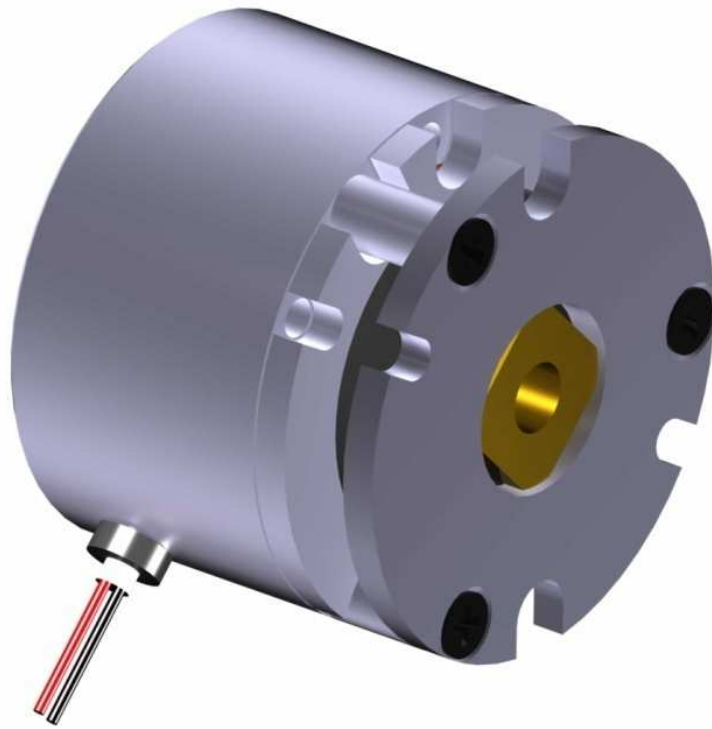


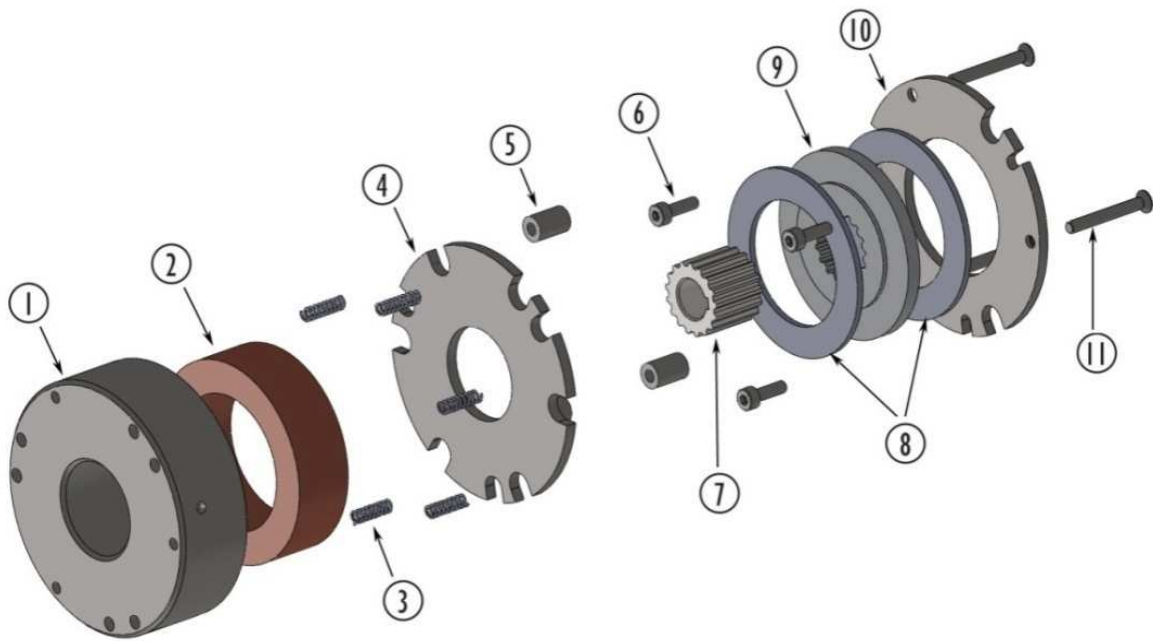


Electromagnetic Release Spring-Applied Dual-Surface Spring applied Brakes



Type ERG

Exploded 3D view ERG



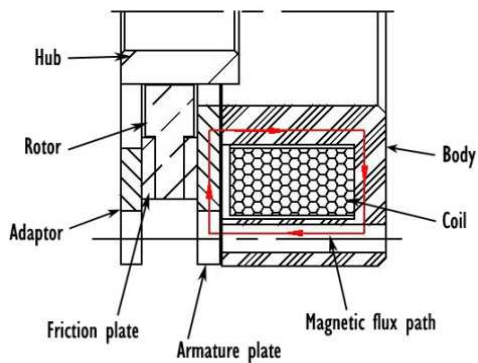
- Legend**
- | | | | |
|---|--------|---|----------------|
| ① | Body | ② | Coil |
| ③ | Spring | ④ | Armature plate |
| ⑤ | Spacer | ⑥ | Bolt |
| ⑦ | Hub | ⑧ | Friction plate |
| ⑨ | Rotor | ⑩ | Adaptor |
| ⑪ | Bolt | | |

Type ERG

OPERATING PRINCIPLE

ERG series Spring-operated brakes are brakes with two friction surfaces. When no current is applied, the brake force is generated by means of several coiled pressure springs. When current is applied, the brakes are released electromagnetically.

While braking, the rotor (9), which is axially movable on the hub (7), is pressed against the friction surface by means of the compression springs (3) acting on the armature plate (4). The asbestos-free friction linings ensure a high brake torque with low wear and long working life. The brake torque is transmitted between hub (7) and rotor (9) through mating splines.



Magnetic Flux Path in ERG Type Brake

Rotor Assembly consist of: Rotor, Friction plate

Stator Assembly consist of: Body, Coil

In brake-applied condition, there is an air gap 's' between body (1) and armature plate (4) as a result of the springs (3) acting on the armature plate (4). To release the brake, the coil (2) is energized

with externally supplied DC voltage. The magnetic force generated causes the armature plate (4) to be attracted to the body (1), pulling it towards the Stator Assembly against the spring force. As a result, the rotor (9) is released and can rotate freely with the hub (7).

Applications

- Vehicles for the disabled such as wheel chairs
- Automation equipment
- Electric motors
- Sports & recreation equipment & machinery
- Rotary indexing tables
- Material handling trucks such as forklifts, warehouse trucks, etc.
- Wood processing machines
- Hoists
- Conveyor technology

KEY PRODUCT FEATURES

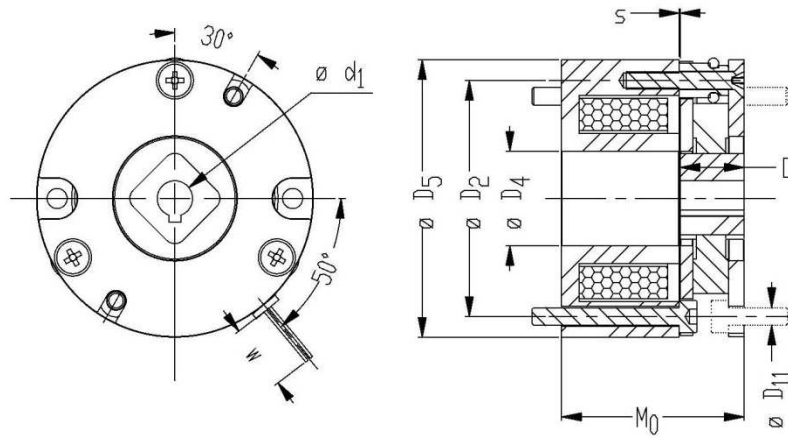
Braking torque 0.12-400 N-m (13 sizes - 0.01/ 0.02/ 0.05/ 0.1/ 0.2/ 0.5/ 1/ 2/ 3.5/ 6/ 10/ 15/ 20)

- Ready to assemble design (fully assembled with rotor and flange with rotor centered for simplified mounting by customer)
- Thermal class H (180°C)
- Simplified assembly by means of integrated fixing screws
- No fixed bearing required for the brake installation
- Compact design with flange for small overall dimensional packaging
- Standard voltage - DC 24 V (other voltages on request)
- Sizes 0.01 to 0.2 can be mounted on both sides (front or back)
- Manual Release optionally available

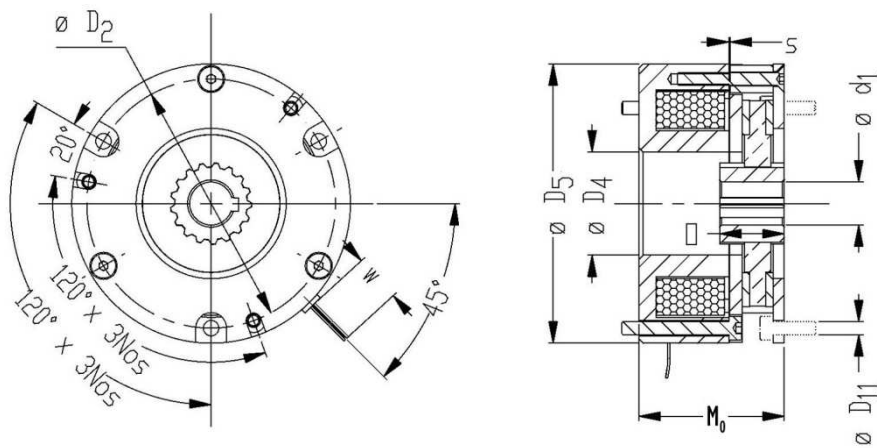
TYPE ERG DRAWINGS

Standard Design

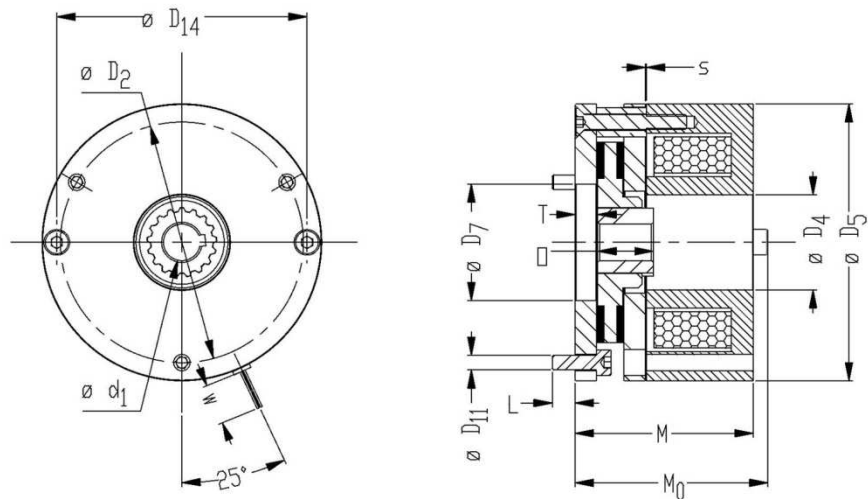
Sizes 0.01 & 0.02



Sizes 0.05, 0.1 & 0.2



Sizes 0.5, 1, 2, 3.5, 6, 10, 15 & 20



TYPE ERG TECHNICAL DATA

Size	0.01	0.02	0.05	0.1	0.2	0.5	1	2	3.5	6	10	15	20	
Torque (N-m)	Static	0.12	0.25	0.5	1	2	4	8	16	32	60	80	150	260
	Static _{max}	0.24	0.5	1.0	2.0	4.0	6	12	23	46	95	125		
∅ D ₂	32	40	48	58	66	72	90	112	132	145	170			
∅ D ₄	13.5	16	19	24	28	31	41.5	44	52	60	70			
∅ D ₅	37	47	56	65	75	84	102	130	150	165	190			
∅ D ₇	-	-	-	-	-	31	42	44	52	60	70			
∅ D ₁₁	2xM2.5	2xM3	3xM3	3xM3	3xM4	3xM4	3xM5	3xM6	3xM6	3xM8	3xM8			
∅ D ₁₄	-	-	-	-	-	77	93.5	117	136.3	150	174.5			
L ¹⁾	-	-	-	-	-	6	9	12	12	14	14	On Request	On Request	
M	-	-	-	-	-	41.3	49.8	56.4	62.4	77.3	83.5			
M ₀	31.3	31	31.8	33.8	35.9	45.3	54.8	61.4	67.4	83.3	89.5			
O	9	12	15	15	15	18	20	20	25	30	30			
T	-	-	-	-	-	7.5	8.5	10	10	13	13.3			
w	400	400	400	400	400	400	400	400	400	400	400			
∅ d ₁ H7 max.	6	7	9	10	12	15	20	20	25	30	38			
s ²⁾	0.1	0.15	0.15	0.15	0.15	0.2	0.2	0.2	0.3	0.3	0.3			
Power (W)	5	6.6	9	11.5	13	20	25	32	40	53	55			

NOTE:

- Power consumption values are specified at 20°C in watt, deviation up to $\pm 10\%$ is possible depending on the selected supply voltage.
- Standard voltages for sizes 0.01-0.2: 24 V, 205 V, (103 V); sizes 0.5-3.5: 24 V, 205 V; Sizes 6 & 10: 24 V, 42 V, 205 V
- Keyways are to DIN 6885/1-P9
- ¹⁾ Please contact our design team if special length is required depending on the counter mounting surface.
- ²⁾ Nominal air gap. Tolerance for size 0.01: $+0.1/-0.05$ & for other sizes: ± 0.1 . The actual value is determined by the sum tolerances of the individual components.
- W: standard cable length, other options available on request
- Details of sizes 15 & 20 available on request.
- All dimensions in mm

TYPE ERG SELECTION DATA

Size	$M_{1 \max.}^{1)}$ [Nm]	$M_1^{1)}$ [Nm]	n_{\max} [rpm]	Operating times ²⁾ [ms]			
				t_1	t_2	t_{11}	t_{12}
0.01	0.24	0.12	5000	12	19	2	10
0.02	0.5	0.25	5000	9	19	3	6
0.05	1.0	0.5	5000	14	20	6	8
0.1	2.0	1	5000	20	25	10	10
0.2	4.0	2	5000	29	39	11	18
0.5	6	4	12000	53	41	32	21
1	12	8	10000	105	46	66	39
2	23	16	8000	105	110	39	66
3.5	46	32	7000	108	149	50	58
6	95	60	6000	118	264	55	63
10	125	80	5000	133	303	78	55

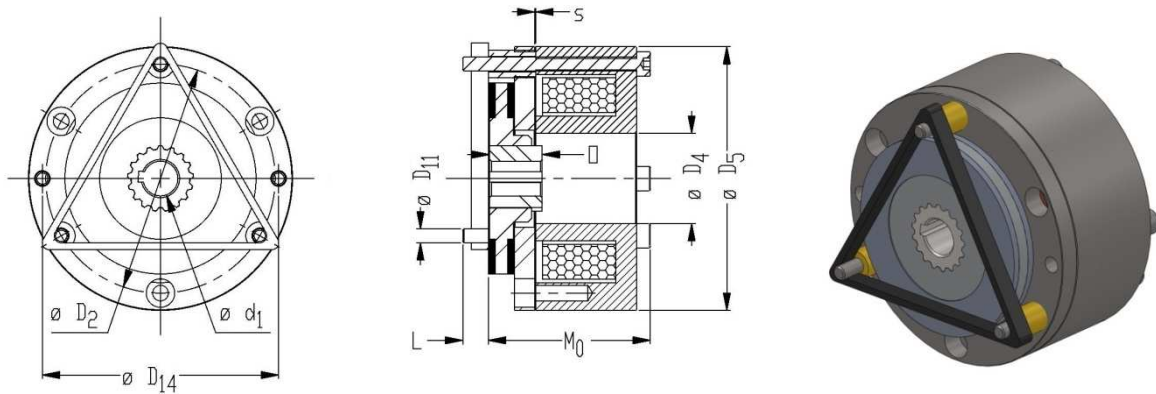
Note:

- ¹⁾ In relation to relative speed $n = 100 \text{ min}^{-1}$
- The braking torque depends on the speed, refer to the operating instructions.
- ²⁾ with standard rated torque and rated air gap
- Standard voltages: 24 V, 205 V, Optional voltages available on request

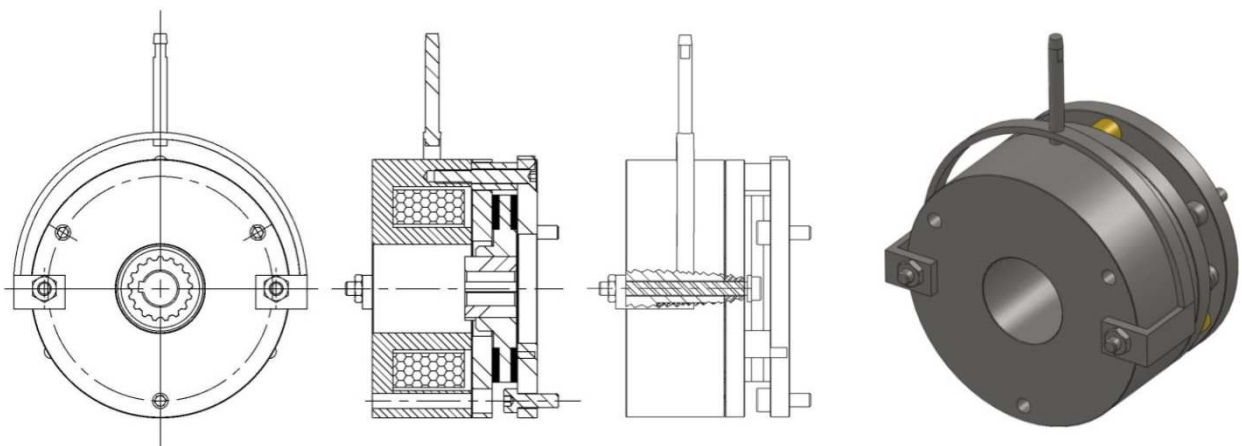
Identification	Description
M_1 [Nm]	Static torque
t_1 [s]	Engagement time, $t_1 = t_{11} + t_{12}$
t_2 [s]	Disengagement time
t_{11} [s]	Response delay time
t_{12} [s]	Rise time

SPECIAL DESIGN Versions of ERG series Brakes

BASIC DESIGN [Available for sizes 0.5 to 20] is the Stator assembly & Armature additionally with the Rotor Assembly which is assembled with a rubber-band device for locking during transport. Apart from the 3 mounting bolts, 2 additional Allen-bolts provided are either used for locking during transport or as manual release and hence should not be used for the normal braking operation.

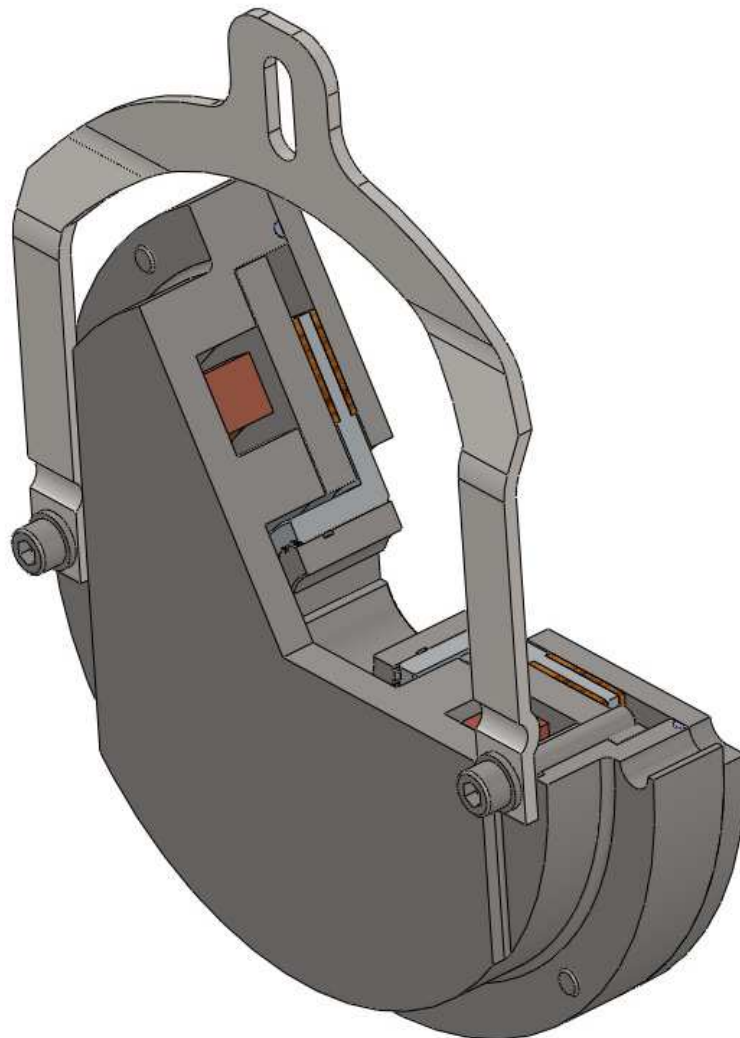


DESIGN WITH MANUAL RELEASE uses additional to the standard or basic brake version, a hand release for manual release of the brake. It can be available factory fitted on request.



PAN-CAKE BRAKE available under special customized design configurations:

Custom designed brakes meet specific customer packaging needs in terms of high performance over narrow space envelope. Specifically designed and developed to meet the needs of parking and emergency braking in modern industrial material handling trucks, these brakes use a high co-efficient of friction material and powerful coil to optimize torque in a very low profile package. The coil is further linked with a PWM (Pulse Width Modulation) power supply to significantly reduce power consumption and maintenance.





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India's foremost manufacturer of a wide range of clutches & brakes

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