

CHENMAI

附录

REDUCER SELECTION MANUAL



www.kong68.com

浙江宸麦传动机械有限公司

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CHENMAI[®]
宸麦



电机

电机按标准供货，若指定或高于此标准必须说明。

Y普通三相异步电动机：

电压380V，频率50Hz（其它电压、频率需注明）

防护等级：IP44或IP54（指定IP54、IP55、IP56、IP65等需注明）

绝缘等级：B或F（指定F等需注明）

制动电机的制动器电压：380V或220V（指定电压或其它电压需注明）

防爆电机防爆等级：d IIBT4（其它等级需注明）

变频电机频率范围：0-50Hz（0-60Hz、0-120Hz或指定的范围需提出）

电机的噪声、电流、效率、功率因素、额定转矩等项目按国家标准。

以下要求及附件需另行说明：

- *制动电机配手释放装置
- *电机的热传感器
- *不带风冷或强制风冷
- *配旋转编码器
- *防水、防潮、防尘的要求

电机代号

四极三相异步电动机代号 - Y（六极代号-Y6、

八极代号-Y8、二级代号-Y2，下同）

制动电机代号 - YEJ

防爆电机代号 - YB

变频电机代号 - YVP

多速电机代号 - YD

变频制动代号 - YPEJ

其它电机代号另咨询。

MOTOR

Motors comply with National standard, please state if specification of other standards needed.

Y general tri-phase asynchronous motor data:
380V, 50Hz (other voltage & frequency should be stated)

Index of performance:

IP44 or IP54 (specification of IP54, IP55, IP56, IP65 should be stated)

Insulation class:

B & F (using F should be stated)

Braking voltage of braking motor:

380V or 220V (other voltages should be stated)

Explosion-proof class:

d IIBT4 (other classes should be stated)

Frequency range:

0~50Hz (0~60Hz, 0~120Hz or other range will be stated)

Noise, current, efficiency, power factor, nominal torque all comply with national standard.

The following will be specified by customers:

- * Brake motor equipped with manual brake release
- * Thermal sensor
- * No air cooling or forced air cooling
- * Installation of rotation encoder
- * Water proof, damp proof, dust proof

Motor code:

Y - 4-pole tri-phase asynchronous motor

(Y2 - 2-pole, Y6 - 6-pole, Y8 - 8-pole)

YEJ - Brake motor

YB - Explosion-proof motor

YVP - Frequency conversion motor

YD - Multi-speed motor

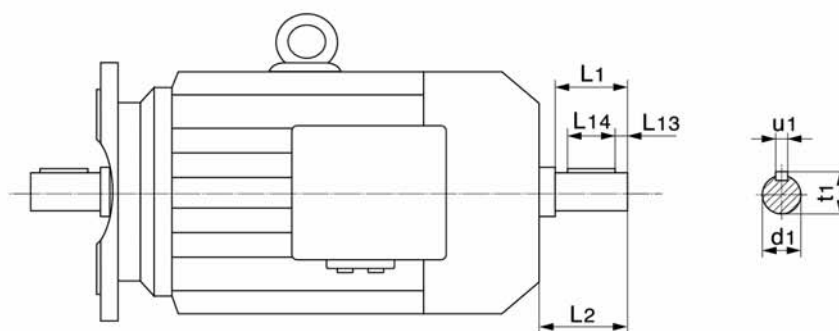
YPEJ - Frequency-conversion brake motor

Other codes are available on request.



电机双出轴：

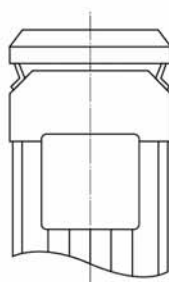
Double extended shaft motor:



	63	71	80	90/100	112	132S	132M	160L	180	200-225
d1	11	11	14	19	24	28	38	42	48	55
L1	23	23	30	40	50	60	80	110	110	110
L2	27	25	31	42	55	65	85	115	115	115
L13	3.5	1	4	4	5	5	5	10	10	10
L14	16	20	22	32	40	50	70	70	80	90
t1	12.5	12.5	16	21.5	27	31	41	45	51.5	59
u1	4	4	5	6	8	8	10	12	14	16

电机配室外防护罩：

Motor equipped with shield:



电机接线盒未注明位置一般以0° 供货。

In general, position of terminal box is at angular 0° without specification.



以下只对Y、Y2的额定转速、外形长度尺寸提供一般说明。由于购买厂家不同，和配齿轮箱时法兰缩小，有时尺寸会有些变化，此处不标，其它例如直流、伺服、起重冶金高转差率电机及其它特种电机另行咨询。

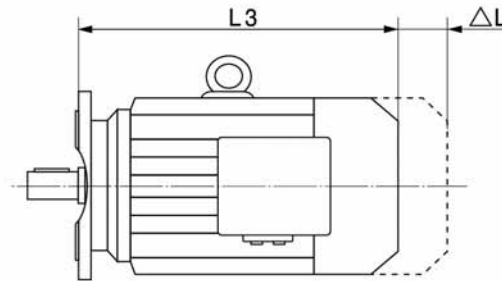
一般情况下Y132以下机座的普通三相异步电机以Y2系列提供，Y132以上以Y系列提供，以实际供货为准。

电机功率和转速、长度尺寸表：

We only provide general data of Y&Y2as example as follows. For the data of DC motor, servo-motor, and other special motors, please consult us.

General 3-phase asynchronous motor belowsize 132 are provided as Y2 series, Type of motors above size 132 willbe provided as Y series.

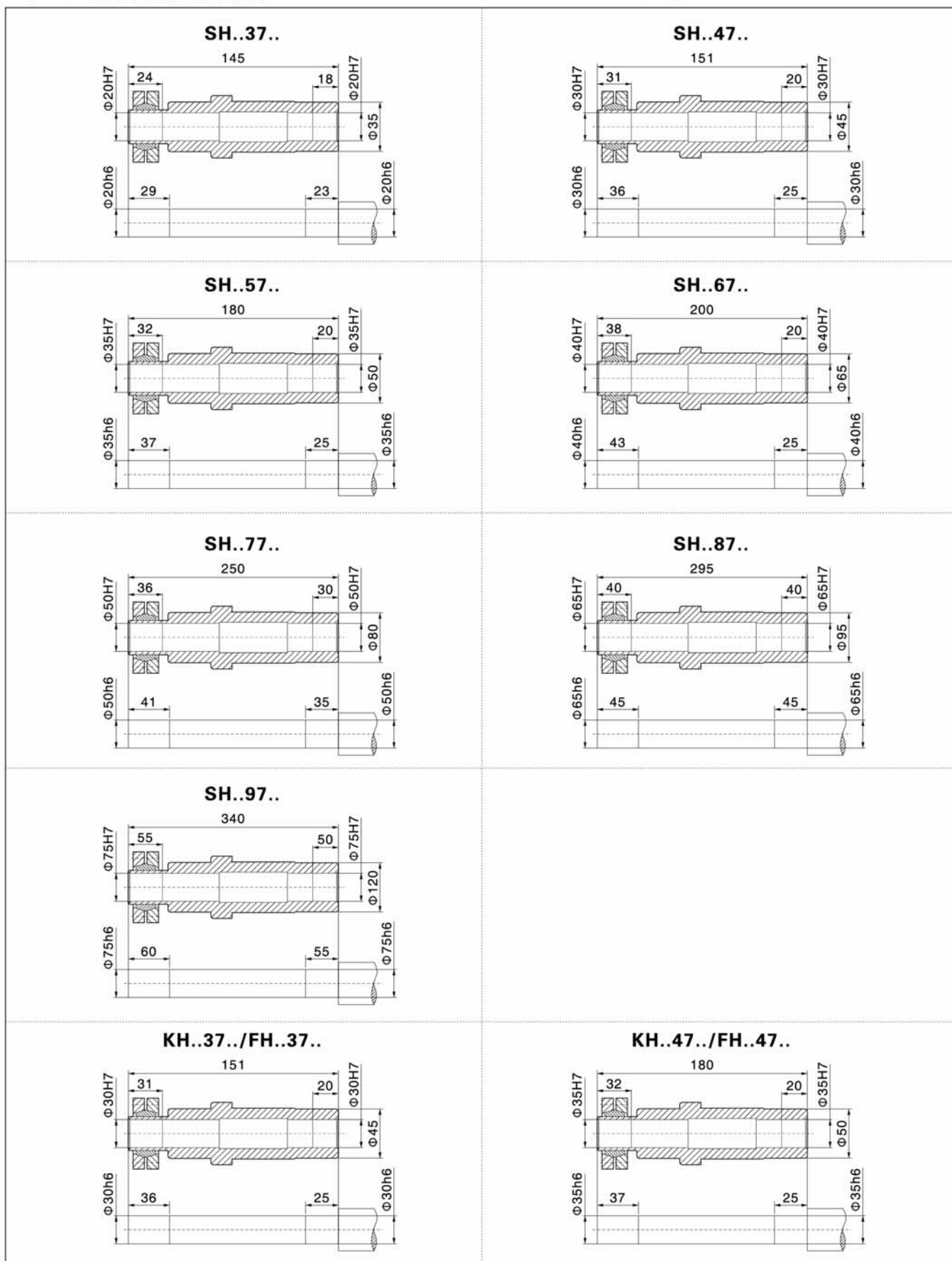
Table of Power, speed and length dimension:



	2极 (2electrodes)		4极 (4electrodes)		6极 (6electrodes)		8极 (8electrodes)		m (kg)				配H. B. P. T. RV. JW L3 (mm)				配R. S. K. F另加 ΔL	
	Pm (kW)	n (r.p.m)	Pm (kW)	n (r.p.m)	Pm (kW)	n (r.p.m)	Pm (kW)	n (r.p.m)	(铝壳)	Y	YB	YEJ	YVP	Y	YB	YEJ	YVP	
63	0.18	2720	0.12	1310					5.5				11	197	270	328		40
	0.25	2720	0.18	1310					6		15		12					
71	0.37	2740	0.25	1330	0.18	850			6.5	10	16	12	14	235	285	330		30
	0.55	2740	0.37	1330	0.25	850			7.5	10.50	16	13	15					
80	0.75	2845	0.55	1390	0.37	885	0.18	645	10	15	31	20	16	255	290	350	330	40
	1.1	2845	0.75	1390	0.55	885	0.25	645	11	16	32	21	17					
90s	1.5	2840	1.1	1390	0.75	910	0.37	670	16	20	35	27	23	270	310	370	330	50
90l	2.2	2840	1.5	1390	1.1	910	0.55	670	20	23	39	31	28	295	335	395	360	50
100	3	2860	2.2	1410	1.5	920	0.75	680						325	370	420	405	60
			3	1410			1.1	680										
112M	4	2880	4	1440	2.2	935	1.5	690		46	67	60	43	340	400	450	420	60
132S	5.5	2900	5.5	1440	3	960	2.2	705		60	93	85	63	395	430	505	450	60
	7.5	2900																
132M			7.5	1440	4	960	3	705		73	105	98	75	435	470	545	490	75
					5.5	965												
160M			11	1460	7.5	970	4	720		115	150	143	116	495	545	610	550	90
							5.5	720										
160L			15	1460	11	970	7.5	720		135	169	165	136	560	585	655	605	90
180M			18.5	1470						172	205	203	169	590	620	715	605	110
180L			22	1470	15	970	11	730		185	222	216	183	630	640	765	705	110
200			30	1470	18.5	970	15	730		253	300	296	236	665	695	790	740	110
					22	970												
225S			37	1480			18.5	730		300	360	370	291	680	705	860	730	130
225M			45	1480	30	980	22	730		335	390	405	327	705	730	890	770	135
250			55	1480	37	980	30	730		420	530	498	393	795	795		860	115
280S			75	1480	45	980	37	740		560	660	633	520	860	870		930	125
280M			90	1480	55	980	45	740		670	785	723	610	920	920		980	125
315S			110	1480	75	980				920	1000	1150	950	1010	1100		1285	
315M			132	1480	90	980				1050	1100	1230	1030	1180	1180		1380	
315L			160	1480	110	980				1160	1100	1320	1100	1200	1270		1450	
			200	1480	132	980				1240	1600	1420	1200					



S、F、K系列锁紧盘尺寸图 Dimensions of shrink disk for S、F、K series

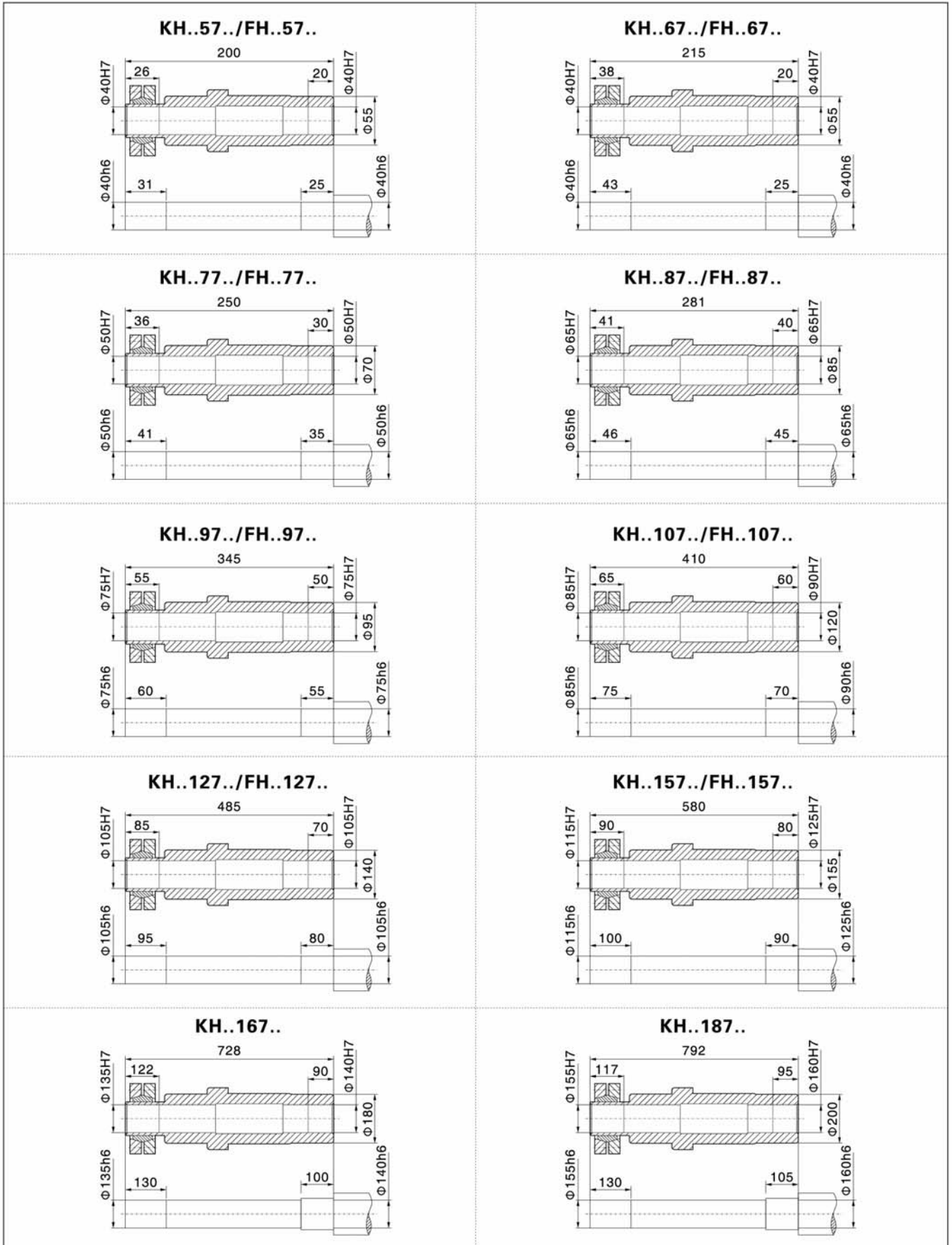


注：1.四大系列带锁紧盘型减速机除输出轴不同外，其余均同平键空心轴标准产品。

Note: 1.Except the output shaft, the main four series gear units with shrink disk are the same as the standard ones with hollow shafts with plat key.



S、F、K系列锁紧盘尺寸图 Dimensions of shrink disk for S、F、K series



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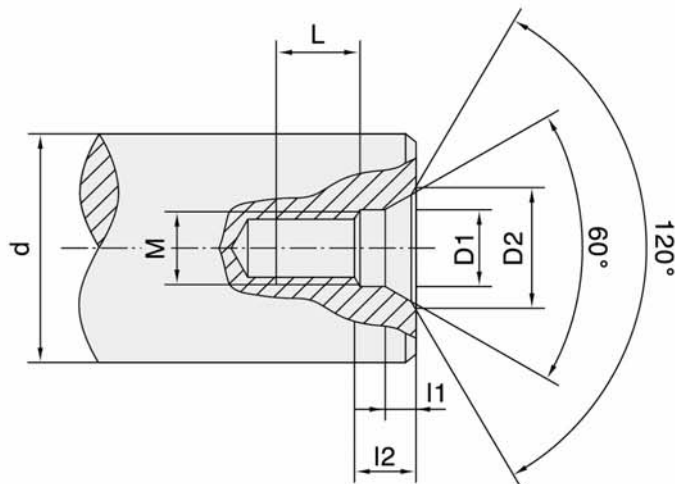


出轴/入轴轴端螺纹孔:

Screw hole in shaft end:

R、S、K、F、T、JW、H、B、P、RV轴端单螺孔(C型带螺纹的中心孔):

R、S、K、F、T、JW、H、B、P、RV series' s single screw hole in shaft end (C screw hole):



d	M	L	I2	I1	D1	D2
$7 < d \leq 10$	M3	10	2.6	1.8	3.2	5.8
$10 < d \leq 13$	M4	10	3.2	2.1	4.3	7.4
$13 < d \leq 16$	M5	10	4	2.4	5.3	8.8
$16 < d \leq 21$	M6	12	5	2.8	6.4	10.5
$21 < d \leq 24$	M8	12	6	3.3	8.4	13.2
$24 < d \leq 30$	M10	15	7.5	3.8	10.5	16.3
$30 < d \leq 38$	M12	20	9.5	4.4	13	19.8
$38 < d \leq 50$	M16	25	12	5.2	17	25.3
$50 < d \leq 85$	M20	30	15	6.4	21	31.3
$85 < d \leq 130$	M24	35	18	8	25	38
$130 < d \leq 225$	M30	45	18	11	31	48
$225 < d \leq 320$	M36	55	22	15	37	60
$320 < d \leq 500$	M42	60	26	19	43	71
$500 < d \leq 710$	M48	65	30	23	49	83

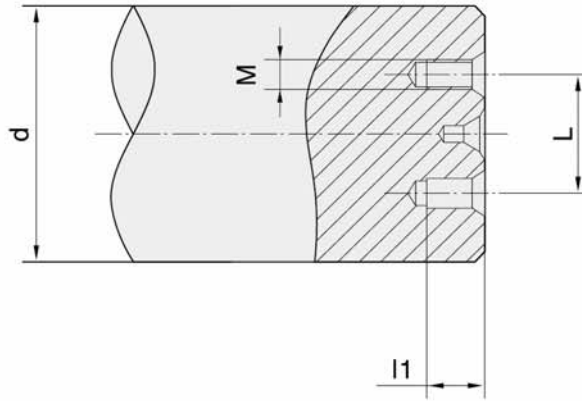
注: 轴端双螺纹孔时, 订货时需特殊说明。

Note: If two holes in shaft-end are necessary, please make a specification for it when placing an order.



轴端双螺孔:

Double screw holes in shaft end:



轴端双螺孔 Double screw hole in shaft end				轴端双螺孔 Double screw hole in shaft end			
d	M	l1	L	d	M	l1	L
40 < d ≤ 45	M8	12	20	150 < d ≤ 165	M12	20	120
45 < d ≤ 50	M8	12	22	165 < d ≤ 180	M16	28	130
50 < d ≤ 60	M10	18	26	180 < d ≤ 210			160
60 < d ≤ 70			36	210 < d ≤ 230			160
70 < d ≤ 80			50	230 < d ≤ 280	180		
80 < d ≤ 100			60	280 < d ≤ 290	190		
100 < d ≤ 110			70	290 < d ≤ 310	220		
110 < d ≤ 120	M12	20	80	310 < d ≤ 330	M24	45	230
120 < d ≤ 130			85	330 < d ≤ 340			240
130 < d ≤ 140			90	d > 340			250
140 < d ≤ 150			110				

注：轴端双螺纹孔时，订货时需特殊说明。

Note: If two holes in shaft-end are necessary, please make a specification for it when placing an order.



输出、输入部分公差标准:

Tolerance for input and output parts:

轴径公差:

Tolerance for shaft diameter:

轴 径	公 差
Shaft diameter	Tolerance
$d \leq 50$	→ K6
$50 < d \leq 250$	→ m6
$d > 250$	→ n6

蜗杆、空心轴孔径公差:

Worm, hollow shaft diameter tolerance:

孔 径	公 差
Hole diameter	Tolerance
D	→ H7

输出法兰凸肩和螺母公差:

Nut, flange protruding step tolerance:

凸 肩 直 径	公 差
d	→ h7

输出法兰、底座定位凹肩公差:

Flange, housing base concave step tolerance:

凹 肩 直 径	公 差
D	→ H7



径向力Fr和轴向力Fa:

Radial loads "Fr" and axial loads "Fa" of output shaft:

输入、输出轴径向力的计算:

Calculation of radial force Fr:



$$Fr1 = \frac{T1 \times f \times Lf}{r}$$

$$Fr2 = \frac{T2 \times f \times Lf}{r}$$

Fr1、Fr2: 输入、输出轴上的径向力大小 (N)
 f: 轴上所装配零件径向力系数 (表1)
 Lf: 载荷位置系数 (表2)
 r: 轴的半径 (m)

Fr1、Fr2: Input,output radial force value (N)
 f: Radial force factor of parts on shaft (table 1)
 Lf: Load position factor (table 2)
 r: Radium of shaft (mm)

径向力系数Radial force factor:(f) 表Table 1

链轮 Chain wheel	齿轮 Gear	V带轮 V belt wheel	平带轮 Flat belt wheel
1.00	1.25	1.5	2.0

载荷位置系数Load position factor:(f) 表Table 2

L/Q	≤0.5	0.75	1
Lf	1	1.5	2

当不受径向力时, 许用轴向力
 $Fa = Fr/2$

Permissible axial loads $Fa = Fr/2$
 without radial loads Fr.

需很大的许用轴向力和许用径向力请向我们另行咨询, 因为有些行业用途时结构(例轴承)需作一些变动。

Radial loads Fr are very big, please contact us because of some modification depending on different industry.

工作周期ED:

Working circle:

$$ED = \frac{t_f}{t_f + t_r} \cdot 100\%$$

t_f : 带负载的工作时间; t_r : 停歇时间。

t_f : Period under load; t_r : Period of repos.

噪声:

应提供允许的声压水平 (dB) 最大值, 当声压超过这一水平时, 可以采用吸音罩罩住, 若需提供在敞开场地的本公司标准声压值。

Noise:

Usershould offer permissible sound pressure maximum value(dB), if noise is greater than maximum value, please use cover of sound absorption. If requiring, The company may offer normal noise intensity value in open field.



减速机的选型所需的参数

减速机的选择用户应提供以下尽量详细的技术要求、载荷周期和运行条件，本公司将可为客户完成最后的选择，保证减速机的质量、经济和可靠性。

为了确保承诺的有效性，主要承包商对传动系统的坚固性负责，通过影响因素进行控制，连接传动部分必须协调。用户需在规定的范围内安装、润滑、使用、运行、维护，不受极限速度、扭矩、振动的影响。

被动设备

- 名称和种类
- 负载性质（使用冲击系数或惯量）
- 运行负载
- 输出功率
- 输出转速 n_2 (rpm):
- 输出扭矩 T_2 (N · m):
- 连续使用时间 小时/天 小时/月 小时/年
- 起动力矩和频率
- 制动力矩和频率
- 冲击负载、峰值负载和频率
- 正反旋转和频率
- 径向、轴向负载

原动机(或电动机是否正反转及其频率，输出轴径向和轴向负载)

- 型号和种类
- 额定功率和转速
- 最大扭矩
- 起动转矩
- 转动惯量直连电动机时，参照电动机的说明
- 代号及附件
- 电机接线盒位置是否指定

减速器（所选减速器必须能经受起动、制动、冲击力矩等影响）

- 要求的型号
- 安装形式
- 安装方位
- 输出形式
- 电源
- 润滑（飞溅润滑、强制润滑）
- 冷却：不附加冷却装置（即风冷）
强制风冷
强制水、油冷却
- 噪声：要求声压值 ≤
- 其它附件

Required parameter for motor selection

Reducer users should offer below detailed technical requirements, The company would accomplish final selection for client and assure reducer's quality, economy, reliability. To ensure validity for promise.

To ensure validity for promise, main contractor should take charge of system ruggedness and transmission factor controlling, connecting pieces must harmonize with transmission components. User must use reducer, operate reducer and maintain reducer properly in the stated tang, and reducer is not influenced by limited speed, torque, vibration.

Passive equipment

- Name and variety
- Load character (use shock factor or inertia)
- Running load
- Output power(kW)
- Output speed(rpm)
- Output torque(N · m)
- Time of woking continuously(hour per day)
- Starting moment and frequency
- Brake momet and frequency
- Shock load,peak load and frequency
- Rotate in both directions and frequency
- Radial and axial load

Impelling force(or motor,if rotate in both direction and frequency of that, output shaft radial and axial load)

- Mode and variety
- Power rating and speed
- Maximal torque
- Starting torque
- Connect with motor directly, rotational inertia refer to specification of motor
- Code and appurtenances
- If position of the terminal box is special requirement.

Reducer (Selected reducer can stand up to influence of starting and brake and shock moment)

- Requied model
- Mounting mode
- Mounting position
- Output mode
- Electrical source
- Lubrication(splash lubrication or forced lubrication)
- Cooling method: No cooling device(air blast)
- Cooling by fan
- Cooling by water or oil
- Noise(dB):required sound pressure value ≤
- Other appurtenances

**联接:**

- 被驱动设备和减速器联接:
- 减速机 and 电动机或其它原动机联接:
- * 当用皮带、链条或开式齿轮联接时, 必须告知装在轴端的皮带、链条或齿轮的直径, 以及中心距和负载方向。
- * 如果使用刚性联轴器, 必须告知作用在轴上的轴向和径向负载。

环境条件:

- 周围温度、空旷场地、狭小场地、通风条件:

- 特殊条件: 高温、低温、灰尘、化学作用、直接日照、冰等

特殊要求:

- 例如: 外伸中间轴 (S、R、K、F、RV、H、B、P 都有可能)
- 制动停机 (例倾斜输送机)
- 特殊密封 (灰尘、严格要求的食品、化学原料等)
- 速度监测、保护、逆止器等

其它要求:**Connection:**

Driven equipment is connected with gear unit
Gear unit is connected with motor or other drives.

- * When gear unit is connected with belt, chain or gear, user must tell The company their diameter, centre distance and load direction.
- * If gear unit is connected with rigid coupling, user must tell The company radial and axial load applied on shaft.

Ambient condition:

Ambient temperature, open field, narrow field, ventilation condition:

Special condition: high temperature, low temperature, dust, chemistry, direct sun, ice etc:

Special requirement:

Example: Extend intermediate shaft (it is possible for S、R、K、F、RV、H、B、P)
Braking and stopping (Such as inclined conveyer)
Special seal (dust, food and chemical material with special requirements.
Speed monitor, protection, backstop.

Other requirement:



安装、使用、润滑说明

一般说明

减速机的安装、操作、维护保养和修理人员均需阅读和理解本说明并遵守其中的规定。若因违反本说明的规定而造成的任何损伤和停机，本公司概不负责。

注意事项

- 一定不能用高压清理设备清洁减速机。
- 对减速机所进行检修、保养、维护、安装都必须在减速机不工作的情况下进行。
- 在减速机上不得进行焊接工作，也不得用作焊接工作的接地点。焊接会造成精密轮齿和轴承的不可修复的损坏。
- 如果在减速机的运行过程中发现了任何异常现象（例如过热或者不正常的噪声等），应该立即停机检查。
- 凡是旋转的零部件必须配备合适的防护罩以防止人员的意外接触，例如联轴器，液力耦合器，齿轮，驱动皮带轮等。
- 一定要遵守减速机上所附加的说明，例如铭牌、指示方向的箭头等。这些铭牌和标记上面不得有灰尘和油漆。
- 在组装或者解体工作中损坏了的螺栓一定要用同等强度和类型的新螺栓更换。
- 安装升降机时，台架面上的孔，在满足丝杆能方便通过的前提下，应尽可能小。
- 根据减速机的操作条件，减速机的表面、润滑油和零部件可能会达到相当高的温度，小心烫伤！
- 当更换润滑油的时候，要谨慎小心不要被热油烫伤。
- 减速机应该放置在不振动的干燥木制基座上并遮盖好。当储存减速机 and 任何单独的零部件的时候一定要做好防锈措施，以免生锈，储存时不得将减速机叠放在一起。
- 除订货合同中另外有所规定，否则减速机不得储存在或在强酸、强碱、低温、高温和重度的空气污染、潮湿，具有化学物品的场所。
- 在搬运减速机时，一定要特别小心，应防止撞击轴端，因为这样将有可能造成减速机的损坏，在吊运减速机时，不得将吊环螺钉挂在轴端处的螺纹上。
- 除订货合同中另外有所规定，减速机和无级变速器工作环境温度不超过40摄氏度，温升低于40摄氏度。
- MB无级变速器出厂时，调速限位螺钉已经调整在极限位置，不得任意调整，以免损坏零件。
- MB无级变速器必须在开机情况下方可调速，否则会损坏零件。

Installation, usage, lubrication

General

It must be read and understood by operators, maintenance and repair persons. And they must comply with all regulations in this manual. Any damages and stop of machine caused by wrong operation will be buyer's responsibility.

Notes

- Gear units can not be cleaned by high-pressure cleaning machine.
- Repair, maintenance, installation must be made with gear unit powered off.
- No welding can be made on gear units, and it cannot be a welding ground point. Welding will cause irreparability of precision gears and shafts.
- During running, gear units must be stopped immediately for check once any problem (such as over heated and high noise) occurs.
- Any rotating parts will be equipped with appropriate shields in order to keep it from accidental touch. Such as couplings, hydraulic couplings, gears, driving belt wheels.
- Please note the instructions attached on gear units, such as label, arrow indicating direction. And they will be kept clean without dust and oil.
- The bolts damaged in installation or dismantlement should be replaced with new one of the same tension and type.
- When installing screw jacks, the screw holes in mounting plate should be as small as possible up to bolts' diameter.
- When gear units running, its temperature may get up to a high point, please take care, there is a danger of scald.
- When changing lubrication, please be careful not to be scalded by hot oil.
- Gear units should be put on dry wooden non-vibration base and be covered. When storing gear units and their components, we should take rust-proof measures, and we cannot pile up gear units.
- Unless there are special requirements in contracts, gear units cannot be stored or work in places with acid, alkali, low temperature, high temperature, heavy air pollution, damp, chemical products.
- When removing gear units, please be careful to avoid knocking shaft end and damaging; when swinging them, bolts of swinging rings cannot put in screw holes in the shaft ends.
- Unless there are special requirements in contracts, ambient temperature of gear units and variable speed drives is below 40°C, and temperature rise should lower 40°C.
- Before delivery of MB series, speed-limiting screw has been adjusted to an extreme point to protect spare parts. And speed adjustment must be done after the drives start up, or the drives will damage.



- 减速机、无级变速机应在许用转矩范围内使用，超扭矩使用应在输出轴上装安全装置，以免减速机损坏。
- 各种减速机、无级变速机适用于连续运转，并允许正反两向运转。（配逆止器时除外）
- 若出现安装方位变动，一般情况下调换油镜、油塞、通气帽即可。
- 备件一定要从本公司购买。

安装与拆卸

关于安装的综合信息：在户外安装时应该避免阳光的直射，一定要避免热力集中影响减速机的正常性能。

整机安装

- 1) 准备刚性好的基础或牢固的台架来安装传动设备，同时也需充分考虑即使加上最大载荷也不至于改变装配好后各部件的位置。
- 2) 底座式安装应校准中心高，联轴器连接时应校准两轴的同轴度；柔性联轴器时浮动量不超过联轴器的允许范围，刚性连接时保证各安装联接的形位公差；长轴联接还要考虑轴的足够刚度。
- 3) 法兰式安装，凸肩（或凹肩）应配合良好，以免错位。法兰式安装并配空心轴联接时，特别应保证联接处的形位公差。
- 4) 扭力臂安装，空心轴与工作轴应配合良好，工作轴的浮动或设备振动应小于弹性块允许的范围，力臂应固定并锁紧。
- 5) 在减速机上安装驱动零件时（如联轴器、齿轮、链轮等），如果需要预加热，则必须保护好轴上的油封，要用隔热屏减少热辐射。
- 6) 输出轴加装联轴器、皮带轮、齿轮、链轮等时，请勿重击，应用输出轴外端螺孔，压入连接件。皮带轮、链轮、搅拌式还需考虑径向力。

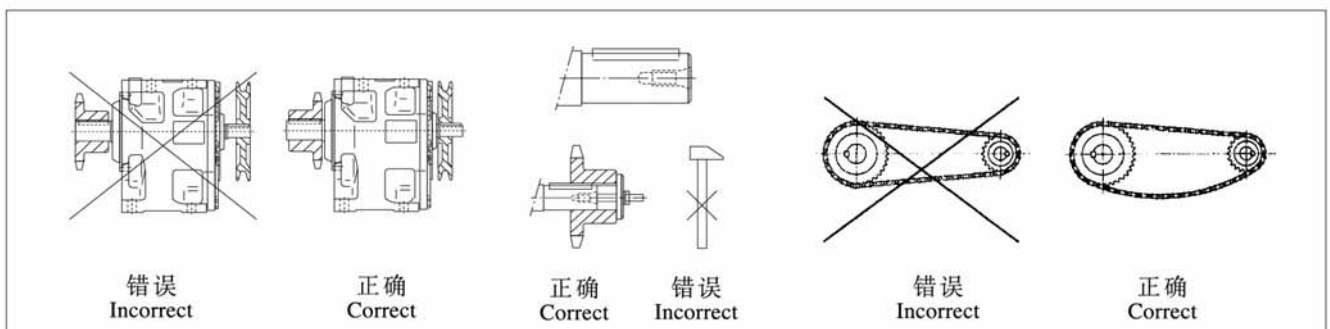
- Gear units and MB should run under permissible torque, safety devices should be equipped to avoid damage if load is larger permissible torque.
- Gear units and MB can run continuously and are permitted to rotate in both directions.
- If mounting position changes, the positions of breather screw, oil level, oil drain plug will be change with each other as usual.
- Spare parts must be purchased from The company.

Installation and dismantlement

Installing gear units should avoid direct sunshine and heat concentration to guarantee smooth running.

Installation of whole units

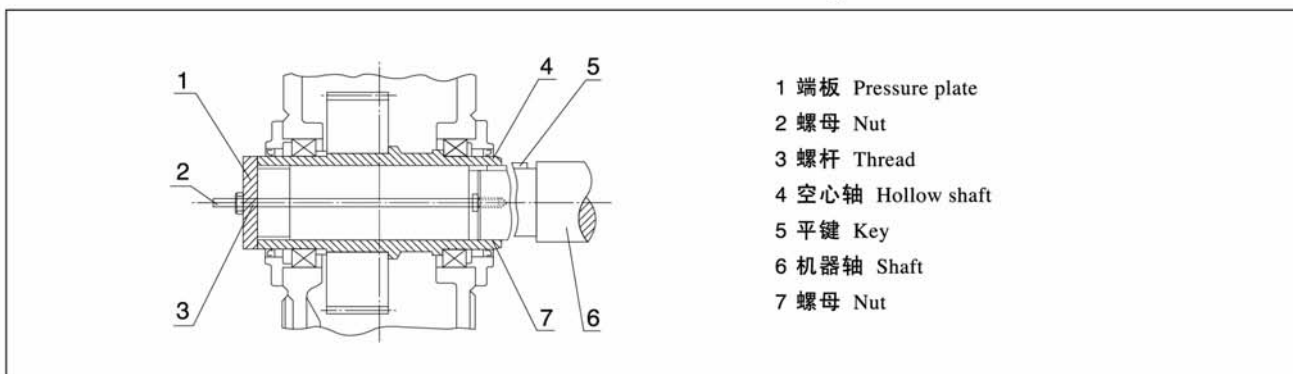
- 1) Please choose foundation with good rigidity or stable plat form to install transmission devices. In the meantime, also should take full consideration that the positions of all parts will not change even if maximum torque is loaded on units.
- 2) Choosing foot-mount, the height of centre line should be calibrated; Choosing coupling-connect, coaxiality should be calibrated; Choosing flexible coupling, run-out should keep within permissible values; Choosing rigid coupling, contour and position tolerance should be guaranteed; Choosing long coupling, rigidity of shaft should be enough.
- 3) Flange-mount, protruding or concave steps should inosculate with housings; using hollow shaft, contour and position tolerance at connection parts should be guaranteed.
- 4) Torque-arm-mount, hollow shafts should be fit with working shafts; run-out of working shafts and vibration of units should be within range of vibration values, torque arm should be fixed and locked.
- 5) Mounting driving parts such as couplings, gears, gear chains, if pre-heat is necessary, seal should be protected by using heat-proof shelter to diminish heat radiation.
- 6) Installing couplings, belt wheels, gears, chain gears on output shafts, please use screw hole in shaft end to press them in the correct position (see following pictures). And radial force should be considered in case of Belt wheel, chain gears and agitation mode.





7) 空心轴与实心轴连接时，应清理干净并涂防锈油(空心轴一定要精密对中)。除了在图中所示的螺母和螺杆以外，还可以使用其它类型的装置例(如液压提升装置)。

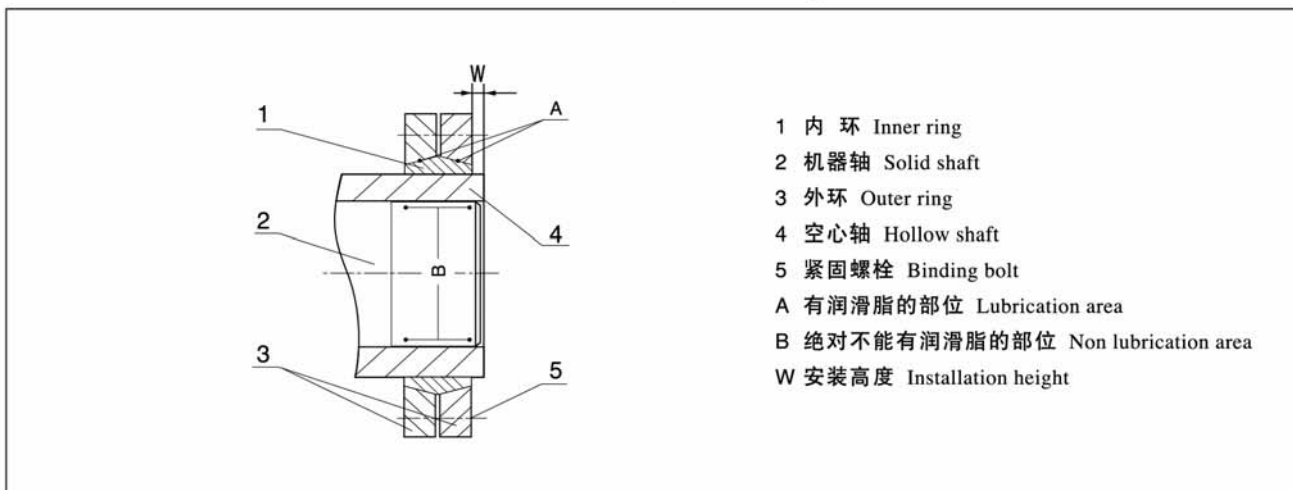
7) When connecting hollow shaft and solid shaft, please clean the surface and put anti-corrosive oil on it. When connecting, besides nuts and threads illustrated in the drawing below, other installing tools such as oil hydraulic devices can be used.



- 1 端板 Pressure plate
- 2 螺母 Nut
- 3 螺杆 Thread
- 4 空心轴 Hollow shaft
- 5 平键 Key
- 6 机器轴 Shaft
- 7 螺母 Nut

8) 当空心轴配置收缩盘时，为了安全起见在收缩盘上加防护罩；空心轴的孔和工作轴在收缩盘的区域里面一定不能有润滑脂。在安装机器的轴之前不要拧紧紧固螺栓。

8) When hollow shaft equipped with shrink disk, protect shield should be installed on shrink disk for safety. Connecting area (equipped shrink disk) of hollow shaft and solid shaft must not be put lubrication cream. Before installing solid shaft, not tighten binding bolts.



- 1 内环 Inner ring
- 2 机器轴 Solid shaft
- 3 外环 Outer ring
- 4 空心轴 Hollow shaft
- 5 紧固螺栓 Binding bolt
- A 有润滑脂的部位 Lubrication area
- B 绝对不能有润滑脂的部位 Non lubrication area
- W 安装高度 Installation height

9) 安装螺栓一般情况下采用 8.8 级，如果有高温或者振动冲击等情况，请在螺纹连接处作好防松措施。各个紧固螺栓的拧紧扭矩见下表：

9) Generally fixing bolts adopt GBT8.8. In case of high temperature and vibration, please take anti-loose measures. The tightening torques of binding bolts as follows

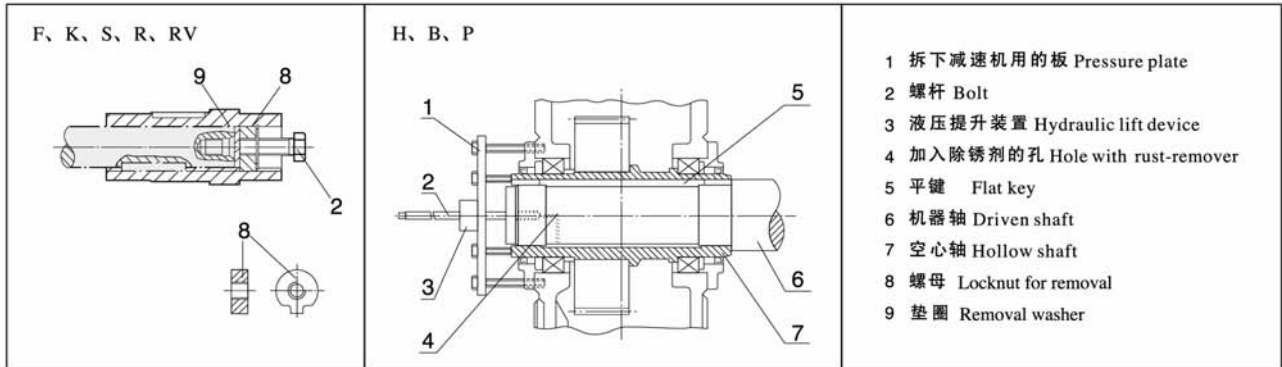
螺栓大小 (mm) Diameter of bolt	预紧力矩 (N·m) Pre-binding-torque	螺栓大小 (mm) Length of bolt	预紧力矩 (N·m) Pre-binding torque
M6	15	M30	2000
M8	36	M36	3560
M10	72	M42	5720
M12	123	M48	8640
M16	295	M56	13850
M20	580	M64	14300
M24	1000	M72	20800



拆卸

1) 空心轴的拆卸

根据现场实际可使用的设备，可以用端板上的螺杆（参见下图）、中心螺杆或者液压提升装置将减速机从机器轴上脱下来。空心轴的每个端面都配备了2个螺丝孔可以拧入固定端板的螺栓。



注：端板和辅助板不在供货范围内。（空心轴端螺纹孔的分布和大小请参照本公司技术图纸）。

2) 当空心轴配置收缩盘时，在首次受力之前一定不能拆下来。拆卸时严禁按照相邻的顺序松开螺栓。

润滑与冷却

润滑

1) 润滑油的选择：

系列 Series of reducer	环境温度 Ambient temperature				ISO粘度与NLGI相应 Adhesiveness of ISO and NLGI unitive	Esso	Mobil	Shell	GB牌号 L-C-K
	-50	0℃	+50	+100					
R. F. K. T. H. B. P	-25	0	+40	+80	VG220		Mobil Glygoyle 30	Shell Tivela OIWB	N220
	-15	+25			VG150	SPARTAN EP 220	Mobilgear 630	Shell Omala OI220	N220
	-30	+10			VG68-46 VG32	SPARTAN EP 150	Mobilgear 629	Shell Omala OI 100	N150
	-20				VG22 VG15	ESSOATF D-21611	Mobil D. T. E. 15M	Shell Tellus OI T 32	N68
RV. S	-45	0	+60		VG680	UNIVIS J 13	Mobil D. T. E. 11M	Shell Tellus OI T 15	N22
	0	+40			VG680		Mobil Glygoyle HE 680		N680
	-15	+25			VG220	SPARTAN EP 680	Mobilgear 636	Shell Omala OI 680	N680
	-20	+10			VG150 VG100	SPARTAN EP 220	Mobilgear 630	Shell Omala OI 220	N220
JW	-25	+10			VG220	SPARTAN EP 150	Mobil D. T. E. 18M	Shell Omala OI 100	N150
	-25	+10			VG220		Mobil Glygoyle 30		N220
	-45-20				VG22 VG15	UNIVIS J 13	Mobil D. T. E. 11M	Shell Tellus OI T 15	N22, N15

升降机的润滑油选择：JW010-JW200，选000#钙基润滑脂；JW300-JW1000，选VG150齿轮润滑油。
Lubrication oil: JW010-JW200, 000# calcium grease; JW300-JW1000, VG150 gear lubrication.

2) 润滑油的更换

要用和原来的润滑油同一牌号、同一厂家的润滑油。更换润滑油品种时，要用润滑油将减速机箱体里面的沉积物、金属颗粒和残留的润滑油都冲洗干净。

对于升降机在其正常工作前，都必须对丝杆表面涂抹润滑油脂，将丝杆升到最大行程，然后在丝杆表面涂抹润滑油脂。

3) 润滑方式：

- 油池润滑：一般情况下减速机都采用油池飞溅润滑；
- 浸油润滑：所有的齿轮和轴承都浸没在润滑油里面；
- 强制润滑：是靠辅助设备将润滑油强制压入齿轮箱内对轴承和齿轮进行润滑的。
- 稀油站集中润滑：客户可以根据实际情况自配润滑系统。

Dismantlement

1) Dismantle hollow shaft

According to tools available on the spot, Bolts on pressure plate, center bolt, oil hydraulic device are available to dismantle gear units from driven solid shaft. There are two screw holes in the end surface of hollow shaft for tightening bolts fixing pressure plate.

Note: Pressure plate and attached plate are not included in shipment. (Screw holes on hollow shaft end refer to drawings)

2) When hollow shaft equipped with shrink disk, it is prohibited to loosen bolts one by one in a round way.

Lubrication and cooling

Lubrication

1) Choosing lubrication oil, as following table:

2) Change of lubrication oil

Changing lubrication oil, it must be the same type and produced by the same factory. If type is different, must completely remove deposits, metal grains, residues of the old oil in housing with new lubrication oil.

Before screw jacks running, must lubricate screw threads with lubrication cream. Let threads get up to highest point and lubricate threads.

3) Lubrication methods

- Splash lubrication: generally gear units adopt or splash lubrication.
- Oil-bath lubrication: all gears and bearings must immerse in oil.
- Forced lubrication: attached devices press oil into housing to lubricate gears and bearings.
- Oil tank lubrication: Customers can equip lubrication system accordingly.



冷却

根据要求，有些减速机可配备风扇、冷却螺旋管、水冷或者空冷的润滑油冷却系统或者单独的供油系统。在单独的供油系统的情况下，一定要遵守有关这些装置的规定。

1) 风扇：

带有风扇的减速机，在安装联轴器或其它零部件的安全防护罩的时一定要留出足够的空间让空气进入。所留出空间的正确尺寸请参照我公司技术图纸。一定要将风扇罩固定好并防止外界的损坏而且不能和风扇叶接触。

2) 冷却螺旋管：

冷却水要由用户自行提供。自来水、海水还是半咸水都可以进行冷却，在连接冷却水的螺旋管之前要先将堵头从冷却水盘管的连接衬套上取下来并彻底冲洗螺旋管将赃物清理干净。（冷却水的流量请参照我公司技术图纸。）

注：冷却水可以任意方向流过减速机。冷却水的压力不得超过8巴。为了避免过高的压力，冷却水的入口必须要配备一个流量控制装置，例如减压阀或者截止阀。

启动

要遵守“安全说明”中的规定。

添加润滑油：

本公司产品一般都未带润滑油出厂，在设备运行前请先加入润滑油。

核查设备：

- 1) 检查油面高度，润滑油冷却或者供油系统管路的密封性。
- 2) 检查冷却装置，截止阀的开启状态
- 3) 配备了止回装置的减速机，检查电机接线是否正确。
- 4) 检查轴封是否有效。
- 5) 检查旋转的零部件是否与其它零件接触。

配置了电动油泵的减速机应当保证在启动设备前首先开启油泵电机。

故障、原因和措施

维修工作一定要由经过培训的素质合格的人员谨慎地进行。

故障 Malfunction	原因 Causes	措施 Measures
在减速机的紧固 件处有大的噪声 High noise at tightening parts	紧固件松动了 Loose of tightening parts	将螺栓/螺母拧紧到规定的扭矩。 更换损坏了的螺栓/螺母。 Tighten nut bolt to correct state Replace damaged nut/bolt
减速机的噪声变化 Changing noise	齿轮的轮齿发生了损坏 Teeth of gears get damaged	和客户服务部联系。 检查所有零件上的齿，更换损坏了的零件。 Consult after-sales department Check teeth of gears and replace damaged one.
	轴承间隙过大 Clearance of bearings too big	和售后服务部联系。 调整轴承的间隙。 Consult after-sales department Adjust the clearance of bearings
	轴承损坏 Bearings get damaged	和客户服务部联系。 更换损坏的轴承。 Consult after-sales department Replace damaged bearings

Cooling

For different requirements, gear units can be equipped with cooling fans, cooling coils, water or air cooling systems, separate oil supply systems. Under condition of separate oil supply system, please comply with its operation regulations.

1) Cooling fan:

When gear units with cooling fans are installed safety shield of couplings or other spare parts, enough space should be left to let air get into. The dimension of the space refers to our technical drawings. The fan shield should be fastened and protected against damage, and cannot touch the leaves of fan.

2) Cooling coil:

Cooling water is supplied by customers. Tap water, seawater, half salt water can applied to cooling. Before installing cooling coils, please get the plug off the coil clean it. (water flux refer to our technical drawings)

Note: Cooling water can flow through gear units in all directions. The pressure of cooling water cannot exceed 8 bar. To avoid higher pressure, a flux controller should be installed at the entrance of cooling coil such as decompression valve or cut-off.

Start up

Please comply with the regulations in safety instructions

Add lubrication oil:

Generally there is no lubrication oil in our products. Please add oil before machines begin running.

Verify machines:

- 1) Check oil level, air-proof of cooling system or oil supply system.
- 2) Check the open-and-close state of cooling devices and cut-off.
- 3) Check the position of input wires when gear units are equipped with anti-counter-rotation devices.
- 4) Check validity of seals.
- 5) Check if the rotating components touch other ones.

Make sure that electric oil pump should start up before the start-up of gear units.

Malfunction, cause and measure

Maintenance should be made by qualified workers.



故障 Malfunction	原因 Causes	措施 Measures
轴承温度升高 Bearing temperature rise	箱体里面的油面过高或过低 Oil level is too high or low	在室温下检查油面的高度并按需加油。 Check oil level at room temperature and add on reduce oil
	油过于陈旧 Oil is used too long	和售后服务部联系。 —检查上次换油的时间。 Consult after-sales department. Check the date that oil be replaced last time.
	油泵的机械故障 Malfunction of oil pump	和售后服务部联系。 检查油泵的工作是否正常，修理或换新的油泵。 Consult after-sales department. Check if pump works normally, repair or replace it.
	轴承损坏 Bearing damage	和售后服务部联系。 —查阅操作人员在振动测量中所获得的数据。 —检查并按需更换轴承。 Consult after-sales department. —Look up the date about vibration. —Check and replace it on request.
工作温度过高 working temperature too high	箱体里面的油面过高 Oil level is too high	检查油面的高度，如果有必要的话，调整。 Check oil level, and adjust if necessary.
	油过于陈旧 Oil is used too long	和售后服务部联系。 检查上一次换油的时间，如果有必要的话就更换。 Consult after-sales department. Check the date that oil was replaced last time, replace it if necessary.
	油受到严重污染 Oil is polluted seriously	和售后服务部联系。 —换油。 Consult after-sales department. —Replace oil.
	在配备了润滑油冷却系统的减速机上：冷却剂的流量过低或者过高 Flux of cooling material is too high or low	全面调节进口和出口管道的阀门。 检查水冷装置的自由流量。 Adjust entrance and exit valves. Check the flux of water cooling devices.
	通过水冷装置的油流过低，其原因是：滤油器严重堵塞 Oil flux through water cooling devices is too low	清理滤油器。 Clean oil filter.
	油泵的机械故障 油泵损坏 Malfunction of oil pump oil pump damage	和售后服务部联系。 —检查油泵的功能是否正常。 —修理或者换新。 Consult after-sales department. —Check of oil pump works normally. —Repair or replace it.
	在配备了风扇的减速机上： 风扇罩的空气入口和/或箱体严重污染 Entrance of fan shield and housing polluted seriously	清理风扇罩和箱体。 Cleanse fan shield and housing.
	配备了冷却螺旋管的减速机： 冷却螺旋管里面结垢 Residues in cooling coil	和售后服务部联系。 —清理或者更换螺旋管。 Consult after-sales department. —Clean or replace cooling coil.



故障 Malfunction	原因 Causes	措施 Measures
轴承处的 振幅升高 Swing at bearing higher	轴承损坏 Bearing is damaged	和售后服务部联系。 —检查并按需更换轴承。 Consult after-sales department. —Check and replace bearing.
	齿轮损坏 Gear is damaged	和售后服务部联系。 —检查并按需更换齿轮。 Consult after-sales department. —Check and replaces gears.
止回装置的温度过高 止回功能的失效 Temperature of anti-backstop too high and it becomes malfunction	止回装置损坏 Anti-backstop becomes malfunction	和售后服务部联系。 —检查并按需更换止回装置。 Consult after-sales department. —Replace anti-backstop
减速机漏油 Oil-leak of gear unit	箱体盖或者联接 处的密封不良 Sealing at cover and connection notin good state	检查密封和连接处，如果必要的话， 更换新的。将连接处密封好。 Check air-proof and connection part, replace them if necessary, and seal up connection part.
	径向轴封环失效 Shaft seal is malfunction	和售后服务部联系。 —换新的径向密封环。 Consult after-sales department. —Replace it.
油中有水 Water in oil	油中有杂物 Mixer in oil	用试管检查油的状态是否有水分存在。 实验室分析油。 Classify if there is water in oil by using tube. Analyse oil in laboratory.
	润滑油冷却器或者 冷却螺旋管失效 Cooling coil is of mal-fanction	和售后服务部联系。 —找出并修理泄漏之处。 —更换冷却器或者螺旋管。 Consult after-sales department. —Find out and repair leakage place. —replace cooling coil
	减速机受到机器间通风过 来的凉空气而产生凝露 Cool air will cause water drop in gear unit.	用合适的保温材料将减速机保护起来。 关闭空气的出口或者在结构上改变其方向。 Shelter gear units with proper

注：对于客户自己无法排除的故障请和我公司
售后服务部联系。

Note: Please consult after-sales department, if malfunction can not
be removed by consumer s tehmselves.

**保养**

用户要定期对减速机进行维护和保养，要定期检查润滑油的使用状态，定期清理通气帽、风扇、冷凝管和减速机表面的灰尘和异物，保持减速机清洁，保证减速机的正常运行。

Maintenance

Users must maintain gear units periodically check oil state periodically clean breather screw, fan, cooling coil and surface of gear units periodically. Keep gear units clean and assure that gear units work smoothly.

措施期限备注：**Maintenance periods:**

检查油温 Check oil temperature	每日 Everyday
检查减速机的不正常的噪声 Check abnormal noise of gear units	每日 Everyday
检查油面高度 Check oil level	每月 Every month
检查减速机的漏油 Check leakage	每月 Every month
检验油中的水分 Analyse water	400工作小时后,至少每年一次 Every 400 working hours. At least 1 years.
在起动之后的首次换油 Replace oil first time after start up	在400工作小时后 Every 400 working hours.
其后的换油 Afterward oil replacement	每18个月或者5000工作小时 Every 18 months or 5000 working hours
清理滤油器 Clean oil filter	每3个月 Every 3 months
清理通气帽 Clean breathe screw	每3个月 Every 3 months
清理风扇、风扇罩和减速机箱体 Clean fan, fan shield and housing	和换油同时进行 At the same time as replacing oil
检查冷却螺旋管的沉积物 Check residues in cooling coil.	大约每2年,和换油同时进行 Every 2 years and the same time as replacing oil
检查润滑油空气冷却器 Check air-cooling devices	和换油同时进行 At the same time as replacing oil
检查润滑油水冷却器 Check water-cooling devices	和换油同时进行 At the same time as replacing oil
检查紧固螺栓的紧固程度 Check tightening bolt	第一次换油后,其后每隔一次换油 After first replacing oil, every 2times of replacing oil
对于减速机的全面检查 Make an over all check	大约每2年和换油同时进行 Every 2 years and coincide with replacing oil



售后服务 After-sale service

各种传动设备，客户发现有质量问题时，不要先拆卸零件，应说明以下情况然后与本公司售后服务部联系，说明现象后确认问题所在，再采用较理想的方法处理。

When customers find some quality problem, please not dismantle the gear units and fill in the following form and contact out after-sales department. We will offer reasonable methods to resolve the problem.

型号规格 Model:

出厂日期 Date:

编号 Number:

已使用时间 Use time:

使用场合或主机名称 Ambience or main machine:

主机生产单位 Company that main machine was made in:

质量问题 Problem:

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用户单位 (Name):

地 址 (Add):

电 话 (Tel):

传 真 (Fax):

邮 编 (Post):

联 系 人 (Link man):

A large, empty grid of small squares, intended for writing or drawing. The grid consists of approximately 30 columns and 40 rows.