



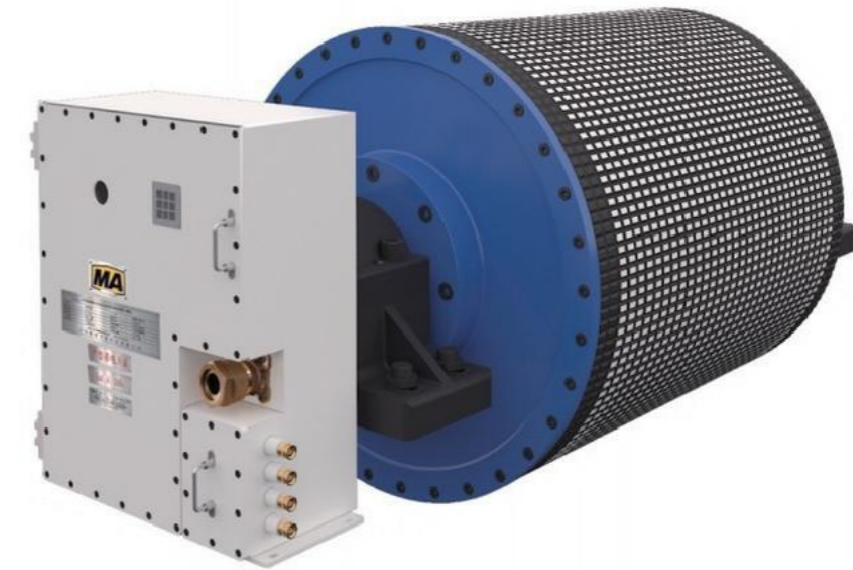
Intelligent Machinery - Qianshun Produce



Intelligent Machinery - Qianshun Produce

Innovative transmission way, transformed manufacturing mode
High energy efficient and bigger torque, simple structure and
maintenance free

Intelligent permanent magnet electric roller



**Leader in the industry
Creating value for our
customers**

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乾顺永磁(天津)科技发展有限公司
Qian Shun Permanent Magnet (Tianjin) Technology Development Co., Ltd.
河北乾顺节能科技有限公司
Hebei Qian Shun Energy Saving Technology Co., Ltd.

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COMPANY PROFILE

Hebei Qianshun Energy Saving Technology Co., Ltd. and Qianshun (Tianjin) Permanent Magnet Technology Development Co., Ltd. are mixed ownership high-tech companies belong to Jizhong Energy Fengfeng Group. The R&D center of the two companies are located in Tianjin Innovation Industrial Park of Chinese Academy of Sciences and the production center of the two companies are located in Ji'nan New District of Handan City. The two companies have been focusing on the permanent magnet direct drive system and intelligent control system solutions for many years, and have provided the world-class products and services. The two companies receive excellent reputation. Qianshun has won excellent goodwill.

Together with the scientific and technological elites from Xi'an Jiaotong University, China University of Mining and Technology, Shenyang University of Technology, Hebei University of Engineering, and Heilongjiang University of Science and Technology, Qianshun has adopted the theory and technology of low-speed and large-torque gearless permanent magnet motors, and developed the world's first "mining-use explosion-proof three-phase permanent magnet synchronous roller motor" in China in 2014. In 2019, National Coal Mine Safety Administration organized an expert review, and Qianshun Technology was listed in the fourth batch of the promotion catalogue of advanced and applicable technology and equipment (43 items).

Qianshun is the first company to obtain the "Safety Mark Certificate for Mining Products", forming 11~710kW series of products, with users including provinces of Hebei, Shandong, Shanxi, Inner Mongolia, Henan, Anhui, Shaanxi, Yunnan, Guizhou, Xinjiang, Gansu, Northeast and other energy provinces as the core, radiating the whole Chinese market. Qianshun has established core partnerships with Jizhong Energy, Shandong Energy, China National Coal Group Corp, INVT, etc. Relying on power electronics, automatic control and information technology, Qianshun is devoted to the application of intelligent speed control system of conveyor, saving energy and reducing the operation cost for the users, and greatly improving economic benefits for them.

Qianshun adheres to the service principle of "creating value for customers". With excellent professional technology, continuous technological innovation, Qianshun shoulders the responsibilities of creating quality products and providing loyal service, and aims to making progresses and achieve win-win cooperation with new and old customers and friends,

Qianshun products are worthy of your trust!

The R&D Centre is located in the Tianjin Innovation Industrial Park of the Chinese Academy of Sciences.
The best team and the most reliable products

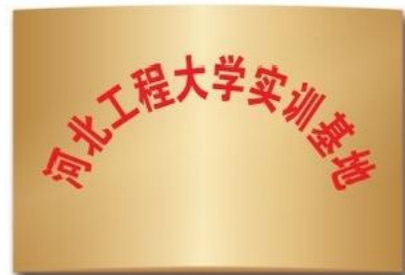
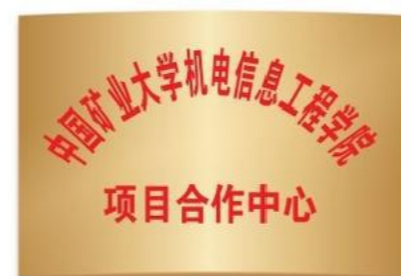
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Company advantage

STYB series of permanent magnet roller motor independently researched, designed, and produced by Qianshun has many strengths in the industry:

1. National Invention Patent (ZL201010291564.7)
2. Professional manufacturer of permanent magnetic roller motor
3. The first company to obtain the national safety standard, and used in underground coal mine
4. The underground coal mine transport system. The first co-operative unit to replace technology with all the permanent magnetic roller motors

Qianshun cooperates with the Project Cooperation Center of Xi'an Jiaotong University, Heilongjiang University of Science and Technology, and Shenyang Institute of Mechanical and Electrical Engineering to conduct in-depth research and apply the theories and technologies of low-speed and large-torque gearless transmission system to jointly develop permanent magnet direct drive motors and other coal mine equipment. It is also the teaching base, scientific research base and practice base of Shenyang University of Technology, China University of Mining and Technology, Hebei University of Engineering and so on. Qianshun conducts cooperation with enterprises to jointly develop products for different needs.



The advantages of Qianshun products are as follows:

- ★ Qianshun has a patent of permanent magnetic roller invention, which is a practical new model patent!
- ★ Qianshun is the one of first batch of enterprises with permanent magnetic roller safety standard in China!
- ★ Qianshun has product intellectual property rights of independent research and development!
- ★ Qianshun has an advanced special processing equipment that is in line with national coal mine safety requirements, customized special machine!
- ★ Qianshun has the whole belt conveyor design, production capacity, the selection of permanent magnetic rollers need the support of belt conveyor technology!
- ★ Qianshun has the two years industrial test before the safety standard certification. Other manufacturers have no such experience!
- ★ Qianshun has developed a three-phase frequency converter jointly developed with Shenzhen INVT, which is specially customized for permanent magnetic roller!
- ★ Permanent magnet roller, converter, belt conveyor are all manufactured by Qianshun, providing after-sales service without the help of other companies!
- ★ Solve the problem of shirking responsibilities to each others in after-sales service due to the supply of many manufacturers to the mines!

Qianshun Technology's intelligent permanent magnet roller IOT platform consists of four parts:

I. The equipment perception layer: through the programmable controller to collect each data of the permanent magnet roller, including: frequency converter operation data, brake holding status, the state of the cooling machine, the running temperature of the permanent magnet roller and so on.

II. Data communication layer: The data of the whole permanent magnet roller collected by the programmable controller is transmitted to the internal communication module through Ethernet or optical fiber. The data is transmitted to the cloud system based on the 4G communication module.

III. Data platform support layer: special cloud service of Hebei Qianshun Energy Saving Technology Co. WDT watchdog is adopted to ensure the stability and reliability of the system.

IV. Application layer: real-time monitoring is applied on the entire permanent magnetic roller system. It supports customers to add, delete, modify fields and data, and can also be customized according to the specific needs of customers.

Qianshun technology intelligent permanent magnetic roller IOT platform application has the following features:

I. It has real-time monitoring functions, including: online status, equipment status, output frequency, output voltage, operating time, power consumption and so on.

II. It has fault management and promotion functions, including: historical fault, fault management, fault statistics, fault subscription and so on.
 Historical faults: all faults will be recorded in the cloud. Using WEB and mobile phone APP, one can query the historical fault records.

Fault Management: the function supports the modification of the description and fault level of all faults.

Fault statistics: Statistics can be made according to the set conditions, such as the type of fault, fault occurrence time, etc., supporting equipment. Failure rate and the proportion of the occurrence of each failure can be printed/downloaded.

Fault subscription: One can subscribe to the faults of concern. All the devices will promote the fault information to the terminal when the subscribed faults occur.

III. system management: different customers can carry out hierarchical management of permissions; such as: ordinary users, maintenance users, dealers and so on. It also supports customized terminal interface and functions requirements.

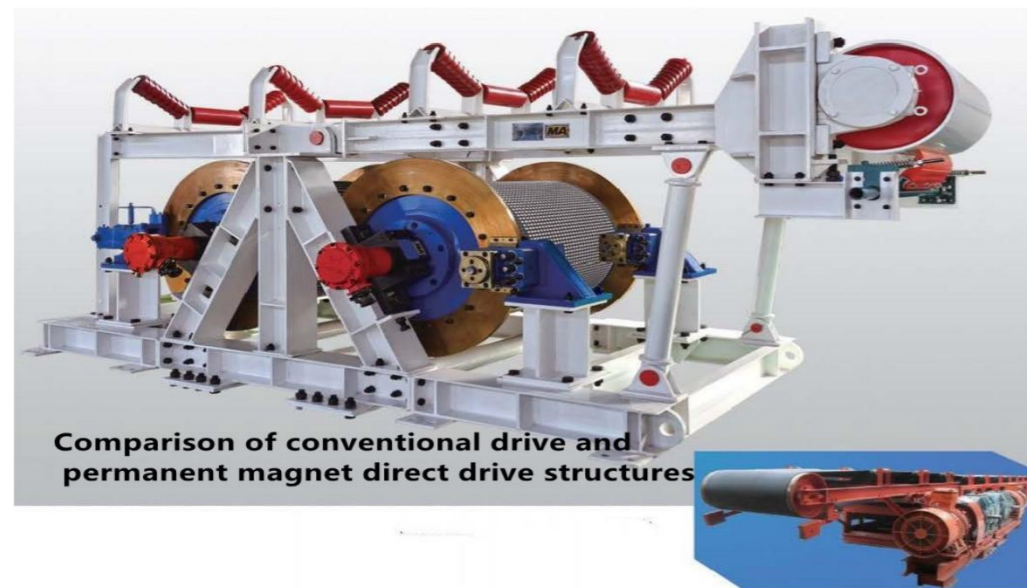
IV. After the contract is finalized, it provides customers with web address and mobile phone APP, opens accounts for customers and provides operation guidelines. During the installation and commissioning of the equipment, the service personnel will provide training of frequency converter and IOT related aspects to the customer and the terminal site operators. After the equipment is put into operation, the customer observes the operating status of the frequency converter from time to time and checks the operating data of the frequency converter at any time according to the instruction of Internet of Things.

About products

Introduction of permanent magnet frequency conversion direct drive system

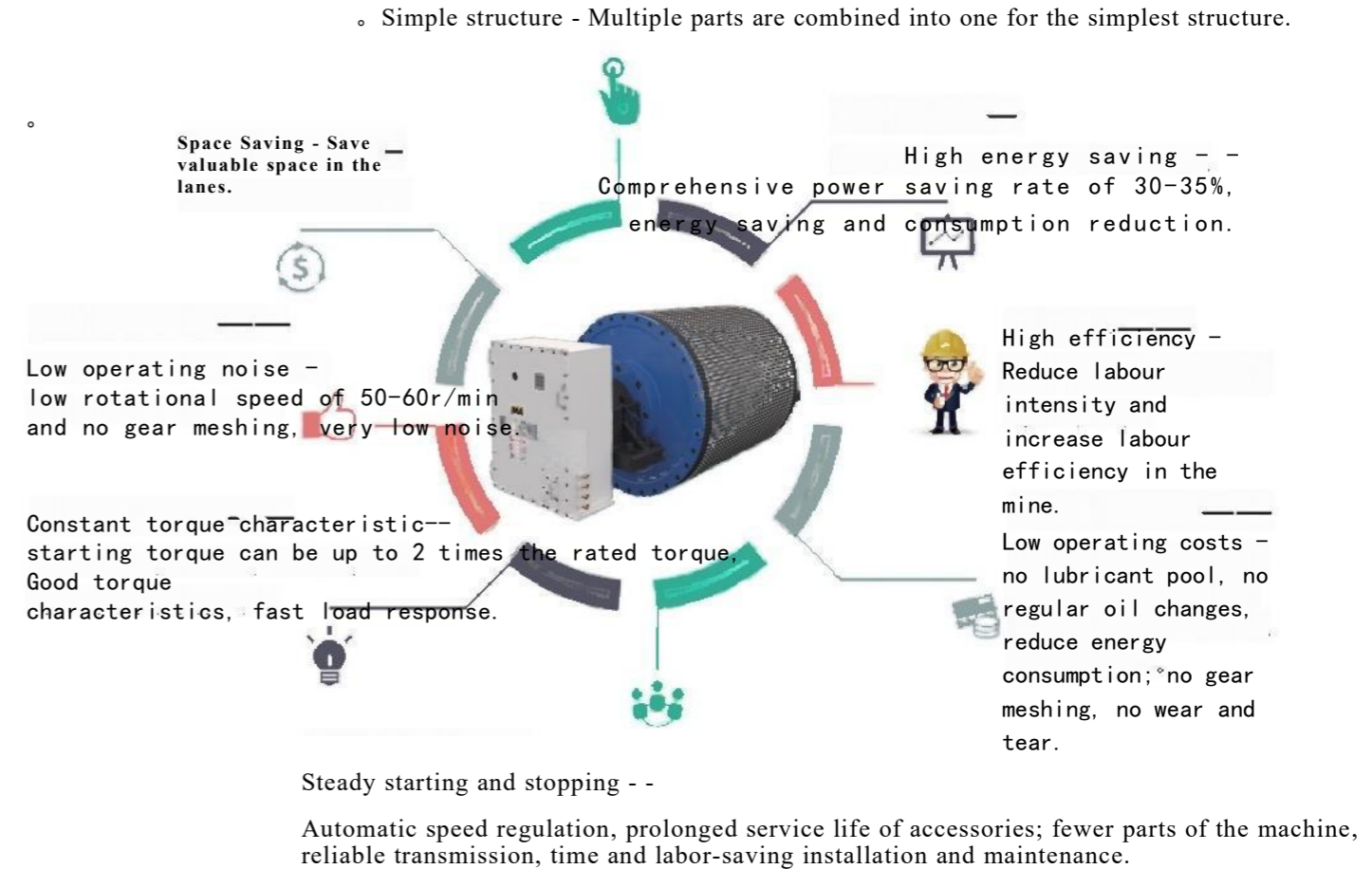
The traditional belt conveyor drive device adopts asynchronous motor, hydraulic coupling with reducer to transmit power to the roller to drive the belt movement. The obvious shortcomings of this traditional transmission mode are: the overall efficiency of the drive system is low, the start is not smooth, it has heavy load start-up difficulties and so on. Moreover, the maintenance and replacement frequencies of the reducer and other components are very high. Therefore, the traditional drive system has been optimized so that the new generation can have simple structure, reliable operation, good energy consumption and high efficiency.

Permanent magnet direct drive belt conveyor is build based on the traditional belt conveyor and innovatively adopts permanent magnet direct drive roller or permanent magnet motor drive to streamline the transmission structure, remove the intermediate transmission parts such as reducer and hydraulic coupling, which has the advantages of gearless transmission, no transition connection, simpler structure, no wear out occurrence, no maintenance required, high efficiency, high reliability, etc. Moreover, it is capable of precise speed regulation, which greatly improves the output efficiency of the drive device and has remarkable energy-saving effect.



Comparison of conventional drive and permanent magnet direct drive structures

Characteristics of permanent magnet direct drive:



STYB Mining-Use Explosion-proof Three-phase Permanent Magnet Synchronous Roller Motor

STYB series permanent magnet roller motor creatively uses advanced external rotor permanent magnet direct drive technology with intelligent control system to integrate the motor and roller. It integrates the motor with the roller, and revolutionarily abandons the mechanical devices such as reducer, hydraulic coupling and coupler, which makes the direct drive of the conveyor become a reality.

Product characteristics:

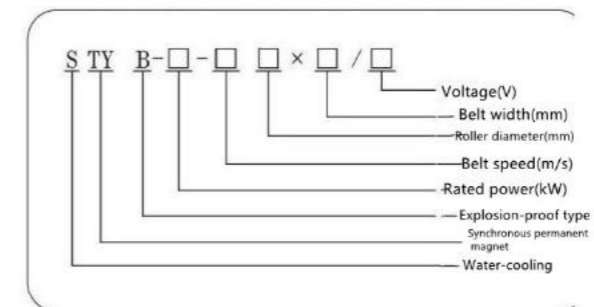
- *★Integrated design, simplest structure, more direct transmission
- ★Good force and energy characteristics, large output torque, smooth starting, constant torque control
- ★Compact structure, small space occupation, neat appearance, save the space of the lane
- ★No gear wear, no oil leakage, more reliable and higher safety, high reliability
- ★High operating efficiency, energy efficient and low consumption, low operating costs, good economic benefits
- ★Easy installation process, easy and very little maintenance works, saving maintenance costs



Product Design -General Structure



Model specification :



Scope of application (special requirements to be specified).

1. Altitude does not exceed 1500m;
2. Ambient air temperature is -15~40°C;
3. Can be used under the coal mine with the danger of methane mixture and coal dust explosion;
4. Can be used in the environment without destroying metal insulation gas and vapor.

STYJVFT Mining-Use Explosion-proof and Intrinsically Safe Permanent Magnet Synchronous Roller Motor Integrated Machine

STYJVFT Mining-Use Explosion-proof and Intrinsically Safe Permanent Magnet Synchronous Roller Motor Integrated Machine adopts the external rotor permanent magnet direct drive technology and sensor-less vector control technology, integrating the permanent magnet synchronous roller motor and frequency converter. It occupies less space, has excellent output performance and avoids interference problems caused by excessively long cables.



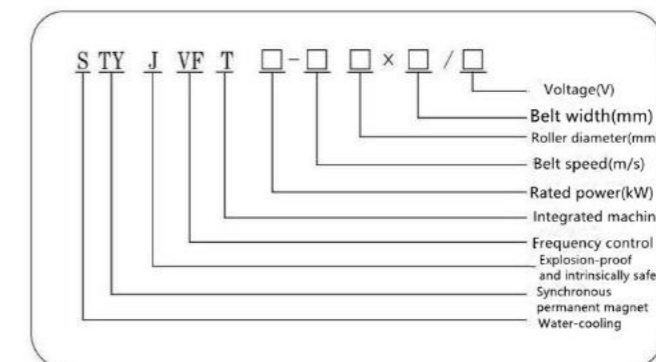
Product Characteristics:

- ★Integrated design of converter and permanent magnet synchronous roller motor, simple and compact structure
- ★Shorten the power supply distance between the frequency converter and the motor, solving the interference problems of harmonic wave and spike voltage caused by the long power supply cable
- ★Integrated water-cooling design, reducing the number of accessories, better utilization of space
- ★The converter adopts modular structure, no electromagnetic interference, it has excellent output performance, suitable for long-distance power supply
- ★Excellent heavy-load soft-start characteristics, which can achieve operation with infinitely variable speed regulation

Main technical parameters:

- Rated voltage: 660V/1140V
- Rated power: 37kW-710kW
- Output belt speed range: 1.6-5.0m/s
- Protection functions: over-voltage, under-voltage, overload, phase failure, over-heat, short circuit, electricity leakage and other protection.
- Insulation grade: H
- Protection grade: IP55
- Cooling method: water-cooling
- Scope of application: belt conveyor
- Refer to STYB Series Explosion-proof Three-phase Permanent Magnet Synchronous Roller Motor for selection and installation sizes.

Model specification :



Scope of application (special requirements to be specified).

1. Altitude does not exceed 1500m;
2. Ambient air temperature is -15~40°C.
3. It can be used under the coal mine with the danger of methane mixture and coal dust explosion;
4. It can be used in the environment without destroying metal insulation gas and vapor.

Qianshun Intelligent Permanent Magnetic Roller Model Selection Table

Belt width (m)	Roller length (mm)	Roller diameter (mm)	Belt speed(M/S) Torque(N-M) Power(KW)	0.8	1	1.25	1.6	2	2.25	2.5	3.15	3.5	4	4.5	5			
500	650	500	7.5						611	551	440	394	350					
			11						900	740	600	540	490					
			15							1100	975	790	730	685				
			18.5							1300	1140	940	870	820				
			22							1500	1320	1100	1020	970				
			30							1800	1600	1350	1260	1210				
	650	800	500	7.5	1400	1100	880	690	510	550	440	394	350					
				11							2300	1900	1500	1400	1350			
				15								2900	2400	1900	1800	1750		
				18.5								3500	2900	2300	2200	2150		
				22								4100	3400	2700	2600	2550		
				30								4900	4100	3300	3200	3150		
650		800	630	7.5	3000	2300	1800	1180	1080	950	790	690	600	530	490			
				11								3500	2700	2200	2100	2050		
				15								4300	3400	2800	2700	2650		
				18.5								5100	4100	3400	3300	3250		
				22								5900	4900	4100	4000	3950		
				30								6900	5800	4900	4800	4750		
	800	950	500	7.5	1400	1100	880	690	510	550	440	394	350					
				11	1800	1500	1180	940	830	740	690	540	490					
				15								2300	1900	1500	1400	1350		
				18.5								2900	2400	1900	1800	1750		
				22								3500	2900	2300	2200	2150		
				30								4300	3500	2800	2700	2650		
800		950	630	11	4400	3500	2700	2000	1720	1560	1380	1110	1000	870	770	700		
				15								1700	1400	1100	1000	950		
				18.5								2100	1700	1400	1300	1250		
				22								2500	2100	1700	1600	1550		
				30								3000	2500	2100	2000	1950		
				37								3600	3000	2500	2400	2350		
	1000	150	500	7.5														
				11														
				15														
				18.5														
				22														
				30														

Qianshun Intelligent Permanent Magnetic Roller Model Selection Table

Belt width (m)	Roller length (mm)	Roller diameter (mm)	Belt speed(M/S) Torque(N-M) Power(KW)	0.8	1	1.25	1.6	2	2.25	2.5	3.15	3.5	4	4.5	5	
650	800	630	11	5000	4100	3200	2400	2000	1800	1600	1400	1300	1250	1200	1150	
			15													
			18.5													
			22													
			30													
			37													
			40													
			45													
			55													
			75													
			90													
			110													
800	1150	725	11	8000	6400	5000	3800	3200	2800	2500	2200	2100	2050	2000	1950	
			15													
			18.5													
			22													
			30													
			37													
			40													
			45													
			55													
			75													
			90													
			110													
1000	1500	850	11	12000	9600	7500	5800	5000	4400	3900	3500	3200	3100	3050	3000	
			15													
			18.5													
			22													
			30													
			37													
			40													
			45													
			55													
			75													
			90													
			110													

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Qianshun Intelligent Permanent Magnetic Roller Model Selection Table

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1000	1130	1000	160								25510	27760	30000	17850	15930					
			185											27330	29500	18470				
			200												25000	22170	20050			
			220													24340	22060			
			250														23000			
		1100	55			23840	18720	15000	13000	12110	9450	8510	7550	6800	5950					
			75			25500	20380	18450	16630	13060	11770	10200	9280	8110						
			90				24550	21980	20000	15520	14180	12300	10930	9480						
			110					20830	19000	17090	14890	13370	12100							
			125						27840	21060	19140	16930	15250	13670						
			132							22960	20720	17950	16050	14450						
			160								27770	25000	21930	19480	17560					
			185									28890	25370	22590	20350					
			200										27200	24360	21860					
			220											26850	24000					
			250												27450					
			1250	55			27720	21830	16730	15450	13690	11110	9850	8570	7620	6920				
				75			37830	29780	23000	21200	19000	14830	13670	11610	10460	9510				
				90				35870	27760	25340	23700	17780	16310	14250	12430	11460				
				110					33730	30870	27480	21780	19700	17280	15100	13790				
		125							38520	35180	31440	25000	22850	19500	17480	15720				
		132							40520	36950	33210	26090	23760	20610	18260	16490				
		160										40110	31710	28860	25000	22100	19930			
		185											36820	33500	29000	25510	23340			
		200											39820	35940	31130	27760	25220			
		220												39710	34900	30360	27450			
		250													39120	34760	31500			
		280														38700	35130			
		315															39730			
		1400		75				32640	26500	23000	20880	16700	15000	12900	11900	10720				
				90				39080	31860	27630	25360	20170	18000	15490	14000	12720				
			110				47940	38830	34000	30780	24600	22000	19100	17140	15210					
			125					44320	38480	35130	27540	25100	21660	19730	17690					
			132						40800	40650	37030	32170	26100	23680	20780	18680				
			160							49210	45050	35700	32000	27740	24880	22610				
			185								51880	46870	36900	32250	28960	26000				
			200									44570	39790	34730	31490	27950				
			220									48660	43600	38180	34500	30860				
			250										49680	43510	38380	35160				
			280											55550	48740	43870	39400			
			315												54770	49160	44000			
			355													55720	49940			
			375														52820			
			1200	1400	500	15		3800	3000	2330	1880	1660	1510	1200	1070	940	850	750		
		18.5					4630	3670	2900	2320	2050	1860	1480	1310	1160	1020	940			
		22						4400	3430	2740	2460	2210	1760	1580	1370	1210	1100			
		30							4700	3800	3320	3100	2340	2140	1870	1670	1590			
		37							5820	4650	4100	3700	2950	2640	2310	2060	1840			
		40								5020	4130	4000	3100	2840	2500	2200	2000			
		45									5630	5000	4520	3550	3220	2810	2490	2240		
		55										6110	5510	4400	3930	3400	3050	2740		
		75											6000	5150	4700	4200	3740			
		90												6420	5620	4980	4480			
		110														6110	5500			
		125															6250			
		132																6600		
		630				22			7000	5530	4390	3450	3100	2770	2210	1980	1740	1550	1400	
						30				7540	6000	4680	4200	3770	3020	2700	2370	2110	1900	
					37					7360	5890	5190	4650	3720	3330	2920	2600	2340		
					40						7950	6240	5600	5040	4000	3600	3150	2800	2520	
					45					8040	7020	6320	5670	4500	4000	3560	3140	2850		
					55						8620	7730	6940	5530	4960	4330	3860	3500		
					75								9450	7560	6780	5930	5290	4730		
					90									9080	8100	7130	6320	5700		
					110										11100	9950	8700	7730	6980	
					125											12540	11200	9850	8790	7900
					132												11940	10410	9280	8340
					160													12580	11240	10120
					183															11720
					725	22			8060	6400	5000	3930	3380	3200	2520	2320	2000	1800	1660	
						30				11050	8700	6830	5420	4850	4400	3470	3070	2760	2400	2200

Qianshun Intelligent Permanent Magnetic Roller Model Selection Table

Belt width (m)	Roller length (m)	Roller diameter (r)	Belt speed(M/S) Torque(N-M) Power(KW)	0.8	1	1.25	1.6	2	2.25	2.5	3.15	3.5	4	4.5	5								
1200	1400	725	37								13590	10750	8400	6630	6000	5380	4240	3830	3350	3000	2700		
			40										11600	9070	7190	6450	5800	4580	4130	3640	3240	3000	
			45											13040	10180	8130	7300	6530	5170	4660	4000	3600	3230
			55											15910	12470	9950	8900	7930	6340	5730	5000	4430	4000
			75												17100	13500	12100	10850	8620	7820	6800	6000	5460
			90													16230	14520	12980	10320	9370	8200	7250	6480
			110														15940	12670	11400	10030	8800	7930	
			125														18120	14320	13000	11400	10050	9060	
			132															16170	13700	12000	10550	9560	
			160																16610	14560	12800	11540	
			185																	16820	14830	13330	
			200																		15980	14520	
			220																		17680	15930	
			800	45				17930	14370	11330	8990	7950	7200	5710	5090	4540	4040	3610					
				55					17500	13770	10950	9720	8750	7000	6200	5520	4930	4410					
		75							18820	14970	13240	11940	9520	8500	7550	6670	6000						
		90								17910	15910	14380	11500	10250	9000	8000	7210						
		110									21880	19430	17480	14000	12500	10960	9850	8810					
		125										22020	19930	15800	14100	12460	11200	10040					
		132											21080	16800	15000	13200	11810	10600					
		160												20400	18210	16000	14300	12780					
		185													21050	18520	16550	14850					
		200														20040	17800	16080					
		220															22000	19600	17660				
		250																22250	20140				
		280																	22500				
		850		40					13580	10600	8430	7510	6850	5310	4780	4300	3830	3470					
				45						15360	12020	9550	8500	7740	5970	5500	4820	4170	3820				
			55						18620	14610	11600	10310	9320	7430	6590	5880	5200	4680					
			75							19820	15850	14050	12810	10020	9000	7960	7000	6410					
			90								19150	16900	15390	12100	10800	9520	8460	7600					
			110									23330	20570	18780	14800	13350	11580	10030	9030				
			125										23320	21370	16800	15100	13300	11860	10700				
			132											22420	17760	16000	13980	12530	11200				
			160												21420	19280	17020	15000	13580				
			185													22440	19690	17550	15770				
			200														21300	18870	17110				
			220																				

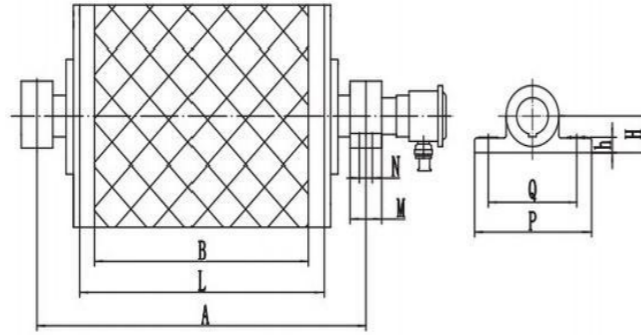
Intelligent Machinery - Qianshun Produce

Qianshun Intelligent Permanent Magnetic Roller Model Selection Table

Belt width (m)	Roller length (mm)	Roller diameter	Belt speed(M/S) Torque(N-M) Power(KW)	0.8	1	1.25	1.6	2	2.25	2.5	3.15	3.5	4	4.5	5		
				1200	1400	1000	125				34000	30800	27640	24660	19440	16430	15260
132				35910			32270	29320	26960	20720	17950	16050	14450				
160				39140			35400	32170	29000	21930	19480	17560					
185								31970	28890	25320	22590	20350					
200								14580	31140	27200	24360	21860					
220								18090	34300	30000	26850	24000					
250									28090	34160	30620	27450					
280										38200	34220	30780					
315											38670	34530					
355												38800					
90				45230			38670	27760	25340	22700	17780	16310	14250	12430	11460		
110				43930			33750	30870	27480	21780	19700	17260	15160	13790			
125				49780		38520	35180	31440	25090	22650	19500	17480	15720				
132				52420		40520	36950	33210	26090	23760	20610	18260	16490				
160				49150		45000	40110	31710	28860	25000	22100	19930					
185				57200		52140	46430	36870	33500	29000	25510	23340					
200						56290	50290	39820	35940	31130	27760	25220					
220							55140	43710	39710	34300	30360	27450					
250								49900	45290	39120	34760	31500					
280								55920	50280	43870	38700	35120					
315								56620	49300	43510	39730						
355									55560	49320	44500						
375										51720	47000						
400										55490	50460						
450											56760						
110				61590		47940	38830	34000	30780	24600	22000	19100	17140	15210			
125				54520		44320	38460	35130	27540	25100	21660	19730	17680				
132				57400		46800	40650	37050	29470	26100	22680	20760	18680				
160				56470		49210	45050	35700	32000	27740	24880	22610					
185				65580		57000	51880	40870	36900	32250	28960	26000					
200				70550		61620	56420	44570	39760	34730	31490	27960					
220						67830	61810	48660	43600	38180	34500	30860					
250							70000	55380	49660	43510	38980	35160					
280								62430	55350	48740	43870	39400					
315								69870	62800	54770	49160	44000					
355								70500	61880	55720	49940						
375									64860	58400	52620						
400									69560	62620	55880						
450										70320	63240						
500											70430						
30				11050		8700	6830	5420	4850	4400	3470	3070	2400	2200			
37				13590		10750	8400	6630	6000	5380	4240	3830	3350	3000	2700		
40				14670		11800	9070	7190	6450	5800	4580	4150	3640	3240	3000		
45				16520		13040	10180	8130	7380	6530	5170	4660	4000	3600	3230		
55				15910		12470	9950	8900	7930	6340	5730	5000	4430	4000			
75						17100	13500	12100	10850	8620	7820	6800	6000	5440			
90						16230	14520	12980	10320	9370	8200	7230	6480				
110						19800	17730	15940	12670	11400	10030	8800	7930				
125						20300	18120	14520	13000	11400	10050	9060					
132							19120	15170	13700	12000	10550	9560					
160							18400	16610	14560	12900	11540						
185								19100	16830	14830	13330						
200								20900	18120	15980	14520						
220									20050	17680	15930						
250										20100	18100						
280											20300						
55				21880	17500	13770	10950	9720	8750	7000	6200	5520	4930	4410			
75				23910	18820	14970	12340	11940	9520	8500	7550	6670	6000				
90				22360	17910	13910	14380	11500	10250	9000	8000	7210					
110					21880	19430	17480	14000	12500	10960	9850	8810					
125					24920	20220	19430	15880	14190	12460	11200	10040					
132					26300	23400	21000	16890	15000	13200	11810	10600					
160						25560	20400	18210	16000	14300	12780						
185								23500	21050	18520	16550	14850					
200								25500	22800	20040	17900	16060					
220								25050	22000	19600	17660						
250									25060	22250	20140						
280										25060	22200						
315											25200						
55				18620	14610	11600	10110	9320	7430	6580	5880	5200	4680				
75				25670	19820	13850	14050	12810	10020	9000	7980	7000	6410				

Qianshun Intelligent Permanent Magnetic Roller Model Selection Table

Belt width (m)	Roller length (mm)	Roller diameter	Belt speed(M/S) Torque(N-M) Power(KW)	0.8	1	1.25	1.6	2	2.25	2.5	3.15	3.5	4	4.5	5	
				1400	1600	850	90					23820	19150	16900	15390	12100
110							29170	23320	20570	18780	14900	13250	11580	10030	9330	
125								26500	23320	21370	16800	15100	13300	11860	10700	
132								28000	24830	22420	17760	16000	13980	12530	11200	
160										27320	21420	19280	17020	15000	13580	
185										24870	22440	19690	17550	15770		
200										26980	24110	21300	18870	17110		
220											26500	23090	20410	18170		
250											26500	23530	21230			
280												26360	23800			
315													24620	20890		
355														30000		
75				23820		21130	17000	14820	13440	10750	8300	8330	7530	6710		
90				27070		25280	20420	17820	16200	12780	11680	10200	8910	8120		
110				32420		30870	24900	21820	19860	15580	14200	12450	11060	9930		
125						35000	28310	24810	22480	17750	16070	14080	12420	11320		
132							30000	26340	23760	18720	17160	14890	13190	11920		
160							36410	31740	28800	22720	20730	17890	16050	14480		
185									33470	26480	23900	20820	18480	16620		
200									35900	28530	25740	22550	20000	18000		
220									31440	28300	24710	21950	19860			
250										35500	32320	28180	25000	22470		
280											36000	31330	27880	25340		
315												35380	31600	28430		
355													35370	31950		
375														33840		
90							27620	22600	20430	17890	14460	12810	11200	9960	8900	
110				35700		34000	27540	24540	21950	17400	15680	13720	12170	11060		
125				38580		31300	27820	24810	20080	17880	15780	13960	12560			
132						33080	29310	26190	21050	18880	16600	14740	13200			
160						40010	35560	31840	25510	22760	20000	17850	15930			
185							41000	36840	28520	25330	20500	18430				
200								38800	31900	28560	25000	22170	20050			
220									35100	31380	27670	24340	22060			
250									38980	35000	31360	27850	25000			
280										39820	35000	31110	28000			
315											39670	35070	31620			
355												39360	35550			
375												41520	37560			
400													40000			
90							30760	24550	21980	20040	15520	14180	12200	10930	9980	
110				40910		37530	29950	26830	24500	19000	17090	14890	13370	12100		
125				42700		34060	30580	27540	21660	19440	16930	15250	13670			
132				44920		35910	32270	29320	22960	20720	179					



TBYC Mining-Use Explosion-Proof Three-phase Permanent Magnet Synchronous Motor is designed to realize direct drive.

TBYC series of mining-use explosion-proof frequency conversion permanent magnet synchronous motor realizing direct drive. It constitutes the "frequency conversion permanent magnet synchronous motor + frequency converter" system efficiency, unstable starting, difficult start of heavy load. It makes the whole system low noise, maintenance-free, and realizes soft start, soft stop, soft impact, and soft drive, ensuring the reliability of conveyor operation.

Product characteristics:

- ★High transmission efficiency, reduce the waste of electrical energy, higher energy efficiency
- ★Good starting effect under heavy load, small impact of electrical and mechanical stress, ensuring safety of the whole machine operation.
- ★More accurate power balance control under multi-drive working conditions to ensure balanced motor output
- ★Compact structure, small space needed, can reduce the amount of underground chamber excavation, cost savings, and can shorten the installation cycle.
- ★No gear meshing, no high-speed transmission, less vibration, lower noise.
- ★No intermediate mechanical transmission, low probability of failure, reduce maintenance costs, basically maintenance-free.
- ★Built-in input and output harmonic wave suppression devices
- ★Load rate in the range of 25% ~ 120%, the motor can ensure high efficiency

Table of Installation Sizes of Qianshun Permanent Magnetic Roller Motor

Roller diameter D(mm)	Belt width B(mm)	Main size (mm)								
		A	L	M	N	Q	P	H	h	do
500	500	1000	600	110		380	460	135	46	M24
500	650	1100	750	110		380	460	135	46	M24
500	800	1300	950	110		380	460	135	46	M24
500	1000	1500	1150	110		380	460	135	46	M24
630	650	1100	750	110		480	570	155	43	M30
630	800	1300	950	110		480	570	155	43	M30
630	1000	1500	1150	110		480	570	155	43	M30
630	1200	1750	1400	110		480	570	155	43	M30
725	800	1300	950	120		400	515	120	50	M24
725	1000	1500	1150	120		400	515	120	50	M24
725	1200	1750	1400	120		400	515	120	50	M24
725	1400	1950	1600	120		400	515	120	50	M24
800	800	1400	950	150		420	550	150	60	M30
800	1000	1600	1150	150		420	550	150	60	M30
800	1200	1850	1400	150		420	550	150	60	M30
800	1400	2050	1600	150		420	550	150	60	M30
850	800	1375	950	150		420	550	150	60	M30
850	1000	1575	1150	150		420	550	150	60	M30
850	1200	1825	1400	150		420	550	150	60	M30
850	1400	2025	1600	150		420	550	150	60	M30
900	800	1375	950	140		420	550	150	60	M30
900	1000	1575	1150	140		420	550	150	60	M30
900	1200	1825	1400	140		420	550	150	60	M30
900	1400	2025	1600	140		420	550	150	60	M30
1000	800	1450	950	275	140	720	880	210	80	M36
1000	1000	1650	1150	275	140	720	880	210	80	M36
1000	1200	1900	1400	275	140	720	880	210	80	M36
1000	1400	2100	1600	275	140	720	880	210	80	M36
1100	1000	1650	1150	275	140	720	880	210	80	M36
1100	1200	1900	1400	275	140	720	880	210	80	M36
1100	1400	2100	1600	275	140	720	880	210	80	M36
1250	1000	1850	1150	320	170	750	900	240	90	M36
1250	1200	2100	1400	320	170	750	900	240	90	M36
1250	1400	2300	1600	320	170	750	900	240	90	M36
1400	1000	1870	1150	320	170	750	900	290	125	M36
1400	1200	2070	1400	320	170	750	900	290	125	M36
1400	1400	2270	1600	320	170	750	900	290	125	M36

Note: STYB, STYJVFT series products can be customized according to the practical use of the site. STYB series permanent magnetic roller motor is our patented product.

Parameter Table of Mining-use Explosion-proof Permanent Magnet Synchronous Motor

Model	Rated Voltage V	Rated Power k W	rated Frequency Hz	No. Of Poles	Rated current A	Synchr onized Speed r/min	Output torque N·m	Power factor	Cooling method	Overall Dimension (L×W×H)mm	Weight k g
TBYC-200/1140	1140	200	30	40	138	90	21219	0.95	Water cooling	1297×1200×1282	5200
TBYC-250/1140	1140	250	30	40	173	90	26524	0.94	Water cooling	1407×1200×1282	5500
TBYC-280/1140	1140	280	45	60	195	90	29708	0.95	Water cooling	1368×1200×1282	5800
TBYC-315/1140	1140	315	45	60	216	90	33422	0.94	Water cooling	1527×1200×1282	6100
TBYC-355/1140	1140	355	45	60	246	90	37663	0.94	Water cooling	442×1520×1563	8900
TBYC-400/1140	1140	400	45	60	275	90	42440	0.95	Water cooling	1513×1520×1563	9400
TBYC-450/1140	1140	450	45	60	314	90	47747	0.94	Water cooling	1573×1520×1563	9800
TBYC-500/1140	1140	500	60	80	347	90	53049	0.94	Water cooling	1652×1760×1883	12000
TBYC-560/1140	1140	560	60	80	387	90	59414	0.94	Water cooling	1712×1760×1883	12500
TBYC-630/1140	1140	630	60	80	433	90	66842	0.95	Water cooling	1772×1760×1883	13000
TBYC-710/1140	1140	710	60	80	490	90	75332	0.95	Water cooling	1997×1760×1883	15000
TBYC-800/1140	1140	800	60	80	550	90	84880	0.95	Water cooling	2250×1760×1883	17000

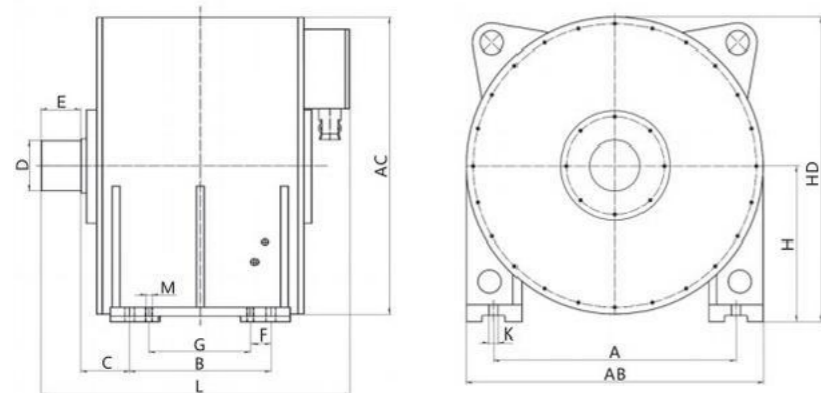
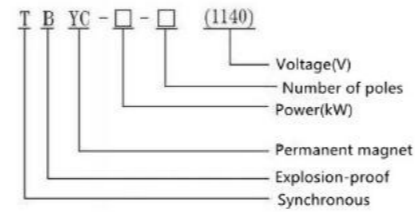


Product design-overall structure

Scope of application (special requirements to be specified).

- ★Altitude not exceeding 1500m.
- ★Ambient air temperature is -15~40°C.
- ★It can be used in coal mines with the danger of methane mixture and coal dust explosion;
- ★It can be used in the environment without destroying metal insulation gas and vapor

Model specification :



Selection Table Of Mining-Use Explosion-Proof Permanent Magnet Synchronous Motor

Power kW	Installation size /mm										Overall size/mm				Weight kg
	D	E	C	B	A	K	M	F	G	H	L	AB	HD	AC	
200	200	170	253	600	960	40	36	100	400	630	1365	1200	1490	1210	5200
250	200	170	253	710	960	40	36	100	510	630	1475	1200	1490	1210	5500
280	200	170	253	770	960	40	36	100	570	630	1540	1200	1490	1210	5800
315	260	206	200	720	1240	46	36	100	520	800	1580	1520	1560	1520	7200
355	260	206	200	810	1240	46	36	100	610	800	1670	1520	1560	1520	8900
400	260	206	200	910	1240	46	36	100	720	800	1780	1520	1560	1520	9400
450	260	206	200	1025	1240	46	36	100	830	800	1900	1520	1560	1520	10000
500	280	250	335	535	1410	58	56	100	375	1000	1400	1760	1883	1760	12000
560	280	250	335	600	1410	58	56	100	420	1000	1575	1760	1883	1760	13000
630	280	250	335	675	1410	58	56	100	475	1000	1770	1760	1883	1760	15000
710	280	250	335	760	1410	58	56	100	535	1000	2000	1760	1883	1760	16200
800	280	250	335	855	1410	58	56	100	600	1000	2200	1760	1883	1760	17000

BPJ series frequency converter controller is specially designed for permanent magnet motor, which is well matched with the permanent magnet synchronous frequency converter motor, and adopts vector control to achieve precise control of torque, meanwhile, the frequency converter has the characteristics of high efficiency, superior electromagnetic compatibility and strong environmental adaptability, which can effectively reduce the interference to the power grid and surrounding equipment, and fully meet the requirements of various working conditions.

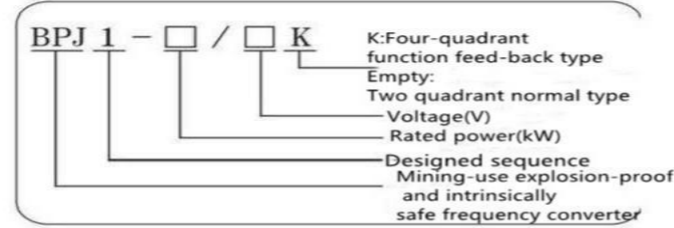
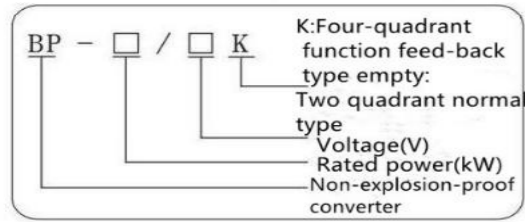


Product Characteristics:

- ★Low output voltage change rate (du/dt), reducing damage to motor insulation
- ★Reduces damage to the motor, increasing the life of the motor
- ★The reverse voltage of IGBT is half of the direct current bus voltage, improving reliability
- ★Three-level of electrical loss is 40-50% lower than that of the two-level of electrical loss under the same load frequency, reducing heat dissipation cost.
- ★Professional stacked busbar and labeling technology, compact design, effectively reducing the space volume
- ★Fully compatible with synchronous / asynchronous motor drive control, multi-machine power that can balance synchronous control
- ★Built-in input and output harmonic wave suppression device

Model specification:

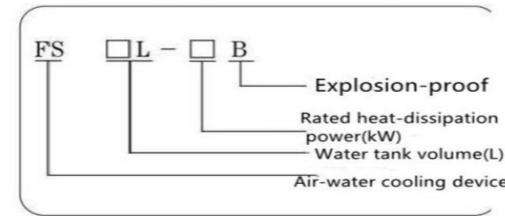
Dedicated converters are divided into BP series non-explosion-proof model and BPJ1 series mining-use explosion proof and intrinsically safe model.



self-circulating cooling device

Creating Values to Custome

Model specification:



Technical Parameters of BPJ1 Series Mining-use Explosion-proof and Intrinsically Safe AC Frequency Converter

Product model	BPJ-55/660	BPJ-75/660	BPJ-90/660	BPJ-110/660	BPJ-160/660
Rated voltage(V)	660	660	660	660	660
Rated power (kw)	55	75	90	110	160
Rated current(A)	60.5	82.5	99	121	176
Output frequency(Hz)	0-400				
Control model	V/F Control, Open Loop Vector Control (SVC), Closed Loop Vector Control (VC)				
Topological structure	Three-level electrical topology, two-quadrant				
Communication method	RS485 (Modbus RTU) as standard, PROFIBUS, CAN, CANOPEN, Ethernet as options				
Protection function	More than 30 kinds of protection functions including over-voltage, over-current, under-voltage, phase loss, overload, over-temperature, short-circuit				
Safety function	Leakage lockout, automatic discharge				
Power balance	Speed control, torque control, droop control				
Heat dissipation method	Forced air/water cooling				
Overall size(mm)	1700x1145x1080				1955x1000x1230
Reference quality(kg)	1200		1240		1760

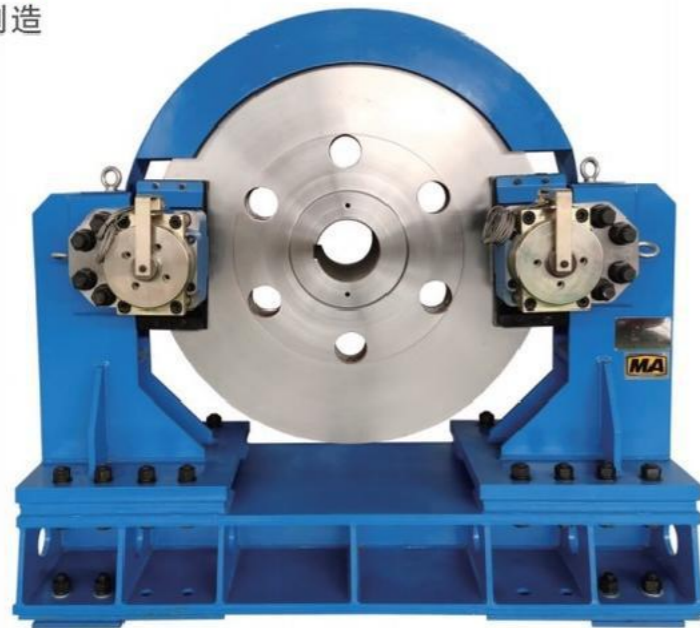
Technical parameters of self-circulating cooling device

Heat dissipation function (kW)	Model	Rated voltage(V)	Tank volume (L)	Working medium	Output volume (t/h)	Water pump electrical motor power (kW)	(kW) Wind motor electrical power	Overall size (mm)
20	FS300L-20 (B)	380/660(ground)	300	Industrial softened or purified water	4	2.2	1.1	1200×800×1040
		660/1140 (mining well)						
40	FS500L-40 (B)	380/660(ground)	500		5.5	2.2	1.1	1400×900×1620
		660/1140 (mining well)						
65	FS700L-65 (B)	380/660(ground)	700	12.5	2.2	2.2	1500×1200×1755	
		660/1140 (mining well)						
100	FS1000L-100 (B)	380/660(ground)	1000	15	2.2	4	1700×1200×1880	

Note: 1, Each cooling device have two water pipes

2, Each cooling device facilitate with two 10m water pipes, eight U-shaped cards, two adapters, if the length or quantity need to be increased, please contact Qianshun.

Product model	BPJ1-75/1140	BPJ1-110/1140	BPJ1-160/1140	BPJ1-200/1140	BPJ1-250/1140	BPJ1-315/1140	BPJ1-400/1140	BPJ1-500/1140	BPJ1-560/1140	BPJ1-630/1140
Rated voltage(V)	1140	1140	1140	1140	1140	1140	1140	1140	1140	1140
Rated power(kW)	75	110	160	200	250	315	400	500	560	630
Rated current(A)	50	73	105	130	160	195	250	320	355	400
Output frequency(Hz)	0-400									
Control model	V/F Control, Open Loop Vector Control (SVC), Closed Loop Vector Control (VC)									
Topological structure	Three-level electrical topology, two-quadrant									
Communication method	RS485 (Modbus RTU) as standard, PROFIBUS, CAN, CANOPEN, Ethernet as options									
Protection function	More than 30 kinds of protection functions including over-voltage, over-current, under-voltage, phase loss, overload, over-temperature, short-circuit									
Safety function	Leakage lockout, automatic discharge									
Power balance	Speed control, torque control, droop control									
Heat dissipation method	Forced air/water cooling									
Overall size(mm)	1700×1145×1080		1955×1000×1230		2245×1220×1360			2715×1140×1375		
Reference quality(kg)	1200	1240	1760	1800	2400	2450	2500	2650	2760	2800



Main Transport Ancillary Product Disc-style Brake Device for Belt Conveyor

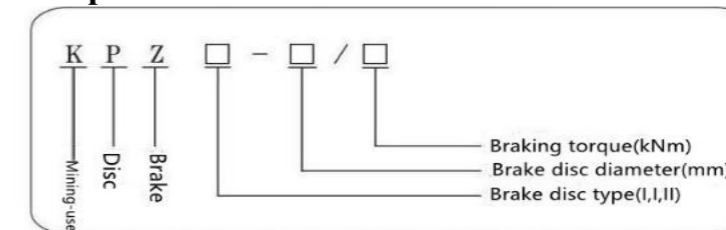
Product characteristics:

- ★KPZ series disc-style brake device for belt conveyor is mainly used for braking of upward and downward belt conveyor, especially for the brake control of large inclination angle belt conveyor.
- ★The disc-style brake is used for downward belt conveyor, which solves the problems of heat dissipation of brake discs and brake sparks, realizes soft braking of belt conveyor and meets the requirements of the Coal Mine Safety Regulations. It can effectively prevent the occurrence of overspeed and flying-machine accidents.
- ★Disc-style brake device is used for upward transport conveyor, especially for large inclination angle upward transport conveyor, which makes the conveyor safer and more reliable, and can effectively prevent the back-flying of machines due to the failure of backstops.
- ★Electrical control device, with programmable controller as the core, cooperates with belt speed detection unit, motor speed detection unit and electro-hydraulic proportional control output unit to monitor the operation of the downward belt conveyor.



National unified service telephone number: 400-9986-369

Model specification:



Main Technical Parameters

Disc diameter(mm) Braking torque(K-Nm) Brake (braking force x number)	KPZ-850	KPZ-1000	KPZ-1200	KPZ-1400	KPZ-1600	KPZ-1800	KPZ-2000
25×2	5.6	6.8					
25×4	11.2	13.6	17.1				
40×2	16.2	20.4	26	31.8			
50×4	22.4	27.2	34.2	38.5			
63×4	25.6	31.7	40.5	49.3			
63×8			82	99.6	118.2	135.8	153.4
80×4		40.3	51.5	62.7			
80×8			103	125.4	150	172.4	194.8
100×4		50.4	64.4	78.4			
100×8			128.8	158.8	187.6	215.6	243.6
120×4		64.4	77.3	94			
120×8			154.6	188.2	225	258.7	292.3
160×4			103	125.4			
160×8			206	250.8	300	345	399.7
180×4			116	141.1			
180×8			231.8	282.2	3376	388	438.4
200×4			128.8	156.8			
200×8			257.6	313.6	3752	431.2	487.2
400×4			257.6	313.6	369.6	A25.6	481.6
400×8					739.2	851.2	963.2
Weight(g)	2300	2500	3000	3500	3900	440	5000
Maximum rotation speed(Vmax)	200	200	150	150	115	115	100

Description: 1.Friction coefficient: $\mu=0.35$; 2.Block-shoe slack: 1-1.5mm; .

3.This braking equipment is used on the ground, the speed can be increased to 500r/min.

KTC Series Mining-use Explosion-proof and Intrinsically Safe Belt Conveyor Centralized Control System

KTC mining-use explosion-proof and intrinsically safe controller takes imported high-speed PLC and high-performance industrial computer as the control core, with rich interfaces and strong expandability, and adopts 15.6-inch graphic display to show the operation information of the belt conveyor.

The system has advanced belt conveyor protection function, which can control and protect a single belt conveyor, and can control and protect the 10 belts in cascade.

The system is equipped with leakage communication system, which can realize mobile control of start/stop/emergency stop of the belt conveyor through hand-held machine, and has convenient and reliable voice call function.

★The device adopts 15.6-inch display screen, showing the system working mode, equipment configuration, the operating status of each device and alarm and fault information (it is displayed with graphics with intuitive and clear interface. The configuration and parameter modification are intuitive and convenient).

★The device has start-up, locking, fault alarm function, protection functions including slippery protection, coal stacking protection, over-temperature protection, smoke protection, tearing protection, deviation protection, tension drop protection, etc. It also equipped with tension device protection function, automatic water sprinkling function for over-temperature, smoke situation, fault information recording and query function.

★The device has the emergency stop protection function when equipment failure, operation failure and emergency happen .

★The device has emergency stop and locking function, effectively preventing accidents caused by maloperation. Only after all the faults are lifted and the emergency stop switch is reset, the system can return to normal operation condition to ensure safety.

★The device has the function of communication and point to point communication; the amplified telephone and the controller can talk to each other and conduct point to point communication.

★All the equipment in the device has a good protection performance and can adapt to the dusty and humid working environment in the coal mining site.



Characteristics of KTC Series Mining-use Explosion-proof Controller Product:

★The device has three working modes: centralized control, on-site and maintenance.

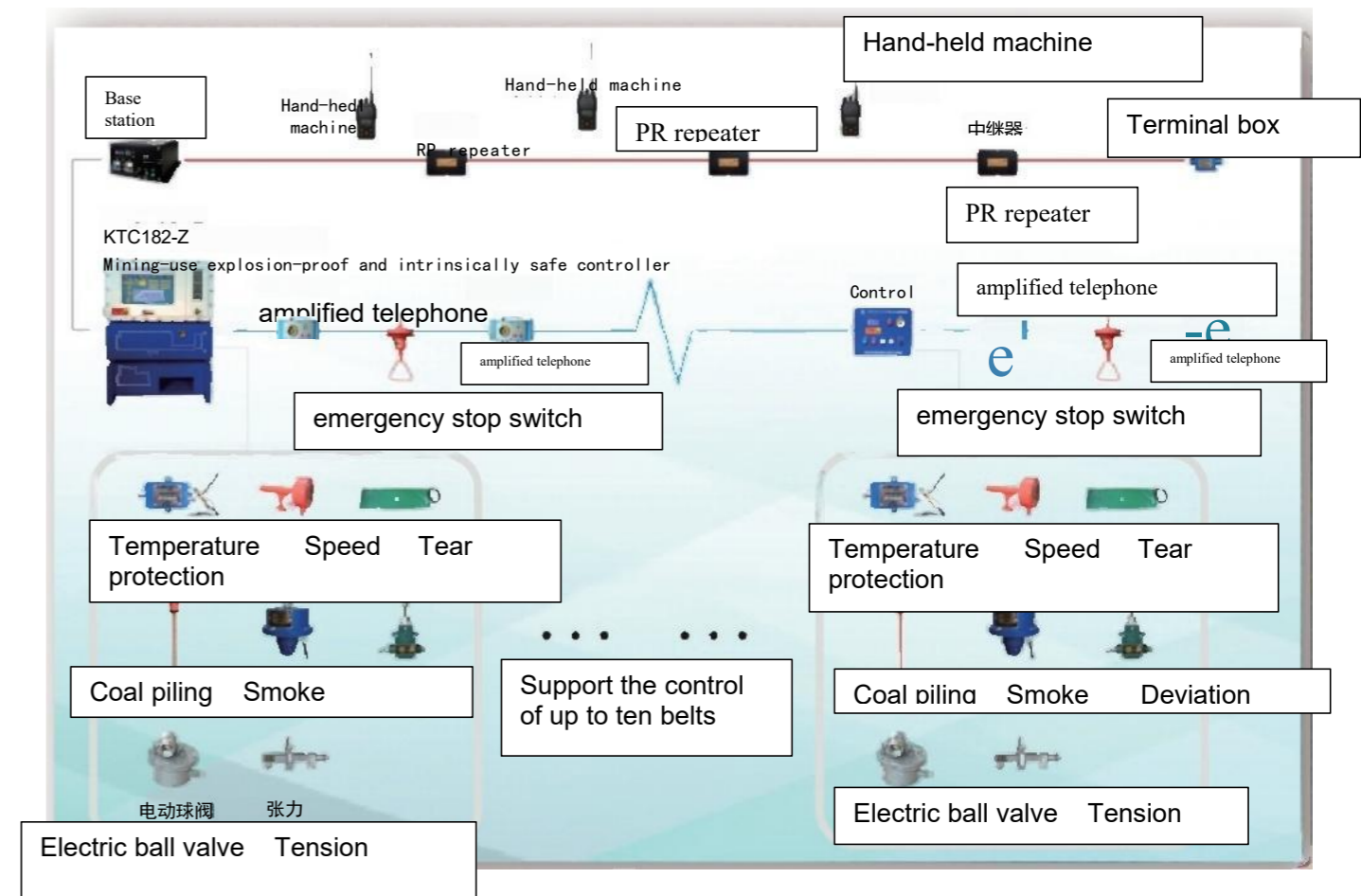
Centralized control mode: one-key operation, realizing the joint start of all equipment in the working site against the coal flow and the joint stop with the coal flow;

On-site mode: realizing the single stop of all equipment in the working site against the coal flow one by one;

Maintenance mode: realizing single start and single stop of the control equipment.

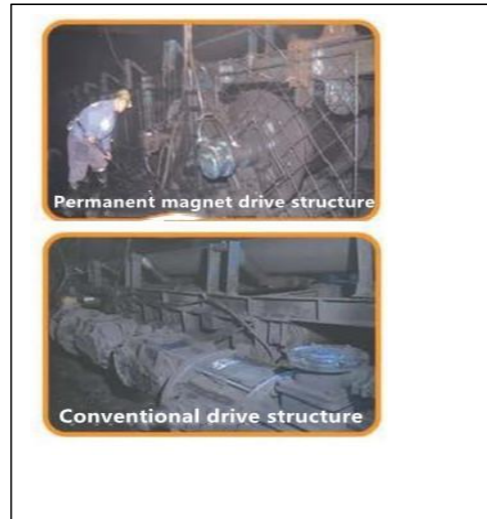
National unified service telephone number: 400-9986-369

Demonstration diagram



Sales performance

Year	Set
2017年	188 Set
2018年	263 Set
2019年	374 Set
2020年	419 Set
2021年	550 Set
2022年	618 Set



Typical application cases

Industrial test case	2014	Jizhong Energy Fengfeng Group, Dashe Coal Mine
Mining well power	710kW	Shanxi Shouyang Duanwang Group, Youzhong Coal Co.
Multiple drive unit	6 drives	Shanxi Tongzhou Group, Anshen Coal Co.
Large reclining angle	25°	Sichuan Dazhu Coal and Electricity Group, Jinggang Coal Co.
Long distance	3000m	Inner Mongolia Huineng Group, Erlin Rabbit Coal Co.

The system has been put into use since 2014, due to its low operation rotating speed, smooth operation and low noise; large starting torque, smooth and easy start of heavy load and low starting current; simple structure, small occupation space; low maintenance and other characteristics, it solves the drawbacks existing in the traditional belt conveyor drive system, and has been recognized by the cooperative coal and mining enterprises all over the world.



Baize Shuangtian Mining Co.



Guangxi Donghui Mining Co.



Inner Mongolia Yakeshi Wujitu (Coal) Group, (Shengli Mine)



Guangxi Donghui Mining Co.



Jizhong Energy Fengfeng Group (Yangdong Mine)

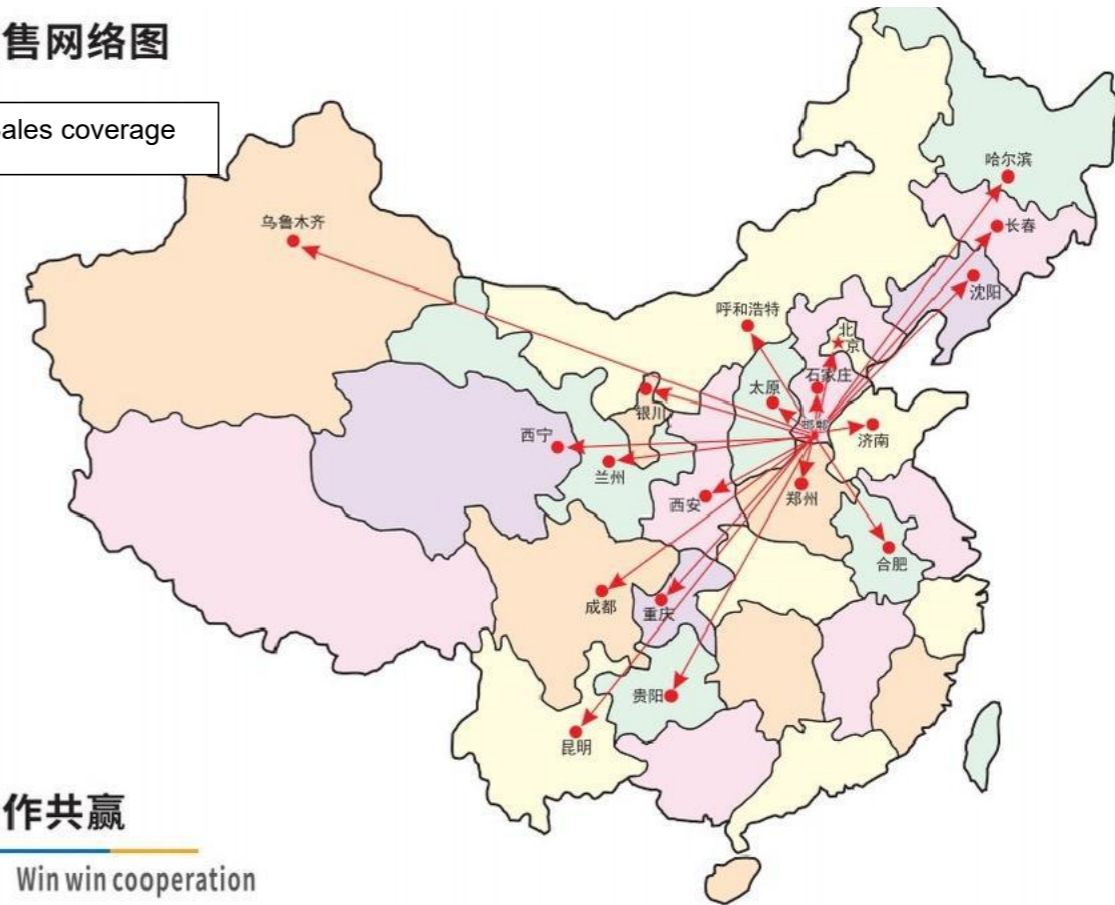


Inner Mongolia Yakeshi Wujitu Coal Group (Yaxing Company)

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销售网络图

Sales coverage



合作共赢

Win win cooperation





Pursuit of excellence/continuous concentration/striving for excellence

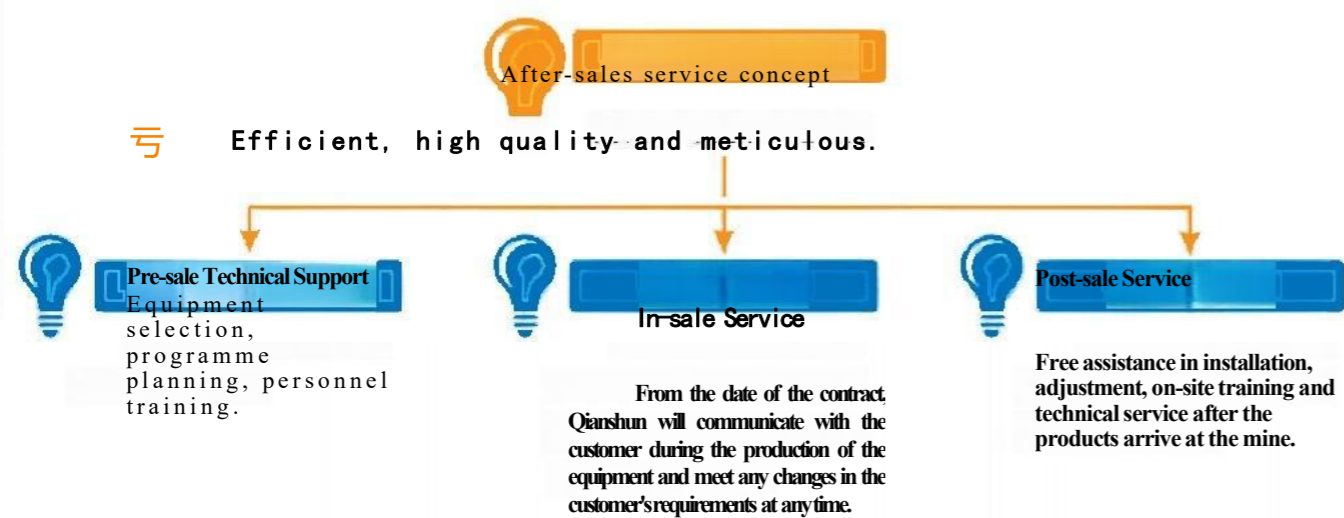
Integration of materials, research and development, production and service

Committed to providing new intelligent machinery and solutions for the safety production of modern coal mine companies

Assist customers to create value and promote social development

Service strengths

The company adopts the whole life cycle management for every product, and achieves the solemn promise of the lowest cost per ton of coal for customers through service outlets all over China, timely supply of parts, customized service that cares customers' sense of experience and all-round support.



National unified service telephone number: 400-9986-369



COMPANY CULTURE

► **Company Mission**

Actively conduct innovation to lead the trend of the industry!
Let the employees be happy!
Create value for the development of social science and technology!

► **Vision**

To be a trusted company in the world

► **Concepts**

Integrity is the foundation - professionalism is the management principle - Innovation is the key to thrive - pursue development to achieve prosperity



The magnificent sail starts together with Qianshun!

Create value for customers!



Intelligent - Permanent Magnet
- Direct Drive