



ELECTROMAG
MABUCHI MOTOR GROUP

Motor solutions for surgical applications

- Orthopedic power tools
- Powered ENT, neuro and spine drills
- Surgical robotics



Motor solutions for surgical applications

Since 2003, Electromag has been developing high-speed ultra-quiet brushless DC motors for critical healthcare applications.

For surgical applications, Electromag offers a range of sterilizable 16, 22 and 30 mm motors integrating a patented coil technology that provides highest torque density.

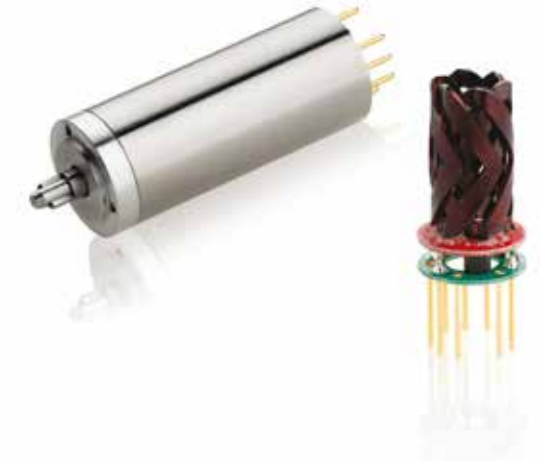
Electromag motors feature a distinctive balancing process and a slotless design that eliminates cogging. The result: virtually no noise and vibrations for higher precision and user comfort.

All motors are customizable allowing optimal integration.

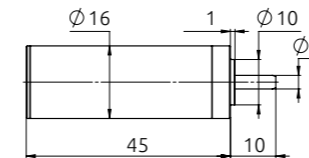


Features

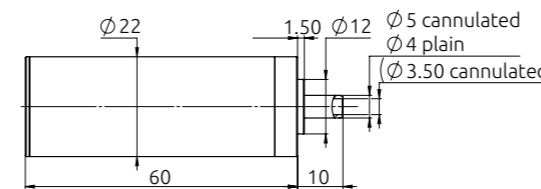
- Sterilizable BLDC motors
- Highest torque density thanks to a patented coil technology
- Available with or without Hall sensors
- Electrical interface using lead wires or pins
- Cannulated or plain shafts
- Customizable interfaces and magnetic circuit



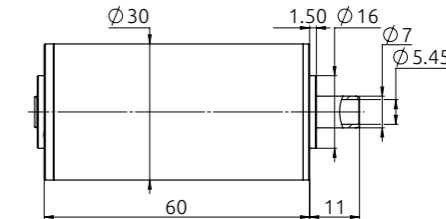
16 MM SHORT MOTOR



22 MM MOTOR

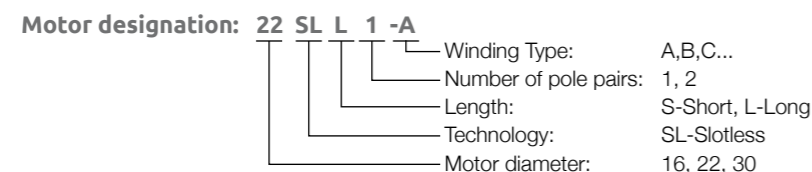


30 MM MOTOR



Solutions overview

DESIGNATION	DIAMETER	LENGTH	SHAFT DIAMETER	CANNULATED SHAFT INNER DIAMETER	VOLTAGE	NO-LOAD SPEED	MAX. CONTINUOUS MECH. POWER ¹⁾	SPEED AT MAX. CONTINUOUS MECH. POWER ¹⁾	TORQUE AT MAX. CONTINUOUS MECH. POWER ¹⁾	CURRENT AT MAX. CONTINUOUS MECH. POWER ¹⁾	TORQUE AT (CURRENT)	MOTOR CONSTANT	TORQUE CONSTANT	PHASE-PHASE RESISTANCE ²⁾
	mm	mm	mm	mm	V	rpm	W	rpm	mNm	A	mNm	mNm/√W	mNm/A	Ohm
16SLS1-A	16	45	3	-	18	87,000	88	84,000	10	5.1	20 (10)	5.6	2.0	0.12
					12	58,000	76	54,000	13	6.8				
16SLS1-B	16	45	3	-	24	67,000	83	63,000	13	3.7	34 (10)	5.6	3.4	0.37
					18	50,500	68	46,000	14	4.1				
16SLS1-C	16	45	3	-	48	67,000	83	63,000	13	1.8	68 (10)	5.6	6.8	1.49
					24	33,500	46	29,000	15	2.2				
22SLL1-A	22	60	4 or 5	3.5	14.4	54,000	217	52,000	40	15.6	77 (30)	13.2	2.6	0.04
					9.6	36,000	160	33,500	45	17.8				
22SLL1-B	22	60	4 or 5	3.5	24	47,000	197	44,500	42	8.7	146 (30)	13.2	4.9	0.14
					14.4	28,000	126	25,500	47	9.7				
22SLL1-C	22	60	4 or 5	3.5	24	26,000	117	23,500	48	5.4	265 (30)	13.2	8.8	0.45
					14.4	15,500	67	13,000	49	5.6				
22SLL2-A	22	60	3	-	24	45 500	153	45 000	33	6.5	150 (30)	24.1	5.0	0.04
					18	34 500	217	33 500	62	12.4				
22SLL2-B	22	60	3	-	24	26 500	198	25 500	74	8.6	259 (30)	24.1	8.6	0.13
					18	20 000	158	18 500	82	9.4				
22SLL2-C	22	60	3	-	48	26 000	196	25 000	75	4.3	519 (30)	24.1	17.3	0.51
					24	13 000	105	11 500	87	5.1				
30SLL1-A	30	60	7	5.45	14.4	39,500	313	38,000	79	22.6	104 (30)	21.0	3.5	0.03
					9.6	26,500	228	24,500	89	25.6				
30SLL1-B	30	60	7	5.45	14.4	23,000	201	21,000	91	15.1	181 (30)	21.0	6.0	0.08
					9.6	15,000	130	13,000	95	15.8				
30SLL1-C	30	60	7	5.45	14.4	11,500	96	9,500	97	8.0	361 (30)	21.0	12.0	0.33
					9.6	7,500	56	5,500	98	8.1				



Notes

- Other configurations available upon request
- Specifications are subject to change without prior notice
- ¹⁾ Continuous values are obtained using a heat sink that reduces the motor thermal resistance by 50% (typical case). Continuous operation is possible up until the maximum winding temperature has been reached. Beyond this point, intermittent operation or additional cooling should be considered
- ²⁾ Resistance values are for a motor with pin terminals. If the motor is equipped with lead wires, the resistance value must be adapted.

Who we are

Electromag SA, headquartered in Ecublens, Switzerland, is a leading expert in the development and manufacturing of brushless DC motors for demanding applications up to 300 W. One of the hallmark features of Electromag motors is their quietness and low vibration level for speeds up to 100,000 rpm. Renowned for their reliability, Electromag motors offer highest efficiency, in particular thanks to a patented winding technology.

Since 2021, Electromag SA is part of Mabuchi Motor Group. Mabuchi Motor with about 21,000 employees worldwide and listed on the Tokyo Stock Exchange has a strong presence in the automotive products as well as the consumer and industrial markets.

Key figures:

- Company founded in 2003
- More than 2 million motors sold
- Over 200 models developed
- ISO9001 and ISO13485 certified
- Over 30 employees



Innovation



Design



Customization



Production



ultra-quiet high-speed motors

Mabuchi Motor Electromag SA

Chemin du Dévent 7
Z.I. Larges Pièces A
1024 Ecublens
Switzerland
+41 (0)21 694 16 00
info@electromag.ch
www.electromag.ch

