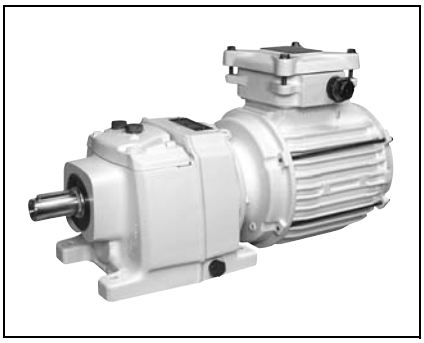
Electromechanical products - Food processing
Very harsh atmosphere
Compabloc IAW 3000

General



Compabloc 3000 geared motors with helical gears are used to adapt the speed of the electric motor to that of the driven machine.
Their size is therefore determined by the motor power (P) expressed in kilowatts (kW) and the output rotation speed of the gearbox (n_S) in revolutions per minute (min^{-1}).
The characteristic parameter of speed reducers is the rated output torque (M_{nS}) expressed in Newton-metres (N.m):

$$M_{nS} = \frac{P \times 9550}{n_S} \times \text{efficiency}$$

A range of six sizes: Cb IAW 31, 32, 33.
Rated output torque: from 10 N.m to 3,150 N.m.
Power ratings: from 0.25 to 4 kW.
Reduction ratios: from 1.25 to 204.
High efficiency: 95% to 98%.
Reversible.
Quiet operation.

IP66 KP cast iron assembly.
Special anti-corrosion surface protection.

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Description of Compabloc gearboxes (Cb IAW)

Component	Materials	Remarks
Frame	Cast iron (31 to 33)	- use of single-component pearlitic ENGJL-200 cast iron (flake graphite: 200 MPa tensile strength) to ensure unit is fully sealed - monobloc with internal reinforcements to absorb vibrations and noise, and increase its rigidity - S foot mounted. They are compact and meet the requirements of industrial and food processing applications
Gears	Steel Ni Cr Mo	- cut by the gear hob, they are heat treated and then undergo final machining. The quality and precision of the gear cutting allow maximum torque with minimum noise level
Lipseals	Nitrile	- sealing ring on motor side - sealed gasket with antidust lipseal in accordance with DIN 3760 form AS - gasket under the access cover - maximum sealing at spigots
Shaft	Steel	- grinding of sealing surfaces - key in accordance with ISO R773 - tolerance of diameters in accordance with NFE 22-051 and ISO R775 - tapped holes at the shaft end for fixing connecting devices in accordance with DIN 332 version D
Lubrication	Oil	- in accordance with ISO 6743/6 and F.D.A. 21 CFR 178.3570 - standard: USDA H2 certification with lubricant approved for the food processing industry but which cannot come into contact, even accidental, with food - option: USDA H1 certification: lubricant which can come into accidental contact with food
Mounting		MI: geared motor with integral mounting
Standard motor		FLS IAW: - multi-voltage 220/380 V - 230/400 V - 240/415 V - cast iron terminal box with nitrile seal and stainless steel screws, fitted with IP 68 cable gland by concentric tightening with anchoring
Finish	Paint	Special surface protection System Ib, shade RAL 9010 (white), (1 epoxy top coat: 20 to 30 µm) • resistance to saline mist: 600 hours (in accordance with NF ISO 9227)

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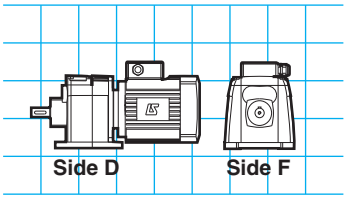
Mounting - Operating positions

Standard position : **gearbox view from side F, motor behind, side D on the floor.**

1 - Definition of mounting form: S

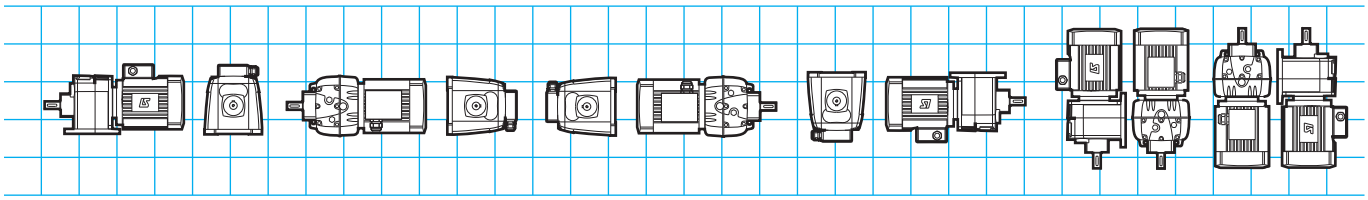


S

Foot mounted housing

2 - Definition of operating position

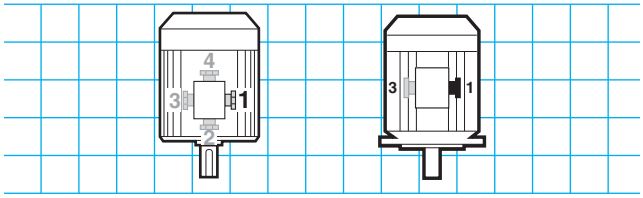
2.1 - S foot mounted



B3 **B6** **B7** **B8** **V5** **V6**

For these multi-position geared motors (M), the positions need only be specified if the following are required: vent hole on the gearbox or/and condensate drainholes on the motor. They MUST be specified for positions V3 and V6.

3 - Cable gland positions



1 **Non-brake motor**

1 **Brake motor**

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Adaptation possibilities

Leroy-Somer offers several drives for its gearboxes which satisfy a very broad range of requirements. They are described below and offered in this catalogue.

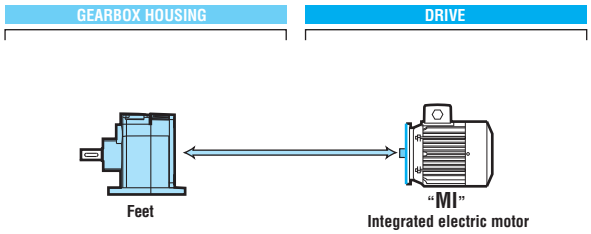
For other drives, consult the Leroy-Somer technical specialists who will be glad to assist.

☞ ***Compabloc gearboxes can be used in conjunction with the following drives:***

- **fixed speed 3-phase induction motors:**
  - FLS IAW motor of 0.25 to 4 kW

☞ ***Options:***

- H1 edible oil
- stainless steel slow shaft extension



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Designation / Coding

Cb IAW	3333	B3	S	57.6	MI	4P	FLS IAW 80 L	0.37 kW	230/400 V 50 Hz	Food processing
Compabloc gearbox type	Size and manufacturer code	Operating position	Mounting form	Exact reduction	Type of input	Polarity	Series, frame size, manufacturing code	Rated output power	Mains voltage and frequency	Special application

☞ ***Example of coding:***

Compabloc IAW 3333 B3 0.37 kW, 25 min^{-1}, Class III

Designation
Cb IAW 3333 B3 S 57.6 MI 4P, FLS IAW 80, 0.37kW230/400V-50Hz-Foodprocessing

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Selection

The selection of a gearbox or a geared motor should take account of the application.
Some of these applications are listed in the indicative “AGMA” load classification, on page D0.10.

The table opposite summarises the relationship between the “AGMA” class and the duty factor K_p of the gearbox.

“AGMA” class	Gearbox duty factor K_p
I	1
II	1.4
III	2

NOTE: In the case of Multibloc 2000 worm and wheel gearboxes, it is necessary to take account of the operating factor, i.e. the operating time under full load in relation to the total operating time per day of the gearbox.
In this catalogue, the selection is made for an operating factor of 50%.
For an operating factor of 100%, Class I becomes Class II, and Class II becomes Class III.
(K_p multiplied by 1.4).

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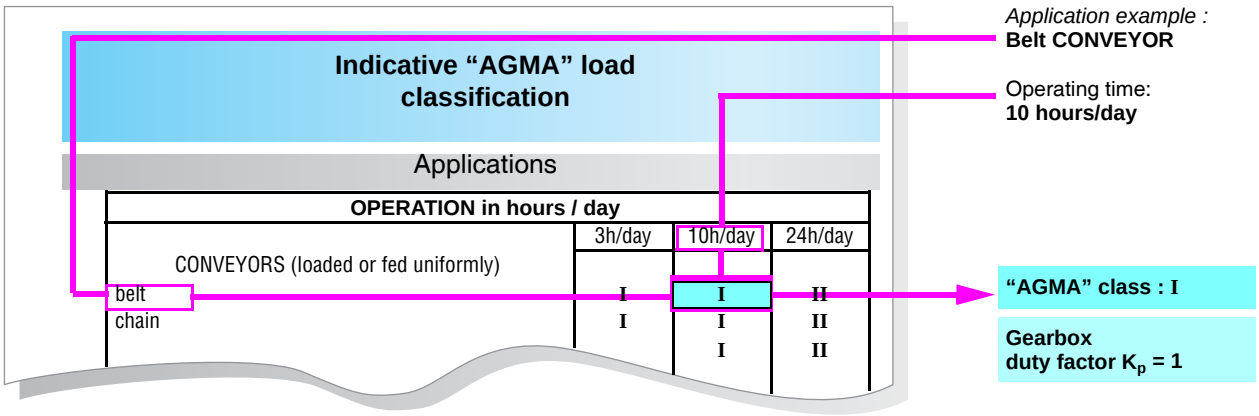
1st case. – Your application is listed

Follow the indicative classification table of loads according to "AGMA" on page D0.10 of the Catalogue for Industry.



2nd case. – Your application is not listed

The “AGMA” selection class is defined by the daily operating time and the type of operation of the application, according to the table below.

Type of application	Daily operating time	“AGMA” class
Shock-free, not many starts	10 hours/day	I
Damped shocks	10 hours/day	II
Shock-free, not many starts	24 hours/day	
Violent shocks, many starts	10 hours/day	III
Damped shocks	24 hours/day	

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Conditions

Cb IAW 3000: S, BT, BS, BDn
FLS IAW - Cl.F - 400 V Y - 50 Hz - S1/S4

Inputs		Maximum quantity per order
		Cb IAW 31/32/3333
MI FLS IAW	0.25-4 kW	

	Mechanical options	
	S	Stainless steel shaft
Cb IAW 31/32/3333		

Inputs		Electrical options			
4p/MI		230/400 V	400 V Δ	PTO/PTC	Coated winding
FLS IAW	0.25-4 kW				

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AGMA I, II, III

Cb IAW 3131: USDA H1/H2
Non-ventilated cast iron motor (IC410)

Cb IAW 3131 - H1/H2 S1/S4

		FLS IAW (kW)					
		0.25	0.37	0.55	0.75	1.1	1.5
		FLS IAW 4p					
min^{-1}	i	80 L		90 L		100 LK	
229	6.25	5.13	3.46				
251	5.69	5.63	3.80				
291	4.92	6.52	4.40	2.94	2.12	1.43	1.04
326	4.38	7.31	4.93	3.30	2.38	1.60	1.17
364	3.93	8.16	5.51	3.68	2.65	1.79	1.31
416	3.44	9.32	6.29	4.21	3.03	2.05	1.49
440	3.25	9.86	6.66	4.45	3.21	2.16	1.58
522	2.74	11.71	7.90	5.29	3.81	2.57	1.88
554	2.58	12.43	8.39	5.61	4.04	2.73	1.99
624	2.29	14.02	9.46	6.33	4.56	3.08	2.25
715	2	15.49	10.43	6.97	5.03	3.39	2.48
813	1.76	16.43	11.01	7.35	5.31	3.59	2.62
917	1.56			7.64	5.53	3.74	2.73
1036	1.38			7.92	5.73	3.87	2.83
1172	1.22	18.97	12.72	8.48	6.14	4.15	3.03
1233	1.16	19.57	13.12	8.75	6.33	4.28	3.13

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AGMA I, II, III

Cb IAW 3133: USDA H1/H2
Non-ventilated cast iron motor (IC410)

Cb IAW 3133 - H1/H2 S1/S4

		FLS IAW (kW)					
		0.25	0.37	0.55	0.75	1.1	1.5
		FLS IAW 4p					
min^{-1}	i	80 L		90 L		100 LK	
9.05	158	0.84					
9.93	144	0.93					
11.5	124	1.07					
12.9	111	1.19	0.80				
14.4	99.4	1.29	0.87				
16.4	87.0	1.43	0.96				
17.4	82.2	1.48	1.00				
20.7	69.2	1.67	1.12				
21.9	65.3	1.73	1.16				
24.7	57.8	1.88	1.26	0.84			
28.3	50.6	2.05	1.38	0.92			
32.1	44.5	2.23	1.50	1.00			
36.3	39.4			1.09	0.78		
36.9	38.8	3.39	2.29				
40.4	35.4	3.71	2.51				
41.0	34.9			1.18	0.85		
46.7	30.6	4.29	2.89	1.93	1.39	0.94	
52.6	27.2	4.79	3.24	2.16	1.56	1.05	
58.6	24.4	5.34	3.60	2.41	1.74	1.17	0.86
66.8	21.4	6.08	4.10	2.74	1.98	1.33	0.97
70.8	20.2	6.42	4.33	2.90	2.09	1.41	1.03
84.1	17.0	7.59	5.12	3.43	2.47	1.67	1.22
89.4	16.0	8.05	5.43	3.63	2.62	1.77	1.29
101	14.2	9.05	6.10	4.08	2.94	1.98	1.45
115	12.4	10.09	6.79	4.54	3.27	2.21	1.61
131	10.9	11.08	7.44	4.97	3.59	2.43	1.77
138	10.4	8.78	5.92				
148	9.67			5.41	3.91	2.64	1.93
163	8.79	10.42	7.04				
167	8.57			5.85	4.23	2.86	2.09
189	7.57	14.15	9.49	6.33	4.58	3.09	2.26
195	7.34	12.48	8.42	5.63	4.06	2.74	2.00
223	6.42	14.26	9.63	6.44	4.64	3.13	2.29
253	5.65	15.96	10.76	7.19	5.19	3.50	2.56
287	4.99			7.56	5.47	3.70	2.70
323	4.43			7.78	5.63	3.81	2.78
366	3.91	19.40	13.01	8.67	6.27	4.24	3.10
385	3.71	19.94	13.37	8.92	6.45	4.36	3.18

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AGMA I, II, III

Cb IAW 3231: USDA H1/H2
Non-ventilated cast iron motor (IC410)

Cb IAW 3231 - H1/H2 S1/S4

		FLS IAW (kW)									
		0.25	0.37	0.55	0.75	1.1	1.5	1.8	2.2	3	4
		FLS IAW 4p									
min^{-1}	i	80 L		90 L		100 LK		112 M		132 M	
177	8.08	6.35	4.29								
207	6.92	7.41	5.00	3.35	2.41	1.65	1.21				
227	6.31	8.13	5.49	3.67	2.64	1.81	1.32				
250	5.71	8.97	6.06	4.05	2.92	2.00	1.46	1.22	1.00		
293	4.88	10.52	7.10	4.75	3.42	2.34	1.71	1.43	1.17	0.85	
330	4.33	11.83	7.99	5.34	3.85	2.63	1.93	1.61	1.32	0.96	
368	3.89	13.16	8.89	5.94	4.28	2.93	2.14	1.79	1.47	1.07	0.81
417	3.43	14.95	10.09	6.75	4.86	3.33	2.43	2.03	1.67	1.21	0.91
463	3.09		11.21	7.50	5.40	3.70	2.70	2.26	1.85	1.35	1.02
526	2.72		12.72	8.51	6.13	4.20	3.07	2.56	2.10	1.53	1.15
561	2.55		13.60	9.09	6.55	4.49	3.28	2.74	2.24	1.64	1.23
647	2.21			10.48	7.55	5.17	3.78	3.15	2.59	1.89	1.42
737	1.94			11.95	8.61	5.89	4.31	3.60	2.95	2.15	1.62
817	1.75							3.91	3.21	2.34	1.76
923	1.55							4.24	3.47	2.53	1.90
986	1.45							4.13	3.38	2.47	1.86
1163	1.23							4.48	3.66	2.68	2.01

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Electromechanical products - Food processing
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AGMA I, II, III

Cb IAW 3233: USDA H1/H2
Non-ventilated cast iron motor (IC410)

Cb IAW 3233 - H1/H2 S1/S4

		FLS IAW (kW)									
		0.25	0.37	0.55	0.75	1.1	1.5	1.8	2.2	3	4
		FLS IAW 4p									
min^{-1}	i	80 L		90 L		100 LK		112 M		132 M	
7.01	204	1.47	0.99								
8.22	174	1.71	1.16								
8.99	159	1.88	1.27	0.85							
9.93	144	2.07	1.40	0.94							
11.6	123	2.43	1.64	1.10	0.79						
13.1	109	2.73	1.84	1.23	0.89						
14.6	98.2	3.04	2.05	1.37	0.99						
16.5	86.5	3.45	2.33	1.56	1.12						
18.4	77.9	3.83	2.59	1.73	1.25	0.85					
20.8	68.6	4.35	2.94	1.96	1.42	0.97					
22.3	64.2	4.65	3.14	2.10	1.51	1.04					
25.7	55.7	5.36	3.62	2.42	1.74	1.19	0.87				
28.5	50.2	5.89	3.97								
29.2	48.9			2.76	1.99	1.36	0.99	0.83			
32.4	44.1							0.92			
33.3	43	6.86	4.63	3.09	2.23	1.53	1.12				
36.5	39.2	7.51	5.07	3.39	2.44	1.67	1.22				
36.6	39.1							1.03	0.85		
40.3	35.5	8.27	5.58	3.73	2.69	1.84	1.35	1.12	0.92		
47.2	30.3	9.66	6.52	4.36	3.14	2.15	1.57	1.31	1.08	0.78	
53.2	26.9	10.84	7.31	4.89	3.52	2.41	1.76	1.47	1.21	0.88	
59.1	24.2	12.03	8.12	5.43	3.91	2.68	1.96	1.63	1.34	0.98	
67.1	21.3	13.62	9.19	6.14	4.43	3.03	2.21	1.85	1.52	1.10	0.83
74.5	19.2		10.13	6.77	4.88	3.34	2.44	2.04	1.67	1.22	0.92
84.6	16.9		11.11	7.42	5.35	3.66	2.67	2.23	1.83	1.33	1.00
90.5	15.8		11.64	7.77	5.61	3.83	2.80	2.34	1.91	1.40	1.05
104	13.7		12.86	8.58	6.20	4.23	3.09	2.58	2.11	1.54	1.16
119	12		14.01	9.34	6.76	4.61	3.37	2.81	2.30	1.68	1.26
131	10.9							3.01	2.46	1.80	1.35
132	10.8		10.10	6.75	4.86	3.33	2.43				
147	9.72		11.21	7.50	5.40	3.70	2.70				
149	9.62							3.25	2.66	1.94	1.46
159	9.02							3.40	2.79	2.03	1.53
167	8.57			8.51	6.13	4.20	3.07				
178	8.02			9.09	6.55	4.49	3.28				
187	7.63							3.78	3.09	2.26	1.70
205	6.96				7.55	5.17	3.78	3.16	2.59	1.89	1.42
234	6.1				8.61	5.89	4.31	3.60	2.95	2.15	1.62
260	5.51							3.98	3.26	2.38	1.79
293	4.88							4.50	3.69	2.69	2.03
313	4.57							4.80	3.93	2.87	2.16
370	3.87							5.67	4.65	3.39	2.55

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AGMA I, II, III

Cb IAW 3331: USDA H1/H2
Non-ventilated cast iron motor (IC410)

Cb IAW 3331 - H1/H2 S1/S4

		FLS IAW (kW)									
		0.25	0.37	0.55	0.75	1.1	1.5	1.8	2.2	3	4
		FLS IAW 4p									
min^{-1}	i	80 L		90 L		100 LK		112 M		132 M	
183	7.83	12.27	8.28	5.54	3.99	2.73	2.00				
202	7.08	13.58	9.17	6.13	4.42	3.03	2.21				
226	6.33	15.18	10.25	6.85	4.94	3.38	2.47	2.06	1.69		
260	5.5	17.48	11.80	7.89	5.68	3.89	2.84	2.37	1.95		
294	4.87	19.75	13.33	8.92	6.42	4.40	3.21	2.68	2.20	1.61	1.21
320	4.47		14.51	9.70	6.99	4.79	3.50	2.92	2.39	1.75	1.31
362	3.95		16.42	10.98	7.91	5.42	3.96	3.30	2.71	1.98	1.49
406	3.52			12.05	8.69	5.94	4.34	3.62	2.97	2.17	1.63
453	3.16			12.56	9.08	6.20	4.53	3.78	3.09	2.26	1.69
491	2.91			14.74	10.62	7.27	5.31	4.44	3.64	2.65	1.99
554	2.58				12.10	8.29	6.06	5.06	4.14	3.02	2.27
636	2.25				12.26	8.36	6.11	5.09	4.17	3.05	2.29
701	2.04							5.36	4.39	3.20	2.40
808	1.77							5.05	4.14	3.02	2.27
888	1.61									3.03	2.27
979	1.46							5.13	4.20	3.07	2.30
1135	1.26									3.22	2.42

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AGMA I, II, III

Cb IAW 3333: USDA H1/H2
Non-ventilated cast iron motor (IC410)

Cb IAW 3333 - H1/H2 S1/S4

		FLS IAW (kW)									
		0.25	0.37	0.55	0.75	1.1	1.5	1.8	2.2	3	4
		FLS IAW 4p									
min^{-1}	i	80 L		90 L		100 LK		112 M		132 M	
7.15	200	2.73	1.84	1.23	0.89						
7.90	181	3.02	2.04	1.36	0.98						
8.83	162	3.37	2.28	1.52	1.10						
10.1	141	3.88	2.62	1.75	1.26	0.86					
11.4	125	4.39	2.96	1.98	1.43	0.98					
12.5	114	4.77	3.22	2.15	1.55	1.06					
14.2	101	5.40	3.65	2.44	1.76	1.20	0.88				
15.9	90.1	6.06	4.09	2.74	1.97	1.35	0.99	0.82			
17.7	80.9	6.76	4.56	3.05	2.20	1.50	1.10	0.92			
19.2	74.4	7.34	4.95	3.31	2.39	1.63	1.19	1.00	0.82		
21.6	66.1	8.26	5.58	3.73	2.69	1.84	1.34	1.12	0.92		
24.8	57.6	9.49	6.40	4.28	3.09	2.11	1.54	1.29	1.06		
27.4	52.1							1.42	1.17	0.85	
29.4	48.7	10.72	7.24	4.84	3.49	2.39	1.74				
31.5	45.4							1.63	1.34	0.98	
32.5	44	11.87	8.01	5.36	3.86	2.64	1.93				
34.8	41.1									1.08	0.81
36.3	39.4	13.26	8.95	5.99	4.31	2.95	2.16	1.80	1.48		
38.3	37.3									1.18	0.89
41.8	34.2	15.27	10.31	6.89	4.97	3.40	2.48	2.07	1.70		
47.4	30.2	17.26	11.65	7.79	5.61	3.84	2.81	2.34	1.92	1.40	1.05
51.4	27.8	18.77	12.67	8.47	6.10	4.18	3.05	2.55	2.09	1.53	1.15
58.1	24.6		14.34	9.59	6.91	4.73	3.46	2.89	2.37	1.73	1.30
65.3	21.9		16.10	10.76	7.75	5.31	3.88	3.24	2.66	1.94	1.46
73.0	19.6		17.94	12.00	8.64	5.92	4.32	3.61	2.96	2.16	1.62
79.0	18.1		19.49	13.03	9.39	6.43	4.70	3.92	3.22	2.35	1.76
88.8	16.1			14.67	10.57	7.24	5.29	4.42	3.62	2.64	1.99
102	14.0			16.84	12.13	8.31	6.07	5.07	4.15	3.03	2.28
113	12.7							5.58	4.58	3.34	2.51
114	12.5			9.59	6.91	4.73	3.46				
129	11.1			10.76	7.75	5.31	3.88				
130	11.0							6.07	4.97	3.63	2.73
143	9.98									3.98	2.99
144	9.95				8.64	5.92	4.32	3.61	2.96		
156	9.16				9.39	6.43	4.70				
158	9.06							7.11	5.83	4.25	3.19
176	8.14					7.24	5.29	4.42	3.62		
182	7.85									4.66	3.50
202	7.09					8.31	6.07	5.07	4.16	3.03	2.28
223	6.41							5.60	4.59	3.35	2.52
256	5.59							6.43	5.27	3.85	2.89
283	5.06									4.25	3.19
312	4.59							7.83	6.42	4.68	3.52
359	3.98									5.40	4.06

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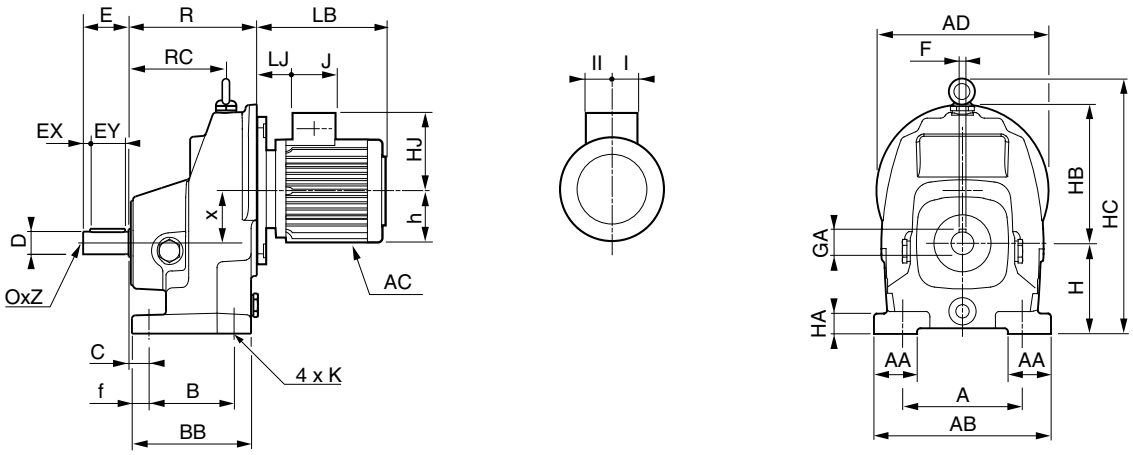
Electromechanical products - Food processing
Very harsh atmosphere
Compabloc IAW 3000

Dimensions

**Dimensions of Compabloc (Cb) geared motors, MI integral mounting, 1 stage,
Cb IAW 3131 to Cb IAW 3331**

Dimensions in millimetres

- S foot mounted form



Type	Gearboxes																Solid output shaft								Max. weight kg
	A	AA	AB	AD	B	BB	C	f	H	HA	HB	HC	K	R	RC	x	D	E	EX	EY	F	GA	O	Z	
Cb IAW 3331	190	55	240	230	100	145	27.5	22	112	25	185	343	16	136	106	70	35k6	70	5	60	10	38	M12	38	15.5
Cb IAW 3231	140	37	180	185	80	115	20.5	17.5	90	20	155	292	14	117	95	63	25j6	50	5	40	8	28	M10	22	8.3
Cb IAW 3131	120	35	156	157	75	105	18	15	80	16	122	246	11	113	86	46.5	20j6	40	7	30	6	22.5	M6	16	6.9

Frame size	Induction motors 3-phase FLS IAW							
	AC	HJ	max. J	max. LB	min. LJ	I	II	Max. weight kg
80	160	150	126	177	27	63	63	15
90	185	160	126	224	22	63	63	23
100	227	194	156	275	34	78	78	44
112	227	194	156	275	34	78	78	48
132	261	214	156	330	25	78	78	75

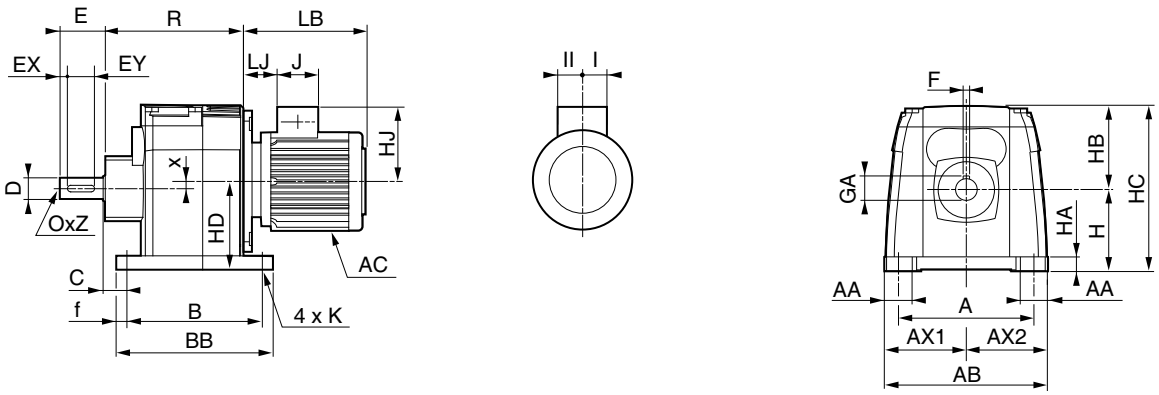
Electromechanical products - Food processing
Very harsh atmosphere
Compabloc IAW 3000

Dimensions

**Dimensions of Compabloc (Cb) geared motors, MI integral mounting, multi-stage,
Cb IAW 3133 to Cb IAW 3333**

Dimensions in millimetres

- S foot mounted form



Type	Gearboxes																			Solid output shaft								Max. weight kg
	A	AA	AB	AD	AX	AX1	AX2	B	BB	C	f	H	HA	HB	HC	HD	K	R	RC	x	D	E	EX	EY	F	GA	O	Z	
Cb IAW 3333	170	65	245	257	222	128.5	128.5	240	272	19.5	16	140	27	107	292	120.5	18	224.5	169.5	19.5	40k6	80	9	60	12	43	M16	36	30
Cb IAW 3233	135	65	208	222	195	115	107	192	216	13	11.5	115	21	89	240	105	14	182.5	135.5	10	30j6	60	6	45	8	33	M10	22	18.5
Cb IAW 3133	110	35	160	172	145	86	86	165	195	16	15	90	20	73	211.5	81.5	9	165.5	167	8.5	25j6	50	5	40	8	28	M10	22	13

Frame size	Induction motors 3-phase FLS IAW							
	AC	HJ	max. J	max. LB	min. LJ	I	II	Max. weight kg
80	160	150	126	177	27	63	63	15
90	185	160	126	224	22	63	63	23
100	227	194	156	275	34	78	78	44
112	227	194	156	275	34	78	78	48
132	261	214	156	330	25	78	78	75