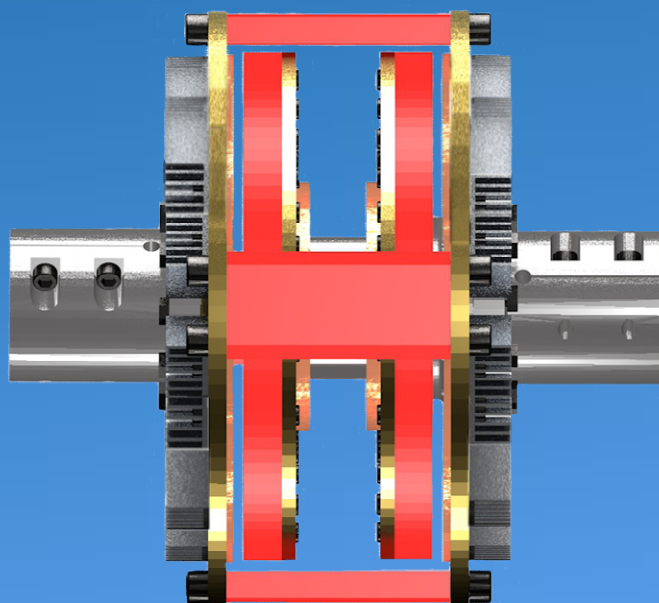




## Permanent magnet transmission

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### Torque-limited permanent magnet coupling

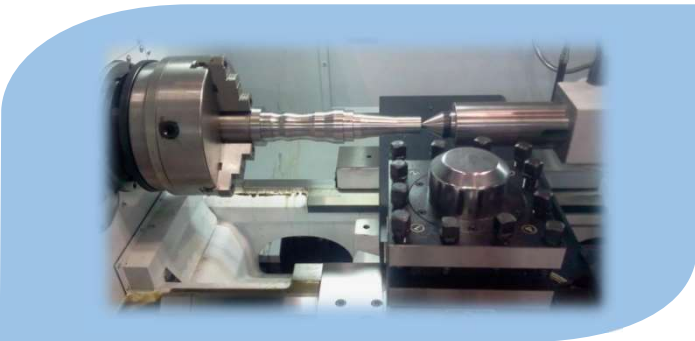


Dalian Mairuisheng  
Transmission Machinery  
Equipment Co., Ltd.



## Company Profile

Our company is a technology-based enterprise that combines production, R&D and sales, and attaches importance to technological innovation and technological specialization. The permanent magnet coupling and permanent magnet speed regulator independently developed by the company and its series of permanent magnet products have subverted the operating mode of traditional mechanical transmission, realized high-efficiency contactless and frictionless transmission, achieved energy conservation and emission reduction, low carbon and environmental protection, and realized the purpose of saving energy and protecting the environment.



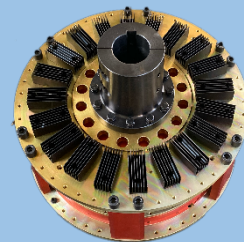
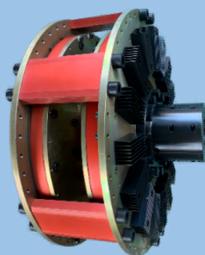
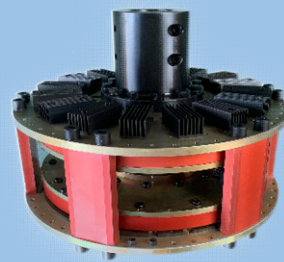
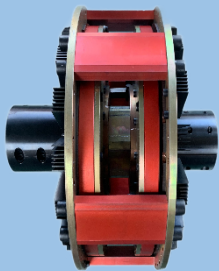
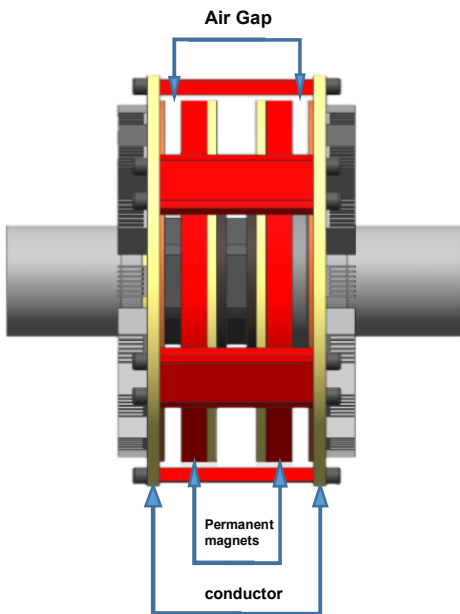
## Product Introduction

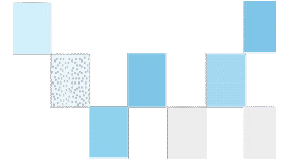
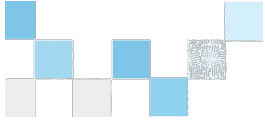
The permanent magnet coupling is a device that transmits torque from a motor to a load through the air gap between a conductor and a permanent magnet. It can realize a transmission mode without mechanical connection between the motor and the load.

The working principle of the permanent magnetic coupling is that when the two move relative to each other, the conductor component cuts the magnetic lines of force, generating eddy currents in the conductor, which in turn generate an anti-inductive magnetic field, which interacts with the magnetic field generated by the permanent magnet, thereby achieving torque transmission between the two.

Features:

1. High efficiency and energy saving, with energy saving rate of 5%~50%;
2. Flexible starting, reducing the impact current of the motor and extending the service life of the equipment;
3. Isolating vibration, no mechanical connection;
4. Simple structure, maintenance-free, no vulnerable and consumable parts, it can adapt to harsh environments;
5. Simple installation, it can tolerate large installation centering errors;
6. Small size, easy installation, no need to move the foundation for system modification;
7. No external power supply, no harmonic pollution;
8. High efficiency torque transmission, allowing impact loads;
9. Long service life, can operate continuously for a long time.

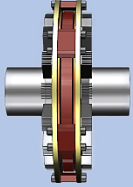
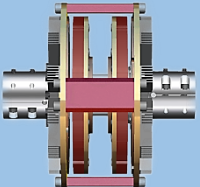
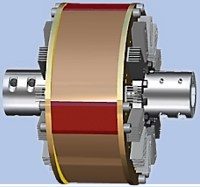
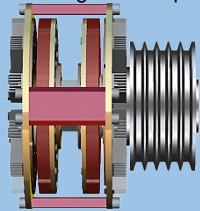
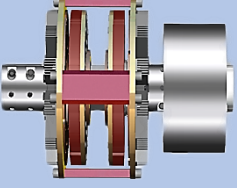
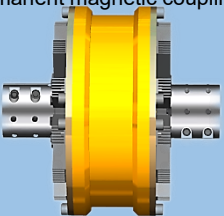




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# Product Model Selection Table

Product Model	Features	Applicable places
<p>YCOJ-Basic permanent magnetic coupling</p> 	<ol style="list-style-type: none"> <li>1. Buffer start to achieve soft start of the motor;</li> <li>2. Flexible connection to effectively eliminate vibration;</li> <li>3. Easy to install, no need for precise alignment;</li> <li>4. Maintenance-free, it can run stably for a long time.</li> </ol>	<p>The coupling is suitable for equipment that has long-term stable operation, relatively stable load and is not prone to stalling.</p> <p>For example: water pumps/fans, etc.</p>
<p>YCOX-Torque-limited permanent magnetic coupling</p> 	<ol style="list-style-type: none"> <li>1. Buffer start, realize motor soft start;</li> <li>2. Overload protection, when the load overload reaches the set torque, the coupling automatically unloads, effectively protecting the motor and working machine, and automatically resets after the fault is eliminated;</li> <li>3. Flexible connection, effectively eliminating vibration;</li> <li>4. Easy to install, no need for precise alignment;</li> <li>5. Maintenance-free, can run stably for a long time.</li> </ol>	<p>The coupling is suitable for equipment that requires soft start, unstable load, and overload protection.</p> <p>For example: elevator/crusher/belt conveyor/bucket wheel excavator, etc.</p>
<p>YCOB-Torque-limited semi-enclosed permanent magnetic coupling</p> 		<p>This structure has a certain degree of sealing and is suitable for places with relatively poor environment.</p> <p>For example: steel mills, mines, etc.</p>
<p>YCOP-Torque-limited pulley type permanent magnetic coupling</p> 	<p>Note: YCOB permanent magnetic coupl is based on the above and adds closed dustproof effect, which can be applied to various types of permanent magnetic couplings.</p>	<p>This structure has input and output at the same end, which is suitable for equipment that requires soft start, unstable load, and overload protection.</p> <p>For example: leather machine/mixing machine, etc.</p>
<p>YCOZ-Torque-limited braking permanent magnetic coupling</p> 	<p>The braking function is added on the basis of the torque-limiting permanent magnetic coupling.</p>	<p>The coupling is suitable for equipment that requires soft start, unstable load, overload protection and braking.</p> <p>For example: belt conveyor, etc.</p>
<p>YCOF-Torque-limited enclosed permanent magnetic coupling</p> 	<p>The function of sealing and fixed air gap is added on the basis of the torque-limited permanent magnetic coupling. This type of permanent magnetic coupling is also suitable for brake type and pulley type</p>	<p>The coupling is suitable for various harsh working conditions, equipment that requires soft start, unstable load, and overload protection.</p> <p>For example: elevator/crusher/belt conveyor/bucket wheel excavator, etc.</p>

Note: The above permanent magnet couplings can be equipped with temperature alarm devices to effectively protect the permanent magnet coupling from demagnetization and motor and working machine damage due to overheating caused by long-term slight overload.

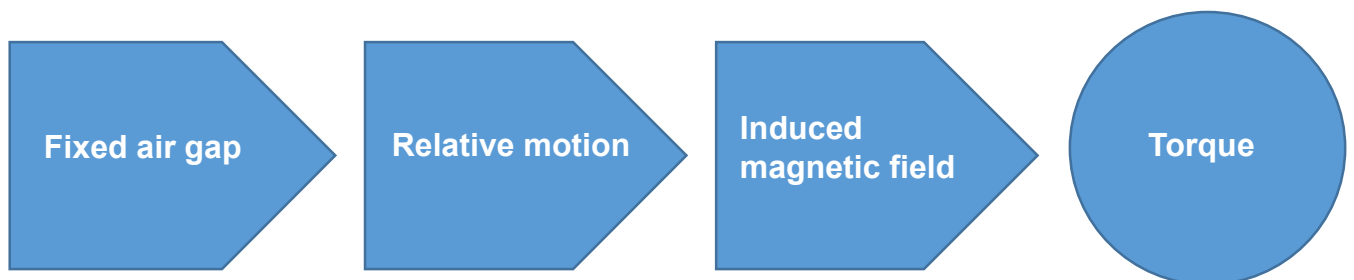
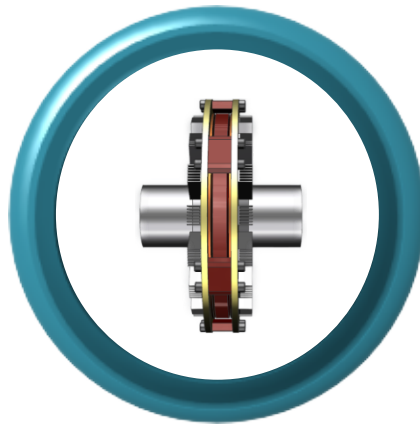
# Basic Permanent Magnet Coupling

## How it works

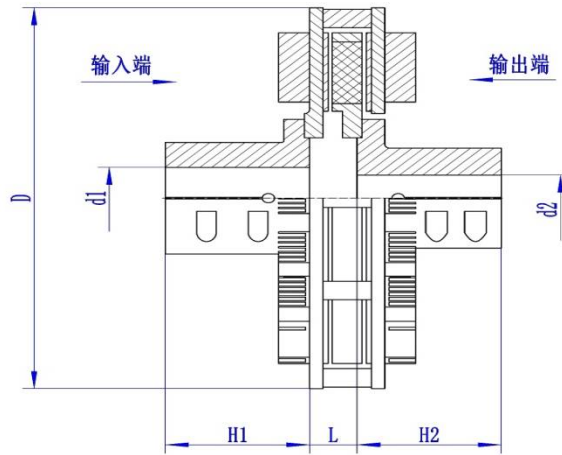
The basic permanent magnet coupling consists of a permanent magnet and a conductor with a fixed air gap between them. When the active motor drives the conductor to rotate and makes a circular motion relative to the permanent magnet installed at the driven end to cut the magnetic lines of force, the conductor at the active end generates an eddy current induced magnetic field, which interacts with the magnetic field of the permanent magnet at the driven end, thereby realizing contactless torque transmission between the active end and the driven end.

## Applicable features

The structure is simple, the total cost is low, and the original system can be easily modified. It is suitable for equipment that requires soft start and relatively stable load.



## YCOJ-Basic Permanent Magnetic Coupler Selection Table



Specification	D(mm)	L(mm)	Power (KW)	Speed (r/min)
YCOJ-320	385	46	7.5-11	1500
YCOJ-340	405	46	15-22/11/7.5	1500/1000/750
YCOJ-360	425	46	30-37/18.5-22/15-18.5	1500/1000/750
YCOJ-380	445	46	45-55/30-37/22-30	1500/1000/750
YCOJ-430	495	46	75-90/45-55/37-45	1500/1000/750
YCOJ-470	535	46	110-132/75-90/55	1500/1000/750
YCOJ-500	565	46	160-185/110/75-90	1500/1000/750
YCOJ-540	605	46	200-220/132/110	1500/1000/750
YCOJ-580	645	46	250-280/160-185/132	1500/1000/750
YCOJ-600	665	50	315/200/160	1500/1000/750
YCOJ-610	670	50	355-400/220-250/185-200	1500/1000/750
YCOJ-630	690	50	450-500/300-315/220-250	1500/1000/750
YCOJ-685	750	52	560-630/355-400/280-315	1500/1000/750
YCOJ-735	800	52	710-800/450-560/355-400	1500/1000/750
YOCJ-770	835	52	900-1000/630-710/450-500	1500/1000/750

Note: The space required to install this device is the sum of H1+L+H2 (mm); Among them, d1.H1 and d2.H2 are determined according to the user's device.

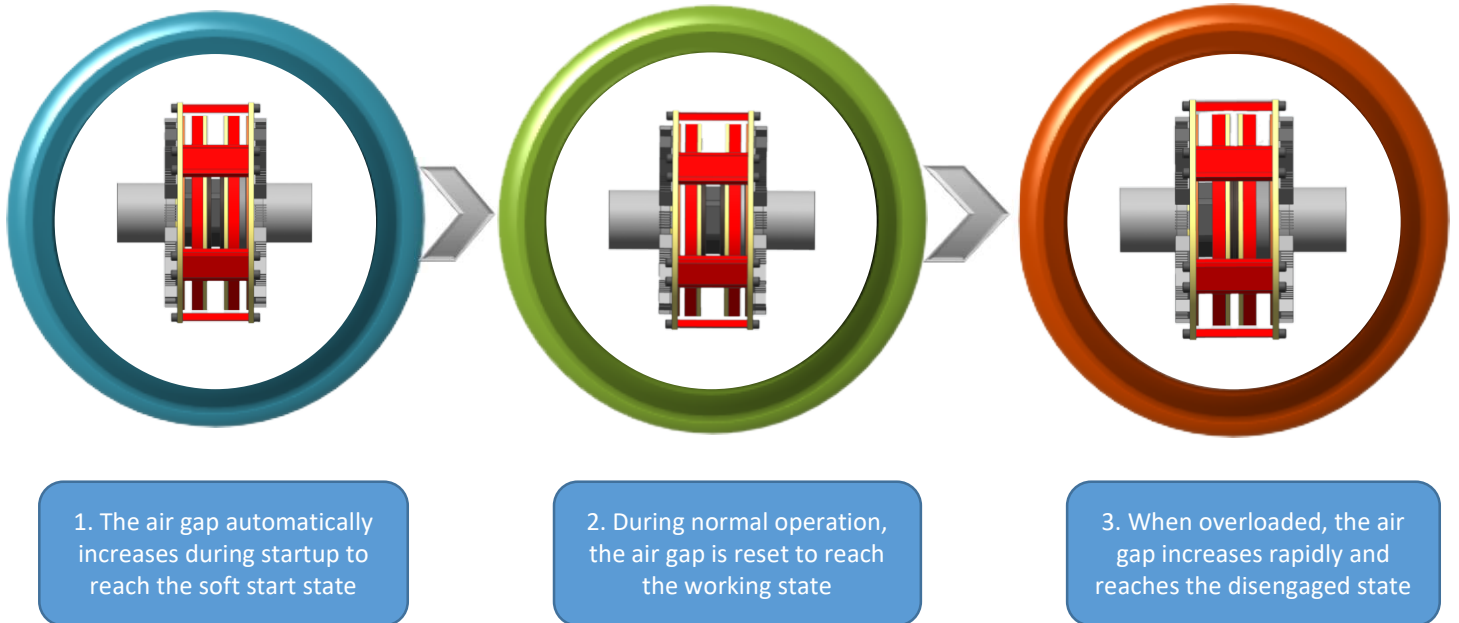
# Torque-limited Permanent Magnetic Coupling

## How it works

The torque-limited permanent magnet coupling consists of two parts: a permanent magnet and a conductor. There is a variable air gap between the permanent magnet and the conductor. When the active motor drives the conductor to rotate and makes a circular motion relative to the permanent magnet installed at the driven end to cut the magnetic lines of force, the conductor at the active end generates an eddy current induction magnetic field, which interacts with the permanent magnet magnetic field at the driven end, thereby realizing contactless torque transmission between the active end and the driven end. When the working machine is under rated load conditions, the air gap between the permanent magnet rotor and the conductor rotor is the smallest; when the working machine is overloaded or stuck, the air gap between the permanent magnet and the conductor increases rapidly until the maximum air gap, and the speed of the permanent magnet at the working machine end decreases until it stops rotating, thereby realizing overload protection for the motor; when the overload or stuck condition is relieved, the position of the permanent magnet and the conductor will automatically return to the original minimum air gap, and the machine will return to normal working state.

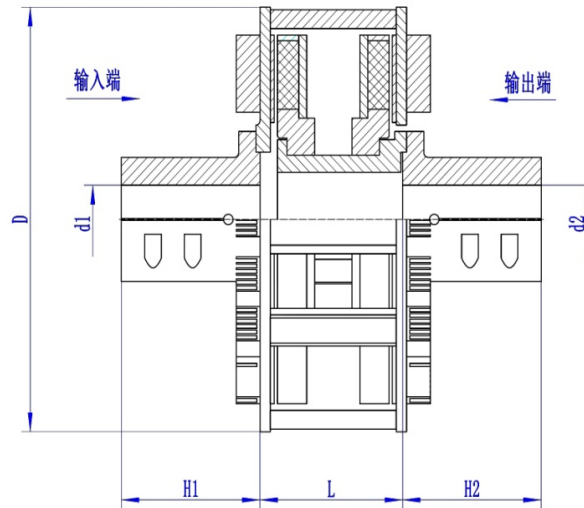
## Applicable features

According to the on-site usage, brake wheels, brake discs and pulleys can be added on the original basis; if the on-site environment is harsh, it can be manufactured into a semi-enclosed or enclosed type to adapt to various usage conditions.





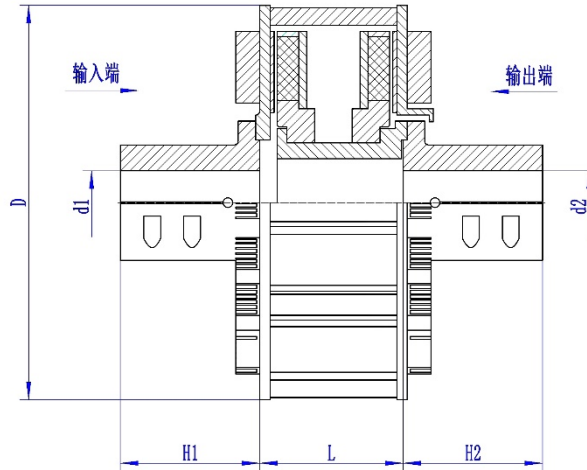
## YCOX-Torque-limited Permanent Magnetic coupling Selection Table



Specification	D(mm)	L(mm)	Power (KW)	Speed (r/min)
YCOX-320	385	180	7.5-11	1500
YCOX-340	405	180	15-22/11/7.5	1500/1000/750
YCOX-360	425	180	30-37/18.5-22/15-18.5	1500/1000/750
YCOX-380	445	180	45-55/30-37/22-30	1500/1000/750
YCOX-430	495	180	75-90/45-55/37-45	1500/1000/750
YCOX-470	535	180	110-132/75-90/55	1500/1000/750
YCOX-500	565	180	160-185/110/75-90	1500/1000/750
YCOX-540	605	195	200-220/132/110	1500/1000/750
YCOX-580	645	195	250-280/160-185/132	1500/1000/750
YCOX-600	665	215	315/200/160	1500/1000/750
YCOX-610	670	215	355-400/220-250/185-200	1500/1000/750
YCOX-630	690	215	450-500/300-315/220-250	1500/1000/750
YCOX-685	750	230	560-630/355-400/280-315	1500/1000/750
YCOX-735	800	230	710-800/450-560/355-400	1500/1000/750
YCOX-770	835	230	900-1000/630-710/450-500	1500/1000/750

Note: The space required to install this device is the sum of H1+L+H2 (mm); Among them, d1.H1 and d2.H2 are determined according to the user's device.

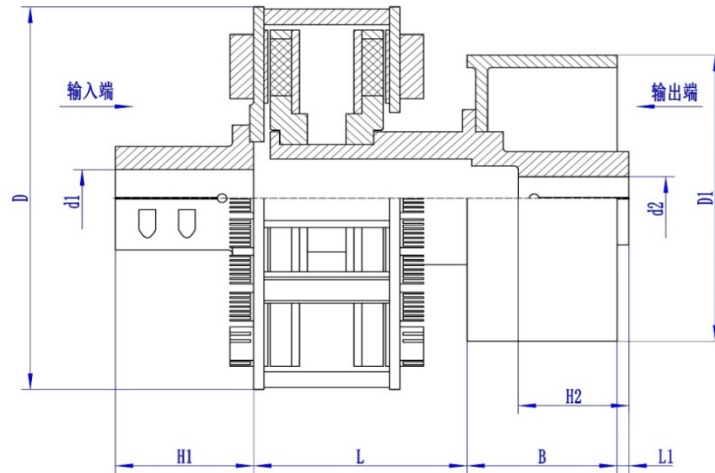
## YCOB-Torque-limited Semi-enclosed Permanent Magnetic Coupling Selection Table



Specification	D(mm)	L(mm)	Power (KW)	Speed (r/min)
YCOB-320	385	180	7.5-11	1500
YCOB-340	405	180	15-22/11/7.5	1500/1000/750
YCOB-360	425	180	30-37/18.5-22/15-18.5	1500/1000/750
YCOB-380	445	180	45-55/30-37/22-30	1500/1000/750
YCOB-430	495	180	75-90/45-55/37-45	1500/1000/750
YCOB-470	535	180	110-132/75-90/55	1500/1000/750
YCOB-500	565	180	160-185/110/75-90	1500/1000/750
YCOB-540	605	195	200-220/132/110	1500/1000/750
YCOB-580	645	195	250-280/160-185/132	1500/1000/750
YCOB-600	665	215	315/200/160	1500/1000/750
YCOB-610	670	215	355-400/220-250/185-200	1500/1000/750
YCOB-630	690	215	450-500/300-315/220-250	1500/1000/750
YCOB-685	750	230	560-630/355-400/280-315	1500/1000/750
YCOB-735	800	230	710-800/450-560/355-400	1500/1000/750
YCOB-770	835	230	900-1000/630-710/450-500	1500/1000/750

Note: The space required to install this device is the sum of H1+L+H2 (mm); Among them, d1.H1 and d2.H2 are determined according to the user's device.

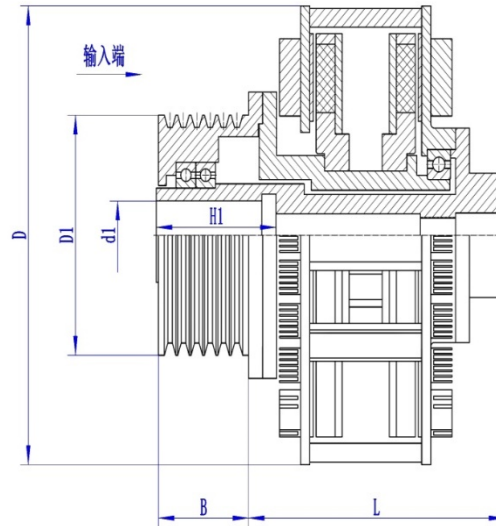
## YCOZ- torque-Limiting Brake Type Permanent Magnetic Coupling Selection Table



Specification	D(mm)	D1(mm)	L(mm)	B(mm)	L1(mm)	Power (KW)	Speed (r/min)
YCOZ-360	425	315	245	150	10	30-37/18.5-22/15-18.5	1500/1000/750
YCOZ-380	445	315	245	150	10	45-55/30-37/22-30	1500/1000/750
YCOZ-430	495	315	245	150	10	75-90/45-55/37-45	1500/1000/750
YCOZ-470	535	400	245	190	15	110-132/75-90/55	1500/1000/750
YCOZ-500	565	400	245	190	15	160-185/110/75-90	1500/1000/750
YCOZ-540	605	400	260	190	15	200-220/132/110	1500/1000/750
YCOZ-580	645	500	260	210	15	250-280/160-185/132	1500/1000/750
YCOZ-600	665	500	280	210	15	315/200/160	1500/1000/750
YCOZ-610	670	500	280	210	15	355-400/220-250/185-200	1500/1000/750
YCOZ-630	690	630	280	265	15	450/300/220	1500/1000/750
YCOZ-685	750	630	300	265	15	560-630/355-400/280-315	1500/1000/750
YCOZ-735	800	630	300	265	15	710-800/450-560/355-400	1500/1000/750

Note: The space required to install this device is the sum of  $H1+L+B+L1$  (mm);  
Among them,  $d1.H1$  and  $d2.H2$  are determined according to the user's device.

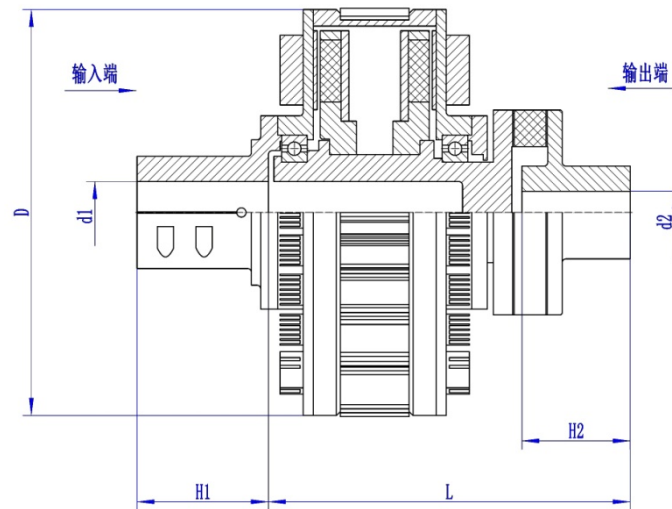
## YCOP-Torque-Limited Pulley Type Permanent Magnetic Coupling Selection Table



Specification	D(mm)	L(mm)	Power (KW)	Speed (r/min)
YCOP-360	425	335	30-37/18.5-22/15-18.5	1500/1000/750
YCOP-380	445	335	45-55/30-37/22-30	1500/1000/750
YCOP-430	495	365	75-90/45-55/37-45	1500/1000/750
YCOP-470	535	365	110-132/75-90/55	1500/1000/750
YCOP-500	565	365	160-185/110/75-90	1500/1000/750
YCOP-540	605	385	200-220/132/110	1500/1000/750
YCOP-580	645	385	250-280/160-185/132	1500/1000/750
YCOP-600	665	425	315/200/160	1500/1000/750
YCOP-610	670	425	355-400/220-250/185-200	1500/1000/750

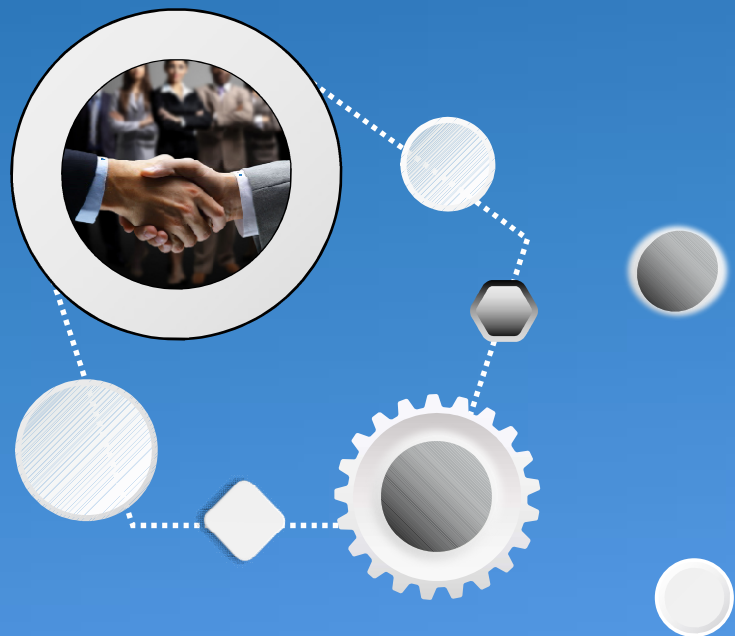
Note: The space required to install this device is the sum of L+B (mm);  
Among them, d1.H1 and D1.B are determined according to the user's device.

## YCOF-Torque-Limited Enclosed Permanent Magnetic Coupling Selection Table



Specification	D(mm)	L(mm)	Power (kW)	Speed (r/min)
YCOF-360	415	440	30-37/18.5-22/15-18.5	1500/1000/750
YCOF-380	435	440	45-55/30-37/22-30	1500/1000/750
YCOF-430	485	465	75-90/45-55/37-45	1500/1000/750
YCOF-470	525	465	110-132/75-90/55	1500/1000/750
YCOF-500	555	465	160-185/110/75-90	1500/1000/750
YCOF-540	595	525	200-220/132/110	1500/1000/750
YCOF-580	635	525	250-280/160-185/132	1500/1000/750
YCOF-600	655	570/610	315/200/160	1500/1000/750
YCOF-610	660	570/610	355-400/220-250/185-200	1500/1000/750
YCOF-630	680	570/610	450/300/220	1500/1000/750

Note: The space required to install this device is the sum of L+H1 (mm);  
Among them, d1.H1 and d2.H2 are determined according to the user's device.



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