

MAGNETIC COUPLING, M SERIES

TECHNOFLEX®
The Power to Perform

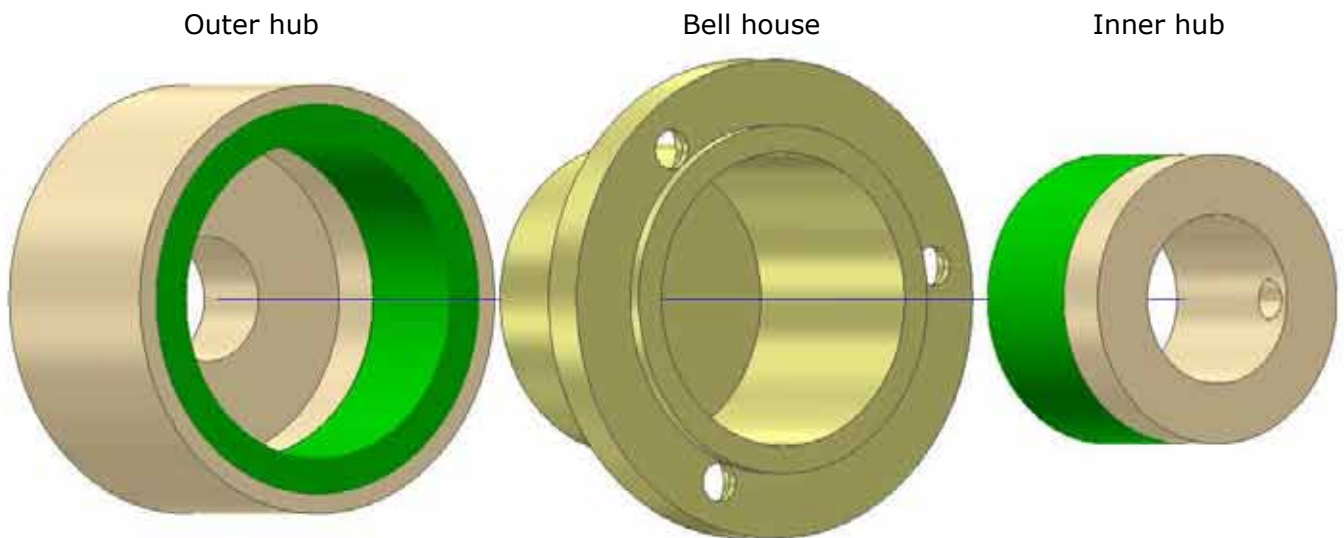
TECHNOFLEX®

The Power to Perform

PERMANENT MAGNETIC SYSTEMS

THINK GREEN

MAGNETIC COUPLING, M SERIES



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POWER TO PERFORM



Magnetic Couplings - Design and Function

Magnetic couplings consist of an outer and an inner drive. The two drives do not touch each other – the coupling works via the non-contact transfer of power, which means that the magnetic solution – in contrast to traditional solutions – does not experience any wear. The magnetic coupling is thus maintenance-free.

Between the two rotating units it is possible to place a can such that two different media can be kept separate. With the hermetic enclosure of the coupling in a stainless steel housing, corrosion is avoided and the coupling can operate directly as a wet runner in different liquids and aggressive environments.

The outer drive is normally connected to the drive unit and the inner drive is, for example, connected to a pump. If a can is placed between the two contact-free rotating units, a standard air-cooled norm motor can for example be connected to a pump without the use of gaskets and seals.

Magnetic couplings are also called torque couplings because they can transfer a certain maximum mechanical torque through the air. If the torque exceeds this maximum value, the coupling will “slip”, which means that the rotational speed between the two coupled units is no longer the same. This prevents wear and tear and the magnetic coupling provides a built-in safety feature that protects against damage.

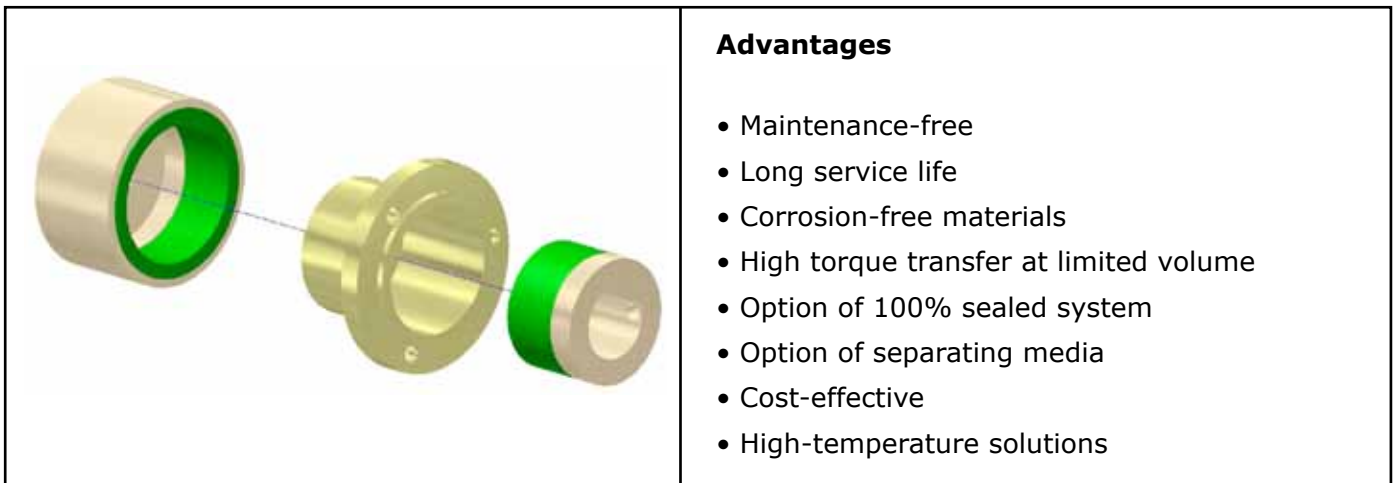
There are two main types of couplings. One type has a radial design – similar to an ordinary electric motor – whilst the other is axially oriented such that it can transfer forces through a surface.



M-Serie® - Magnetic Couplings

Technoflex is a specialist in the production of permanent magnetic couplings in corrosion-resistant materials. We focus on being able to provide maintenance-free solution.

Technoflex® Magnetic couplings are high-quality products with an extremely long service life, no maintenance and high torque transfer. They are primarily used in three different ways: Firstly, to transfer mechanical work to a sealed container; secondly, to reduce the load on connected bearing systems; and thirdly, as a torque limiter in.



Unlike traditional solutions, magnetic couplings can accommodate considerable differences in eccentricity between the shafts. This results in greater flexibility in the alignment of the system – both radially and axially – and the load on the bearing system is reduced.

MAGNETIC TORQUE LIMITER AND INSULATING COUPLING

Product qualities

Permanent Magnetic Coupling.

No-contact torque transfer.

The Magnetic Coupling can be adapted and designed according to your needs.

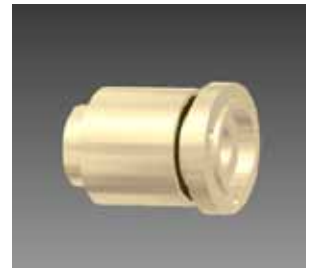
Connection shaft to shaft, coupling flange to shaft, coupling flange to coupling flange or as per requirements.

Bore according to ISO (H7), conical or spline. Can be adjusted as per requirements.

Keyway acc. DIN 6885 can be adjusted according to your needs.

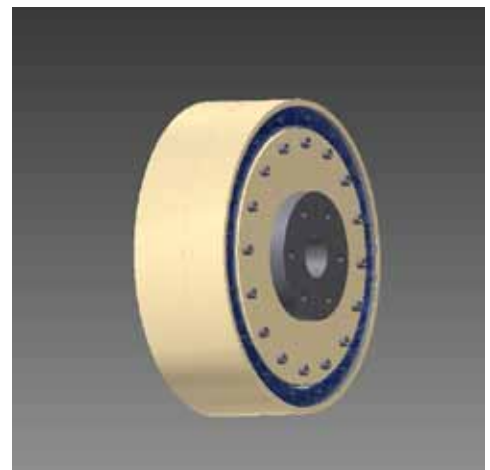
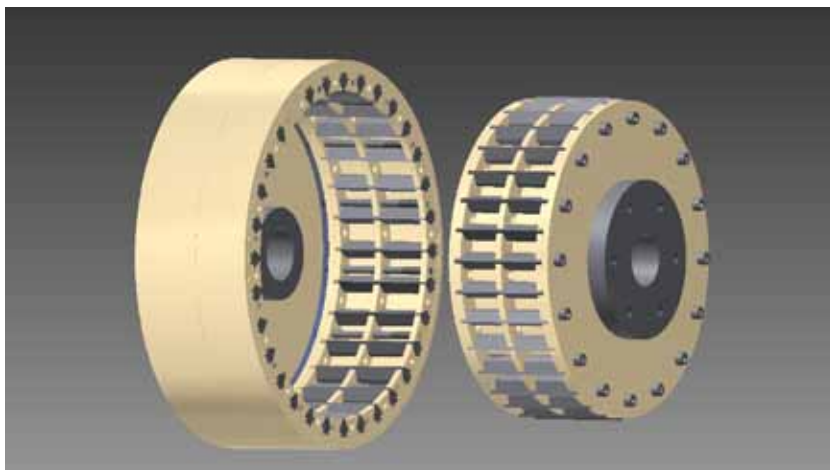
Material: steel or stainless, bell house is always stainless or synthetic material

Torque interval from 0,15 Nm to 95 Nm, and interlock system from 100 Nm to 4500 Nm made as per customer specifications.

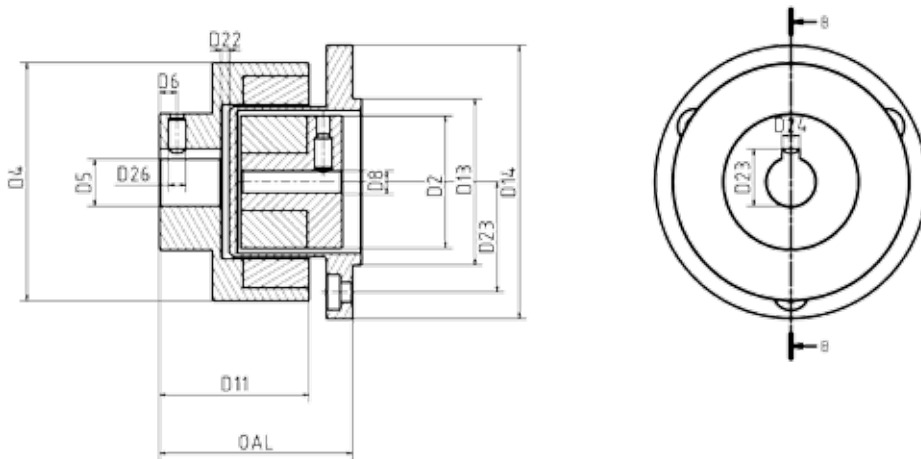


PRODUCT DESIGN

Below is shown how the design looks on the larger Magnet Couplings. In co-operation with Technoflex the customer may have the required connection custom made. It is also possible to have a complete coupling dimensioned in close co-operation with Technoflex.



Last but not least Technoflex also develop Magnetic Couplings as per customer applications in our own test lab – this of course requires that the customer sends the application to Technoflex.



* D2, OAL, and D23 can be adjusted

Size	Tkmax Dyn at 20 °C Nm	t _m ax 150°C	Max RPM	D5 Min/Max bore In mm Outer rotor	D8 Min/Max bore In mm Inner rotor	OAL In mm	D14 In mm	D2 In mm	D4 In mm	D13 In mm	D11 In mm	D23 In mm
TFM-022	0,220	150°C	4000	4/12	5/10	42	46	20	38	Customized	35	Customized
TFM-2	1,5	150°C	4000	5/15	4/10	46	62	30	52		53	
TFM-3	3	150°C	4000	5/20	5/16	70	79	34	60		55	
TFM-7	7	150°C	4000	9/30	12/22	92	79	58	60		75	
TFM-10	10	150°C	4000	9/40	12/22	79	109	71	86		63	
TFM-14	14	150°C	4000	9/40	12/22	105	96	58	86		98	
TFM-24	24	150°C	4000	12/48	12/30	105	109	71	99		83	
TFM-40	40	150°C	4000	12/50	12/30	119	109	71	99		103	
TFM-60	60	150°C	4000	14/60	14/40	125	143	106	140		112	
TFM-95	95	150°C	4000	14/60	14/40	125	143	106	140		132	

PALL Magnets are made from NdFeB. Hubs are in St52. Bell housing in Stainless 1.4571. This may also be made in another alloy or in synthetic material. Coating in NiCuNi Nickel coating. with a work temperature of Max 150C. Technoflex can per request produce up to 240C

Magnetic Couplings - Applications

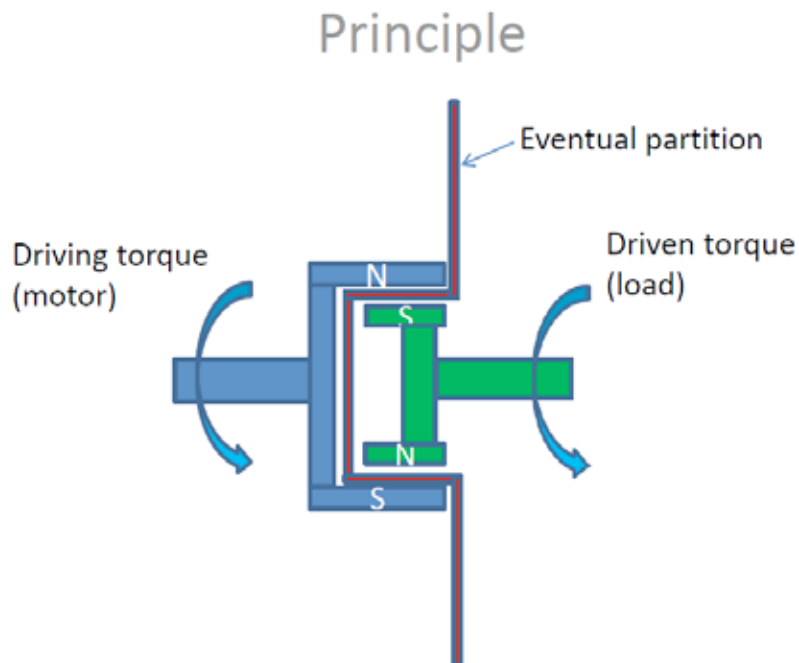
TECHNOFLEX® magnetic couplings are used within, for example, the pump industry, the pharmaceutical industry, the chemical industry, the biotech industry and the food industry.

Typical applications:

- Submersible pumps
- Circulation pumps
- Household pumps
- Wastewater pumps
- Industrial pumps
- Liquid systems
- Mixers & agitators
- Hydraulic & process technology

Sketch of M-Serien® outer and inner drive in a permanent magnetic coupling system:

Technoflex Magnet Couplings

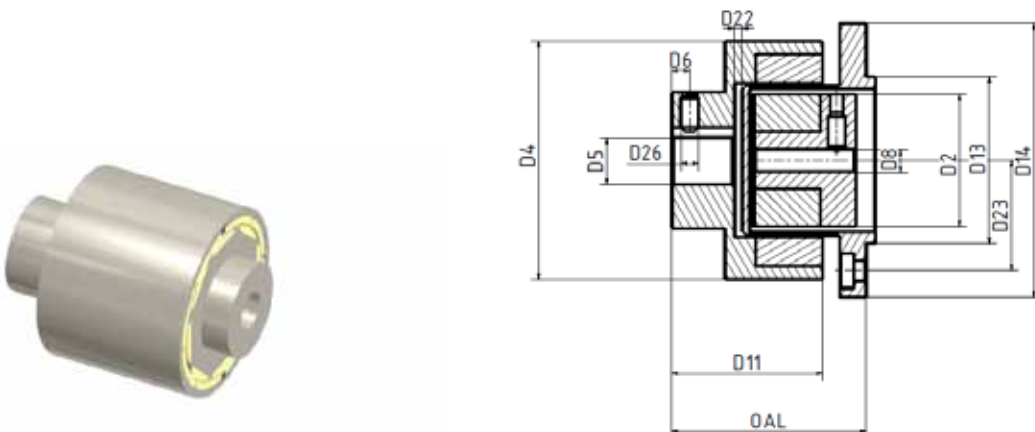


Magnetic Couplings - Case Story Hermetically sealed magnetic system...

The development of a hermetically sealed magnetic coupling has optimised the final system solution for one of Technoflex' customers in the pump industry. The magnetic coupling replaces a previous solution with a standard mechanical shaft seal.

The new magnetic coupling is completely impermeable such that liquid cannot escape. It is optimised in order to ensure minimal eddy current losses in the can yet at the same time maintain the corrosion resistance and stability of the can in thin stainless steel.

The final solution has thus also benefitted the customer in terms of cost.



SEEKING PARTNER:



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POWER TO PERFORM

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