



YCH、YGF、YCS系列 低启动电流、大负载转动惯量 三相异步电动机

YCH、YGF、YCS Series Three-Phase Induction Motor
with Low Starting Current and High Inertia



西安泰富西玛电机有限公司
XI'AN TECH FULL SIMO MOTOR CO., LTD



企业简介

西安泰富西玛电机有限公司是哈尔滨泰富电气有限公司下属的全资子公司，中国机械工业专业生产大中型、高低压、交直流电动机、同步电动机、高低压三相交流同步发电机、直流发电机、防爆电动机等产品的研发制造企业；是国家机械电器制造500强的骨干企业；是集电机设计制造、非标产品研究开发、机械加工、模具制造和自动化成套工程为一体的动力系统提供商。

泰富西玛始建于1955年，已有50多年电机生产销售的历史，公司原名“西安电机厂”，2004年整体改制为“西安西玛电机（集团）股份有限公司”，2009年10月通过股权转让，公司变更为“西安泰富西玛电机有限公司”，注册资本21500万元。公司地址：国家级西安经济技术开发区明光路159号。

泰富西玛公司“西玛”牌电机产品营销国内外，先后取得了欧盟“CE”、美国“UL”、俄罗斯“GOST”、铁道部“CRCC”产品质量体系认证。最早取得了国家质量体系ISO9001-2008认证、中国节能产品认证（获得第五批惠民工程推广认可）；国家安全强制性“CCC”认证；质量信誉AAA等级企业；2006年又通过了ISO14000环境体系认证和OHSAS18000职业健康认证。

泰富西玛公司拥有电机研发、制造、试验等各类工程技术人员500多名，其中高级工程师21名，工程师150名，硕士研究生15人，省、市、局管专家15人。公司现有员工2018人。能为市场提供电机研发、制造、修理（我公司是国家西北地区唯一指定的电机产品再制造企业）、模具制造等优质服务。企业经过近60年的发展形成了以电机、发电机生产为主，多种经营，蓬勃发展的多元产业结构的现代化企业。

泰富西玛电机种类齐全，拥有产品34大系列、2000多个品种、19500多个规格，功率范围0.35千瓦至25000千瓦，泰富西玛研发的YE3全系列低压超高效率三相异步电动机，YX、YXKS、YXKK全系列高压高效率三相异步电动机被列进了国家“节能产品惠民工程”高效电机推广目录（第5批）。另外公司还批量生产YVF、YVF2、YVFE2、YVFE3系列变频调速高低压电动机、TFW350-5000KW系列大型同步发电机、T、TD、TK、TDMK系列同步电动机、YB2、YBX2、YBE2、YBE3系列防爆高低压三相异步电动机和Z2、Z4、Z系列直流电动机。注册商标“西玛”牌，所有产品符合国际、国家、行业和企业标准，产品广泛应用于电力、煤炭、石油、采矿、冶金、铁路、交通、化工、农业、水利、航空、航海及高科技等领域，是铁道部定点的电机配套厂家。



Xi'an Tech Full Simo Motor Co., Ltd is a wholly owned subsidiary of Harbin Tech Full Electric Co., Ltd, a large-scale enterprise specializing in researching and manufacturing of large/medium-sized, high/low voltage and AC/DC motors, synchronous motor, high/low voltage three phase AC synchronous generators, DC generator, explosion-proof motor in Chinese mechanical industry. It is the key enterprise in top 500 enterprises in mechanical electrical appliance manufacturing industry in China. It is the supplier of dynamical systems which integrating the automation and complete-installation engineering of motor design manufacturing, mechanical processing, mold/die making, quality system,

The Company was founded in 1995 originally and now has a motor manufacturing and selling history of more than 50 years already. The Company formerly had the name of "Xi'an Motor Factory", and in 2004 was wholly reorganized into "Xi'an Simo Motor (Group) Co., Ltd.", in Oct 2009 the Company changed into "Xi'an Tech Full Simo Motor Co., Ltd." through equity transfer. The Company is located at No. 159, Mingguang Road, Xi'an Economic and Technological Development Zone, with the registered capital of 215 million Yuan.

"Simo" motor exported to abroad also, "SIMO" brand has passed the EU "CE", US "UL" "GOST" and ministry of railway "CRCC" certificate. "SIMO" get the above certificates at the earliest, ISO9001-2008 certificate, CECP, national security mandatory "CCC" certification. The Company is a quality credit AAA-grade enterprise. In 2006, company got the ISO14000 and OHSAS18000 certificates.

In Xi'an Tech Full Simo Motor Co., Ltd, there are more than 500 engineering technicians for motor R&D, manufacturing, test etc, of whom 21 are senior engineers, 150 engineers, 15 graduates of master's degree, and 15 provincial, municipal, ministerial experts. There are 2018 staffs in company, we can provide many services, such as motor design, develop, manufacture, repair (the company is the unique appointed motor products re-manufacture enterprise in northwest) and mould manufacture. After 60 years' development, company has become a modernized enterprise of a complex industrial structure, primarily engaging in motor manufacturing, additionally dealing in manifold businesses, and vigorously growing.

Company's products fall in 34 major series, 2000 varieties, more than 19,500 specifications, the power range from 0.35kW to 25,000 kW. Among them, YE3 series low voltage premium efficiency three phase asynchronous motor, YX, YXKS, YXKK series high voltage high efficiency three phase asynchronous motor has been listed in "National energy-saving products Huimin Project" high efficiency motor promotion catalog (the fifth lot). In addition, we also manufacture YVF、YVF2、YVFE2、YVFE3 series variable frequency and variable speed high/low voltage motor in batch, TFW350-5000KW series large size synchronous generator, T, TD, TK, TDMK series synchronous motor, YB2、YBX2、YBE2、YBE3 series explosion-proof series high/low voltage three phase asynchronous motor and Z2, Z4 and Z series DC motor. The registered trademark of "Simo" brand, in conformity with international, national, industrial and corporate standards, and widely applied in electricity, coal, petroleum, mining, metallurgy, railway, transportation, chemical industry, agriculture, water economy, aviation, navigation and high technologies and other areas. The Company is the motor supporting manufacturer specially designated by the Ministry of Railways.



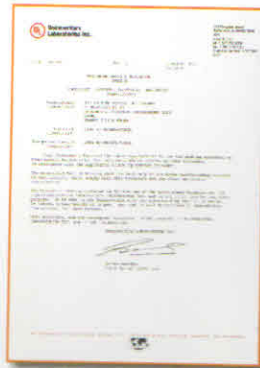
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追求卓越品质 打造国际品牌

持续创新改进 增强顾客满意



欧盟“CE”认证证书



美国“UL”认证证书



俄罗斯“GOST”认证证书



铁道部“CRCC”认证证书



国家“CCC”强制认证证书



质量管理体系认证证书



环境管理体系认证证书



职业健康安全管理体系认证证书



中国节能产品认证证书



中国质量认证中心

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YCH系列低启动电流、大负载转动惯量三相异步电动机

一、概述

YCH、YGF系列低启动电流、大负载惯量三相异步电机是西安泰富西玛西玛电机有限公司研制的最新产品；结合我公司60年来电机制造经验而倾力推出的重要产品。

本系列电机具有：体积小、重量轻、结构合理、用料上乘、制造精良、振动小、可靠性好、安装维护方便等特点，具有启动电流低（基本上在5倍以下，我国一般标准在5~7倍之间）、大负载惯量（电机允许的负载转动惯量可达NEMA标准值的2.5倍或以IEC标准值的7倍左右）等的突出特点。

本系列电动机是我公司最新研制的新产品，大量应用于我国石油化工行业的催化裂化装置配套电机及冶金行业的高炉风机配套电机等领域，深受广大用户的青睐和好评。

本系列电动机是在YCH、YGF710-4、800-4、900-4、三个中心高系列电机的基础上，经过不断的总结和改进，开发出了处于国内领先地位的YCH、YGF1000-4电机产品，并在YCH、YGF1000-4电机产品可靠运行，近十余年后，结合用户需求的发展，推出了具有世界先进水平的YCH、YGF1000-4电机产品，所提供的4P电机最大功率可达30000kW。

1. General Description

YCH、YGF series three-phase induction motors with low starting current and high load inertia are Xi'an Tech Full Simo Motor Co., Ltd's newest products. They are developed and manufactured with our 60 years of electric motor manufacturing experience.

YCH、YGF series three-phase induction motors with low starting current and high load inertia are featured by compact volume, light weight, reasonable construction, quality materials, excellent workmanship, low vibration, good reliability, easy erection and maintenance etc., and characterized by low starting current (basically below 5 times while the national standard is between 5 times to 7 times) and high load inertia (the permissible load inertia can be 2.5 times of NEMA standard value, or 7 times of IEC standard value) etc..

YCH、YGF series three-phase induction motors with low starting current and high load inertia have won good reputation from the clients and are warmly received. They have been widely applied in fields such as catalytic cracking installations in petrochemical industry, blast furnace blower sets in metallurgical industry, etc..

YCH、YGF series three-phase induction motors with low starting current and high load inertia are updated products based on 710-4, 800-4, 900-4 of YCH、YGF standard series. Though continuous summarizing and improving, we developed YCH、YGF 1000-4 and after YCH、YGF1000-4 series' nearly 10 years of reliable operation and taking the clients' demand in consideration, we have developed YCH、YGF1120-4 series with 30000kW as its largest output.

二、结构说明

YCH、YGF系列电动机为鼠笼型、带空—水冷却器的封闭式（基本防护等级IP44，冷却方式IC81W）。卧式安装（安装方式IMB3）。

电动机总体结构为箱式结构，零米安装，采用端盖式轴承，端盖采用整圆式，为便于安装、检查及维护，端盖上半部装一个薄板盖板。其中，YCH、YGF710-4、800-4、900-4采用的是常规的端盖式滑动轴承，YCH、YGF1000-4、1120-4是我公司自主开发的“端盖式座式滑动轴承及其端盖”，机座为方形，采用钢板焊接成箱体，结构合理，刚性好，两端配有起吊攀，起吊方便。

本系列电动机具有一个圆柱形轴伸，单键联接，转向可根据用户要求，单向运行。

定子绕组采用F级绝缘材料，端部有可靠的固定及绑扎，在制造过程中，经过多次匝间脉冲电压试验及对地耐压试验，并采用真空压力浸渍无溶剂漆工艺（VPI）处理，电动机的电气绝缘性能可靠，机械强度高，防潮能力强。

电动机鼠笼转子导条采用铜排，焊接性能好，强度高。转子导电排和端环采用先进可靠的中频焊接工艺，并经槽内紧固处理。

主出线盒为IP54防护等级，一般装于电动机右侧（从电动机轴身端看），也可按订货要求装于电动机左侧。主出线盒内可按订货要求加装保护设备（如电流互感器、避雷器等）。

电动机带防潮加热器，并有测温装置，可自行防止加热器表面温度过高。

定子绕组和轴瓦均带铂热电阻测温原件，分度号为PT100，机座上带进、出风温度计，用于监测风温，以确保电动机可靠运行。

2. Structure Description

The motor series YCH、YGF is of enclosed squirrelcage type with air-water cooler, protection degree of IP44 in normal, cooling method of IC81W, mounting type of IMB3(horizontal mounting).

The motor is generally of a box type structure and floor mounting. End bracket bearing is adopted. The bearing has a integral round bracket, the upper half of which is equipped with a small end cover for convenient installation, inspection and maintenance. The YCH、YGF710-4,800-4,900-4 apply normal end bracket sleeve bearing, and the YCH、YGF1000-4,1120-4 apply "the end bracket and pedestal type sleeve bearing and end shield", which is developed by us independently. The quadrate stator frame is of a fabricated box construction which is light in weight and high in rigidity.

This series of motors has a cylindrical shaft with a single key. The rotation direction is determined in compliance with the requirement of customer. The motor is permitted running with single directional rotation.

Class F insulation material is used for the stator winding and the end portion is securely fixed and bound. After several times of voltage impulse test between turn to turn and voltage endurance test to the ground during manufacturing process and vacuum pressure impregnation(VPI) treatment with solventless varnish and sometime also anti-corona treatment upon customer's requirements, the motors have a reliable insulation performance, high conducting bars. Advanced and reliable medium-frequency welding technology is adopted to connect the conducting bars and the end rings. In slot positioning measure is made to prevent the rotor bars from movement.

The main terminal box with protection degree of IP54 is generally installed on the right hand of the motor(view from shaft extension end), and also can be on the left hand according to customer's requirements. In addition, main

terminal box can be equipped with some protection devices(such as current transformer and lightning arrestor etc.).

The motor is equipped with a space heater, the motor is provided with a temperature control device in order to prevent the surface of the heater form overheating. Both the stator winding and the bearing bushes are provided with temperature detecting elements, Pt100. The stator frame is provided with air inlet and air outlet thermometers so as to ensure a reliable operation of the motor.

三、电动机的起动

YCH、YGF系列电动机采用了先进的计算程序，对起动电流、起动时间、定子绕组温升、转子导条温升、端环温升等进行了详细准确的计算，以防电动机因起动负荷过重而导致电动机损坏。在制造过程中采用了先进的工艺手段，以确保电动机起动、运行的可靠性。

在系统方案设计时，建议用户检查：

(1) 被驱动机械转动部分的转动惯量 J （折算到电动机转速时）应不超过技术数据表中“负载转动惯量 J ”项的数值。

(2) 用户的电网应保证在起动过程中电动机的端电压不低于额定电压的85%。

(3) 被传动机械的阻力矩特性为压缩机，鼓风机类阻力矩特性。在额定转速时，折算到电动机端的阻力矩不大于电动机额定转矩的35%。

在上述条件下，电动机允许在实际冷状态下连续起动两次（两次起动时间应为自然停机）、或在电动机热状态上起动一次，电动机在上述起动之后额外的再次起动应在停车4小时以后。

注：①如果负载机械转动部分的转动惯量超过技术数据表中的数值；

②因电网短路容量较小，起动过程中最低电动机端电压低于额定电压的85%；

③被驱动机械的阻力矩特性非压缩机、鼓风机类阻力矩特性；

④阻力矩特性虽为压缩机、鼓风机类阻力矩特性，但在额定转速时，折算到电动机端的阻力矩大于电动机额定转矩的35%时，则务请事先和制造公司联系，作为特殊订货，以保障电动机的可靠启动。

由于本系列电动机最大功率可达30000kW采用常规起动方法时，对电网冲击影响较大，我公司可成套提供对电网无冲击的电动机起动变频装置。

3.starting of the motor

Advanced computing technology is used to calculate tile starting current, starting time, temperature rise of stator winding, temperature rise of rotor bars and temperature rise of end rings in order to protect the motor from early damage due to excessive starting load.

In system designing, it' s recommended for the customer to check:

1)The moment of inertia J of the rotating parts of the driven machine(converted to the rated speed) not exceed the value J (load) listed in the technical date table.

2)The line voltage measured at the terminals of the motor during starting period not less than 85% of the tile ratings.

3)The characteristics of the resistance torque of the driven machine are compressor-like or blower-like ones, and at rated speed the resistance moment converted to the motor side not exceed 35% of the rated torque of the motor. Under above-mentioned conditions, the motor is permitted to be started consecutively twice under actual cold state (natural coasting down to still between two starts), or once under hot state.

Additional starts after the above mentioned should be made 4 hours later after the motor is shut down.

In the following cases, please consult the manufacturer in advance and a special order should be placed in order to guarantee a reliable starting of motor:

①It' s requested that the mass moment of inertia of the mechanical rotation part driven by the motor is to exceed the J value presented in the technical data table.

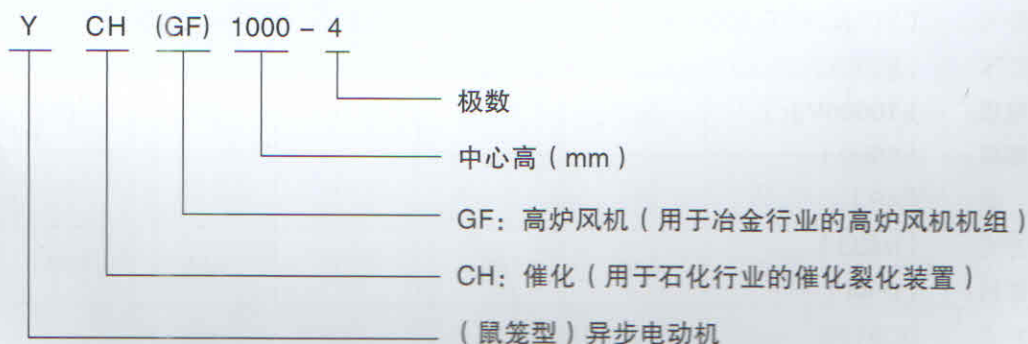
②The network short-circuit capacity is relative small. The lowest terminal voltage of the motor is lower than 85% of the ratings.

③The characteristics of the resistance moment of the driven machine is not compressor like or blower-like.

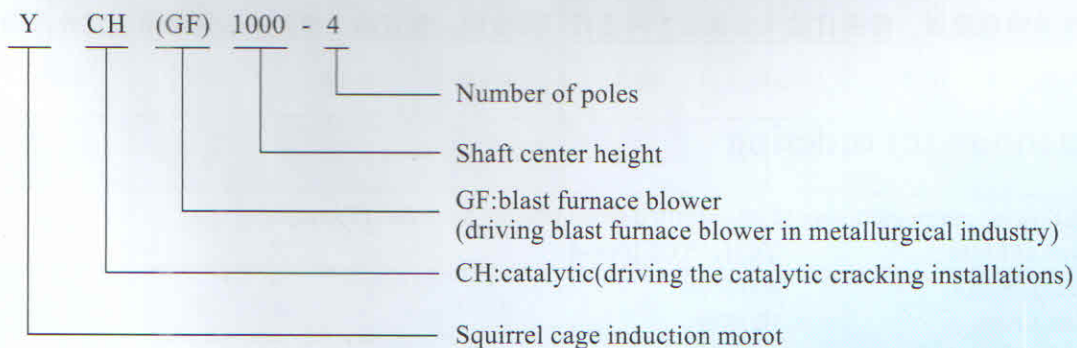
④Though the characteristics of the resistance moment of the driven machine is compressor like or blower-like, at rated speed, the resistance moment converted to the motor side is greater than 35% of the rated torque of the motor, in order to guarantee reliable start, please contact with us before place order.

Notes: As the largest output of the series motor can be 30000kW, there will be relabively big shock to the network when the motor starts. Xi'an Tech Full Simo Motor Co.,Ltd' s can supply the whole set of frequency converter device which will not cause shock to the network.

四、型号说明



4. Type designation



五、用途

YCH、YGF系列电动机可广泛应用于冶金、石化、电站、矿山等各种工矿企业中作原动机，用以驱动压缩机、风机、水泵等各种通用机械及其他机械设备。

本系列电动机尤其适用于要求低启动电流并驱动大负载转动惯量的石化行业中催化裂化装置，冶金行业中的高炉风机机组等。

5. application

This series of motors is mainly applicable as prime drivers in power plants, mines, petrochemical industry and steel works etc. To drive compressors, blowers, water pumps and other mechanical equipment.

This series is especially suitable for driving the catalytic cracking installations in petrochemical industry and blast furnace blower sets in metallurgical industry.

六、订货注意事项：

请在订货时注明一下参数

电机型号：（YCH、YGF 1000-4）

额定功率：（9000kW）

额定电压：（10000V）

额定频率：（50Hz）

极数：（4P）

安装方式：（IMB3）

防护等级：（IP44）

冷却方式：（IC81W）

旋转方向：〔顺时针转向（面对电动机轴伸端看）〕

出线盒位置：（面对电动机轴伸端看在电动机右侧）

环境条件：（≤1000m,+5℃~+40℃）

其他特殊要求，需另订技术协议后方可签订订货合同。签订后，请向本公司索取正式外形图。

6.attention for ordering

The following parameters should be specified when placing an order: (Example)

Type of Motor: YCH、YGF1000-4

Rated Output: 9000kW

Rated Voltage: 10000V

Rated Frequency:	50Hz
Number of Poles:	4P
Type of Mounting:	IMB3
Degree of Protection:	Ip44
Method of Cooling:	IC81W
Rotating Direction:	Clockwise (seeing from drive end)
Position of Terminal Box:	On the left right hand(view from shaft extension end)
Environmental Conditions:	Elevation above sea level: ≤ 1000m, +5℃~+40℃

Note: If there are special requirements, a technical agreement should be entered into before signing the order contact.
When technical agreement signed, please ask for formal outline drawing from us.

七、主要技术数据

1、YCH、YGF系列710-4、800-4、900-4异步电动机技术数据(6000V)(设计值)

The technical data of the series YCH、YGF710-4、800-4、900-4 asynchronous motor(6000V)(design value)

中心高 Center Height	功率 Rated output kW	电流 Rated Current A	效率 Effi. %	功率因数 Power factor COSΦ	最大转矩	堵转转矩	堵转电流	J _{负载} J _{Load} kg·m ²
					额定转矩	额定转矩	额定电流	
					$\frac{T_{max}}{T_N}$	$\frac{T_{st}}{T_N}$	$\frac{I_{st}}{T_N}$	
710	3300	361	97.0	0.905	2.00	0.74	4.87	2150
710	3600	393	97.1	0.906	2.00	0.75	4.86	2250
710	4000	436	97.1	0.907	2.00	0.77	4.94	2400
710	4500	492	97.1	0.907	1.93	0.75	4.76	2600
710	5000	545	97.2	0.908	1.94	0.77	4.80	2800
710	5600	625	96.9	0.880	1.65	0.62	4.50	2850
710	6300	710	96.9	0.880	1.60	0.60	4.40	2900
800	7100	771	97.1	0.913	1.93	0.78	4.76	3150
900	8000	878	96.9	0.905	1.84	0.51	4.20	3500
900	9000	982	97.1	0.909	1.88	0.54	4.34	3650

2、YCH、YGF系列710-4、800-4、900-4异步电动机技术数据(10000V)(设计值)

The technical data of the series YCH、YGF710-4、800-4、900-4 asynchronous motor(10000V)(design value)

中心高 Center Height	功率 Rated output kW	电流 Rated Current A	效率 Effi. %	功率因数 Power factor COSΦ	最大转矩	堵转转矩	堵转电流	J _{负载} J _{Load} kg·m ²
					额定转矩	额定转矩	额定电流	
					$\frac{T_{max}}{T_N}$	$\frac{T_{st}}{T_N}$	$\frac{I_{st}}{T_N}$	
710	3200	218	96.9	0.87	1.68	0.52	3.87	2250
800	3800	275	95.7	0.89	1.72	0.56	3.98	2400
800	4500	303	96.0	0.89	1.85	0.61	4.29	2900
800	6000	408	96.1	0.88	1.60	0.54	3.68	3050
900	6300	418	96.0	0.90	1.90	0.52	4.23	3100
900	7100	466	96.2	0.91	2.01	0.56	4.53	3200
900	7800	571	96.2	0.90	1.82	0.51	4.09	3300

3、YCH、YGF系列1000-4(1000-18000)kW 6000V异步电动机的技术性能参数表

The technical data of the series YCH、YGF 1000-4 Induction Motor 6000V

中心高 Center Height	电流 Rated Current A	效率 Effi. %	功率因数 Power factor COSΦ	最大转矩	堵转转矩	堵转电流	J _{负载} J _{Load} kg·m ²
				额定转矩	额定转矩	额定电流	
				$\frac{T_{max}}{T_N}$	$\frac{T_{st}}{T_N}$	$\frac{I_{st}}{T_N}$	
10000	1089	96.6	0.915	1.96	0.56	4.37	3800
12000	1295	96.8	0.920	1.96	0.59	4.44	5345
14000	1506	96.9	0.923	1.94	0.59	4.42	5700
16000	1730	97.0	0.918	1.86	0.57	4.24	5935
18000	1966	96.6	0.910	1.71	0.53	3.86	6175

4、YCH、YGF系列1000-4(8000~18000)kW 10000V异步电动机的技术性能参数表

The technical data of the series YCH、YGF 1000-4 Induction Morot (8000~18000)kW 10000V

中心高 Center Height	电流 Rated Current A	效率 Effi. %	功率因数 Power factor COS Φ	最大转矩	堵转转矩	堵转电流	J _{负载} J _{Load} kg·m ²
				额定转矩	额定转矩	额定电流	
				T _{max} T _N	T _{st} T _N	I _{st} T _N	
8000	526	96.23	0.912	1.95	0.50	4.27	4050
10000	652	96.54	0.916	2.02	0.54	4.49	4510
12000	784	96.67	0.915	1.88	0.52	4.21	4950
14000	911	96.87	0.916	1.90	0.53	4.26	5700
16000	1034	97.04	0.920	2.02	0.58	4.59	5950
18000	1158	97.16	0.923	2.11	0.62	4.84	6410

5、YCH、YGF系列1120-4 (19000~30000) kW 10000V异步电动机的技术性能参数表

The technical data of the series YCH、YGF 1120-4 Induction Morot (19000~30000) kW 10000V

中心高 Center Height	电流 Rated Current A	效率 Effi. %	功率因数 Power factor COS Φ	最大转矩	堵转转矩	堵转电流
				额定转矩	额定转矩	额定电流
				T _{max} T _N	T _{st} T _N	I _{st} T _N
19000	1235	97.5	0.911	1.81	0.32	4.16
21000	1380	97.5	0.901	1.64	0.28	3.73
23000	1489	97.7	0.914	1.83	0.33	4.34
25000	1589	97.9	0.928	2.29	0.44	5.55
28000	1790	97.9	0.922	2.04	0.39	4.92
30000	1927	97.9	0.918	1.90	0.36	4.75

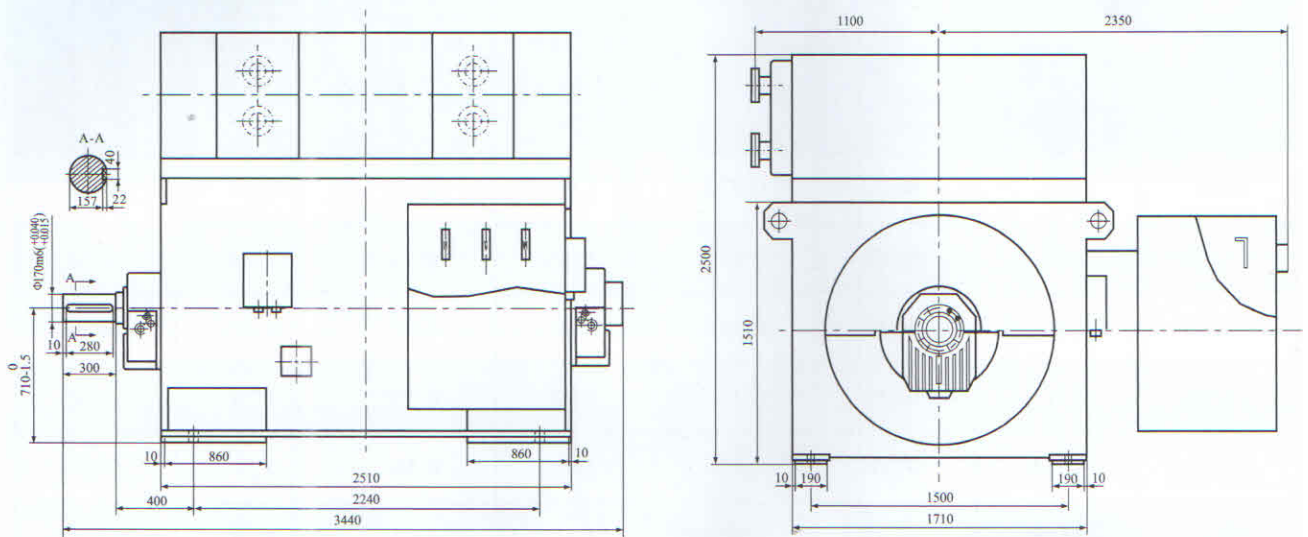
注：随着技术的进步和有关国内外标准的修改，样本内尺寸及技术参数改动时，恕不另行通知。

NOTES: Because of technical progress and the revising of domestic and international standards.

We will not inform the dimension and technical data-changes in catalogue

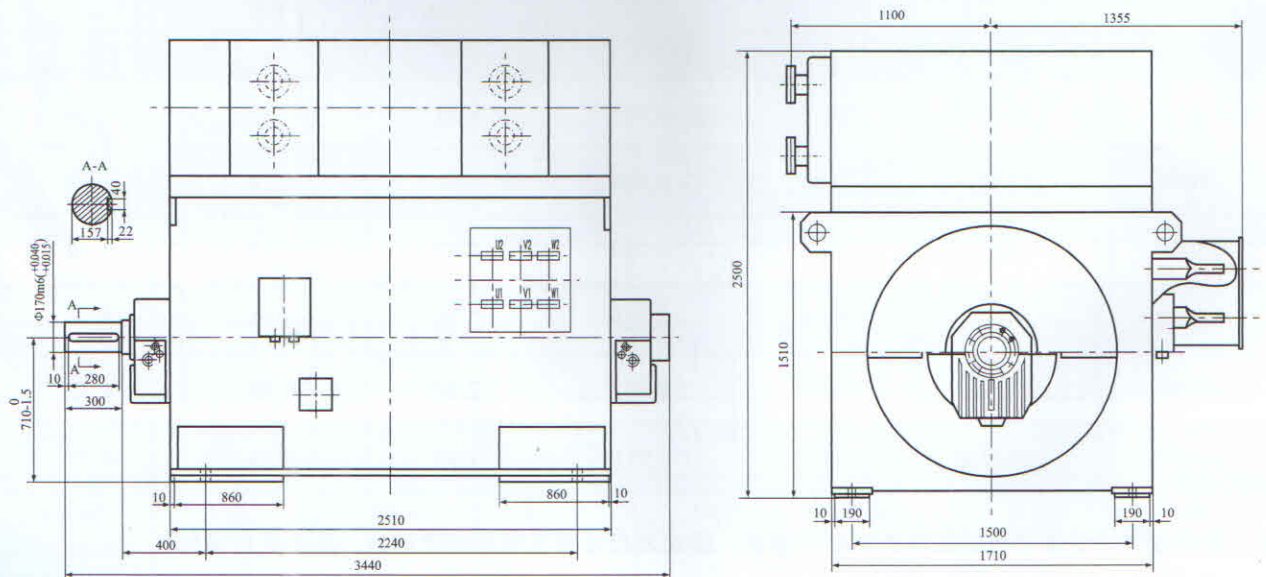
YCH系列710-4三相异步电动机外形尺寸图

YCH Series 710-4 Three-Phase Induction Motors Outline Drawings



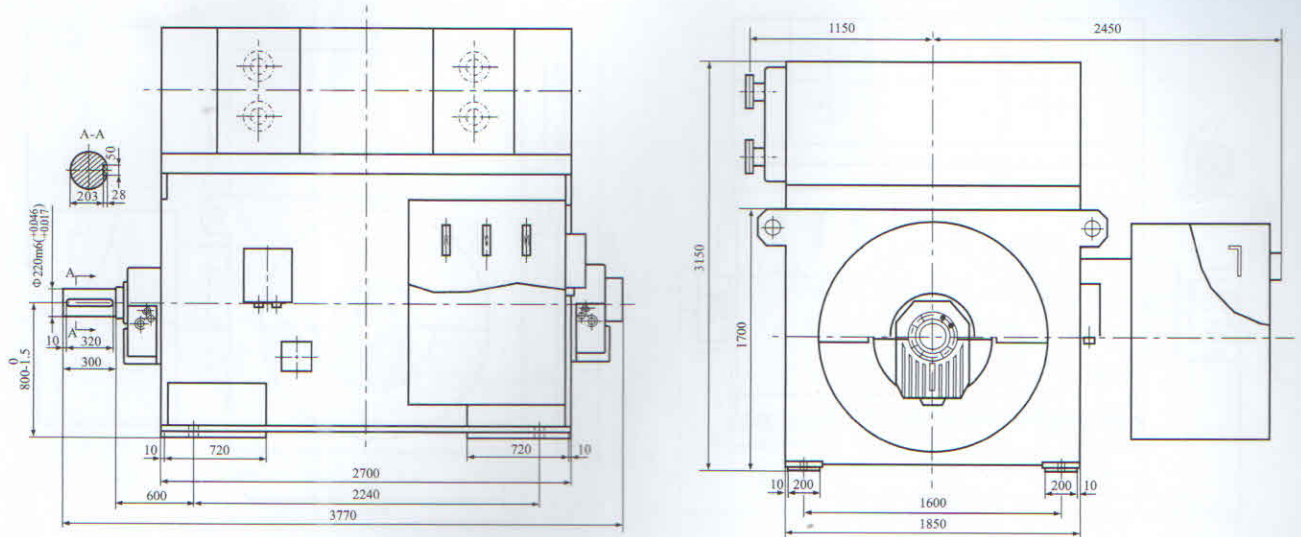
YGF系列710-4三相异步电动机外形尺寸图

YGF Series 710-4 Three-Phase Induction Motors Outline Drawings



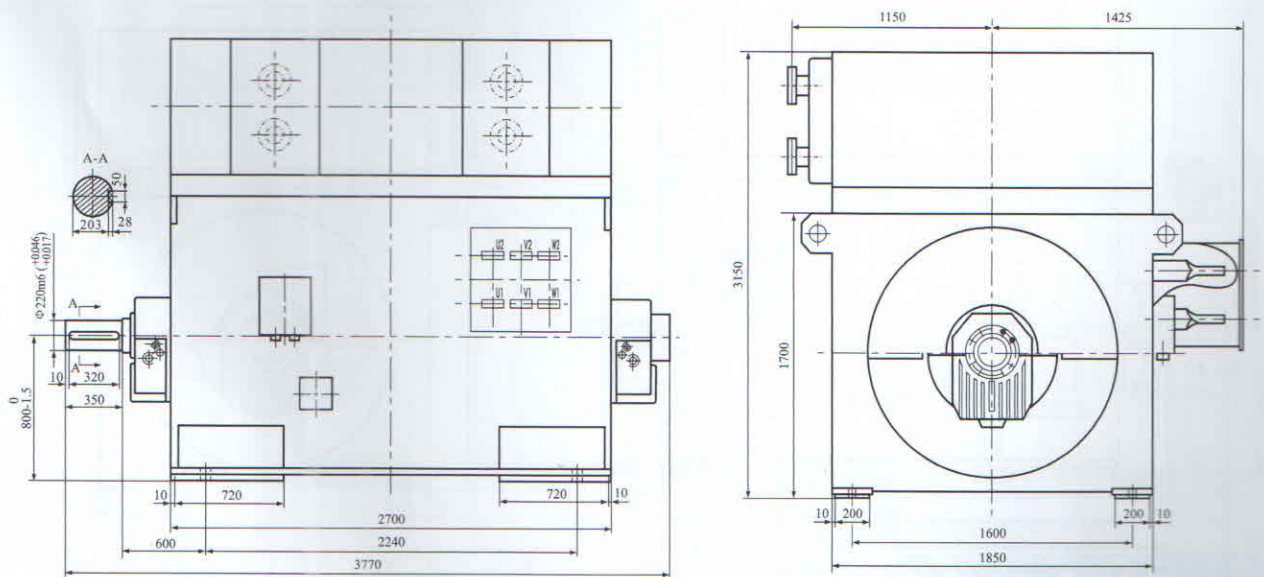
YCH系列800-4三相异步电动机外形尺寸图

YCH Series 800-4 Three-Phase Induction Motors Outline Drawings



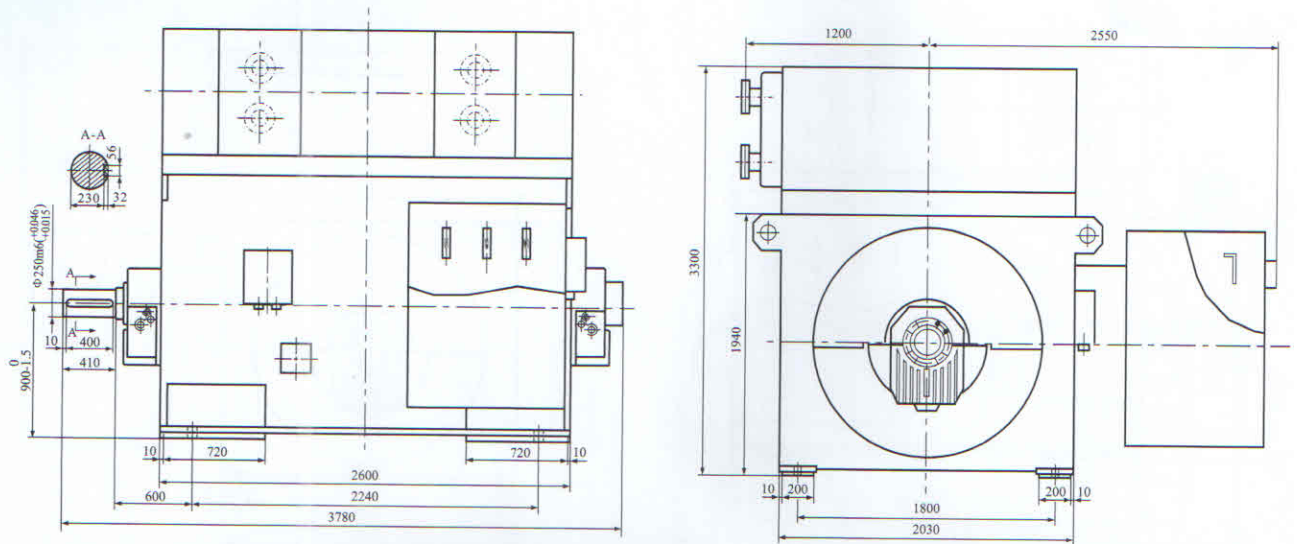
YGF系列800-4三相异步电动机外形尺寸图

YGF Series 800-4 Three-Phase Induction Motors Outline Drawings



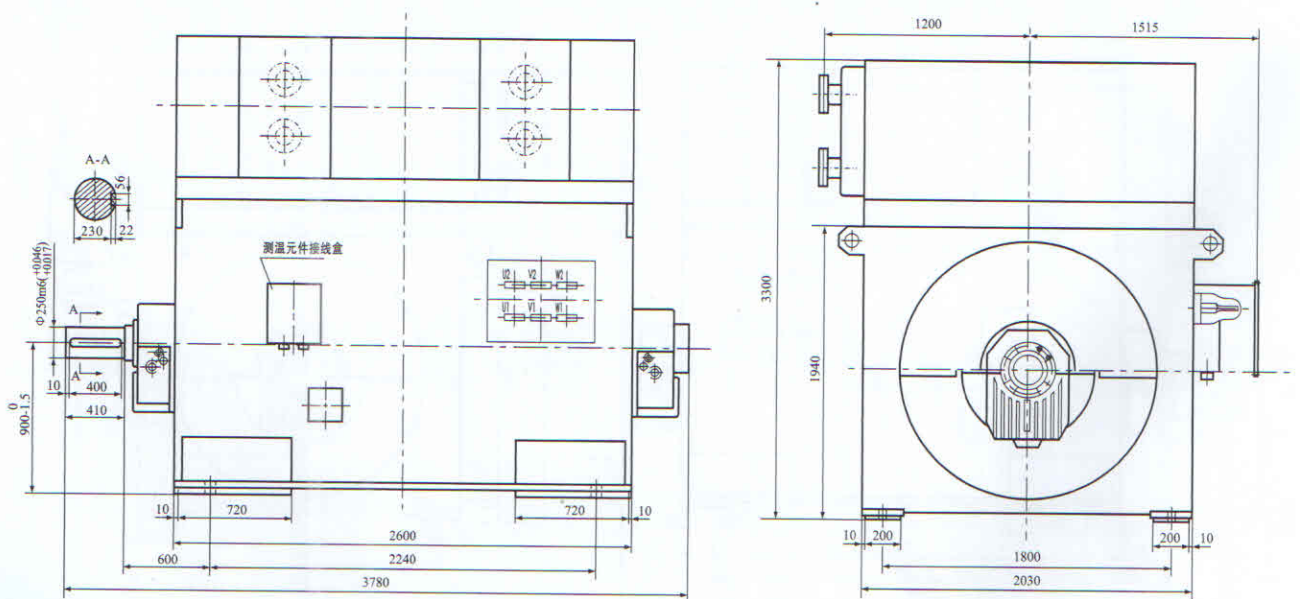
YCH系列900-4三相异步电动机外形尺寸图

YCH Series 900-4 Three-Phase Induction Motors Outline Drawings



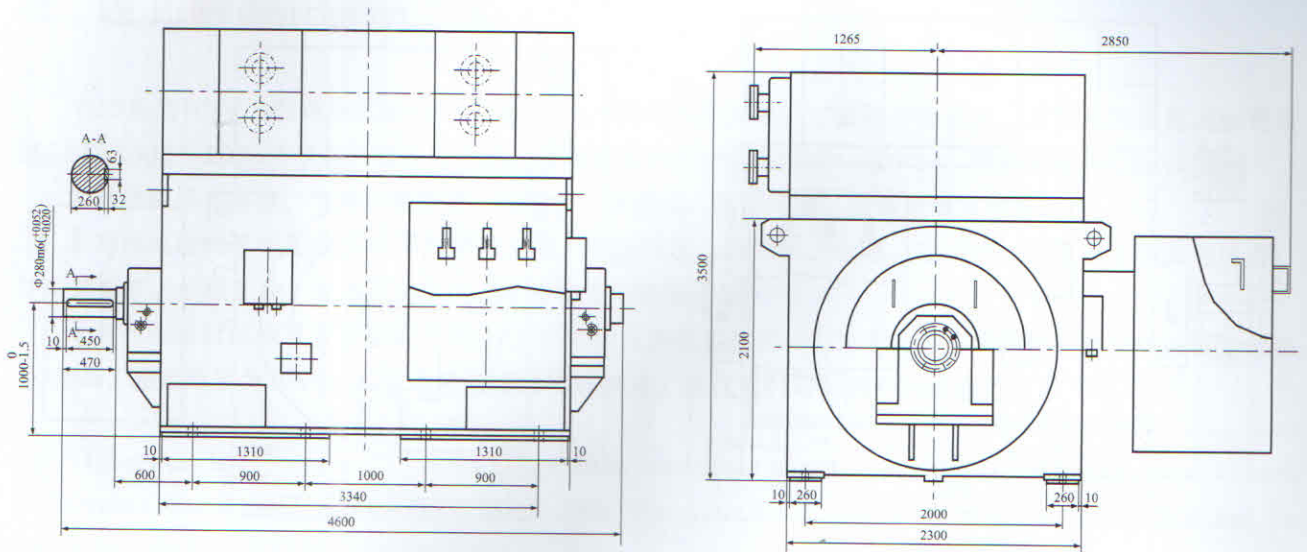
YGF系列900-4三相异步电动机外形尺寸图

YGF Series 900-4 Three-Phase Induction Motors Outline Drawings



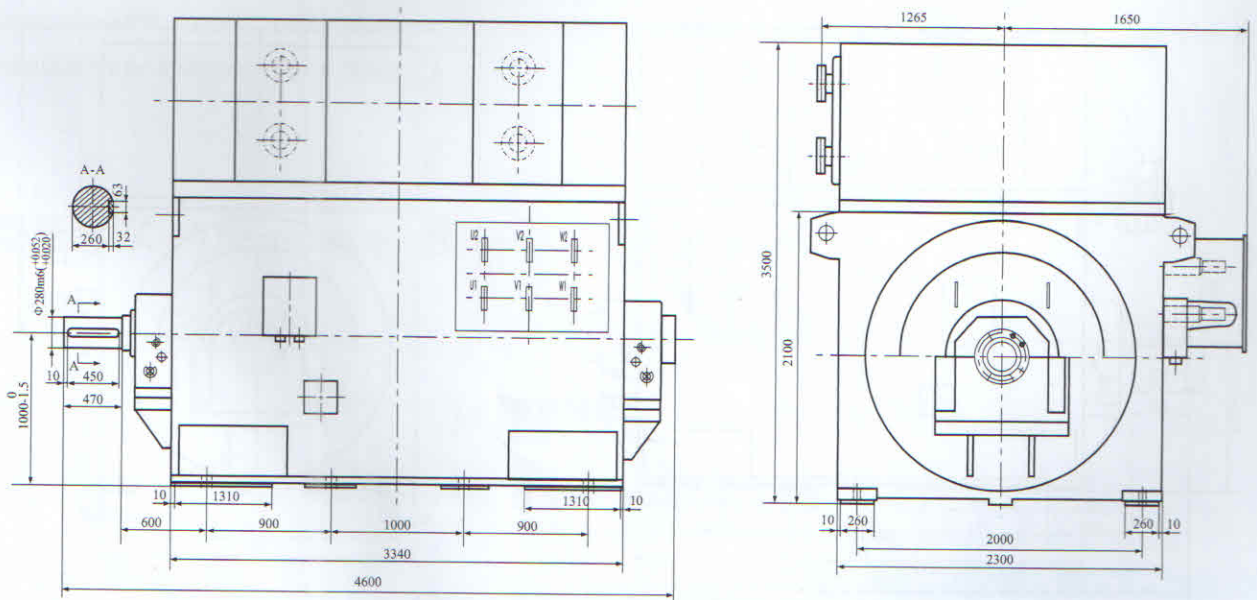
YCH系列1000-4三相异步电动机外形尺寸图

YCH Series 1000-4 Three-Phase Induction Motors Outline Drawings



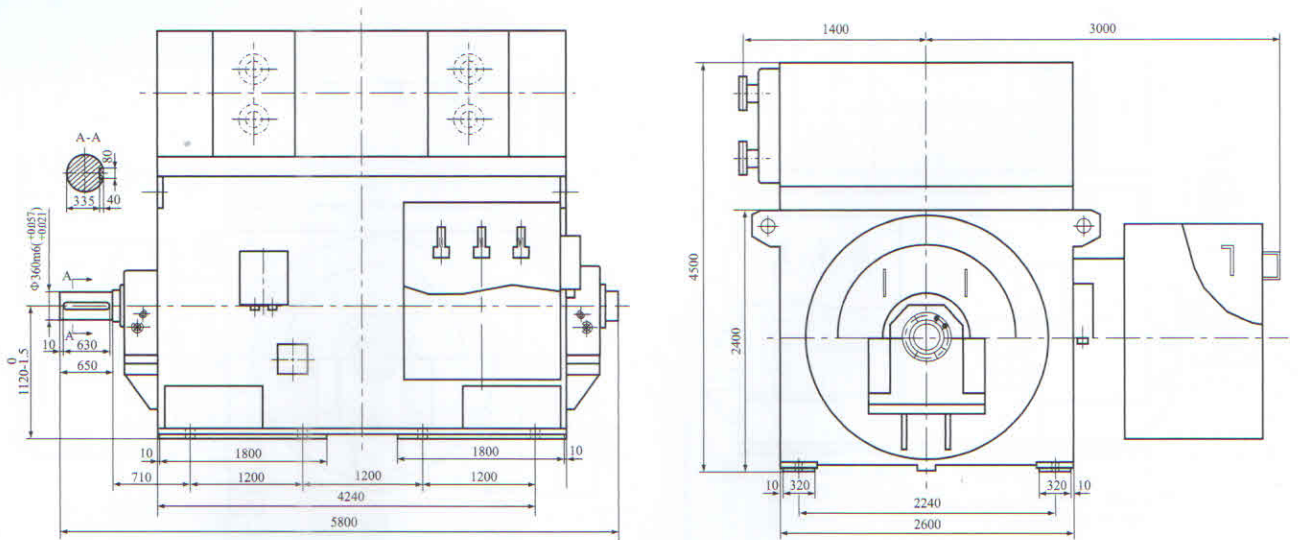
YGF系列1000-4三相异步电动机外形尺寸图

YGF Series 1000-4 Three-Phase Induction Motors Outline Drawings



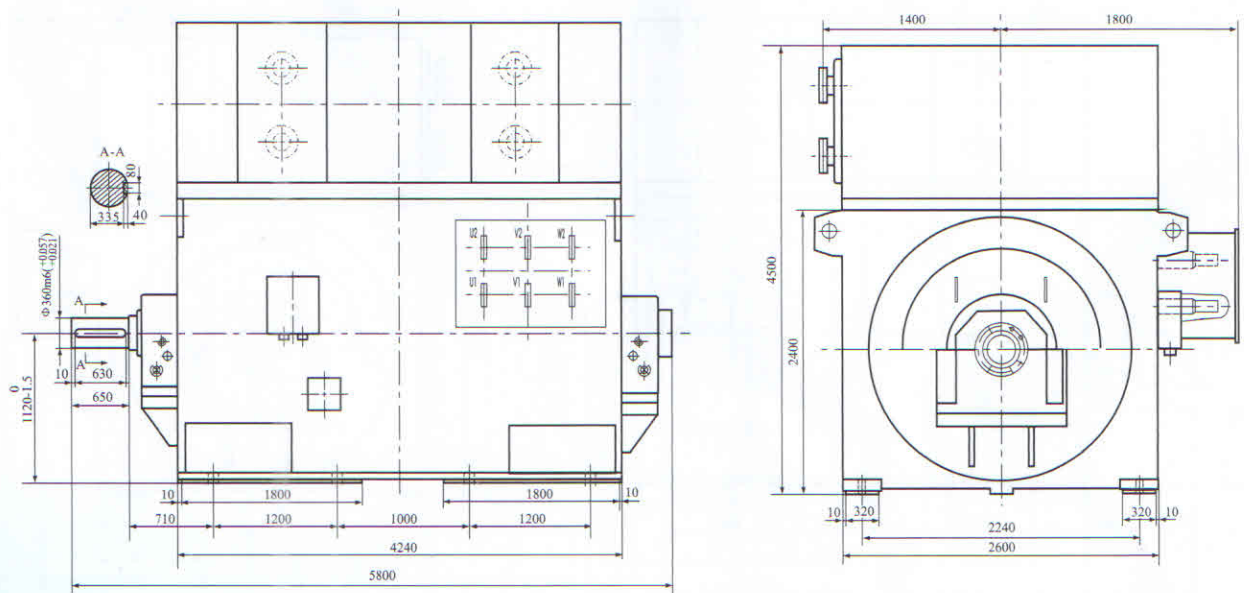
YCH系列1120-4三相异步电动机外形尺寸图

YCH Series 1120-4 Three-Phase Induction Motors Outline Drawings



YGF系列1120-4三相异步电动机外形尺寸图

YGF Series 1120-4 Three-Phase Induction Motors Outline Drawings



YCS系列 高压三相异步电动机 (中心高450~1000)

概述 Brief description

YCS系列10kV三相异步电动机(中心高450~1000)为笼型转子三相异步电动机。该三相异步电动机是按照GB/T 13957-2008技术条件派生生产的。该电动机的防护等级为IP44或IP54,冷却方法为IC81W。

本电动机具有高效、节能、噪音低、振动小、重量轻、性能可靠、安装维修方便等优点。

本系列电动机可作驱动各种不同机械之用。如通风机、压缩机、水泵、破碎机、切削机床及其它设备,并可供煤矿、机械工业、发电厂及各种工矿企业作原动机之用。

本系列电动机结构及安装型式为IMB3,定额是以连续工作制(S1)为基础连续定额,电动机的额定频率为50Hz,额定电压为10kV,其它电压等级或特殊要求,在订货时可与用户共同商订。

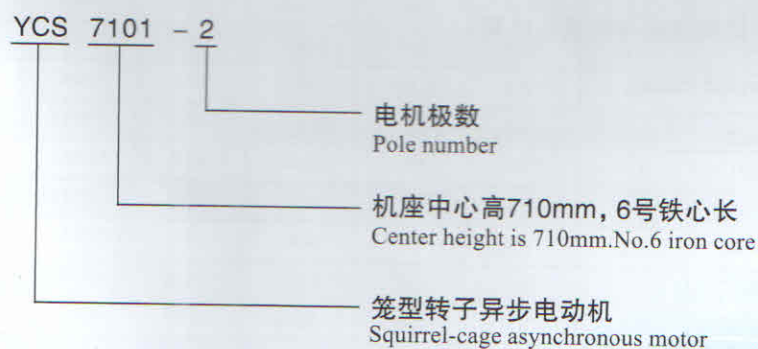
YCS series (10kV) motor is of closed squirrelcage three phase asynchronous motor(center height from 450mm to 1000mm), which complies with GB/T 13957-2008. The protection degree of the motor is of IP44/IP54 and the cooling method is of IC81W.

The motor has such advantage as high efficiency, energy saving, low noise, low vibration, light weight and reliable performance. They are easy for installation and maintenance.

This motor is used to drive various mechanical equipments such as blowers, compressors, pumps, crushers, stock removing machines. It can serve as the prime movers in coalmines, mechanical industries, power plants and various industrial enterprises.

The structure and the mounting type is of IMB3 with continuous duty(S1).The rated frequency is 50Hz and the rated voltage is 10000V, other voltage requirements or special requirements should be negotiate with the manufacturer before order is placed.

型号含义 The meaning of type



技术数据见表1

Technical Data see Appendix 1

外形安装尺寸见表2

Mounting and Contour Dimensions see Appendix 2

定货须知 (用户订货时须注明如下要求)

When ordering, the following requirement should be specified

- | | |
|----------------------------------|-----------------------------------|
| ◎电机型号: (YCS7105-4) | Frame size such as: (YCS7105-4) |
| ◎额定功率: (2240kW) | Rated power: (2240kW) |
| ◎额定电压: (10000V) | Rated Voltage: (10000V) |
| ◎额定频率: (50Hz) | Rated Frequency: (50Hz) |
| ◎同步转速: (1500r/min) | Synchronous Speed: (1500r/min) |
| ◎安装方式: (IMB3) | Mounting Type: (IMB3) |
| ◎防护等级: (IP44或IP54) | Protection Degree: (IP44或IP54) |
| ◎冷却方式: (IC81W) | Cooling Method: (IC81W) |
| ◎绝缘等级: (F级) | Insulation Class: (Class F) |
| ◎环境条件: 海拔 (1000m) 环境温度 (40℃) | |

Ambient Conditions: altitude should not be over 1000 meters above sea level, the vary of ambient temperature should not exceed 40℃

注: 禁用皮带轮传动; 若需皮带轮传动应与制造商协商。

Note: Belt driving is not allowed on the motor.

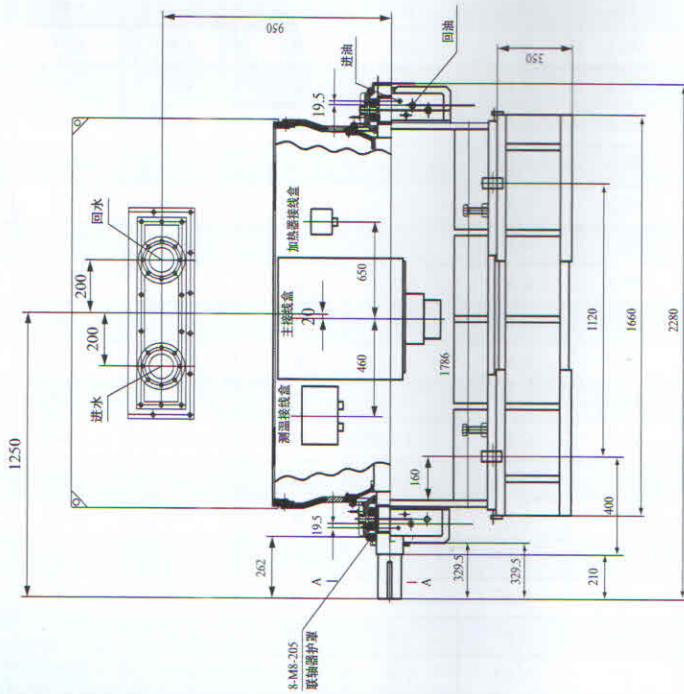
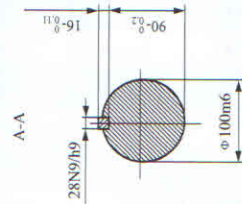
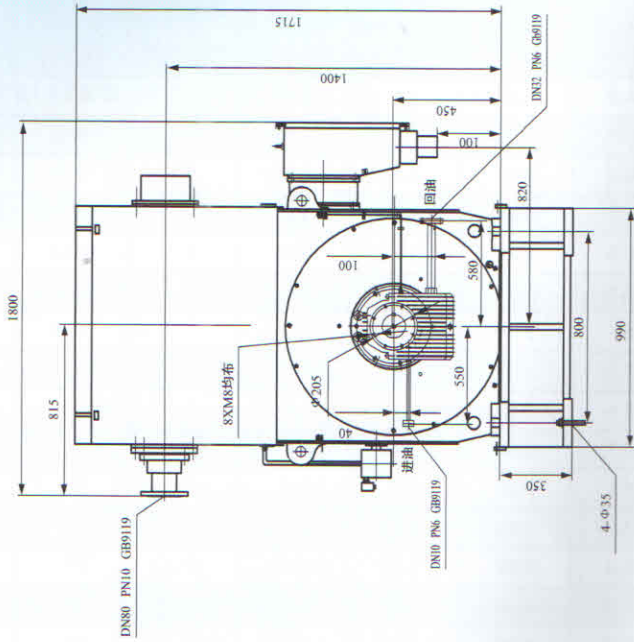
Belt driving applied on the motor , should be negotiated with manufacturer.

表1 (Table 1)

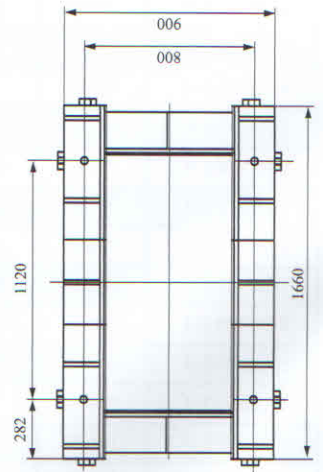
型号	额定功率 kW	额定电流 A	转速 (r/min)	效率 (%)	功率 因数 $\cos\phi$	最大转矩	堵转转矩	堵转电流	J(电机)	J(负载)
						额定转矩	额定转矩	额定电流	$\text{kg} \cdot \text{m}^2$	$\text{kg} \cdot \text{m}^2$
YCS4501-2	630	44.2	2990	94.6	0.87	1.8	0.55	7	9.5	32
YCS4502-2	710	49.2	2990	94.7	0.88	1.8	0.55	7	10.2	37
YCS4503-2	800	55.4	2990	94.8	0.88	1.8	0.55	7	10.9	42
YCS4504-2	900	62.2	2990	94.9	0.88	1.8	0.55	7	11.7	48
YCS4505-2	1000	69.1	2990	95.0	0.88	1.8	0.55	7	12.4	52
YCS5001-2	1120	77.2	2978	95.2	0.88	1.8	0.6	7	13.9	65
YCS5002-2	1250	85.0	2978	95.4	0.89	1.8	0.6	7	15.4	70
YCS5003-2	1400	95.1	2978	95.5	0.89	1.8	0.6	7	16.6	75
YCS5004-2	1600	108.6	2978	95.6	0.89	1.8	0.6	7	18.2	80
YCS5601-2	1800	122.0	2985	95.7	0.89	1.8	0.6	7	28	72
YCS5602-2	2000	135.4	2985	95.8	0.89	1.8	0.6	7	31	76
YCS5603-2	2200	148.8	2985	95.9	0.89	1.8	0.6	7	33	80
YCS5604-2	2500	168.9	2985	96.0	0.89	1.8	0.6	7	37	85
YCS6301-2	2800	189.4	2978	95.9	0.89	1.8	0.5	7	28	75
YCS6302-2	3200	216.5	2978	95.9	0.89	1.8	0.5	7	32	80
YCS6303-2	3600	243.2	2981	96	0.89	1.8	0.5	7	35	85
YCS6304-2	4000	270.3	2983	96	0.89	1.8	0.5	7	40	90
YCS7101-2	4500	300	2990	96.2	0.9	1.8	0.5	6.5	55.6	190.2
YCS7102-2	5000	333	2990	96.3	0.9	1.8	0.5	6.5	59.2	198.5
YCS7103-2	5600	372.7	2990	96.4	0.90	1.8	0.5	6.5	62.8	206
YCS7104-2	6300	418.8	2990	96.5	0.90	1.8	0.5	6.5	66.4	215
YCS6301-4	3150	217.8	1495	96	0.87	1.8	0.5	6.5	145	300
YCS6302-4	3550	245.1	1495	96.1	0.87	1.8	0.5	6.5	154	320
YCS6303-4	4000	276	1495	96.2	0.87	1.8	0.5	6.5	163	350
YCS6304-4	4500	310	1495	96.4	0.87	1.8	0.5	6.5	173	380
YCS7101-4	4600	317.3	1495	96.2	0.87	1.8	0.5	6.5	246.5	273.7
YCS7102-4	5000	344.5	1495	96.3	0.87	1.8	0.5	6.5	252	292
YCS7103-4	5600	385.5	1495	96.4	0.87	1.8	0.5	6.5	257.5	310.7
YCS7104-4	6300	433.2	1495	96.5	0.87	1.8	0.5	6.5	263.5	336.6
YCS7105-4	7100	487.7	1495	96.6	0.87	1.8	0.5	6.5	273.6	362.5
YCS9001-4	7200	495	1496	96.5	0.87	1.8	0.5	6.0	833	596
YCS9002-4	8000	550	1496	96.6	0.87	1.8	0.5	6.0	928	622
YCS9003-4	9000	618	1496	96.7	0.87	1.8	0.5	6.0	1042	649
YCS9004-4	10000	686	1496	96.8	0.87	1.8	0.5	6.0	1165	687
YCS10001-4	10500	718	1496	97	0.87	1.8	0.5	6.0	1120	536
YCS10002-4	11200	765	1496	97	0.87	1.8	0.5	6.0	1120	536
YCS10003-4	12500	854	1496	97	0.87	1.8	0.5	6.0	1251	549
YCS10004-4	14000	956	1496	97	0.87	1.8	0.5	6.0	1372	563
YCS10005-4	15000	1024	1496	97	0.87	1.8	0.5	6.0	1372	563
YCS10006-4	18000	1229	1496	97.1	0.87	1.8	0.5	6.0	1570	592

YCS450-2三相异步电动机链接尺寸标准图

YCS450-2 Three-Phase Induction motor outline drawing

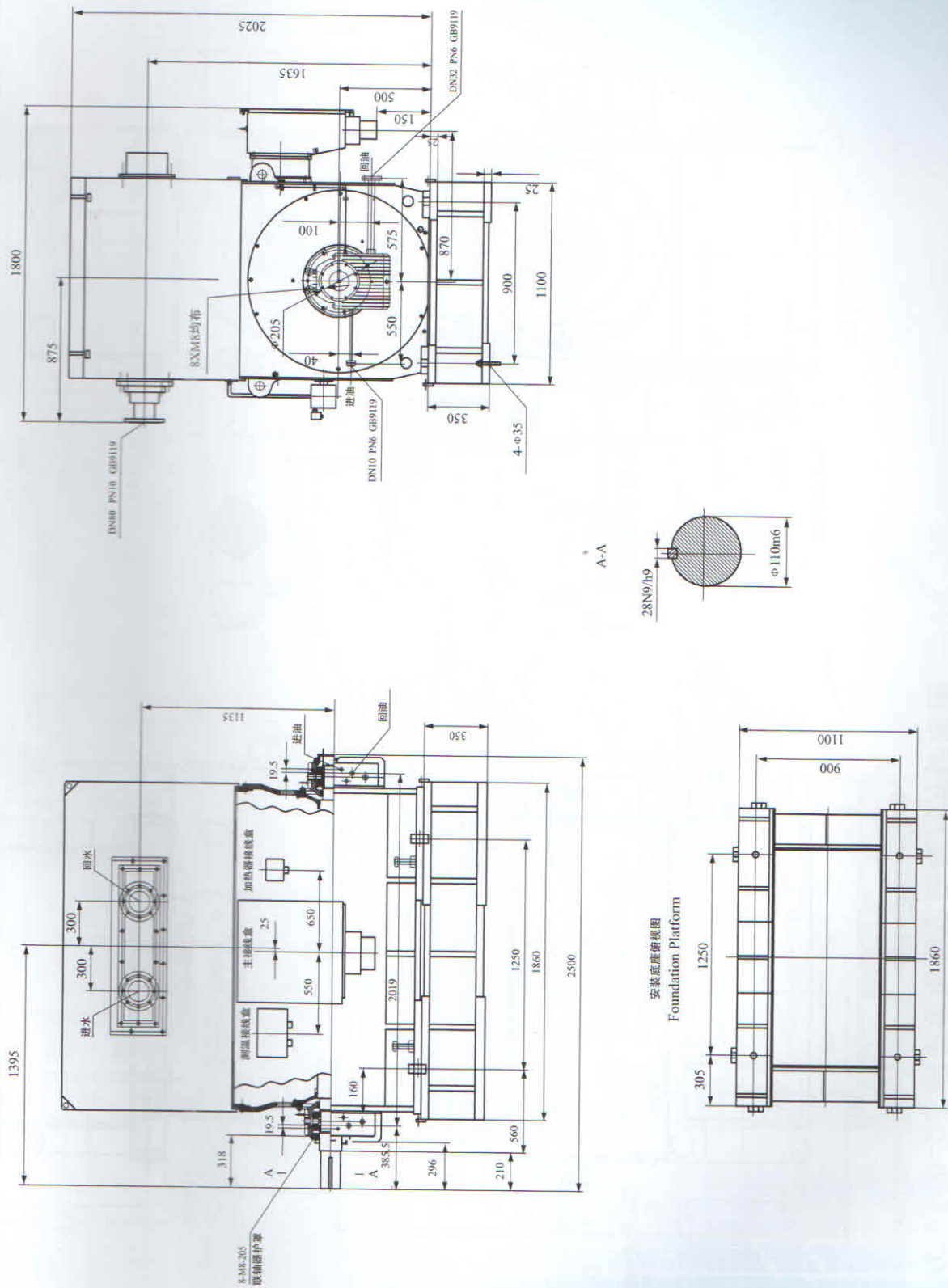


安装底座俯视图
Foundation Platform



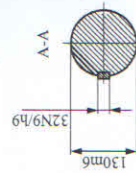
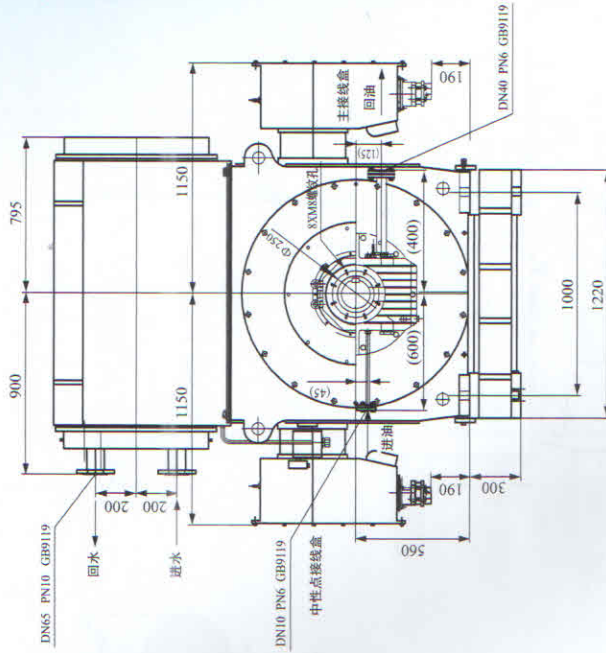
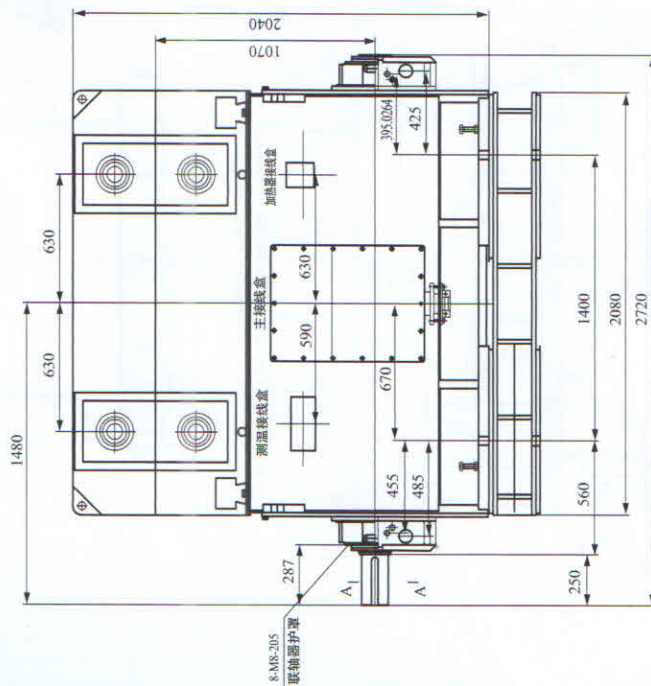
YCS500-2三相异步电动机链接尺寸标准图

YCS500-2 Three-Phase Induction motor outline drawing

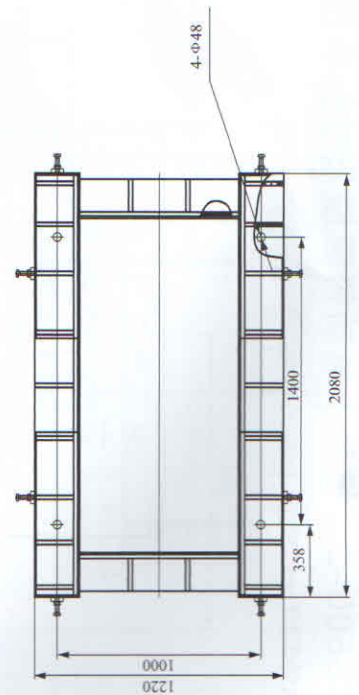


YCS560-2三相异步电动机链接尺寸标准图

YCS560-2 Three-Phase Induction motor outline drawing

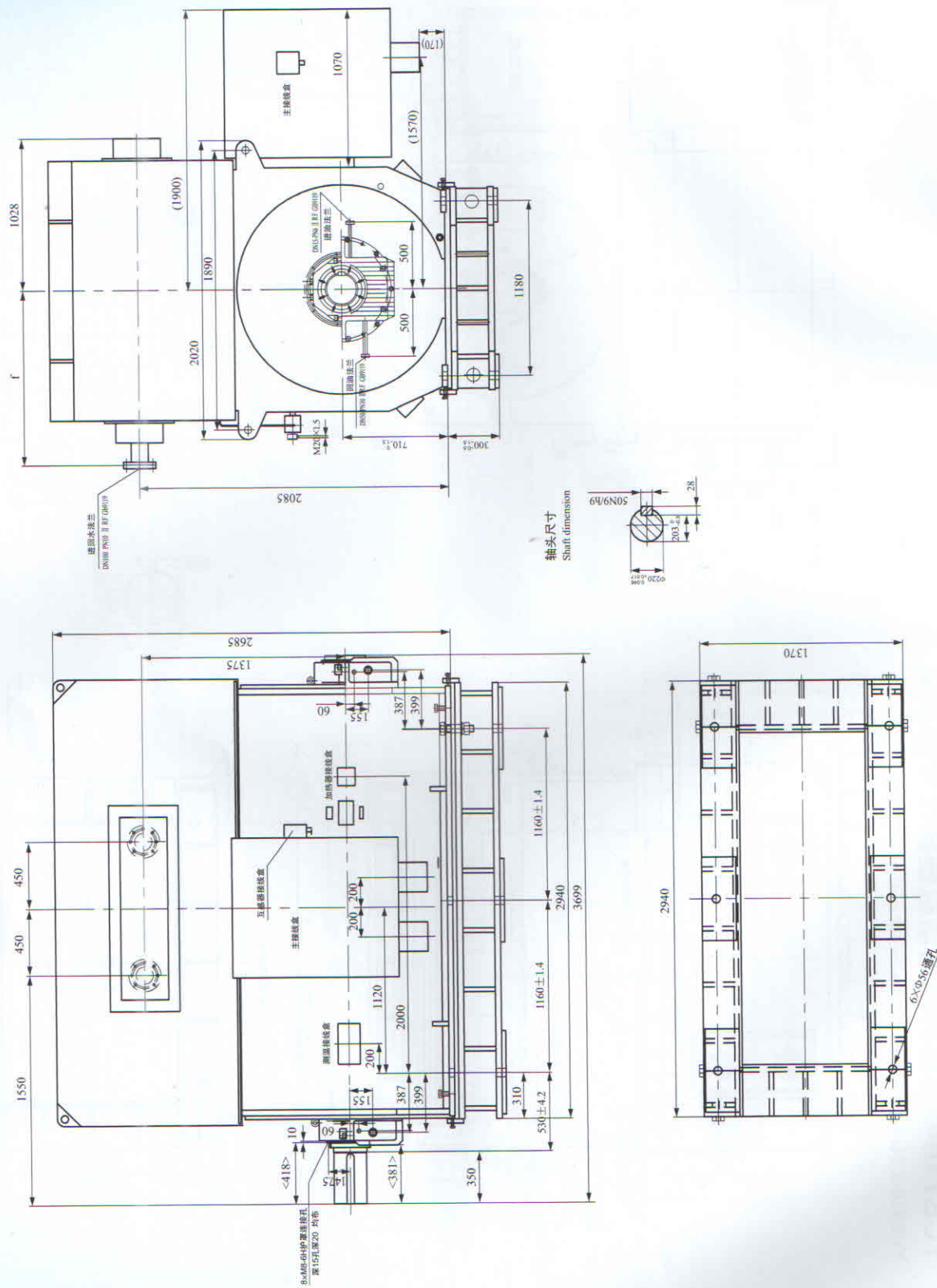


底座俯视图
Foundation Platform



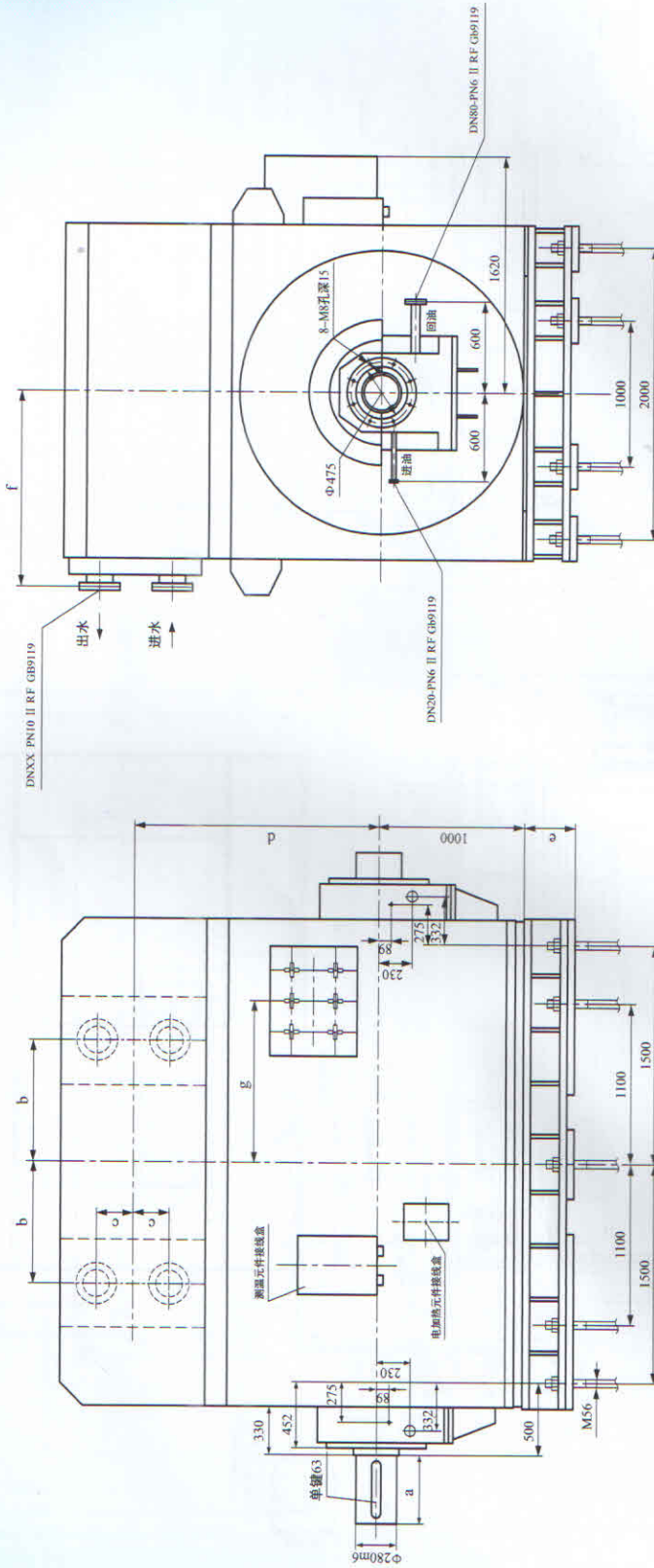
YCS710-4三相异步电动机链接尺寸标准图

YCS710-4 Three-Phase Induction motor outline drawing

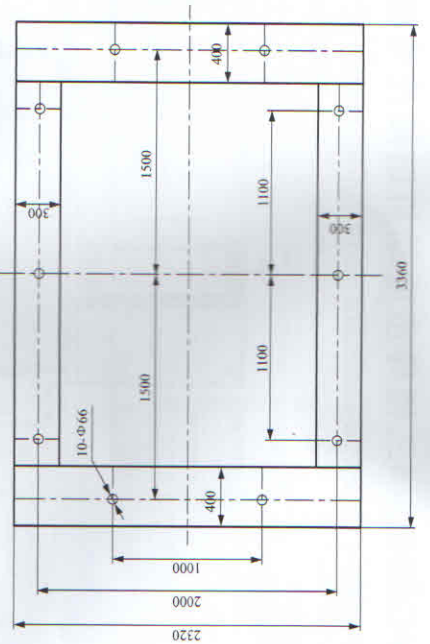


YCS1000-4 三相异步电动机链接尺寸标准图

YCS1000-4 Three-Phase Induction motor outline drawing



安装底座俯视图
Foundation platform



YCS系列10kV三相异步电动机（机座号400-630）外形图

YCS series 10kV Three-Phase Induction motor (H400-630) outline drawing

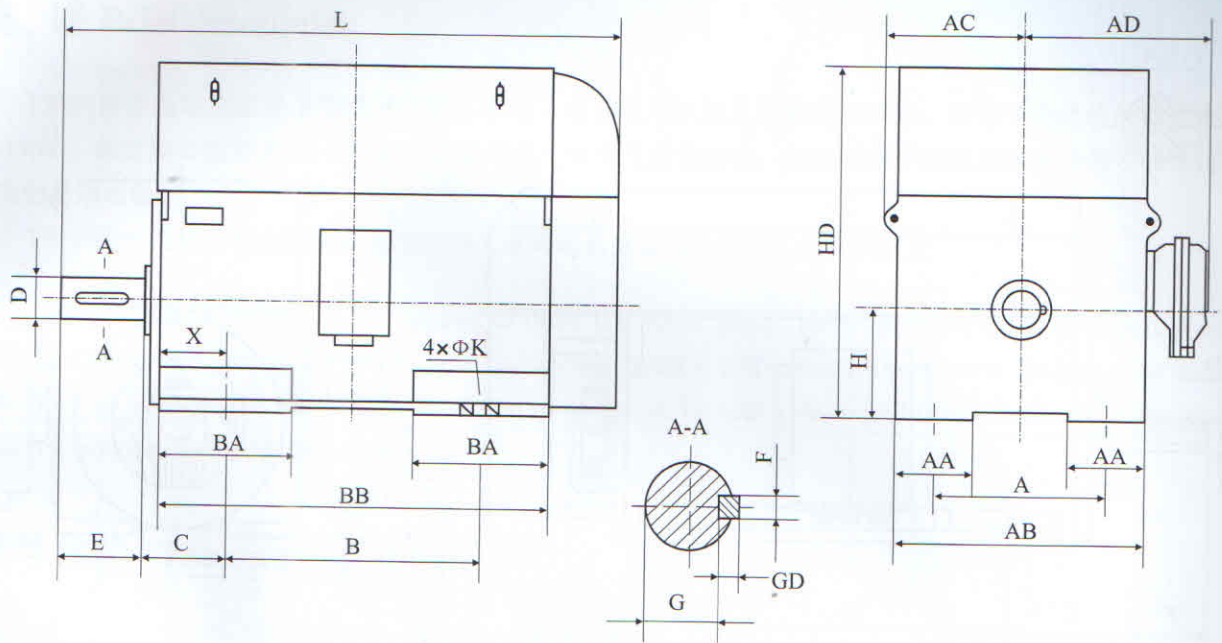


图1 YCS400~450、YCS500-630-2

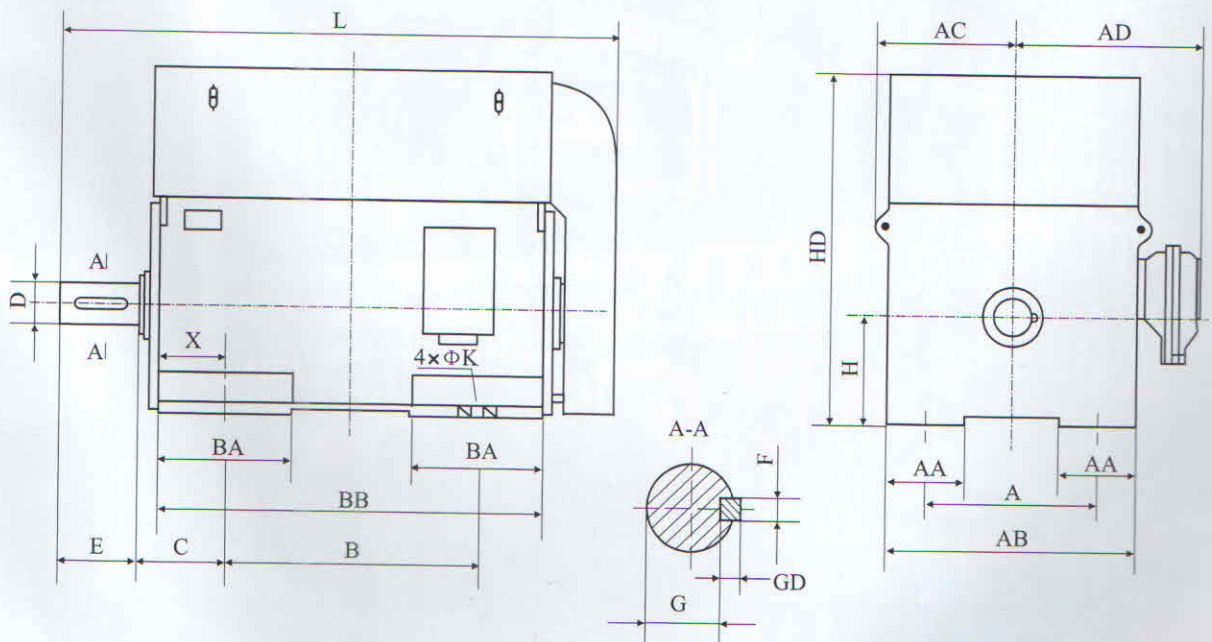
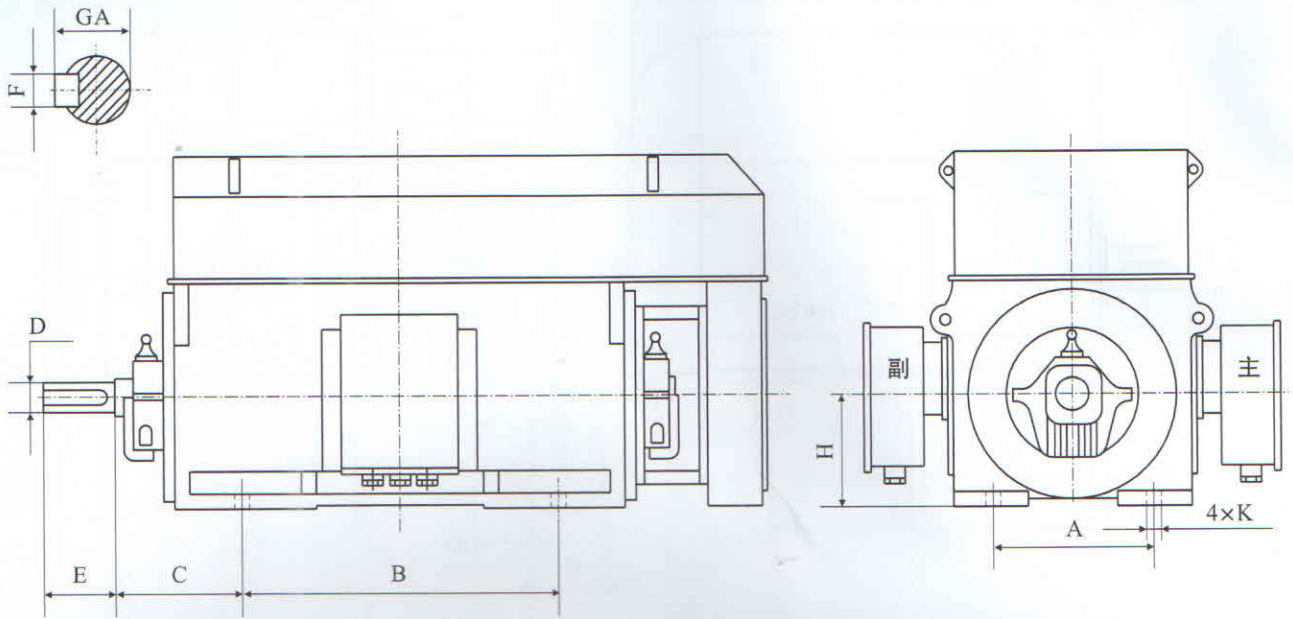


图2 YCS500~630（四极以上）

YCS系列10kV(中心高H710~1000)三相异步电动机安装尺寸图

YCS series 10kV Three-Phase Induction motor (H710-1000) outline drawing



T系列大型三相同步电动机

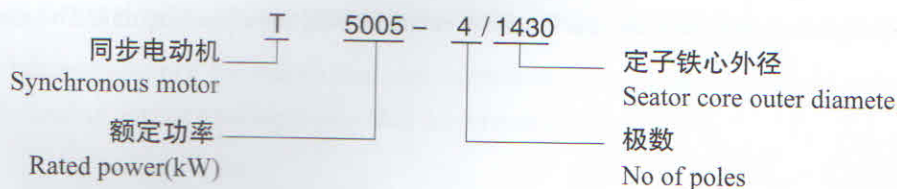
概述 Brief description

T系列同步电动机适用于传动通风机、水泵、电动发电机组及其他通用机械。本系列电动机的额定电压10000V。额定功率因数为0.9(超前)。电动机允许全压直接起动,起动时转子回路应串接10倍于磁场绕组电阻的起动电阻。

T系列同步电机均符合国家标准GB755《旋转电机基本技术要求》的有关规定。

T series synchronous motors are applied to drive fan, water pump, motor-generator set and other universal machines. Their rated voltage is 10000V. The rated power factor is 0.9(leading). The motor is allowed to be started directly at full voltage. The rotor circuit should be series connected with a starting resistor with ten times resistance of field winding resistance during starting.

型号含义 The meaning of type



结构简介 Introduction of construction

T系列同步电机为卧式结构。冷却方式有开启自扇冷式、管道或半管道通风式、封闭自循环通风式:

T系列同步电动机可制成一端轴伸,也可制成两端轴伸。旋转方向从集电环端看为逆时针方向旋转:根据需要可改变电机的旋转方向,但电机的风叶应做相应的变动。

机座:用钢板焊成整体结构,机座与轴承座分别固定于钢板焊成的底板上。

定子铁心:用0.5mm厚的硅钢扇形冲片叠压而成,扇形冲片两面涂有绝缘漆。定子铁心用拉紧螺杆或鸽尾筋固定在机座上。

定子线圈:线圈为变层叠绕式,采用B级或F级绝缘,并有防电晕措施。线圈端部绑扎牢固,并经整体浸漆处理。

磁极:用薄钢板冲制的磁极冲片叠压而成,磁极铁心外套以磁极线圈。整个磁极装在磁轮上。

磁极线圈:由扁铜线绕制而成,经绝缘处理后为B级或F级绝缘。

轴承:由铸铁的轴承座和浇有轴承合金的轴瓦等组成。润滑方式为油环自润滑或外加油路系统的复合润滑。

电刷与集电环:集电环为装配式结构。电刷装在恒压刷盒内,由导电板将电刷连接起来,整个刷架固定在轴承侧面。

励磁方式：T系列同步电机采用晶闸管励磁装置励磁。励磁装置可由我公司配套提供。

T series synchronous are of horizontal. Their cooling mode can be open self-ventilation, duct or half-duct ventilation, or enclose self-circulating ventilation.

T series motors can have one shaft end or two shaft end as well. They rotate in CCW direction as see from the ring collector. The rotation direction can be changed, but the fan should be changed accordingly.

Frame: Integral construction welded by steel plate. The frame and plain bearing housing are fixed on the base by steel plate respectively.

Stator iron core: Laminated by 0.5mm silicon steel fan-shaped lamination. The two sides of fan-shaped lamination is painted with insulating varnish. The stator iron core is fixed on the frame by tightening screw or dovetail rib.

Stator coil: The coil is two layer lap winding. It has class B/F insulation and can prevent the corona. The end of the coil is wrapped tightly and be integral varnished.

Magnetic coil: Wound by flat copper wire and has class B/F insulation after be insulating treated.

Bearing: Composed of cast iron plain bearing housing and plain bearing half-liner casted with alloy. The lubricating method is oiling self-lubricating or compound lubricating with outer oil system.

Brush and collector ring: The collector rings construction is assembling. The brush is fixed in the constant voltage brush box and connected by the conducting plate. The whole brush is fixed on the side of bearing.

Exciting mode: T series synchronous electrical machines are excited by thyristor exciting unit. The exciting unit can be provided by us.

技术数据见表1

Technical Data see Appendix 1

外形安装尺寸见表2

Mounting and Contour Dimensions see Appendix 2

定货须知 (用户订货时须注明如下要求)

When ordering, the following requirement should be specified

订货时需说明电机型号、额定功率、额定电压、额定转速、防护通风型式及配套设备。如有特殊要求另行签订技术协议。

The customer must write the type, capacity, rated voltage, rated speed, protection and ventilation mode of the machine and equipment fitted with it in the contract when ordering. A technical agreement should be signed separately if the customer has any special Requirement.

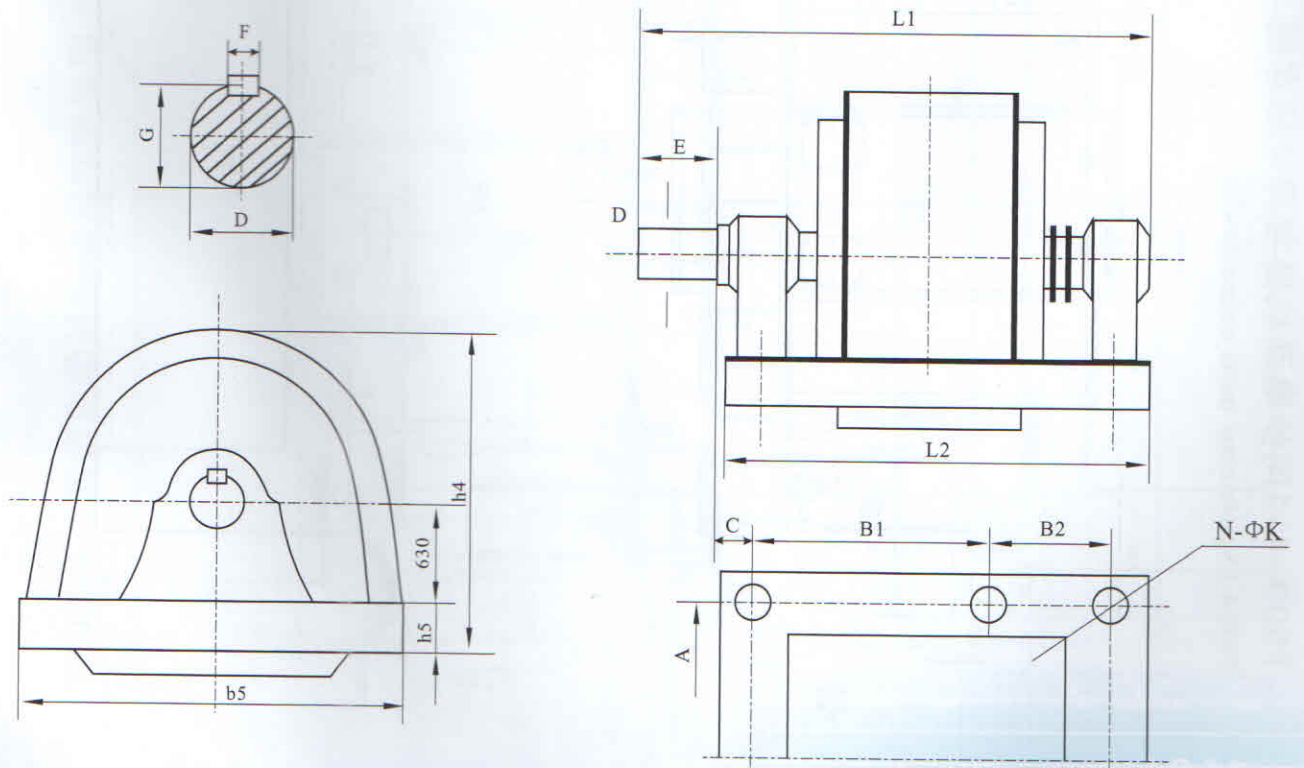
表1 (Table 1)

型号	额定功率 kW	额定电压 V	额定电流 A	额定转速 (r/min)	额定因数 (超前)	效率 (%)	起动电流	起动转矩	牵入转矩	最大转矩	飞轮力矩 ($\text{KN}\cdot\text{m}^2$)
							额定电流	额定转矩	额定转矩	额定转矩	
T5001-4	4000	10000	267	1500	0.9	96	5.58	2.25	1.0	1.81	21
T5002-4	5000	10000	333	1500	0.9	96.2	6.25	2.55	1.12	1.85	28
T5003-4	6300	10000	419	1500	0.9	96.4	6.45	2.64	1.17	1.83	32
T5004-4	7100	10000	471	1500	0.9	96.6	6.45	2.66	1.17	1.81	35
T5005-4	8000	10000	530	1500	0.9	96.8	6.53	2.69	1.20	1.8	39
T5006-4	8500	10000	563	1500	0.9	96.9	5.59	2.16	1.13	1.66	52
T6301-6	4000	10000	267	1000	0.9	96.1	6.34	2.16	1.27	1.88	42
T6302-6	5000	10000	333	1000	0.9	96.3	6.31	2.08	1.30	1.83	49
T6303-6	6300	10000	418.8	1000	0.9	96.5	6.37	2.11	1.32	1.8	58
T6304-6	7100	10000	471	1000	0.9	96.7	6.76	2.26	1.40	1.82	62

T系列大型三相同步电动机安装尺寸图

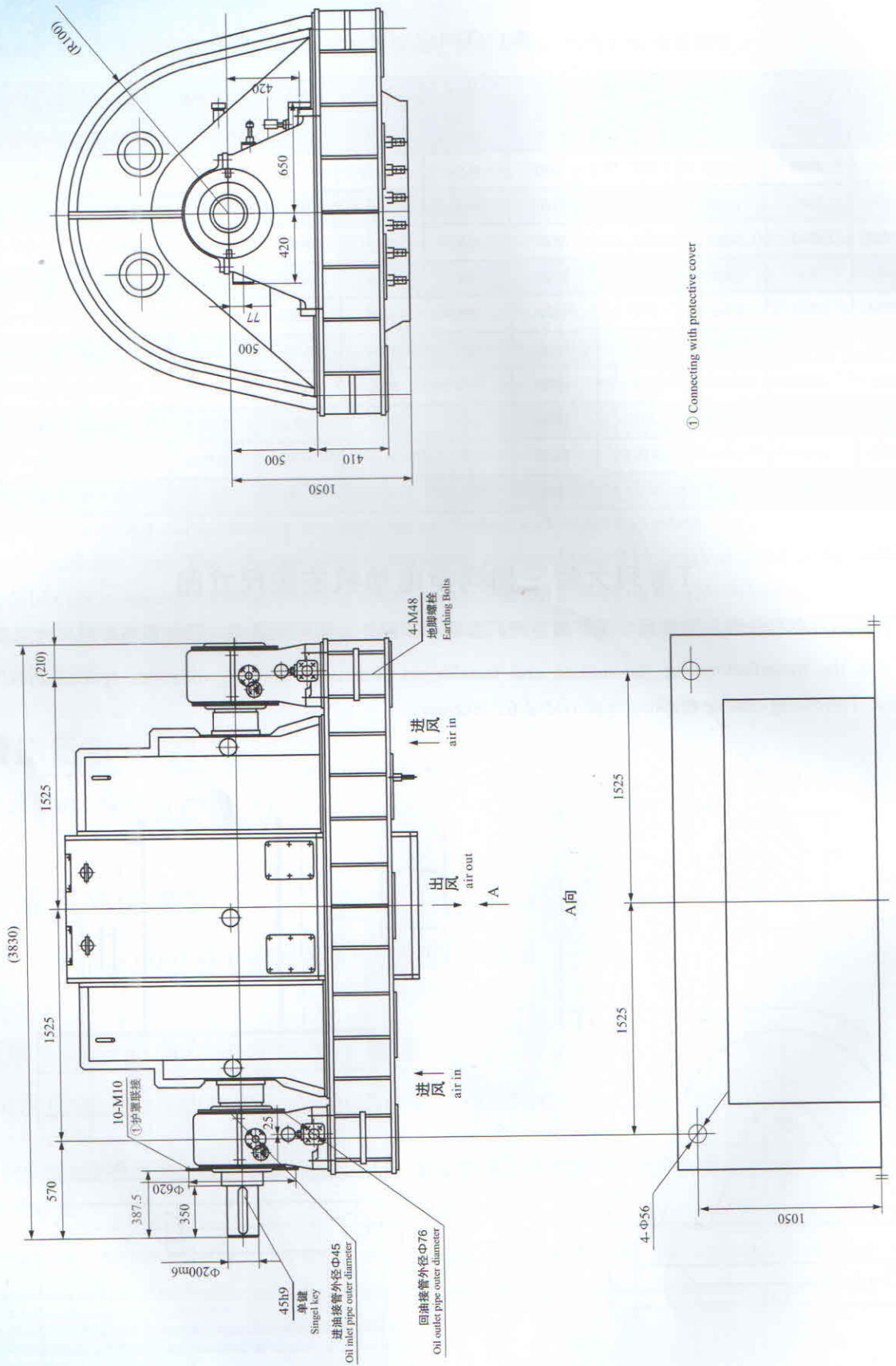
下列同步电机外形与安装尺寸图可向生产厂索取。下列外形图可供参考。已有规格外形尺寸见表2

Ask the manufactory for the outline and installation dimension drawing of series synchronous electrical machine. Following outline drawing is provided for reference.



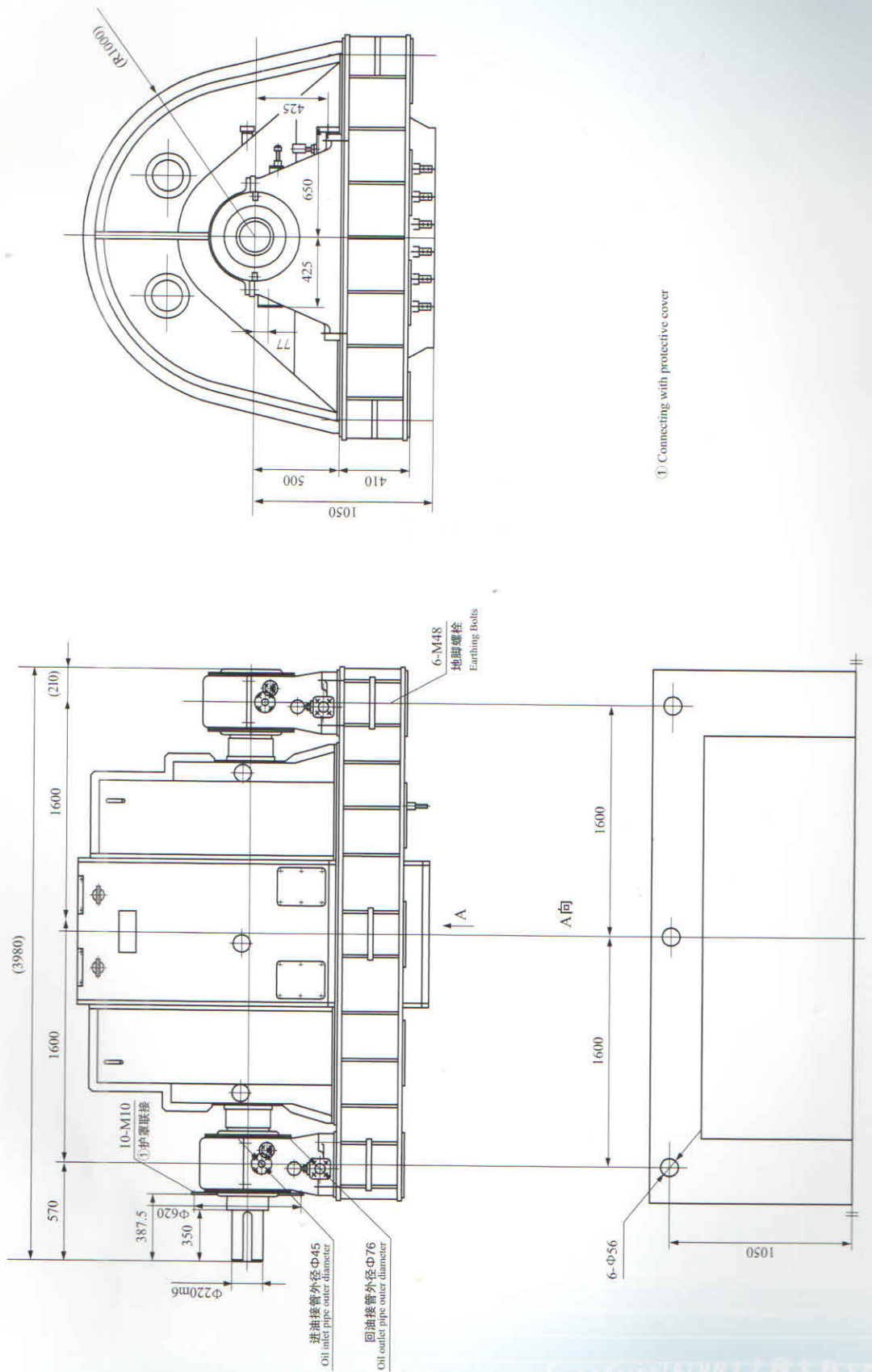
T500-4-1 同步电动机链接尺寸标准图

T500-4-1 Synchronous motor outline drawing



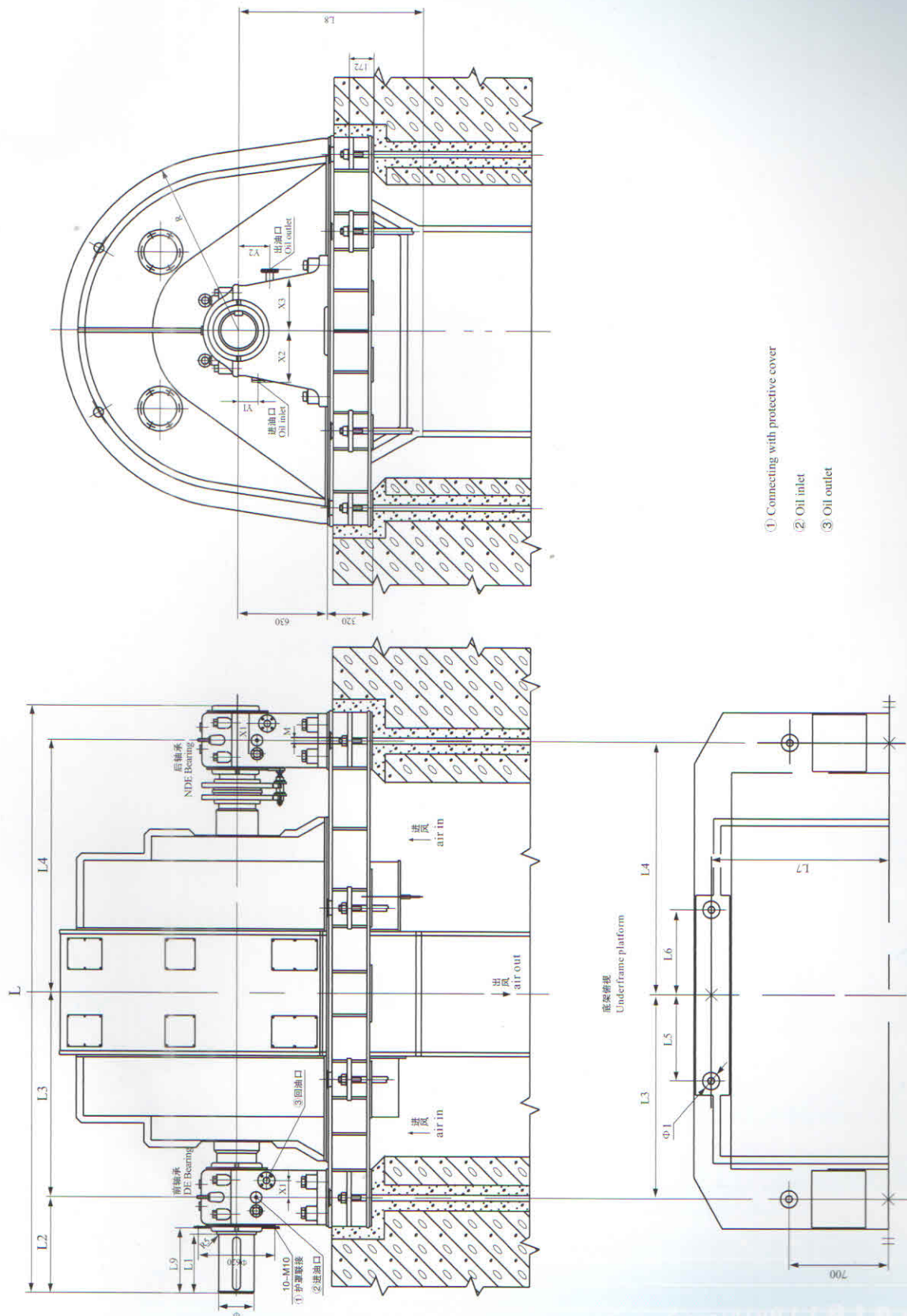
T500-4-2 同步电动机链接尺寸标准图

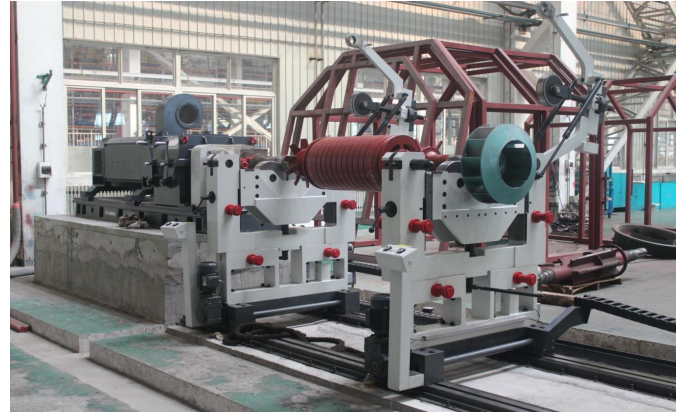
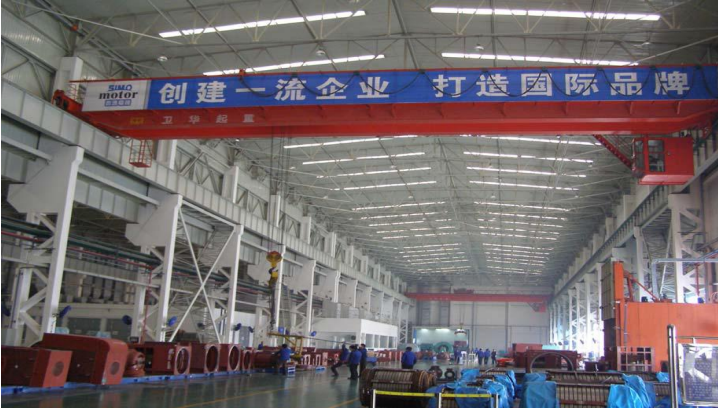
T500-4-2 Synchronous motor outline drawing



T630-6 同步电动机链接尺寸标准图

T630-6 Synchronous motor outline drawing





泰富西玛电机厂内景及部分设备



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