

## MSEJ

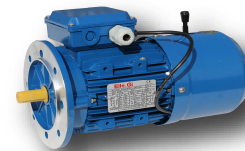
**ASYNCHRONOUS THREE-PHASE BRAKE MOTORS WITH SQUIRREL CAGE ROTOR. DIRECT CURRENT BRAKE**  
**MOTORI ASINCRONI TRIFASE AUTOFREBANTI CON ROTORE A GABBIA E FRENO IN CORRENTE CONTINUA**

MSEJ series-enclosed construction externally ventilated-sizes 63-160 - **Costruiti dalla taglia 63 alla taglia 160**

The brake-motors of the MSBCCL series result from coupling an asynchronous three-phase motor and an electromagnetic D.C. Brake unit. Due to their reliability and operating safety, as well as their quick braking time(connection & disconnection time=5~80 milliseconds) they are suitable for a great variety of applications, as:

**I motori sono composti da motori trifase e freno elettromagnetico. Grazie alla loro affidabilità e sicurezza e alla velocità di intervento del freno (tempo di intervento 5/80 millisecondi) possono essere utilizzati in svariate applicazioni.**

- Braking of loads or torques on the driving shaft. - **Frenatura dei carichi o reazione sull'albero**
- Braking of rotating masses to reduce and lost-time - **Frenatura di masse rotanti per ridurre perdite di tempo.**
- Braking operations to increase the set-up precision. - **Operazioni di frenatura per aumentare la precisione**
- Braking of machine parts, according to safety rules. - **Frenatura di parti della macchina, secondo le norme di sicurezza.**



## MSEJ ASINCRONOUS THREE PHASES BRAKE MOTORS WITH DIRECT CURRENT BRAKE MOTORI ASINCRONI TRIFASE AUTOFRENANTI CON FRENO CORRENTE CONTINUA

### TECHNICAL DATA

2 Poles-3000rpm-50Hz

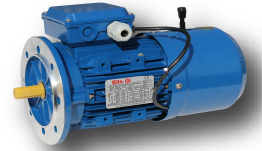
Brake motors have a  $\pm 60\%$  tolerance on the supply voltage

2 POLES - 2 POLI	Model	Power (KW)	Speed (r/min)	Eff (%)	Power factor	Rated Current (A)			Tstart/Tn (Times)	Tmax/Tn (Times)	Tmin/Tn (Times)	Is/In	Noise dB(A)
						230V	400V	690V					
						MSEJ631-2	0.18	2710					
MSEJ632-2	0.25	2710	65	0.78	1.23	0.71	0.41	2.2	2.4	1.6	6	61	
MSEJ633-2	0.37	2710	65	0.78	1.82	1.05	0.61	2.2	2.4	1.6	6	62	
MSEJ711-2	0.37	2730	70	0.79	1.67	0.97	0.56	2.2	2.4	1.6	6	64	
MSEJ712-2	0.55	2730	71	0.79	2.45	1.42	0.82	2.2	2.4	1.6	6	64	
MSEJ713-2	0.75	2730	72	0.82	3.18	1.83	1.06	2.2	2.4	1.5	6	65	
MSEJ801-2	0.75	2770	73	0.84	3.06	1.77	1.02	2.2	2.4	1.5	6	67	
MSEJ802-2	1.1	2770	76	0.83	4.35	2.51	1.45	2.2	2.4	1.5	6	67	
MSEJ803-2	1.5	2800	78	0.83	5.87	3.32	1.92	2.2	2.4	1.5	6	70	
MSEJ90S-2	1.5	2840	78	0.84	5.76	3.28	1.90	2.2	2.4	1.5	6	72	
MSEJ90L1-2	2.2	2840	81	0.85	8.0	4.61	2.66	2.2	2.4	1.4	6	72	
MSEJ90L2-2	3.	2840	82	0.86	10.56	6.10	3.52	2.2	2.4	1.4	6	74	
MSEJ100L1-2	3	2840	82	0.87	10.44	6.03	3.48	2.2	2.3	1.4	7	76	
MSEJ100L2-2	4	2850	84	0.87	13.65	7.88	4.55	2.2	2.3	1.4	7.5	77	
MSEJ112M-2	4	2880	84	0.87	13.65	7.88	4.55	2.2	2.3	1.4	7.5	77	
MSEJ112L-2	5.5	2880	85	0.88	18.23	10.53	6.08	2.2	2.3	1.2	7.5	78	
MSEJ132S1-2	5.5	2900	85	0.88	18.23	10.53	6.08	2	2.2	1.2	7.5	80	
MSEJ132S2-2	7.5	2920	87	0.88	24.49	14.14	8.16	2	2.2	1.2	7.5	80	
MSEJ132M1-2	9.2	2930	88	0.89	29.87	17.25	9.96	2	2.2	1.2	7.5	81	
MSEJ132M2-2	11	2930	88	0.9	34.57	19.96	11.52	2	2.2	1.2	7.5	83	
MSEJ160M1-2	11	2940	88	0.9	34.57	19.96	11.52	2	2.2	1.2	7.5	86	
MSEJ160M2-2	15	2940	88	0.91	46.09	26.61	15.36	2	2.2	1.2	7.5	86	
MSEJ160L-2	18.5	2940	90	0.91	56.47	32.6	18.82	2	2.2	1.1	7.5	86	

Type	Brake Type k	Brake Torque Nm	Brake Rated Power W	J Brake Pd <sup>2</sup> kgm <sup>2</sup>	No.of Starts/Hr Under no load	Delayed Cut-in Time★ Msec.	Quick Cut-in Time Msec.	Cut Out Time Msec.	Noise dB(A)
MSEJ 63	K1	6	15	0.00005	3000	45	20	10	62
MSEJ 71	K2	6	15	0.00014	3000	50	30	15	64
MSEJ 80	K3	12	20	0.00021	1300	55	30	15	67
MSEJ 90S	K4	20	30	0.00039	1100	65	40	15	72
●MSEJ 90S	K4D	23	30	0.00039	1100	65	40	15	72
MSEJ 90L	K4	20	30	0.00039	1100	65	40	15	72
●MSEJ 90L	K4D	23	30	0.00039	1100	65	40	15	72
MSEJ 100L	K5	40	45	0.00104	900	75	45	20	76
●MSEJ 100L	K6	46	45	0.00104	900	180	85	25	76
MSEJ 112MT	K5	40	45	0.00104	880	75	45	20	77
MSEJ 112M	K6	60	50	0.00135	880	180	85	25	78
MSEJ 132S	K7	90	55	0.00219	480	200	95	50	80
●MSEJ 132S	K7D	125	55	0.00438	480	200	95	50	80
MSEJ 132M	K7	90	55	0.00219	450	200	95	50	80
●MSEJ 132M	K7D	125	55	0.00438	480	200	95	50	80
MSEJ 160MT	K7D	180	55	0.00438	350	200	95	50	86
MSEJ 160L	K8	235	60	0.00408	350	210	100	60	86
●MSEJ 160L	K8D	235	60	0.00408	350	210	100	60	86

●Motor with increased braking torque on request

★On request, delayed brake cut in time for lifting equipments. We suggest double disk brake D for lifting equipments.



## MSEJ ASINCRONOUS THREE PHASES BRAKE MOTORS WITH DIRECT CURRENT BRAKE MOTORI ASINCRONI TRIFASE AUTOFRENANTI CON FRENO CORRENTE CONTINUA

4 Poles-1500rpm-50Hz

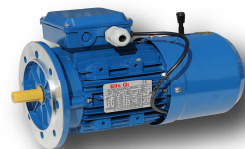
Brake motors have a  $\pm 60\%$  tolerance on the supply voltage

4 POLES - 4 POLI	Model	Power (KW)	Speed (r/min)	Eff (%)	Power factor	Rated Current (A)			Tstart/Tn (Times)	Tmax/Tn (Times)	Tmin/Tn (Times)	Is/In	Noise dB(A)
						230V	400V	690V					
MSEJ631-4	0.12	1350	57	0.64	0.82	0.47	0.27	2.2	2.4	1.7	6	52	
MSEJ632-4	0.18	1350	59	0.65	1.17	0.68	0.39	2.2	2.4	1.7	6	52	
MSEJ633-4	0.25	1350	60	0.66	1.58	0.91	0.53	2.2	2.4	1.7	6	54	
MSEJ711-4	0.25	1350	60	0.72	1.45	0.84	0.48	2.2	2.4	1.7	6	55	
MSEJ712-4	0.37	1370	65	0.74	1.92	1.11	0.64	2.2	2.4	1.7	6	55	
MSEJ713-4	0.55	1380	66	0.75	2.78	1.60	0.93	2.2	2.4	1.7	6	57	
MSEJ801-4	0.55	1370	67	0.75	2.74	1.58	0.91	2.2	2.4	1.7	6	58	
MSEJ802-4	0.75	1380	72	0.78	3.34	1.93	1.11	2.2	2.4	1.6	6	58	
MSEJ803-4	1.1	1390	76	0.78	4.63	2.67	1.54	2.2	2.4	1.6	6	60	
MSEJ90S-4	1.1	1400	76	0.79	4.57	2.64	1.52	2.2	2.4	1.6	6	61	
MSEJ90L-4	1.5	1400	78	0.8	5.97	3.54	1.99	2.2	2.4	1.6	6	61	
MSEJ90L2-4	2.2	1400	81	0.8	8.45	4.90	2.83	2.2	2.4	1.5	7	63	
MSEJ100L1-4	2.2	1420	81	0.81	8.38	4.84	2.79	2.2	2.3	1.5	7	64	
MSEJ100L2-4	3	1420	82	0.81	11.21	6.47	3.74	2.2	2.3	1.5	7	64	
MSEJ100L3-4	4	1430	84	0.82	14.18	8.36	4.83	2.2	2.3	1.5	7	65	
MSEJ112M-4	4	1430	84	0.83	14.31	8.26	4.77	2.2	2.2	1.5	7	65	
MSEJ112L-4	5.5	1440	85	0.83	19.33	11.16	6.44	2.2	2.2	1.4	7	68	
MSEJ132S-4	5.5	1450	85	0.84	19.1	11.03	6.37	2.2	2.2	1.4	7	71	
MSEJ132M-4	7.5	1450	87	0.85	25.35	14.64	8.45	2.2	2.2	1.4	7	71	
MSEJ132L1-4	9.2	1460	87	0.85	30.92	17.85	10.31	2.2	2.2	1.4	7	74	
MSEJ132L2-4	10	1460	88	0.85	33.42	19.3	11.14	2.2	2.2	1.4	7.5	74	
MSEJ132L2-4	11	1460	88	0.86	36.17	20.88	12.06	2.2	2.2	1.4	7.5	74	
MSEJ160M-4	11	1460	88	0.87	35.76	20.64	11.92	2.2	2.2	1.4	7.5	75	
MSEJ160L-4	15	1460	88	0.87	48.76	28.15	16.25	2.2	2.2	1.4	7.5	75	

Type	Brake Type k	Brake Torque Nm	Brake Rated Power W	J Brake Pd <sup>2</sup> kgm <sup>2</sup>	No.of Starts/Hr Under no load	Delayed Cut-in Time★ Msec.	Quick Cut-in Time Msec.	Cut Out Time Msec.	Noise dB(A)
MSEJ 63	K1	5	15	0.00005	3000	45	20	10	52
MSEJ 71	K2	12	20	0.00014	3000	50	30	15	55
MSEJ 80	K3	16	25	0.00021	1300	55	30	15	58
MSEJ 90S	K4	20	30	0.00039	1100	65	40	15	61
●MSEJ 90S	K4D	40	30	0.00078	1100	65	40	15	61
MSEJ 90L	K4	20	30	0.00039	1100	65	40	15	63
●MSEJ 90L	K4D	40	30	0.00078	1100	65	40	15	63
MSEJ 100L	K5	40	45	0.00104	900	75	45	20	64
●MSEJ 100L	K6	60	50	0.00135	900	180	85	25	65
MSEJ 112MT	K5	40	45	0.00104	880	75	45	20	65
MSEJ 112M	K6	60	50	0.00135	880	180	85	25	65
MSEJ 132S	K7	90	55	0.00219	480	200	95	50	71
●MSEJ 132S	K7D	180	55	0.00438	480	200	95	50	71
MSEJ 132M	K7	90	55	0.00219	450	200	95	50	71
●MSEJ 132M	K7D	180	55	0.00438	480	200	95	50	71
MSEJ 160MT	K7D	180	55	0.00438	350	200	95	50	75
MSEJ 160L	K8	200	60	0.00408	350	210	100	60	75
●MSEJ 160L	K8D	400	60	0.00816	350	210	100	60	75

● Motor with increased braking torque on request

★ On request, delayed brake cut in time for lifting equipments. We suggest double disk brake D for lifting equipments.



## MSEJ ASINCRONOUS THREE PHASES BRAKE MOTORS WITH DIRECT CURRENT BRAKE MOTORI ASINCRONI TRIFASE AUTOFRENANTI CON FRENO CORRENTE CONTINUA

6 Poles-1000rpm-50Hz

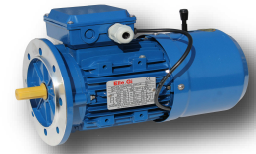
Brake motors have a  $\pm 60\%$  tolerance on the supply voltage

6 POLES - 6 POLI	Model	Power (KW)	Speed (r/min)	Eff (%)	Power factor	Rated Current (A)			Tstart/Tn (Times)	Tmax/Tn (Times)	Tmin/Tn (Times)	Is/In	Noise dB(A)
						230V	400V	690V					
						MSEJ631-6	0.09	840					
MSEJ632-6	0.12	850	45	0.62	1.08	0.62	0.36	2	2	1.5	3.5	50	
MSEJ711-6	0.18	880	56	0.66	1.22	0.70	0.41	1.6	1.7	1.5	4	52	
MSEJ712-6	0.25	900	59	0.7	1.51	0.87	0.50	2.1	2.2	1.5	4	52	
MSEJ713-6	0.37	890	61	0.69	2.2	1.27	0.73	2	2.1	1.5	4	54	
MSEJ801-6	0.37	900	62	0.7	2.13	1.23	0.71	1.9	1.9	1.5	4	56	
MSEJ802-6	0.55	900	67	0.72	2.85	1.65	0.95	2	2.3	1.5	4	56	
MSEJ803-6	0.75	900	68	0.72	3.83	2.21	1.28	2	2.3	1.5	4	58	
MSEJ90S-6	0.75	920	69	0.72	3.77	2.18	1.26	2.2	2.2	1.5	5.5	59	
MSEJ90L-6	1.1	925	72	0.73	5.23	3.02	1.74	2.2	2.2	1.3	5.5	59	
MSEJ100L-6	1.5	945	74	0.76	6.67	3.85	2.22	2.2	2.2	1.3	6	61	
MSEJ112M-6	2.2	955	78	0.76	9.28	5.36	3.09	2.2	2.2	1.3	6	64	
MSEJ132S-6	3	960	79	0.76	12.49	7.21	4.16	2	2	1.3	6.5	64	
MSEJ132M1-6	4	960	80	0.76	16.35	9.44	5.45	2	2	1.3	6.5	68	
MSEJ132M2-6	5.5	960	83	0.77	21.51	12.42	7.17	2	2	1.3	6.5	68	
MSEJ132L-6	7.5	960	85	0.77	28.65	16.54	9.55	2	2	1.3	6.5	68	
MSEJ160M-6	7.5	960	86	0.8	27.25	45.73	9.08	2	2	1.3	6.5	68	
MSEJ160L-6	11	960	87	0.79	39.78	22.97	13.26	2	2	1.2	6.5	73	

Type	Brake Type k	Brake Torque Nm	Brake Rated Power W	J Brake Pd <sup>2</sup> kgm <sup>2</sup>	No.of Starts/Hr Under no load	Delayed Cut-in Time★ Msec.	Quick Cut-in Time Msec.	Cut Out Time Msec.	Noise dB(A)
MSEJ 63	K1	5	15	0.00005	3000	45	20	10	50
MSEJ 71	K2	12	20	0.00014	3000	50	30	15	52
MSEJ 80	K3	16	25	0.00021	1300	55	30	15	56
MSEJ 90S	K4	20	30	0.00039	1100	65	40	15	59
●MSEJ 90S	K4D	40	30	0.00078	1100	65	40	15	59
MSEJ 90L	K4	20	30	0.00039	1100	65	40	15	59
●MSEJ 90L	K4D	40	30	0.00078	1100	65	40	15	59
MSEJ 100L	K5	40	45	0.00104	900	75	45	20	61
●MSEJ 100L	K6	60	50	0.00135	900	180	85	25	61
MSEJ 112MT	K5	40	45	0.00104	880	75	45	20	64
MSEJ 112M	K6	60	50	0.00135	880	180	85	25	64
MSEJ 132S	K7	90	55	0.00219	480	200	95	50	64
●MSEJ 132S	K7D	180	55	0.00438	480	200	95	50	64
MSEJ 132M	K7	90	55	0.00219	450	200	95	50	68
●MSEJ 132M	K7D	180	55	0.00438	480	200	95	50	68
MSEJ 160MT	K7D	180	55	0.00438	350	200	95	50	68
MSEJ 160L	K8	200	60	0.00408	350	210	100	60	73
●MSEJ 160L	K8D	400	60	0.00816	350	210	100	60	73

●Motor with increased braking torque on request

★On request, delayed brake cut in time for lifting equipments. We suggest double disk brake D for lifting equipments.



## MSEJ ASINCRONOUS THREE PHASES BRAKE MOTORS WITH DIRECT CURRENT BRAKE MOTORI ASINCRONI TRIFASE AUTOFRENANTI CON FRENO CORRENTE CONTINUA

### TECHNICAL FEATURES

6 Poles-1000rpm-50Hz

Brake motors have a  $\pm 60\%$  tolerance on the supply voltage

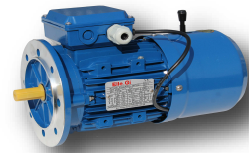
8 POLES - 8 POLI	Model	Power (KW)	Speed (r/min)	Eff (%)	Power factor	Rated Current (A)			Tstart/Tn (Times)	Tmax/Tn (Times)	Tmin/Tn (Times)	Is/In	Noise dB(A)
						230V	400V	690V					
						MSEJ711-8	0.09	680					
MSEJ712-8	0.12	690	51	0.59	1.00	0.58	0.33	1.6	1.7	1.3	2.7	50	
MSEJ801-8	0.18	680	51	0.61	1.45	0.84	0.48	1.5	1.7	1.3	2.8	52	
MSEJ802-8	0.25	680	56	0.61	1.83	1.06	0.61	1.6	2	1.3	2.7	52	
MSEJ90S-8	0.37	680	63	0.63	2.33	1.35	0.78	1.6	1.8	1.3	2.8	56	
MSEJ90L-8	0.55	680	66	0.65	3.21	1.85	1.07	1.6	1.8	1.3	3	56	
MSEJ100L1-8	0.75	710	66	0.67	4.24	2.45	1.41	1.7	2.1	1.3	3.5	59	
MSEJ100L2-8	1.1	710	72	0.69	5.54	3.20	1.85	1.7	2.1	1.2	3.5	59	
MSEJ112M-8	1.5	710	74	0.68	7.45	4.3	2.48	1.8	2.1	1.2	4.2	61	
MSEJ132S-8	2.2	720	75	0.71	10.33	5.96	3.44	2	2	1.2	5.5	64	
MSEJ132M-8	3	720	77	0.73	13.34	7.7	4.45	2	2	1.2	5.5	64	
MSEJ160M1-8	4	730	80	0.73	17.12	9.89	5.71	1.9	2.1	1.2	6	68	
MSEJ160M2-8	5.5	720	83	0.74	22.25	12.85	7.42	2	2.2	1.2	6	68	
MSEJ160L-8	7.5	720	85	0.75	29.41	17.0	9.8	1.9	2.2	1.2	6	68	

Type	Brake Type k	Brake Torque Nm	Brake Rated Power W	J Brake Pd <sup>2</sup> kgm <sup>2</sup>	No. of Starts/Hr Under no load	Delayed Cut-in Time★ Msec.	Quick Cut-in Time Msec.	Cut Out Time Msec.	Noise dB(A)
63 MSEJ	K1	5	15	0.00005	3000	45	20	10	50
71 MSEJ	K2	12	20	0.00014	3000	50	30	15	50
80 MSEJ	K3	16	25	0.00021	1300	55	30	15	52
90S MSEJ	K4	20	30	0.00039	1100	65	40	15	56
●90S MSEJ	K4D	40	30	0.00078	1100	65	40	15	56
90L MSEJ	K4	20	30	0.00039	1100	65	40	15	56
●90L MSEJ	K4D	40	30	0.00078	1100	65	40	15	56
100L MSEJ	K5	40	45	0.00104	900	75	45	20	59
●100L MSEJ	K6	60	50	0.00135	900	180	85	25	59
112MT MSEJ	K5	40	45	0.00104	880	75	45	20	61
112M MSEJ	K6	60	50	0.00135	880	180	85	25	61
132S MSEJ	K7	90	55	0.00219	480	200	95	50	64
●132S MSEJ	K7D	180	55	0.00438	480	200	95	50	64
132M MSEJ	K7	90	55	0.00219	450	200	95	50	64
●132M MSEJ	K7D	180	55	0.00438	480	200	95	50	64
160MT MSEJ	K7D	180	55	0.00438	350	200	95	50	68
160L MSEJ	K8	200	60	0.00408	350	210	100	60	68
●160L MSEJ	K8D	400	60	0.00816	350	210	100	60	68

● Motor with increased braking torque on request

★ On request, delayed brake cut in time for lifting equipments. We suggest double disk brake D for lifting equipments.





## MSEJ ASINCRONOUS THREE PHASES BRAKE MOTORS WITH DIRECT CURRENT BRAKE MOTORI ASINCRONI TRIFASE AUTOFRENANTI CON FRENO CORRENTE CONTINUA

### ELECTROMAGNETIC DIRECT CURRENT BRAKE SERIES CC

#### OPERATING PRINCIPLE

The direct current brake is fed by means of an electronic circuit with diode bridge(rectifier) situated inside the terminal-box. When feeding the electromagnet(5), the movable anchor(4) is attracted towards the same, thus loading the braking torque springs(9) and allowing the disk(2), equipped with friction packing and fitted on the groove hub(6) to turn solitary the motor shaft(1) by means of a key (7). By interrupting the feeling, the movable anchor(4), pushed by the braking torque springs(9), exerts a pressure upon the friction surface of the disk(2), thus causing its stopping.

#### PRINCIPIO DI FUNZIONAMENTO

Il freno a corrente continua viene alimentato da un circuito elettronico con diodo tramite un raddrizzatore situato nella scatola morsetti. Alimentando l'elettromagnete (5), l'ancora mobile (4) è attratta verso lo stesso lasciando libero l'albero di ruotare. Interrompendo l'alimentazione all'elettromagnete l'ancora mobile (4), grazie alle molle di coppia (9), esercita una pressione sulla superficie di attrito del disco (2), interrompendo il movimento dell'albero.

#### ADJUSTMENT OF THE AIR GAP

The air gap (11) is the distance between the electromagnet (5) and the movable anchor(9). The air gap has to be regularly checked, since due to the wear of the friction packing(2) it tends to increase. Act on the brake adjusters (3) after having unloosen the screws (8) to bring the air gap to the required value. Act on the ring nut (10) which acts on the braking torque springs (9) to adjust the braking torque. Pis. Contact our technical department for information on the air gap adjustment values.

#### REGOLAZIONE DEL TRAFERRO

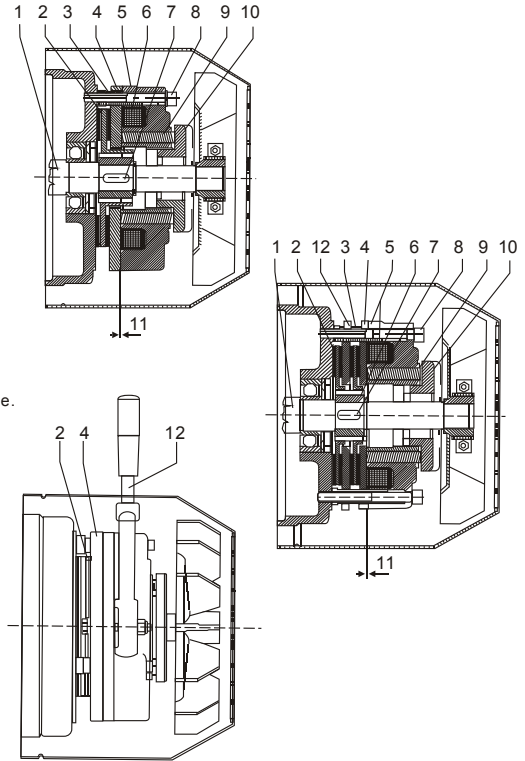
Il traferro è la distanza tra l'elettromagnete e l'ancora mobile. Il traferro deve essere controllato periodicamente in quanto causa usura tende ad aumentare. Regolare le viti (3) per portare il traferro al valore richiesto. Regolare la ghiera (10) per aumentare o diminuire la coppia frenante. Si consiglia comunque di rivolgersi al nostro ufficio tecnico per concordare la manutenzione necessaria che è preferibile venga effettuata presso la nostra officina.

#### HANDRELEASE WITH LEVER

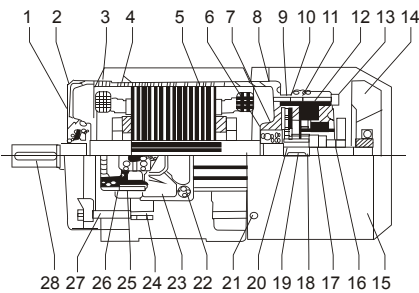
Upon request a hand release with lever can be supplied. In case of a current cutoff, acting on the lever(12), the release, connected to the movable anchor(4) overcomes the springs pressure, thus detaching the movable anchor from the disc friction packing(2) allowing the shaft to turn.

#### SBLOCCO MANUALE

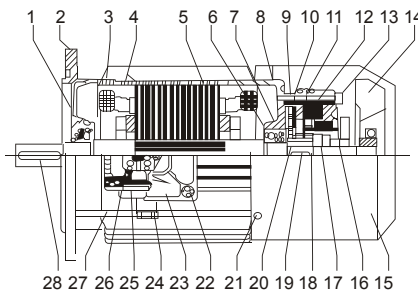
A richiesta può essere fornito lo sblocco manuale. A motore fermo è possibile far ruotare l'albero del motore tirando la leva (12) verso la parte posteriore dello stesso.



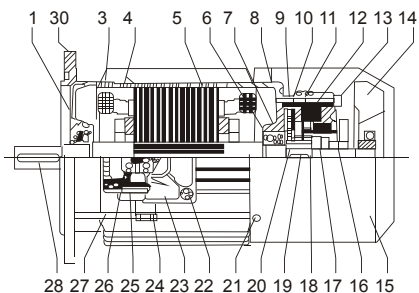
MSEJ Brake Motors B3 63~112



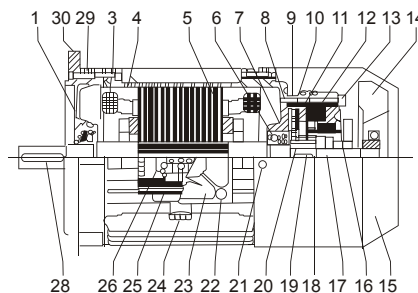
MSEJ Brake Motors B3 132~160



MSEJ Brake Motors B5 63~112



MSEJ Brake Motors B5 132~160



#### SPARE PARTS

1. Front bearing - Cuscinetto anteriore
2. Front shield - Coperchio anteriore
3. Winding - Tirante
4. Frame with stator package - Telaio con pacco statore
5. Shaft with rotor - Albero con rotore
6. Rear bearing - Cuscinetto posteriore
7. Spring - Anello di compensazione
8. Rear shield - Scudo posteriore
9. Adjusting bush - Boccola di regolazione
10. Brake disc - Disco freno
11. Moving anchor - Ancora mobile
12. Electromagnet coil with diode - Elettromagnete
13. Fixing screws for brake - Viti di fissaggio del freno
14. Cooling fan - Ventola
15. Fan hood - Copriventola
16. Ring nut - Anello della chiocciola
17. Spring - Molla
18. See gearing - Ingranaggi
19. Key brake side - Chiavetta lato freno
20. Toothed pinion - Pignone dentato
21. Fixing screw for fan hood - Viti di fissaggio copriventola
22. Fixing crew for terminal-box - Viti fissaggio scatola
23. Terminal-box - copri morsetti
24. able-holder - pressacavo
25. Packing - Gommino
26. Terminal-block - Morsetti
27. Tie-bolt - Viti
28. Coupling side key - Chiavetta anteriore
29. Fixing screw for shield - Viti fissaggio scudo
30. Flange shield - Flangia anteriore