

SPRING LOADED ELECTROMAGNETIC CLUTCHES AND BRAKES

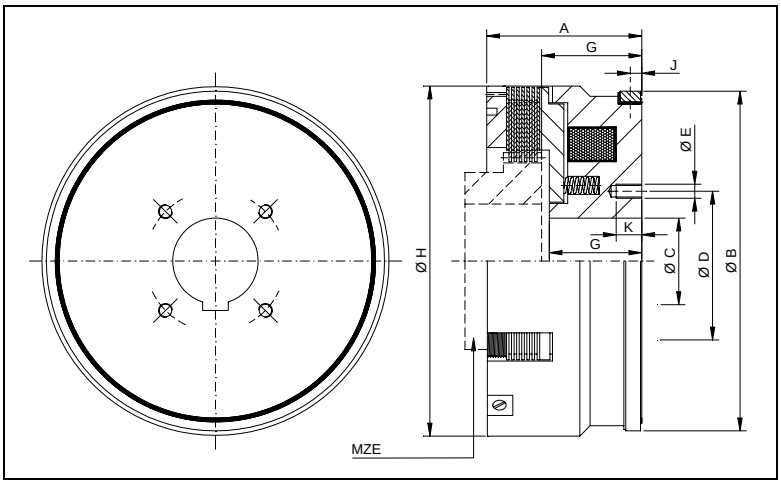
Characteristics
These units, which are spring loaded and electrically released, are intended for applications requiring the block of transmission in case of failure, the automatic engagement of the brake when an motor stalls and other safety requirements. They are sometimes used on units which are rarely opened. However, we would like to point out that their complexity and performances (50% less compared to units with direct drive) make these units particularly expensive. They are operated by means of some helical springs (whose load can in some cases be calibrated) which press an iron disc, pressing in turn of pack of discs. By connecting the winding inside the unit body, you create a magnetic field; it attracts the disc towards the coil, overcoming the springs action and releasing the pack of discs.

Discs
The magnetic flux does not need pass through the discs and it is also possible to design frictional couplings with different materials.
For wet operations, you can use steel/steel plates or steel/sintered plates.
For dry operations steel/sintered plates or lining/cast iron or steel discs.
Furthermore, it is possible to produce units with negative teeth.

Assembling
These units are generally assembled horizontally. In an upright position, the weight of sliding disc may create in some cases drag torque.
The magnetic flux should have no leakages to surrounding metal masses, otherwise it might become less effective and interfere with other electromagnetic units. In such a case, you should resort to a proper insulation with non –magnetic material.

Lubrication
When needed, use excellent, resistant to electrolysis oil with viscosity 3° E/50°C.

Feeding
Four our standard production, voltage is 24Vcc.brakes and clutches with slip ring are fed through small pipelines or cable or, upon request, through a connector. For such clutches an anti-revolving lock is very important: in fact, the coil is static but it may be moved by friction or fall bearing. For clutches with slip ring, occurs through the sliding contacts of ring and brush.



MULTIPLATE SPRING LOADED ELECTROMAGNETIC CLUTCHES
Model FML

PERFORMANCES (24VDC)

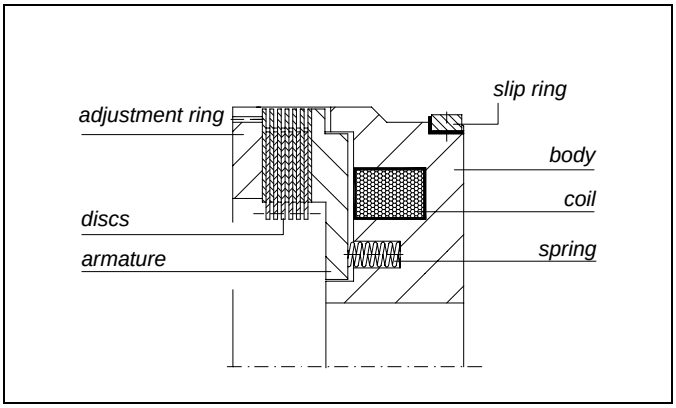
size	*torque* (nm) M_d	M_s	*time* *engagement*	*disengag*	*power* (W) 20°	120°	*weight* (kg)	*plates* int/est
FML 114	25	40	120	70	110	80	5	2/3
FML 140	50	70	200	80	92	68	7	2/3
FML 166	100	140	280	90	98	78	13	3/4
FML 195	200	260	360	100	140	100	20	3/4

for engagement in motion refer to dynamic torque M_d
for stationary engagement or for engaged clutches refer to static torque M_s

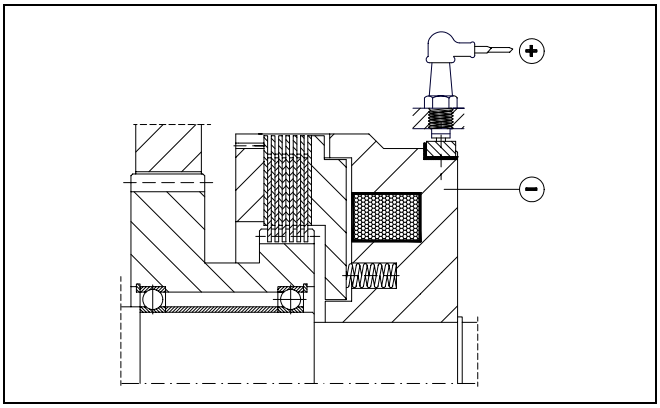
DIMENSIONS (mm)

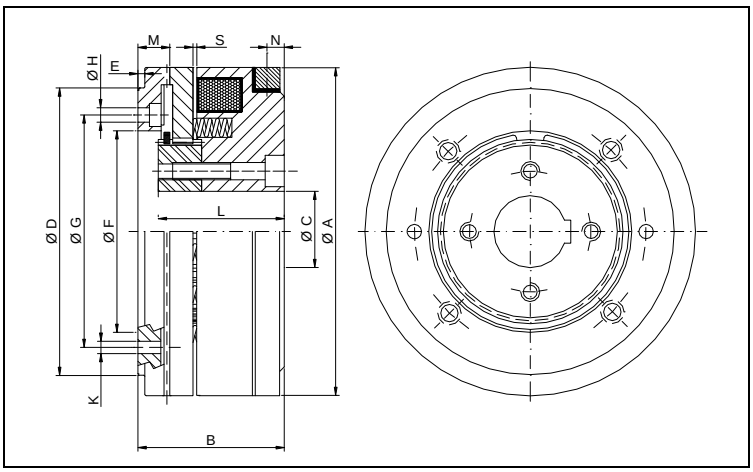
size	A	B	C	D	E n°X ø	F	G	H	J	K	L	M	P	Q
FML 114	84	114	25	58	4XM8	69	65	114	6	23	10	8,5	26,7	8
FML 140	93	140	25	72	4XM8	74	71	140	7	27	13	8,5	26,7	8
FML 166	104	166	30	84	4XM10	79	76	165	7	28	13	10,5	31,7	8
FML 195	113	195	30	108	4XM12	87	83	195	7	33	15	12,5	52,6	14

PARTS NAME



MOUNTING EXAMPLE







TOOTH ELECTROMAGNETIC SPRING LOADED CLUTCHES WITH SLIP RING
Model MRZ

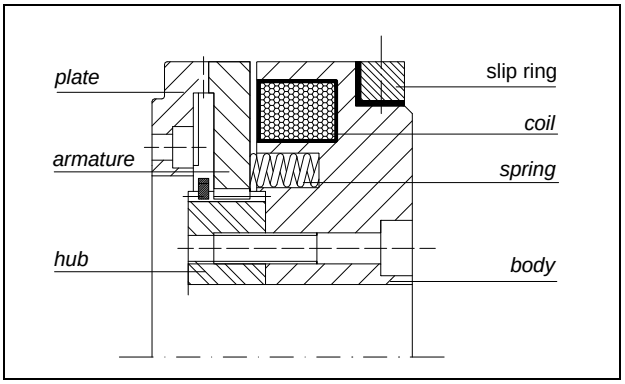
PERFORMANCES (24 VDC)

size	*torque* (Nm)	*power* (W)	*RPM* *dry*	*wet*	*teeth number*	*weight* (kg)
MRZ 095	30	39	4000	2000	205	1,6
MRZ 106	60	42	3500	2000	240	3
MRZ 114	90	48	3000	2000	264	3
MRZ 126	150	65	3000	1500	280	4,5
MRZ 140	240	89	2500	1000	300	6
MRZ 166	380	111	2000	1000	336	9
MRZ 185	600	125	1500	1000	360	13
MRZ 215	950	130	1500	1000	410	20

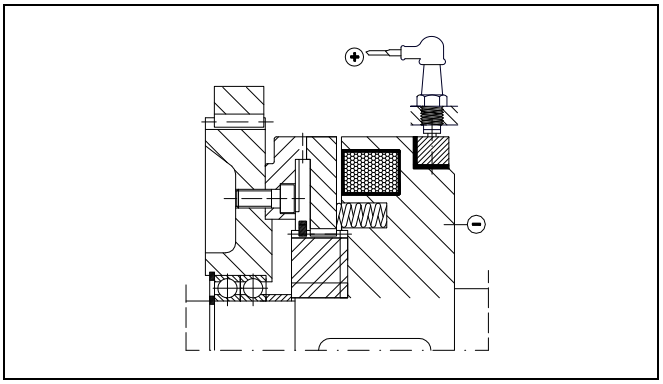
DIMENSIONS (mm)

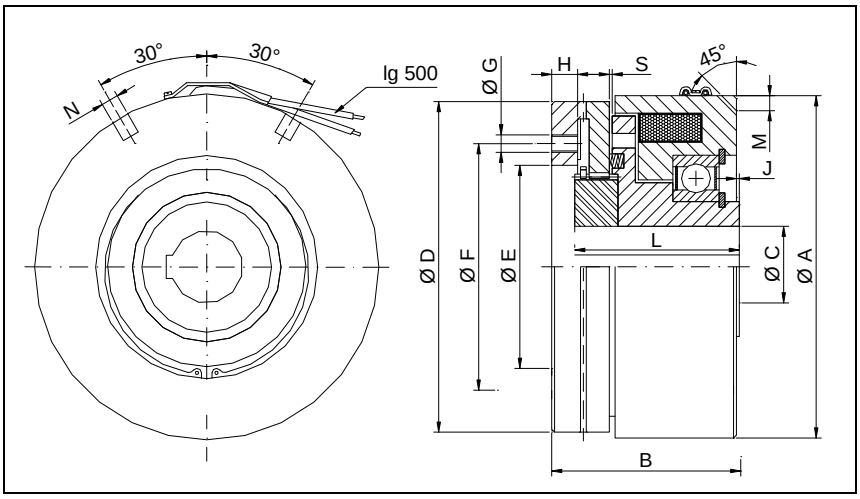
size	A	B	C max	D H7	E	F H7	G	H N x Ø	K N x Ø	L	M	N	S
MRZ 095	92	40	25	75	2	52	64	4 x 5,5	2 x 5	33,5	8,5	6	1,3
MRZ 106	106	44	25	85	2	65	75	4 x 5,5	2 x 6	38	8,5	6	1,3
MRZ 114	114	50	32	100	2	70	85	4 x 6,5	2 x 6	41	11,5	6	1,3
MRZ 126	125	58	35	105	2	75	90	4 x 6,5	2 x 6	47	13,5	6	1,3
MRZ 140	140	67	42	115	3	85	100	4 x 6,5	2 x 8	57	14	7	1,3
MRZ 166	166	75	48	130	3	95	115	6 x 8,5	3 x 8	62	17	8	1,4
MRZ 185	185	85	50	155	3	115	135	6 x 8,5	3 x 8	71	19	8	1,4
MRZ 215	215	100	60	180	4	130	155	6 x 8,5	3 x 8	84	23	8	1,4

PARTS NAME



MOUNTING EXAMPLE





TOOTH ELECTROMAGNETIC SPRING LOADED CLUTCHES WITHOUT SLIP RING
Model MSZ

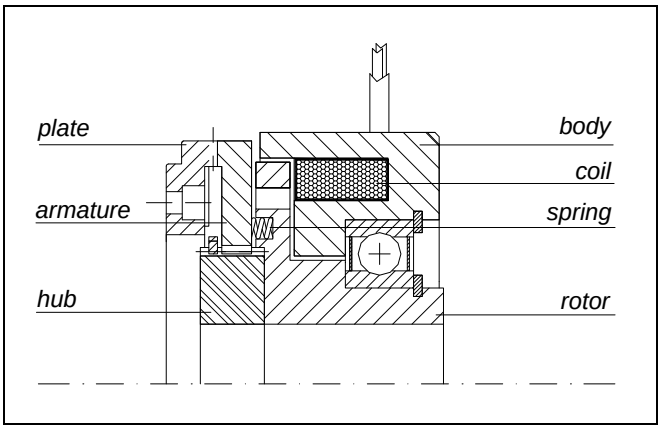
PERFORMANCES (24VDC)

size	*torque* (nm)	*power* (W) 20°	120°	*RPM wet running* max	*RPM dry running* max	*weight* (kg)
MSZ 090	50	50	36	4500	3800	2,5
MSZ 105	100	78	58	3600	3100	3,5
MSZ 115	200	84	61	3300	2800	4,3
MSZ 140	400	135	95	2700	2100	8
MSZ 185	800	150	110	2100	1800	18
MSZ 215	1600	175	128	1800	1500	33,5
MSZ 265	3200	280	205	1450	1200	55
MSZ 320	6400	400	310	1200	950	98
MSZ 385	12800	540	430	1000	850	178

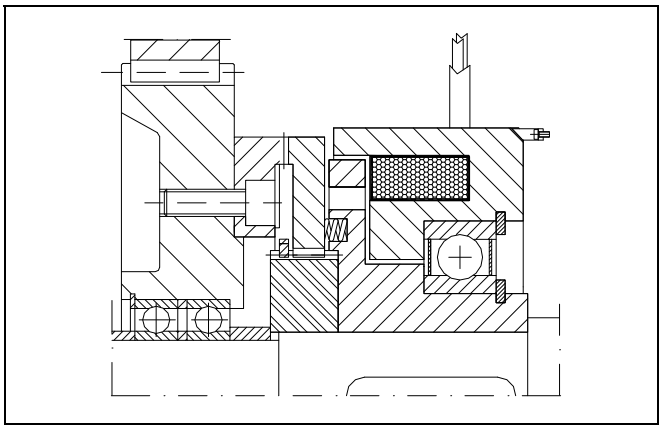
DIMENSIONS (mm)

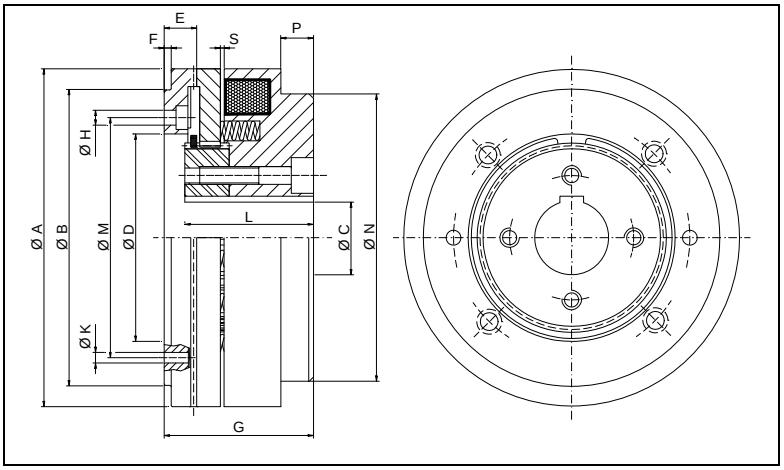
size	A	B	C max	D	E H7	F	G n x Ø	H	J	L	M	N	S
MSZ 090	100	58	30	90	58	68	4 x M6	5	1	51	4	10	0,8
MSZ 105	114	63	38	105	70	82	4 x M6	6	1	55	4	10	1
MSZ 115	125	65	42	115	80	92	6 x M6	6	1	57	4	10	1
MSZ 140	154	80	55	142	95	110	6 x M8	7	1	71	5	10	1,2
MSZ 185	205	100	75	185	130	148	6 x M10	8	1	90	6	10	1,2
MSZ 215	245	145	80	215	153	175	6 x M12	12	15	130	7	12	1,8
MSZ 265	290	165	95	265	215	240	12 x M12	15	15	160	8	16	2
MSZ 320	350	200	110	320	260	290	12 x M14	20	22	196	10	18	2
MSZ 385	425	245	130	385	315	355	12 x M16	25	27	240	12	20	2,5

PARTS NAME



MOUNTING EXAMPLE





TOOTH ELECTROMAGNETIC SPRING LOADED BRAKES
Model MED

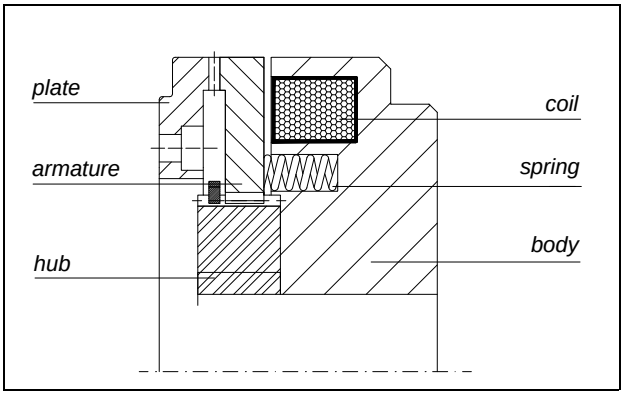
PERFORMANCES (24 VDC)

size	*torque* (Nm)	*power* (W)	*RPM* *dry*	*wet*	*teeth number*	*weight* (kg)
MED 095	30	39	4000	2000	80	1,2
MED 106	60	42	3500	2000	100	2
MED 114	90	48	3000	2000	145	3
MED 126	150	65	3000	1500	240	6
MED 140	240	89	2500	1000	480	9,5
MED 166	380	111	2000	1000	700	11,5
MED 185	600	125	1500	1000	980	20
MED 215	950	130	1500	1000	1.100	25

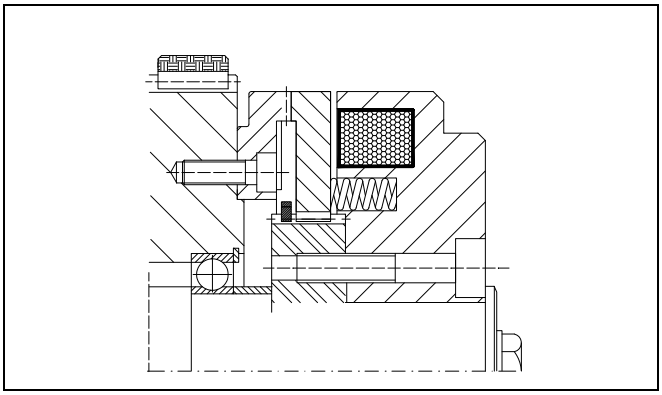
DIMENSIONS (mm)

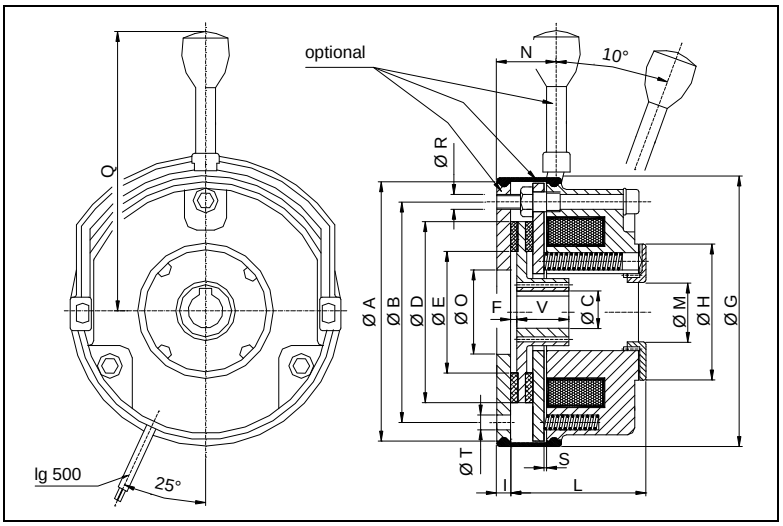
size	A	B H7	C max	D H7	E	F	G	H	K	L	M	N	P	S
MED 095	92	75	25	52	8,5	2	40	4x5,5	2x5	33,5	64	81,75	12	1,3
MED 106	106	85	25	65	8,5	2	44,5	4x5,5	2x6	38	75	94,4	11,5	1,3
MED 114	114	100	32	70	11,5	2	50,5	4x6,5	2x6	41	85	102,6	12,3	1,3
MED 126	125	105	35	75	13,5	2	58	4x6,5	2x6	47	90	112,25	12	1,3
MED 140	140	115	42	85	14	3	67	4x6,5	2x8	57	100	125,85	13,5	1,3
MED 166	166	130	48	95	17	3	75,5	6x8,5	3x8	62	115	148,9	15,4	1,4
MED 185	185	155	50	115	19	3	85	6x8,5	3x8	71	135	170	17	1,4
MED 215	215	180	60	130	23	4	100,5	6x8,5	3x8	84	155	198	17	1,4

PARTS NAME



MOUNTING EXAMPLE





SPRING LOADED ELECTROMAGNETIC BRAKES
Model MEM

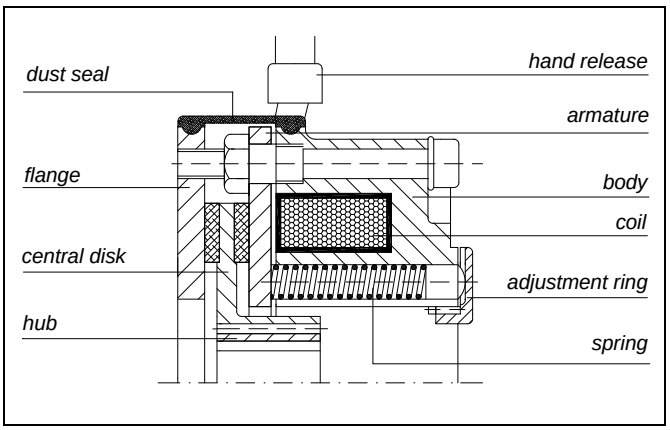
PERFORMANCES (24VDC)

size	*torque* (nm) M_d	M_s	*power* (W) 20°	120°	*RPM* max	*time* (ms) *engagement*	*disengag*	*J rotor* 10^{-5} kgm^2	*weight* (kg)
MEM 056	2	2,5	15	12	3.000	10	21	0,09	0,5
MEM 087	4	6	20	16	3.000	17	35	0,15	0,8
MEM 105	8	12	25	21	3.000	20	50	0,61	1,4
MEM 130	16	23	30	26	3.000	30	90	2,0	2,5
MEM 150	32	46	40	32	3.000	40	120	4,5	4,0
MEM 165	60	95	50	41	2.000	65	150	6,3	5,6
MEM 190	80	125	55	43	2.000	90	180	15	8,4
MEM 217	150	235	85	79	1.500	110	300	29	12,6
MEM 254	260	400	100	85	1.500	200	400	73	19,5
MEM 302	400	600	110	90	1.500	270	500	200	31,0

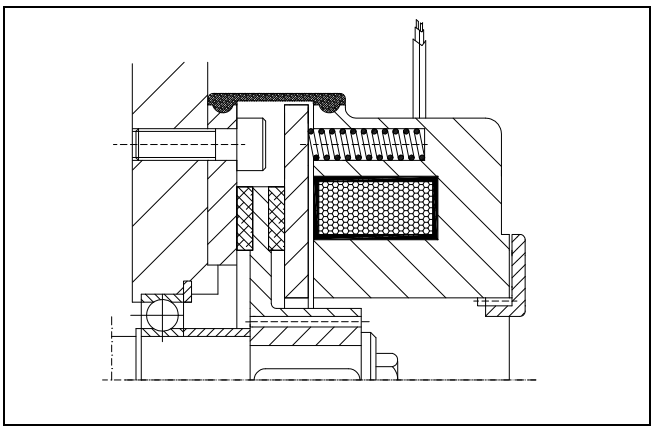
DIMENSIONS (mm)

size	A j7	B	C max	D	E	F	G	H	I	L	M H7	N	O H7	Q	R	S	T	V
MEM 056	56	48	9	/	/	0	58	/	2,5	31,2	/	/	/	/	/	/	2x6	/
MEM 087	87	72	15	60	40	1	91	52	6	41	25	15,8	31	109	3xM4	0,2	3x4,5	18
MEM 105	105	90	20	77	56	1,5	109	60	7	47,5	32	16,3	41	118	3xM5	0,2	3x5,5	20
MEM 130	130	112	20	95	66	2	134	68	9	56	42	27,4	45	134	3xM6	0,2	3x6,6	20
MEM 150	150	132	25	115	70	2	154	82	9	64,5	50	29,4	52	164	3xM6	0,3	3x6,6	25
MEM 165	165	145	30	124	80	2	169	92	11	76,5	60	33	55	196	3xM8	0,3	3x9	30
MEM 190	190	170	38	149	104	2,25	195	102	11	82,5	68	37,5	70	240	3xM8	0,3	3x9	30
MEM 217	217	196	45	174	129	2,75	222	116	11	98	75	41,1	77	347	3xM8	0,4	4x9	35
MEM 254	254	230	50	206	148	3,5	259	135	11	114	85	47,6	90	418	3xM10	0,4	4x11	40
MEM 302	302	278	70	254	199	4,5	307	165	12,5	124	115	57,7	120	504	3xM10	0,5	6x11	50

PARTS NAME



MOUNTING EXAMPLE



Symbology


mechanically actuated


electromagnetically actuated


hydraulically actuated


pneumatically actuated


springs loaded


permanent magnet


with rotating magnet


with stationary magnet


with steel plates


with steel plates E


with sintered discs M


with linings


toothed


accessories


powder