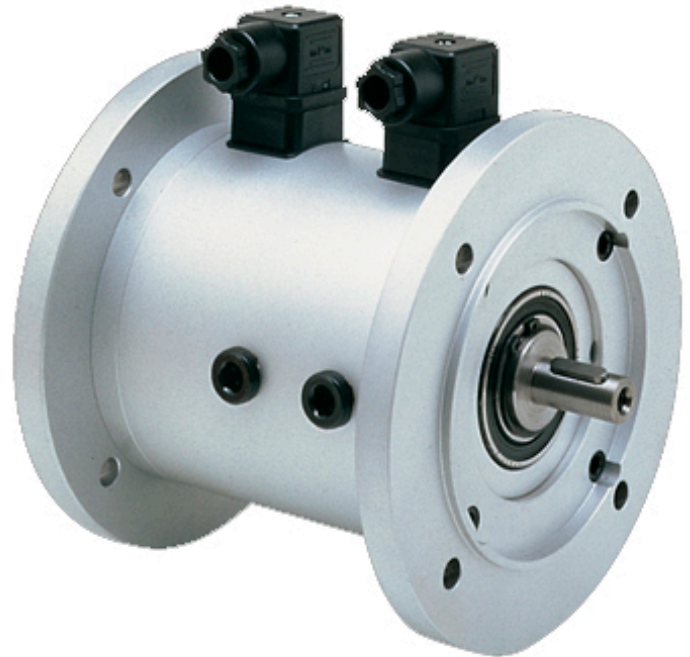
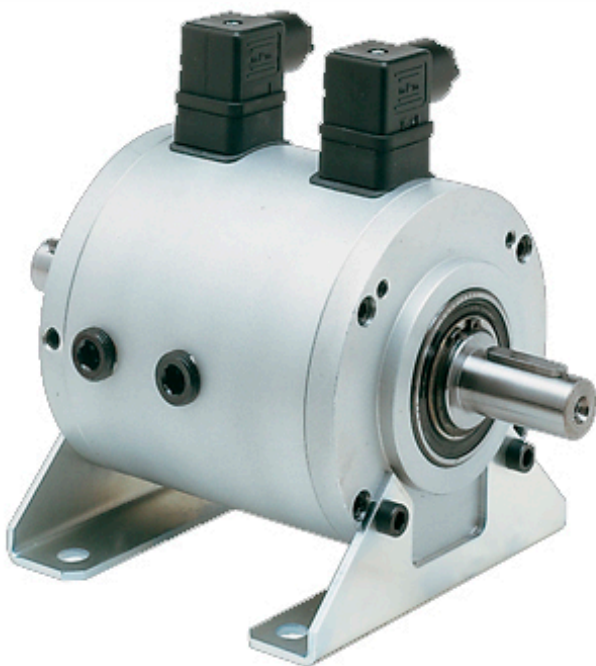
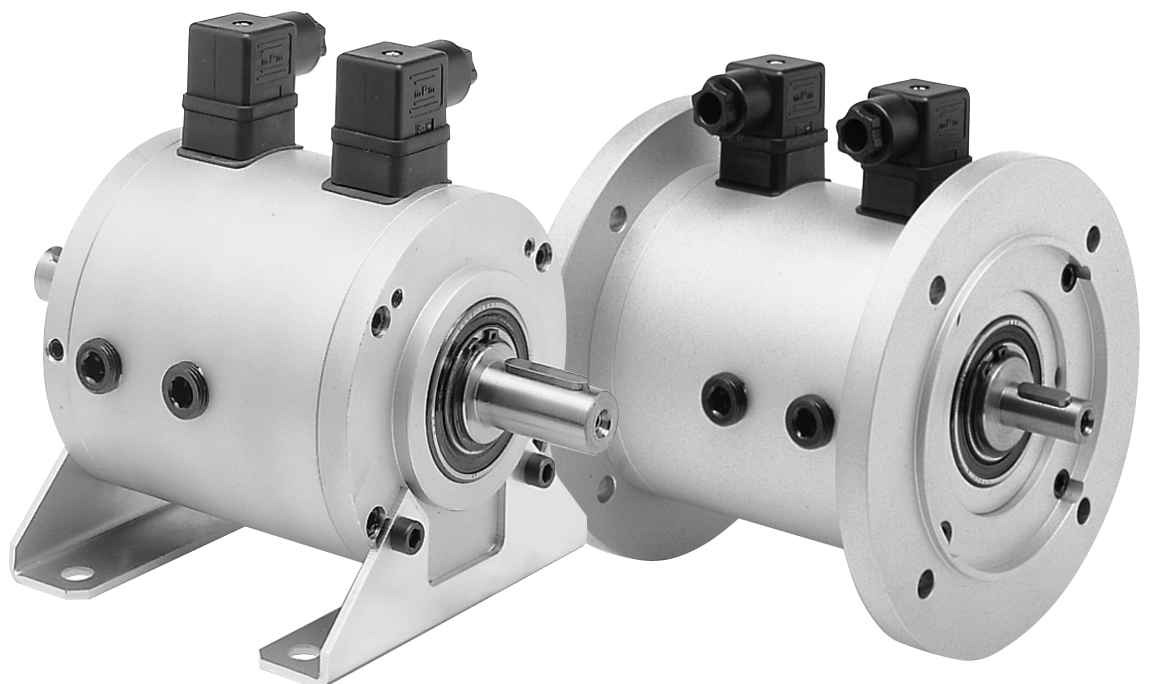




Conjunto Freno / Embrague



CLUTCH-BRAKE UNITS



CLUTCH-BRAKE UNITS

The clutch-brake unit is electromagnetic single-disk type, with a static magnet-type clutch at the inlet side of the unit and a brake on the other side. The armature located in the center has a toothed hub which slides on it to engage and disengage the brake.

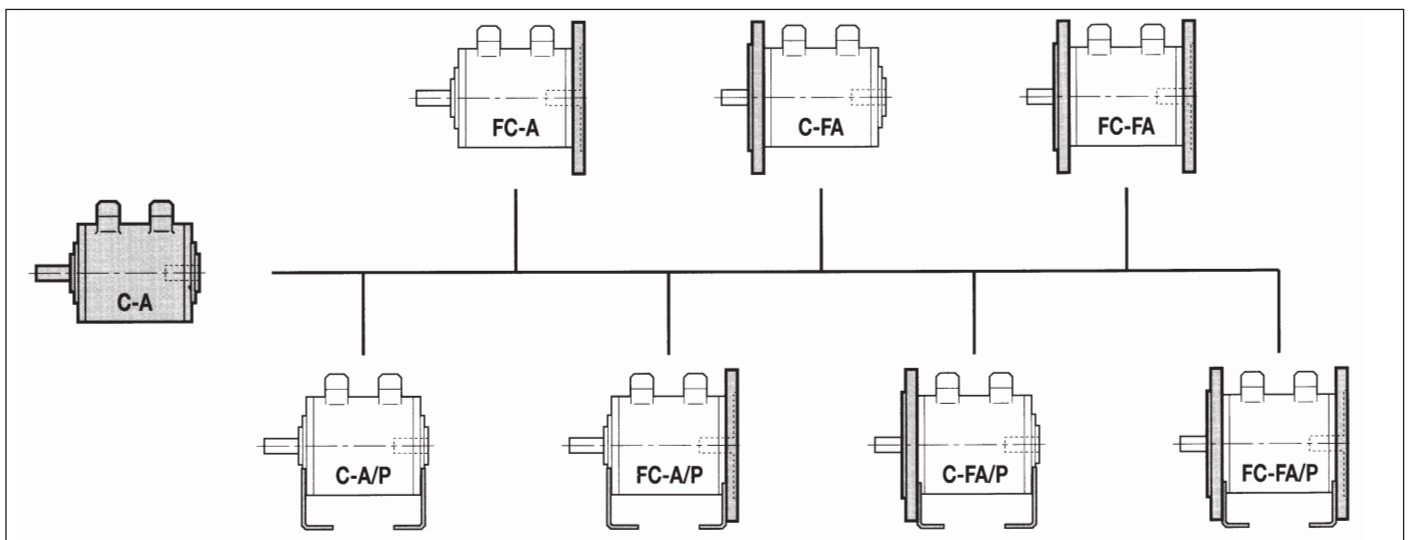
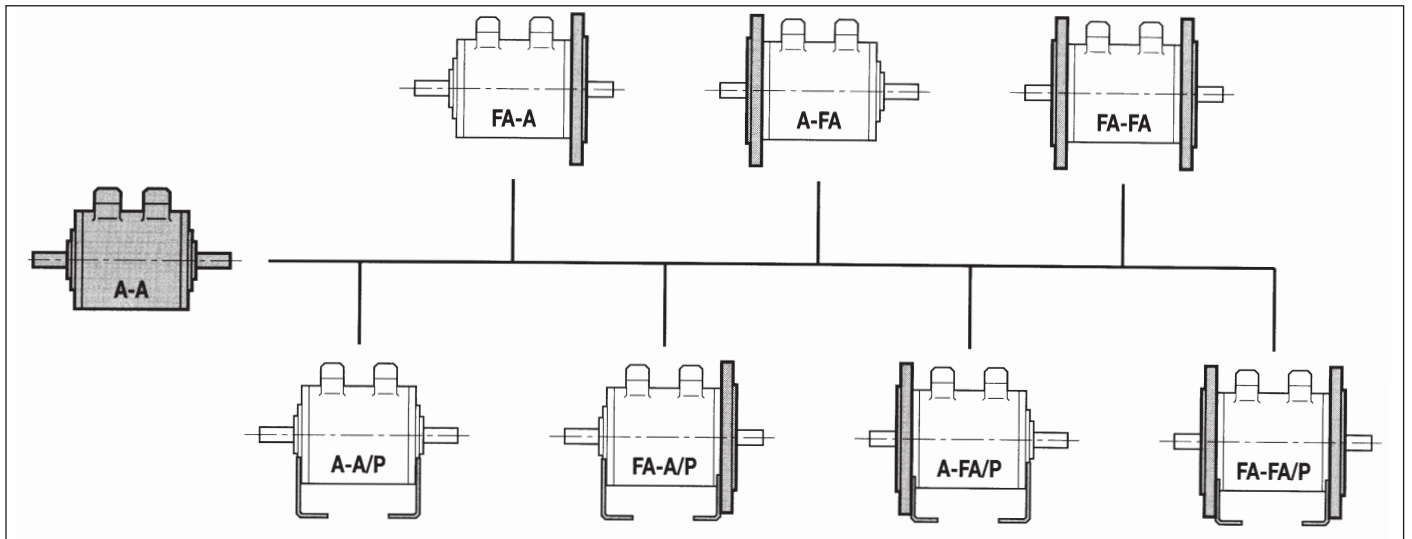
The unit is complete housed, so it can be used in damp or dusty environments without its efficiency being damaged. (Protection Grade IP 44, with IP 54 on request).

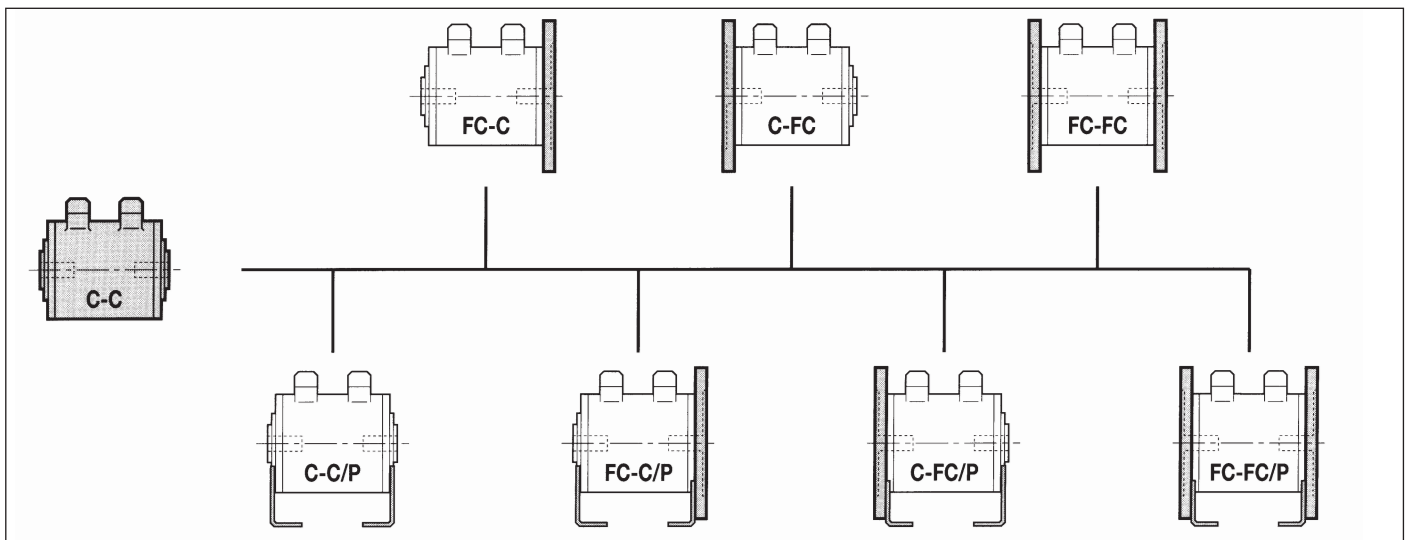
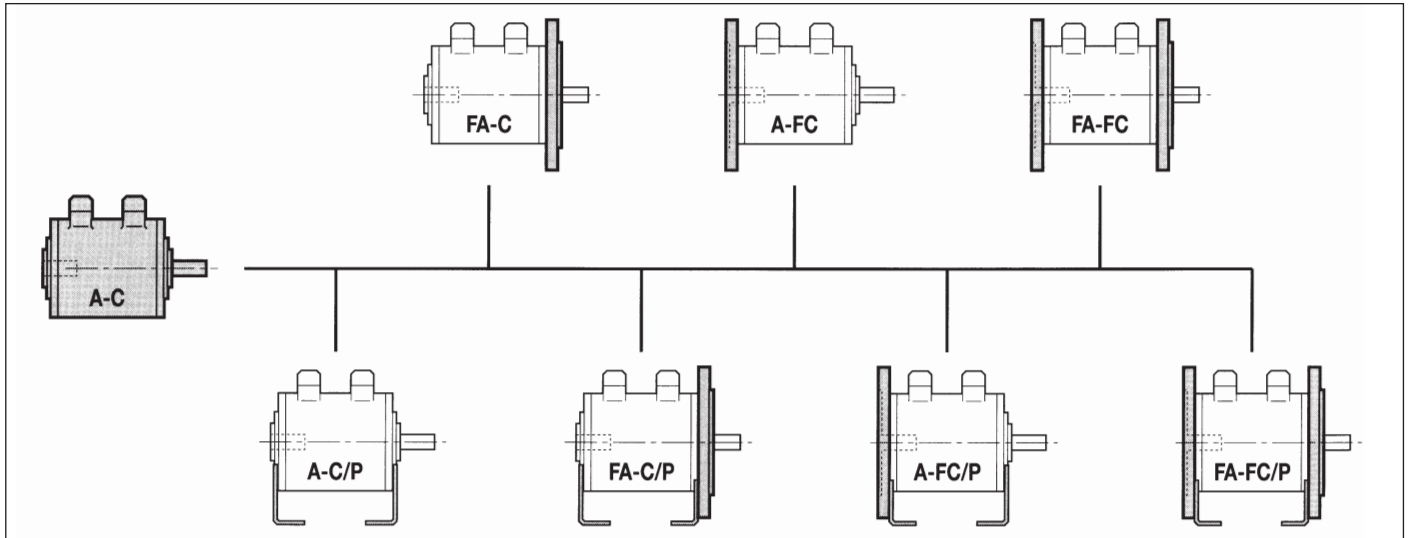
These units are used when fast, precise engagement and disengagement is required, and also when the operation frequency is high.

Power supply equipment with sealed components is recommended to obtain good repeatability. We also supply electronic equipment which can provide excellent repeatability, even with many operations per second.

All the versions are in accordance with the IEC Norms; which permits easy coupling with electric motors, speed reducers and variable reducers.

These clutch-brake units have a modular design. Starting from a basic configuration, many different versions can be produced, thus providing a solution to many mounting needs (see following pages).





ELECTROMAGNETIC CONTROL

*These clutch-brake are in accordance with **VDE 0580 NORMS***

POWER SUPPLY

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

MOUNTING AND ADJUSTMENT

Please follow the mounting instructions and the examples given in the following pages.

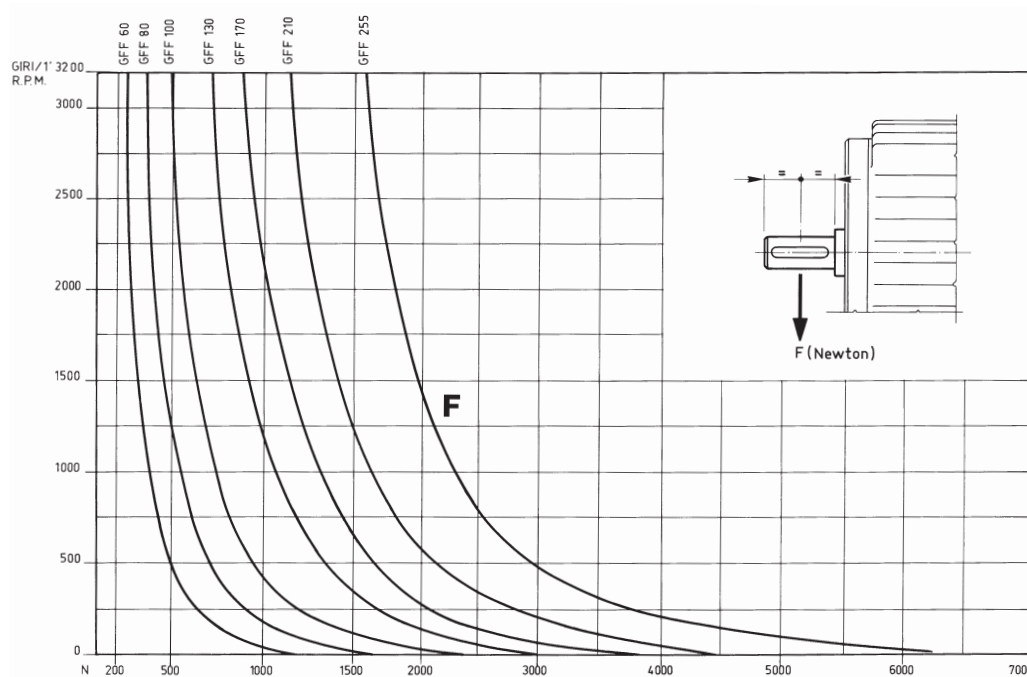
When the unit is not functioning properly and repeatability is affected, the air gap has to be adjusted.

Before adjusting the air gap, remove the cover (5) from the terminal section, supply the brake and measure the gap between the clutch rotor and the center armature, using a thickness gauge. If the air gap is more than twice the average value "A" shown in the table, it has to be adjusted.

Air gap adjustment

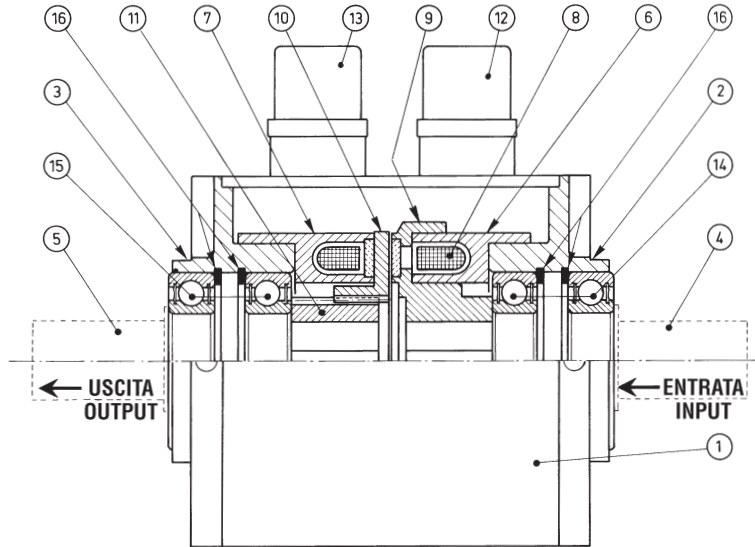
1. Remove the closure plugs (1) and set screws (2)
2. Loosen the screws (3) (not more than one turn).
3. Insert the thickness gauge between the rotor (6) and the armature (7). Turn the adjustment screws (4) on both sides until the desired gap is obtained. (The table will give the right gap «A» value) Make sure the gap is the same on both sides.
4. Tighten down the screws (3)
5. Insert the set screws (2) and tighten down; insert the closure plugs (1) and (5).

TIPO / TYPE	Air gap A
GFF 60	0,15
GFF 80	0,20
GFF 100	0,25
GFF 130	0,30
GFF 170	0,35

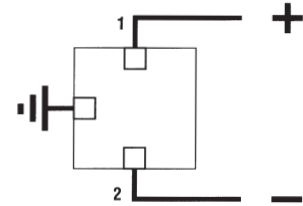




GFF/A - A



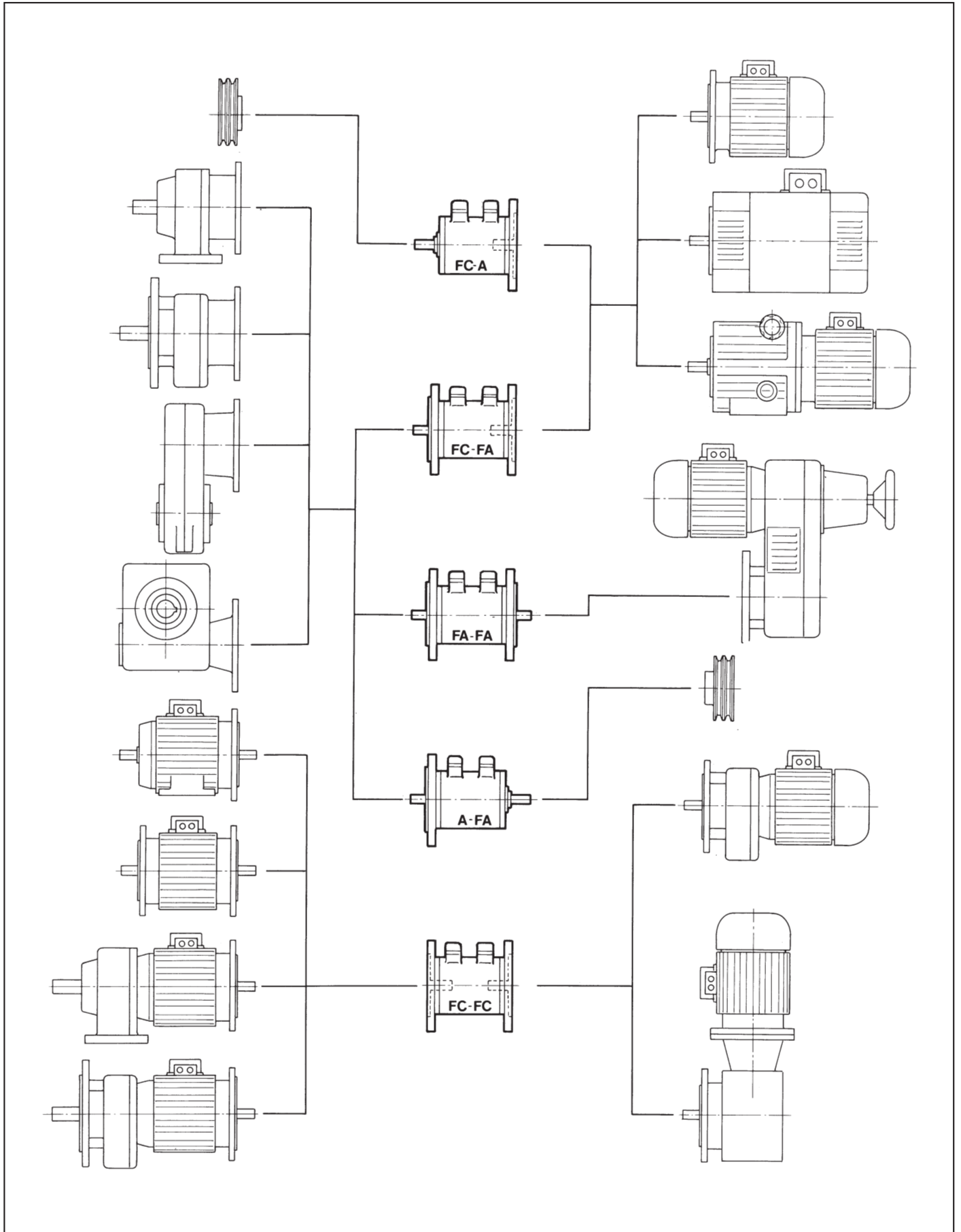
CONNETTORE / CONNECTOR



PARTS LIST

1. BODY
2. INLET COVER
3. OUTLET COVER
4. INPUT SHAFT
5. OUTPUT SHAFT
6. CLUTCH MAGNET
7. BRAKE MAGNET
8. COIL
9. ROTOR
10. ARMATURE
11. TOOTHED HUB
12. CLUTCH CONNECTOR
13. BRAKE CONNECTOR
14. INPUT BEARINGS
15. OUTPUT BEARINGS
16. INNER SAFETY RINGS

EXAMPLES OF MOUNTING





ENBLOC ELECTROMAGNETIC CLUTCH-BRAKE UNITS

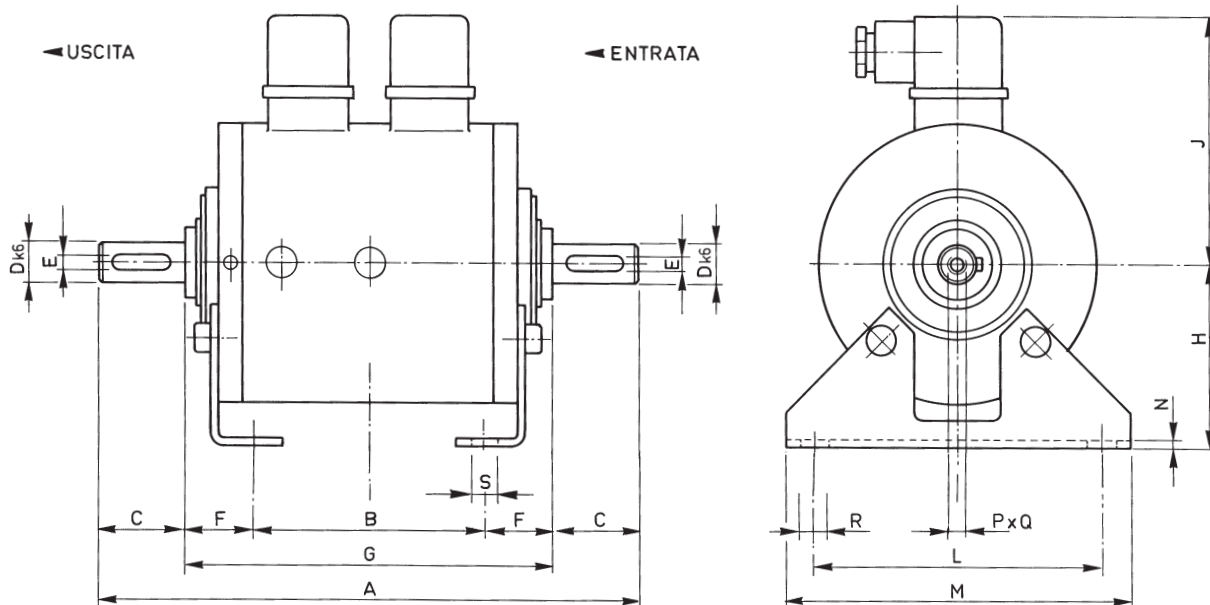
GFF .../A-A/P

09

MODEL CODE

1 GFF □□□/A-A/P
09.01.□□□.11

2 GFF □□□/A-A/P
09.01.□□□.12



□□□		Torques Mi (Nm)	Ms (Nm)	R.P.M. limit max	Build up time ms	Decay time ms	WATT		Weight kg
							20°	120°	
060	Clutch	6	7,5	8000	48	14	16	11,5	3,5
	Brake				40	9	12	8,5	
080	Clutch	12	15	6000	78	16	22	16	5,8
	Brake				50	10	17	12,5	
100	Clutch	24	30	5000	125	30	30	22	8,9
	Brake				70	14	22	16	
130	Clutch	50	70	4000	160	45	38	27	14,5
	Brake				100	18	30	22	
170	Clutch	95	130	3000	200	55	52	38	20,5
	Brake				150	25	40	28	

□□□-□□	A	B	C	D	E	F	G	H	J	K	L	M	N	P x Q	R	S	
060	.11	174	80	23	11	4	24	128	63	90	7	100	120	2,5	M 5 x 10	11	7
	.12	188		30	14	5											
080	.11	205	90	30	14	5	27,5	145	71	100	7	112	136	3	M 6 x 12	11	7
	.12	225		40	19	6											
100	.11	243	100	40	19	6	31,5	163	90	115	9	140	170	3,5	M 8 x 15	13	9
	.12	263		50	24	8											
130	.11	308	140	50	24	8	34	208	100	130	12	160	190	3,5	M 8 x 15	16	12
	.12	328		60	28	8											
170	.11	346	140	60	28	8	43	226	132	150	12	216	256	5	M 10 x 20	16	12
	.12	386		80	38	10											



**ENBLOC ELECTROMAGNETIC
CLUTCH-BRAKE UNITS**

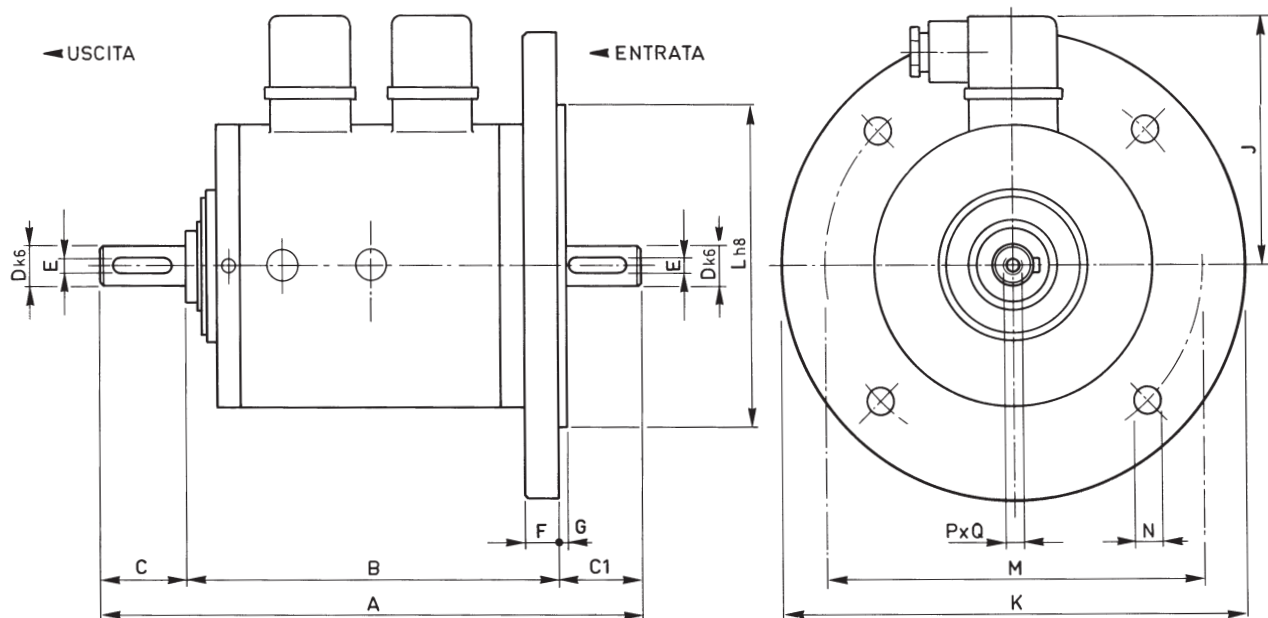
GFF .../FA-A

09

**MODEL
CODE**

1 GFF □□□/FA-A
09.01.□□□.21

2 GFF □□□/FA-A
09.01.□□□.22



□□□		Torques Mi (Nm)	Torques Ms (Nm)	R.P.M. limit max	Build up time ms	Decay time ms	WATT 20°	WATT 120°	Weight kg
060	Clutch	6	7,5	8000	48	14	16	11,5	3,5
	Brake				40	9	12	8,5	
080	Clutch	12	15	6000	78	16	22	16	5,8
	Brake				50	10	17	12,5	
100	Clutch	24	30	5000	125	30	30	22	8,9
	Brake				70	14	22	16	
130	Clutch	50	70	4000	160	45	38	27	14,5
	Brake				100	18	30	22	
170	Clutch	95	130	3000	200	55	52	38	20,5
	Brake				150	25	40	28	

□□□ - □□	A	B	C	C1	D	E	F	G	J	K	L	M	N	P x Q	
060	.21	174	129	23	22	11	4	12	3	90	140	95	115	9	M 5 x 10
	.22	188		30	29	14	5			160	110	130			
080	.21	205	146,5	30	28,5	14	5	13	3,5	100	160	110	130	11	M 6 x 12
	.22	225		40	38,5	19	6			200	130	165			
100	.21	243	164,5	40	38,5	19	6	13	3,5	115	200	130	165	11	M 8 x 15
	.22	263		50	48,5	24	8			200	130	165	11		
130	.21	308	210	50	48	24	8	15	4	130	200	130	165	11	M 8 x 15
	.22	328		60	58	28	8			250	180	215	14		
170	.21	346	229	60	57	28	8	18	4	150	250	180	215	14	M10 x 20
	.22	386		80	77	38	10			300	230	265	14		

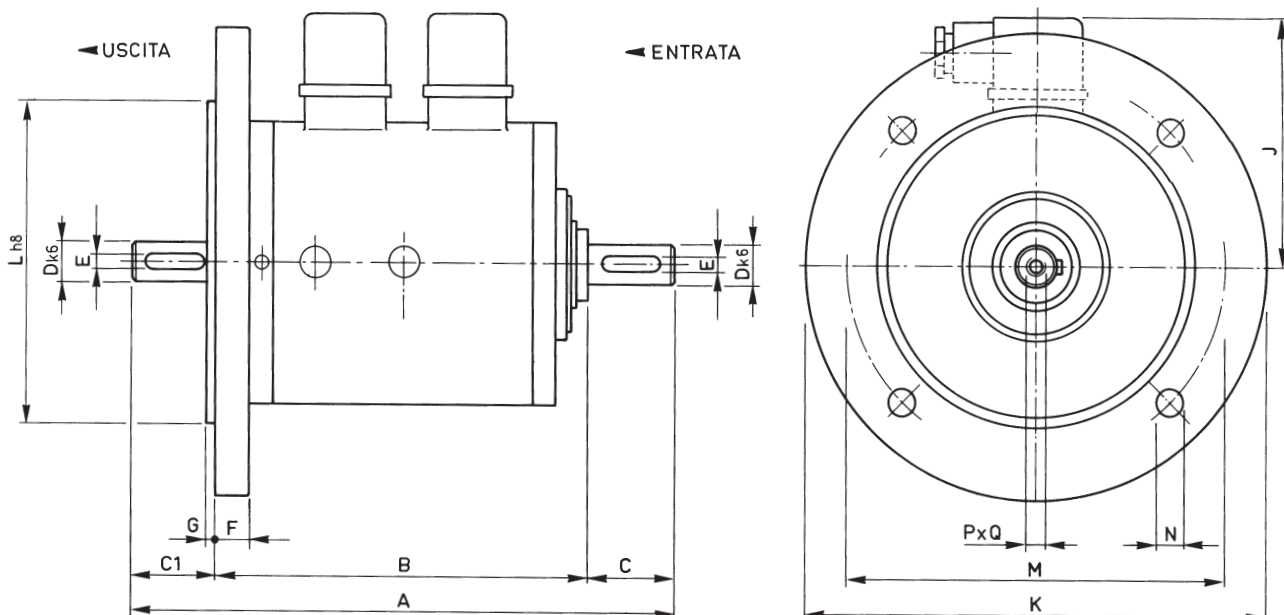


**ENBLOC ELECTROMAGNETIC
CLUTCH-BRAKE UNITS**

GFF .../A-FA

09

MODEL CODE	1 GFF □□□/A-FA 09.01.□□□.31	2 GFF □□□/A-FA 09.01.□□□.32
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□□□		Torques Mi (Nm)	Torques Ms (Nm)	R.P.M. limit max	Build up time ms	Decay time ms	WATT 20°	WATT 120°	Weight kg
060	Clutch	6	7,5	8000	48	14	16	11,5	3,5
	Brake				40	9	12	8,5	
080	Clutch	12	15	6000	78	16	22	16	5,8
	Brake				50	10	17	12,5	
100	Clutch	24	30	5000	125	30	30	22	8,9
	Brake				70	14	22	16	
130	Clutch	50	70	4000	160	45	38	27	14,5
	Brake				100	18	30	22	
170	Clutch	95	130	3000	200	55	52	38	20,5
	Brake				150	25	40	28	

□□□ - □□	A	B	C	C1	D	E	F	G	J	K	L	M	N	P x Q	
060	.31	174	129	23	22	11	4	12	3	90	140	95	115	9	M 5 x 10
	.32	188		30	29	14	5				160	110	130		
080	.31	205	146,5	30	28,5	14	5	13	3,5	100	160	110	130	9	M 6 x 12
	.32	225		40	38,5	19	6				200	130	165		
100	.31	243	164,5	40	38,5	19	6	13	3,5	115	200	130	165	11	M 8 x 15
	.32	263		50	48,5	24	8				200	130	165		
130	.31	308	210	50	48	24	8	15	4	130	200	130	165	11	M 8 x 15
	.32	328		60	58	28	8				250	180	215		
170	.31	346	229	60	57	28	8	18	4	150	250	180	215	14	M10 x 20
	.32	386		80	77	38	10				300	230	265		



**ENBLOC ELECTROMAGNETIC
CLUTCH-BRAKE UNITS**

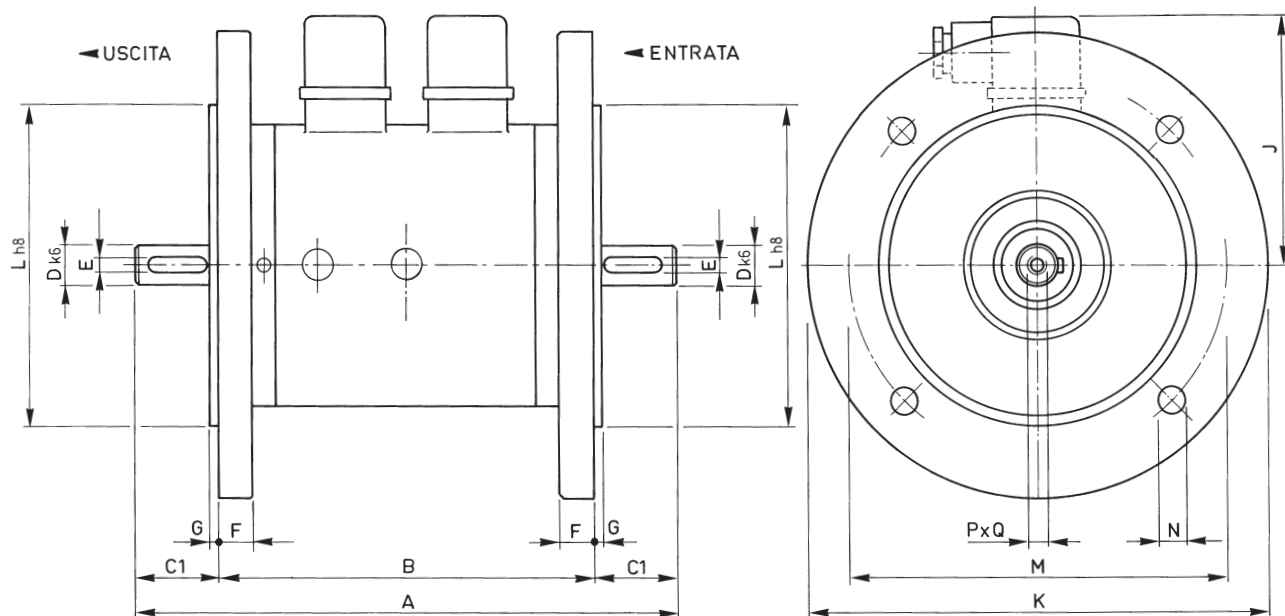
GFF .../FA-FA

09

MODEL
CODE

1 GFF □□□/FA-FA
09.01.□□□.41

2 GFF □□□/FA-FA
09.01.□□□.42



□□□		Torques Mi (Nm)	Ms (Nm)	R.P.M. limit max	Build up time ms	Decay time ms	WATT 20°	120°	Weight kg
060	Clutch	6	7,5	8000	48	14	16	11,5	3,5
	Brake				40	9	12	8,5	
080	Clutch	12	15	6000	78	16	22	16	5,8
	Brake				50	10	17	12,5	
100	Clutch	24	30	5000	125	30	30	22	8,9
	Brake				70	14	22	16	
130	Clutch	50	70	4000	160	45	38	27	14,5
	Brake				100	18	30	22	
170	Clutch	95	130	3000	200	55	52	38	20,5
	Brake				150	25	40	28	

□□□ - □□	A	B	C1	D	E	F	G	J	K	L	M	N	P x Q	
060	.41	174	130	22	11	4	12	3	90	140	95	115	9	M 5 x 10
	.42	188	130	29	14	5	12	3	90	160	110	130	9	M 5 x 10
080	.41	205	148	28,5	14	5	13	3,5	100	160	110	130	9	M 6 x 12
	.42	225	148	38,5	19	6	13	3,5	100	200	130	165	11	M 6 x 12
100	.41	243	166	38,5	19	6	13	3,5	115	200	130	165	11	M 8 x 15
	.42	263	166	48,5	24	8	13	3,5	115	200	130	165	11	M 8 x 15
130	.41	308	212	48	24	8	15	4	130	200	130	165	11	M 8 x 15
	.42	328	212	58	28	8	15	4	130	250	180	215	14	M 8 x 15
170	.41	346	232	57	28	8	18	4	150	250	180	215	14	M10 x 20
	.42	386	232	77	38	10	18	4	150	300	230	265	14	M10 x 20



**ENBLOC ELECTROMAGNETIC
CLUTCH-BRAKE UNITS**

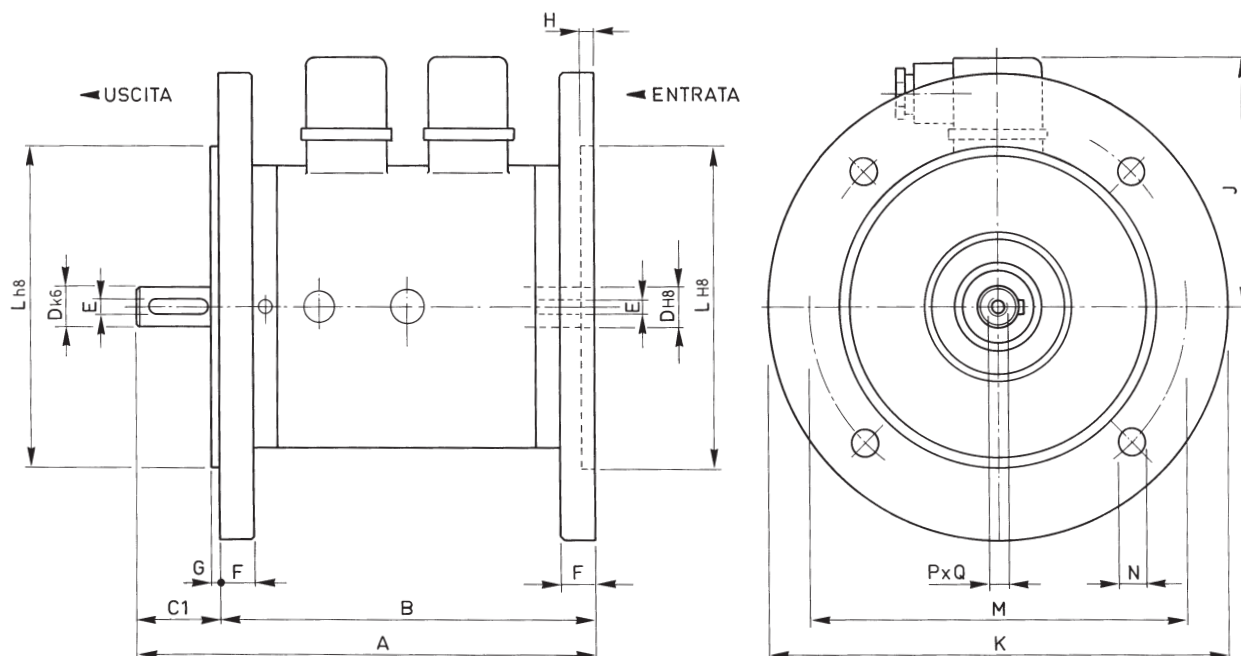
GFF .../FC-FA

09

**MODEL
CODE**

1 GFF □□□/FC-FA
09.02.□□□.11

2 GFF □□□/FC-FA
09.02.□□□.12



□□□		Mi (Nm)	Torques Ms (Nm)	R.P.M. limit max	Build up time ms	Decay time ms	WATT 20°	WATT 120°	Weight kg
060	Clutch	6	7,5	8000	48	14	16	11,5	3,5
	Brake				40	9	12	8,5	
080	Clutch	12	15	6000	78	16	22	16	5,8
	Brake				50	10	17	12,5	
100	Clutch	24	30	5000	125	30	30	22	8,9
	Brake				70	14	22	16	
130	Clutch	50	70	4000	160	45	38	27	14,5
	Brake				100	18	30	22	
170	Clutch	95	130	3000	200	55	52	38	20,5
	Brake				150	25	40	28	

□□□-□□	A	B	C1	D	E	F	G	H	J	K	L	M	N	P x Q
060	.11	152	130	22	11	4	3	5	90	140	95	115	9	M 5 x 10
	.12	159		29	14	5				12	160	110		
080	.11	176,5	148	28,5	14	5	3,5	6	100	160	110	130	9	M 6 x 12
	.12	186,5		38,5	19	6				13	200	130		
100	.11	204,5	166	38,5	19	6	3,5	6	115	200	130	165	11	M 8 x 15
	.12	214,5		48,5	24	8				13	200	130		
130	.11	260	212	48	24	8	4	7	130	200	130	165	11	M 8 x 15
	.12	270		58	28	8				15	250	180		
170	.11	289	232	57	28	8	4	8	150	250	180	215	14	M10 x 20
	.12	309		77	38	10				18	300	230		

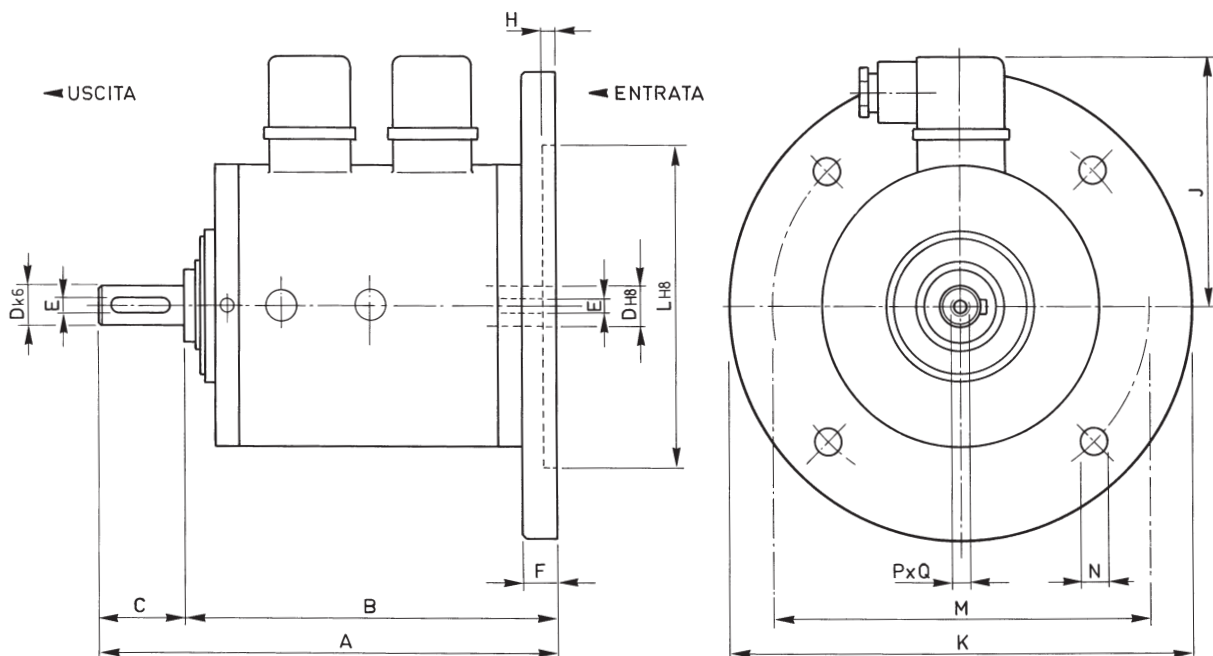


ENBLOC ELECTROMAGNETIC CLUTCH-BRAKE UNITS

GFF .../FC-A

09

MODEL CODE	1 GFF □□□/FC-A 09.02.□□□.21	2 GFF □□□/FC-A 09.02.□□□.22
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□□□		Torques Mi (Nm)	Torques Ms (Nm)	R.P.M. limit max	Build up time ms	Decay time ms	WATT 20°	WATT 120°	Weight kg
060	Clutch	6	7,5	8000	48	14	16	11,5	3,5
	Brake				40	9	12	8,5	
080	Clutch	12	15	6000	78	16	22	16	5,8
	Brake				50	10	17	12,5	
100	Clutch	24	30	5000	125	30	30	22	8,9
	Brake				70	14	22	16	
130	Clutch	50	70	4000	160	45	38	27	14,5
	Brake				100	18	30	22	
170	Clutch	95	130	3000	200	55	52	38	20,5
	Brake				150	25	40	28	

□□□ - □□	A	B	C	D	E	F	H	J	K	L	M	N	P x Q	
060	.21	152	129	23	11	4	12	5	90	140	95	115	9	M 5 x 10
	.22	159		30	14	5				160	110	130		
080	.21	176,5	146,5	30	14	5	13	6	100	160	110	130	9	M 6 x 12
	.22	186,5		40	19	6				200	130	165		
100	.21	204,5	164,5	40	19	6	13	6	115	200	130	165	11	M 8 x 15
	.22	214,5		50	24	8				200	130	165		
130	.21	260	210	50	24	8	15	7	130	200	130	165	11	M 8 x 15
	.22	270		60	28	8				250	180	215		
170	.21	289	229	60	28	8	18	8	150	250	180	215	14	M10 x 20
	.22	309		80	38	10				300	230	265		

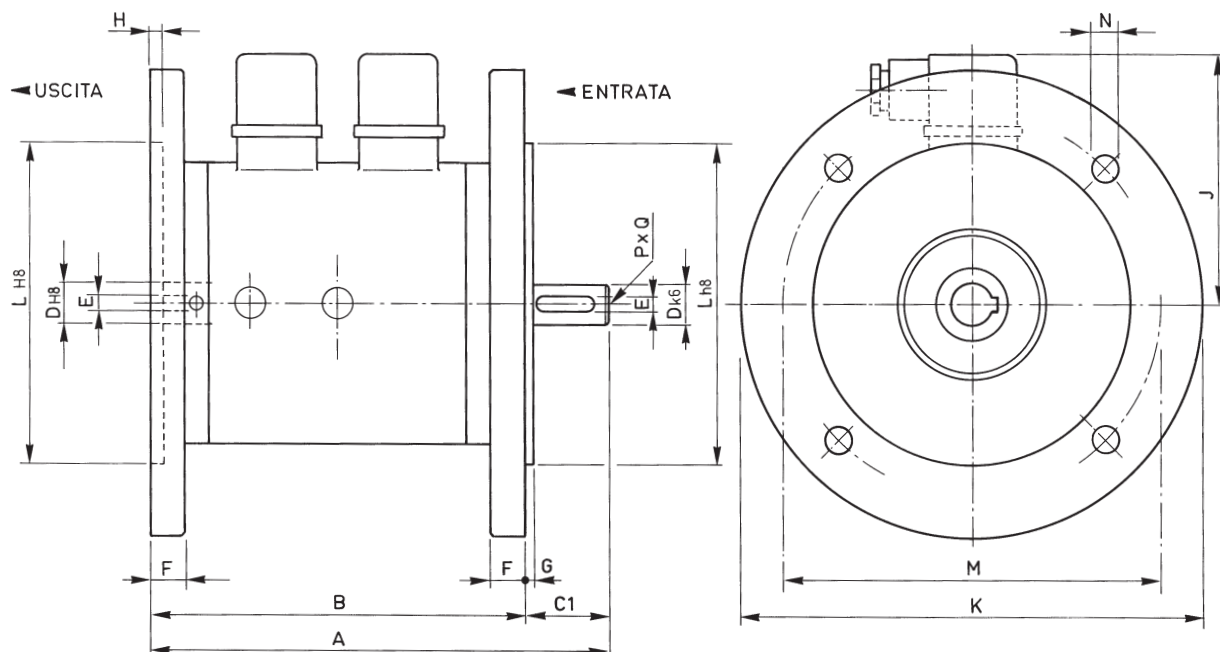


**ENBLOC ELECTROMAGNETIC
CLUTCH-BRAKE UNITS**

GFF .../FA-FC

09

MODEL CODE	1	GFF □□□/FA-FC 09.03.□□□.11	2	GFF □□□/FA-FC 09.03.□□□.12
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□□□		Torques Mi (Nm)	Torques Ms (Nm)	R.P.M. limit max	Build up time ms	Decay time ms	WATT 20°	WATT 120°	Weight kg
060	Clutch	6	7,5	8000	48	14	16	11,5	3,5
	Brake				40	9	12	8,5	
080	Clutch	12	15	6000	78	16	22	16	5,8
	Brake				50	10	17	12,5	
100	Clutch	24	30	5000	125	30	30	22	8,9
	Brake				70	14	22	16	
130	Clutch	50	70	4000	160	45	38	27	14,5
	Brake				100	18	30	22	
170	Clutch	95	130	3000	200	55	52	38	20,5
	Brake				150	25	40	28	

□□□ - □□	A	B	C1	D	E	F	G	H	J	K	L	M	N	P x Q
060	.11	152	130	22	11	4	3	5	90	140	95	115	9	M 5 x 10
	.12	159		29	14	5				12	160	110		
080	.11	176,5	148	28,5	14	5	3,5	6	100	160	110	130	9	M 6 x 12
	.12	186,5		38,5	19	6				13	200	130		
100	.11	204,5	166	38,5	19	6	3,5	6	115	200	130	165	11	M 8 x 15
	.12	214,5		48,5	24	8				13	200	130		
130	.11	260	212	48	24	8	4	7	130	200	130	165	11	M 8 x 15
	.12	270		58	28	8				15	250	180		
170	.11	289	232	57	28	8	4	8	150	250	180	215	14	M10 x 20
	.12	309		77	38	10				18	300	230		



ENBLOC ELECTROMAGNETIC CLUTCH-BRAKE UNITS

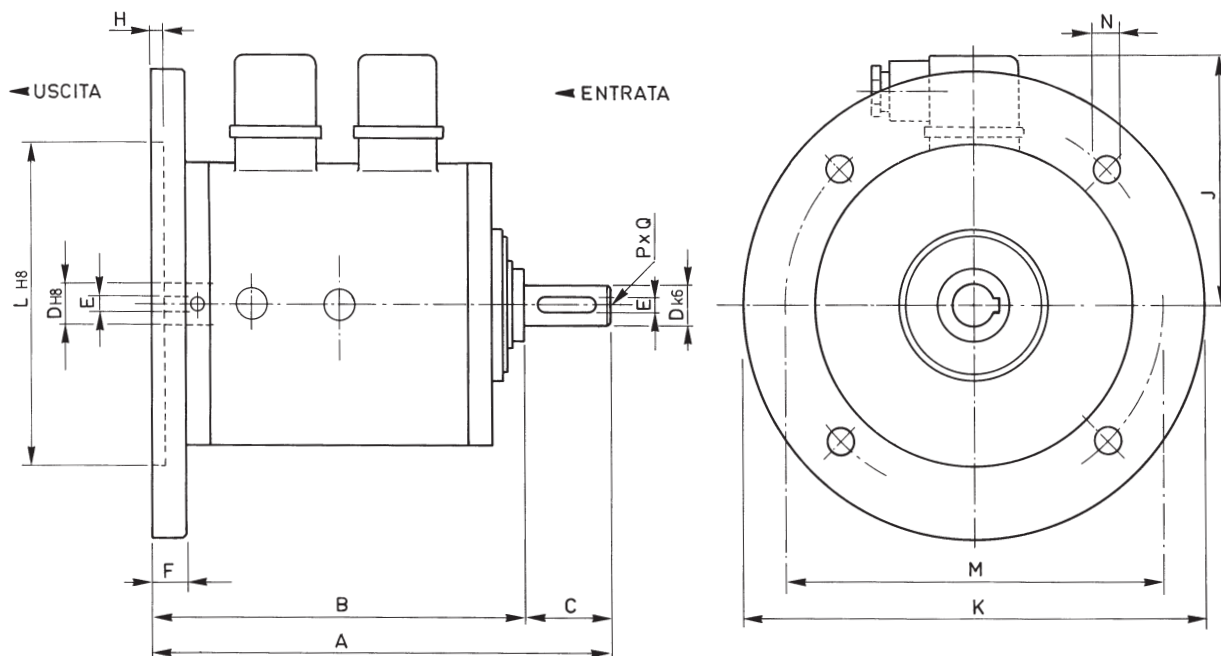
GFF .../A-FC

09

MODEL CODE

1 GFF □□□A-FC
09.03.□□□.21

2 GFF □□□/A-FC
09.03.□□□.22



□□□		Torques Mi (Nm)	Torques Ms (Nm)	R.P.M. limit max	Build up time ms	Decay time ms	WATT 20°	WATT 120°	Weight kg
060	Clutch	6	7,5	8000	48	14	16	11,5	3,5
	Brake				40	9	12	8,5	
080	Clutch	12	15	6000	78	16	22	16	5,8
	Brake				50	10	17	12,5	
100	Clutch	24	30	5000	125	30	30	22	8,9
	Brake				70	14	22	16	
130	Clutch	50	70	4000	160	45	38	27	14,5
	Brake				100	18	30	22	
170	Clutch	95	130	3000	200	55	52	38	20,5
	Brake				150	25	40	28	

□□□ - □□	A	B	C	D	E	F	H	J	K	L	M	N	P x Q	
060	.21	152	129	23	11	4	12	5	90	140	95	115	9	M 5 x 10
	.22	159		30	14	5				160	110	130		
080	.21	176,5	146,5	30	14	5	13	6	100	160	110	130	9	M 6 x 12
	.22	186,5		40	19	6				200	130	165		
100	.21	204,5	164,5	40	19	6	13	6	115	200	130	165	11	M 8 x 15
	.22	214,5		50	24	8				200	130	165		
130	.21	260	212	50	24	8	15	7	130	200	130	165	11	M 8 x 15
	.22	270		60	28	8				250	180	215		
170	.21	289	229	60	28	8	18	8	150	250	180	215	14	M10 x 20
	.22	309		80	38	10				300	230	265		

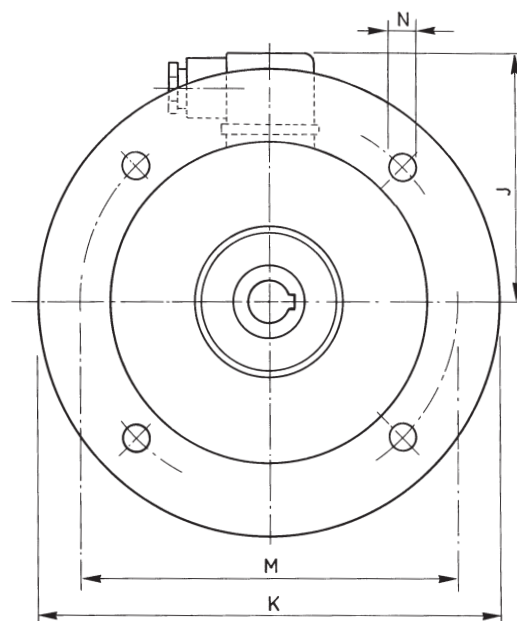
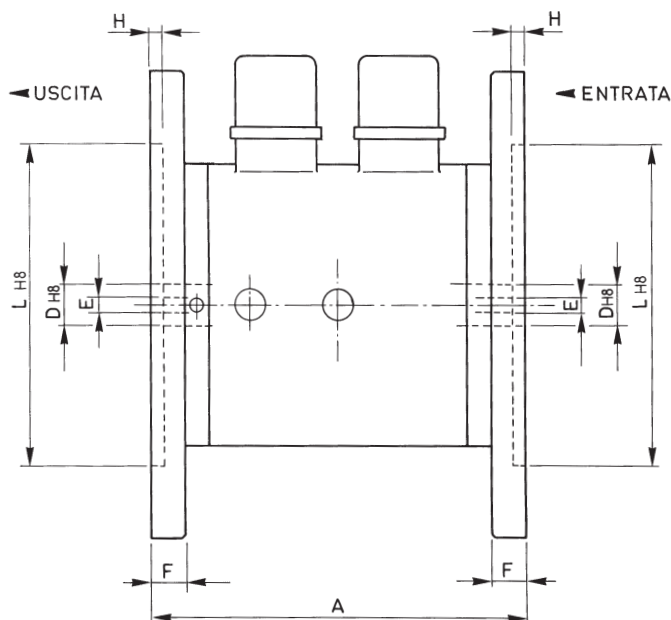


**ENBLOC ELECTROMAGNETIC
CLUTCH-BRAKE UNITS**

GFF .../FC-FC

09

MODEL CODE	1	GFF □□□/FC-FC 09.04.□□□.11	2	GFF □□□/FC-FC 09.04.□□□.12
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□□□		Torques		R.P.M. limit	Build up time	Decay time	WATT		Weight
		Mi (Nm)	Ms (Nm)	max	ms	ms	20°	120°	kg
060	Clutch	6	7,5	8000	48	14	16	11,5	3,5
	Brake				40	9	12	8,5	
080	Clutch	12	15	6000	78	16	22	16	5,8
	Brake				50	10	17	12,5	
100	Clutch	24	30	5000	125	30	30	22	8,9
	Brake				70	14	22	16	
130	Clutch	50	70	4000	160	45	38	27	14,5
	Brake				100	18	30	22	
170	Clutch	95	130	3000	200	55	52	38	20,5
	Brake				150	25	40	28	

□□□ - □□	A	D	E	F	H	J	K	L	M	N	
060	.11	130	11	4	12	5	90	140	95	115	9
	.12		14	5	160		110	130			
080	.11	148	14	5	13	6	100	160	110	130	9
	.12		19	6	200		130	165	11		
100	.11	166	19	6	13	6	115	200	130	165	11
	.12		24	8	200		130	165	11		
130	.11	212	24	8	15	7	130	200	130	165	11
	.12		28	8	250		180	215	14		
170	.11	232	28	8	18	8	150	250	180	215	14
	.12		38	10	300		230	265	14		