



MAGNETIC DRIVE COUPLINGS & MIXERS



MAGNETIC DRIVE COUPLING & MIXERS


INTRODUCTION

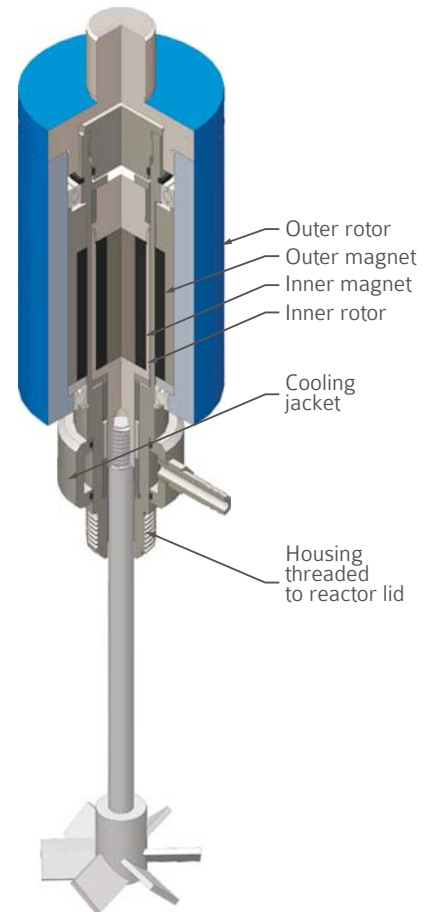
AMAR Equipment is a pioneer, largest manufacturer & exporter of high pressure reactors & magnetic drive coupling in India. These couplings are extremely useful for high pressure or high vacuum applications where leakages are not permitted through shaft for continuous running. They have replaced the gland & mechanical sealing for critical applications.

CONSTRUCTION & WORKING

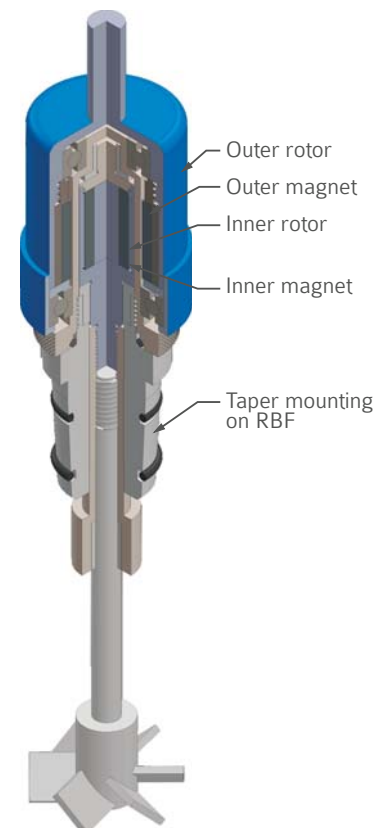
It is a zero leakage maintenance free coupling directly driven by the motor. It consists of external magnet rotor, which is driven by the motor. A stationary shell is threaded / bolted / mounted on reactor head & completely isolates the external rotor from the inner rotor. As the external rotor rotates, the internal also rotates in synchronism. The reactor's shaft is threaded / bolted to the inner rotor. High energy permanent (rare earth) magnets are fixed inside the inner & outer rotors. A water cooling jacket protects the magnets & other components from excessive temperature arising from the reactor.

SALIENT FEATURE

- Suitable for full vacuum to 700 bar pressure
- Magnetic drive couplings, mixers & agitators available for 50 ml - 10,000 ltr reactors
- High torque magnetic drive from 0.8 to 1000 Nm
- Materials of SS316, Hastelloy C, inconel, titanium, zirconium, for resistance to various chemicals
- Magnetic drive coupling / mixers with taper end connections for glass reactors for high vacuum distillation
- Compact inline motor & magnetic couplings for 50 ml - 100 ltr reactors
- Magnetic drive coupling, mixers & agitator offered with CE, ATEX , UL/CSA certification on request
- The gland/mechanical sealing need replacement after every 200-1000 hrs of working depending on application & have limitation of maximum pressure where as magnetic drive can run virtually life long without leakage & can be designed for pressures upto 700 bar
- Very useful for long or round the clock reactions as in gland/mechanical sealing if there is any leakage midway, the whole batch may go waste
- Zero leakage hence zero maintenance & zero breakdown for years
- Noiseless, vibration free & flexible hence overload results in coupling slippage safe guarding the motor
- Safe for toxic / hazardous & expensive chemicals
- No friction losses hence lower power consumption
- Suitable for glass/metal reactors / autoclaves / fermentors etc.
- Retrofitting existing gland / mechanical seal with magnetic coupling for reactors of any make & size with little modifications
- Reactor mounting end connections & shaft connections customizable



Cross-sectional view of magnetic drive coupling for high pressure application (M series)



Cross-sectional view of magnetic drive coupling for high vacuum distillation (MG Series).



MAGNETIC DRIVE COUPLINGS / MIXERS

FOR HIGH VACUUM DISTILLATION



MG-Series

MMG-Series

SALIENT FEATURES

- Amar Equipment is a pioneer to introduce magnetic drive couplings for high vacuum distillation in round bottom flask (RBF) in India since 2000. The leakage of vacuum due to distillation using conventional PTFE bush / tape results in contamination of the product. This is totally avoided by using zero leakage magnetic coupling / mixers with suitable taper / glass joints like B24, B34, B/NS29/32, B/NS45/40 etc. These couplings are cost effective & guarantee superior product quality without any contamination. Clients can buy **MG series** coupling from Amar with their existing stirrer or alternately **MMG series** compact inline vibration free motor & coupling in their existing RBF.
- Available for 100 ml to 100 ltr RBF / glass reactors
- These coupling / mixers can withstand full vacuum during continuous running
- Materials: SS316, Hastelloy C
- Suitable up to 1500 rpm
- Temperature up to 200°C & 500°C with cooling jacket

Note: Amar does not supply RBF assembly or external stirrer with the coupling / mixers. Stirrer shafts & impellers can be optionally provided in different materials.

TECHNICAL SPECIFICATIONS

Sr. No.	Model No.*	Static torque capacity		For reactor volume	
		Kg-cm.	N-m.	Standard	Optional
1	MG08/MMG08	8	0.78	500 ml - 10 ltr	—
2	MG20/MMG20	20	1.96	15 - 30 ltr	500 ml - 10 ltr
3	MG40/MMG40	40	3.92	35 - 50 ltr	15 - 30 ltr
4	MG80/MMG80	80	7.85	55 - 75 ltr	35 - 50 ltr
5	MG120/MMG120	120	11.7	80 - 100 ltr	55 - 75 ltr

Note:

- The number after the series indicates the static torque capacity in kg-cm
- Magnetic drives of higher torque capacity can be designed on request. Drives with torque higher / lower than recommended can be used for particular reactor size depending on motor hp / viscosities / stirrer design etc.
- For enquiry specify the model no., material & end connection for shaft & drive.

***MG-series:** Magnetic drives for glass round bottom flasks / reactors

***MMG-series:** Inline motor & magnetic drive for glass round & bottom flasks / reactors



MAGNETIC DRIVE COUPLINGS / MIXERS

FOR HIGH PRESSURE



M-Series

Agitator

MM-Series

MM-Series

MM-Series with air motor

SALIENT FEATURES

- Full vacuum to 700 bar pressures
- For reactors from 50 ml - 10,000 ltr
- Temperature up to 500 °C using cooling jacket
- Magnetic drive & stirrer wetted parts of SS316, Hastelloy C, inconel, titanium, zirconium
- High torque couplings upto 1000 Nm
- Agitator assembly with motor, motor speed controller, magnetic drive coupling, shaft and different types of impellers
- Compact inline motor and magnetic drive coupling MM series with speed controller
- MM series for 50 ml - 100 ltr metal / glass reactors
- No separate motor / stand / stirrer required

TECHNICAL SPECIFICATIONS

Sr. No.	Model No.*	Static torque capacity		For reactor volume	
		Kg-cm.	N-m.	Standard	Optional
1	M08/MM08	8	0.78	50 ml - 250 ml	-
2	M20/MM20	20	1.96	-	50 ml - 250 ml
3	M40/MM40	40	3.92	500 ml - 5 ltr	500 ml - 5 ltr
4	M80/MM80	80	7.85	10 - 25 ltr	500 ml - 5 ltr
5	M120/MM120	120	11.7	50 - 100 ltr	5 - 25 ltr
6	M200	200	19.6	100 - 10,000 ltr up to 30 hp motor & 300 rpm	
7	M400	400	39.2		
8	M600	600	58.8		
9	M1200	1200	117.6		
10	M2400	2400	235.2		
11	M4800	4800	470.4		
12	M6000	6000	588		
13	M9600	9600	936		

Note:

- The number after the series indicates the static torque capacity in kg-cm
- Magnetic drives of higher torque capacity for reactors of any make can be designed on request. Drives with torque higher / lower than recommended can be used for particular reactor size depending on motor hp / viscosities / stirrer design etc.
- For enquiry specify the model no., material, pressure & end connection for shaft & drive.
- Up to M80 & MM80 series, models are designed for 200 bar pressure & 350 bar optional.

***M-series:** Magnetic drive for metal autoclaves / reactors

***MM-series:** Inline motor & magnetic drive for metal autoclaves / reactors

About **AMAR**

Serving Industry Since 1974

New 50000 sqft state-of-the-art manufacturing facility

Largest manufacturer of magnetic couplings in India

Largest manufacturer of pressure & flow reactors in India

Inline with government's MAKE IN INDIA campaign

Exports to over 50 countries worldwide

Over 6000 successful installations worldwide

More than 2000 delighted customers globally

Manufacturing on CNC/VMC & automated machines

Unmatched quality & safety standards

ISO, CE-PED, ASME U, CSA, UL, Ex-Proof, ATEX certification

Prompt & efficient after sales service

Highly skilled & trained team of more than 200 personnel



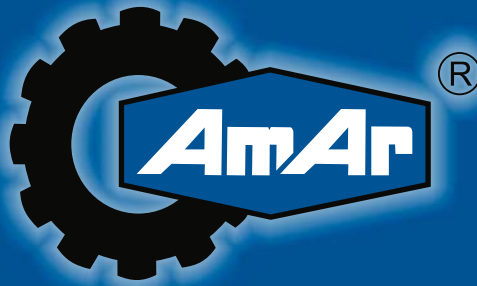
OUR PRODUCTS

Pressure Reactor & Systems

Stirred Pressure Autoclaves
Plant Scale Pressure Reactors
Parallel Synthesizer
Eco Catalyst Screening
Glass Autoclaves
Magnetic Drive Couplings / Stirrers
Pressure Vessels
Acid Digestion Bomb
Shaker Hydrogenator
Super Critical Fluid Extraction
HPHT Corrosion Testing
Gas Hydrate Formation System
Agitated Nutsche Filter & Dryer
Heating Cooling Circulators

Flow Reactor & Systems

Metal Microreactor
Conical 3D Flow Reactor
Pinched Tube Reactor
Multi-flo Reactor
Tubular Reactor with Static Mixer
Slurry-flo Reactor
Continuous Stirred Tank Reactor
Photo-flo Reactor
Glass Microreactor
SoLi-flo Reactor
Packed Bed Reactor
Fluidized Bed Reactor
Electrochemical Reactor
Liquid-liquid Separator



AMAR EQUIPMENT PVT. LTD.

📍 Valson Textile Mills, LBS Road, Bhandup (W), Mumbai - 400078, INDIA.

☎ +91-22- 6225 5000 🏠 www.amarequip.com ✉ sales@amarequip.com