

PERMANENT MAGNETIC TORQUE LIMITER

- ◆ Overload Protection
- ◆ Hydraulic Swift Dismount
- ◆ Intelligent Transmission



Focus on Transmission Field Over 30 Years Global Innovative Hydraulic Grid Coupling More Reliable More Efficient

BASKA -More Than Transmission

Beijing Baska Technology Company Limited is a professional and modern high-tech enterprise who integrates research, development, design, manufacture, sales and services. The company is headquartered in Beijing, and has a research and development center. Baska sets its manufacture base in Datong equipment manufacture industrial park in Shanxi Province-a state-level industrial park, with possessing land of 80000 m². The base is a modern and intelligent factory built with high standards. As a professional equipment manufacturer of both hydraulic and mechanical transmission, Baska provides systematic solution for customers in power transmission field.

BASKA company first introduces shaft-hub hydraulic connection technology into power transmission field, which is characterized by compact structure, quick assembly, easy positioning, little runout, high concentricity, little damage on joint surface, and convenient fitting. With its cold and quick fitting effects, the technology is leading a product revolution in field of shaft-hub connection including shaft coupling, torque limiter, and bearing. Since it is a long-standing problem of difficulty in installation and dismantle shaft coupling, BASKA company can perfectly solve this “pain point”, and truly achieve double effects of cold fitting and quick fitting.

BASKA holds the faith of “craftsman spirit”, focusing on production of power transmission series products. The main products are hydraulic grid coupling, hydraulic permanent magnetic torque limiter, backstops, hydraulic sleeve set for bearing, and widely used in coal mine, steel mill, nonferrous metals, chemical, cement, power, port, special pumps, shipbuilding industries. Baska has been identified as National high-tech enterprise, and owns dozens of national invention patents and utility model patents in China. BASKA company has passed a few authoritative certifications, including ISO international quality management system certification, French Bureau Veritas certification, German TUV certification, environmental management system certification, Chinese safety certification for mining products, and etc.

BASKA

Baska has been holding the belief of integrated innovation of technology and market, and insisting on “invisible service is our competitiveness” as well. “Simplicity, Learning, Young, Commitment” are core values of Baska Company. We adhere to “Customer-centric” as our core philosophy, “people oriented” as our development principle, and “Respecting value” as our operation principle. BASKA is continuously developing toward a younger, institutionalized, modern, and international enterprise.



Certifications

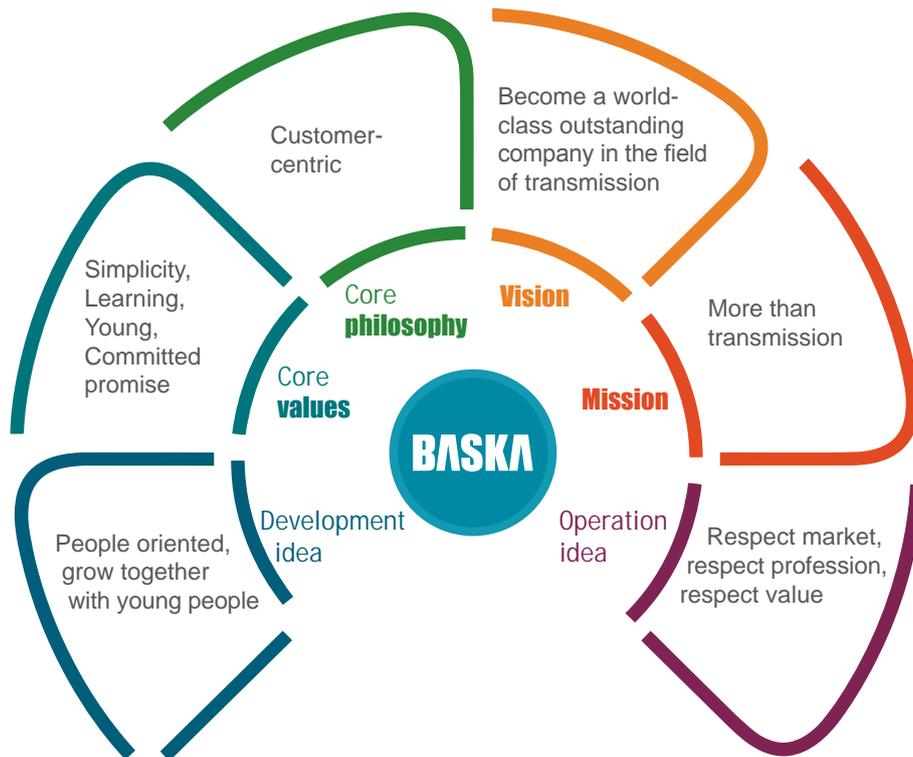


国际质量体系认证

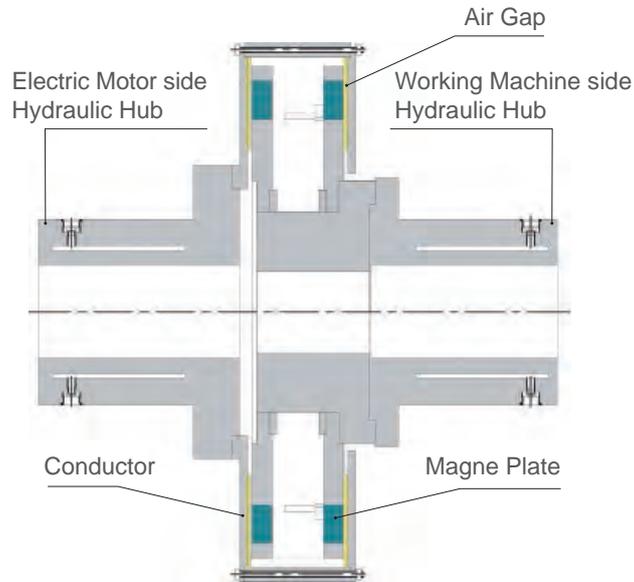


CULTURE is like sky, all embraced
is like water, all moistened

The culture of BASKA is spiritual sustenance and spiritual belonging, all staff approved value orientation and judgment. Also the shared belief gradually formed in time and intravenous drip of accumulation and precipitation of every employee.



Permanent Magnetic Torque Limiter



Principle of Permanent Magnetic Power Transmission Figure

Realization of Non-contact Power Transmission through Electromagnetic Induction.

A hydraulic permanent magnetic torque limiter consists of two parts: hydraulic coupling hubs and permanent magnetic torque limiter. Hydraulic coupling hubs can realize their quick installation and dismantle with shafts, while permanent magnetic torque limiter is comprised of conductor plate and magnet plate.

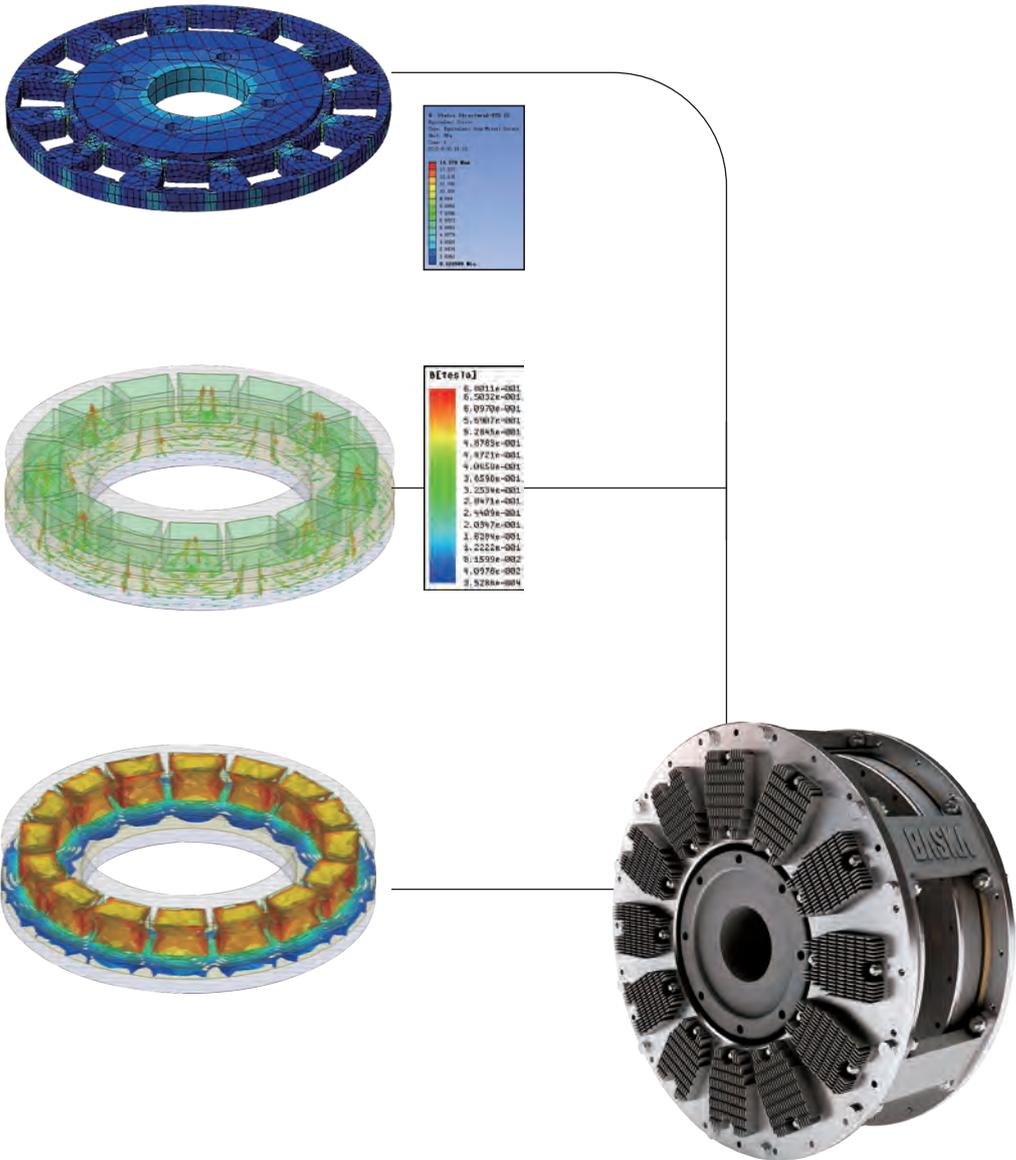
According to the principle of electromagnetic induction, when the conductor cuts the magnetic induction line, an induced current will be generated on the conductor, and the induced current will generate an electromagnetic field. The magnetic field generated by the induced current interacts with the physical magnetic field on the magnet plate. Under normal working conditions, the magnetic poles of the electromagnetic field and the physical magnetic field attract each other, so as to realized non-contact power transmission.

Featured by Overload Protection

When overload occurs, the slip becomes larger between conductor plate and magnet plate, the magnetic poles of the electromagnetic field and the physical magnetic field change to repel each other, which forces the conductor plate to separate magnet plate, and as a result, overload protection is realized. When overload disappears, the electromagnetic field and the physical magnetic field will automatically restore to attract each other, and power transmission is realized.

Product Design Analysis

Solid Modeling is adopted with Creo 3D software for Permanent Magnetic Torque Limiter, and ANSYS is for structure and magnetic circuit analysis, through which the theoretical calculation is further optimized.



Performance Comparison

Shaft coupling

Features	Torque limit model					Basic model	
	Shear pin	Friction	Steel ball	Fluid coupling	Permanent magnetic torque limiter	Legacy	Permanent magnetic
Protection accuracy	Low	Low	Low	Low	High	Contact and wear	Non-contact and no wear
Service life	One time	Short	Medium	One time	Long		
Maintenance requirement	N/A	Inspect wear degree	Inspect wear degree	Replace hydraulic oil	Maintenance free		
Soft start function	No	No	No	Yes	Yes		
Working principle	Shear pin cracks	Friction slips	Steel ball disengages	Fusible plug melted and oil spout	Slip		
Recovery mode	Replace shear pin	Auto	Manual	Manual	Auto		
Alignment requirement	High	High	High	High	Low		
Compensation capacity	No	No	No	No	High		
Damping effect	No	No	No	20%	80%		
Cost performance	Low	Low	Low	Low	High		

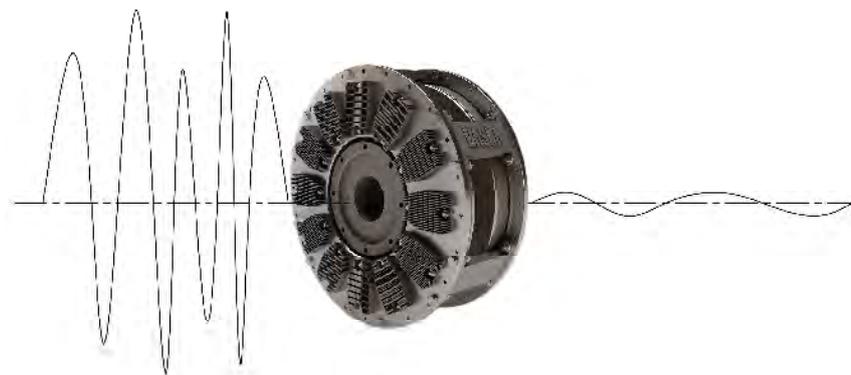
Technical Advantage of Permanent Magnetic Torque Limiter

High Efficiency and Energy Saving

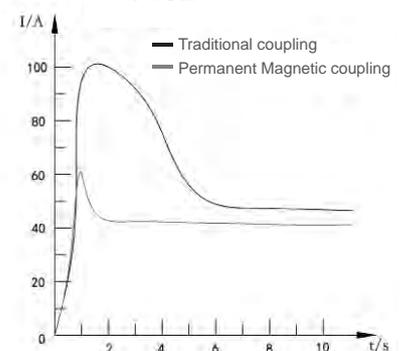
Lowering the peak current when motor starts, and reducing the surging duration. Through the adjustment of slip rate, different energy-saving effects will be realized.

Superior Cushion Performance

Damping effect can reach 80%, and the amplitude and frequency are effectively lowered, so that the equipment's running is more stable.



Starting current of electric motor

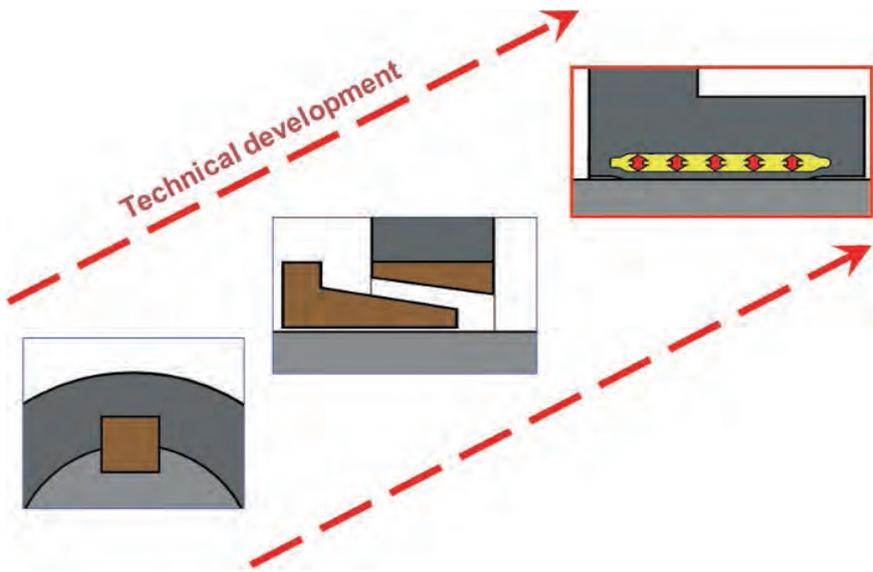


Shaft-hub Hydraulic Connection Technology

Years ago, scientist Blaise Pascal found the principle of liquid delivering pressure. Liquid will exert pressure evenly to the wall of its container who has a certain shape. With this principle, we have successfully developed many high quality products, among which is Hydraulic Coupling — a new generation power transmission device.

With an external working pump, inject a certain amount of hydraulic pressure medium into the interlayer of a shaft hub. Under the influence of hydraulic pressure medium, the wall of shaft hole side will deform and tightly hold shaft. As a consequence, an interference fitting occurs between the shaft and the hub in order to transmit torque.

With applying the principle, BASKA hydraulic coupling are featured by compact design, quick installation, easy positioning, small vibration, high transmission efficiency, no joint surface damage and quick removal. These characteristics will help clients to save more time and cost, creating more value.



Traditional Keyed Connection



Traditional Expanding—Sleeve Connection

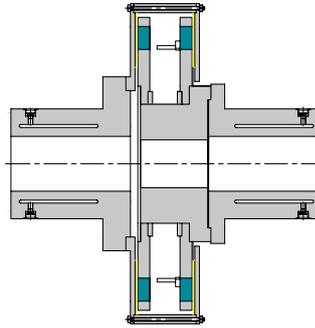


BASKA Hydraulic Pressure Expansion

H-MTL Hydraulic Permanent Magnetic Torque Limiter

Features:

- ◆ Quick installation and dismantle
- ◆ High axial positioning accuracy
- ◆ Large contact interface
- ◆ Equally distributed pressure on shaft surface

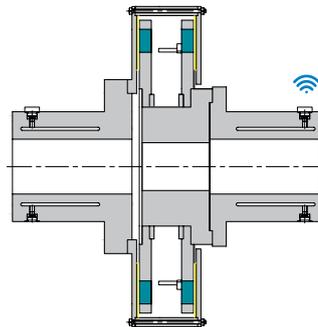


Power		Centrifugal Water Pump/Fan				Conveyor			
KW	HP	750rpm	1000rpm	1500rpm	3000rpm	750rpm	1000rpm	1500rpm	3000rpm
4	5	H-MTL101	H-MTL102	H-MTL103	H-MTL104	H-MTL161	H-MTL162	H-MTL163	H-MTL164
5.5	7.5	H-MTL201	H-MTL202	H-MTL203	H-MTL204	H-MTL261	H-MTL262	H-MTL263	H-MTL264
7.5	10	H-MTL301	H-MTL302	H-MTL303	H-MTL304	H-MTL361	H-MTL362	H-MTL363	H-MTL364
11	15	H-MTL401	H-MTL402	H-MTL403	H-MTL404	H-MTL461	H-MTL462	H-MTL463	H-MTL464
15	20	H-MTL501	H-MTL502	H-MTL503	H-MTL504	H-MTL561	H-MTL562	H-MTL563	H-MTL564
18.5	25	H-MTL601	H-MTL602	H-MTL603	H-MTL604	H-MTL661	H-MTL662	H-MTL663	H-MTL664
22	30	H-MTL701	H-MTL702	H-MTL703	H-MTL704	H-MTL761	H-MTL762	H-MTL763	H-MTL764
30	40	H-MTL801	H-MTL802	H-MTL803	H-MTL804	H-MTL861	H-MTL862	H-MTL863	H-MTL864
37	50	H-MTL901	H-MTL902	H-MTL903	H-MTL904	H-MTL961	H-MTL962	H-MTL963	H-MTL964
45	60	H-MTL111	H-MTL112	H-MTL113	H-MTL114	H-MTL171	H-MTL172	H-MTL173	H-MTL174
55	75	H-MTL211	H-MTL212	H-MTL213	H-MTL214	H-MTL271	H-MTL272	H-MTL273	H-MTL274
75	100	H-MTL311	H-MTL312	H-MTL313	H-MTL314	H-MTL371	H-MTL372	H-MTL373	H-MTL374
90	120	H-MTL411	H-MTL412	H-MTL413	H-MTL414	H-MTL471	H-MTL472	H-MTL473	H-MTL474
110	150	H-MTL511	H-MTL512	H-MTL513	H-MTL514	H-MTL571	H-MTL572	H-MTL573	H-MTL574
132	175	H-MTL611	H-MTL612	H-MTL613	H-MTL614	H-MTL671	H-MTL672	H-MTL673	H-MTL674
160	215	H-MTL711	H-MTL712	H-MTL713	H-MTL714	H-MTL771	H-MTL772	H-MTL773	H-MTL774
200	265	H-MTL811	H-MTL812	H-MTL813	H-MTL814	H-MTL871	H-MTL872	H-MTL873	H-MTL874
220		H-MTL911	H-MTL912	H-MTL913	H-MTL914	H-MTL971	H-MTL972	H-MTL973	H-MTL974
250	335	H-MTL121	H-MTL122	H-MTL123	H-MTL124	H-MTL181	H-MTL182	H-MTL183	H-MTL184
280		H-MTL221	H-MTL222	H-MTL223	H-MTL224	H-MTL281	H-MTL282	H-MTL283	H-MTL284
315	420	H-MTL321	H-MTL322	H-MTL323	H-MTL324	H-MTL381	H-MTL382	H-MTL383	H-MTL384
355	475	H-MTL421	H-MTL422	H-MTL423	H-MTL424	H-MTL481	H-MTL482	H-MTL483	H-MTL484
400	535	H-MTL521	H-MTL522	H-MTL523	H-MTL524	H-MTL581	H-MTL582	H-MTL583	H-MTL584
450		H-MTL621	H-MTL622	H-MTL623	H-MTL624	H-MTL681	H-MTL682	H-MTL683	H-MTL684
500	670	H-MTL721	H-MTL722	H-MTL723	H-MTL724	H-MTL781	H-MTL782	H-MTL783	H-MTL784
560	750	H-MTL821	H-MTL822	H-MTL823	H-MTL824	H-MTL881	H-MTL882	H-MTL883	H-MTL884
630	845	H-MTL921	H-MTL922	H-MTL923	H-MTL924	H-MTL981	H-MTL982	H-MTL983	H-MTL984
710	950	H-MTL131	H-MTL132	H-MTL133	H-MTL134	H-MTL191	H-MTL192	H-MTL193	H-MTL194
800	1070	H-MTL231	H-MTL232	H-MTL233	H-MTL234	H-MTL291	H-MTL292	H-MTL293	H-MTL294
900	1200	H-MTL331	H-MTL332	H-MTL333	H-MTL334	H-MTL391	H-MTL392	H-MTL393	H-MTL394
1000	1340	H-MTL431	H-MTL432	H-MTL433	H-MTL434	H-MTL491	H-MTL492	H-MTL493	H-MTL494
1120		H-MTL531	H-MTL532	H-MTL533	H-MTL534	H-MTL591	H-MTL592	H-MTL593	H-MTL594
1250		H-MTL631	H-MTL632	H-MTL633	H-MTL634	H-MTL691	H-MTL692	H-MTL693	H-MTL694
1400		H-MTL731	H-MTL732	H-MTL733	H-MTL734	H-MTL791	H-MTL792	H-MTL793	H-MTL794
1600		H-MTL831	H-MTL832	H-MTL833	H-MTL834	H-MTL891	H-MTL892	H-MTL893	H-MTL894
1800		H-MTL931	H-MTL932	H-MTL933	H-MTL934	H-MTL991	H-MTL992	H-MTL993	H-MTL994
2500		H-MTL141	H-MTL142	H-MTL143	H-MTL144	H-MTL151	H-MTL152	H-MTL153	H-MTL154

S-MTL Intelligent Permanent Magnetic Torque Limiter

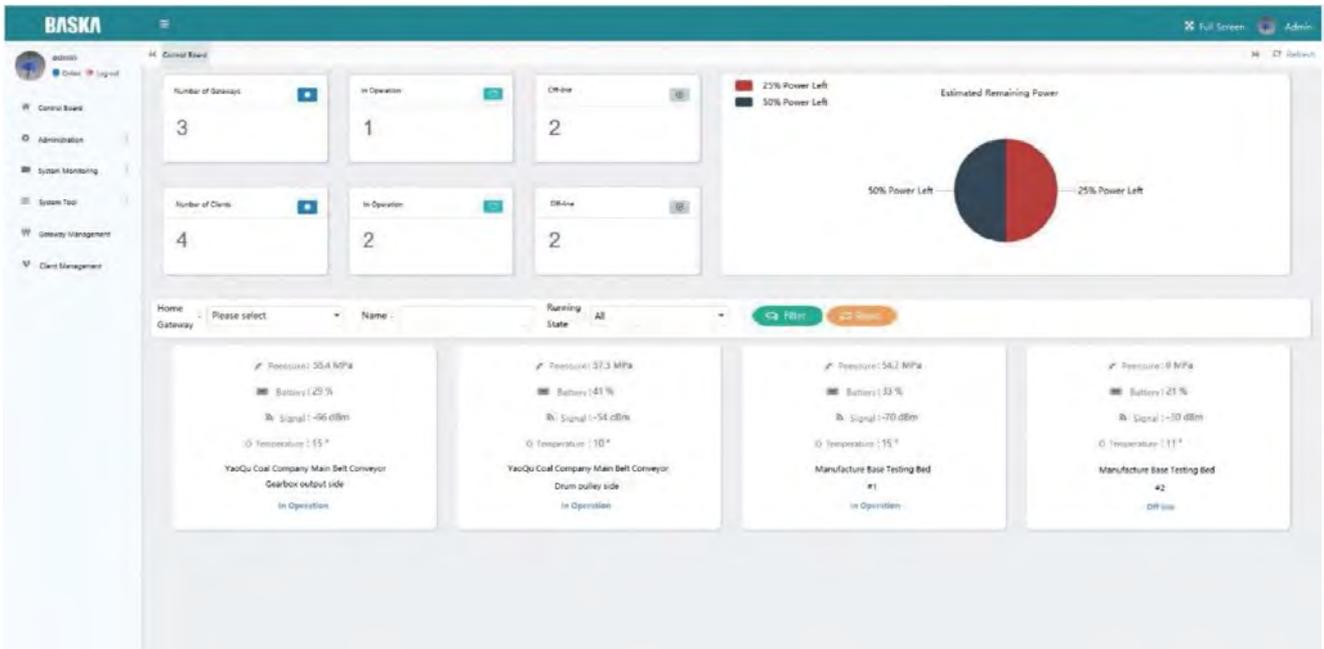
Features:

- ◆ Real-time Monitoring,
- ◆ Intelligent Analysis
- ◆ Fault Alarming



Power		Centrifugal Water Pump/Fan					Conveyor			
KW	HP	750rpm	1000rpm	1500rpm	3000rpm		750rpm	1000rpm	1500rpm	3000rpm
4	5	S-MTL101	S-MTL102	S-MTL103	S-MTL104		S-MTL161	S-MTL162	S-MTL163	S-MTL164
5.5	7.5	S-MTL201	S-MTL202	S-MTL203	S-MTL204		S-MTL261	S-MTL262	S-MTL263	S-MTL264
7.5	10	S-MTL301	S-MTL302	S-MTL303	S-MTL304		S-MTL361	S-MTL362	S-MTL363	S-MTL364
11	15	S-MTL401	S-MTL402	S-MTL403	S-MTL404		S-MTL461	S-MTL462	S-MTL463	S-MTL464
15	20	S-MTL501	S-MTL502	S-MTL503	S-MTL504		S-MTL561	S-MTL562	S-MTL563	S-MTL564
18.5	25	S-MTL601	S-MTL602	S-MTL603	S-MTL604		S-MTL661	S-MTL662	S-MTL663	S-MTL664
22	30	S-MTL701	S-MTL702	S-MTL703	S-MTL704		S-MTL761	S-MTL762	S-MTL763	S-MTL764
30	40	S-MTL801	S-MTL802	S-MTL803	S-MTL804		S-MTL861	S-MTL862	S-MTL863	S-MTL864
37	50	S-MTL901	S-MTL902	S-MTL903	S-MTL904		S-MTL961	S-MTL962	S-MTL963	S-MTL964
45	60	S-MTL111	S-MTL112	S-MTL113	S-MTL114		S-MTL171	S-MTL172	S-MTL173	S-MTL174
55	75	S-MTL211	S-MTL212	S-MTL213	S-MTL214		S-MTL271	S-MTL272	S-MTL273	S-MTL274
75	100	S-MTL311	S-MTL312	S-MTL313	S-MTL314		S-MTL371	S-MTL372	S-MTL373	S-MTL374
90	120	S-MTL411	S-MTL412	S-MTL413	S-MTL414		S-MTL471	S-MTL472	S-MTL473	S-MTL474
110	150	S-MTL511	S-MTL512	S-MTL513	S-MTL514		S-MTL571	S-MTL572	S-MTL573	S-MTL574
132	175	S-MTL611	S-MTL612	S-MTL613	S-MTL614		S-MTL671	S-MTL672	S-MTL673	S-MTL674
160	215	S-MTL711	S-MTL712	S-MTL713	S-MTL714		S-MTL771	S-MTL772	S-MTL773	S-MTL774
200	265	S-MTL811	S-MTL812	S-MTL813	S-MTL814		S-MTL871	S-MTL872	S-MTL873	S-MTL874
220		S-MTL911	S-MTL912	S-MTL913	S-MTL914		S-MTL971	S-MTL972	S-MTL973	S-MTL974
250	335	S-MTL121	S-MTL122	S-MTL123	S-MTL124		S-MTL181	S-MTL182	S-MTL183	S-MTL184
280		S-MTL221	S-MTL222	S-MTL223	S-MTL224		S-MTL281	S-MTL282	S-MTL283	S-MTL284
315	420	S-MTL321	S-MTL322	S-MTL323	S-MTL324		S-MTL381	S-MTL382	S-MTL383	S-MTL384
355	475	S-MTL421	S-MTL422	S-MTL423	S-MTL424		S-MTL481	S-MTL482	S-MTL483	S-MTL484
400	535	S-MTL521	S-MTL522	S-MTL523	S-MTL524		S-MTL581	S-MTL582	S-MTL583	S-MTL584
450		S-MTL621	S-MTL622	S-MTL623	S-MTL624		S-MTL681	S-MTL682	S-MTL683	S-MTL684
500	670	S-MTL721	S-MTL722	S-MTL723	S-MTL724		S-MTL781	S-MTL782	S-MTL783	S-MTL784
560	750	S-MTL821	S-MTL822	S-MTL823	S-MTL824		S-MTL881	S-MTL882	S-MTL883	S-MTL884
630	845	S-MTL921	S-MTL922	S-MTL923	S-MTL924		S-MTL981	S-MTL982	S-MTL983	S-MTL984
710	950	S-MTL131	S-MTL132	S-MTL133	S-MTL134		S-MTL191	S-MTL192	S-MTL193	S-MTL194
800	1070	S-MTL231	S-MTL232	S-MTL233	S-MTL234		S-MTL291	S-MTL292	S-MTL293	S-MTL294
900	1200	S-MTL331	S-MTL332	S-MTL333	S-MTL334		S-MTL391	S-MTL392	S-MTL393	S-MTL394
1000	1340	S-MTL431	S-MTL432	S-MTL433	S-MTL434		S-MTL491	S-MTL492	S-MTL493	S-MTL494
1120		S-MTL531	S-MTL532	S-MTL533	S-MTL534		S-MTL591	S-MTL592	S-MTL593	S-MTL594
1250		S-MTL631	S-MTL632	S-MTL633	S-MTL634		S-MTL691	S-MTL692	S-MTL693	S-MTL694
1400		S-MTL731	S-MTL732	S-MTL733	S-MTL734		S-MTL791	S-MTL792	S-MTL793	S-MTL794
1600		S-MTL831	S-MTL832	S-MTL833	S-MTL834		S-MTL891	S-MTL892	S-MTL893	S-MTL894
1800		S-MTL931	S-MTL932	S-MTL933	S-MTL934		S-MTL991	S-MTL992	S-MTL993	S-MTL994
2500		S-MTL141	S-MTL142	S-MTL143	S-MTL144		S-MTL151	S-MTL152	S-MTL153	S-MTL154

Intelligent Monitoring Platform

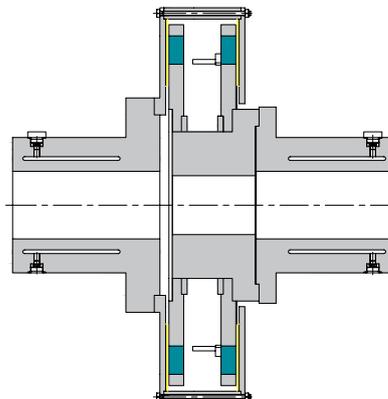


BASKA Helps Intelligent Mines Construction

In recent years, China speeds up intelligent construction of mines. As the degrees of mechanization, automation, informationization and intelligence have been continuously improved, the requirements for mine intelligent equipment are becoming higher and higher. The deep integration of new generation information technology and mining equipment has become a general trend.

For this purpose, BASKA has developed a coupling intelligent monitoring platform to help the construction of smart mines in China. Through the intelligent monitoring platform, the cavity pressure and temperature of hydraulic coupling can be monitored intelligently and remotely in real time. When abnormality occurred, for instance, the cavity pressure of hydraulic coupling is lower than the set value, or drops dramatically, the pressure and temperature data will be immediately uploaded to the platform centralized control center for early warning. As a result, the intelligent monitoring ensures the safe and stable operation of the transmission system.

Wireless pressure sensor



Applications of Permanent Magnetic Torque Limiter



Permanent magnetic torque limiter is safe and stable, and characterized by soft start, torque limit, damping of vibration. It has been widely applied in various fields such as cement, electric power generation, coal, chemical industry, port, steel, mine, papermaking, refrigeration and heating. Specifically, it can be used on fan, pump, belt conveyor, crusher, bucket wheel machine, scraper conveyor, compressor and other equipment.



Permanent Magnetic Torque Limiter

Customer Name: _____

Supplier: Motion Technologies Pty Limited
Sydney, Australia

1. Technical Standard

In accordance with manufacturer's standard for Permanent Magnetic Torque Limiter.

2. Parameters

Power kW : _____

Speed rpm : _____

Required rated torque Nm : _____

Max. start torque Nm : _____

Peak torque Nm : _____

Start/Stop time sec. / min. : _____

Duty Cycle % : _____

3. Parameters of Shafts

Drive end: shaft diameter _____; shaft length _____; optional key groove (depth x width) _____;

Driven end: shaft diameter _____; shaft length _____; optional key groove (depth x width) _____;

Shaft end gap: _____

4. Shaft-hub Connection Method

- a. Hydraulic pressure expanding (default)
- b. Locking assembly, with or without keyway
- c. Parallel keyed shaft(s)
- d. Other custom (please provide details)

5. Working Condition

6. Attached Accessories: Intelligent Monitoring platform required?

7. Notes

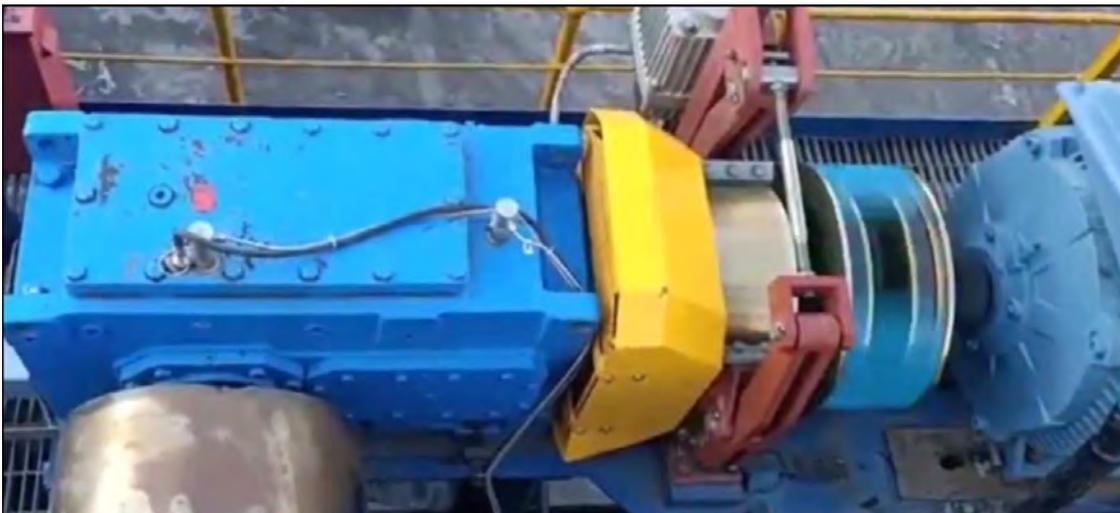
BASKA

Application example of Magnetic Torque Limiter

At Rest:



During acceleration:



At full load:





BASKA company has professional technical engineer teams equipped in our branch offices around the world, they are responsible for pre-sale technology promotion, in sale technical support, after-sale guarantee, and other customer services. We adhere to the concept of “invisible service is our competitiveness”, and commit ourselves to provide you with a systematic solution for your power transmission problem. In addition, we will be responsible for the whole and systematic implementation throughout the whole process.



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