

Magnetic

Couplings



■ Co-axial Type

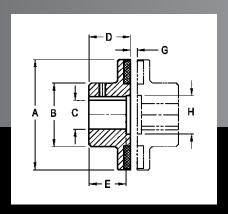
Disc Type



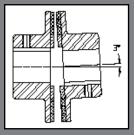
TRANSMITTING TORQUE THROUGH AIR

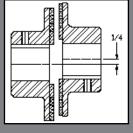
DISC MAGNETIC COUPLINGS

How Disc Couplings Work



Disc type couplings consist of two opposing discs with powerful rare earth magnets. The torque applied to one disc is transferred through an air gap to the other disc. Because of its simple flat design, you can have angular misalignment of up to 3° or parallel misalignment up to /" and still transmit nearly full rotational torque. You could also fabricate an inexpensive flat barrier to separate the atmospheres or fluids surrounding the two discs. This is our simplest and most versatile coupling.





Angular Misalignment

Parallel Misalignment

Part Number	HP @ 1750 RPM	Max Speed	Weight per hub	Torque NORMAL	Torque PEAK	Α	В	C (MAX)	D	Е	G	Н
	HP	RPM	kg	Nm	Nm	mm	mm	mm	mm	mm	mm	mm
			lb	in.lbs	in.lbs	inch	inch	inch	inch	inch	inch	inch
MTD-0.2	0.03	42500	0.05	0.12	0.16	26.9	21		15.9	15.9	3.2	N/A
						1.06	0.81		0.63	0.63	0.125	
MTD-0.3	0.08	26000	0.1	0.5	0.6	43.7	21	Please	15.0	15.0	4.8	
			0.22	4	5	1.72	0.81	see Bore	0.59	0.59	0.19	N/A
MTD-0.6	0.17	23000	0.1	0.7	0.9	50.3	28	Chart for	15.0	15.0	4.8	
			0.32	6	8	1.98	1.12	these	0.59	0.59	0.19	N/A
MTD-1	0.25	19000	0.3	1.0	1.4	59.9	38	stock	19.05	19.05	4.83	
			0.58	9	12	2.36	1.50	sizes.	0.75	0.75	0.19	N/A
MTD-2	0.45	15500	0.6	1.7	2.3	72.6	51		25.4	25.4	4.8	
			1.27	15	20	2.86	2.00		1.00	1.00	0.19	N/A
MTD-5	1.22	11700	1.0	5.0	5.4	97.5	70	34.93	25.4	25.4	4.80	
			2.20	44	48	3.84	2.75	1.375	1.00	1.00	0.19	N/A
MTD-8	2.00	10500	1.2	8.1	9.0	107	70	34.93	25.4	25.4	6.35	
			2.55	72	80	4.20	2.75	1.375	1.00	1.00	0.25	N/A
MTD-12	3.00	9000	2.0	12.2	13.5	130	76	41.28	38.1	31.8	6.35	52
			4.39	108	120	5.10	3.00	1.625	1.50	1.25	0.25	2.06
MTD-20	5.00	9200	2.2	20.3	22.6	125	70	41.28	38.1	31.8	6.35	52
			4.79	180	200	4.92	2.75	1.625	1.50	1.25	0.25	2.06
MTD-30	7.50	9200	3.1	30.5	33.9	125	108	53.98	47.5	41.4	6.35	68
			6.92	270	300	4.92	4.25	2.125	1.87	1.63	0.25	2.69
MTD-40	10.00	7800	4.1	40.6	45.2	147	108	60.33	52.6	46.0	6.35	78
			8.97	360	400	5.79	4.25	2.375	2.07	1.81	0.25	3.06
MTD-50	13.00	7800	3.2	53.1	61.0	147	60	38.10	41.7	31.8	6.35	48
			7.12	470	540	5.79	2.37	1.500	1.64	1.25	0.25	1.88

Stock sizes (MTD-0.3 through MTD-2) are kept on the shelf. Larger units are made to order. Please call the factory for bore codes and availability of larger units.

Disc Type Couplings are sold as halves; weight per hub includes magnets.

Bore Code	0000	0125	0188	0197	0236	0250	0313	0315	0375	0394	0433	0472	0500	0551	0625	0709	0748	0750	0875	01000
Size	SOLID	1/8	3/16	5mm	6mm	1/4	5/16	8MM	3/8	10MM	11MM	12MM	1/2	14MM	5/8	18MM	19mm	3/4	7/8	1
MTD 0.2	Χ	Х	Χ	Х	Χ	Х	Χ	Χ												
MTD 0.3	Χ		Х	Χ	Х	Х	Х	Х	X	Χ										
MTD 0.6	Χ				Χ	Χ	Χ	Χ	Х	Χ	Χ	Χ	Χ							
MTD 1	X								Х	Х	Х	X	Х	Χ	Χ	X	Χ	Χ		
MTD 2	Χ										Х	Х	Χ	Х	Χ	Х	Х	Χ	Х	Χ

Simple Concept: OPPOSITE POLES ATTRACT

Optional
Containment
Barrier

How Co-Axial Couplings Work

The coaxial coupling (shown above) consists of two parts. The outer hub consists of a series of rare earth magnets that are ground, potted and attached to the inside diameter of a steel hub. The inner hub consists of a series of rare earth magnets that are ground, potted and attached to the outside diameter of a steel rotor. The inner hub is then completely sealed in stainless steel to protect the magnets and rotor from damage or corrosive substances. Typically there is a radial air gap of up to .275" (7mm) between the inner and outer hubs. Conventional bores and keyways are used to drive the inner and outer hubs.

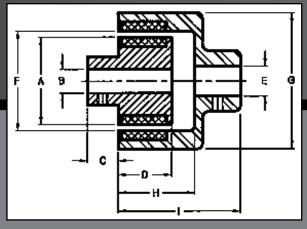
Technical Data:

	Co-Axial	Disc				
Inner Cylinder/Disc	300 stainless steel, hermetically sealed.	400 stainless steel for MTD-0.2 through				
Outer Cylinder/Disc	mild steel, magnets encapsulated.	MTD-4, 300 stainless steel for larger sizes				
Magnet (Nickel Plated)	NdFeB	NdFeB				
Operating Temp. *	140C (284° F)	140C (284° F)				

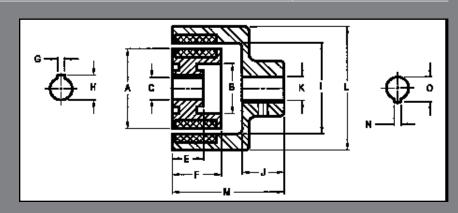
^{*} **Note:** The couplings are also available with SmCo type magnets, rated up to 280C (536° F).

CO-Axial MAGNETIC COUPLINGS

Note: The dimensions and ratings for all co-axial type couplings are shown using only NdFeB type rare earth magnets. Ratings and dimensions may vary for the SmCo versions.

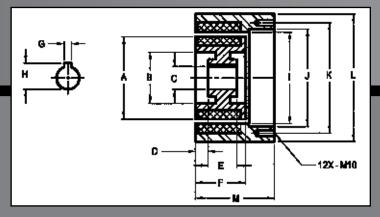


						INNEF	HUB		OUTER HUB					
Part Number	Max Speed	Weight (total)	Torque (nominal)	Torque (peak)	Α	В	С	D	Е	F	G	Н	I	
	rpm	kg	Nm	Nm	mm	mm	mm	mm	mm	mm	mm	mm	mm	
		lb	in.lbs	in.lbs	inch	inch	inch	inch	inch	inch	inch	inch	inch	
MTC-0.1	44000	0.1	0.1	0.2	12.7	5	7	15	6	18	26	19	30	
		0.2	1.0	1.75	0.500	0.197	0.28	0.59	0.236	0.710	1.02	0.75	1.18	
MTC-0.3	26000	0.3	0.3	0.5	22	8	8	16	8	28	44	22	36	
		0.6	2.6	45	0.866	0.315	0.31	0.63	0.315	1.102	1.73	0.87	1.42	
MTC-1	22000	0.8	1.0	1.5	28	10	12	20	10	35	52	28	44	
		1.7	9	13	1.102	0.394	0.47	0.79	0.394	1.378	2.05	1.10	1.73	
MTC-3	18000	1.0	3	3.5	35	12	16	32	12	42	64	42	62	
		2.2	27	30	1.378	0.472	0.63	1.26	0.472	1.654	2.52	1.65	2.44	
MTC-10	13000	2.5	10	12	58	16	20	35	20	66	90	50	80	
		5.5	90	105	2.283	0.630	0.79	1.38	0.787	2.598	3.54	1.97	3.15	



					INNER HUB						OUTER HUB							
Part Number	Max Speed	Weight (total)	Torque NORMAL	Torque PEAK	Α	В	С	E	F	G	Н	1	J	K	L	M	N	0
	rpm	kg	Nm	Nm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm
		lb	in.lbs	in.lbs	inch	inch	inch	inch	inch	inch	inch	inch	inch	inch	inch	inch	inch	inch
MTC-16	13000	3	16	26	58	26	14	30	62	5	16.3	66	40	19	92	120	6	21.8
		6.6	140	230	2.283	1.02	0.551	1.18	2.44	0.197	0.64	2.598	1.58	0.748	3.62	4.72	0.236	0.86
MTC-22	9400	7	22	35	88	50	20	30	50	6	22.8	97	50	24	124	120	8	27.3
		16	200	310	3.465	1.97	0.787	1.18	1.97	0.236	0.90	3.819	1.97	0.945	4.88	4.72	0.315	1.07
MTC-30	9400	8	30	48	88	50	24	30	62	8	27.3	97	50	28	124	130	8	31.3
		18	265	425	3.465	1.97	0.945	1.18	2.44	0.315	1.07	3.819	1.97	1.102	4.88	5.12	0.315	1.23
MTC-50	7300	12	50	80	122	80	30	30	50	8	33.3	132	60	38	160	130	10	41.3
		26	450	708	4.803	3.15	1.181	1.18	1.97	0.315	1.31	5.197	2.36	1.496	6.30	5.12	0.394	1.63
MTC-65	7300	15	65	100	122	80	30	40	65	8	33.3	132	60	38	160	145	10	41.3
		33	575	885	4.803	3.15	1.181	1.57	2.56	0.315	1.31	5.197	2.36	1.496	6.30	5.71	0.394	1.63
MTC-80	6500	19	80	130	142	90	35	40	65	10	38.3	152	80	42	180	165	12	45.3
		42	710	1151	5.591	3.54	1.378	1.57	2.56	0.394	1.51	5.984	3.15	1.654	7.09	6.50	0.472	1.78
MTC-110	6500	22	110	165	142	90	35	40	80	10	38.3	152	80	42	180	180	12	45.3
		48	1000	1460	5.591	3.54	1.378	1.57	3.15	0.394	1.51	5.984	3.15	1.654	7.09	7.09	0.472	1.78
MTC-140	6500	29	140	210	142	90	40	40	110	12	43.3	152	80	48	180	210	14	51.8
		64	1250	1859	5.591	3.54	1.575	1.57	4.33	0.472	1.70	5.984	3.15	1.890	7.09	8.27	0.551	2.04

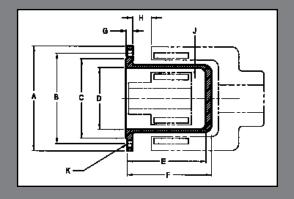
CO-AXIAI MAGNETIC COUPLINGS



					INNER HUB							OUTER HUB				
Part Number	Max Speed	Weight (total)	Torque NORMAL	Torque PEAK	Α	В	С	Е	F	G	Н	ı	J	K	L	М
	rpm	kg	Nm	Nm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm
		lb	in.lbs	in.lbs	inch	inch	inch	inch	inch	inch	inch	inch	inch	inch	inch	inch
MTC-180	6200	23	180	290	142	90	40	60	50	140	12	43.3	152	156	170	190
		51	1600	2567	5.59	3.54	1.575	2.36	1.97	5.51	0.472	1.70	5.98	6.142	6.69	7.48
MTC-220	6200	26	220	330	142	90	48	70	60	160	14	51.8	152	156	170	190
		57	2000	2921	5.59	3.54	1.890	2.76	2.36	6.30	0.551	2.04	5.98	6.142	6.69	7.48
MTC-280	6200	30	280	380	142	90	48	90	60	180	14	51.8	152	156	170	190
		66	2500	3363	5.59	3.54	1.890	3.54	2.36	7.09	0.551	2.04	5.98	6.142	6.69	7.48

Optional Containment Barrier

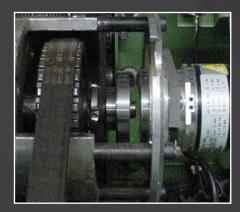
An optional stainless steel barrier can be used to separate the atmosphere or fluid surrounding the inner and outer hubs. This eliminates the need for a rotating shaft seal. Both standard and custom barrier designs up to 75 hp are available. All sizes over MTC-10-SB are made to order. All designed applications are economically produced, even in small quantities.



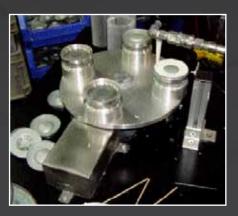
Part Number	Α	В	С	E	F	G	н	1	J	K, # of Holes
	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm x qty
	inch	inch	inch	inch	inch	inch	inch	inch	inch	inch
MTC-0.1-SB	43	34.1	-	15	28	30	5	6.6	0.5	5.5 x 4
	1.69	1.343	-	0.579	1.10	1.16	0.20	0.26	0.019	0.22
MTC-0.3-SB	49	40	30	24	30	32	5	7	1	5.5 x 4
	1.93	1.575	1.18	0.945	1.18	1.26	0.20	0.28	0.039	0.22
MTC-1-SB	55	46	38	30	35	37	5	7	1	5.5 x 6
	2.17	1.811	1.50	1.181	1.38	1.46	0.20	0.28	0.039	0.22
MTC-3-SB	66	55	44	38	45	50	7	5	1	6.6 x 6
	2.60	2.165	1.73	1.496	1.77	1.97	0.26	0.21	0.039	0.26
MTC-10-SB	96	83	73	60	62	67	15	6	1	6.6 x 6
	3.78	3.268	2.87	2.362	2.44	2.64	0.59	0.24	0.039	0.26

Note: The MTC-0.1 through -10 containment shells are 316 stainless, and are rated to a minimum of 450 psi. Containment shells for other sizes are made and rated according to customer requirements.

TRANSMITTING TORQUE THROUGH AIR



Vibration isolation on high speed encoder using Disc Type Coupling



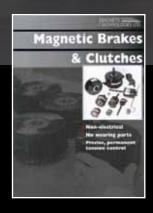
Indexing application using Disc Type Coupling



Chemical pump application using Co-Axial Type Coupling



Belt-driven mixer using Co-Axial Type Coupling



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