

ELECTROMAGNETIC POWDER BRAKES

Characteristics

These groups are recommended for all applications requiring continuous braking and a torque variation within a wide band and with excellent sensitivity. The typical application is the tension control of materials unwound on spools, which, in order to ensure a constant tension, have to brake with decreasing torques following the reduction of the diameter. They have the advantage, despite their name, of not spreading powder so to be suitable for applications where contamination with the processed material is not admitted, such as the food industry. The brakes are made of two sectors between which the magnetic powder is dispersed. The magnetic flow produced by the coil, attracts the powder between rotor and stator where it is compacted with a density proportional to the magnetic field: it is developed a braking action, which can be controlled manually through regulators or automatically through a control systems that detect the tension, as loading cells and dandy rolls, or detect the diameter reduction, as feelers or proximities.

Mounting

The mounting suggested is on horizontal axis for a homogeneous distribution of powder on work surfaces.

Ventilation

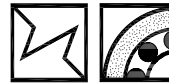
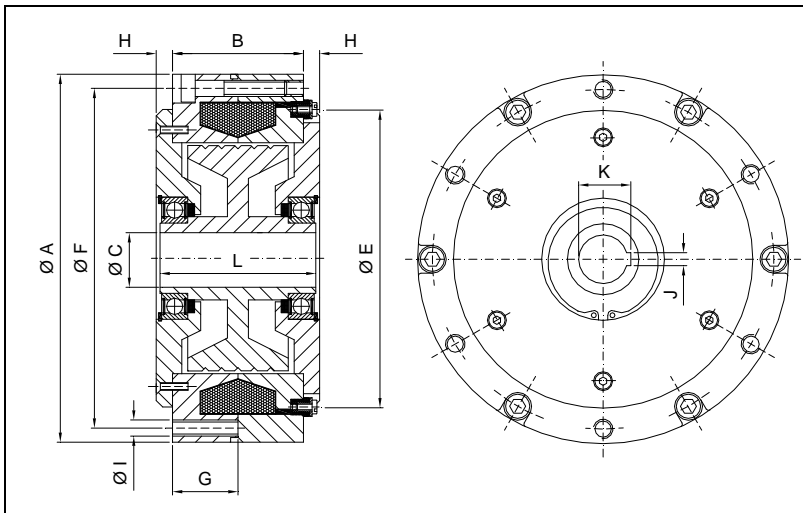
The use in applications with continuous slipping produces a large amount of heat due to the transformation from mechanical energy into thermal energy. The use up to 100°C does not cause problems while for upper temperatures it is advised the use of groups with radiator or fan.

Maintenance

These groups do not require particular maintenance: however the magnetic powders become exhausted losing their magnetic characteristics. Thus, when a torque loss occurs, replace them, in order to restore the initial braking characteristics.

Accessories

Our company has a large range of accessories for brake regulation and feeding in order to satisfy the performance requirements and the automation level of machines.



**POWDER ELECTROMAGNETIC
BRAKES
Model PVB**

PERFORMANCES (24VDC)

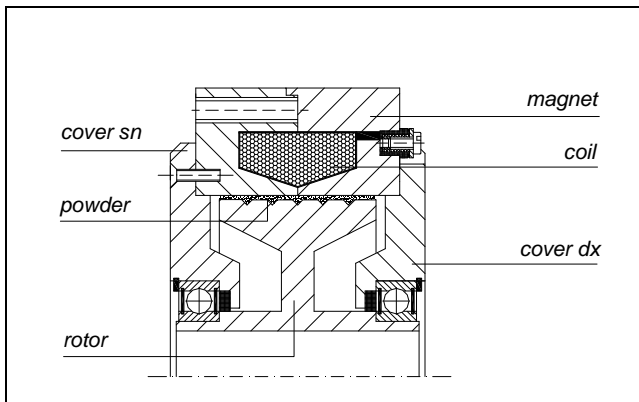
size	torque (Nm)		power (W)	speed (RPM)		dissipation power (W)	weight (Kg)
	M_d	M_r		max	min		
PVB 005	5	0,04	24	2500	40	75	1,3
PVB 012	12	0,06	24	2000	40	80	2,5
PVB 035	35	0,2	24	2000	40	130	4
PVB 065	65	0,4	24	2000	40	170	6,5
PVB 120	120	0,5	24	2000	40	330	16,5
PVB 170	170	0,5	24	2000	40	450	22,5
PVB 250	250	3	24	1800	40	500	32
PVB 500	500	6	24	1500	40	1300	59

M_d = dynamic torque – M_r = residual torque

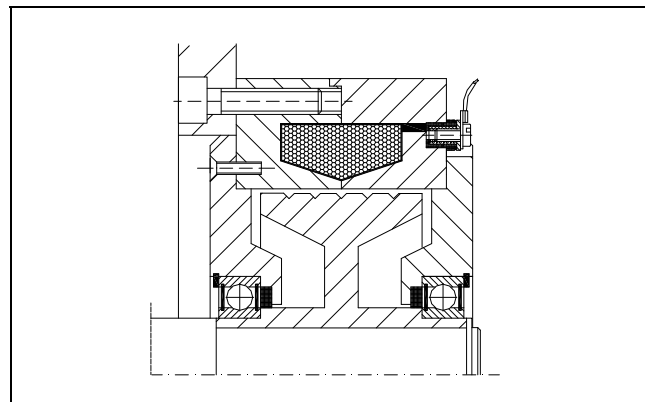
DIMENSIONS (mm)

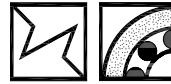
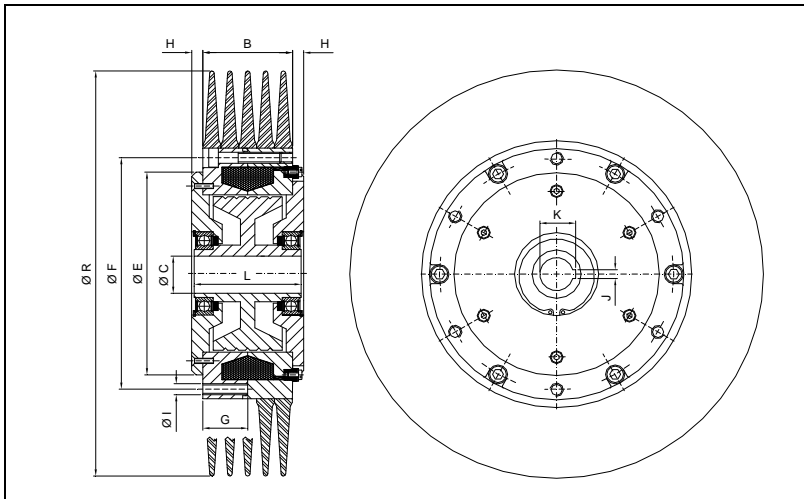
size	A	B	C H7	E h8	F	G	H	n x l	J P9	K + 0,1	L
PVB 005	80	36,5	17	44	78,5	20	7	3xM3	5	19,3	50,5
PVB 012	115	41	15	55	103	20,5	4	3 X M5	4	16,3	48
PVB 035	135,5	48	17	55	122	27	3	3 X M5	5	19,3	51
PVB 065	157	56	20	75	144	33	4	3XM5	6	22,8	64
PVB 120	254	63	28	195	233	36,5	5	4XM6	10	31,3	69
PVB 170	254	79	28	195	233	44,5	5	4XM6	10	31,3	86
PVB 250	286	80	55	150	267	40	10	8XM6	16	59,3	90
PVB 500	360	110	55	150	342	45	5	8XM8	16	59,3	110

PARTS NAME



MOUNTING EXAMPLE





**POWDER ELECTROMAGNETIC
BRAKES WITH RADIATOR
Model PVB - R**

PERFORMANCES (24VDC)

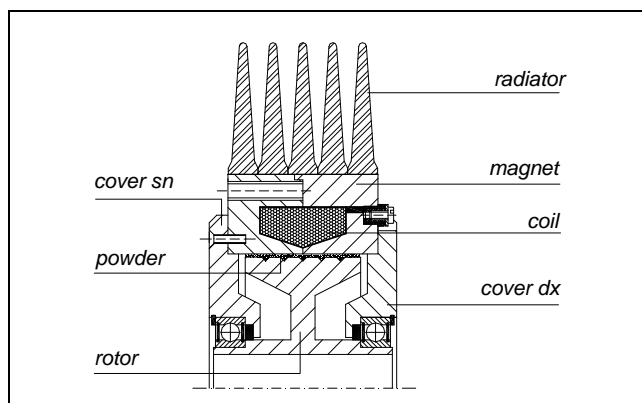
size	torque (Nm)		power (W)	speed (RPM)		dissipation power (W)	weight (Kg)
	M_d	M_r		max	min		
PVB 012 R	12	0,06	24	2000	40	160	4,5
PVB 035 R	35	0,2	24	2000	40	230	4,5
PVB 065 R	65	0,4	24	2000	40	400	9
PVB 120 R	120	0,5	24	2000	40	650	19
PVB 170 R	170	0,5	24	2000	40	850	25,5
PVB 250 R	250	3	24	1800	40	900	38
PVB 500 R	500	6	24	1500	40	2500	62

M_d = dynamic torque – M_r = residual torque

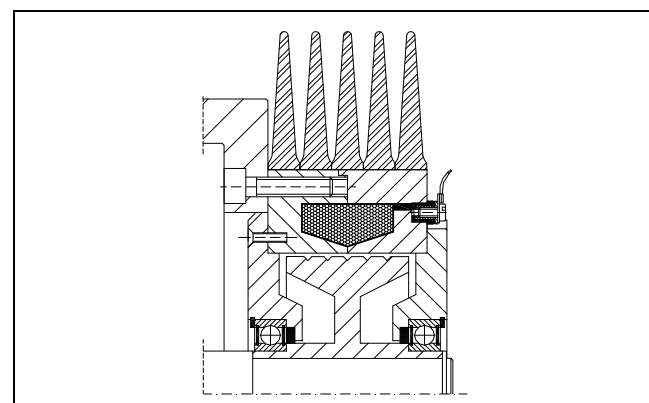
DIMENSIONS (mm)

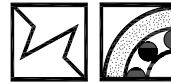
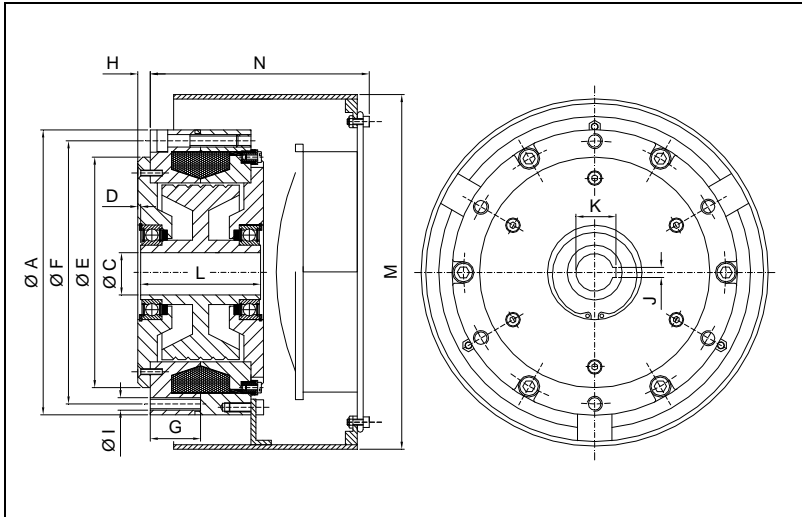
size	B	C H7	E h8	F	G	H	n x l	J P9	K + 0,1	L	R
PVB 012 R	41	15	55	103	20,5	4	3 X M5	4	16,3	48	200
PVB 035 R	48	17	55	122	27	3	3 X M5	5	19,3	51	240
PVB 065 R	56	20	75	144	33	4	3XM5	6	22,8	64	280
PVB 120 R	63	28	195	233	36,5	5	4XM6	10	31,3	69	390
PVB 170 R	79	28	195	233	44,5	5	4XM6	10	31,3	86	390
PVB 250 R	80	55	150	267	40	10	8XM6	16	59,3	90	406
PVB 500 R	110	55	150	342	45	5	8XM8	16	59,3	110	500

PARTS NAME



MOUNTING EXAMPLE





**POWDER ELECTROMAGNETIC
BRAKES WITH FAN
Model PVB - V**

PERFORMANCES (24VDC)

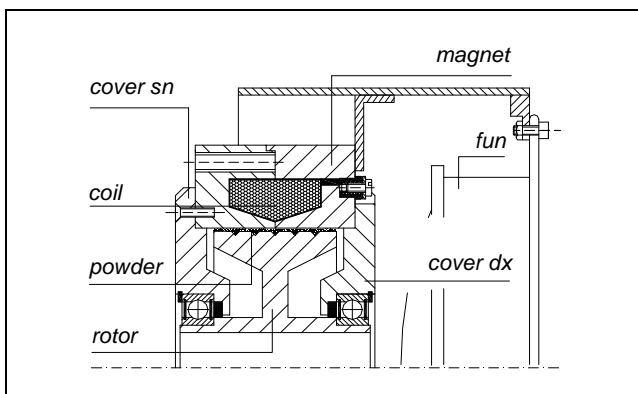
size	torque (Nm)		power (W)	speed (RPM)		dissipation power (W)	weight (Kg)
	M_d	M_r		max	min		
PVB 012 V	12	0,06	24	2000	40	350	3,7
PVB 035 V	35	0,2	24	2000	40	500	4,5
PVB 065 V	65	0,4	24	2000	40	800	8,9
PVB 120 V	120	0,5	24	2000	40	1400	17
PVB 170 V	170	0,5	24	2000	40	1500	25
PVB 250 V	250	3	24	1800	40	2000	36
PVB 500 V	500	6	24	1500	40	4000	62

M_d = dynamic torque – M_r = residual torque

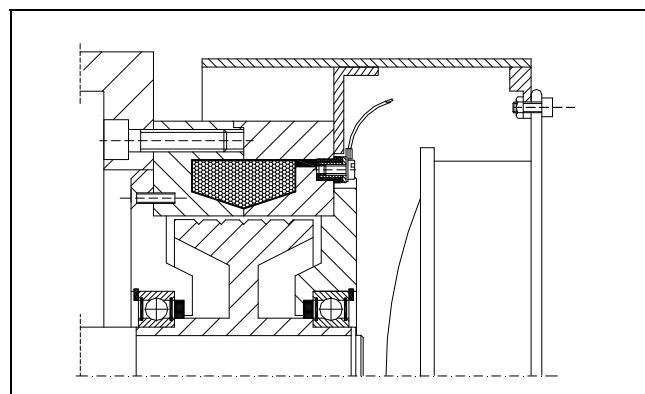
DIMENSIONS (mm)

size	A	C H7	D	E h8	F	G	H	n x l	J P9	K + 0,1	L	M	N
PVB 012 V	115	15	-	55	103	20,5	4	3 X M5	4	16,3	48	182	135
PVB 035 V	135,5	17	-	55	122	27	3	3 X M5	5	19,3	51	182	133
PVB 065 V	157	20	-	75	144	33	4	3XM5	6	22,8	64	185	135
PVB 120 V	254	28	2	195	233	36,5	5	4XM6	10	31,3	69	284	219
PVB 170 V	254	28	1,5	195	233	44,5	5	4XM6	10	31,3	86	284	235
PVB 250 V	286	55	5	150	267	40	10	8XM6	16	59,3	90	315	245
PVB 500 V	360	55	5	150	342	45	5	8XM8	16	59,3	110	390	271

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