

# Высокомощные электродвигатели постоянного тока, щеточные Z, с жидкостным, с водяным охлаждением ZKSL

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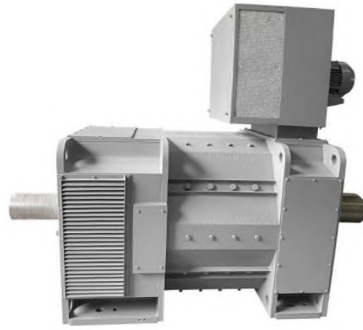
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## Z Series High Hp Dc Motor

Z series high hp dc motor is widely used for prime mover in production machinery such as large reversible rolling mills, mine hoists, gantry planers, paper and printing machinery, marine machinery, textile, large precision machine tools, and large cranes due to their strong overload capacity and wide speed regulation range.

- Z series medium-size DC motors are developed with adoption of up-to-date design and manufacture technologies and based on our over twenty years' experiences in this field. In Z series, motors are with seven different center heights from 315 to 710.
- The installation dimensions, performance, and technical requirements of Z series high hp dc motor fully comply with the relevant provisions of JB/T9577 "Technical Conditions for Z-Series Medium sized DC Motors" and GB/T755 "Rating and Performance of Rotating Electrical Machines".
- The series DC motors are suitable for use as drive sources for various machines, such as main drive of metal rolling mill, main drive of reeling machine, main drive of extracting machine for sugar production, drive of cement rotary kiln, extruding machinery for rubber and plastic products, etc.
- This series of motors adopts a polygonal structure, with high utilization of internal space in the stator. The stator magnetic field defect adopts a laminated structure, which is suitable for power supply of thyristor rectifier power supply and can withstand the working conditions of pulsating current and rapid changes in current (load changes). The magnetic pole installation has precise positioning, and all series of motors are equipped with compensation winding, resulting in good commutation performance.
- The insulation level of the motor is Class F, and it adopts a reliable insulation structure and solvent-free vacuum pressure impregnation treatment to ensure stable insulation performance and good heat dissipation.
- The vibration of Z series high hp dc motor complies with the provisions of the central standard GB10068 "Mechanical Vibration, Vibration Measurement, Evaluation and Limits for Motors with Shaft Center Height of 56mm and Above".

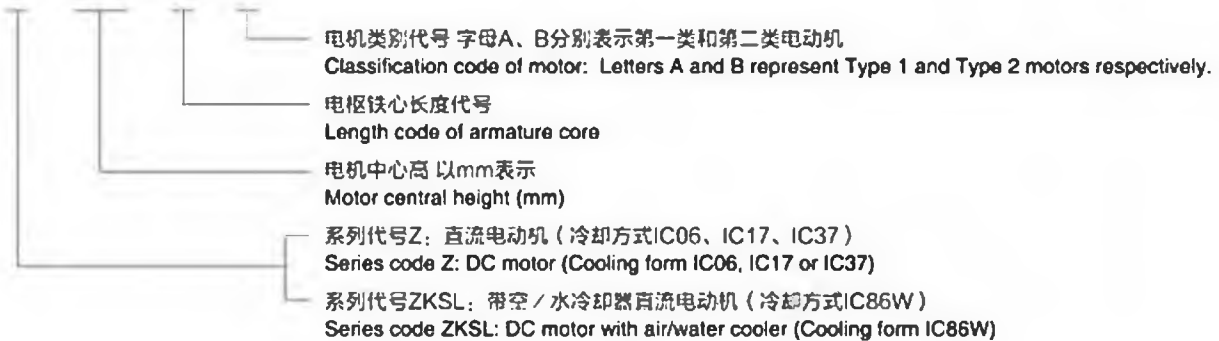
Frame	315~710
Output range(KW)	50~2800
Voltage(V)	220/330/440/550/660/750/850/950V
Field voltage(V)	180/220/310V
Excitation	Sep.
Rate speed	100-1800rpm
Working duty	S1,S3,S5,S6
Enclosure	IP21S, IP23, IP44
Cooling	IC06, IC17, IC37, IC86W
Frequency(Hz)	50/60;3~100Hz
Encoder/tachometer generator	according to customers requirement
Mounting	IMB3, IMB35, IMV1
Application	plastic industry, sugar mill, steel plant, rolling mill, paper-making plant, cement plant, textile, rubber plant, aluminium plant, etc.
Blower position	DE side

#### Dimensions and Parts' codes

#### 型号说明 Type Designation

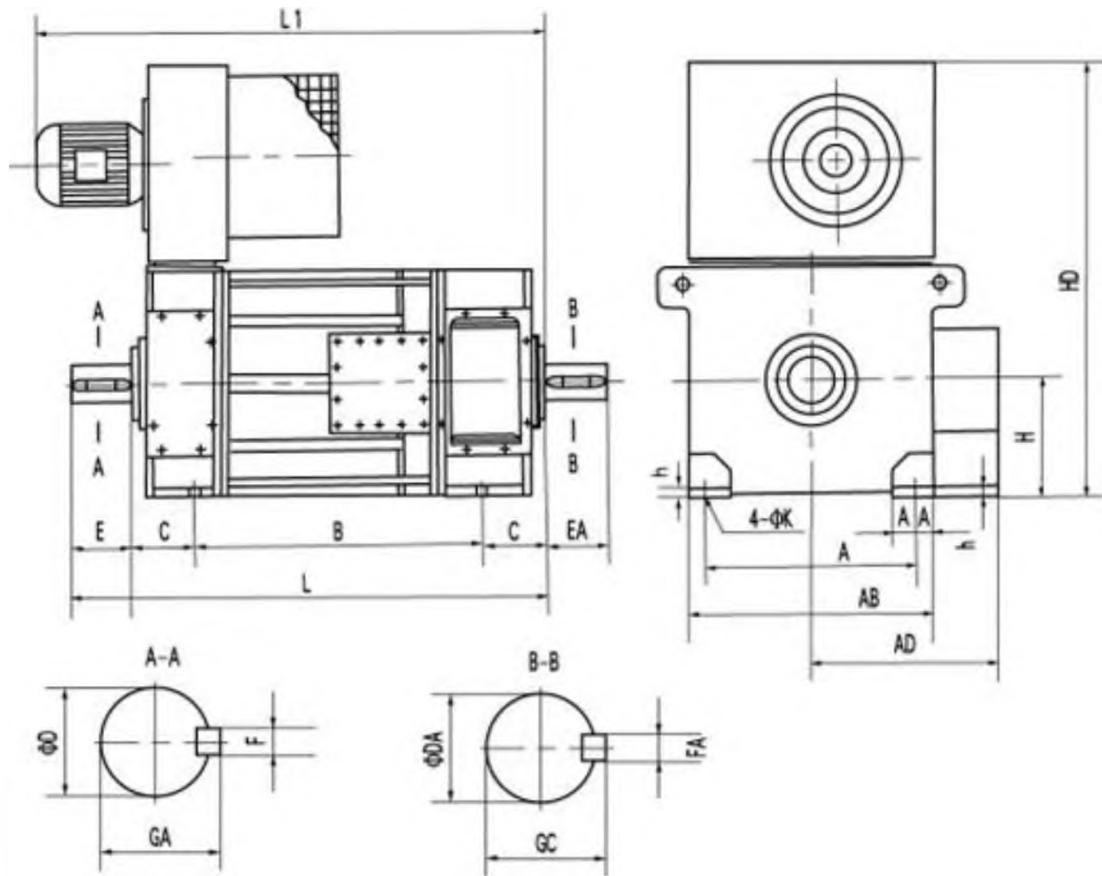
举例 For example:

Z 560 — 4 A



冷却方式 Cooling form	IC06 配有骑式鼓风机 With motor blower	IC17 管道进风、自由出风 Air inlet piping and free outlet	IC37 管道进、出风 Air inlet and outlet piping	IC86W 带空/水冷却器 With air/water cooler
图示 As shown in Figure				
防护等级 Class of protection	IP23(防滴式) 防护直径大于12mm固体异物 防滴水进入 IP23 (Drip-proof) Protecting against solid substances with diameter of over 12mm Preventing from drip water		IP44(防溅式) 防护直径大于1mm固体异物 防溅水进入 IP44 (Splash-proof) Protecting against solid substances with diameter of over 1mm Preventing from splash water	

编号 Series no.	额定电压U <sub>N</sub> 下的转速 Rotating speed under the voltage below rated voltage U <sub>N</sub> r/min					功率 Output P <sub>N</sub> kW	额定 电流 Rated current I <sub>N</sub> A	效率 Effi- ciency η· %	最大 转速 Max speed n <sub>max</sub> r/min	励磁 功率 Excit- ation power P <sub>I</sub> kW	转动 惯量 Moment of inertial J kg.m <sup>2</sup>	通风 Ventilation		电枢回路 Armature circuit		
	220V	330V	440V	550V	660V							风量 volume Q m <sup>3</sup> /s	风压 pressure H Pa	电压降 voltage drop ΔU <sub>V</sub>	电感 inductance L <sub>a</sub> mH	
01	436					61	335	80.0	1300	3.1	4.8	1.0	1000	34.2	0.72	
						96	330	86.0	1800	3.1	4.8	1.0	1000	33.8	0.68	
		696				129	324	89.0	1800	3.1	4.8	1.0	1000	33.2	0.68	
						1219	161	318	90.6	1800	3.1	4.8	1.0	1000	32.7	0.68
						1481	190	310	91.6	1800	3.1	4.8	1.0	1000	31.9	0.69
02	573					80	421	84.1	1700	3.1	5.0	0.9	840	25.6	0.44	
						123	412	88.5	1800	3.1	5.0	1.0	1010	25.1	0.43	
		901				162	400	90.6	1800	3.1	5.0	1.0	1010	24.4	0.43	
						1556	194	380	91.6	1800	3.1	5.0	1.0	1010	23.3	0.45
03	760					101	518	86.6	1800	3.1	5.0	1.0	1010	20.5	0.27	
						154	510	90.1	1800	3.1	5.0	1.0	1010	20.2	0.26	
						205	501	91.6	1800	3.1	5.0	1.0	1010	19.9	0.26	
04	957					123	622	88.2	1800	3.1	5.3	1.0	1010	16.7	0.18	
						185	608	90.9	1800	3.1	5.3	1.1	1190	16.4	0.17	
05	1204					160	800	89.9	1800	3.1	5.3	1.0	1010	13.7	0.11	



型号	安装尺寸											外形尺寸								
	A	B	C	D	E	F	GA	DA	EA	FA	GC	H	K	AB	AD	L	L1	HD	AE	h
Z315-1		770														1372	1427			
Z315-2	508	850														1452	1507	1490	620	25
Z315-3		930	216	90	170	25	95	90	170	25	95	315	28	620	490	1532	1587			
Z315-4		1030														1632	1687			
Z355-2		800														1515	1647			
Z355-3	610	900	254	110	210	28	116	110	210	28	116	355	28	700	630	1615	1747	1720	700	35
Z355-4		1000														1715	1847			
Z355-5		1120														1835	1967			
Z400-1		800														1560	1722			
Z400-2	686	900	280	120	210	32	127	120	210	32	127	400	35	790	670	1660	1822	1870	790	35
Z400-3		1000														1760	1922			
Z400-4		1120														1880	2042			
Z450-1		900														1775	1887			
Z450-2	800	1000	315	140	250	36	148	140	250	36	148	450	35	890	725	1875	1987	1990	890	40
Z450-3		1120														1995	2107			
Z450-4		1250														2125	2237			

# ZKSL Series Liquid Cooled Dc Motor

In the plastic industry, especially in the injection molding process, most users choose to use water-cooled motors. ZKSL series liquid cooled dc motor can effectively control the temperature of the mold, improve the physical strength and internal stress of the product. Because plastic materials generate a large amount of heat during the injection molding process, if not dissipated in a timely manner, it will seriously affect product quality.

[Send Inquiry](#)

## Description

## Technical Parameters

- The reason why the plastic industry often uses water-cooled motors is because water-cooled motors have significant advantages, especially in frequent starting and high-speed operation, which can significantly improve the driving range of vehicles and the service life of batteries.

- Compared to other types of motors, ZKSL series liquid cooled dc motor have the following

- Efficient operation

The liquid-cooled motor can operate efficiently throughout the entire speed range, which is higher than the efficiency of brushed DC water-cooled motors and AC variable frequency water-cooled motors near the rated point, significantly improving the vehicle's driving range and battery life.

- Excellent starting characteristics

This series motors have excellent load characteristics, good low-speed performance, large starting torque, small starting current, suitable for the frequent starting needs of electric vehicles, and save energy.

- Compact structure

The liquid-cooled motor adopts plug-in rare earth magnet steel, which has a compact structure, strong overload capacity, long service life, does not generate sparks, and does not require replacement of carbon brushes.

- Good energy feedback effect

The rotor of the liquid-cooled motor has a strong magnetic field, which generates electricity effectively during sliding and braking, without the need to absorb battery power for excitation, resulting in good electric braking effect.

- ZKSL series liquid cooled dc motor usually means water-cooled motor.

Do water-cooled motors have requirements for circulating water volume and water temperature? Yes, ZKSL series liquid cooled dc motor have certain requirements for water quantity and temperature, mainly including water quality, water quantity, water temperature, and requirements for the use of cooling water.

**1. Water quality requirements**

Soft water should be used and hard water should be avoided, as hard water may cause scaling inside the evaporator and mold, affecting the energy conversion efficiency. The optimal pH value is 7, and pH values greater than 7 may cause corrosion. To solve the problem of hard water, electronic hard water softeners can be installed in the system or descaling agents can be added regularly to the circulation system.

**2. Water requirement**

There is no specific water requirement mentioned, but the importance of using soft water is emphasized because hard water may cause scaling inside the evaporator and mold, affecting the cooling effect and energy conversion efficiency.

**3. Water temperature requirement**

For the temperature of the cooling water, it is generally required that the inlet temperature be 32 ° C and the outlet temperature be 37 ° C. Within this temperature range, the chiller unit can ensure that the outlet temperature of the refrigerant water remains at 7 ° C under rated load.

**4. Requirements for the use of cooling water**

The replenishment of chilled water should not use cooling water from the cooling tower to avoid introducing impurities and microorganisms, which may affect the cooling effect and system health.

Type	Heavy-load equipment and industry
Application	Plastic industry, sugar mill, steel plant, rolling mill, paper-making plant, cement plant, textile, rubber plant, aluminium plant, etc.
AMB TEMP	-15~+40 deg.C
Inlet water temp	0~+32 deg.C
Altitude	Max.1000m
Frame size	315~560
Output	50kW~1000kW
Armature voltage	220/330/440/550/660/750V
Field Voltage	180/220/310V

Excitation	Sep
Rate speed	100-1800rpm
Cooling method	IC86W
Protection rating	IP44
Insulation class	F, H
Working duty	S1,S3
Mounting	IMB3, IMB35
Standard	GB/T755 & IEC 60034-1
Encoder/tachometer generator	According to customers requirement
Vibration sensor	According to customers requirement

Cooler is usually at top and the inlet and outlet flanges are located on the side of the cooler. If the on-site usage environment is special, it can be designed at the top of the cooler according to customer requirements.

## 01

If it's humid-tropical environment , we will produce motor with special making and mark "TH " after the model code.

## 02

Special ambient environment and altitude, the motor models need to be recalculated and confirmed by engineers.

### PT100

PT100 is a platinum thermistor, and its resistance value changes with temperature. The higher the resistance value, the higher the surface temperature of the detected object. ZKSL series liquid cooled dc motor will be usually equipped with PT100 for windings and bearings while producing.

### Cable joint gland

Cable waterproof joint, also known as cable clamping sealing joint, cable fixing head. According to the material, it is divided into plastic products and metal products. Plastic products mainly use nylon materials (PA6, PA66). Metal products are divided into brass nickel plating, 304 stainless steel, and 316 stainless steel.

### Carbon brush

For brushed DC motors, the carbon brush interacts with the commutator and tightly contacts through spring pressure, ensuring that the current can be smoothly transmitted from the fixed part to the rotating part. Carbon brushes are usually made of carbon and graphite, which have good conductivity and lubricity, reducing wear and maintaining good electrical contact.

### Shaft fixation

ZKSL series liquid cooled dc motor is an electro-mechanical integrated device that contains many components and structures inside. If the axis rotates during transportation, it will cause varying degrees of damage to these components and structures. To prevent the shaft from rotating, a bracket, fixture, or transport lock can be used to solve this problem.

冷却方式 Cooling form	IC06 配有骑式鼓风机 With motor blower	IC17 管道进风、自由出风 Air inlet piping and free outlet	IC37 管道进、出风 Air inlet and outlet piping	IC86W 带空/水冷却器 With air/water cooler
图示 As shown in Figure				
防护等级 Class of protection	IP23(防滴式) 防护直径大于12mm固体异物 防滴水进入 IP23 (Drip-proof) Protecting against solid substances with diameter of over 12mm Preventing from drip water		IP44(防溅式) 防护直径大于1mm固体异物 防溅水进入 IP44 (Splash-proof) Protecting against solid substances with diameter of over 1mm Preventing from splash water	

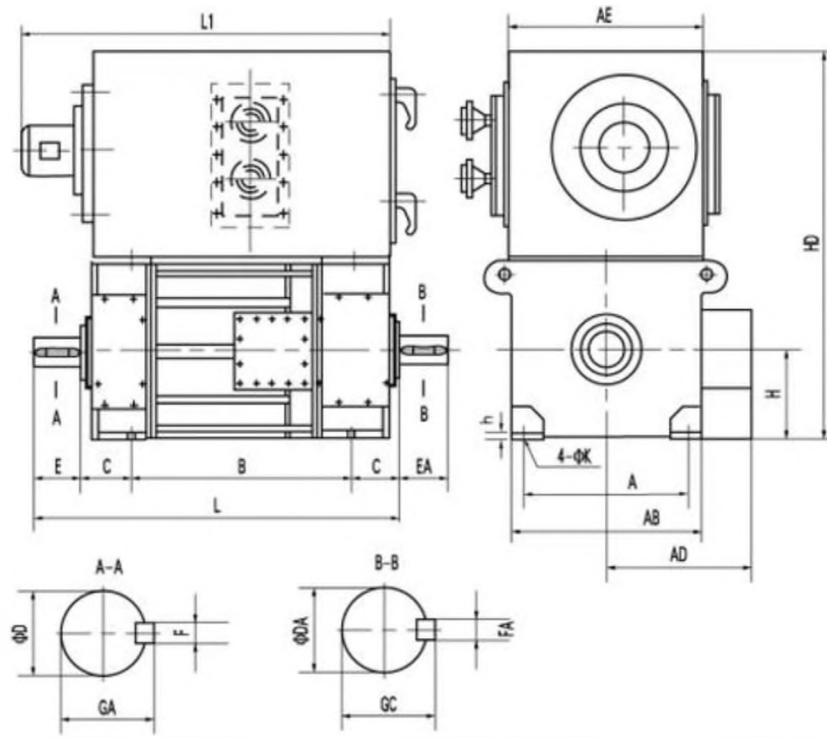
	防护等级 Protection Level	冷却方式 Cooling Mode
径向骑式鼓风机冷却 Radial Ride Type Air Blower Cooling	IP213	IC06
单管风 Single-duct Ventilation	IP23S	IC17
双管风 Double-duct Ventilation	IP44	IC37
带空/水冷却器 With Air/Water Cooler	IP44	ICW86

# Z560-2A ZKSL560-2A 电动机 (MOTOR)

Z560-2A适用于冷却方式 Applicable cooling form IC06, IC17, IC37, IC86W

ZKSL560-2A适用于冷却方式 Applicable cooling form IC86W

额定功率	额定电压Un下的转速				最高转速	电枢电流	励磁功率	效率	转动惯量
	750V	660V	550V	440V					
KW	750V	660V	550V	440V	r/min	A	KW	%	kg <sup>2</sup> · m
720	600				1200	1035	7.0	91.8	150
640		520			1200	1050		91.3	
550			430		1200	1100		89.7	
440				340	1000	1115		87.9	
830	720				1300	1180		93.1	
760		630			1200	1235		92.3	
650			520		1200	1280		91.3	
530				410	1200	1320		90.1	
890		760			1250	1435		93.2	
770			640		1200	1500		92.5	
630				510	1200	1555		91.1	
935			820		1200	1810		93.2	
780				650	1200	1900		92.0	



ZKSL500-1	1000																		2030	2530			
ZKSL500-2	1120	900	280	160	300	40	169	160	300	40	169	500	42	1090	900				2150	2630	2200	1100	45
ZKSL500-3	1250																		2300	2800			
ZKSL500-4	1400																		2450	2950			
ZKSL560-1	1000																		1930	2480			
ZKSL560-2	1120																		2050	2600			
ZKSL560-3	1000	1250	315	180	300	45	190	180	300	45	190	560	45	1200	1100				2200	2750	2400	1200	55
ZKSL560-4	1400																		2350	2900			
ZKSL560-5	1600																		2550	3100			

型号	安装尺寸													外形尺寸														
	A	B	C	D	E	F	GA	DA	EA	FA	GC	H	K	AB	AD	L	L <sub>1</sub>	HD	AA	h								
Z710-1		1120																						2240	2320			
Z710-2	1400	1250	355	250	410	56	262	250	410	56	262	710	50	1540	1045									2370	2450	3044	1830	45
Z710-3		1400																							2520	2600		
Z710-4		1600																							2720	2800		



## ZKSL Series Water Cooled Dc Motor

ZKSL series water cooled dc motor have a wide range of applications in the industrial field, serving as the driving source for various mechanical equipment such as ventilators, compressors, water pumps, crushers, etc. They also play an important role in coal mines, machinery industry, power plants, and various industrial and mining enterprises. For working environments in tropical regions with high ambient temperatures and near the equator, air-cooled electric motors are the best choice.

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- Electric motors are common power systems in mechanical equipment, and they have temperature limitations. When the temperature is too high, it can cause damage to the motor. Therefore, the motor must take some measures to reduce the temperature. The most commonly used method is to reduce the temperature of the motor through the motor cooling system. There are mainly two types of motor cooling methods: air water cooling and water cooling.
- Air cooling, as the name suggests, refers to the cooling of the motor through the surrounding air. The air passes through the metal heat sink around the motor and is then blown away by the fan to cool the motor. This cooling method mainly relies on air to dissipate heat, but the heat dissipation capacity of air is relatively poor, so larger and stronger radiators and fans are needed to maintain good heat dissipation effect.
- Water cooling refers to using water to cool the motor. Water passes through a metal radiator and then flows through a water pump to remove heat and cool the motor. ZKSL series water cooled dc motor is one kind of this type. This cooling method has better heat dissipation effect because water has a much larger specific heat capacity than air, which can take away more heat. Meanwhile, since water-cooled motors do not require fans, the noise generated is usually lower.

- Energy saving

By adopting advanced design concepts and manufacturing processes, ZKSL series water cooled dc motor can achieve higher energy-saving effects than traditional motors, with some models able to save up to 30% energy. This energy-saving design can save a lot of electricity expenses and reduce operating costs for enterprises in long-term industrial environments.

- Good speed regulation performance

The water-cooled DC motor has good speed regulation performance, which can smoothly adjust the motor speed according to needs and meet the needs of various working scenarios.

- Low noise and low vibration

This series electric motors pay special attention to reducing noise and vibration in the design and manufacturing process, so that the motor has less interference with the surrounding environment during operation, which helps improve the working environment and enhance the comfort of employees.

- Lightweight

By using high-quality materials and advanced manufacturing processes, ZKSL series water cooled dc motor achieves a lightweight design, making it easy to install and maintain.

- Reliable performance

The motor is made of high-quality materials and undergoes strict quality testing to ensure stable operation in harsh industrial environments, with a long service life.

- Easy installation and maintenance

The compact structure and light weight of the motor make installation and maintenance more convenient, bringing great convenience to enterprise production and maintenance.

Standard	GB/T755 & IEC 60034-1
Type	Heavy-load equipment and industry
AMB TEMP.	-15~+40 deg.C
Inlet water temp.	0~+32 deg.C
Altitude	Max.1000m
Frame size	315~560
Output	50kW~1000kW
Application	Plastic industry, sugar mill, steel plant, rolling mill, paper-making plant,cement plant,textile,rubber plant,aluminium plant,etc.
Armature voltage	220/330/440/550/660/750V

Field Voltage	180/220/310V
Excitation	Sep.
Rate speed	100-1800rpm
Insulation class	F, H
Cooling method	IC86W
Protection rating	IP44
Working duty	S1,S3
Mounting	IMB3, IMB35
Encoder/tachometer generator	According to customers requirement

If it's humid-tropical environment , we will produce motor with special making and mark "TH " after the model code.

## 01

Cooler is usually at top and the inlet and outlet flanges are located on the side of the cooler. If the on-site usage environment is special, it can be designed at the top of the cooler according to customer requirements.

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Special ambient environment and altitude, the motor models need to be recalculated and confirmed by engineers.

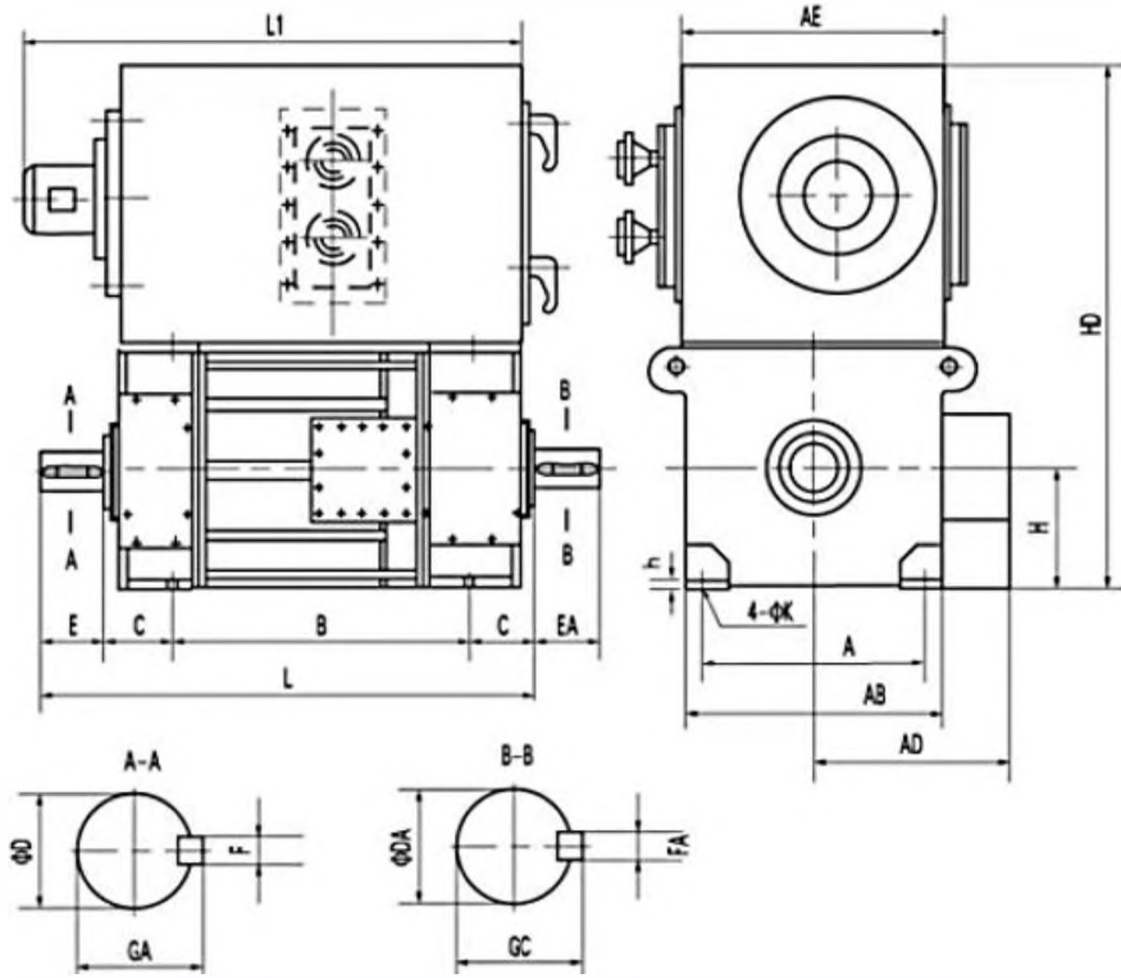
冷却方式 Cooling form	IC06 配有骑式鼓风机 With motor blower	IC17 管道进风, 自由出风 Air inlet piping and free outlet	IC37 管道进, 出风 Air inlet and outlet piping	IC86W 带空/水冷却器 With air/water cooler
图示 As shown in Figure				
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## Z500-2A ZKSL500-2A 电动机 (MOTOR)

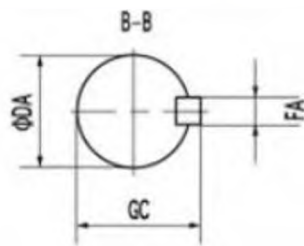
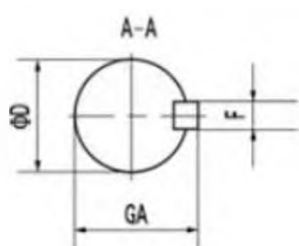
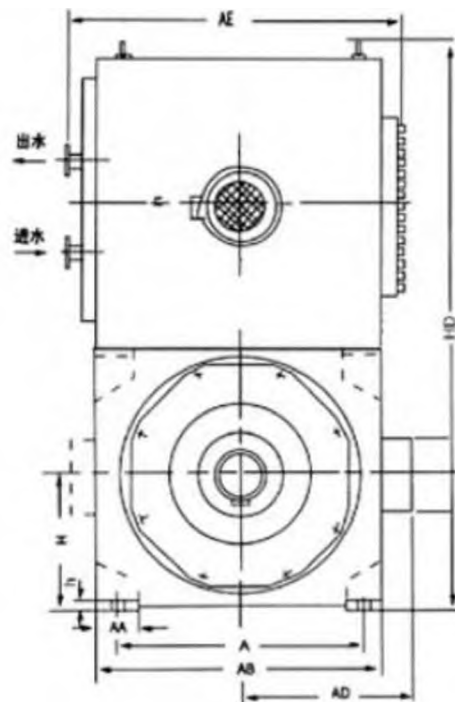
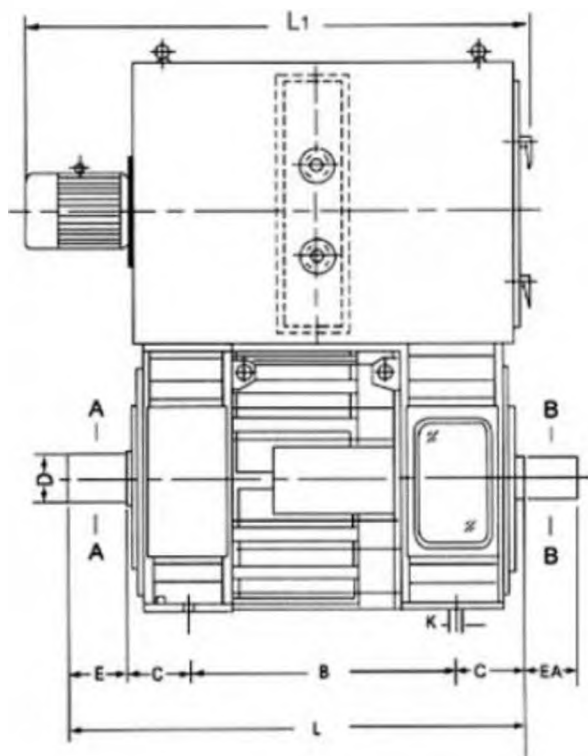
Z500-2A适用于冷却方式 Applicable cooling form IC06, IC17, IC37, IC86W

ZKSL500-2A适用于冷却方式 Applicable cooling form IC86W

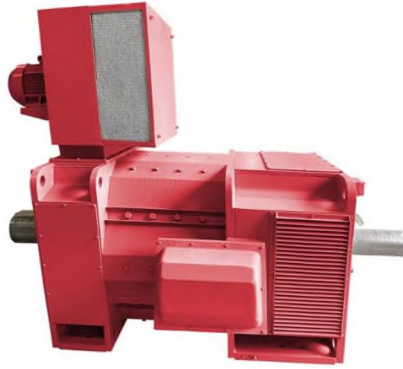
额定 功率	额定电压Un下的转速 r/min				最高 转速	电枢 电流	励磁 功率	效率 $\eta$	转动惯量 J
	750V	660V	550V	440V					
580	610				1300	830		92.5	40
500		530			1200	835		91.1	
425			440		1100	850		90.4	
340				350	1000	865		88.1	
690	720				1300	980		93.6	
600		630			1200	970	6.8	93.0	
500			505		1100	980		92.0	
405				410	1000	1010		90.4	
740		810			1400	1190		94.0	
620			650		1300	1210		93.0	
510				510	1200	1250		91.0	



ZKSL500-1	1000															2030	2530			
ZKSL500-2	900	1120	280	160	300	40	169	160	300	40	169	500	42	1090	900	2150	2630	2200	1100	45
ZKSL500-3		1250														2300	2800			
ZKSL500-4		1400														2450	2950			
ZKSL560-1		1000														1930	2480			
ZKSL560-2		1120														2050	2600			
ZKSL560-3	1000	1250	315	180	300	45	190	180	300	45	190	560	45	1200	1100	2200	2750	2400	1200	55
ZKSL560-4		1400														2350	2900			
ZKSL560-5		1600														2550	3100			



型号	安装尺寸												外形尺寸								
	A	B	C	D	E	F	GA	DA	EA	FA	GC	H	K	AB	AD	L	L <sub>1</sub>	HD	AA	h	
Z710-1		1120														2240	2320				
Z710-2	1400	1250	355	250	410	56	262	250	410	56	262	710	50	1540	1045	2370	2450	3044	1830	45	
Z710-3		1400														2520	2600				
Z710-4		1600														2720	2800				



## Z Type High Power Brushed Dc Motor

Z type high power brushed dc motor, its cooling method can be made with air cooling type or water cooling type. If it's air cooling type, the inlet temperature of the cooling air shall not exceed 40 °C. And if it's water cooling type, the inlet temperature of the cooling water shall not exceed 32 °C. For our normal design, the altitude shall be within 1000m.

- As an important category of electric motors, high-power DC motors work by converting DC electrical energy into mechanical energy, achieving the conversion between electrical and mechanical energy. Z type high power brushed dc motor generally operate by the interaction between the rotor and stator, using electromagnetic torque to drive the rotor to rotate.
- DC electric motors are classified with 2 kinds, Z series medium-size DC motors and Z series large-size DC motors, all of which are developed with adoption of up-to-date design and manufacture technologies and based on our over twenty years' experiences in this field.
- For Z series medium-size DC motors, there are six different center heights from 315 to 560, power from 100kW to 1000kW. For Z series large-size DC motors, there are 2 different center heights from 710 to 800, power from 800kW to 3500kW.
- The application of Z type high power brushed dc motor is very extensive, involving multiple fields as below.
  - Industrial sector  
High power DC motors are widely used in various mechanical equipment (plastic machinery, printing machinery, textile machinery), manufacturing, metallurgy, mining, power transmission and transformation, and transportation, such as cranes, machine tools (Sheet metal bending machine, injection molding machine), metallurgical equipment, paper-making equipment, rail transit, etc.
  - Energy sector  
High power DC motors can be applied to fields such as boiler feed pumps, gas turbines, and thermal power generation.
  - Transportation sector  
In the field of transportation, high-power DC motors can be applied to high-speed trains, railway traction subsidies, and other applications.
  - Agricultural sector  
In the agricultural industry, high-power DC motors can be used for irrigation pumps, wind turbines, and other applications.

- Petroleum field

In the petroleum exploration industry, high-power DC motors can be used for wellhead pumps, compressors, and other applications

- Class A: Ordinary industrial DC motors.

- The detailed data of this type of motor can be found in the technical data sheet. Users can determine the capacity, voltage, speed, and cooling method of the motor according to their needs.

- Class B: DC motors for metal rolling mills.

- The rated output power of this type of motor is about 20% lower than the value in the technical data sheet of Class A motors, and the specific value will be agreed upon by the user and the manufacturer.

- In addition to the specifications listed in the technical data sheet, we can design other specifications for the electric motor according to the specific requirements raised by the user.

Standard	GB/T755 & IEC 60034-1
Type	Heavy-load equipment and industry
AMB TEMP	-15~+40 deg.C
Altitude	Max.1000m
Frame size	315~710
Output	50kW~2800kW
Application	Plastic industry, sugar mill, steel plant, rolling mill, paper-making plant,cement plant,textile,rubber plant,aluminium plant,etc.
Armature voltage	220/330/440/550/660/750/850/950V
Field Voltage	180/220/310V
Excitation	Sep
Rate speed	100-1800rpm

Insulation class	F, H
Cooling method	IC06, IC17, IC37, IC86W
Protection rating	IP21S, IP23, IP44
Working duty	S1,S3,S5,S6
Mounting	IMB3, IMB35, IMV1
Encoder/tachometer generator	According to customers requirement

Special ambient environment and altitude, the motor models need to be recalculated and confirmed by engineers.

## 01

If it's humid-tropical environment , we will produce motor with special making and mark "TH " after the model code.

## 02

Blower/cooler can be needed or not, this will be made according to customers requirement.

## 03

Blower can be assembled at DE side or NDE side, this will be made according to customers requirement. Usually it's at DE side.

## 04

### **Carbon brush**

Carbon brush is a conductive component with a relatively simple structure, consisting of two carbon brush heads and a conductive body. The lifespan of carbon brushes of Z type high power brushed dc motor varies depending on the duration of use and the usage environment, with a usage range of approximately 200 to 1300 hours.

### **Brush rod**

Brush rods are usually made of metal materials and play a role in conducting electricity and transmitting energy. They are one of the key components for the normal operation of electric motors or generators. It is shaped like a long stick or pillar, with a certain length and diameter.

### **Encoder**

Installing an encoder at the NDE shaft side of Z type high power brushed dc motor is the most common installation method, which ensures that the encoder rotates synchronously with the motor shaft and provides accurate position feedback. Installing an encoder on the load side can measure the position and angle of the load, achieving more accurate motion control.

### **Cable gland**

Cable gland, also known as cable waterproof joint. The size and parameters of the gland are determined based on the size and requirements of the connected pipeline or equipment. The common sizes of gland heads include various specifications such as DN15, DN20, DN25, DN32,

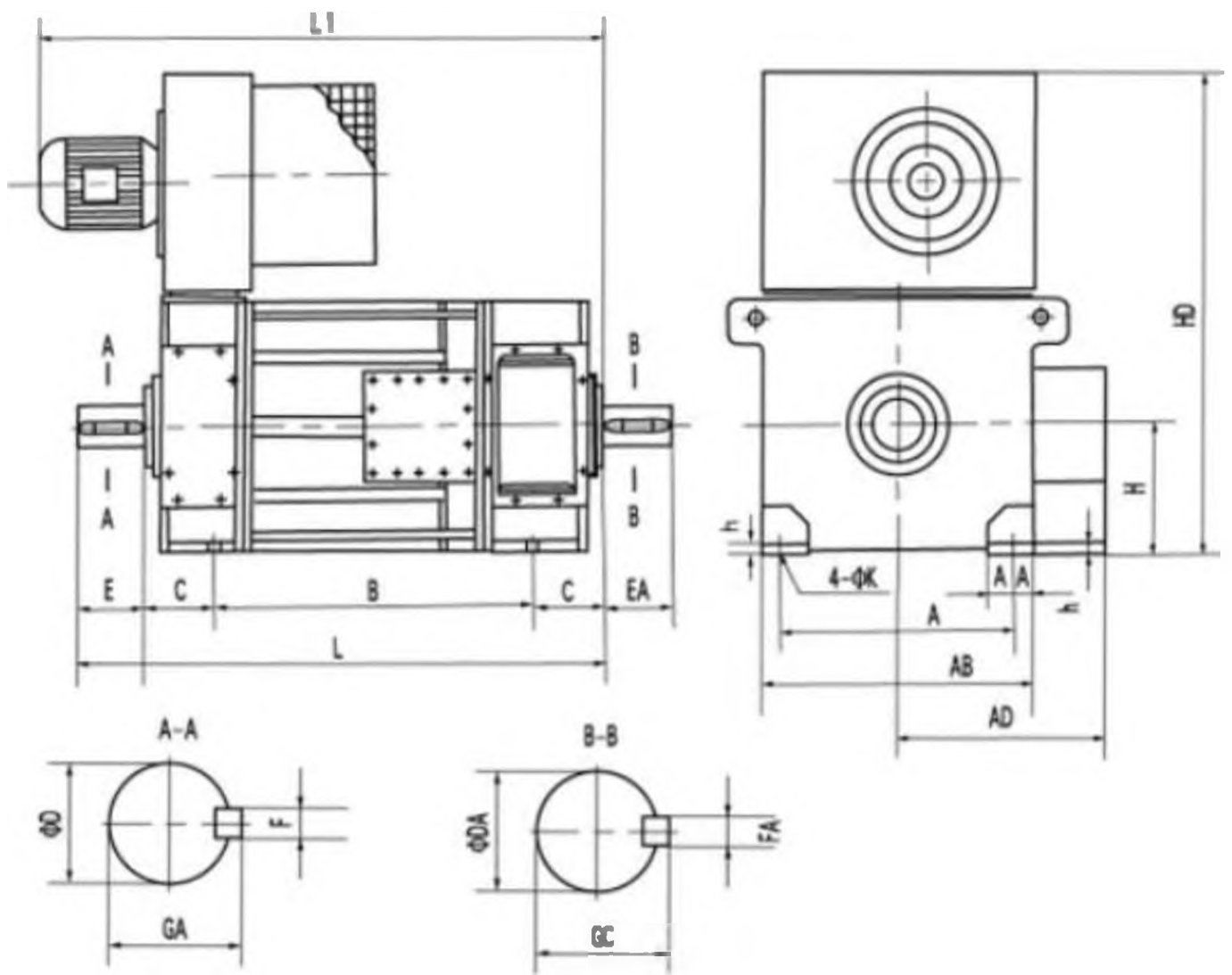
DN40, DN50, etc., where DN represents the nominal diameter. The common gland pressure levels include PN6, PN10, PN16, PN25, PN40, PN63, PN100, PN160, etc.

冷却方式 Cooling form	IC06 配有骑式鼓风机 With motor blower	IC17 管道进风，自由出风 Air inlet piping and free outlet	IC37 管道进、出风 Air inlet and outlet piping	IC86W 带空/水冷却器 With air/water cooler
图示 As shown in Figure				
防护等级 Class of protection	<p>IP23(防滴式) 防护直径大于12mm固体异物 防滴水进入</p> <p>IP23 (Drip-proof) Protecting against solid substances with diameter of over 12mm Preventing from drip water</p>		<p>IP44(防溅式) 防护直径大于1mm固体异物 防溅水进入</p> <p>IP44 (Splash-proof) Protecting against solid substances with diameter of over 1mm Preventing from splash water</p>	

	防护等级 Protection Level	冷却方式 Cooling Mode
径向骑式鼓风机冷却 Radial Ride Type Air Blower Cooling	IP21S	IC06
单管风 Single-duct Ventilation	IP23S	IC17
双管风 Double-duct Ventilation	IP44	IC37
带空/水冷却器 With Air/Water Cooler	IP44	ICW86

额定功率	额定电压Un下的转速 r/min				最高转速	电枢电流	励磁功率	效率 $\eta$	转动惯量 J
	KW	750V	660V	550V					
720	600				1200	1035		91.8	150
640		520			1200	1050		91.3	
550			430		1200	1100		89.7	
440				340	1000	1115		87.9	
830	720				1300	1180		93.1	
760		630			1200	1235		92.3	
650			520		1200	1280	7.0	91.3	
530				410	1200	1320		90.1	
890		760			1250	1435		93.2	
770			640		1200	1500		92.5	
630				510	1200	1555		91.1	
935			820		1200	1810		93.2	
780				650	1200	1900		92.0	

功率 kW	额定电压下的转速 r/min			额定电流 A	效率 %	最大转速 r/min	励磁功率 kW	转动惯量 J kg m <sup>2</sup>	通风	
	440V	660V	750V						风量 m <sup>3</sup> /S	风压 kPa
1000	560			2437	93.3	1100	10	296	4.6	1.08
1000		530		1621	93.4	1100	10	289	4.4	1.0
1250		745		2021	93.7	1200	8.4	289	5.1	1.3
1250			645	1775	93.9	1100	9.8	296	5.0	1.26
1500		860		2423	93.8	1100	8.7	296	6.0	1.75
1500			845	2129	93.9	1200	8.2	289	5.9	1.7



型号	安装尺寸													外形尺寸						
	A	B	C	D	E	F	GA	DA	EA	FA	GC	H	K	AB	AD	L	L1	HD	AE	h
Z315-1		770														1372	1532			
Z315-2	508	850	216	90	170	25	95	90	170	25	95	315	28	620	490	1452	1612	1490	620	25
Z315-3		930														1532	1692			
Z315-4		1030														1632	1792			
Z355-2		800														1515	1545			
Z355-3	610	900	254	110	210	28	116	110	210	28	116	355	28	700	630	1615	1645	1720	700	35
Z355-4		1000														1715	1745			
Z355-5		1120														1835	1865			
Z400-1		800														1560	1580			
Z400-2	686	900	280	120	210	32	127	120	210	32	127	400	35	790	670	1660	1680	1870	790	35
Z400-3		1000														1760	1780			
Z400-4		1120														1880	1900			
Z450-1		900														1775	1785			
Z450-2	800	1000	315	140	250	36	148	140	250	36	148	450	35	890	725	1875	1885	1990	890	40
Z450-3		1120														1995	2005			
Z450-4		1250														2125	2135			
Z500-1		1000														2030	2130			
Z500-2	900	1120	280	160	300	40	169	160	300	40	169	500	42	1090	900	2150	2250	1900	160	45
Z500-3		1250														2300	2400			
Z500-4		1400														2450	2550			
Z560-1		1000														1930	2030			
Z560-2		1120														2050	2150			
Z560-3	1000	1250	315	180	300	45	190	180	300	45	190	560	45	1200	1100	2200	2300	2250	190	55
Z560-4		1400														2350	2450			
Z560-5		1600														2550	2650			

型号	安装尺寸													外形尺寸						
	A	B	C	D	E	F	GA	DA	EA	FA	GC	H	K	AB	AD	L	L1	HD	AA	h
Z710-1		1120														2240	2320			
Z710-2	1400	1250	355	250	410	56	262	250	410	56	262	710	50	1540	1045	2370	2450	3044	1830	45
Z710-3		1400														2520	2600			
Z710-4		1600														2720	2800			

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