

MBT low voltage motors

General information



Low voltage enclosed continuous current (DC) motors

MBT :

- Excitation by permanent magnets.
- Power 0.06 to 0.75 kW.
- IP 40 protection (MBT 65-82)
- IP 40 - IP 20 (MBT 1141)

MBT 65 : 2 poles construction.

MBT 82 : 2 poles construction (4 poles after having studied).

MBT 1141 : Only 4 poles construction.

Conditions of use

- S1 duty.
- Altitude lower than 1 000 m.
- Ambient temperature lower than or equal to 40 °C.

Uses

- Lifting equipment
- Medical equipment
- Pumps

CAUTION :

These applications are offered as a guide only; the conditions of use must be precisely defined.

Only the characteristics of the motors turning at nominal speed appear in the tables: 2500 - 3000 min⁻¹ and for standard voltages from 12 to 48 V. These values are the most common.

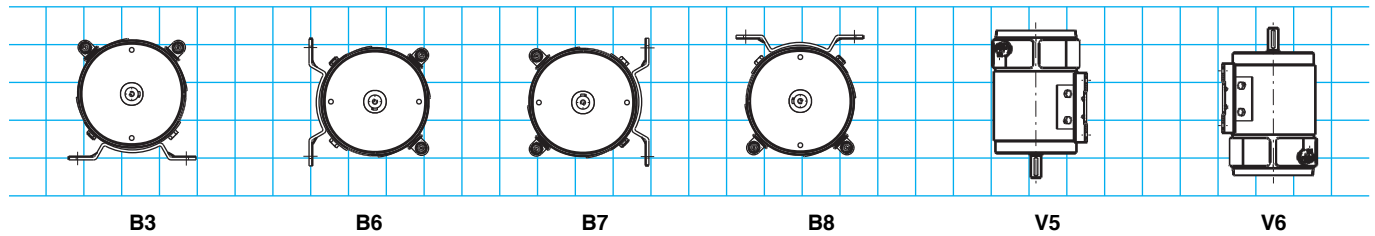
Description of the MBT low voltage continuous current (dc) motors

Component	Materials	Remarks
Casing	Steel	- Drawn or welded according to models
Inductors	Permanent magnets	- High coercive field
Armature	Insulated low carbon magnetic steel laminations Enameled electrolytic copper Insulation class F	- Formed on automatic machines for consistent accuracy - Commutator, reinforced shrink fit
Commutator	Silver-plated copper on resin	
Shaft	Steel	- Open keyway - Straight-ended key
Brush	Electrographitic compound	- Different types fitted for various uses - In MBT 1141, cassettes/brush system certificated LS
End shields	Aluminium alloy	- Front end shields for flange with plain or tapped holes
Bearings	Steel	- Ball bearings - Lubricated for life
Connection	- Wires, connectors or terminals - Faston strip for MBT 65	- To be defined according to the application

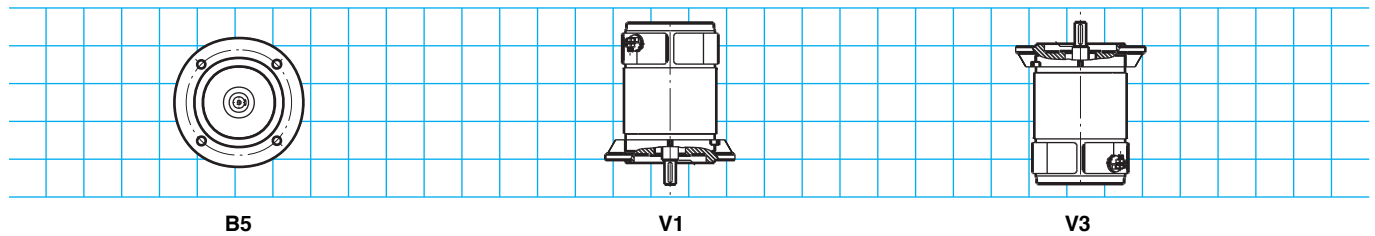
MBT low voltage motors

Mounting positions

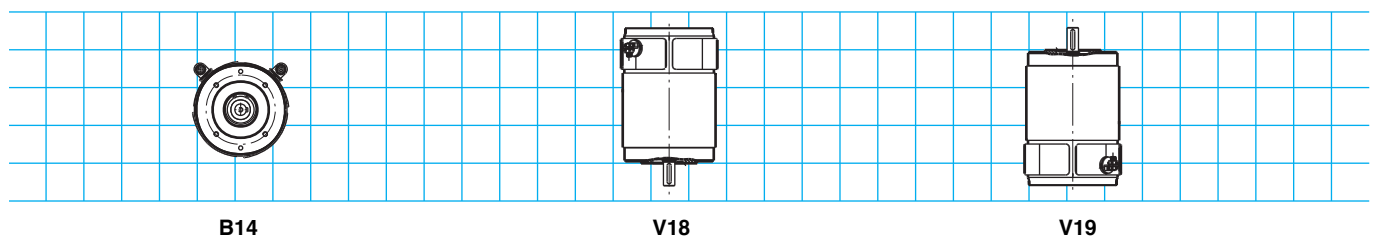
Foot mounted motors (only MBT 1141)



Plain hole flange mounted motors (only MBT 1141)



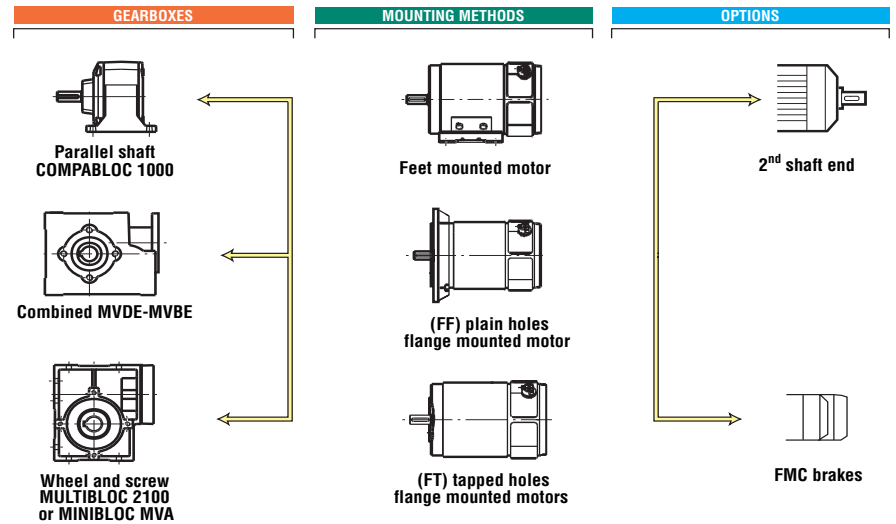
Tapped hole flange mounted motors



MBT low voltage motors

Adaptation possibilities

Leroy-Somer offers, for use with the fractional power motors, many options which meet the needs of highly diverse applications. They are described below.



Designation / Codification

MBT	82	M	12 V	3000 min⁻¹	0.18 kW	S1	IP 44	IM 1001	IC 410
Motor type	Motor diameter	Motor length	Armature voltage	Speed	Power	Duty type	Protection index	Mounting index	Cooling index

For the MBT 1141 motor, motor diameter : 114 mm.

MBT low voltage motors

Selection

FF
1.05

- MBT motor - IP 40 - Class F - Excitation by permanent magnets
 - IC 410 non ventilated motor
- S1 duty - Ambient temperature $\leq 40\text{ }^{\circ}\text{C}$ - Rated speed : 3000 min^{-1}

Type	Power	Speed	Torque	Average efficiency	Minimum voltage	Maximum voltage
	kW	min^{-1}	N.m	%	V	V
MBT 65 M	0.07	2600	0.22	70	12	48
MBT 65 L	0.09	2600	0.28	73	24	48
MBT 82 S	0.15	3000	0.49	76	24	48
MBT 82 M	0.2	3000	0.65	81	24	48
MBT 82 L	0.25	3000	0.81	83	24	48
MBT 82 IL	0.3	3000	0.98	85	24	48
MBT 1141 S	0.25	3000	0.78	72	12	48
MBT 1141 M	0.37	3000	1.2	84	24	48
MBT 1141 L	0.55	3000	1.76	88	24	48
MBT 1141 VL	0.72	3000	2.45	84	24	48

FF
1.05

- MBT motor - IP 40 - Class F - Excitation by permanent magnets
 - IC 410 non ventilated motor
- S1 duty - Ambient temperature $\leq 40\text{ }^{\circ}\text{C}$ - Rated speed : 1500 min^{-1}

Type	Power	Speed	Torque	Average efficiency	Minimum voltage	Maximum voltage
	kW	min^{-1}	N.m	%	V	V
MBT 65 M	0.035	1500	0.22	70	12	48
MBT 65 L	0.045	1500	0.28	73	24	48
MBT 82 S	0.075	1500	0.49	70	24	48
MBT 82 M	0.1	1500	0.65	70	24	48
MBT 82 L	0.13	1500	0.78	80	24	48
MBT 82 IL	0.15	1500	0.98	80	24	48
MBT 1141 S	0.15	1500	0.98	75	12	48
MBT 1141 M	0.23	1500	1.3	80	24	48
MBT 1141 L	0.35	1500	2.3	80	24	48
MBT 1141 VL	0.4	1500	2.9	82	24	48

FF
1.05

- MBT motor - IP 40 - Class F - Excitation by permanent magnets
 - IC 411 non ventilated motor
- S1 duty - Ambient temperature $\leq 40\text{ }^{\circ}\text{C}$ - Rated speed : 3000 min^{-1}

Type	Power	Speed	Torque	Average efficiency	Minimum voltage	Maximum voltage
	kW	min^{-1}	N.m	%	V	V
MBT 1141 M	0.6	3000	1.9	85	24	48
MBT 1141 L	0.7	3000	2.8	84	24	48

MBT low voltage motors

Selection



- MBT motor - IP 40 - Class F - Excitation by permanent magnets
 - IC 410 non ventilated motor
- S1 duty - Ambient temperature $\leq 40\text{ }^{\circ}\text{C}$ - Rated speed : 3000 min⁻¹

Type	Power kW	IM 1001 (IM B3)		IM 3001 (IM B5)		IM 3601 (IM B14)	
		Code	Qty	Code	Qty	Code	Qty
MBT 65 M	0.07		-		-		-
MBT 65 L	0.09		-		-		-
MBT 82 S	0.15		-		-		-
MBT 82 M	0.2		-		-		-
MBT 82 L	0.25		-		-		-
MBT 82 IL	0.3		-		-		-
MBT 1141 S	0.25		-		-		-
MBT 1141 M	0.37		-		-		-
MBT 1141 L	0.55		-		-		-
MBT 1141 VL	0.72		-		-		-



- MBT motor - IP 40 - Class F - Excitation by permanent magnets
 - IC 410 non ventilated motor
- S1 duty - Ambient temperature $\leq 40\text{ }^{\circ}\text{C}$ - Rated speed : 1500 min⁻¹

Type	Power kW	IM 1001 (IM B3)		IM 3001 (IM B5)		IM 3601 (IM B14)	
		Code	Qty	Code	Qty	Code	Qty
MBT 65 M	0.035		-		-		-
MBT 65 L	0.045		-		-		-
MBT 82 S	0.075		-		-		-
MBT 82 M	0.1		-		-		-
MBT 82 L	0.13		-		-		-
MBT 82 IL	0.15		-		-		-
MBT 1141 S	0.15		-		-		-
MBT 1141 M	0.23		-		-		-
MBT 1141 L	0.35		-		-		-
MBT 1141 VL	0.4		-		-		-



- MBT motor - IP 40 - Class F - Excitation by permanent magnets
 - IC 411 non ventilated motor
- S1 duty - Ambient temperature $\leq 40\text{ }^{\circ}\text{C}$ - Rated speed : 3000 min⁻¹

Type	Power kW	IM 1001 (IM B3)		IM 3001 (IM B5)		IM 3601 (IM B14)	
		Code	Qty	Code	Qty	Code	Qty
MBT 1141M	0.6		-		-		-
MBT 1141L	0.7		-		-		-

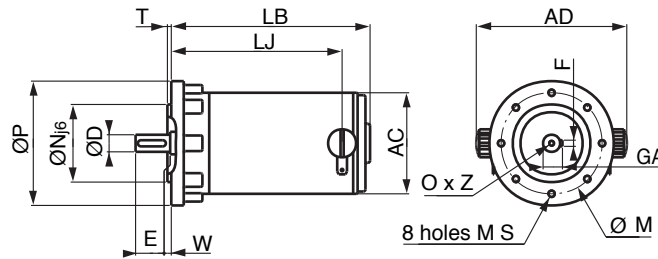
MBT low voltage motors

Dimensions

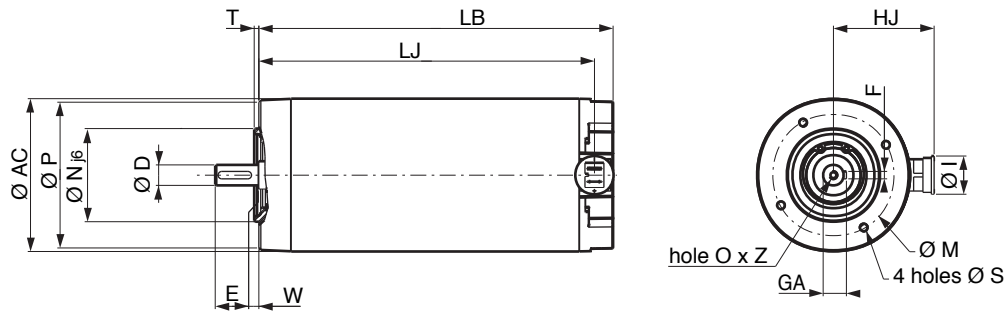
Dimensions of the standard low voltage continuous current (dc) motors

Dimensions in millimetres

IM 3601 (FT) tapped hole flange MBT 65



IM 3601 (FT) tapped hole flange mounted MBT 82



Flange or foot mounted

Type	Motor																	Weight kg	
	A	AB	AD	B	X	C	AC	H	HA	HD	HJ	I	K	LB ¹	LJ ¹	U	V		BO
MBT 65 M	-	-	97	-	-	-	65	-	-	-	-	-	-	122	-	17	4	20	0.9
MBT 65 L	-	-	97	-	-	-	65	-	-	-	-	-	-	137	-	17	4	20	1.1
MBT 82 S	-	-	-	-	-	-	82	-	-	-	56	22	-	150	140	-	-	-	3
MBT 82 M	-	-	-	-	-	-	82	-	-	-	56	22	-	170	160	-	-	-	3.5
MBT 82 L	-	-	-	-	-	-	82	-	-	-	56	22	-	190	180	-	-	-	4
MBT 82 IL	-	-	-	-	-	-	82	-	-	-	56	22	-	210	200	-	-	-	4.5

1. In the plain hole flange version (IM 3001), LB and LJ = + 15 mm MBT 1141.

Type	Plain hole flange						Tapped hole flange					Shaft end				F	W
	M	N	P	LA	S	T	M	N	P	S	T	D	E	O x Z	GA		
MBT 65	-	-	-	-	-	-	50	36	30	M5	2.5	11	34	-	7	-	-
MBT 82	-	-	-	-	-	-	65	50	80	M5	2.5	11	23	M4 x 10	12.5	4	0
MBT 82	-	-	-	-	-	-	65	50	80	M5	2.5	14	30	M4 x 12	16	5	0

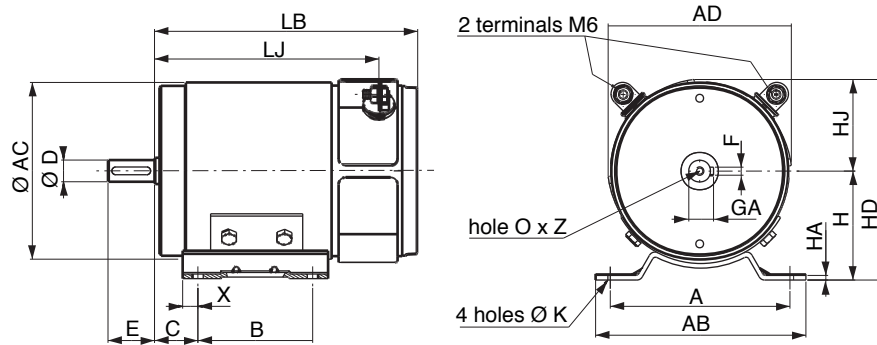
MBT low voltage motors

Dimensions

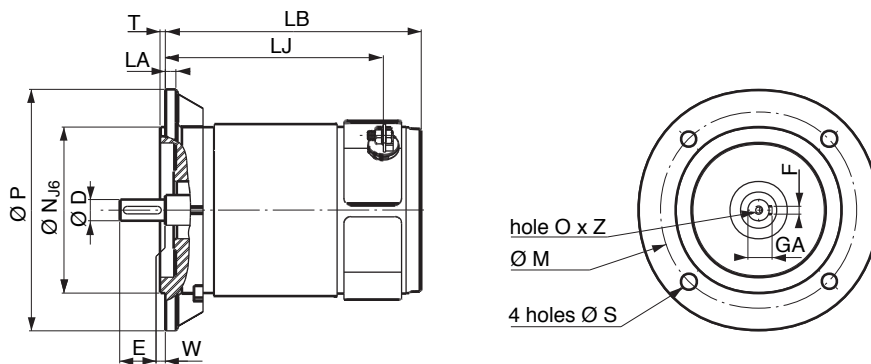
Dimensions of the MBT 1141 low voltage continuous current (dc) motors

Dimensions in millimetres

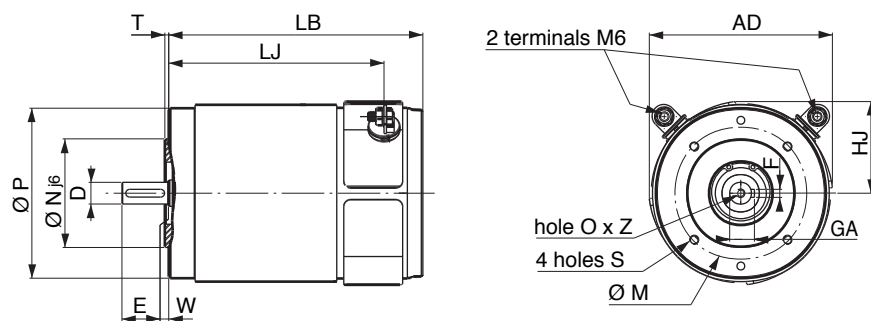
IM B3 (IM 1001) foot mounted MBT 1141



IM B5 (IM 3001) (FF) plain hole flange mounted MBT 1141



IM B14 (IM 3601) (FT) tapped hole flange mounted MBT 1141



Flange or foot mounted

Type	Motors																	Weight kg	
	A	AB	AD	B	X	C	AC	H	HA	HD	HJ	I	K	LB ¹	LJ ¹	U	V		BO
MBT 1141 S	100	120	118	80	10	40	114	63	2	123	60	-	7	167	142	-	-	-	6
MBT 1141 M	100	120	118	80	10	40	114	63	2	123	60	-	7	187	162	-	-	-	7.5
MBT 1141 L	100	120	118	80	10	40	114	63	2	123	60	-	7	227	202	-	-	-	9
MBT 1141 VL	100	120	118	80	10	40	114	63	2	123	60	-	7	257	232	-	-	-	10.5

1. In the plain holes flange version (IM 3001), LB and LJ = + 15 mm MBT 1141.

Type	Plain holes flanges						Tapped holes flanges					Shaft end					
	M	N	P	LA	S	T	M	N	P	S	T	D	E	O x Z	GA	F	W
MBT 1141	115	95	140	10	9	3	85	70	105	M5	2,5	14	30	M5 x 12	16	5	0

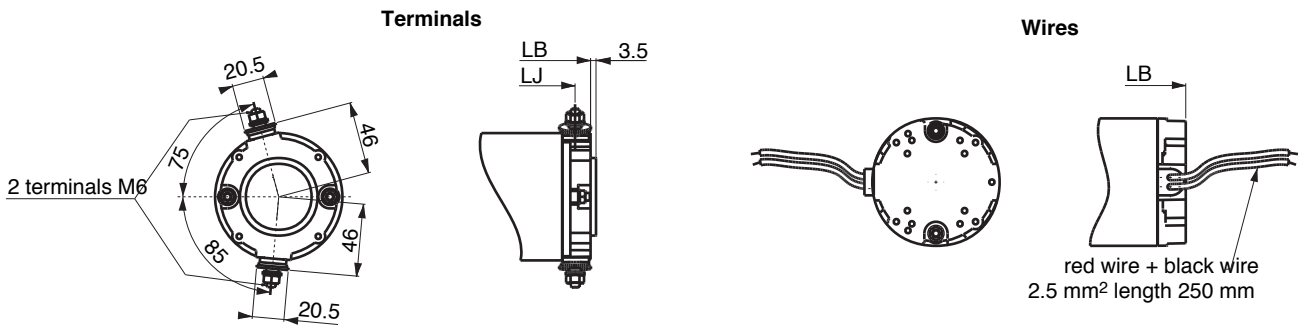
MBT low voltage motors

Dimensions

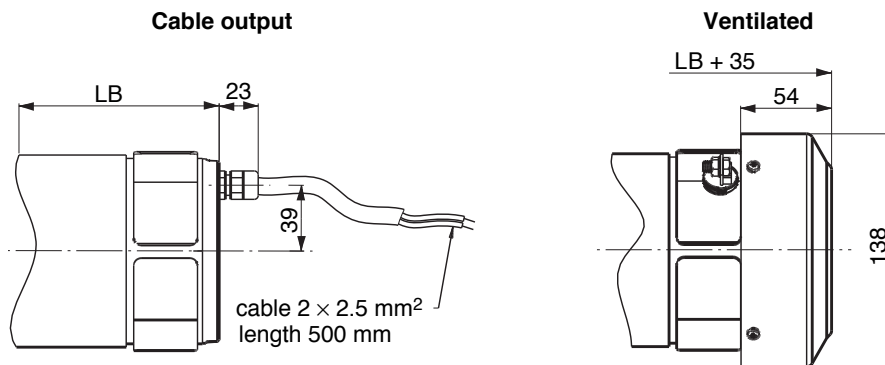
Dimensions of the low voltage continuous current (dc) motors

Dimensions in millimetres

MBT 82 motor



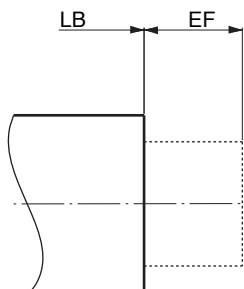
MBT 1141 motor



Type	Weight		
	LB ¹	LJ ¹	kg
MBT 65 M	122	-	0.9
MBT 65 L	137	-	1,1
MBT 82 S	150	140	3
MBT 82 M	170	160	3,5
MBT 82 L	190	180	4
MBT 82 IL	210	200	4,5
MBT 1141 S	167	142	6
MBT 1141 M	187	162	7,5
MBT 1141 L	227	202	9
MBT 1141 VL	257	232	10,5

¹. In the plain holes flange version (IM 3001),
LB and LJ = + 15 mm MBT 1141.

MBT 65, MBT 82 and MBT 1141 motor with brake



MBT 82 - MBT 1141		
Brake type	Brake torque	EF
FMC	2.5 N.m	48
FMCL	5 N.m	53
MBT 65		
Other brakes	1.5 N.m	consult us

MBT low voltage motors

Dimensions

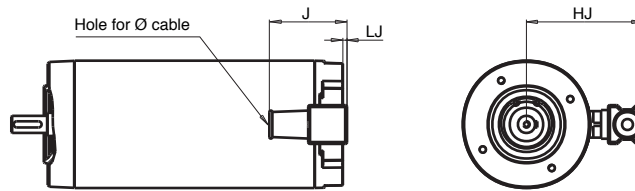
Dimensions of the low voltage continuous current(dc) motors

Dimensions in millimetres

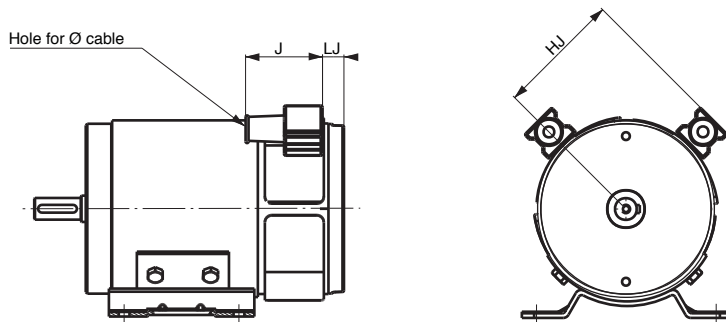
Terminal cover

May be rotated every 90 deg.

MBT 82



MBT 1141

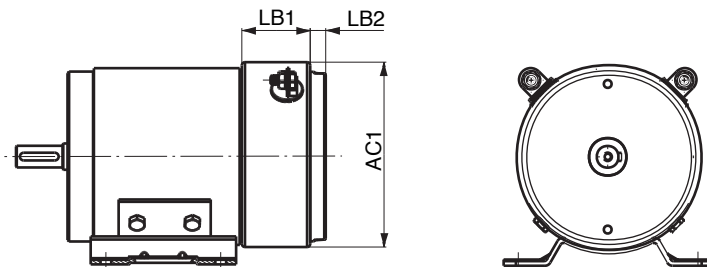


Type	HJ	J	LJ	Ø maximum cable
MBT 82	75	50	3	8
MBT 1141	80	50	14	8

Protective caps

Increases the protection of the MBT 1141(only) from IP 40 to IP 44.

MBT 1141



Type	AC 1	LB 1	LB 2
MBT 1141	119	44	10

Option when fitted with the terminal caps.

Compatibility with gearboxes

Type	Reducers		
	MVA	MVB-MVAB-MVBE-MVDE	Cb 1000
MBT 65	1	1	2
MBT 82	1	1	1
MBT 1141	1	1	1

1. Compatibility with gearbox
2. Incompatibility with gearbox

