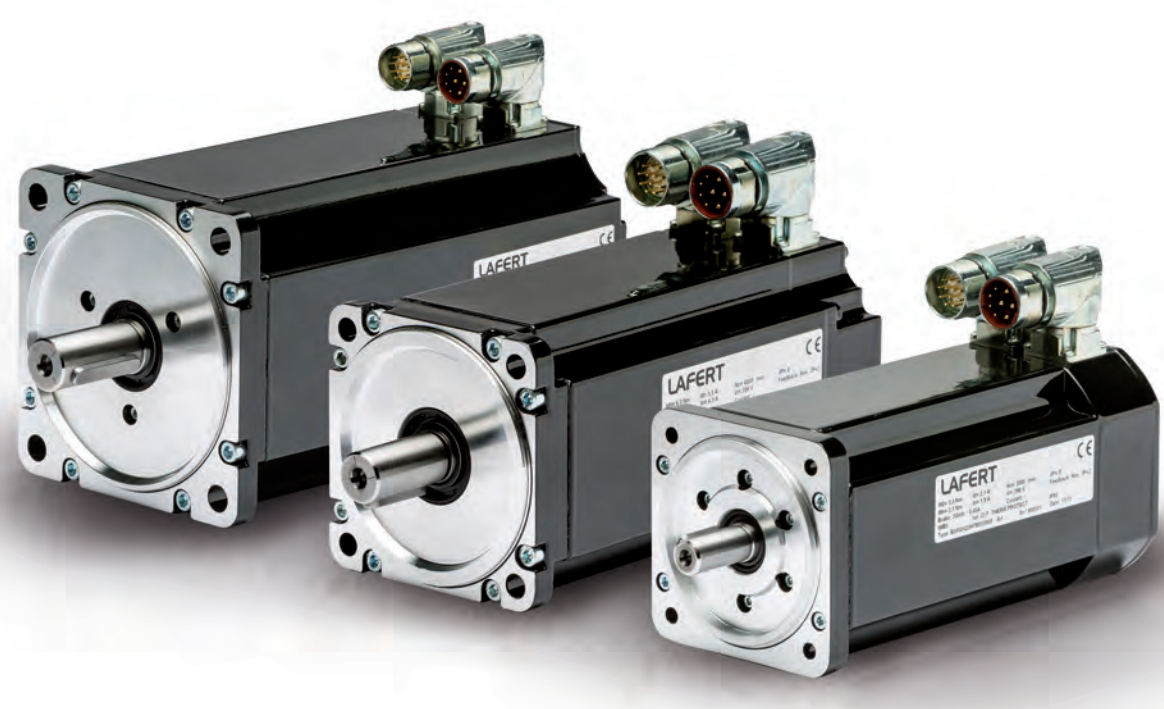
LAFERTSERVO

SERVO MOTORS

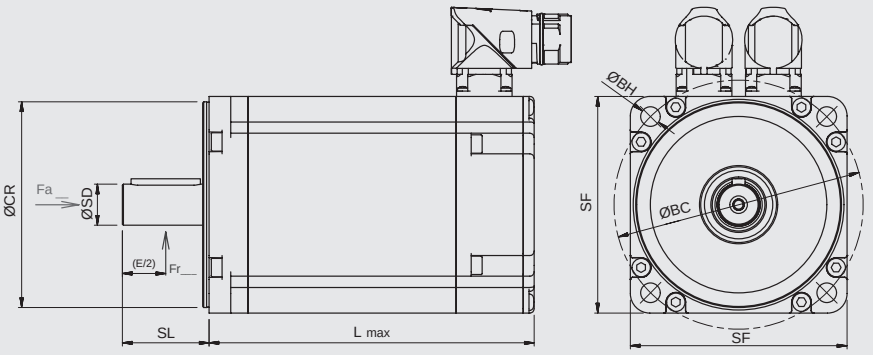
BRUSHLESS SERVO MOTORS
TORQUE MOTORS



BROCHURE 2017

MORE FEATURES

- Drive End cooling (liquid coolant)
- Low voltage special winding
- Water cooling (jacket) for medium and large size motors
- Fly - connectors for cabling
- 230V application
- One cable solution
- Safety application
- **ATEX Certification** - II 3G Ex nA IIC T155°C (T3) Gc and II 3D Ex tc IIIC T135°C Dc *(a dedicated brochure is available)*



BRUSHLESS SERVO MOTORS

STANDARD FEATURES

- Torque range 0.25 to 390 Nm; rated speed up to 6000 rpm
- Superior performance, high torque accuracy
- High dynamics and acceleration
- High overload capability
- Compact design with high power density
- Wide range of transducers: resolver, incremental and absolute encoders
- Forced ventilation (fan cooling) option available
- IP65 protection; TENV construction
- All motors available with brake as an option
- Deep background to meet any special mechanical and electrical design
- Excellent flexibility to meet specific market demands

OPTIONAL FEATURES

- cURus certification
- Atex certification
- Special rotor balancing grade
- Special rotor inertia
- Customised flange and special shaft
- Other (type of encoder and connector, brake, thermal sensor,...)

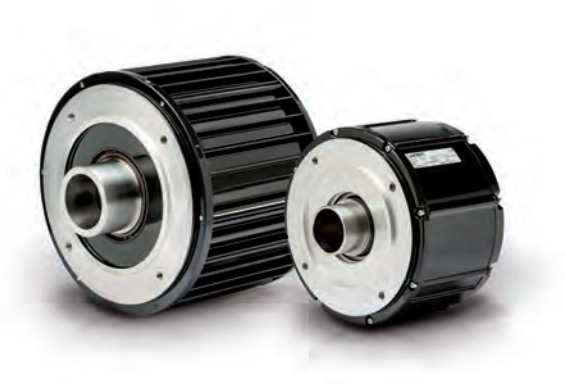
TARGET APPLICATIONS

- Material Handling
- Printing
- Material working
- Packaging machines
- Textile machines
- Plastic machines
- Robots

Type	Square flange SF [mm]	Torque [Nm]	Rated speed [rpm]	Centring diameter ø - CD [mm]	Bolt circle diameter ø - BC [mm]	Shaft diameter ø - SD [mm]	Shaft length SL [mm]
B28Q	58	0.25 to 1.25	3000 – 6000	Ø40j6	63	9j6	20
B36Q	70	0.6 to 1.8	3000 – 6000	Ø60j6	75	11j6	23
	70	2.4 to 3	3000 – 6000	Ø60j6	75	14j6	30
B56Q	91.3	1.35 to 4.5	3000 – 6000	Ø80j6	100	14j6	30
B63Q	100	4 to 10	3000 – 4500 - 6000	Ø95j6	115	19k6	40
B63Y	116	6 to 8	3000 – 4500	Ø110j6	130	19j6	40
	116	10 to 14	3000 – 4500	Ø110j6	130	24j6	50
B71Q	142	4.5 to 26	2000 – 3000 - 4500	Ø130j6	165	24k6	50
	142	29 to 38	2000 – 3000 - 4500	Ø130j6	165	28j6	58
B100J	190	20 to 42	2000 – 3000	Ø180j6	215	32k6	58
	190	56 to 80	2000 – 3000	Ø180j6	215	38k6	80
B132I	240	42 to 73	1500 – 2000 – 3000	Ø230j6	265	38k6	80
	240	81 to 120	1500 – 2000 – 3000	Ø230j6	265	42k6	110
B160Q	270	140 to 240	1500 – 2000 – 3000	Ø250h7	300	55m6	110
	270	300	1500 – 2000 – 2500	Ø250h7	300	60m6	140

THE RANGE

Lafert offers a wide range of permanent magnet synchronous servo motors and torque motors. The Lafert range of servo motors grants precise engineering and superior performance.
Thanks to its whole integrated manufacturing process, Lafert can supply standard and tailor-made products for **Industrial Automation** giving **excellent flexibility** and **cost efficiency**.



TORQUE MOTORS

STANDARD FEATURES

- Torque range 10 to 510 Nm and rated speed up to 1000 rpm
- High torque at low speed; low noise level
- High overload capability
- Energy Efficient through the whole speed range
- Different coupling shaft available: standard key, blind hole, hollow shaft
- Water cooling options available for medium and large size motors
- Optimal for machines' strong integration

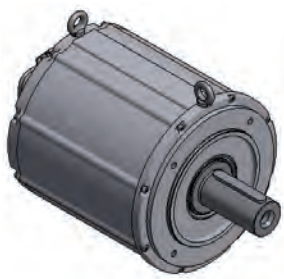
OPTIONAL FEATURES

- cURus certification
- Customised flange and special shaft
- Other (type of encoder and connector, thermal sensor, ...)

TARGET APPLICATIONS

- Material Handling
- Printing
- Material working
- Textile machines
- Plastic machines

B16P



B18P

Type	Square flange [mm]	Torque [Nm]	Rated speed [rpm]	Centring diameter ø - CD [mm]	Bolt circle diameter ø - BC [mm]	Shaft diameter ø - SD [mm]	Shaft internal diameter ø [mm]	Shaft length SL [mm]
B10P	225	10 to 20	500 – 1000	Ø130j6	165	32	30	80
B16P	275	50 to 200	300 – 500 - 1000	Ø180j6	215	55	55	110
B18P	386	115 to 510	300	Ø250j6	300	75	80	140

ELECTRICAL DATA BRUSHLESS SERVO MOTORS

SELF COOLED

Type	Stall torque (Δt=105°C) Mo Nm	Rated torque (Δt=105°C) Mn Nm	Stall current Io Arms	Rated current In Arms	Rated speed n 1/min	Moment of Inertia J 10^{-4} Kgm2	Length with resolver Without brake L mm	Length with resolver With Brake L mm
B28.D2Q	0.25	0.24	0.34	0.33	6000	0.07	86.5	116.5
B28.D5Q	0.5	0.47	0.69	0.65	6000	0.13	98.5	128.5
B28.D7Q	0.75	0.70	1.03	0.96	6000	0.19	110.5	140.5
B28.01Q	1.0	0.93	1.37	1.28	6000	0.25	122.5	152.5
B28.E2Q	1.25	1.16	1.72	1.59	6000	0.31	134.5	164.5
B36.D6Q	0.6	0.5	0.8	0.7	6000	0.25	112	147
B36.E2Q	1.2	1.0	1.6	1.4	6000	0.44	127	162
B36.E8Q	1.8	1.5	2.5	2.1	6000	0.63	142	177
B36.F4Q	2.4	2.0	3.3	2.7	6000	1.05	167	198
B36.03Q	3.0	2.4	4.1	3.3	6000	1.22	182	213
B56.E3Q	1.35	1.3	0.8	0.8	3000	0.47	122	157
B56.F6Q	2.6	2.5	1.6	1.5	3000	0.88	145	180
B56.G5Q	3.5	3.1	2.1	1.9	3000	1.09	160	195
B56.H5Q	4.5	3.9	2.8	2.4	3000	1.40	180	215
B63.04Q	4	2.5	2.1	3.50	3000	1.87	150	182
B63.06Q	6	3.7	3.2	5.25	3000	2.67	170	202
B63.08Q	8	4.9	4.6	7.50	3000	3.47	194	226
B63.10Q	10	6.1	5.4	8.75	3000	4.27	214	246
B63.06Y	6	5.5	3.7	3.4	3000	7.76	168	204.5
B63.08Y	8	7.0	4.9	4.3	3000	10.4	183	219.5
B63.10Y	10	8.5	6.1	5.2	3000	12.4	198	234.5
B63.12Y	12	10.1	7.4	6.2	3000	14.9	213	249.5
B63.14Y	14	11.8	8.6	7.2	3000	18.2	233	269.5
B71.04Q	4.5	4.2	1.8	1.7	2000	3.6	148	183
B71.08Q	9	8.1	3.7	3.3	2000	6.0	173	208
B71.12Q	12.5	11.8	5.1	4.8	2000	8.2	198	228
B71.16Q	16	15.1	6.6	6.2	2000	10.7	223	253
B71.20Q	20	18.5	8.2	7.6	2000	13.1	248	273
B71.26Q	26	22.4	10.6	9.2	2000	18.4	298	318
B71.29Q	29	23.9	11.9	9.8	2000	20.6	338	373
B71.32Q	32	25.5	13.1	10.4	2000	23.0	360	395
B71.35Q	35	26.7	14.3	10.9	2000	25.5	383	418
B71.38Q	38	28.0	15.6	11.5	2000	28.0	405	440
B10.20J	20	18.3	8.2	7.5	2000	33	195	225
B10.28J	28	24.7	11.4	10.1	2000	46	218	248
B10.36J	36	30.1	14.7	12.3	2000	60	240	270
B10.42J	42	36.1	17.2	14.8	2000	74	263	293
B10.56J	56	44.5	22.9	18.2	2000	102	308	338
B10.68J	68	50.9	27.8	20.8	2000	130	353	383
B10.80J	80	57.8	32.7	23.6	2000	158	414	444
B13.42I	42	35.5	12.9	10.9	1500	65	303	353
B13.58I	58	47.0	17.8	14.4	1500	90	343	393
B13.73I	73	58.5	22.4	17.9	1500	114	383	433
B13.81I	81	65.0	24.8	19.9	1500	126	403	453
B13.98I	98	77.5	30.1	23.8	1500	150	443	493
B13.C2I	120	94.5	36.8	29.0	1500	192	503	553
B16.C4Q	140	86	57	35	2000	290	438	*
B16.C8Q	180	115	74	47	2000	373	498	*
B16.B4Q	240	148	98	61	2000	497	588	*
B16.300Q	300	191	123	78	2000	622	678	*

*On request

ELECTRICAL DATA BRUSHLESS SERVO MOTORS

AIR COOLED

Type	Stall torque (Δt=105°C) Mo Nm	Rated torque (Δt=105°C) Mn Nm	Stall current Io Arms	Rated current In Arms	Rated speed n 1/min	Moment of Inertia J 10^{-4} Kgm2	Length with resolver Without brake L mm	Length with resolver With Brake L mm
B63.04Q	4.8	4.4	2.9	2.7	3000	1.87	237	296
B63.06Q	7.4	6.8	4.5	4.2	3000	2.67	257	289
B63.08Q	10.1	9.4	6.2	5.8	3000	3.47	281	313
B63.10Q	13	11.8	8.0	7.2	3000	4.27	301	333
B71.04Q	6	5.6	2.5	2.3	2000	3.6	246	281
B71.08Q	12	11.0	4.9	4.5	2000	6.0	271	306
B71.12Q	17	15.8	7.0	6.5	2000	8.2	296	326
B71.16Q	22	20.5	9.0	8.4	2000	10.7	321	351
B71.20Q	27.5	25.5	11.3	10.4	2000	13.1	346	371
B71.26Q	35.5	33.5	14.5	13.7	2000	18.4	396	416
B71.29Q	40	39.2	16.4	16.1	2000	20.6	436	471
B71.32Q	44	42.6	18.0	17.4	2000	23.0	458	493
B71.35Q	48	46.1	19.7	18.9	2000	25.5	481	516
B71.38Q	52	49.7	21.3	20.4	2000	28.0	503	538
B10.20J	26	24.2	10.6	9.9	2000	33	305	335
B10.28J	36.4	33.1	14.9	13.5	2000	46	328	358
B10.36J	47.2	42.1	19.3	17.2	2000	60	350	380
B10.42J	55.4	50,0	22.7	20.4	2000	74	373	403
B10.56J	74.5	61.7	30.4	25.2	2000	102	418	448
B10.68J	91.1	70.8	37.2	28.9	2000	130	463	493
B10.80J	108	80.3	44.1	32.8	2000	158	524	554
B13.42I	61	56.0	18.7	17.2	1500	65	419	469
B13.58I	84	77.5	25.8	23.8	1500	90	459	509
B13.73I	105	98.0	32.2	30.1	1500	114	499	549
B13.81I	116	109.0	35.6	33.4	1500	126	519	569
B13.98I	136	125.0	41.7	38.3	1500	150	559	609
B13.C2I	162	142.0	49.7	43.6	1500	192	619	669
B16.C4Q	180	155	74	63	2000	290	597	*
B16.C8Q	234	200	96	82	2000	373	657	*
B16.B4Q	312	270	128	111	2000	497	747	*
B16.300Q	390	335	160	137	2000	622	837	*

*On request

ELECTRICAL DATA TORQUE MOTORS

Type	Stall torque (Δt=105°C) Mo Nm	Rated torque (Δt=105°C) Mn Nm	Stall current Io Arms	Rated current In Arms	Rated speed n 1/min	Moment of Inertia J 10^{-4} Kgm2	Length with resolver L mm
B10.10P	10	9.6	1.03	0.99	500	40	160
B10.20P	20	19.0	2.06	1.96	500	80	160
B16.50P	50	48	3.0	2.9	300	409	230
B16.C0P	100	95	6.0	5.7	300	784	280
B16.C5P	150	142	8.9	8.5	300	1159	330
B16.B0P	200	188	11.9	11.2	300	1534	380
B18.CBP	115	100	7.1	6.1	300	1600	259
B18.BCP	225	196	13.8	12.0	300	3000	309
B18.325P	325	263	20.0	16.2	300	4400	359
B18.420P	420	290	25.8	17.8	300	5800	409
B18.510P	510	315	31.3	19.3	300	7200	459

MOTOR TYPE CODES USED

DIGIT	DESCRIPTION

g — BRAKE AND SHAFT EXTENSION

A	Without brake, keyed shaft	D	Without brake, smooth shaft
B	With brake, keyed shaft	E	With brake, smooth shaft
C	With reinforced brake, keyed shaft	F	With reinforced brake, smooth shaft

hh — FEEDBACK*

00 Without feedback

RESOLVER

05	Resolver 2 poles
A5	Resolver 4 poles

INCREMENTAL ENCODER With Hall sensors and 0 reference mark

E9	1000 ppr
09	1024 ppr
L9	2000 ppr
F9	2048 ppr

SIN / COS HIPERFACE ENCODER

RS	Single-turn 1024 sin/cos Stegmann SRS50
RM	Multi-turn 1024 sin/cos, 4096 rev. Stegmann SRM50
EK	Single-turn 16 sin/cos Stegmann SEK37 or SEK52
EL	Multi-turn 16 sin/cos, 4096 rev. Stegmann SEL37 or SEL52
KS	Single-turn 128 sin/cos Stegmann SKS36
KM	Multi-turn 128 sin/cos, 4096 rev. Stegmann SKM36

EnDat or other Hiperface encoders available on request

** Availability of each feedback system and/or ppr to be evaluated on the motor size*

i — CONNECTION DIRECTION

0	Standard	2	Position 2

l — COOLING SYSTEM

0	Natural convection	V	Forced Ventilation 230Vac from B-Flange to A-Flange
		X	Forced Ventilation 24Vdc from B-Flange to A-Flange

mm — CUSTOMER OPTION

Eg.:

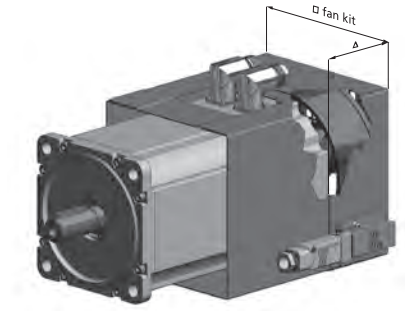
x	aa	bb	c	d	e	f	g	hh	i	l	mm
B	63	08	Q	3	H	4	A	05	0	0	00

FORCED VENTILATION

Forced ventilation available for B63Q, B71Q, B100J, B132I and B160Q series.

For precise increase and torque performances, please refer to the Technical Catalogue.

Type	Voltage V	Power consumption W	Fan kit square mm	Δ L mm
B63Q*	24 Vdc 230 Vac, 50/60 Hz	11 12	122 x 122	87
B71Q	24 Vdc 230 Vac, 50/60 Hz	12 47	164 x 164	98
B100J	24 Vdc 230 Vac, 50/60 Hz	12 47	212 x 212	110
B132I	24 Vdc 230 Vac, 50/60 Hz	12 47	246 x 246	116
B160Q	24 Vdc	105	295 x 295	147/175



*For series B63Q only, motor length with encoder= motor length with resolver + ΔL

MOTOR TYPE CODES USED

DIGIT	DESCRIPTION

x — PRODUCT TYPE

B	Complete Brushless Servo Motors
F	Brushless Servo Motors components

aa — STANDARD MOTOR SIZE

B28Q	☐ Flange 58
B36Q	☐ Flange 70
B56Q	☐ Flange 91.3
B63Q	☐ Flange 100
B63Y	☐ Flange 116
B71Q	☐ Flange 142
B100J	☐ Flange 190
B132I	☐ Flange 240
B160Q	☐ Flange 270

aa — TORQUE MOTOR SIZE

B10	☐ Flange typical 225
B16	☐ Flange typical 275
B18	☐ Flange typical 386

bb — STALL TORQUE CODE

Integer: digit + digit

02	2 Nm
12	12 Nm
25	25 Nm
...	etc...

Fractional: letter + digit (x)

Dx	0.x Nm
Ex	1.x Nm
Fx	2.x Nm
Gx	3.x Nm
Hx	4.x Nm
Ix	5.x Nm
Lx	6.x Nm
Mx	7.x Nm
Nx	8.x Nm
Ox	9.x Nm

Over hundred: letter + digit or letter

C0	100 Nm
CA	105 Nm
C1	110 Nm
CB	115 Nm
...	etc..
B0	200 Nm
BA	205 Nm
B1	210 Nm
BB	215 Nm
...	etc..

Over Threehundred: digit + digir + digit

300	300 Nm
375	375 Nm
460	460 Nm
...	etc..

c — SINUSOIDAL STANDARD MOTOR TYPE

Size	Series	Description
28	Q	8 poles
36	Q	8 poles
56	Q	8 poles
63	Q	8 poles
63	Y	10 poles
71	Q	8 poles
100	J	10 poles
132	I	6 poles
160	Q	8 poles

c — SINUSOIDAL TORQUE MOTOR TYPE

Size	Series	Description
10	P	12 poles
16	P	24 poles
18	P	30 poles

d — SPEED

1	1000 rpm
2	2000 rpm
3	3000 rpm
4	4000 rpm
6	6000 rpm
A	1500 rpm
B	2500 rpm
C	3500 rpm
D	4500 rpm
P	200 rpm
Q	300 rpm
R	400 rpm
O	500 rpm

e — VOLTAGE

M	220/230V (on request)	H	380/400V

f — CONNECTION TYPE

4	Straight connectors on endshield
7	Turnable 90° angled connectors

Terminal box construction to be evaluated on special request only
Single connector design available on request depending on transducer requirements

LAFERTGROUP

MKTG-10-143/17

Lafert S.p.A.
Via J. F. Kennedy, 43
I-30027 San Donà di Piave (Venice), Italy
Tel. +39 / 0421 229 611 | Fax +39 / 0421 222 908
info.lafert@lafert.com

Lafert Servo Motors S.p.A.
Via E. Majorana, 2/a
I-30020 Noventa di Piave (Venice), Italy
Tel. +39 / 0421 572 211 | Fax +39 / 0421 225 858
info.servomotors@lafert.com

www.lafert.com

Branches & Partners

Lafert GmbH
Wolf-Hirth-Straße 10
D-71034 Böblingen
Germany
Phone +49 175 550 4526
lafert.germany@lafert.com

Lafert Electric Motors Ltd.
Unit 17 Orion Way
Crewe, Cheshire CW1 6NG
United Kingdom
Phone +44 / (0) 1270 270 022
Fax +44 / (0) 1270 270 023
lafertuk@lafert.com

Lafert Moteurs S.A.S.
L'Isle d'Abeau Parc de Chesnes
75, rue de Malacombe
F - 38070 St. Quentin-Fallavier France
Phone +33 / 474 95 41 01
Fax +33 / 474 94 52 28
info.lafertmoteurs@lafert.com

Lafert Motores Eléctricos, S.L.
Polígono Pignatelli, Nave 27
E - 50410 Cuarte de Huerva
(Zaragoza) - Spain
Phone +34 / 976 503 822
Fax +34 / 976 504 199
info@lafert.es

Lafert N.A. (North America)
5620 Kennedy Road - Mississauga
Ontario L4Z 2A9 - Canada
Phone +1 / 800/661 6413 - 905/629 1939
Fax +1 / 905/629 2852
sales@lafertna.com

Lafert Electric Motors (Australia)
Factory 3, 117-123 Abbott Road,
Hallam - VIC 3803 - Australia
Phone +61 / (0)3 95 46 75 15
Fax +61 / (0)3 95 47 93 96
info@lafertaust.com.au

Lafert Singapore Pte Ltd
48 Hillview Terrace #02-08
Hillview Building - Singapore 669269
Phone +65 / 67630400 - 67620400
Fax +65 / 67630600
info@lafert.com.sg

Lafert (Suzhou) Co., Ltd.
No.3 Industrial Plant Building Yue Xi Phase 3,
Tian E Dang Lu 2011, 15104 Wu Zhong
Economic Development Zone, Suzhou, China
Phone +86 / 512 6687 0618
Fax +86 / 512 6687 0718
info.lafertsuzhou@lafert.com