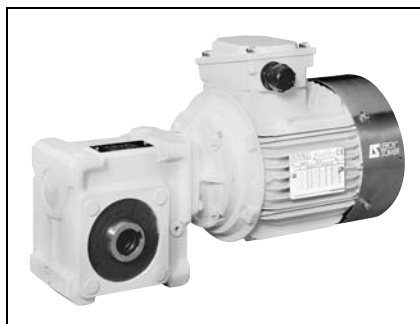


Electromechanical products - Food processing

Harsh atmosphere

Multibloc IA 2000

General



Multibloc 2000 geared motors with worm gear are used to adapt the speed of the electric motor to that of the driven machine. Their size is therefore determined by the power of the motor (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 five sizes: Mb IA 31, 22, 23, 24, 25.

Rated output torque: from 20 N.m to 1500 N.m.

Power ratings: from 0.18 to 9 kW.

Reduction ratios: from 5.2 to 100.

Efficiency: 55% to 88%.

Very quiet operation.

Construction

Description of Multibloc gearboxes (Mb IA)

Component	Materials	Remarks
Frame	Cast iron	<ul style="list-style-type: none"> - use of single-component pearlitic FGL cast iron (flake graphite: 150 MPa tensile strength) to ensure unit is fully sealed - monobloc with internal reinforcements to absorb vibrations and noise, and increase its rigidity - with NU housing, it can be adapted for sizes 22, 23, 24, 25 by using BS or BD flanges. They are compact and meet the requirements of food processing applications by elimination of retention zones
Wheel	Bronze	- moulded on a steel or cast iron insert, fixed with respect to the worm, supported by two large-diameter bearings without intermediate shields
Worm	Steel	- cut on a whirl lathe, toughened and ground
Shafts	Steel	<ul style="list-style-type: none"> - grinding of sealing surfaces - cylindrical hollow according to ISO R773, with stainless steel screw fixing the hollow shaft protective cover, sealed and conforming to machinery directive 89/392/EEC - tolerance of diameters H7 - corrosion "anti-fretting" adaptation
Seals	Nitrile	<ul style="list-style-type: none"> - antidust lipseals in accordance with DIN 3760 form AS - ground sealing surfaces - maximum sealing at spigots
End shield	Cast iron	- reinforced by large ribs, this ensures ruggedness of the gearbox under heavy loads
Lubrication	Oil	<ul style="list-style-type: none"> - 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		MU (FT or FF): geared motor with IEC motor, manufactured with universal mounting
Standard motor		<ul style="list-style-type: none"> LS IA: - multi-voltage 220/380 V - 230/400 V - 240/415 V - black plastic fan cover as standard; as an option, fitted with a stainless steel cover fixed by stainless steel screws - metal terminal box with nitrile seal and stainless steel screws, fitted with IP 68 cable gland by concentric tightening with anchoring - IP 55 standard protection
Brake motors		LS IA FCR: failsafe brake induction motor, from 0.18 to 9 kW, IP 55 protection
Finish	Paint	<ul style="list-style-type: none"> System IIb, shade RAL 9010 (white), (1 epoxy base coat + 1 epoxy top coat: 55 to 75 μm) • resistance to saline mist: 400 hours (in accordance with NF ISO 9227)

Electromechanical products - Food processing

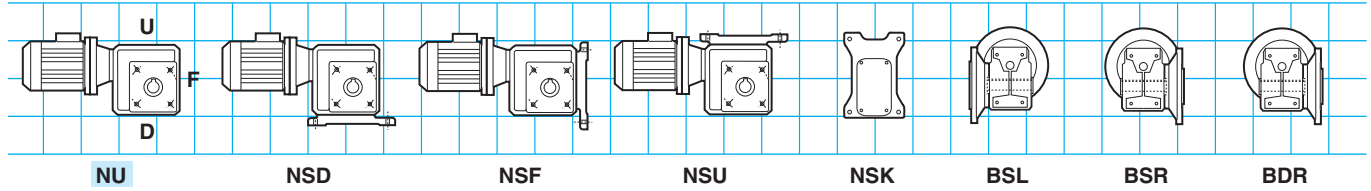
Harsh atmosphere

Multibloc IA 2000

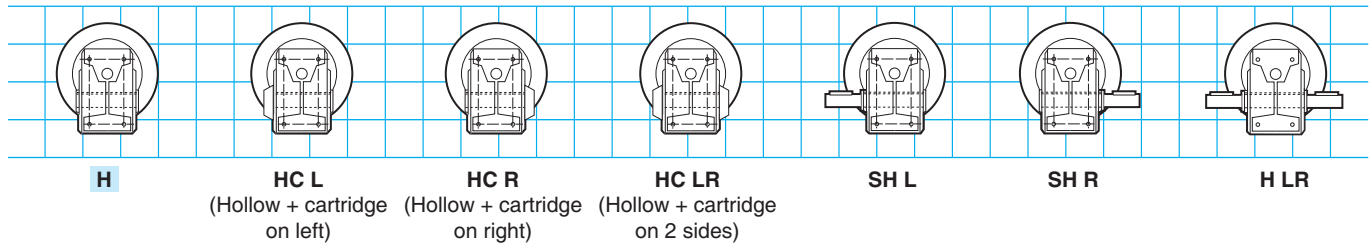
Mounting arrangements

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

1 - Mounting form

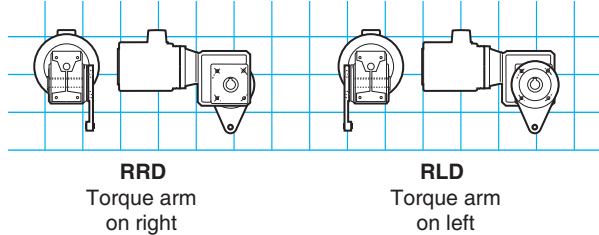


2 - Output shaft

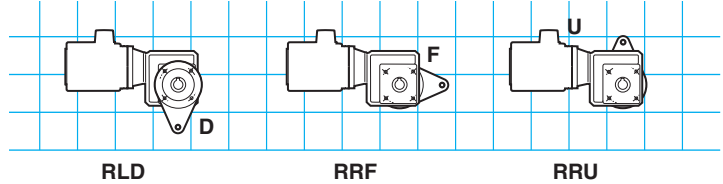


3 - Options

Torque arm mounting side

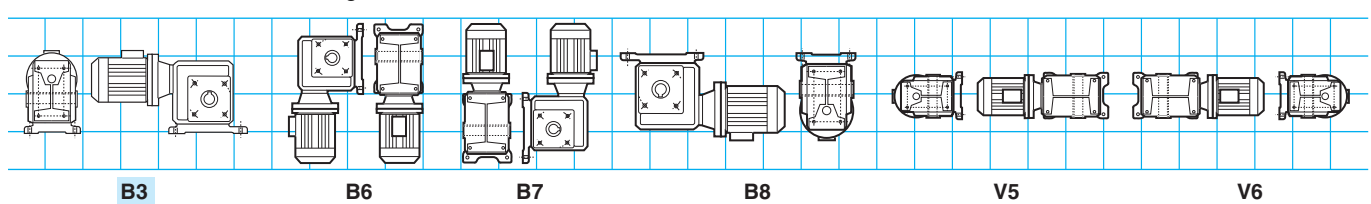


Possible orientation of the torque arm (examples)

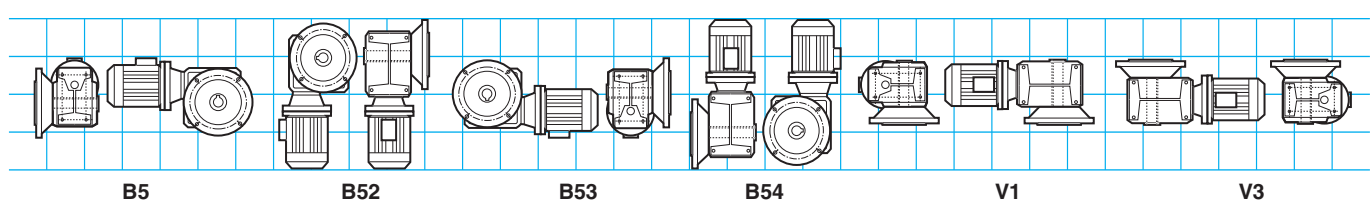


4 - Operating position

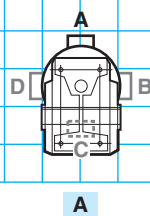
NU, NS D, NS U, R mounting



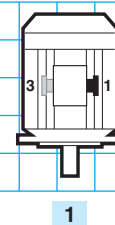
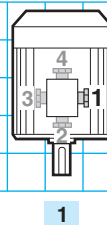
BS mounting



5 - Terminal box positions



6 - Cable gland positions



Non-brake motor

Brake motor

Electromechanical products - Food processing

Harsh atmosphere

Multibloc IA 2000

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, please consult the Leroy-Somer technical specialists who will be glad to assist.

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

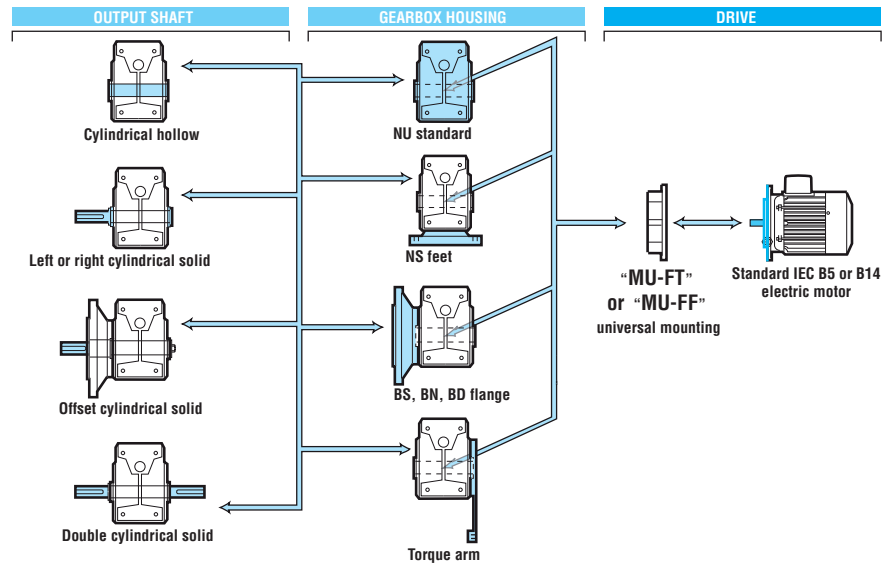
- **fixed speed 3-phase induction motors:**
 - LS IA motors from 0.18 to 9 kW
 - LS IA FCR brake motor from 0.18 to 9 kW

- **electronic variable speed motors: centralised system with separate drive**
 - LSMV IA motor from 0.25 to 9 kW
 - LSMV IA brake motor from 0.25 to 9 kW

- **decentralised system with integrated drive**
 - VARMECA from 0.25 to 9 kW

☞ *Options:*

- baseplate kit
- flange kit
- output shaft extension kit
- torque arm kit
- sealing cartridge kit (NU or R finish)
- H1 edible oil



Designation / Coding

Mb IA	2301	B3	NU	D	H	20	MU-FT	4P	LS IA 90	1.1 kW	230/400 V 50 Hz	Food processing S1
Gearbox type	Size	Operating position	Mounting form	Mounting position	Definition of output shaft	Exact reduction	Type of input	Polarity	Series, frame size and manufacturer code	Rated output power	Mains voltage and frequency	Special application

☞ *Example coding in IA, S1 duty:*

Multibloc Mb IA 2301 1.1 kW, 72 min⁻¹, S1

Designation	Code
Mb IA 2301 B3 NU D H 20 MU-FT 4P, LS IA 90 1.1 kW	-

Electromechanical products - Food processing

Harsh atmosphere

Multibloc IA 2000

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 gearbox duty factor K_p .

"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.

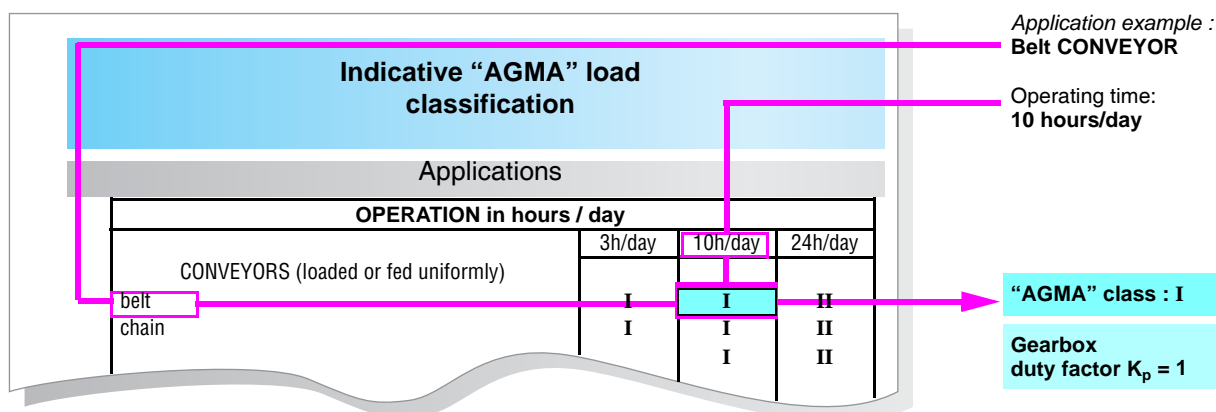
In this catalogue, the selection is made for an operating factor of 50%.

For an operating factor of 100%, Class I becomes Class II, and Class II becomes Class III.

(K_p multiplied by 1.4).

1st case. – Your application is listed

Follow the indicative classification table of loads according to "AGMA", 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	II
Violent shocks, many starts	10 hours/day	III
Damped shocks	24 hours/day	III

Electromechanical products - Food processing

Harsh atmosphere

Multibloc IA 2000

Conditions

Mb IA 3101, Mb IA 2000: NU, BS, BN, BD, RK
 LS IA, LS IA FCR brake - CI.F - 400 V Y - 50 Hz

Inputs ¹	Maximum quantity per order					
	Mb 3101	Mb 2201	Mb 2301	Mb 2401	Mb 2501	
LS IA	0.18-2.2 kW/8p	-	5	5	5	3
	0.18-1.5 kW/4p	5	5	5	5	3
	2.2-4 kW/4p	-	-	5	5	3
	5.5-9 kW/4p	-	-	-	5	3
LS IA FCR	0.18-2.2 kW/8p	-				
	0.18-1.5 kW/4p					
	2.2-9 kW/4p	-	-			

1. MU-FT (B14); MU-FF (B5)

	Mechanical options					Sealing cartridge
	NU H	BSL/BSR H/S H	BDL/BDR H/S H	BNL/BNR H/S H	R	
Mb IA 3101		-				
Mb IA 2201						
Mb IA 2301						
Mb IA 2401						
Mb IA 2501						

Inputs 4p/MU	Electrical options				Brake options			
	230/400 V	400 V Δ	PTO/PTC	Coated winding	DLRA	TRR	Different Mf	J01
LS IA	0.18-3 kW				-	-	-	-
	4-9 kW				-	-	-	-
LS IA FCR	0.18-3 kW							
	4-9 kW							

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Electromechanical products - Food processing

Harsh atmosphere

Multibloc IA 2000

AGMA I

Mb IA 3101, Mb IA 2000: USDA H1
LS IA, LS IA FCR brake - Cl.F - 400 V Y - 50 Hz - S1

Mb IA 3101, Mb IA 2000

		LS IA (kW)														
		0.18	0.25	0.37	0.55	0.75	0.9	1.1	1.5	1.8	2.2	3	4	5.5	7.5	9
		LS IA 4 p														
min ⁻¹	i	71 L			80 L			90 L			100 L		112		132 M	
14.3	100		2301		2401 ^{2>}											
17.9	80			2301												
23.8	60		2201													
28.6	50				2301	2401										
35.8	40							2401		2501						
47.7	30				2201		2301									
56.1	25.5								2401							
71.5	20		3101 ²													
95.3	15															
124.3	11.5															
138.8	10.3					<	<				2301	2401		2501		
195.9	7.33					<	<					2401				
275	5.2															
Brake motors ¹		LS IA 4 p														
FCR ¹		71 L FCR J02			80 L FCR J02			90 L FCR J02			100 L FCR J02		112 MG FCR J01	132 S FCR J01	132 M FCR J02	

1. See brake in section B2.

2. 3101 < LS 80: B14 FT 85, ba 14 x 30 are compulsory.

3. 2401 > LS 80: B14 FT 100, ba 19 x 40 are compulsory.

Exact reduction

Type	Reduction indices												
	100	80	60	50	40	30	25.5	20	15	11.5	10.3	7.3	5.2
Mb IA 2501	100	80	60	50	40	30	25.5	20.5	15.5		10.3	7.25	
Mb IA 2401	100	80	60	50	40	30	25.5	19.5	14.5		10.3	7.25	
Mb IA 2301	100	80	60	50	40	30	25.5	20	15	11.5	10.3	7.5	5.2
Mb IA 2201	100	80	60	50	40	30	25.5	20	15	11.5	10.3	7.33	
Mb IA 3101	100	80	60	50	40	30	25	20	15	12.5	10	7.5	

S1
USDA H1
Edible oil Lubricant which can
come into accidental contact
with food

Electromechanical products - Food processing

Harsh atmosphere

Multibloc IA 2000

AGMA I

Mb IA 3101, Mb IA 2000: USDA H2 for S1/S4 - USDA H1 for S4
 LS IA, LS IA FCR brake - CI.F - 400 V Y - 50 Hz - S1/S4

Mb IA 3101, Mb IA 2000

		LS IA (kW)														
		0.18	0.25	0.37	0.55	0.75	0.9	1.1	1.5	1.8	2.2	3	4	5.5	7.5	9
		LS IA 4 p														
min ⁻¹	i	71 L			80 L			90 L			100 L		112		132 M	
14.3	100			2301	2401 ³											
17.9	80															
23.8	60			2201												
28.6	50															
35.8	40						2301				2501					
47.7	30				2201				2401							
56.1	25.5															
71.5	20		3101 ²													
95.3	15															
124.3	11.5															
138.8	10.3										2301		2401		2501	
195.9	7.33															
275	5.2															
Brake motors ¹		LS IA 4 p														
FCR ¹		71 L FCR J02			80 L FCR J02			90 L FCR J02			100 L FCR J02		112 MG FCR J01	132 S FCR J01	132 M FCR J02	

1. See brake in section B2.
2. 3101 < LS 80: B14 FT 85, ba 14 x 30 are compulsory.
3. 2401 > LS 80: B14 FT 100, ba 19 x 40 are compulsory.

Exact reduction

Type	Reduction indices												
	100	80	60	50	40	30	25.5	20	15	11.5	10.3	7.3	5.2
Mb IA 2501	100	80	60	50	40	30	25.5	20.5	15.5		10.3	7.25	
Mb IA 2401	100	80	60	50	40	30	25.5	19.5	14.5		10.3	7.25	
Mb IA 2301	100	80	60	50	40	30	25.5	20	15	11.5	10.3	7.5	5.2
Mb IA 2201	100	80	60	50	40	30	25.5	20	15	11.5	10.3	7.33	
Mb IA 3101	100	80	60	50	40	30	25	20	15	12.5	10	7.5	

S4
USDA H1
 Edible oil
 Lubricant which can come into
 accidental contact with food

S1/S4
USDA H2
 Lubricant approved for
 the food processing industry but
 which cannot come into contact,
 even accidental, with food

Electromechanical products - Food processing

Harsh atmosphere

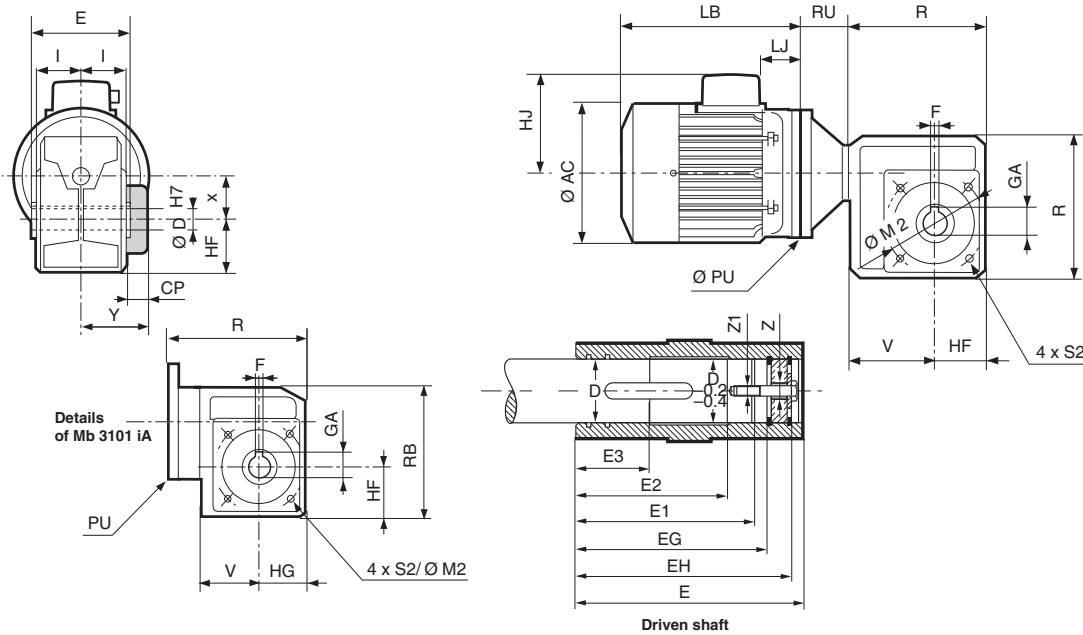
Multibloc IA 2000

Dimensions

Dimensions of Multibloc IA geared motors, MU-FT universal mounting, with IM 3601 (IM B14) motor, Mb IA 3101, Mb IA 2201 to Mb IA 2501

Dimensions in millimetres

- NU standard form, H hollow shaft



Type	NU gearbox									Max. weight kg
	CP	HF	I	M2	R	S2	V	x	Y	
Mb IA 2501	28.5	93	78	180	228	M12 x 20	135	80	106.5	45.5
Mb IA 2401	28	78	64	130	193	M10 x 15	115	63	92	28
Mb IA 2301	22.5	66	54	115	163	M8 x 12	97	55	76.5	16
Mb IA 2201	23.5	59	49	105	143	M8 x 12	84	45	72.5	11.5
Mb IA 3101 ²	22.5	50	41	85	123	M8 x 12	54.5	40	63.5	5

1. Option for Mb 2601 BT: M2 = 165, S2 = 6 x M10 x 15.

2. See Details of Mb 3101 iA: HG = 48 and RB = 127.

Type	H hollow output shaft				Driven shaft							
	D	E	F	GA	D	EG	EH	E1	E2	E3	Z	Z1
Mb IA 2501	45H7	168	14	48.8	45h6	133	147	131	107	57	M20	M16
Mb IA 2401	35H7	138	10	38.3	35h6	110	121	107	95	49	M16	M12
Mb IA 2301	30H7	108	8	33.3	30h6	95	105	91	79	39	M12	M10
Mb IA 2201	25H7	108	8	28.3	25h6	91	99	87	72	36	M12	M10
Mb IA 3101	20H7	90	6	22.8	20h6	73	80.1	71	60	30	M8	M6

Frame size	Induction motors, brake and gearboxes																			
	3-phase LS IA					LS IA and FCR brake ¹					Gearboxes									
	Weight					Weight					3101		2201		2301		2401		2501	
	AC	HJ	LB	LJ	kg	AC	HJ	LB	LJ	kg	RU ⁴	PU	RU	PU	RU	PU	RU	PU	RU	PU
71	140	130	183	21	8.3	140	135	245	13	11	-	105	31	105	35	105	50	120 ²	50	120 ²
80	170	130	215	26	11	172	146	265	11	17	-	105 ³	33	120	36	120	50	120	50	120
90	190	138	245	26	15.2	184	156	304	13	23	-	-	33	120 ³	38	140	50	140	50	140
100	200	152	290	26	21	200	161	351	21	28	-	-	-	-	35	140 ³	50	160	50	160
112	235	152	315	26	24.4	235	169	396	23	39	-	-	-	-	35	140 ³	50	160	50	160
132	280	201	387	25	60	280	188	492	25	72	-	-	-	-	-	-	50	160 ³	50	160 ³

1. FCR J01 to J03. 2. Caution: motor with larger IEC flange and shaft extension. 3. Caution: motor with smaller IEC flange and shaft extension.

4. For Mb 3101, input flange integrated with the housing, i.e. V + RU = 75.

Electromechanical products - Food processing

Harsh atmosphere

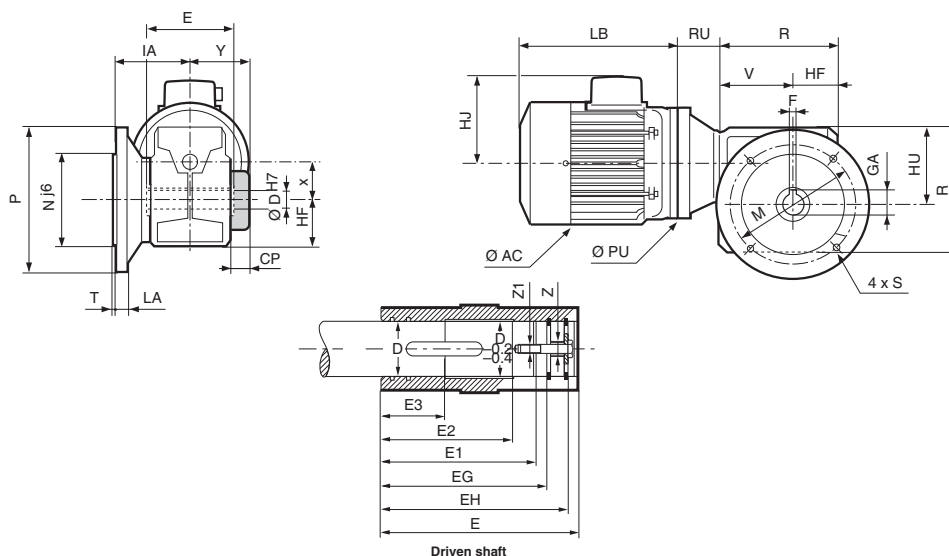
Multibloc IA 2000

Dimensions

Dimensions of Multibloc IA geared motors, MU-FT universal mounting, with IM 3601 (IM B14) motor,
Mb IA 3101, Mb IA 2201 to Mb IA 2501

Dimensions in millimetres

- Form with standard BS or BD flange (or BN flange without spigot), H hollow shaft



Type	Gearbox with flange								BS or BN ¹ flange							Max. weight kg
	CP	HF	HU	IA	R	V	x	Y	M	N ¹	P	LA	S	T	Y	
Mb IA 2501	28.5	90	135	126	225	135	80	106.5	265	230	300	12	14	4	106.5	50.5
Mb IA 2401	28	75	115	126	190	115	63	88.5	215	180	250	12	14	4	92	32.5
Mb IA 2301	22.5	63	97	106	160	97	55	74.5	165	130	200	10	11	3.5	76.5	19
Mb IA 2201	23.5	56	84	100.5	140	84	45	70.5	165	130	200	10	11	3.5	72.5	14.5
Mb IA 3101	22.5	50 ²	77	77	120 ²	54.5	40	61.5	100	-	120	7	7 ³	-	63.5	6.4

1. BN flange without spigot: Nj6 = 0 and T = 0. 2. See Details of Mb 3101 iA: page D49.8. 3. 4 radial slots.

Type	H hollow output shaft				Driven shaft							BD flange						Max. weight kg		
	D	E	F	GA	D	EG	EH	E1	E2	E3	Z	Z1	IA	M	N	P	LA		S	T
Mb IA 2501	45H7	168	14	48.8	45h6	133	147	131	107	57	M20	M16	138	215	180	250	12	14	4	49.5
Mb IA 2401	35H7	138	10	38.3	35h6	110	121	107	95	49	M16	M12	126	165	130	200	10	11	3.5	31.5
Mb IA 2301	30H7	108	8	33.3	30h6	95	105	91	79	39	M12	M10	106	130	110	160	9	9	3.5	18.5
Mb IA 2201	25H7	108	8	28.3	25h6	91	99	87	72	36	M12	M10	100.5	130	110	160	9	10	3.5	14
Mb IA 3101	20H7	90	6	22.8	20h6	73	80.1	71	60	30	M8	M6	76	85	-	105	6	7 ¹	-	6

1. 4 radial slots.

Frame size	Induction motors, brake and gearboxes																					
	3-phase LS IA					LS IA and FCR brake ¹					Gearboxes											
	AC	HJ	LB	LJ	Weight kg	AC	HJ	LB	LJ	Weight kg	3101		2201		2301		2401		2501		2601	
											RU ⁴	PU	RU	PU	RU	PU	RU	PU	RU	PU	RU	PU
71	140	130	183	21	8.3	140	135	245	13	11	-	105	31	105	35	105	50	120 ²	50	120 ²	-	-
80	170	130	215	26	11	172	146	265	11	17	-	105 ³	33	120	36	120	50	120	50	120	-	-
90	190	138	245	26	15.2	184	156	304	13	23	-	-	33	120 ³	38	140	50	140	50	140	-	-
100	200	152	290	26	21	200	161	351	21	28	-	-	-	-	35	140 ³	50	160	50	160	-	-
112	235	152	315	26	24.4	235	169	396	23	39	-	-	-	-	35	140 ³	50	160	50	160	-	-
132	280	201	387	25	60	280	188	492	25	72	-	-	-	-	-	-	50	160 ³	50	160 ³	51	250

1. FCR J01 to J03. 2. Caution: motor with larger IEC flange and shaft extension. 3. Caution: motor with smaller IEC flange and shaft extension. 4. For Mb 3101, input flange integrated with the housing, i.e. V + RU = 75.

Electromechanical products - Food processing

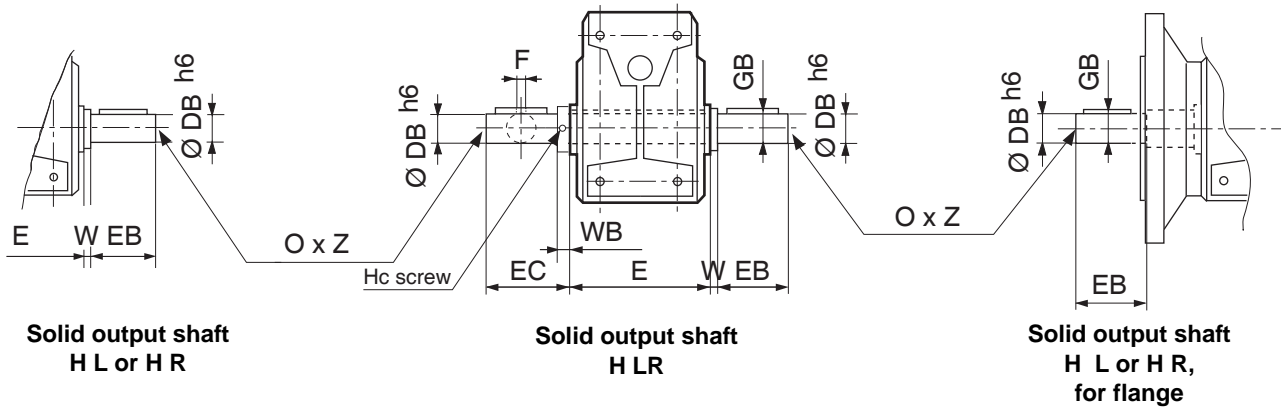
Harsh atmosphere

Multibloc IA 2000

Dimensions

Dimensions of the solid output shaft extension kit
 Mb IA 3101 and Mb IA 2201 to Mb IA 2501
 (Not possible with the sealing cartridge option)

Dimensions in millimetres



Type	Solid output shaft										
	D	E	F	DB	EB	EC	GA	O	Z	W	Hc screws
Mb IA 2501	45	168	14	45	90	95	48.5	M16	36	5	M5
Mb IA 2401	35	138	10	35	70	75	38	M12	28	5	M5
Mb IA 2301	30	118	8	30	60	65	33	M10	22	5	M5
Mb IA 2201	25	108	8	25	50	55	28	M10	22	5	M5
Mb IA 3101	20	90	6	20	40	48	22.5	M6	16	5	M5

Electromechanical products - Food processing

Harsh atmosphere

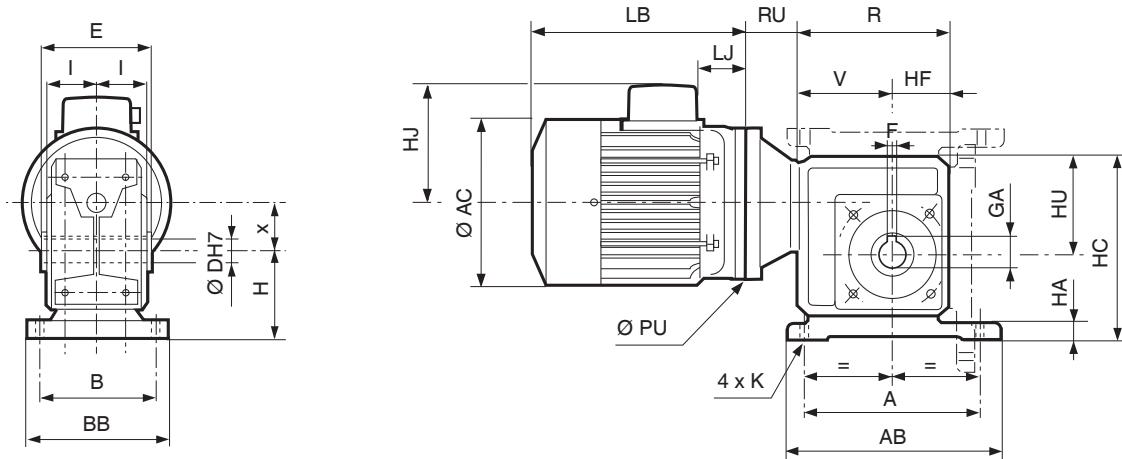
Multibloc IA 2000

Dimensions

Dimensions of the baseplate kit Mb IA 3101 and Mb IA 2201 to Mb IA 2501

Dimensions in millimetres

- NS D [NS F or NS U] foot mounted form, H hollow shaft



Type	NS gearboxes							
	A	AB	B	BB	H	HA	HC	K
Mb IA 2501	220	270	156	188	112	16	247	16
Mb IA 2401	202	235	156	187	90	15	205	14
Mb IA 2301	154	184	128	156	80	6	177	11
Mb IA 2201	134	164	125	153	71	6	155	11

Electromechanical products - Food processing

Harsh atmosphere

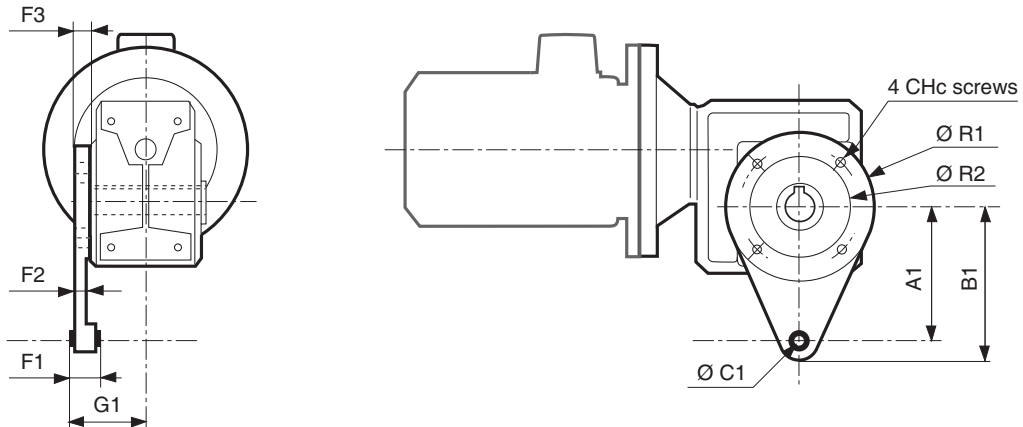
Multibloc IA 2000

Dimensions

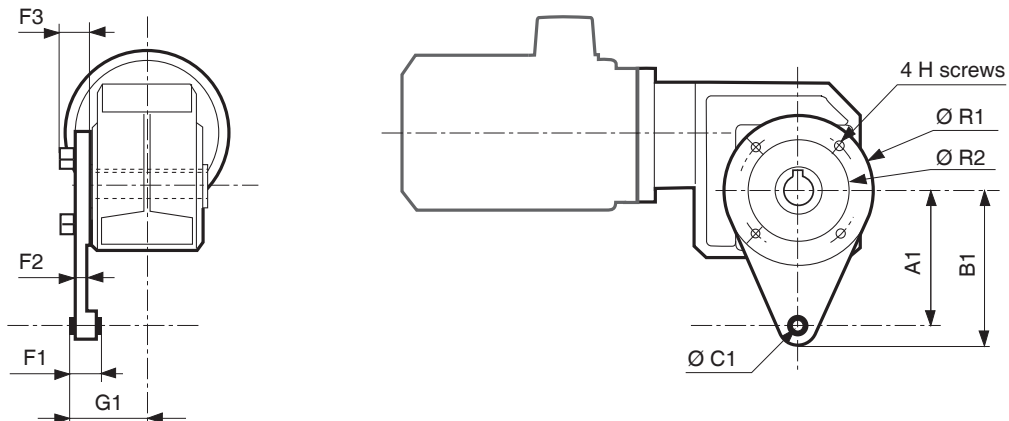
Dimensions of torque arms R, Mb IA 3101 and Mb IA 2201 to Mb IA 2501

Dimensions in millimetres

- Mb 2201 to 2501: Form LD [or RD]



- Mb 3101: Form LD [or RD]



Type ¹	Torque arm R										Weight kg
	A1	B1	C1	F1	F2	F3	G1	R1	R2	Screws	
Mb IA 2501	310	340	16 H10	54	23	25	105	225	135	M12 x 25	6.7
Mb IA 2401	200	230	16 H10	54	23	25	91	179	97	M10 x 25	4.3
Mb IA 2301	160	181	10 H10	33	14	16	71.5	153	86	M8 x 15	1.8
Mb IA 2201	130	151	10 H10	33	14	16	66.5	133	77	M8 x 15	1.4
Mb IA 3101	100	120	10 H10	23	6	11.5	48.5	109	68	M8 x 20	0.5

¹. As standard, the torque arm (fitted with a Silentbloc flexible joint) is supplied separately, painted black.
As an option, the torque arm is supplied mounted on the gearbox: in this case, specify the mounting side **R** or **L** and the orientation **D**, **F** or **U**.

Electromechanical products - Food processing

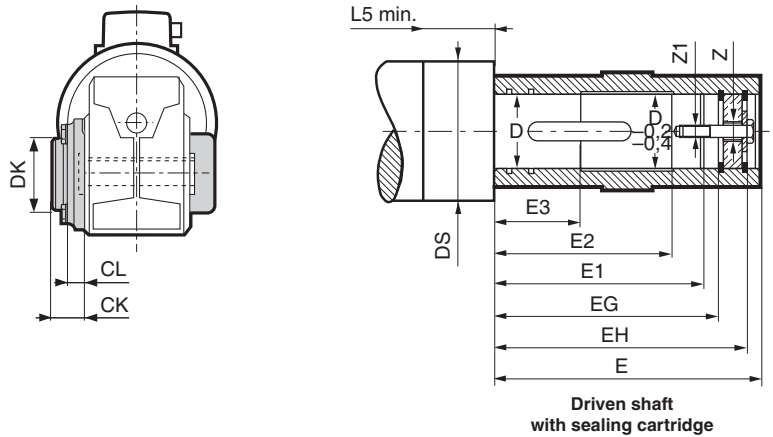
Harsh atmosphere

Multibloc IA 2000

Dimensions

Dimensions of Multibloc IA and sealing cartridge kit,
Mb IA 3101 and Mb IA 2201 to Mb IA 2501

Dimensions in millimetres



Type	NU gearbox		
	CL	CK	DK
Mb IAW 2501	16	31	133
Mb IAW 2401	14	31	92
Mb IAW 2301	13	27	80
Mb IAW 2201	13	25	68
Mb IAW 3101	16	21	65

Type	H hollow output shaft				Driven shaft									
	D	E	F	GA	D	DS ¹	EG	EH	E1	E2	E3	L5	Z	Z1
Mb IAW 2501	45H7	168	14	48.8	45h6	56h8	133	147	131	107	57	25	M20	M16
Mb IAW 2401	35H7	138	10	38.3	35h6	45h8	110	121	107	95	49	25	M16	M12
Mb IAW 2301	30H7	108	8	33.3	30h6	35h8	95	105	91	79	39	21	M12	M10
Mb IAW 2201	25H7	108	8	28.3	25h6	35h8	91	99	87	72	36	20	M12	M10
Mb IAW 3101	20H7	90	6	22.8	20h6	25h8	73	80.1	71	60	30	17	M8	M6

1. Surface roughness: $ra = 1.6$

Electromechanical products - Food processing

Harsh atmosphere

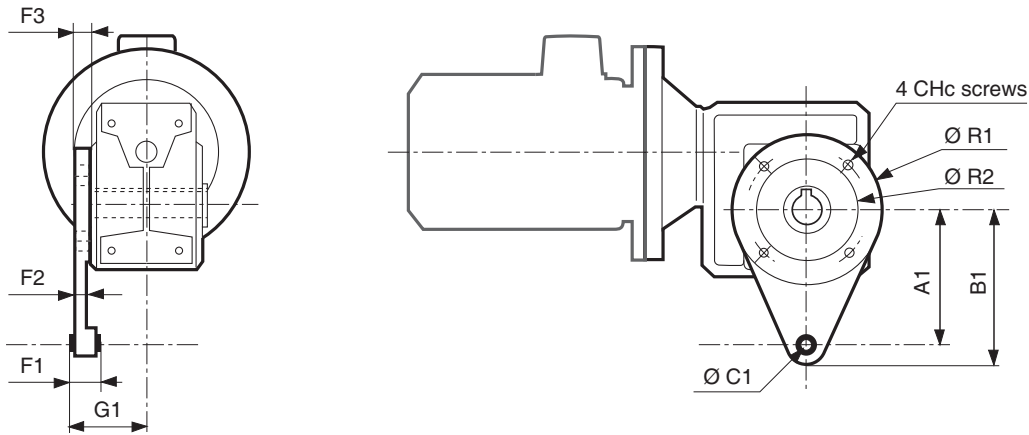
Multibloc IA 2000

Dimensions

Dimensions of torque arms R with sealing cartridge kit,
Mb IA 3101 and Mb IA 2201 to Mb IA 2501

Dimensions in millimetres

- Mb IAW 3101 and Mb IAW 2201 to 2501: Form LD [or RD]



Type ¹	Torque arm R										Weight kg
	A1	B1	C1	F1	F2	F3	G1	R1	R2	Screws	
Mb IAW 2501	310	340	16 H10	54	23	25	121.2	225	135	M12 x 25	6.7
Mb IAW 2401	200	230	16 H10	54	23	25	105	179	97	M10 x 25	4.3
Mb IAW 2301	160	181	10 H10	33	14	16	84.5	153	86	M8 x 15	1.8
Mb IAW 2201	130	151	10 H10	33	14	16	79.5	133	77	M8 x 15	1.4
Mb IAW 3101	100	120	10 H10	23	6	11.5	64.5	109	68	M8 x 20	0.5

¹. As standard, the torque arm (fitted with a Silentbloc flexible joint) is supplied separately, painted black.
As an option, the torque arm is supplied mounted on the gearbox: in this case, specify the mounting side **R** or **L** and the orientation **D**, **F** or **U**.

