DOSSIER TECHNIQUE

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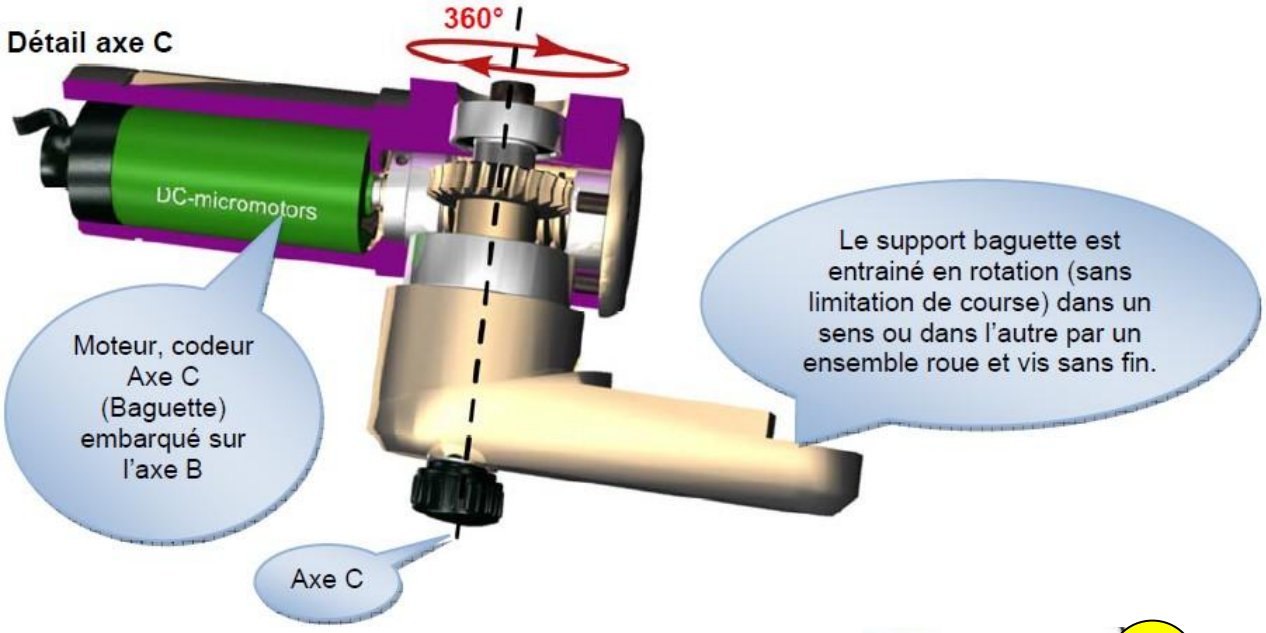
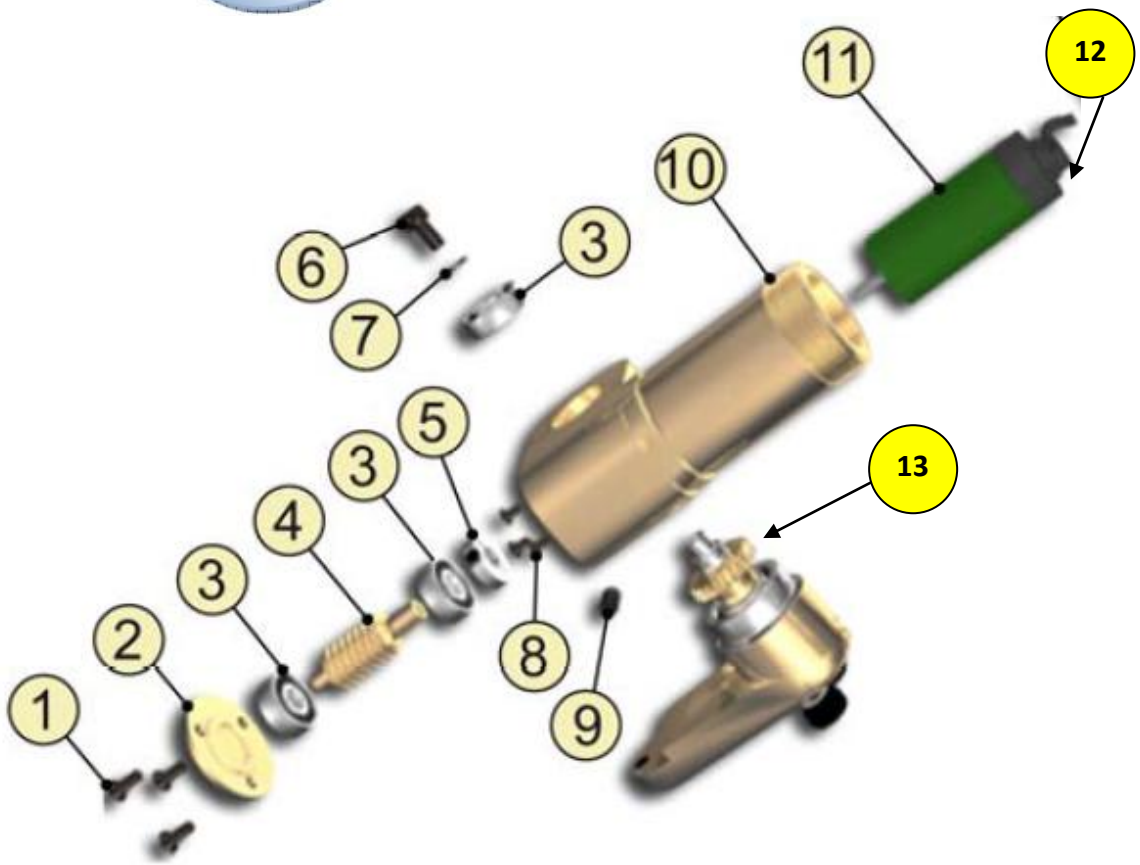
STRUCTURE GENERALE DE L'AXE BAGUETTE





Repère	Intitulé	Description
11	Moteur axe baguette	Référence : 2657 W012 CR
12	Codeur	Référence : IE2-64
4	Vis sans fin	N=1 filet
13	Roue dentée	Z=25 dents

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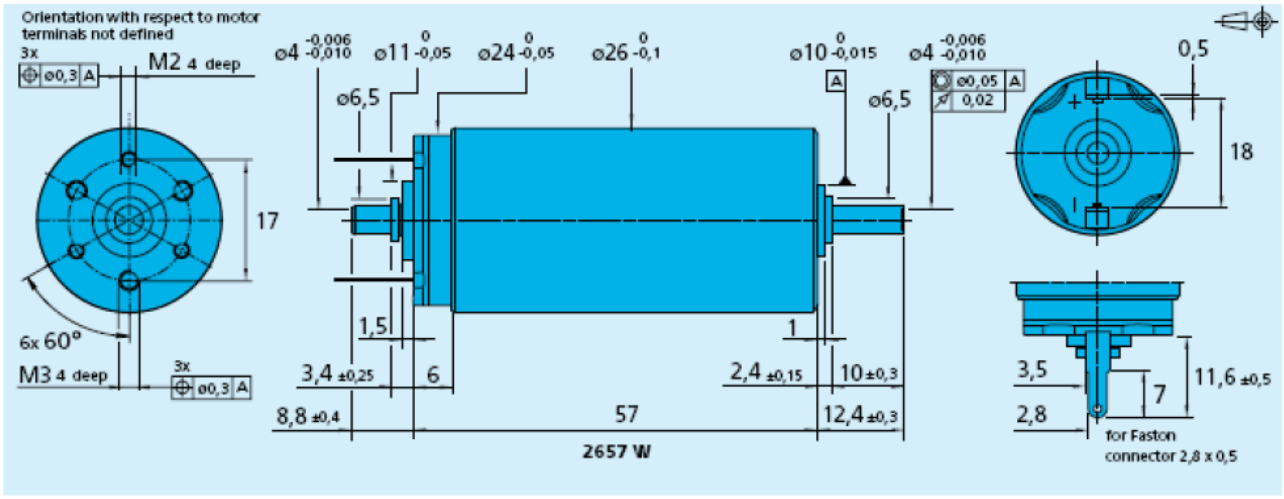
MOTEUR DE L'AXE BAGUETTE



Series 2657 ... CR

		2657 W	012 CR	024 CR	048 CR	
1	Nominal voltage	U_N	12	24	48	Volt
2	Terminal resistance	R	0,71	2,84	12,50	Ω
3	Output power	$P_{2\,max.}$	45,9	47,9	44,5	W
4	Efficiency	$\eta_{max.}$	84	85	84	%
5	No-load speed	n_0	6 300	6 400	6 400	rpm
6	No-load current (with shaft ø 4,0 mm)	I_0	0,115	0,058	0,028	A
7	Stall torque	M_H	278	286	265	mNm
8	Friction torque	M_R	2	2	2	mNm
9	Speed constant	k_n	552	274	136	rpm/V
10	Back-EMF constant	k_E	1,81	3,65	7,37	mV/rpm
11	Torque constant	k_M	17,3	34,8	70,4	mNm/A
12	Current constant	k_I	0,058	0,029	0,014	A/mNm
13	Slope of n-M curve	$\Delta n/\Delta M$	22,7	22,4	24,2	rpm/mNm
14	Rotor inductance	L	95	380	1 550	µH
15	Mechanical time constant	τ_m	3,9	3,9	3,9	ms
16	Rotor inertia	J	16	17	15	gcm²
17	Angular acceleration	$\alpha_{max.}$	170	170	170	$\cdot 10^3$rad/s²

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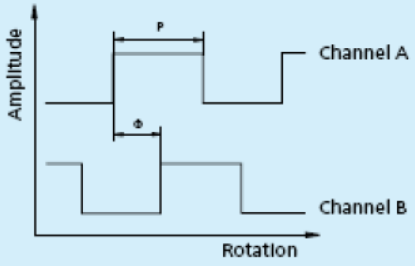
CODEUR DE L'AXE BAGUETTE

Output signals / Circuit diagram / Connector information

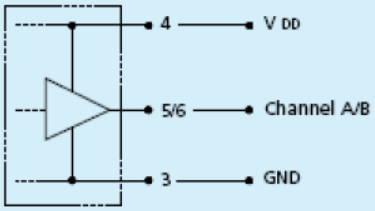
Output signals
with clockwise rotation as seen from the shaft end



Admissible deviation of phase shift:

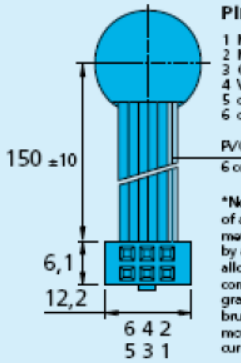
$$\Delta\Phi = \left| 90° - \frac{\Phi}{P} * 180° \right| \leq 45°$$

Output circuit



Pin Function

1 Motor – *
2 Motor + *
3 GND
4 V_{DD}
5 channel B
6 channel A



PVC-Ribbon cable
6 conductors 0,09 mm²

*Note: The terminal resistance of all motors with precious metal commutation is increased by approx. 0.4 Ω, and the max. allowable motor current in combination is 1A. Motors with graphite commutation and brushless motors have separate motor leads and higher motor current is allowed.

Connector
DIN-41651
grid 2,54 mm

Series IE2 – 512

		IE2 – 64	IE2 – 128	IE2 – 256	IE2 – 512	
Lines per revolution	N	64	128	256	512	
Signal output, square wave		2				channels
Supply voltage	V_{DD}	4,5 ... 5,5				V DC
Current consumption, typical (V_{DD} = 5 V DC)	I_{DD}	typ. 6, max. 12				mA
Output current, max. [1]	I_{OUT}	5				mA
Pulse width	P	180 ± 45				°e
Phase shift, channel A to B	Φ	90 ± 45				°e
Signal rise/fall time, max. (C_{LOAD} = 50 pF)	tr/tf	0,1 / 0,1				µs
Frequency range [2], up to	f	20	40	80	160	kHz
Inertia of code disc [3]	J	0,09				gcm²
Operating temperature range		– 25 ... + 85				°C

[1] V_{DD} = 5 V DC: Low logic level < 0,5 V, high logic level > 4,5 V: CMOS and TTL compatible
[2] Velocity (rpm) = f (Hz) x 60/N
[3] For the brushless DC-Servomotors 1628 ... B, 2036 ... B and 2444 ... B the inertia of code disc is J = 0,14 gcm²

Ordering information

Encoder	number of channels	lines per revolution	In combination with:
IE2 – 64	2	64	DC-Micromotors series
IE2 – 128	2	128	1336 ... C,
IE2 – 256	2	256	1516 ... SR, 1524 ... SR,
IE2 – 512	2	512	1717 ... SR, 1724 ... SR, 1727 ... C,
			2224 ... SR, 2232 ... SR, 2342 ... CR,
			2642 ... CR, 2657 ... CR,
			3242 ... CR, 3257 ... CR, 3863 ... C
			Brushless DC-Servomotors series
			1628 ... B, 2036 ... B, 2057 ... B,
			2444 ... B