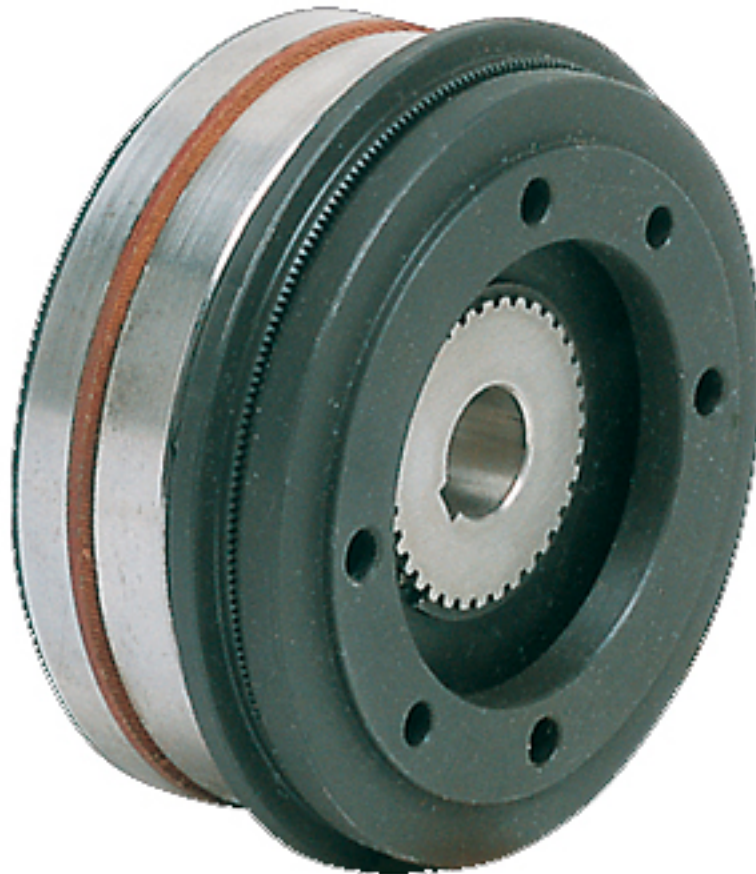




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# Frenos Electromagnéticos Dentados



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## *ELECTROMAGNETIC TOOTH-TYPE COUPLINGS*

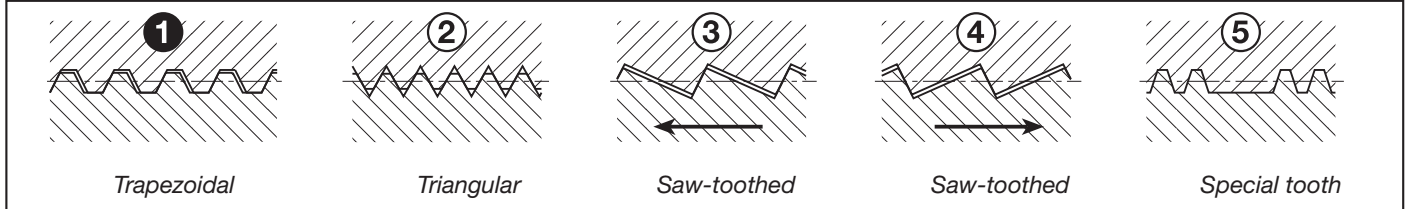
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### ELECTROMAGNETIC TOOTH-TYPE COUPLINGS

These units have been designed to be compact and able to ensure high torque. They have the advantage of operating in either dry or lubricated conditions, and are entirely free of any dragging in neutral position.

The teeth can be made in different types:



#### Trapezoidal teeth with lateral play ① (standard)

This type permits engagement when the velocities are synchronous, or at a very low R.P.M.

#### Triangular teeth without play ②

This type has no lateral play and permits only engagement when there is no movement or at synchronous speed.

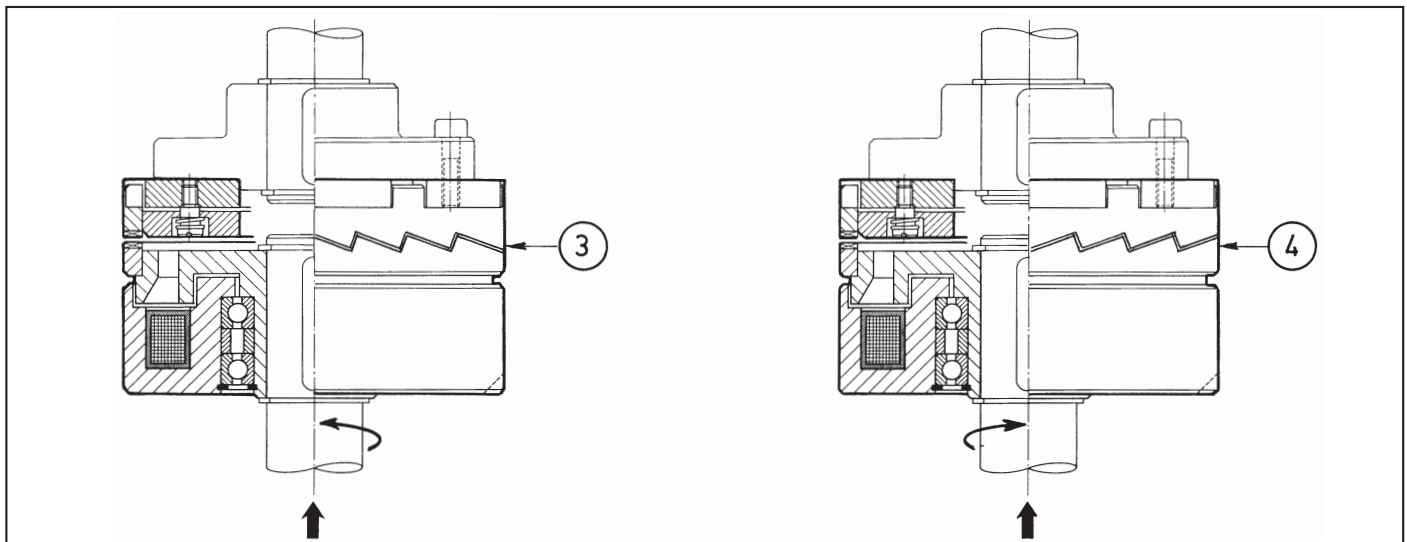
**On request**, the following features are available: dragging in only one direction (clockwise or counterclockwise), saw-toothed design ③ ④; one or more fixed points of reference, special tooth design ⑤.

These couplings are available in two basic versions: with or without collector ring.

The collector-ring version is a simpler, less-expensive design. It has an electromagnetic cup, on the top of which is mounted the collector ring, on one side, and toothed ring on the other side.

The version without the collector ring, since there are no brushes to cause sparking, provides the advantage of greater operational safety and precision.

There are two armature designs. One has a milled transmission flange on its outer diameter, while the other has toothed flange.



**ELECTROMAGNETIC CONTROL**

The couplings conform to the **VDE 0580 NORMS**.

**POWER SUPPLY**

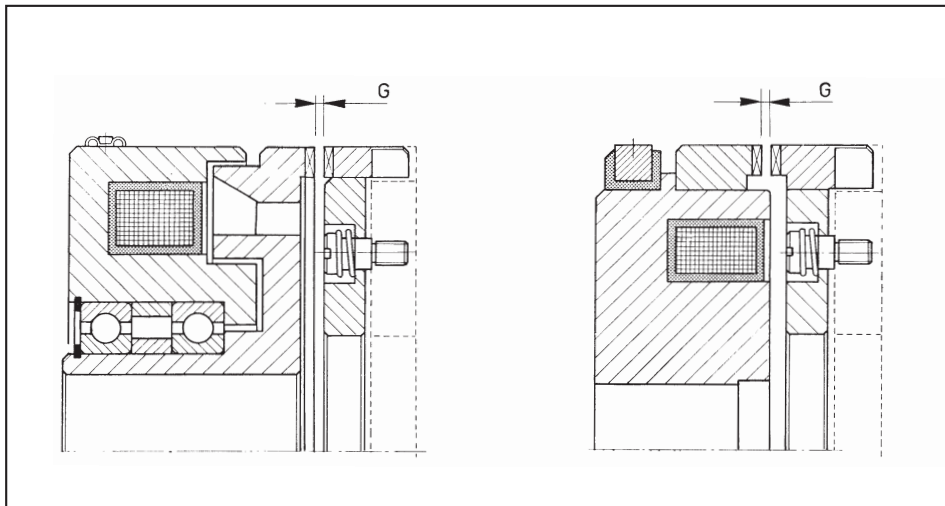
The couplings operate on 24 V DC -0 +15%.  
On request, different voltages are available.

**MOUNTING AND AIR GAP ADJUSTMENT**

For mounting, please follow the instructions and examples given.

The electromagnet on the couplings without the collector ring has to be anchored counter-rotation, using one of the three 120° milled spots on the electromagnet. In order to avoid cutting down the service life of the radial support bearings, care must be taken to avoid any rigidity or forcing when making the coupling.

- During the assembly phase, it is very important to check to see that the gap between the teeth (**G**) is as specified in the special table.



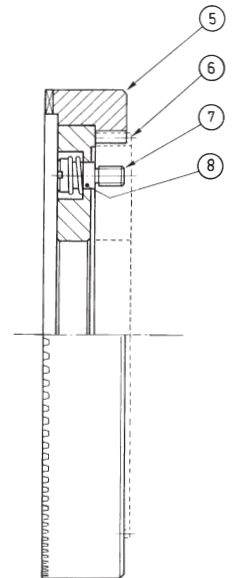
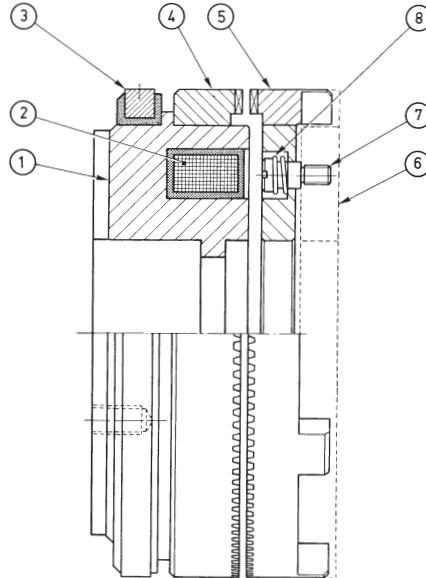
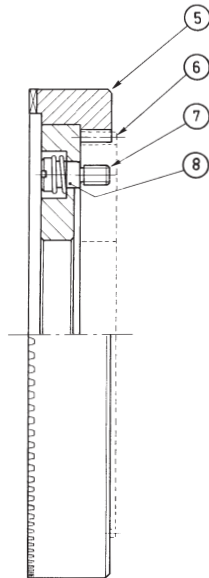
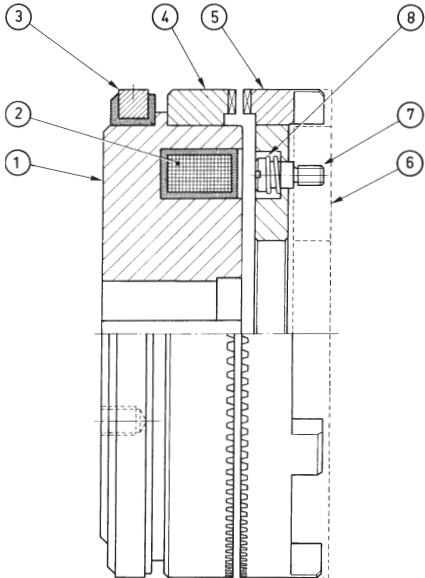
□□□	Traferro min.	G	Air gap max.
60	0,20		0,30
70	0,20		0,30
82	0,20		0,40
95	0,25		0,45
114	0,30		0,50
134	0,35		0,55
140	0,35		0,55
166	0,40		0,60
195	0,40		0,60
210	0,40		0,70
240	0,40		0,70
260	0,45		0,75
295	0,50		0,80
325	0,55		0,85

## EC/Z

## EC/ZD

## ECF/Z

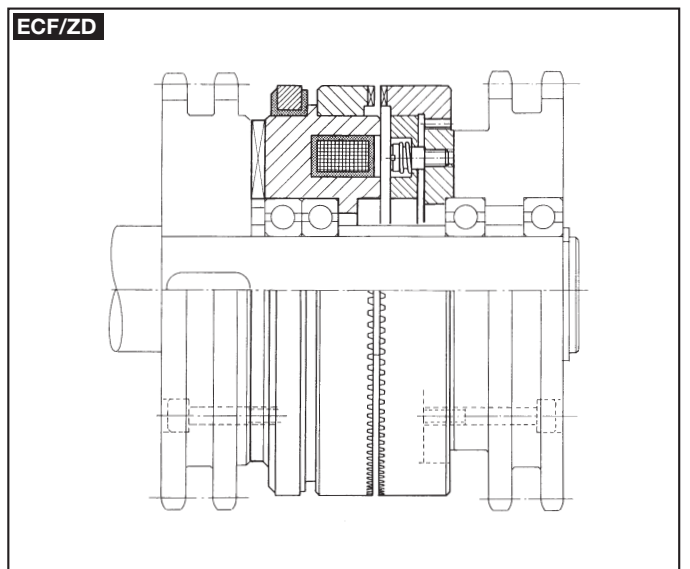
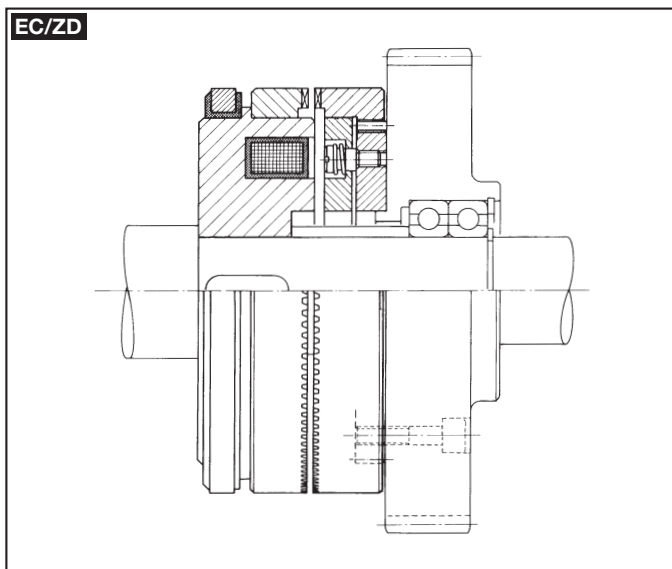
## ECF/ZD



### PARTS LIST

1. MAGNET CUP
2. COIL
3. COLLECTOR RING
4. CLUTCH TOOTHED RING
5. ARMATURE TOOTHED RING
6. COUPLING FLANGE (on demand)
7. SPRING GUIDE PIN
8. SPRING

### EXAMPLES OF MOUNTING





**ELECTROMAGNETIC TOOTH-TYPE COUPLINGS**

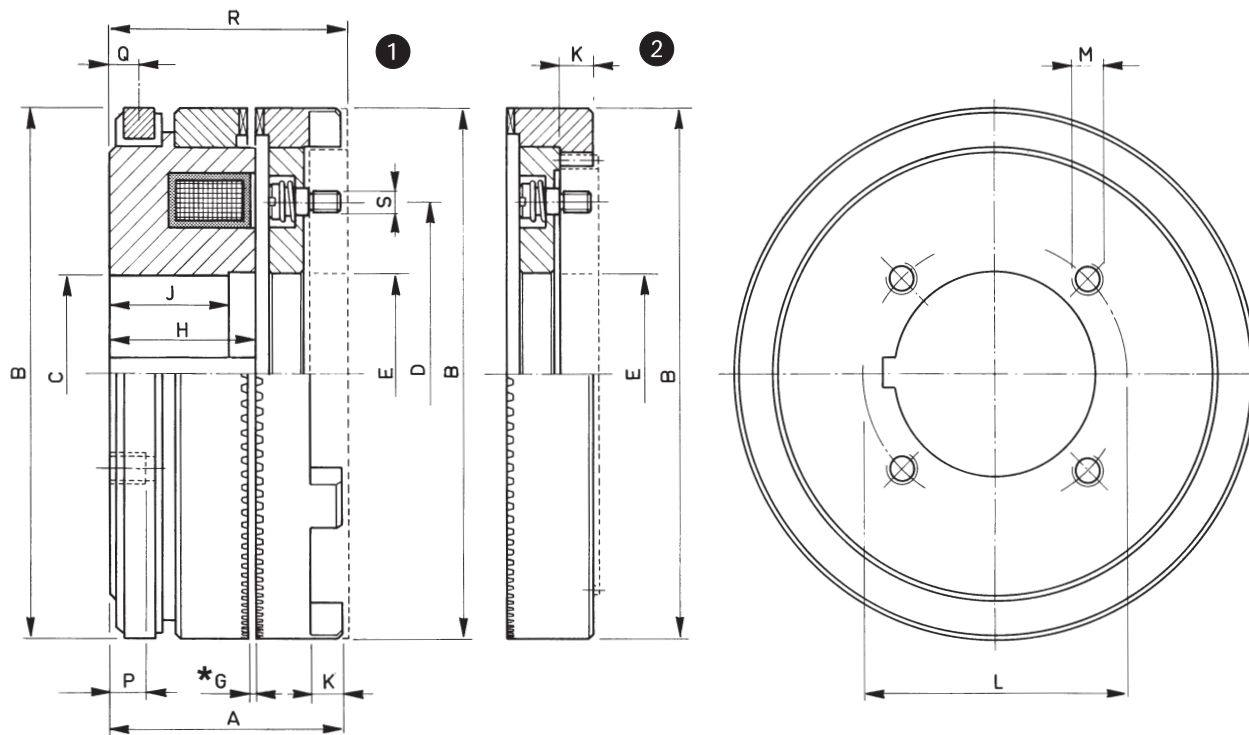
EC .../Z  
EC .../ZD

07

MODEL  
CODE

1 EC □□□/Z  
07.01.□□□.01

2 EC □□□/ZD  
07.03.□□□.01



\* G = Air gap adjustment

□□□	Torque Ms (Nm) max	Build up time ms	Decay time ms	20° WATT	120° WATT	Weight kg	Armature's flange	
							1	2
060	20	16	30	7,5	5,5	0,3	FF 060/Z	FD 060/ZD
070	40	22	40	12	8,5	0,45	FF 070/Z	FD 070/ZD
082	100	22	40	24	17	0,80	FF 082/Z	FD 082/ZD
095	200	26	45	31	22,5	1,15	FF 095/Z	FD 095/ZD
114	350	32	68	40	28	1,9	FF 114/Z	FD 114/ZD
134	600	42	90	51	37	3	FF 134/Z	FD 134/ZD
140	600	44	90	53	38	3,2	FF 140/Z	FD 140/ZD
166	1200	68	100	76	55	5,6	FF 166/Z	FD 166/ZD
167	1200	68	100	63	45	4,9	FF 166/Z	FD 166/ZD
195	2200	75	160	83	60	9	FF 195/Z	FD 195/ZD
210	3000	80	250	98	70	11	FF 210/Z	FD 210/ZD
240	4000	80	270	102	74	16,5	FF 240/Z	FD 240/ZD
260	6000	90	290	128	93	19	FF 260/Z	FD 260/ZD

□□□	A	B	C		D	E	H	J	K	L	M	P	Q	R	S
			min.	max.							n° x Ø	max.			n° x Ø
060	25	60	10	22	40	23	15,5	15,5	3,5	28	3 x M 3	8	3,5	30,5	3 x M3
070	27,5	70	15	25	45	26	17,5	17,5	4	32	3 x M 4	8	3,5	32,5	3 x M3
082	37	82	15	34	55	35	23	23	6	41	3 x M 4	10	5,5	40	3 x M4
095	38	95	15	36	65	45	23	20	6	50	4 x M 6	10	5,5	41	3 x M4
114	43	114	20	46	80	53	26	23	7	60	4 x M 6	12	6	46	3 x M4
134	50	134	20	52	100	63	29	26	8	72	4 x M 8	15	7	53	3 x M5
140	51	140	20	62	100	70	30	26	8	80	4 x M 6	15	7	54	3 x M5
166	60	166	25	72	120	80	35	30	9,5	92	5 x M10	15	7	63,5	3 x M6
167	57	166	25	82	120	89	32	27	9,5	100	5 x M 6	15	7	60,5	3 x M6
195	68	195	30	82	150	89	38,5	33,5	12	110	5 x M10	18	7	71	3 x M6
210	73	210	35	92	150	100	38	35	14	120	5 x M10	20	8,5	75	3 x M6
240	81	240	40	102	150	112	42	37	14,5	140	5 x M12	20	8,5	83,5	3 x M6
260	84	258	50	122	170	133	46	42	16,5	150	5 x M12	20	8,5	86,5	3 x M6

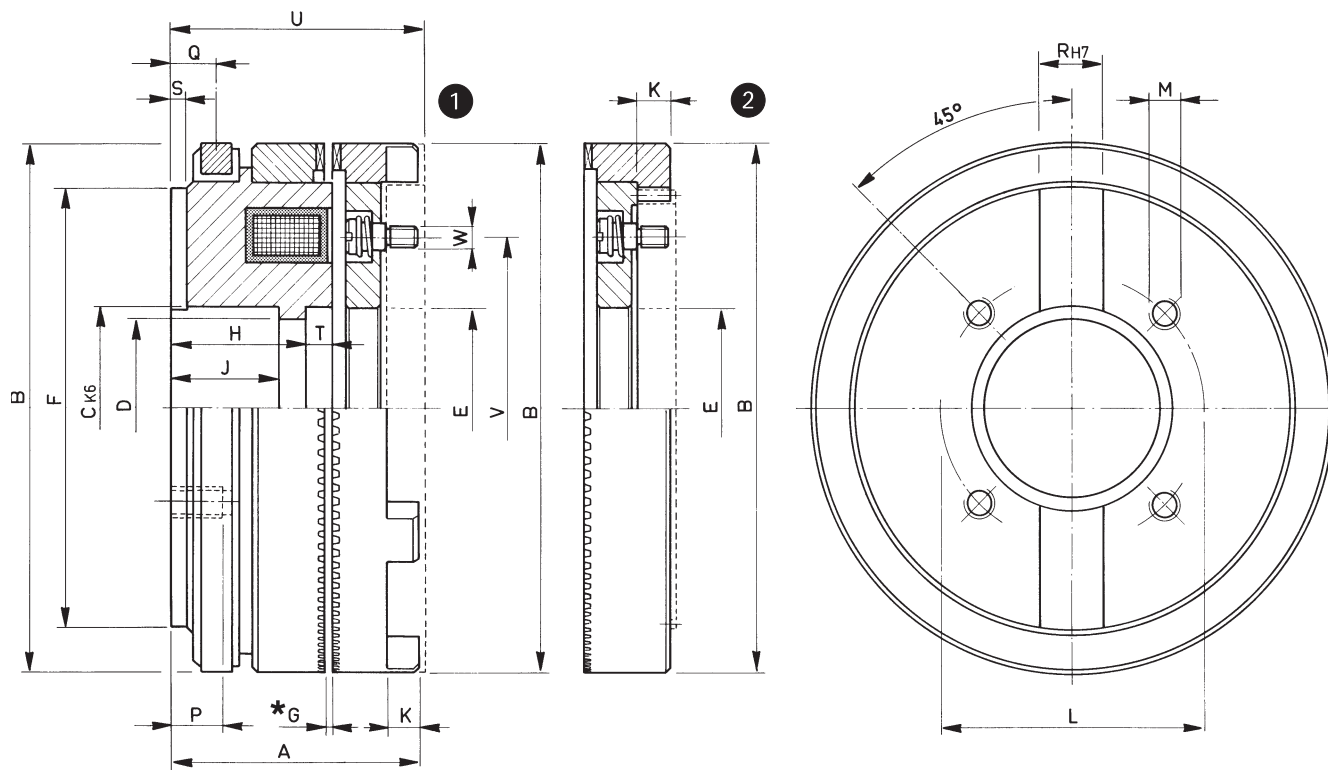


ELECTROMAGNETIC TOOTH-TYPE COUPLINGS

ECF .../Z  
ECF .../ZD

07

<b>MODEL CODE</b>	<b>1</b> ECF □□□/Z 07.02.□□□.01	<b>2</b> ECF □□□/ZD 07.04.□□□.01
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\* G = Air gap adjustment

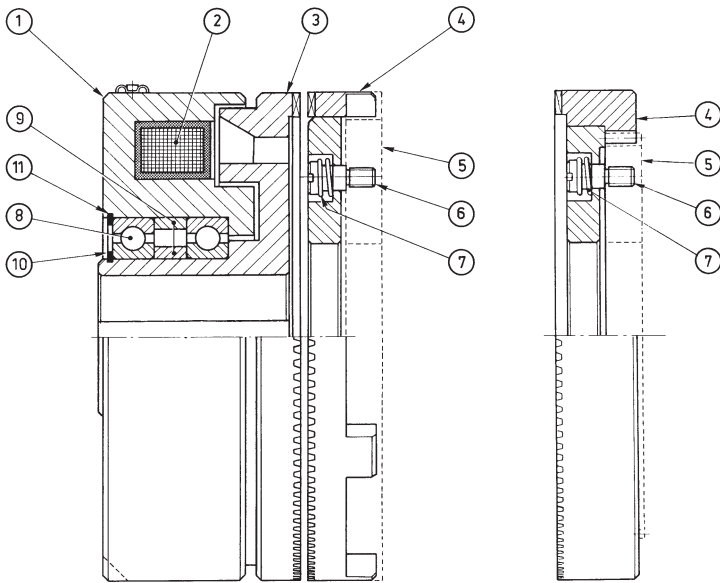
□□□	Torque Ms (Nm) max	Build up time ms	Decay time ms	20°	WATT 120°	Weight kg	Armature's flange	
							1	2
082	100	22	40	24	17	0,9	FF 082/Z	FD 082/ZD
095	200	26	45	31	22,5	1,2	FF 095/Z	FD 095/ZD
114	350	32	68	40	28	2	FF 114/Z	FD 114/ZD
140	600	42	90	53	38	3,3	FF 140/Z	FD 140/ZD
166	1200	68	100	76	55	5,1	FF 166/Z	FD 166/ZD
167	1200	68	100	63	45	5	FF 166/Z	FD 166/ZD
194	2000	75	160	83	60	7,8	FF 195/Z	FD 195/ZD
195	2200	75	160	83	60	7,8	FF 195/Z	FD 195/ZD
210	3000	80	250	98	70	11	FF 210/Z	FD 210/ZD
240	4000	80	270	102	74	17	FF 240/Z	FD 240/ZD
260	6000	90	290	128	93	19,5	FF 260/Z	FD 260/ZD

□□□	A	B	C	D	E	F	H	J	K	L	M n° x Ø	P max.	Q	R	S	T	U	V	W n° x Ø
082	39	82	35	31	35	67	22,5	20	6	50	4 x M5	5	7,5	12	2,5	2,5	42	55	3 x M4
095	40	95	42	37	45	78	22	20	6	56	4 x M6	5	7,5	12	2,5	3	43	65	3 x M4
114	47	114	55	45	53	95	25	22	7	75	4 x M8	6	11	14	5	5	50	80	3 x M4
140	54	140	68	60	70	120	28	22	8	90	4 x M8	8	11	16	5	5	57	100	3 x M5
166	60	166	75	65	80	142	30	25	9,5	100	4 x M10	9	13	20	6	5	63,5	120	3 x M6
167	63	166	90	80	89	142	33	28	9,5	116	4 x M10	9	13	20	6	5	66,5	120	3 x M6
194	68,5	195	90	80	89	170	34	28	12	116	4 x M10	14	13	20	6	5	71,5	150	3 x M6
195	67	195	110	100	110	170	34	28	12	125	4 x M10	14	13	20	6	3,5	70	150	3 x M6
210	77	210	100	90	100	184	39	31	14	130	4 x M12	16	14,5	20	6	3	79	150	3 x M6
240	84	240	110	100	112	216	40	32	14,5	145	4 x M12	18	14,5	25	6	5	86,5	150	3 x M6
260	90	258	140	130	133	234	41	33	16,5	200	4 x M12	13	14,5	25	6	11	92,5	170	3 x M6



## ESB/Z

## ESB/ZD

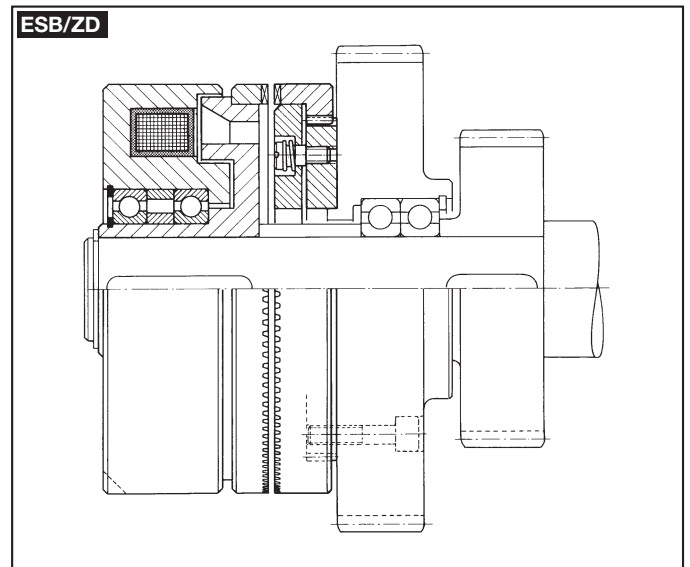
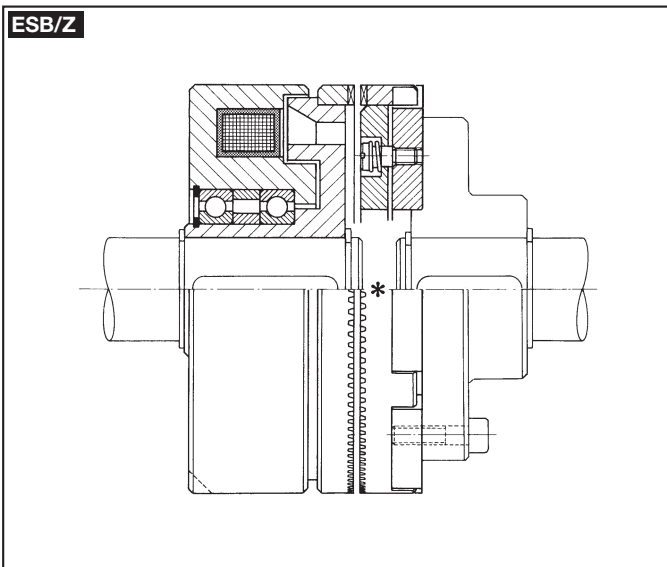


### PARTS LIST

1. MAGNET CUP
2. COIL
3. ROTOR TOOTHED
4. ARMATURE TOOTHED RING
5. COUPLING FLANGE (on demand)
6. SPRING GUIDE PIN
7. SPRING
8. BEARINGS
9. SPACER RINGS
10. OUTER SAFETY RING
11. INNER SAFETY RING

There must never be any disalignment between the two parts.

### EXAMPLES OF MOUNTING





**ELECTROMAGNETIC TOOTH-TYPE COUPLINGS**

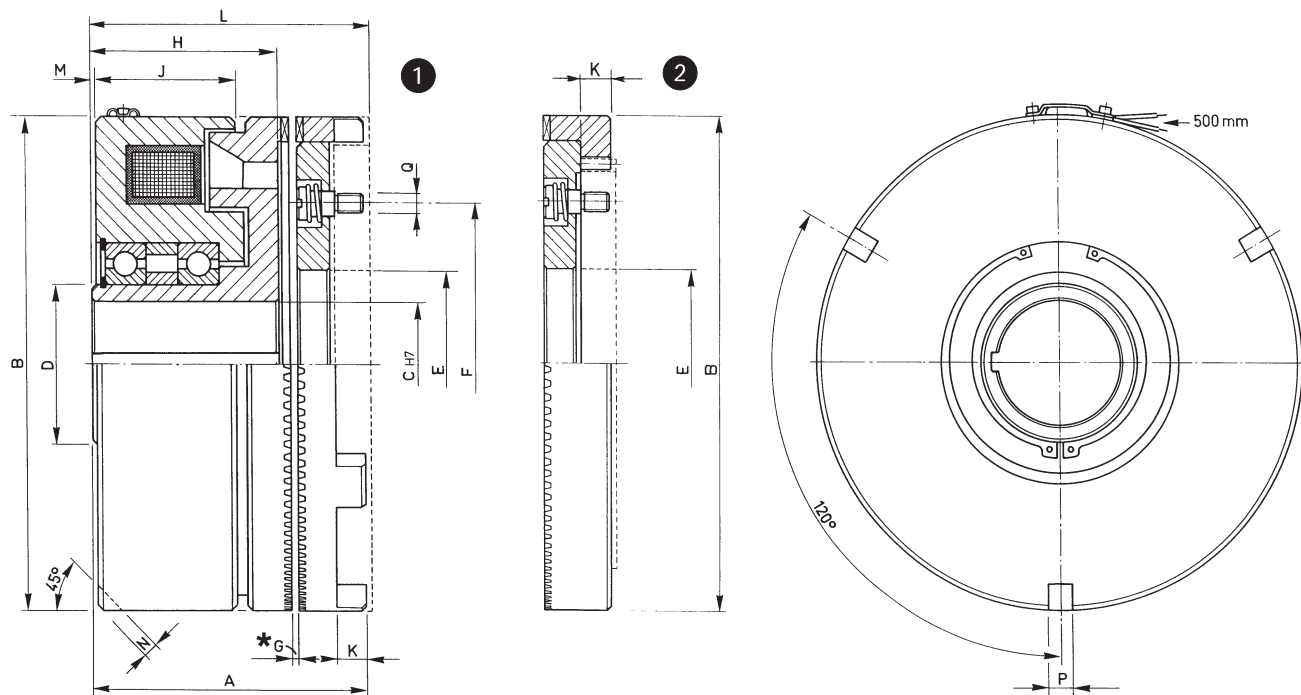
ESB .../Z  
ESB .../ZD

07

**MODEL CODE**

**1** ESB □□□/Z  
07.05.□□□.01

**2** ESB □□□/ZD  
07.06.□□□.01



\* G = Air gap adjustment

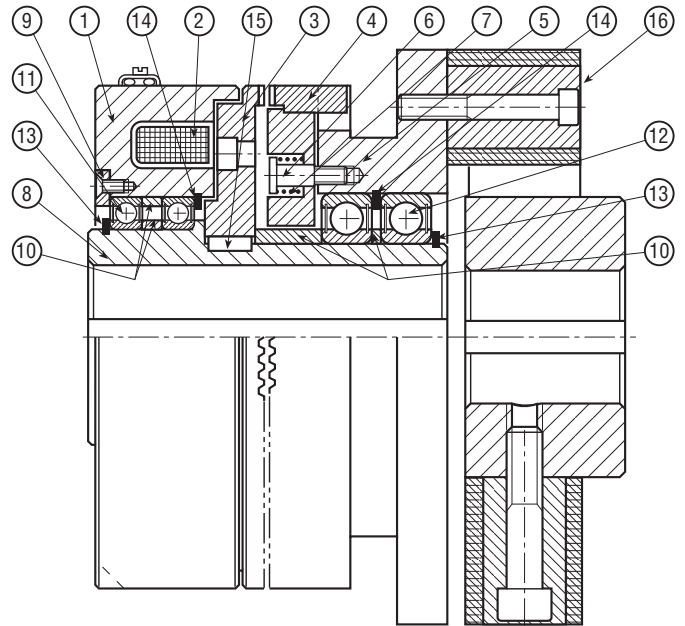
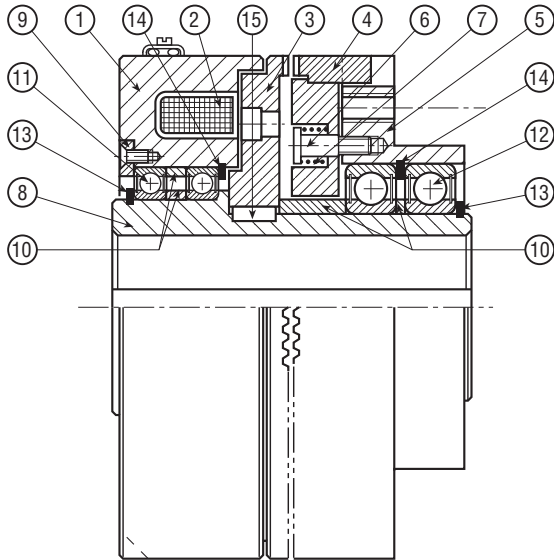
□□□	Torque Ms (Nm) max	R.P.M. max	Build up time ms	Decay time ms	20°	WATT 120°	Weight kg	Armature's flange	
								1	2
060	20	8500	20	30	14	10	0,45	FF 060/Z	FD 060/ZD
070	40	7000	22	35	23	16	0,80	FF 070/Z	FD 070/ZD
082	100	4000	24	40	43	30	1,2	FF 082/ZB	FD 082/ZDB
095	200	3800	26	50	54	40	1,8	FF 095/ZB	FD 095/ZDB
114	300	3600	32	70	65	47	3	FF 114/ZB	FD 114/ZDB
134	600	3400	42	100	84	60	5,2	FF 134/ZB	FD 134/ZDB
166	1400	3200	68	180	114	83	9,3	FF 166/ZB	FD 166/ZDB
195	2000	3000	76	300	140	100	15	FF 195/Z	FD 195/ZDB
210	3000	2800	80	400	170	122	19	FF 210/Z	FD 210/ZD
240	4000	2500	115	680	210	150	28	FF 240/Z	FD 240/ZD
260	6000	2000	130	950	240	172	35	FF 260/Z	FD 260/ZD
295	9000	1700	143	1100	280	205	40	—	FD 295/ZD
325	12000	1500	160	1250	340	245	45	—	FD 325/ZD

□□□	A	B	C		D	E	F	H	J	K	L	M	N	P	Q
			min.	max.											n° x Ø
060	38	60	—	14	20	23	40	28	23,5	3,5	43,5	1	2,5	5	3 x M3
070	42,5	70	—	22	30	26	45	32	26,5	4	47,5	1	2,5	5	3 x M3
082	54	82	10	25	35	38	52	37	31,5	6	57	1	3	6	3 x M4
095	59	95	15	35	45	46	62	41	33	6	62	1	4	6	3 x M4
114	66	114	20	38	50	56	70	44	38	7	69	1	5	8	3 x M4
134	80	134	25	46	60	62	85	54	44,5	8	83	1	5	8	3 x M5
166	90	166	30	60	75	80	108	61	51,5	9,5	93,5	1	6	8	3 x M6
195	96	195	35	65	80	100	150	65	52,5	12	99	2	8	12	3 x M6
210	111	210	40	68	85	105	150	74	58	14	113	2	8	12	3 x M6
240	119	240	45	78	100	115	150	77	61	14,5	121,5	1,5	10	12	3 x M6
260	126	258	50	85	105	130	170	85	67	16,5	128,5	2	10	12	3 x M6
295	140	295	60	100	130	122	170	100	74	13	146	7	12	14	6 x M8
325	172	325	70	120	150	150	230	120	94	22	175	7	12	14	6 x M8



# ESBR/Z

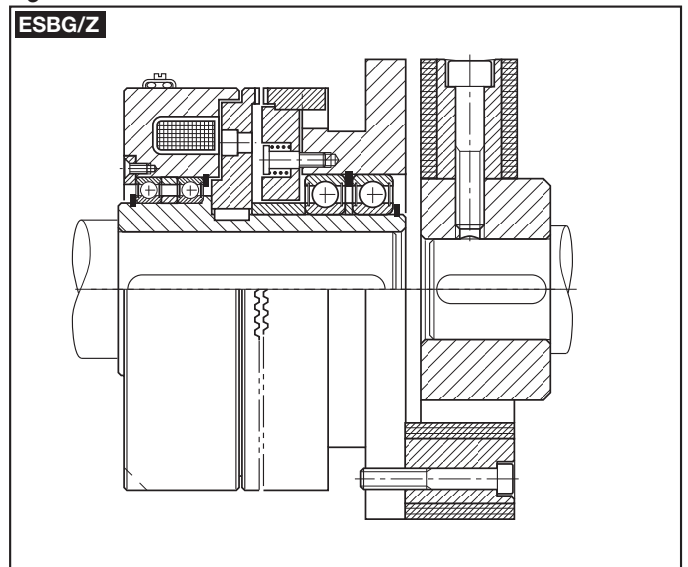
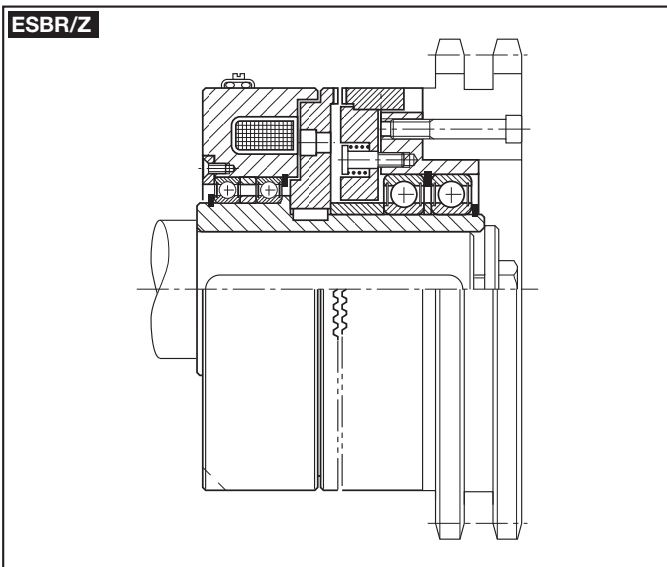
# ESBG/Z



### PARTS LIST

1. MAGNET CUP
2. COIL
3. ROTOR TOOTHED
4. ARMATURE TOOTHED RING
5. TRANSMISSION HUB
6. SPRING GUIDE PIN
7. SPRING
8. HUB
9. PLATE
10. SPACER RINGS
11. COUPLING BEARINGS
12. TRANSMISSION BEARINGS
13. OUTER SAFETY RINGS
14. INNER SAFETY RINGS
15. LOCK KEY
16. FLEXIBLE COUPLING

### EXAMPLES OF MOUNTING



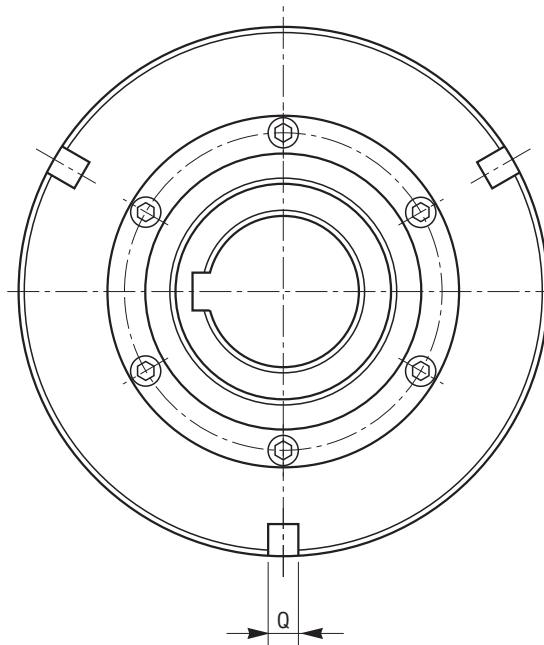
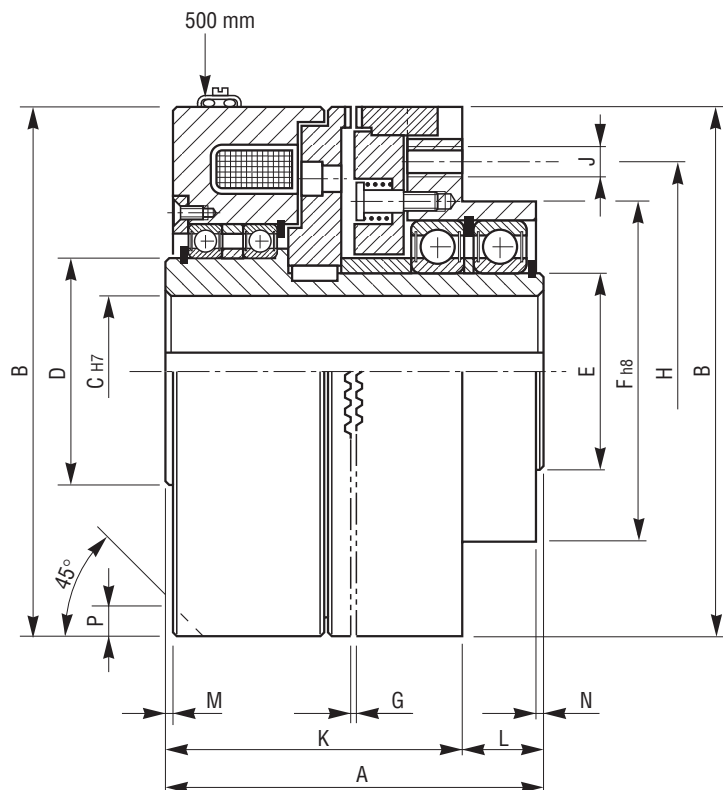
**ELECTROMAGNETIC TOOTH-TYPE COUPLINGS  
WITH TRANSMISSION HUB**

ESBR .../Z

**07**

**MODEL  
CODE**

ESBR □□□/Z  
07.40.□□□.01



□□□	Torque Ms (Nm)	R.P.M. max	Build up time ms	Decay time ms.	WATT-Ω	Coil (20° C)	Weight kg
060	20	8500	20	30	15,5	37	1,5
070	40	7000	22	35	26,0	22,1	1,8
082	100	4000	24	40	47,0	12,2	2,0
095	200	3800	26	50	58,5	9,8	3,0
114	300	3600	32	70	62,5	9,2	4,0
134	600	3400	42	100	99,0	5,8	8,0
166	1400	3200	68	180	106	5,4	12
195	2000	3000	76	300	144	4,0	22
210	3000	2800	80	400	192	3,0	29
240	4000	2500	115	680	213	2,7	45
260	6000	2000	130	950	288	2,0	52
295	9000	1700	143	1100	320	1,8	60
325	12000	1500	160	1250	360	1,6	65

□□□	A	B	C		D	E	F	H	J n° x Ø	K	L	M	N	PxQ
			min.	max										
060	54	60	8	14	20	25	37	48	3 x M 5	48	6	0,5	2,5	2,5 x 4
070	64	70	10	15	23	30	47	58	3 x M 6	56	8	1	4,5	2,5 x 5
082	80	82	10	20	35	30	62	72	3 x M 5	58	22	1	1	3 x 6
095	84	95	15	30	45	40	70	82	3 x M 6	63	21	1	3	4 x 6
114	97	114	20	30	50	40	75	88	3 x M 6	71,5	25,5	1	2,5	5 x 8
134	112	134	20	40	60	50	90	106	3 x M 8	86	26	1	1	7 x 8
166	127	166	30	50	75	65	112	135	6 x M 8	97,5	29,5	1	2,5	6 x 8
195	140	195	35	60	80	80	138	155	6 x M 8	101	39	1	5	8 x 12
210	165	210	40	65	85	85	145	165	6 x M10	119	46	2	3	8 x 12
240	180	240	45	75	100	95	170	205	6 x M12	129,5	50,5	1,5	3,5	10 x 12
260	190	258	50	85	100	100	180	210	8 x M12	132	58	2	9,7	10 x 12
295	225	295	55	95	130	120	200	220	9 x M14	157,5	67,5	8,5	7,5	12 x 14
325	270	325	60	120	150	150								12 x 14

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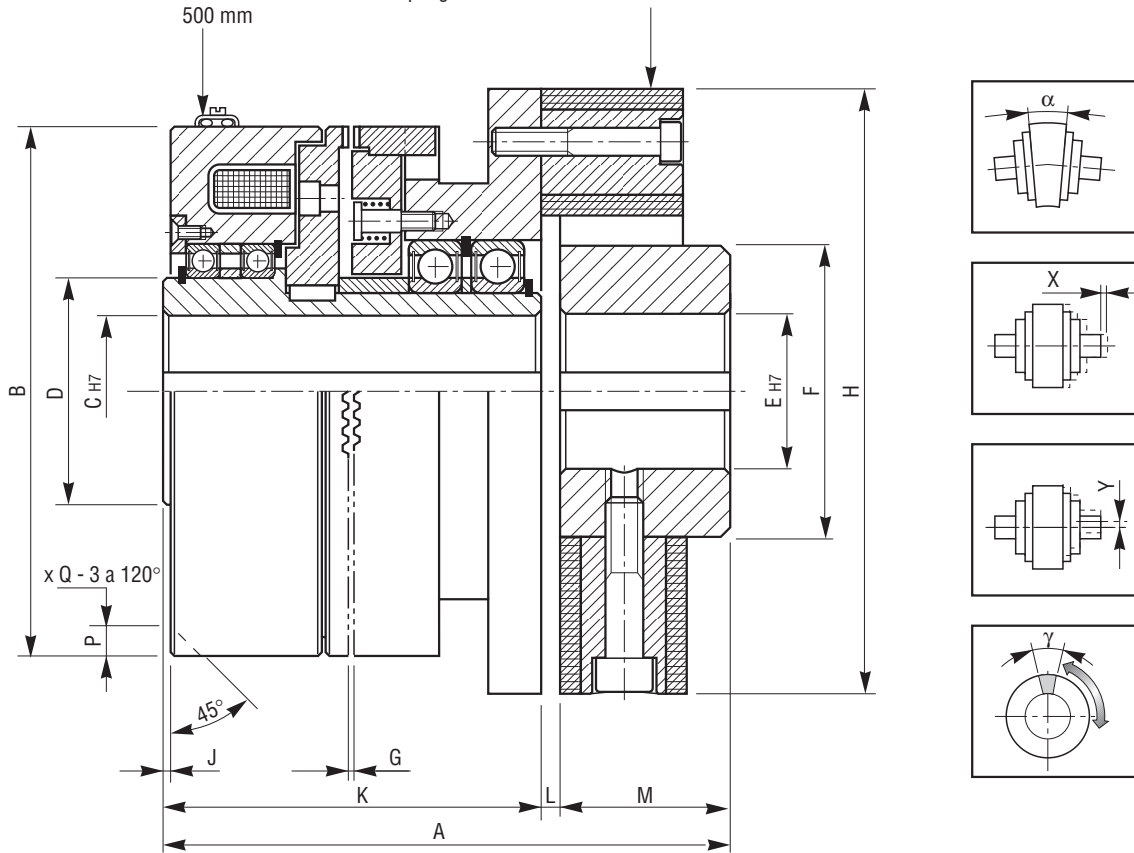
**ELECTROMAGNETIC TOOTH-TYPE COUPLINGS  
WITH FLEXIBLE COUPLING**

ESBG .../Z

07

<b>MODEL</b>	ESBG □□□/Z
<b>CODE</b>	07.42.□□□.01

Flexible coupling - Series "A" - Size "W"



□□□	Torque Ms (Nm)	R.P.M. max	Build up time ms	Decay time ms.	Coil WATT-Ω	(20° C)	Coupling size W	Weight kg
060	20	8500	20	30	15,5	37	1	2,0
070	40	7000	22	35	26,0	22,1	2	3,0
082	100	4000	24	40	47,0	12,2	8	3,6
095	200	3800	26	50	58,5	9,8	12	5,0
114	300	3600	32	70	62,5	9,2	16	6,5
134	600	3400	42	100	99,0	5,8	30	12,0
166	1400	3200	68	180	106	5,4	50	18,5
195	2000	3000	76	300	144	4,0	140	30,0
210	3000	2800	80	400	192	3,0	140	42,0
240	4000	2500	115	680	213	2,7	140	58,0
260	6000	2000	130	950	288	2,0	E-275	80,0
295	9000	1700	143	1100	320	1,8	E-275	100
325	12000	1500	160	1250	360	1,6	E-350	110

□□□	A	B	C		D	E		F	H	J	K	L	M	PxQ	X	Y	α	γ
			min.	max		min.	max											
060	82	60	8	14	20	8	19	30	56	1	56	2	24	2,5 x 4	2	1,5	3°	17°
070	98	70	10	15	23	10	28	40	85	1	66	4	28	2,5 x 5	3	1,5	3°	17°
082	126	82	10	20	35	10	38	60	120	1	58	22	1	3 x 6	4	2	3°	14°
095	130	95	10	30	45	12	38	60	122	1	84	4	42	4 x 6	4	2	2°	7,5°
114	153	114	20	30	50	15	48	70	150	1	97	6	50	5 x 8	5	2	3°	14°
134	186	134	20	40	60	20	65	100	200	1	112	8	66	5 x 8	5	2	3°	14°
166	201	166	30	50	75	20	65	100	200	1	127	8	66	6 x 8	5	2	2°	7,5°
195	228	195	35	60	80	30	75	125	260	1	140	8	80	8 x 12	5	2	2°	7,5°
210	253	210	20	65	85	30	85	125	260	2	165	8	80	8 x 12	5	2	2°	7,5°
240	268	240	45	75	100	30	85	120	260	1,5	180	8	80	10 x 12	5	2	2°	7,5°
260	286,5	258	45	85	100	40	100	145	275	2	190	-	96,5	10 x 12	Vedi scheda tecnica/See technical sheet			
295	321,5	295	50	95	130	40	100	145	275	8,5	225	-	96,5	12 x 14	Vedi scheda tecnica/See technical sheet			
325	376,5	325	60	120	150	40	120	192	365	7	270	-	106,5	12 x 14	Vedi scheda tecnica/See technical sheet			



**ELECTROMAGNETIC TOOTH-TYPE BRAKES**

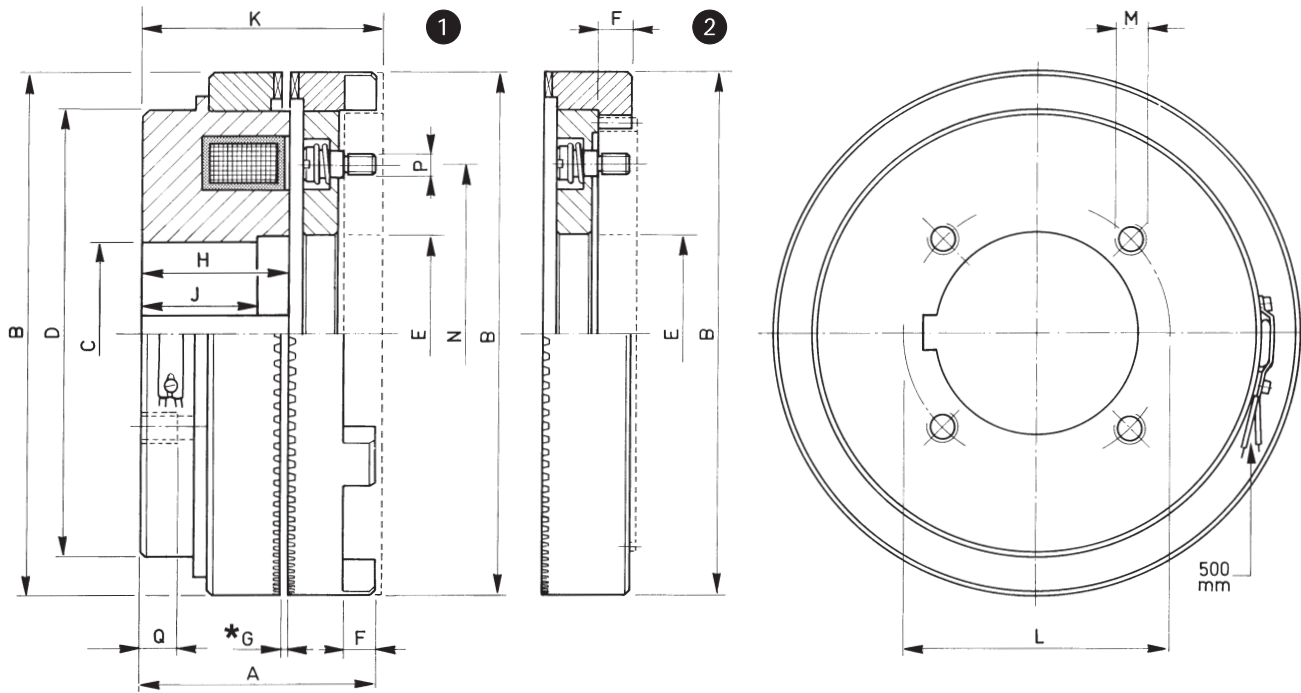
EC .../Z-F  
EC .../ZD-F

**07**

**MODEL**  
**CODE**

**1** EC □□□/Z-F  
07.07.□□□.01

**2** EC □□□/ZD-F  
07.08.□□□.01



\* G = Air gap adjustment

□□□	Torque Ms (Nm)	Build up time ms	Decay time ms	20° WATT	120° WATT	Weight kg	Armature's flange	
							①	②
060	20	16	30	7,5	5,5	0,3	FF 060/Z	FD 060/ZD
070	40	22	40	12	8,5	0,45	FF 070/Z	FD 070/ZD
082	100	22	40	24	17	0,80	FF 082/Z	FD 082/ZD
095	200	26	45	31	22,5	1,15	FF 095/Z	FD 095/ZD
114	350	32	68	40	28	1,9	FF 114/Z	FD 114/ZD
134	600	42	90	51	37	3	FF 134/Z	FD 134/ZD
140	600	44	90	53	38	3,2	FF 140/Z	FD 140/ZD
166	1200	68	100	76	55	5,6	FF 166/Z	FD 166/ZD
167	1200	68	100	63	45	4,9	FF 166/Z	FD 166/ZD
195	2200	75	165	83	60	9	FF 195/Z	FD 195/ZD
210	3000	80	250	98	70	11	FF 210/Z	FD 210/ZD
240	4000	80	270	102	74	16,5	FF 240/Z	FD 240/ZD
260	6000	90	290	128	93	19	FF 260/Z	FD 260/ZD

□□□	A	B	C		D	E	F	H	J	K	L	M n° x Ø	N	P n° x Ø	Q max.
			min.	max.											
060	25	60	10	22	52	23	3,5	15,5	15,5	30,5	28	3 x M3	40	3 x M3	8
070	27,5	70	15	25	62	26	4	17	17	32,5	32	3 x M4	45	3 x M3	8
082	37	82	15	34	71	35	6	23	23	40	41	3 x M4	55	3 x M4	10
095	38	95	15	36	82	45	6	23	20	41	50	4 x M6	65	3 x M4	10
114	43	114	20	46	100	53	7	26	23	46	60	4 x M6	80	3 x M4	12
134	50	134	20	52	118	63	8	29	26	53	72	4 x M8	100	3 x M5	15
140	51	140	20	62	123	70	8	30	26	54	80	4 x M6	100	3 x M5	15
166	60	166	25	72	148	80	9,5	35	30	63,5	92	5 x M10	120	3 x M6	15
167	57	166	25	82	148	89	9,5	32	27	60,5	100	5 x M6	120	3 x M6	15
195	68	195	30	82	175	89	12	38,5	33,5	71	110	5 x M10	150	3 x M6	18
210	73	210	35	92	190	100	14	38	35	75	120	5 x M10	150	3 x M6	20
240	81	240	40	102	220	112	14,5	42	37	83,5	140	5 x M12	150	3 x M6	20
260	84	258	50	122	238	133	16,5	46	42	86,5	150	5 x M12	170	3 x M6	20



**ELECTROMAGNETIC TOOTH-TYPE BRAKES**

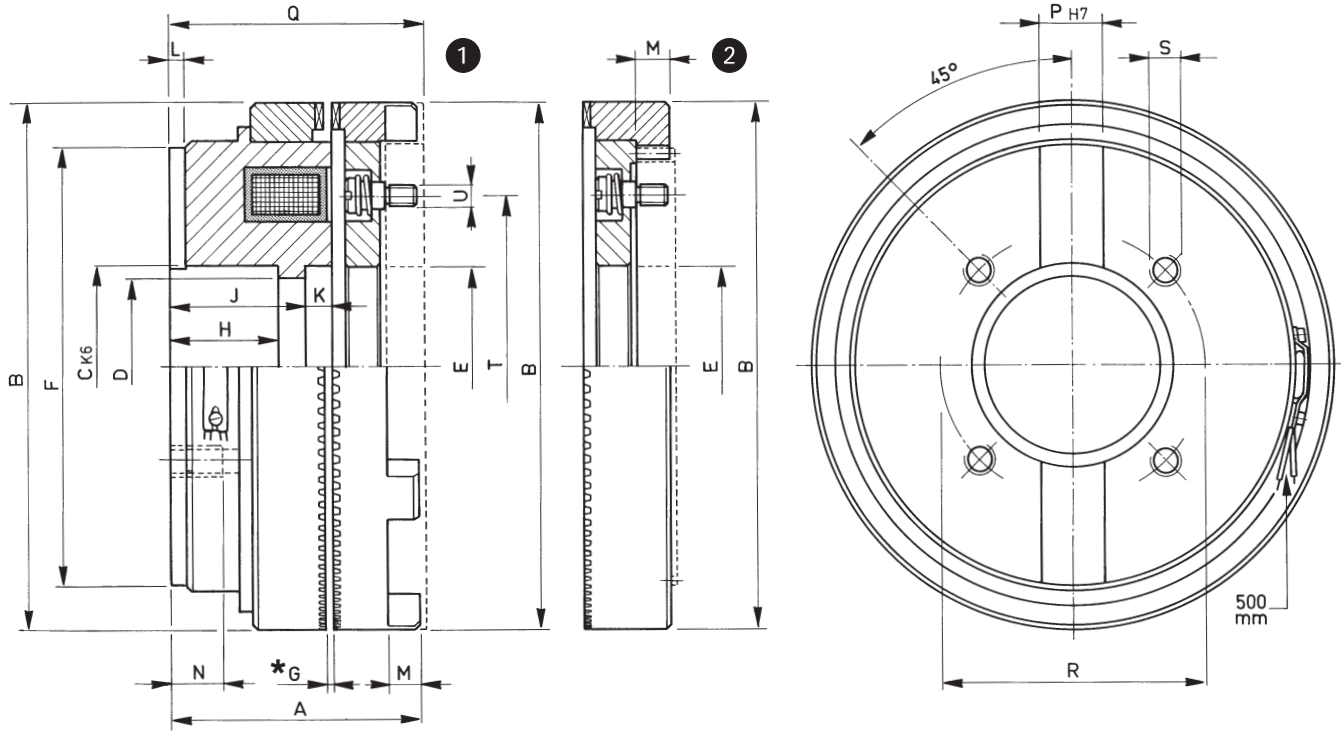
**EBLF .../Z**  
**EBLF .../ZD**

**07**

**MODEL**  
**CODE**

**1** **EBLF □□□/Z**  
07.09.□□□.01

**2** **EBLF □□□/ZD**  
07.10.□□□.01

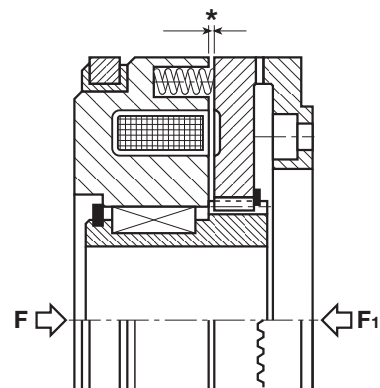
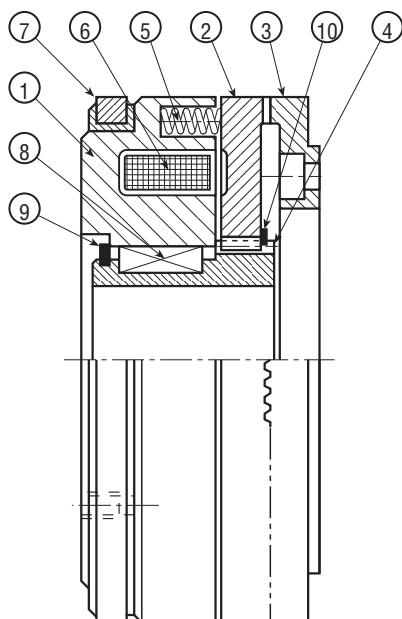


\* G = Air gap adjustment

□□□	Torque Ms (Nm)	Build up time ms	Decay time ms	20°	WATT	120°	Weight kg	Armature's flange	
								①	②
082	100	22	40	24		17	0,9	FF 082/Z	FD 082/ZD
095	200	26	45	31		22,5	1,2	FF 095/Z	FD 095/ZD
114	350	32	68	40		28	2	FF 114/Z	FD 114/ZD
140	600	44	90	53		38	3,3	FF 140/Z	FD 140/ZD
166	1200	68	100	76		55	5,1	FF 166/Z	FD 166/ZD
167	1200	68	100	61		44	5	FF 166/Z	FD 166/ZD
194	2000	75	160	83		60	7,8	FF 195/Z	FD 195/ZD
195	2200	75	160	83		60	7,8	FF 195/Z	FD 195/ZD
210	3000	80	250	98		70	11	FF 210/Z	FD 210/ZD
240	4000	80	270	102		74	17	FF 240/Z	FD 240/ZD
260	6000	90	290	128		93	19,5	FF 260/Z	FD 260/ZD

□□□	A	B	C	D	E	F	H	J	K	L	M	N max.	P	Q	R	S n° x Ø	T	U n° x Ø
082	39	82	35	31	35	67	20	22,5	2,5	2,5	6	5	12	42	50	4 x M 5	55	3 x M 4
095	40	95	42	37	45	78	20	22	3	2,5	6	5	12	43	56	4 x M 6	65	3 x M 4
114	47	114	55	45	53	95	22	25	5	5	7	6	14	50	75	4 x M 8	80	3 x M 4
140	54	140	68	60	70	120	22	28	5	5	8	8	16	57	90	4 x M 8	100	3 x M 5
166	60	166	75	65	80	142	25	30	5	6	9,5	9	20	63,5	100	4 x M 10	120	3 x M 6
167	63	166	90	80	89	142	28	33	5	6	9,5	9	20	66,5	116	4 x M 10	120	3 x M 6
194	68,5	195	90	80	89	170	28	34	5	6	12	14	20	71,5	116	4 x M 10	150	3 x M 6
195	67	195	110	100	110	170	28	34	3,5	6	12	14	20	70	125	4 x M 10	150	3 x M 6
210	77	210	100	90	100	184	31	39	3	6	14	16	20	79	130	4 x M 12	150	3 x M 6
240	84	240	110	100	112	216	32	40	5	6	14,5	18	25	86,5	145	4 x M 12	150	3 x M 6
260	90	258	140	130	133	234	33	41	11	8	16,5	13	25	92,5	200	4 x M 12	170	3 x M 6

## EC-N/Z

**PARTS LIST**

1. MAGNET CUP
2. TOOTHED ARMATURE
3. TOOTHED COVER
4. TOOTHED HUB
5. SPRING
6. COIL
7. COLLECTOR RING
8. KEY
9. SAFETY RING
10. SAFETY RING

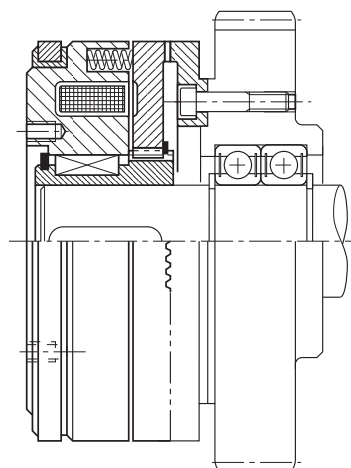
**AIR GAP ADJUSTMENT**

- Mount the toothe-type coupling.
- The toothing has to be engaged.
- Make force in the direction  $F$  or  $F_1$ .

Check the size of the air gap \* at 3 points (120°) with a thickness gauge; it should be as indicated in the relevant tables.

**EXAMPLE OF MOUNTING**

EC-N/Z



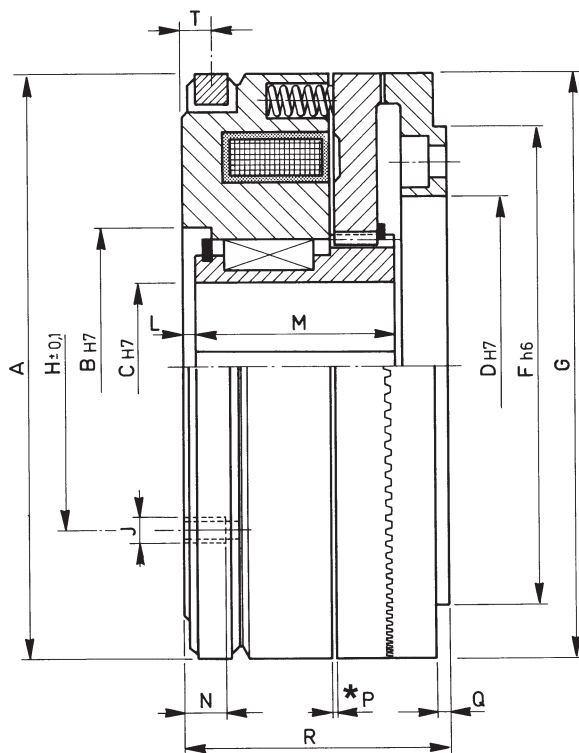
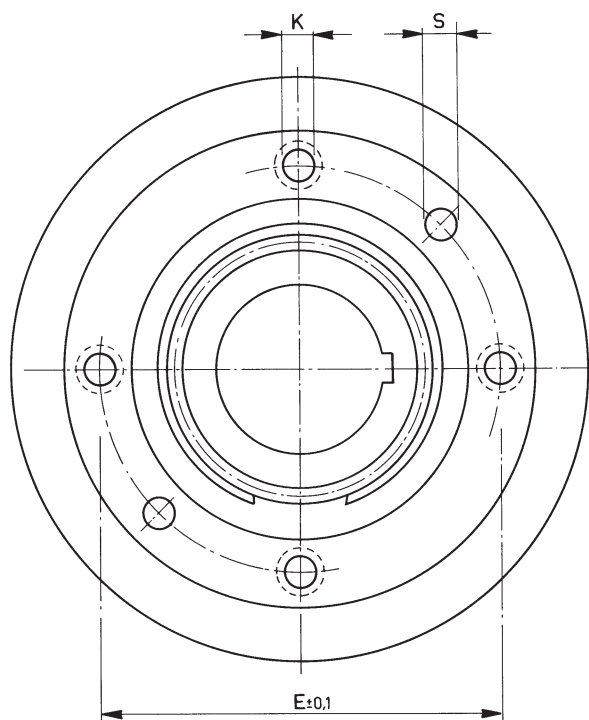


TOOTHE-TYPE SPRING LOADED COUPLINGS

EC-N .../Z

07

MODEL	EC-N □□□/Z
CODE	07.50.□□□.01



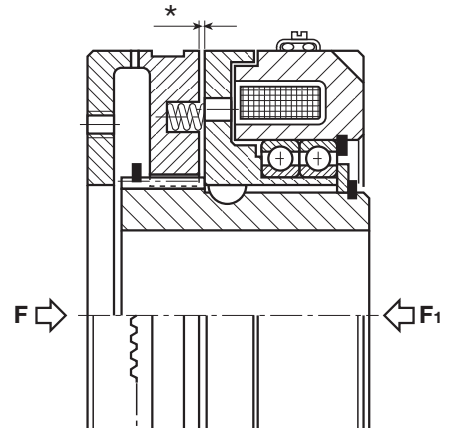
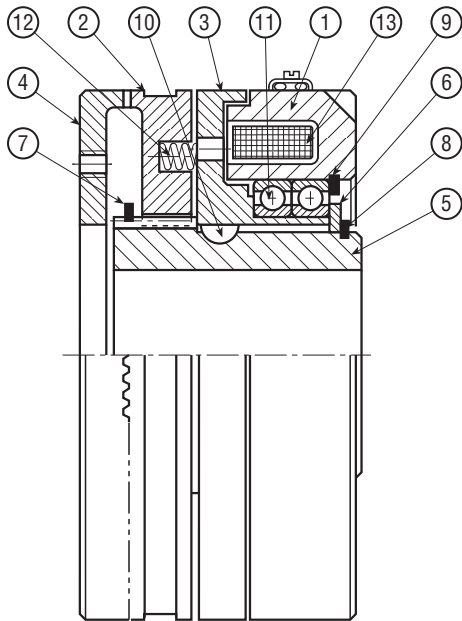
\* P = Air gap adjustment

□□□	Torque Ms (Nm)	R.P.M. limit max	WATT		Axial thrust on the crown ring daN		Weight kg
			20°	120°			
082	25	4500	30	18	22	1,8	
090	35	4500	38	26	30	2	
105	70	4000	45	33	51	2,7	
115	100	3500	50	37	67	3,5	
125	160	3300	65	46	100	4,4	
140	250	3000	85	64	140	6,3	
160	400	2500	96	68	190	9	
185	650	2200	115	81	270	14	
215	1050	2000	135	95	370	20	

□□□	A	B	C max	D	E	F	G	H	J n° x Ø	K n° x Ø	L	M	N max	P	Q	R	S n° x Ø	T
082	82	40	18	46	56	65	82	54	4xM5	4x4,5	2	40	8	0,8	2	47	2x 4	6
090	90	46	25	53	64	75	92	54	4xM4	4x5,5	2	31,5	10	0,9	2	40	2x 5	6
105	105	52	28	65	75	85	105	62	4xM5	4x5,5	2	36	10	0,9	2	44	2x 5	6
115	115	58	32	70	85	100	114	68	4xM6	4x6,5	2,5	38,5	12	1	2	50	2x 6	6
125	125	62	35	75	90	105	125	72	4xM6	4x6,5	2,5	44,5	12	1	2,5	58	2x 8	6
140	140	70	42	85	100	115	140	80	4xM6	4x6,5	2,5	54,5	15	1,1	2,5	67	3x 8	7
160	166	78	45	95	115	130	165	90	4xM8	6x8,5	3	59	15	1,2	3	75	3x 8	8
185	185	84	50	115	135	155	185	106	6xM8	6x8,5	3	68	15	1,2	3	85	3x10	8
215	210	96	60	130	155	180	215	124	6xM8	6x8,5	3	81	15	1,4	4	100	3x10	8



# ESB-N/Z



### PARTS LIST

1. MAGNET CUP
2. TOOTHED ARMATURE
3. ROTOR
4. TOOTHED CUP HOUSING
5. HUB
6. SPACER RINGS
7. SAFETY RING
8. SAFETY RING
9. SAFETY RING
10. LOCK KEY
11. BEARINGS
12. SPRING
13. COIL

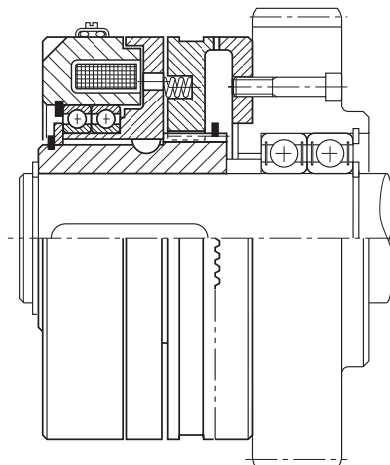
### AIR GAP ADJUSTMENT

- Mount the toothe-type coupling.
- The toothing has to be engaged.
- Make force in the direction F or F<sub>1</sub>.

Check the size of the air gap \* at 3 points (120°) with a thickness gauge; it should be as indicated in the relevant tables.

### EXAMPLE OF MOUNTING

ESB-N/Z



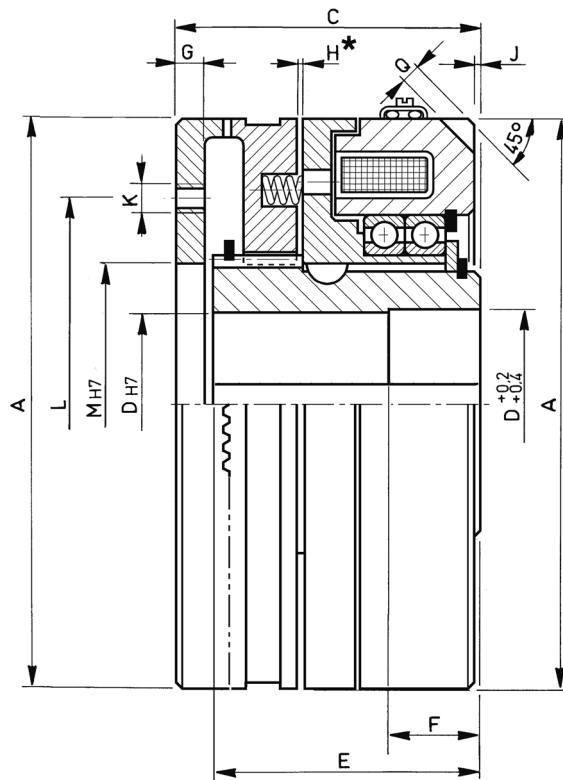
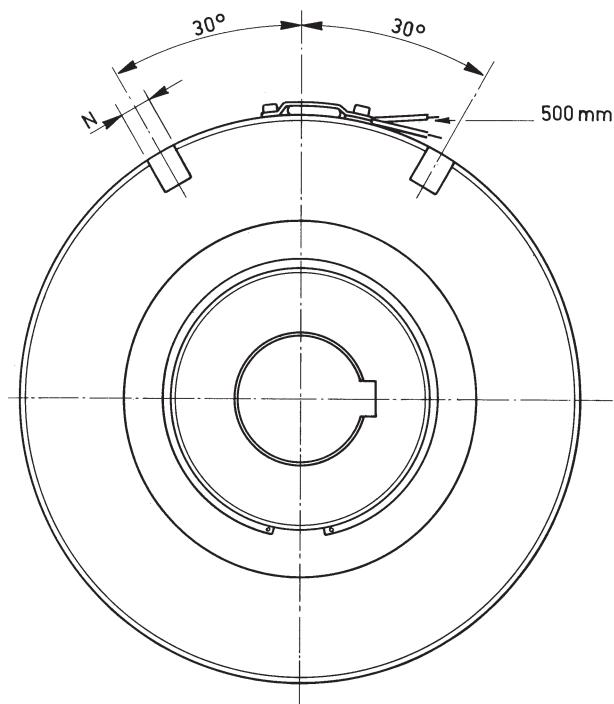


TOOTHE-TYPE SPRING LOADED COUPLINGS

ESB-N .../Z

07

MODEL	ESB-N □□□/Z
CODE	07.80.□□□.01



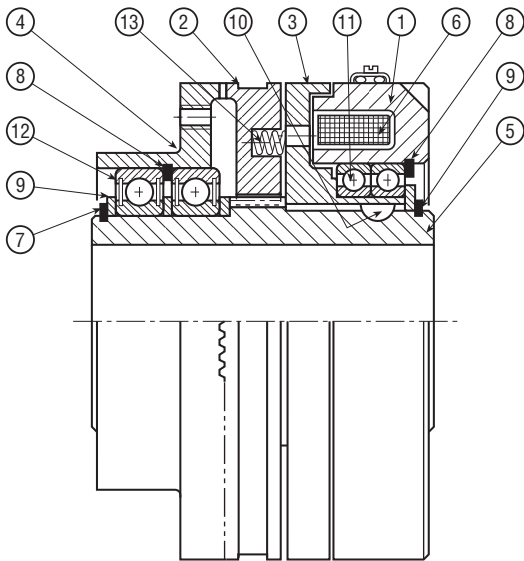
\* H = ir gap adjustment

□□□	Torque Ms (Nm)	R.P.M. limit max.	WATT		Axial thrust on the crown ring daN		Weight kg
			20°	120°			
090	50	4300	50	36	30	2,5	
105	100	3600	78	58	45	3,5	
115	200	3300	84	61	65	4,3	
140	400	2700	135	95	115	8	
185	800	2100	150	110	180	18	
215	1600	1800	175	128	330	33,5	
265	3200	1450	280	205	900	55	
320	6400	1200	400	310	1500	98	
385	12800	1000	540	430	2200	178	

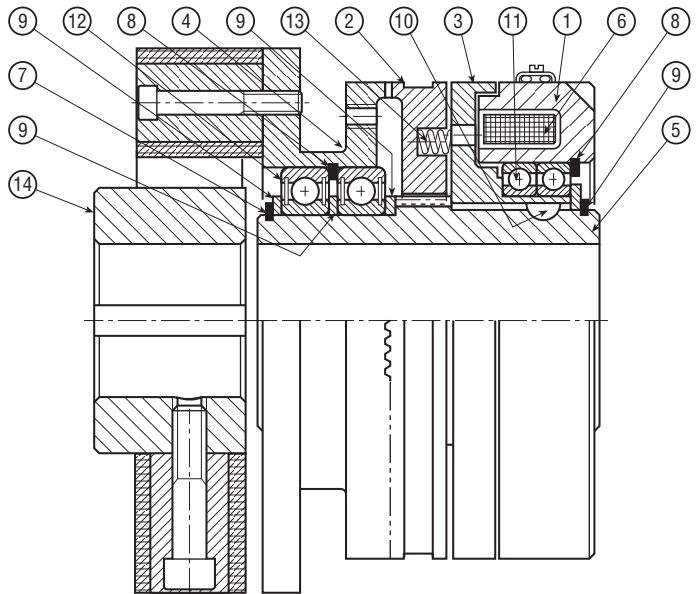
□□□	A	C	D		E	F	G	H	J	K	L	M		N	Q
			min.	max						n° x Ø		min.	max		
090	100	58	16	30	51	20	5	0,8	1	4 x M 6	68	40	58	10	4
105	114	63	20	38	55	21	6	0,9	1	4 x M 6	82	40	70	10	4
115	125	65	20	42	57	23	6	1	1	6 x M 6	92	50	80	10	4
140	154	80	25	55	71	25	7	1,1	1	6 x M 8	110	65	95	10	5
185	205	100	30	75	90	30	8	1,2	1	6 x M10	148	100	130	10	6
215	245	145	40	80	130	48	12	1,4	15	6 x M12	175	110	153	12	7
265	290	165	55	95	160	55	15	1,8	15	12 x M12	240	215		16	8
320	350	200	75	110	196	65	20	2	22	12 x M14	290	260		18	10
385	425	245	90	130	240	78	25	2,5	27	12 x M16	355	315		20	12



## ESBR-N/Z



## ESBG-N/Z

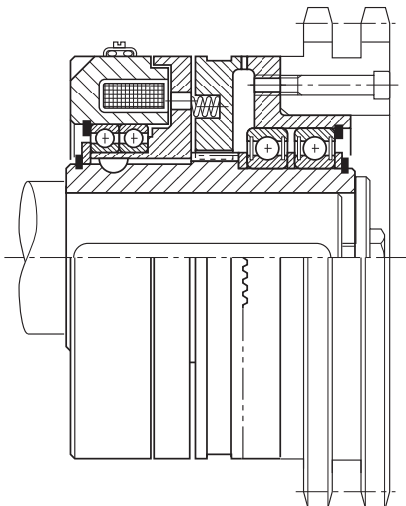


### PARTS LIST

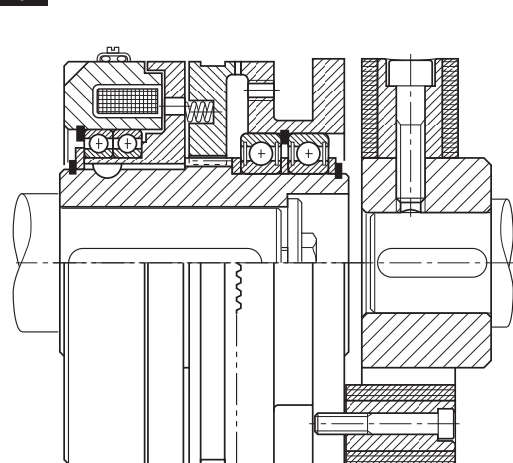
1. MAGNET CUP
2. TOOTHED ARMATURE
3. ROTOR
4. TRANSMISSION HUB
5. HUB
6. COIL
7. OUTER SAFETY RING
8. INNER SAFETY RING
9. SPACER RINGS
10. LOCK KEY
11. COUPLING BEARINGS
12. TRANSMISSION BEARINGS
13. SPRING
14. FLEXIBLE COUPLING

### EXAMPLES OF MOUNTING

ESBR-N/Z



ESBG-N/Z



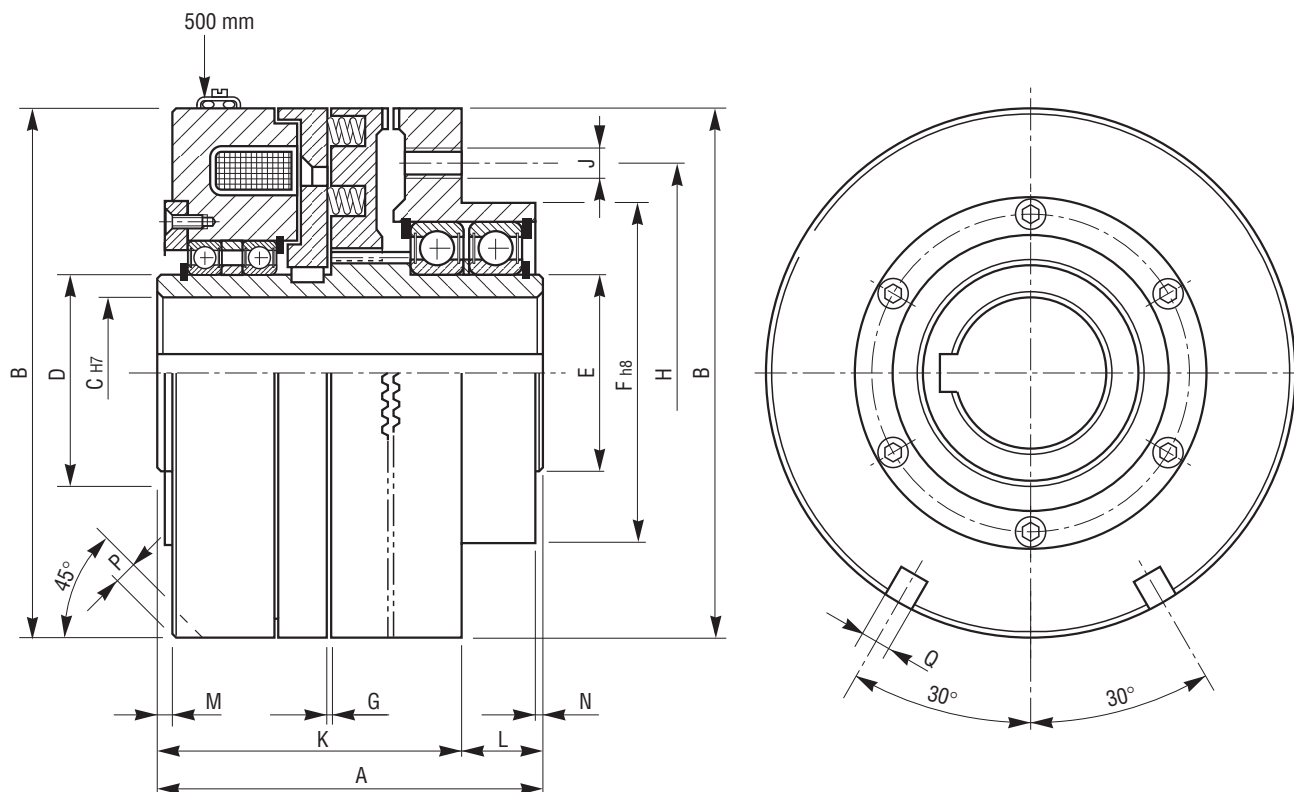


**TOOTH-TYPE COUPLING SPRING LOADED WITH TRANSMISSION HUB**

ESBR-N/Z

07

<b>MODEL</b>	ESBR-N □□□/Z
<b>CODE</b>	07.84.□□□.01



□□□	Torque Ms (Nm)	R.P.M. limit max	WATT-Ω	Bobina - Coil (20° C)	Axial thrust on the crown ring daN	Weight kg
090	50	4300	50	11,5	30	4,0
105	100	3600	78	7,4	45	5,6
115	200	3300	84	6,8	65	7,0
140	400	2700	135	4,3	115	12,5
185	800	2100	150	3,84	180	29,5
215	1600	1800	175	3,29	330	50
265	3200	1450	280	2,05	900	80
320	6400	1200	400	1,44	1500	148
385	ON REQUEST					

□□□	A	B	C		D	E	F	H	J n° x Ø	K	L	M	N	PxQ
			min.	max										
090	86	100	15	30	40	40	75	86	3 x M 6	61	25	1	1	4 x 10
105	94	114	15	35	48	45	84	96	3 x M 6	69	25	1	4,5	4 x 10
115	98	125	20	38	54	50	90	105	3 x M 8	70	28	1	1	4 x 10
140	116	154	25	50	68	65	115	135	6 x M 8	83	33	1	1	5 x 10
185	152	205	30	70	90	90	154	175	6 x M10	110	42	1,5	1	6 x 10
215	190	245	40	80	110	100	180	205	6 x M12	147	43	10	3	7 x 12
265	230	290	45	95	120	120	200	240	12 x M12	163	67	15	1	8 x 16
320	315	350	60	110	150	140	210	275	8 x 10,5	295,5	19,5	25	25	10 x 18
385	ON REQUEST													

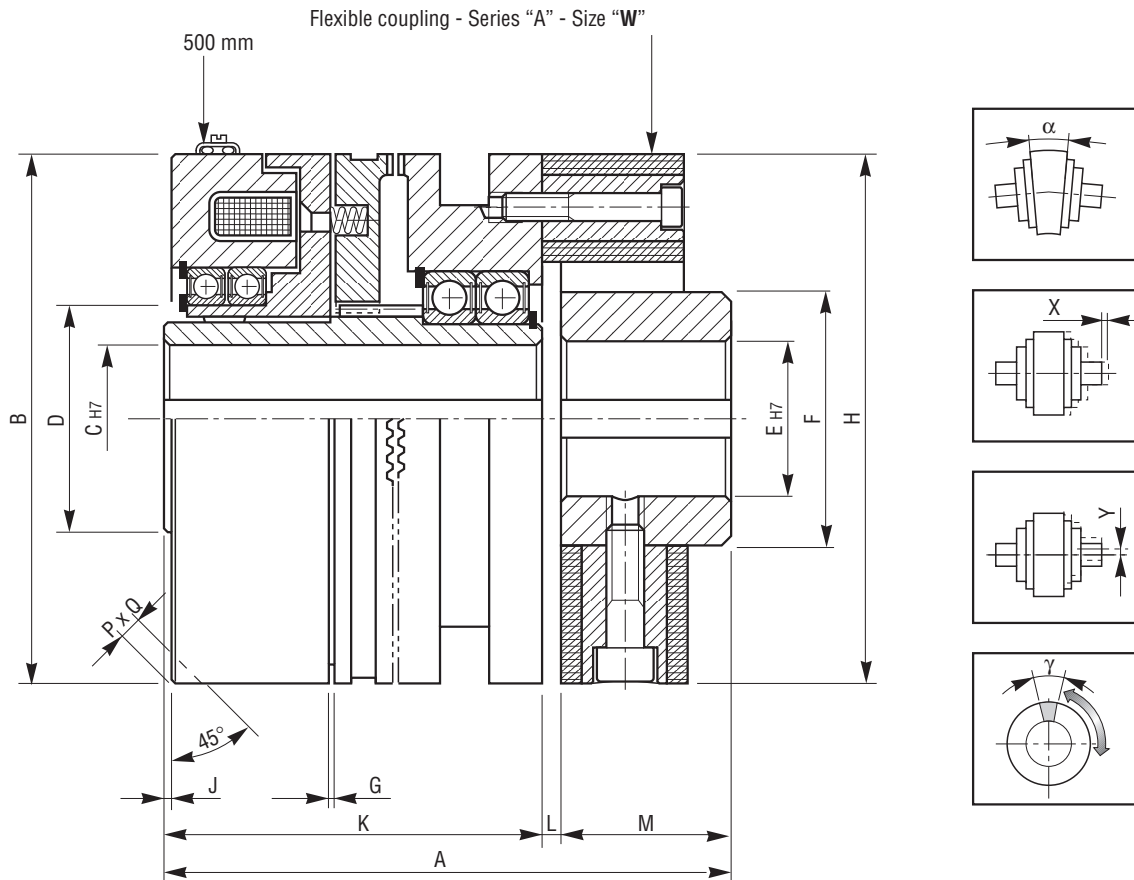
**TOOTH-TYPE COUPLING SPRING LOADED WITH FLEXIBLE COUPLING**

ESBG-N/Z

07

MODEL  
CODE

ESBG-N □□□/Z  
07.86.□□□.01



□□□	Torque Ms (Nm)	R.P.M. max	Axial force on teeth daN		Coil WATT-Ω (20° C)		Coupling size W	Weight kg
090	50	4300	30	50	11,5	4	5,8	
105	100	3600	45	78	7,4	8	7,5	
115	200	3300	65	84	6,8	16	10	
140	400	2700	115	135	4,3	30	19	
185	800	2100	180	150	3,84	50	37	
215	1600	1800	330	175	3,29	90	93	
265	3200	1450	900	280	2,05	8,0	12	
320	6400	1200	1500	400	1,44	8,0	22	
385	ON REQUEST							

□□□	A	B	C		D	E		F	H	J	K	L	M	PxQ	X	Y	α	γ
			min.	max		min.	max											
090	120	100	15	30	40	15	30	45	100	1	86	4	30	4 x 10	2	1,5	3°	17°
105	140	114	20	35	55	15	38	60	120	1	94	4	42	4 x 10	4	2	3°	14°
115	154	125	20	38	54	15	48	70	150	1	98	6	50	4 x 10	5	2	3°	14°
140	190	154	25	50	68	20	65	100	200	1	116	8	66	5 x 10	5	2	2°	14°
185	226	205	30	70	90	25	65	100	200	1	152	8	66	6 x 10	5	2	3°	7,5°
215	278	245	40	80	110	30	83	125	260	10	190	8	80	7 x 12	5	2	3°	14°
265	339	290	45	95	120	40	100	145	275	15	225	14,5	82	10 x 18	Vedi scheda tecnica/See technical sheet			
320	480	350	50	110	150	50	100	145	275	25	315	23	142	20 x 12	Vedi scheda tecnica/See technical sheet			
385	A RICHIESTA - ON REQUEST																	

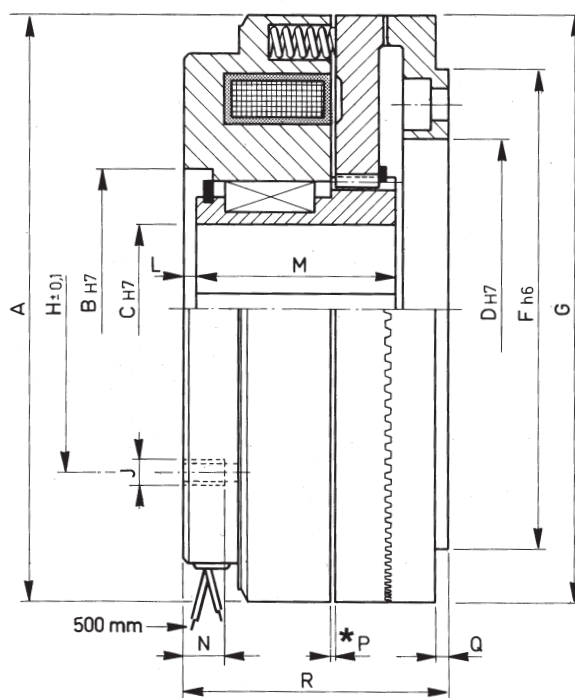
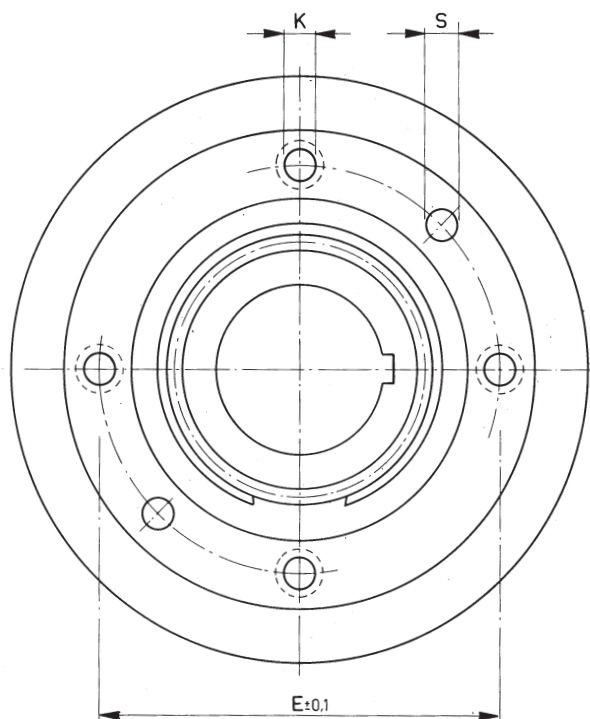


**TOOTHE-TYPE SPRING LOADED BRAKES**

EC-N .../Z-F

**07**

<b>MODEL</b>	EC-N □□□/Z-F
<b>CODE</b>	07.90.□□□.01



\* P = Air gap adjustment

□□□	Torque Ms (Nm)	R.P.M. limit max	WATT		Axial thrust on the crown ring daN		Weight kg
			20°	120°			
082	25	4500	30	18	22	1,8	
090	35	4500	38	26	30	2	
105	70	4000	45	33	51	2,7	
115	100	3500	50	37	67	3,5	
125	160	3300	65	46	100	4,4	
140	250	3000	85	64	140	6,3	
160	400	2500	96	68	190	9	
185	650	2200	115	81	270	14	
215	1050	2000	135	95	370	20	

□□□	A	B	C max	D	E	F	G	H	J n° x Ø	K n° x Ø	L	M	N max	P	Q	R	S n° x Ø
082	82	40	18	46	56	65	82	54	4xM5	4x4,5	2	40	8	1	2	47	2x 4
090	90	46	25	53	64	75	90	54	4xM4	4x5,5	2	31,5	10	1	2	40	2x 5
105	105	52	28	65	75	85	105	62	4xM5	4x5,5	2	36	10	1	2	44	2x 5
115	115	58	32	70	85	100	115	68	4xM6	4x6,5	2,5	38,5	12	1	2	50	2x 6
125	125	62	35	75	90	105	125	72	4xM6	4x6,5	2,5	44,5	12	1,3	2,5	58	2x 8
140	140	70	42	85	100	115	140	80	4xM6	4x6,5	2,5	54,5	15	1,3	2,5	67	3x 8
160	166	78	45	95	115	130	160	90	4xM8	6x8,5	3	59	15	1,5	3	75	3x 8
185	185	84	50	115	135	155	185	106	6xM8	6x8,5	3	68	15	1,5	3	85	3x10
215	210	96	60	130	155	180	215	124	6xM8	6x8,5	3	81	15	1,5	4	100	3x10