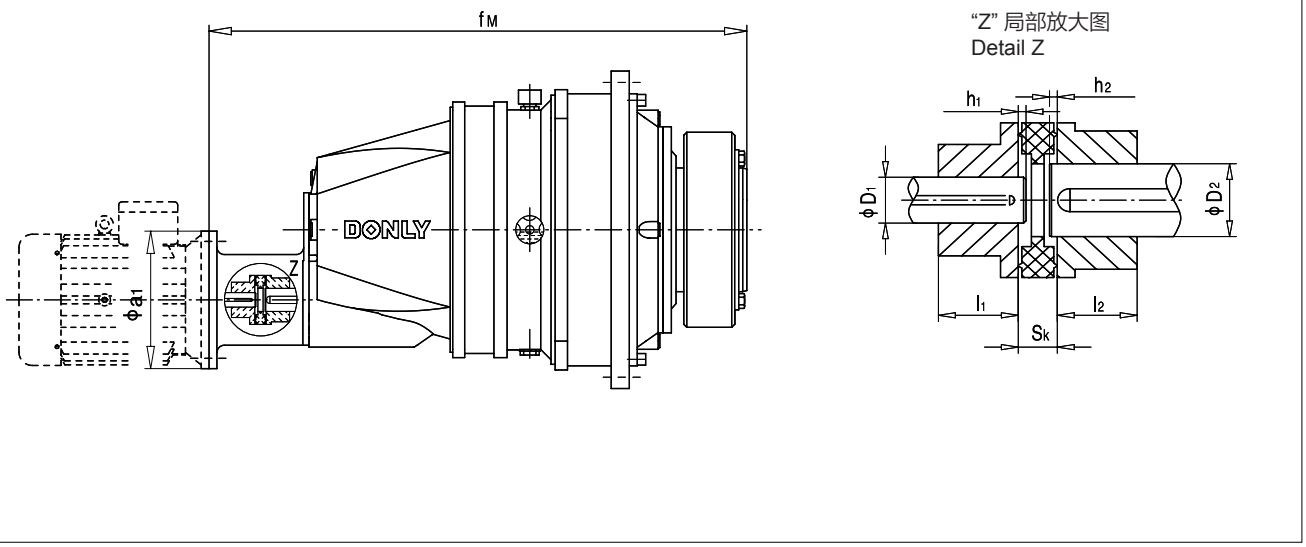
1) The bolts must be checked by the user to ensure that they are suitable for the foundation design.
2) Tightening torques relate to friction values 0.125 in the thread and 70% utilization of yield Point.

7.6 带电机安装法兰和联轴器

DLPII S 型

7.6 With motor bell housing and coupling

Type DLPII S



尺寸 / Dimensions											
规 格 Size	电动机 Motor 1)	联轴器 Coupling ML	S_k	l_1	D_1	l_2	D_2	h_1	h_2	f_M	a_1
			mm								
3	160	ML4	27	100	42	72	38	-17	-12	860	350
	180	ML5	33	100	48	72	38	-17	-12	860	350
4	160	ML4	27	100	42	72	38	-17	-12	889	350
	180	ML5	33	100	48	72	38	-17	-12	889	350
5	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
6	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
7	225	ML8	48	125	60	120	70	-1	0	1264	450
	250	ML8	48	125	65	120	70	-8	0	1271	550
8	225	ML8	48	125	60	120	70	-1	0	1324	450
	250	ML8	48	125	65	120	70	-8	0	1331	550
9	250	ML9	50	125	65	140	80	-2	0	1468	550
	280	ML9	50	125	75	140	80	-2	0	1468	550
10	250	ML9	50	125	65	140	80	-2	0	1503	550
	280	ML9	50	125	75	140	80	-2	0	1503	550
11	315	敬请垂询 /On request									
12+13	315										

1) 如需配置单侧扭力臂，请与我们联系。

2) $ØD_1$ 为电机轴头。

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

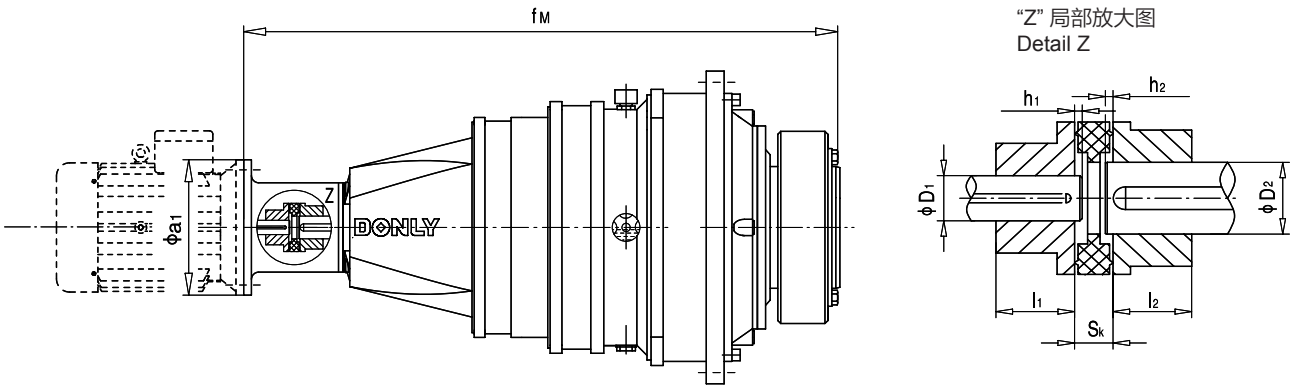
2) Motor shaft $ØD_1$.

7.6 带电机安装法兰和联轴器

DLPIII N 型

7.6 With motor bell housing and coupling

Type DLPIII N



尺寸 / Dimensions											
规 格 Size	电动机 Motor 1)	联轴器 Coupling ML	S_k	l_1	D_1	l_2	D_2	h_1	h_2	f_M	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	120	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）$ØD_1$ 为电机轴头。

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

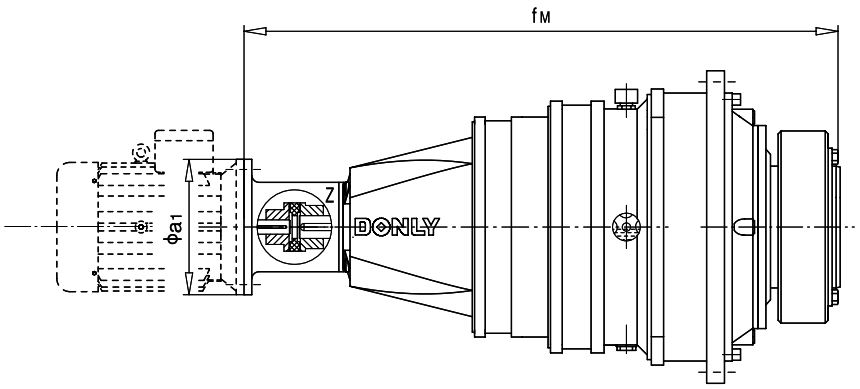
2) Motor shaft $ØD_1$.

7.6 带电机安装法兰和联轴器

DLPIII S 型

7.6 With motor bell housing and coupling

Type DLPIII S



尺寸 / Dimensions											
规 格 Size	电动机 Motor 1)	联轴器 Coupling ML	S_k	l_1	D_1	l_2	D_2	h_1	h_2	f_M	a_1
			mm								
3	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
4	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
5	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
6	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
7	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
8	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
9	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
10	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
11	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
12+13	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）ØD$_1$ 为电机轴头。

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

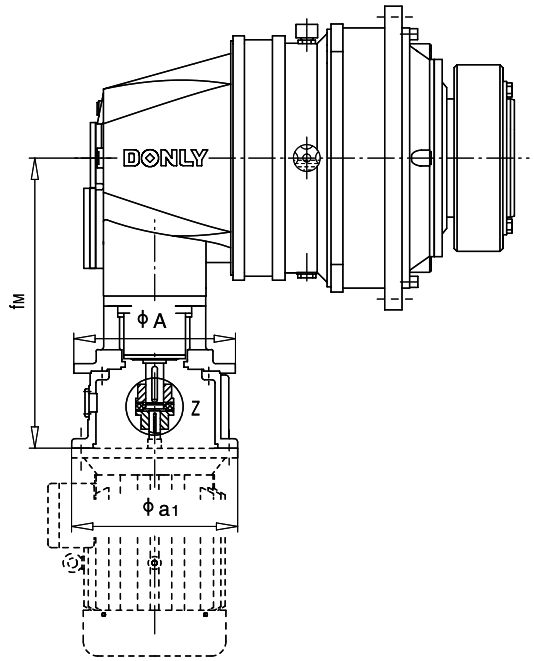
2) Motor shaft ØD$_1$.

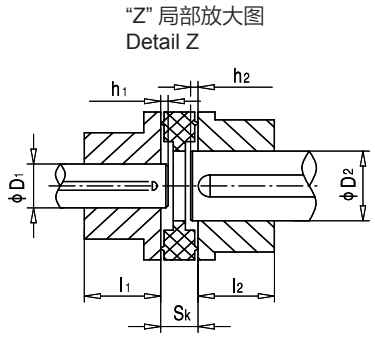
7.6 带电机安装法兰和联轴器

DLPII K 型

7.6 With motor bell housing and coupling

Type DLPII K





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	l_2	D_1	l_1	h_2	h_1	S_k	f_M	A		D_2	l_2	D_1	l_1	h_2	h_1	S_k	f_M	A	
			mm										mm									
3, 4	132											ML3	25	60	38	70	0	10	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
5, 6	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
7, 8	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
9, 10	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
11, 12, 13	225											ML7	50	110	60	125	0	-14	39	918	510	450
	250	ML8	70	120	65	125	15	-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）$ØD_1$ 为电机轴头。

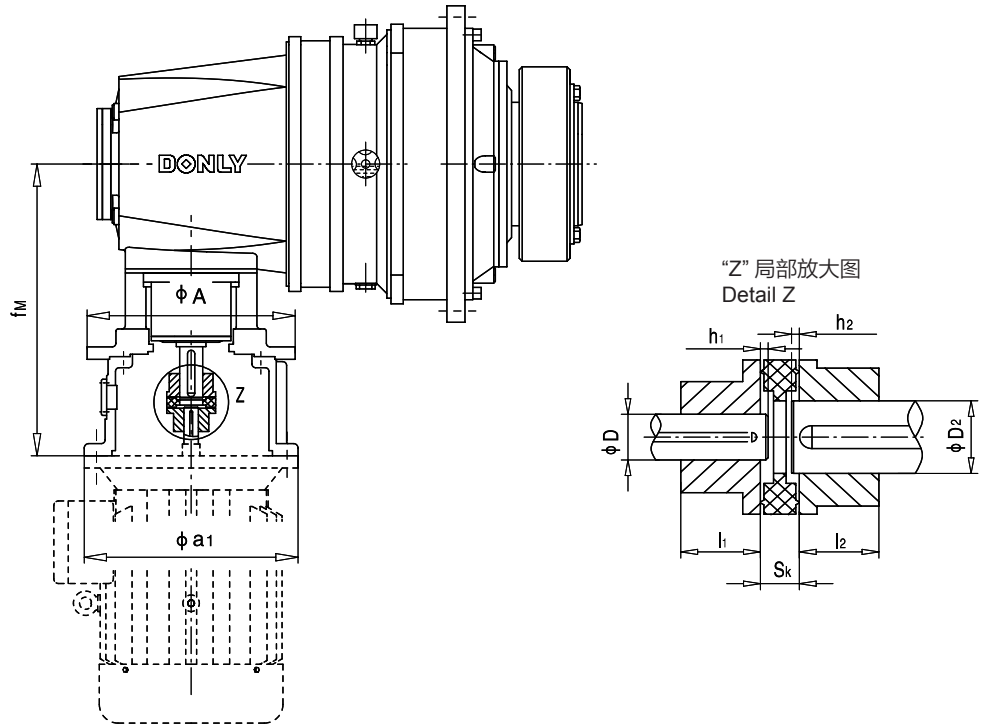
1) Motor shaft $ØD_1$.

7.6 带电机安装法兰和联轴器

DLPII L 型

7.6 With motor bell housing and coupling

Type DLPII L



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=31.5...90									联轴器 Coupling ML	传动比范围 /Transmission ratio range i_N=100									a_1
			D_2	l_2	D_1	l_1	h_2	h_1	S_k	f_M	A		D_2	l_2	D_1	l_1	h_2	h_1	S_k	f_M	A	
			mm										mm									
3, 4	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
5, 6	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
7, 8	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
9, 10	280											ML8	60	140	75	125	0	10	48	808	510	550
	315	敬请垂询 /On request																				
11,12 13	315																					
14, 15, 16, 17	315																					
	355																					

1) $ØD_1$ 为电机轴头。

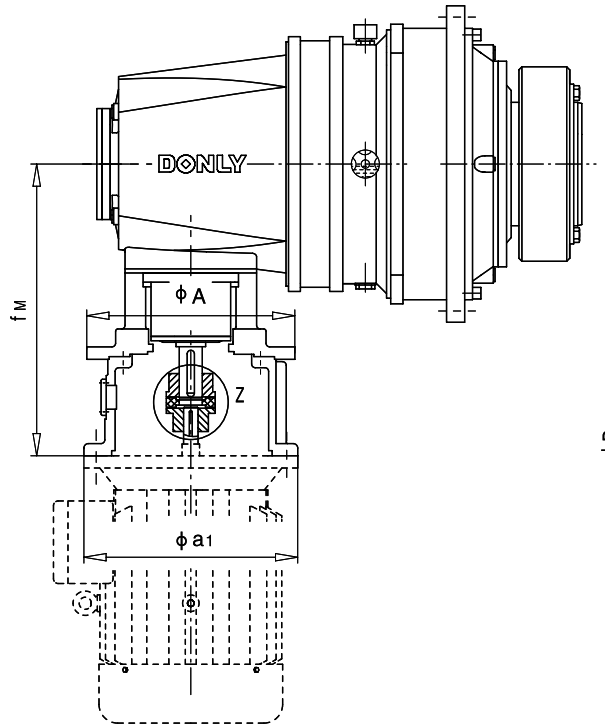
1) Motor shaft $ØD_1$.

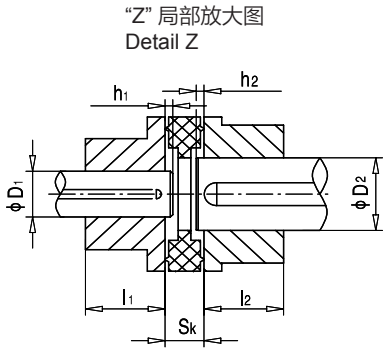
7.6 带电机安装法兰和联轴器

DLPIII K 型

7.6 With motor bell housing and coupling

Type DLPIII K





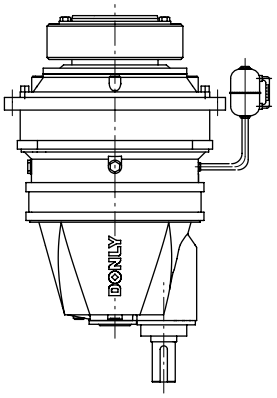
尺寸 / Dimensions																						
规格 Size	电动机 Motor	联轴器 Coupling ML	传动比范围 /Transmission ratio range i_N=560...2000									联轴器 Coupling ML	传动比范围 /Transmission ratio range i_N=2240…4000									a_1
			D_2	l_2	D_1	l_1	h_2	h_1	S_k	f_M	A		D_2	l_2	D_1	l_1	h_2	h_1	S_k	f_M	A	
			mm										mm									
3, 4, 5, 6, 7, 8	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
9, 10	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
11, 12, 13, 14, 15	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
16, 17, 18, 19	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
20, 21, 22, 23	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																				

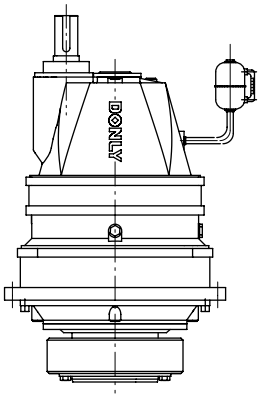
1) $ØD_1$ 为电机轴头。

1) Motor shaft $ØD_1$.

7.7 在竖直安装时通过补油箱供油润滑

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。

为了保证供油，油位已作了相应的提升。

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。

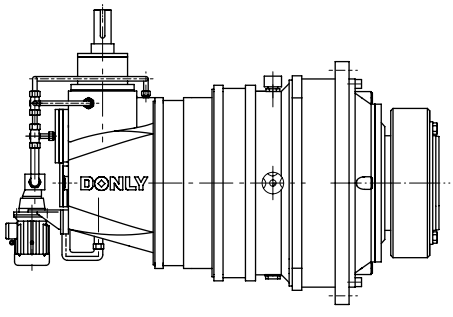
对于竖直安装的齿轮箱，其所需油量约为上述油量的一倍。

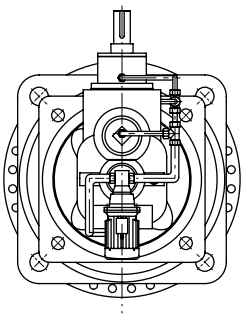
齿轮箱油位可通过单独配置的补油箱观察，且补油箱的设计容积已经提前考虑到了运行状态下润滑油体积的变化，齿轮箱同时也通过补油箱透气。补油箱既可固定在齿轮箱体上，也可固定在用户设备的机架上。

补油箱底面大约在如下位置：
d_2 向上：输出端法兰的安装面
d_1 向上：齿轮箱箱体的上缘

补油箱的实际容积和最低位置应在订单中确定。

在卧式安装和上方驱动时通过电动泵供油润滑。
L_{21}，L_{31}[1)]（所有机座号）和 L_{11}[1)]（从机座号 11 起）





1）轴的布置形式见第 06 页

7.7 Oil supply by compensating tank for vertical mounting position

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

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

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

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

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

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 units or to the customer's machine frame.

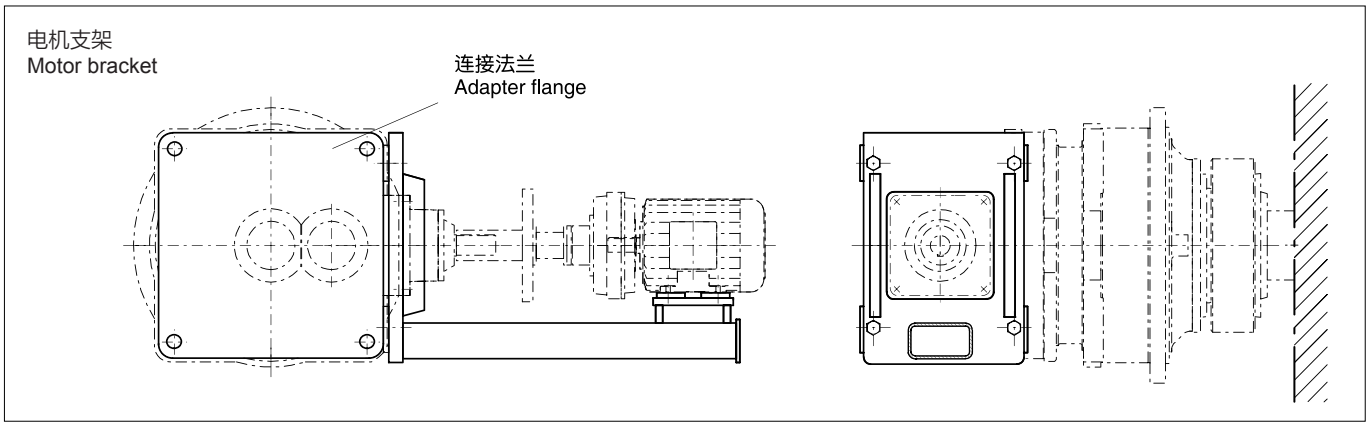
The bottom of the oil compensating tank is set at approximately the following level: if
d_2 upwards: Mounting surface output flange
d_1 upwards: Upper edge primary gear units housing

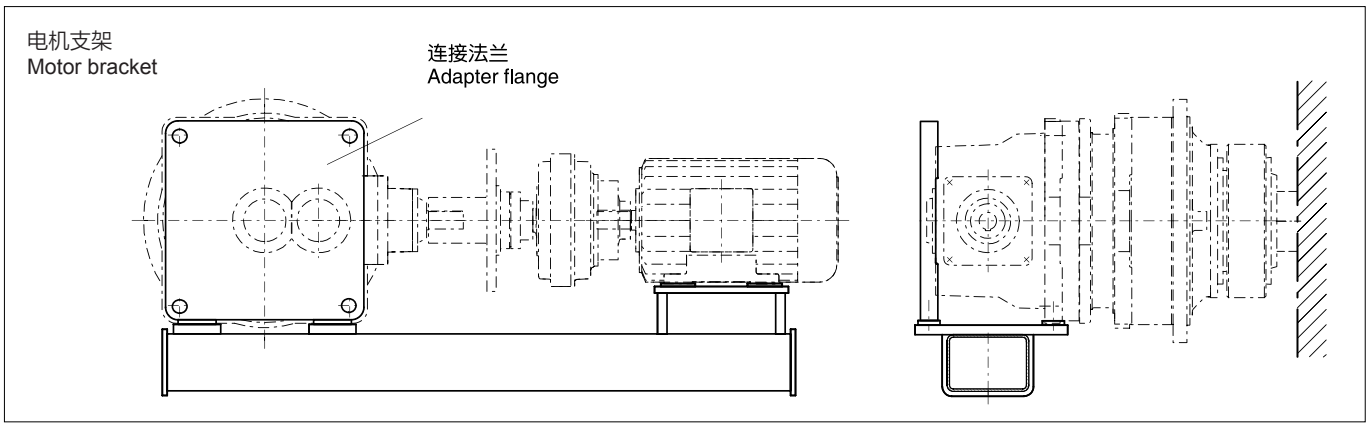
The actual dimension and final position will be decided when the order is placed

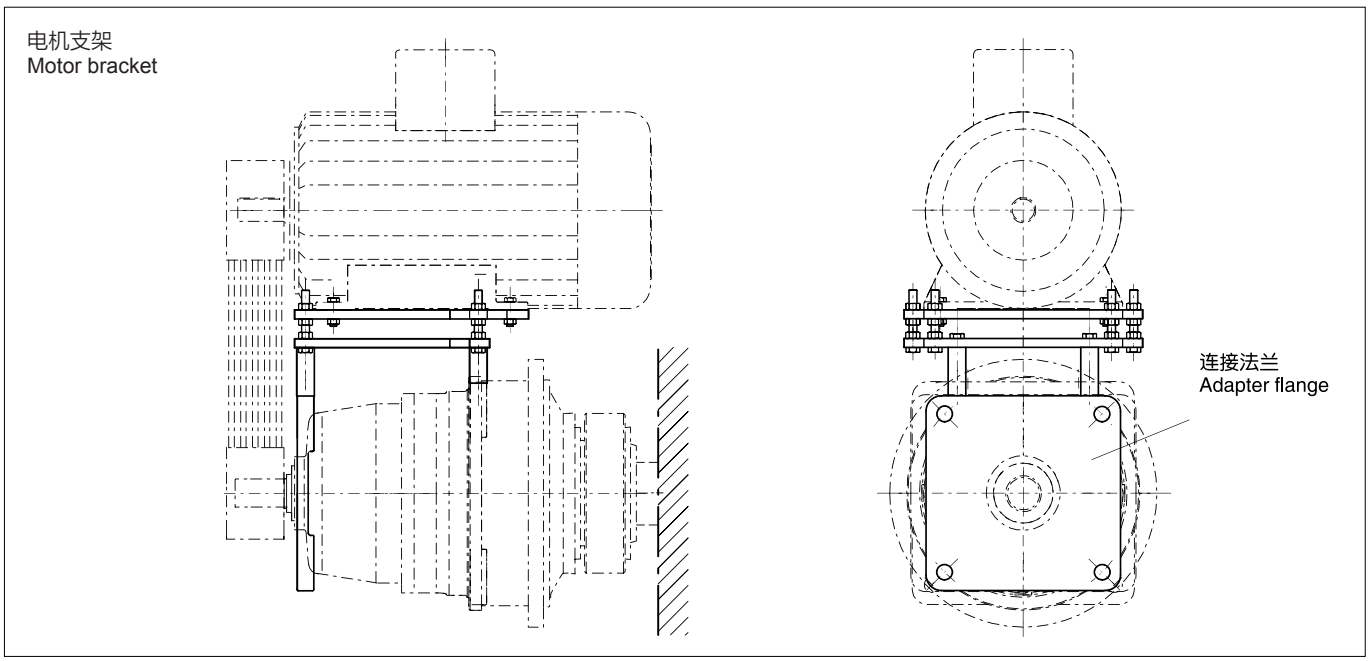
Oil supply by motor pumps for horizontal mounting position and drive from above
L_{21}, L_{31}[1)] (all sizes) and L_{11}[1)] (above size 11)

1) For shaft arrangement, see page 06

7.8 电机支架 7.8 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，并且是根据订 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。

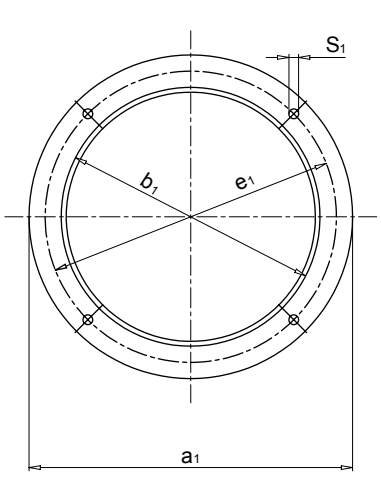
In cases where no motor bell housings are provided we use an adapter flange to attach motor brackets.

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

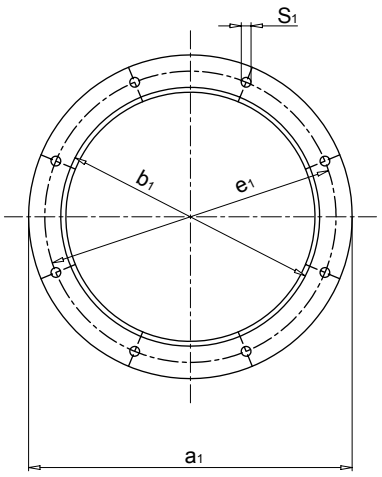
Examples of the type and design of bracket attachment are shown in the above drawings. The permissible motor size for each gear unit size and design is to be agreed upon from case to case with the design department.

7.9 IEC 标准电机安装法兰尺寸

7.9 Fitting dimensions of IEC standard motors for bell housings



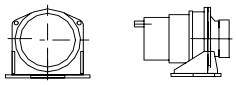
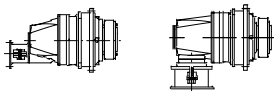
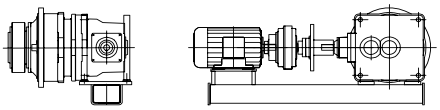
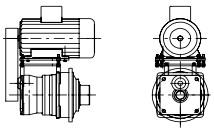
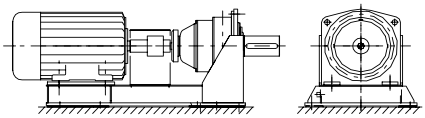
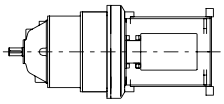
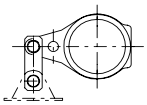
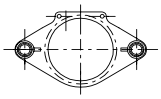
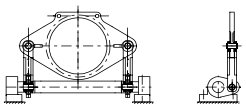
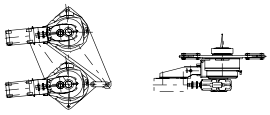
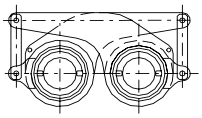
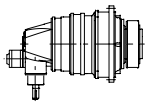
a_1=250 至 400
a_1=250 up to 400



a_1=450 至 660
a_1=450 up to 660

鼠笼式三相交流电机，按照 IEC60072-1 Three-phase motors with squirrel-cage rotor acc. to IEC60072-1																
	电机规格 / Motor sizes															
	100 L	112M	132 S	132 M	160 M	160 L	180 M	180 L	200 L	225 S	225 M	250 M	280 S	280 M	315 S	315 M
a_1 mm	250	250	300	300	350	350	350	350	400	450	450	550	550	550	660	660
b_1 mm	180	180	230	230	250	250	250	250	300	350	350	450	450	450	550	550
e_1 mm	215	215	265	265	300	300	300	300	350	400	400	500	500	500	600	600
s_1	4x M12	4x M12	4x M12	4x M12	4x M16	4x M16	4 x M16	4x M16	4x M16	8x M16	8x M16	8x M16	8x M16	8x M16	8x M20	8x M20

7.10 附件综览 7.10 Summary of add-on pieces

标记 Identification	附件 Add-on piece		附图 Representation
	无附件 Without add-on piece		
FJ01	齿轮箱基座 Gear units base	见第 43 页 See page 43	
FJ02	电机安装法兰（输入端）[1)] Motor bell housing (input)	见第 48~53 页 See page 48~53	
	电机支架 （电动机，联轴器）[1)] Motor bracket (motor , coupling)		
	电机支架 Motor bracket		
	电机浮动底座 （电动机，联轴器，齿轮箱）[1)] Motor swing-base (motor, coupling, gear unit)		
	安装法兰（输出端）[1)] Bell housing (output)		
FJ03	（单侧）扭力臂 Torque reaction arm (on one side)	见第 44 页 See page 44	
FJ04	（双侧）扭力臂 Torque reaction arm (on both sides)	见第 45 页 See page 45	
FJ05	扭力轴支撑 Torsion shaft support	见第 46 页 See page 46	
	支撑 I SupportI		
	支撑 II Support II		
FJ06	逆止器 （DLPIIK./DLPIIIK） Backstop （DLPIIK./DLPIIIK）		
	特殊设计 / Special design		

1）不能应用钢性联轴器 1) Not for rigid couplings

7.11 防爆保护

防爆要求
按照 ATEX 95

行星齿轮箱可以根据用户的需求提供按照 94/9/EC 规范认证的改进型结构。这种齿轮箱可以在有爆炸危险的环境中使用。

应用：设备特性类型 2+3

7.11 Explosion protection

Explosion protection
according to ATEX 95

planetary gear units are certified according to directive 94/9/EC and may be used in hazardous locations.

Surface application:catagories 2+3

环境说明 Description of the surroundings			设备特性对安全要求的适配 Assignment of equipment categories to safety requirements		
爆炸危险的持续时间 Explosive atmospheres occurring:	爆炸危险的起因 Explosive atmospheres caused by:		特性类型: Category:	安全要求: Safety requirements:	在下列情况下 安全: Safe if taking into account:
量化数据仅用于应用选型 The quantification serves fororientation only.	气体，雾 蒸汽 Gases, vapours, mists	粉尘 Dust			
不断发生，频繁发生，每年大于 1000 小时 Continuously frequently, for more than 1,000 h/yr	Zone 0	Zone 20	特性类型 1 Category 1	很高 very high	很少发生爆炸 Rarely occurring disturbances
偶尔发生，短时发生，每年在 10 和 1000 小时之间 Occasionally, for a short term, between 10 and 1,000 h/yr	Zone 1	Zone 21	特征类型 2 Category 2	高 high	爆炸有时发生 Normally occurring disturbances
很少发生，短时发生，每年少于 10 小时 Infrequently, for a short term, less than 10 h/yr	Zone 2	Zone 22	特征类型 3 Category 3	一般 normal	在正常运行条件下 Normal operating conditions

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