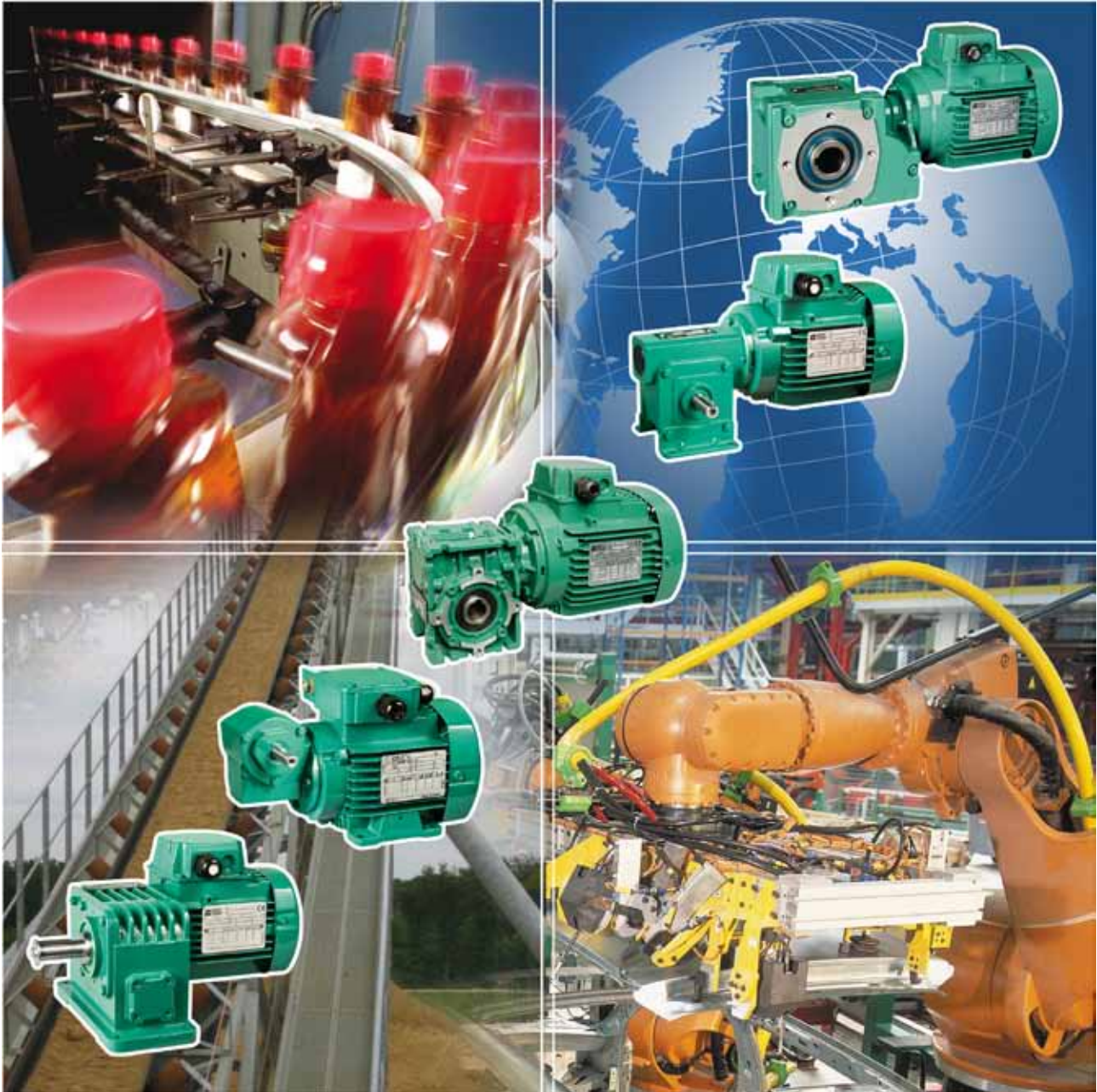




**EMERSON**<sup>™</sup>  
Industrial Automation



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**LERROY**<sup>®</sup>  
**SOMER**

# Geared motors with fractional power

Technical catalogue



# Electromechanical products

## Introduction

Leroy-Somer's extensive experience in all areas of "industrial" power and drive transmission has led it to develop a highly comprehensive range of geared motors for "fractional" power.

These products must provide the user with the same level of satisfaction (i.e. reliability, performance, etc.) as the "industrial" products, whilst still meeting the specific needs of the "fractional" market.

Specialised units from the Leroy-Somer group have therefore been set up to design and manufacture these products (motors and gearboxes).

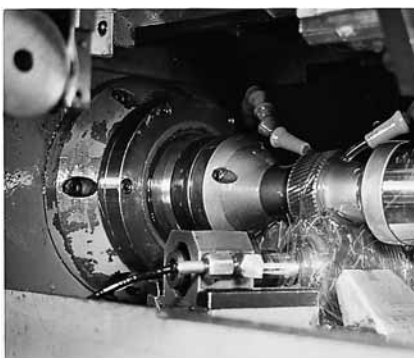
All the gearboxes shown in this catalogue have components that have been selected for their quality and performance.

Thus:

- the shafts (output or countershafts) are mounted exclusively on ball bearings.

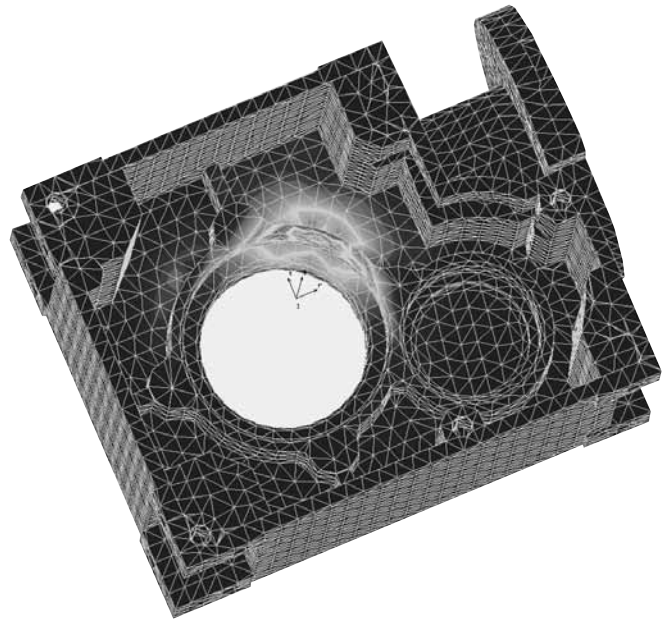


- in addition to their calculations and the optimisation of their teeth all done by computer, the gearing for all models has been manufactured with specially-adapted equipment.



- gear reducers: all gearing is made of hardened steel with final machining. The input trains are microfinished to guarantee an especially low noise level.

- worm and wheel gearboxes: all wheels are made of bronze (never synthetic materials) with alloy optimised for operating; worms cut in hardened steel and either toughened and ground or surface treated by ion nitriding (depending on type).



In addition, all frames created using Computer-Aided Design (CAD) meet market requirements: dimensions and weight have been kept as low as possible, with easy maintenance and installation for the user.

Finally, for easy product operation, all gearboxes are lubricated for their lifetime and supplied "ready to use".

The drives that accompany the gearboxes in this catalogue are the most widely used. Like the gearboxes, these motors come from industrial ranges and meet the most stringent operating standards.

The products in this catalogue form the cornerstone of "fractional manufacturing".

Any specific application that requires specially adapted features, whether mechanical or electrical, can be reviewed with Leroy-Somer's technical department.



# Electromechanical products

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The descriptions cannot in any way be considered contractual.

# Electromechanical products

## General information

### Quality commitment

LEROY-SOMER's quality management system is based on:

- control of procedures right from the initial sales offering until delivery to the customer, including design, manufacturing start-up and production
- a total quality policy based on making continuous progress in improving operational procedures, involving all departments in the company in order to give customer satisfaction as regards delivery times, conformity and cost
- indicators used to monitor procedural performance

- corrective actions and advancements with tools such as FMECA, QFD, MAVP, MSP/MSQ and Hoshin type improvement workshops on flows, process re-engineering, plus Lean Manufacturing and Lean Office

- annual surveys, opinion polls and regular visits to customers in order to ascertain and detect their expectations  
personnel are trained and take part in the analyses and the actions for continuously improving the procedures.

LEROY-SOMER has entrusted the certification of its expertise to various international organisations.

Certification is granted by independent professional auditors, and recognises the high standards of the **company's quality assurance procedures**. All activities resulting in the final version of the machine have therefore received official **ISO 9001 certification: 2000 from the DNV**. Similarly, our environmental approach has enabled us to obtain ISO 14001 certification: 2004.

Products for particular applications or those designed to operate in specific environments are also approved or certified by the following organisations: CETIM, LCIE, DNV, INERIS, EFECTIS, UL, BSRIA, TUV, CCC, GOST, which check their technical performance against the various standards or recommendations.



## ISO 9001 : 2000



# Electromechanical products

## General information

### Units of measurement and standard formulae

#### ELECTRICITY AND ELECTROMAGNETISM

Parameters				Units		Units and expressions not recommended
English name	French name	Symbol	Definition	SI	Non SI, but accepted	Conversion
<b>Frequency</b> <b>Period</b>	Fréquence	$f$	$f = \frac{1}{T}$	Hz (hertz)		
<b>Electric current</b> <b>(current)</b>	Courant électrique (intensité de)	$I$		A (ampere)		
<b>Electric potential</b> <b>Output</b>	Potentiel électrique Tension	$V$ $R$		V (volt)		
<b>Electromotive force</b>	Force électromotrice	$O$				
<b>Phase angle</b>	Déphasage	$\varphi$	$U = Um \cos \omega t$ $i = im \cos (\omega t - \varphi)$	rad	° degree	
<b>Power factor</b>	Facteur de puissance	$\cos \varphi$				
<b>Reactance</b> <b>Resistor</b>	Réactance Résistance	$X$ $S$	$Z =  Z  \angle \varphi$ $= R + jX$	Ω (ohm)		$j$ is defined as $j^2 = -1$ $\varphi$ rotational frequency = $2\pi \cdot f$
<b>Impedance</b>	Impédance	$Z$	$ Z  = \sqrt{R^2 + X^2}$ $X = P\omega - \frac{1}{C\omega}$			
<b>Self inductance</b>	Inductance propre (self)	$P$	$P = \frac{\Phi}{I}$	H (henry)		
<b>Capacity</b>	Capacité	$C$	$C = \frac{Q}{V}$	F (farad)		
<b>Current load,</b> <b>Quantity of electricity</b>	Charge électrique, Quantité d'électricité	$Q$	$Q = \int i dt$	C (coulomb)	A.h 1 A.h = 3 600 C	
<b>Resistivity</b>	Résistivité	$\rho$	$\rho = \frac{R \cdot O}{l}$	Ω.m		Ω/m
<b>Conductance</b>	Conductance	$G$	$G = \frac{1}{S}$	S (siemens)		1/Ω = 1 S
<b>Number of turns</b> <b>(coil)</b>	Nombre de tours (spires) de l'enroulement	$N$				
<b>Number of phases</b>	Nombre de phases	$m$				
<b>Number of pairs of poles</b>	Nombre de paires de pôles	$p$				
<b>Magnetic field</b>	Champ magnétique	$H$		A/m		
<b>Magnetic potential</b> <b>difference</b>	Différence de potentiel magnétique	$Um$		A		The unit AT (ampere-turns) is incorrect because it treats "turn" as a physical unit
<b>Magnetomotive force</b> <b>Current linkage</b>	Force magnétomotrice Solénation, courant totalisé	$F, Fm$ $H$	$F = \Phi H_s d_s$ $H = NI$			
<b>Magnetic induction,</b> <b>Magnetic flux density</b>	Induction magnétique, Densité de flux magnétique	$B$		T (tesla) = Wb/ m <sup>2</sup>		(gauss) 1 G = 10 <sup>-4</sup> T
<b>Magnetic flux,</b> <b>Magnetic induction flux</b>	Flux magnétique Flux d'induction magnétique	$\Phi$	$\Phi = \int f_s Bn ds$	Wb (weber)		(maxwell) 1 max = 10 <sup>-8</sup> Wb
<b>Magnetic vector potential</b>	Potentiel vecteur magnétique	$A$		Wb/m		
<b>Permeability</b>	Perméabilité du milieu	$\mu = \mu_r \mu_0$	$B = \mu H$	H/m		
<b>Permeability of vacuum</b>	Perméabilité du vide	$\mu_0$	$\mu_0 = 4\pi 10^{-7} H/m$			
<b>Permittivity</b>	Permittivité	$\epsilon = \epsilon_r \epsilon_0$	$\epsilon_0 = \frac{1}{36\pi 10^9} F/m$	F/m		

# Electromechanical products

## General information

### Units of measurement and standard formulae

#### THERMODYNAMICS

Parameters				Units		Units and expressions not recommended
English name	French name	Symbol	Definition	SI	Non SI, but accepted	Conversion
Temperature Thermodynamic	Température Thermodynamique	$T$		K (kelvin)	temperature Celsius, $t$ , °C $T = t + 273.15$	°C: Degree Celsius $t_C$ : Temp. in °C $t_F$ : Temp. in °F F temperature Fahrenheit °F $t = \frac{f - 32}{1.8}$ $t_C = \frac{t_F - 32}{1.8}$
Temperature rise	Écart de température	$\Delta T$		K	°C	1°C = 1 K
Heat flux density	Densité de flux thermique	$q, \square$	$q = \frac{\phi}{A}$	W/m <sup>2</sup>		
Thermal conductivity	Conductivité thermique	$\square$		W/m.K		
Total thermal transmission coefficient	Coefficient de transmission thermique global	K	$\varphi = K (T_{r2} - T_{r1})$	W/m <sup>2</sup> .K		
Thermal capacity	Capacité thermique	$C$	$C = \frac{dQ}{dT}$	J/K		
Thermal capacity specific	Capacité thermique massique	$c$	$c = \frac{C}{m}$	J/kg.K		
Internal energy	Energie interne	$R$		J		

#### NOISE AND VIBRATIONS

Parameters				Units		Units and expressions not recommended
English name	French name	Symbol	Definition	SI	Non SI, but accepted	Conversion
Acoustic power level	Niveau de puissance acoustique	$L_w$	$L_w = 10 \lg(P/P_0)$ ( $P_0 = 10^{-12} W$ )	dB (decibel)		lg logarithm to base 10 $\lg 10 = 1$
Acoustic pressure level	Niveau de pression acoustique	$L_p$	$L_p = 20 \lg(P/P_0)$ ( $P_0 = 2 \times 10^{-5} Pa$ )	dB		

#### DIMENSIONS

Parameters				Units		Units and expressions not recommended
English name	French name	Symbol	Definition	SI	Non SI, but accepted	Conversion
Angle (plane angle)	Angle (angle plan)	$\square, \square, T, \square$		rad	degree: ° minute: ' second: "	180° = $\pi$ rad = 3.14 rad
Length Width Depth Radius Curvilinear length	Longueur Largeur Hauteur Rayon Longueur curviligne	$l$ $b$ $h$ $r$ $s$		m (metres)	micrometre	cm, dm, dam, hm 1 inch = 1" = 25.4 mm 1 foot = 1' = 304.8 mm $\mu m$ micron $\mu$ angström: Å = 0.10 nm
Area	Aire, superficie	$A, S$		m <sup>2</sup>		1 square inch = 6.45 10 <sup>-2</sup> m <sup>2</sup>
Volume	Volume	$V$		m <sup>3</sup>	litre: l litre: P	UK gallon = 4.546 10 <sup>-3</sup> m <sup>3</sup> US gallon = 3.785 10 <sup>-3</sup> m <sup>3</sup>

# Electromechanical products

## General information

### Units of measurement and standard formulae

#### MECHANICS AND MOVEMENT

Parameters				Units		Units and expressions not recommended
English name	French name	Symbol	Definition	SI	Non SI, but accepted	Conversion
<b>Time</b> Time interval / duration Period (periodic time)	Temps Intervalle de temps, durée Period (periodic time)	$t$ $T$		s (second)	minute: min hour: h day: d	Symbols ' and " are reserved for angles minute not written as mn
<b>Angular velocity</b> Rotational frequency	Vitesse angulaire Pulsation	$\omega$	$\omega = \frac{d\varphi}{dt}$	rad/s		
<b>Angular acceleration</b>	Accélération angulaire	$\alpha$	$\alpha = \frac{d\omega}{dt}$	rad/s <sup>2</sup>		
<b>Speed</b> Velocity	Vitesse Célérité	$u, v, w,$ $c$	$v = \frac{ds}{dt}$	m/s	1 km/h = 0.277,778 m/s 1 m/min = 0.0166 m/s	
<b>Acceleration</b> Acceleration of free fall	Accélération Accélération of free fall	$a$ $g = 9.81 \text{ m/s}^2$	$a = \frac{dv}{dt}$ <i>in Paris</i>	m/s <sup>2</sup>		
<b>Speed of rotation</b>	Fréquence de rotation	$N$		s <sup>-1</sup>	min <sup>-1</sup>	tr/mn, RPM, TM, etc
<b>Mass</b>	Masse	$m$		kg (kilogram)	tonne: t 1 t = 1,000 kg	kilo, kgs, KG, etc 1 pound: 1 lb = 0.4536 kg
<b>Mass density</b>	Masse volumique	$\rho$	$\frac{dm}{dV}$	kg/m <sup>3</sup>		
<b>Linear density</b>	Masse linéique	$\rho_e$	$\frac{dm}{dL}$	kg/m		
<b>Surface density</b>	Masse surfacique	$\rho_A$	$\frac{dm}{dS}$	kg/m <sup>2</sup>		
<b>Momentum</b>	Quantité de mouvement	$P$	$p = m.v$	kg. m/s		
<b>Moment of inertia</b>	Moment d'inertie	$J, I$	$I = \sum m.r^2$	kg.m <sup>2</sup>		$J = \frac{MD^2}{4}$ kg.m pound per square foot = 1 lb.ft <sup>2</sup> = 42.1 x 10 <sup>-3</sup> kg.m <sup>2</sup>
<b>Force</b> Weight	Force Poids	$F$ $G$	$G = m.g$	N (newton)		kgf = kgp = 9.0.81 N pound force = lbF = 4.448 N
<b>Moment of force</b> Torque	Moment d'une force, Moment	$M$ $T$	$M = F.r$	N.m		mdaN, mkg, m.N 1 mkg = 9.81 N.m 1 ft.lbF = 1.356 N.m 1 in.lbF = 0.113 N.m
<b>Pressure</b>	Pression	$p$	$p = \frac{F}{O} = \frac{F}{A}$	Pa (pascal)	bar 1 bar = 10 <sup>5</sup> Pa	1 kgf/cm <sup>2</sup> = 0.981 bar 1 psi = 6894 N/m <sup>2</sup> = 6894 Pa 1 psi = 0.06894 bar 1 atm = 1.013 x 10 <sup>5</sup> Pa
<b>Normal stress</b> <b>Shear stress,</b> <b>Shear</b>	Contrainte normale Contrainte tangentielle Cission	$\sigma$ $\tau$		Pa Leroy-Somer use the MPa = 10 <sup>6</sup> Pa		kg/mm <sup>2</sup> , 1 daN/mm <sup>2</sup> = 10 MPa psi = pound per square inch 1 psi = 6894 Pa
<b>Friction coefficient</b>	Facteur de frottement	$\mu$				incorrectly = friction coefficient $f$
<b>Work</b> Energy Potential energy Kinetic energy Quantity of heat	Travail Énergie Énergie potentielle Énergie cinétique Quantité de chaleur	$W$ $O$ $Ep$ $Ek$ $Q$	$W = F.l$	J (joule)	Wh = 3600 J (watt-hour)	1 N.m = 1 W.s = 1 J 1 kgm = 9.81 J (calorie) 1 cal = 4.18 J 1 Btu = 1055 J (British thermal unit)
<b>Power</b>	Puissance	$P$	$P = \frac{W}{t}$	W (watt)		1 ch = 736 W 1 HP = 746 W
<b>Volumetric flow</b>	Débit volumique	$qv$	$qv = \frac{dV}{dt}$	m <sup>3</sup> /s		
<b>Efficiency</b>	Rendement	$\eta$		< 1		%
<b>Dynamic viscosity</b>	Viscosité dynamique	$\mu, \mu$		Pa.s		poise, 1 P = 0.1 Pa.s
<b>Kinematic viscosity</b>	Viscosité cinématique	$\nu$	$\nu = \frac{\eta}{\rho}$	m <sup>2</sup> /s		stokes, 1 St = 10 <sup>-4</sup> m <sup>2</sup> /s



# Electromechanical products

## General information

### Unit conversions

Units	MKSA (IS international system)	AGMA (US system)
Length	1 m = 3.2808 ft    1 mm = 0.03937 in	1 ft = 0.3048 m    1 in = 25.4 mm
Weight	1 kg = 2.2046 lb	1 lb = 0.4536 kg
Torque	1 Nm = 0.7376 lb.ft    1 N.m = 141.6 oz.in	1 lb.ft = 1.356 N.m    1 oz.in = 0.00706 N.m
Force	1 N = 0.224 8 lb	1 lb = 4.448 N
Moment of inertia	1 kg.m <sup>2</sup> = 23.73 lb.ft <sup>2</sup>	1 lb.ft <sup>2</sup> = 0.04214 kg.m <sup>2</sup>
Power	1 kW = 1.341 HP	1 HP = 0.746 kW
Pressure	1 kPa = 0.14505 psi	1 psi = 6.894 kPa
Magnetic flux	1 T = 1 Wb / m <sup>2</sup> = 6.452 10 <sup>4</sup> line / in <sup>2</sup>	1 line / in <sup>2</sup> = 1.550 10 <sup>-5</sup> Wb / m <sup>2</sup>
Magnetic losses	1 W / kg = 0.4536 W / lb	1 W / lb = 2.204 W / kg

### GLOSSARY

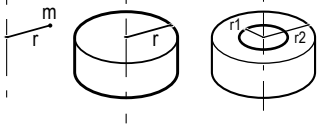
Symbol	Definition	Symbol	Definition
d/h	starts per hour	<i>M</i>	torque transmitted by the geared motor N.m
h/d	daily operating time in hours per day	<i>M<sub>Max</sub></i>	maximum permissible torque N.m
<i>FJ</i>	inertia factor	<i>M<sub>S max</sub></i>	maximum selection torque as output N.m
<i>FM</i>	on-load operating factor as a %	<i>M<sub>uS</sub></i>	torque required for the application as output N.m
<i>F<sub>r</sub></i>	permissible radial force N	<i>M<sub>nS</sub></i>	rated output torque
<i>i</i>	exact gearbox reduction	<i>n<sub>min</sub>, n<sub>max</sub></i>	minimum gearbox output speed, maximum gearbox output speed min <sup>-1</sup>
<i>i<sub>u</sub></i>	application useful reduction	<i>n<sub>uE</sub></i>	gearbox input useful rotational speed min <sup>-1</sup>
<i>J<sub>C/M</sub></i>	moment of inertia of the load connected to the motor shaft	<i>n<sub>uS</sub></i>	gearbox output useful rotational speed min <sup>-1</sup>
<i>J<sub>M</sub></i>	moment of inertia of the motor	<i>P</i>	standard motor power kW
<i>K</i>	overall duty factor	<i>P<sub>n</sub></i>	rated power kW
<i>K1</i>	duty factor depending on the inertia	<i>P<sub>uE</sub></i>	input power necessary for the application kW
<i>K2</i>	duty factor depending on the operating factor	<i>P<sub>uS</sub></i>	output power necessary for the application kW
<i>K<sub>P</sub></i>	maximum possible duty factor for the geared motor	<i>P<sub>t</sub></i>	rated thermal power for the geared motor kW
<i>K<sub>q</sub></i>	thermal power correction factor	q	ambient temperature °C
		<i>Z (d/h)</i>	frequency of starts of the application (d/h)

# Electromechanical products

## General information

### Standard formulae used in electrical engineering

#### MECHANICAL FORMULAE

Title	Formulae	Units	Definitions / Notes
Force	$F = m \cdot a$	$F$ in N $m$ in kg $a$ in m/s <sup>2</sup>	A force $F$ is the product of a mass $m$ by an acceleration $a$
Weight	$G = m \cdot g$	$G$ in N $m$ in kg $g = 9.81$ m/s <sup>2</sup>	
Torque	$M = F \cdot r$	$M$ in N.m $F$ in N $r$ in m	The torque $M$ of a force in relation to an axis is the product of that force multiplied by the distance $r$ of the point of application of $F$ in relation to the axis.
Power	- Rotating $P = M \cdot \omega$	$P$ in W $M$ in N.m $\omega$ in rad/s	Power $P$ is the quantity of work yielded per unit of time  $\omega = 2\pi N/60$ with $N$ rotational speed in min <sup>-1</sup>
	- Linear $P = F \cdot V$	$P$ in W $F$ in N $V$ in m/s	$V =$ linear velocity
Acceleration time	$t = J \cdot \frac{\omega}{M_a}$	$t$ in s $J$ in kg.m <sup>2</sup> $\omega$ in rad/s $M_a$ in Nm	$J$ is the moment of inertia of the system $M_a$ is the moment of acceleration NB: all the calculations refer to a single rotational speed $\omega$ . The inertias at speed $\omega^*$ are corrected to speed $\omega$ by the following calculation: $J_\omega = J_{\omega^*} \cdot \left(\frac{\omega^*}{\omega}\right)^2$
Moment of inertia Centre of gravity	$J = m \cdot r^2$		
Solid cylinder around its axis	$J = m \cdot \frac{r^2}{2}$	$J$ in kg.m <sup>2</sup> $m$ in kg $r$ in m	
Hollow cylinder around its axis	$J = m \cdot \frac{r_1^2 + r_2^2}{2}$		
Inertia of a mass in linear motion	$J = m \cdot \left(\frac{v}{\omega}\right)^2$	$J$ in kg.m <sup>2</sup> $m$ in kg $v$ in m/s $\omega$ in rad/s	

# Electromechanical products

## General information

### Standard formulae used in electrical engineering

#### ELECTRICAL FORMULAE

Title	Formulae	Units	Definitions / Notes
Accelerating torque	$M_a = \frac{M_D + 2M_A + 2M_M + M_N}{6} - M_f$ <p>General formula:</p> $M_a = \frac{1}{N_N} \int_0^{N_N} (M_{mot} - M_f) dN$	Nm	Moment of acceleration $M_A$ is the difference between the motor torque $M_{mot}$ (estimated), and the resistive torque $M_f$ . ( $M_D, M_A, M_M, M_N$ , see curve below) $N$ = instantaneous speed $N_N$ = rated speed
Power required by the machine	$P = \frac{M \cdot \omega}{\eta_A}$	$P$ in W $M$ in N.m $\omega$ in rad/s $\eta_A$ no units	$\eta_A$ expresses the efficiency of the driven machine. $M$ is the torque required by the driven machine.
Power drawn by the 3-phase motor	$P = \sqrt{3} \cdot U \cdot I \cdot \cos \varphi$	$P$ in W $U$ in V $I$ in A	$\varphi$ phase angle by which the current lags or leads the voltage. $U$ armature voltage. $I$ line current.
Reactive power absorbed by the motor	$Q = \sqrt{3} \cdot U \cdot I \cdot \sin \varphi$	Q in VAR	
Reactive power supplied by a capacitor bank	$Q = \sqrt{3} \cdot R^2 \cdot C \cdot \omega$	$U$ in V $C$ in $\mu F$ $\omega$ in rad/s	$U$ = voltage at the capacitor terminals $C$ = capacitor capacitance $\omega$ = rotational frequency of supply phases ( $\omega = 2\pi f$ )
Apparent power	$S = \sqrt{3} \cdot U \cdot I$ $S = \sqrt{P^2 + Q^2}$	S in VA	
Power supplied by the 3-phase motor	$P = \sqrt{3} \cdot U \cdot I \cdot \cos \varphi \cdot \eta$		$\eta$ expresses motor efficiency at the point of operation under consideration.
Slip	$g = \frac{N_O - N}{N_O}$		Slip is the difference between the actual motor speed $N$ and the synchronous speed $N_s$
Synchronous speed	$N_O = \frac{120 \cdot f}{p}$	$N_s$ in $\text{min}^{-1}$ $f$ in Hz	$p$ = number of poles $f$ = frequency of the power supply

Parameters	Symbols	Units	Torque and current curve in accordance with the speed
Starting current Rated current No-load current	$I_s$ $I_N$ $I_o$	A	
Starting torque* Run up torque	$M_s$ $M_A$	Nm	
Maximum torque breakdown	$M_M$		
Rated torque	$M_N$		
Rated speed Synchronous speed	$N_N$ $N_s$	$\text{min}^{-1}$	

\* Torque is the usual term for expressing the moment of a force.

# Electromechanical products

## Selection

Apart from the basic choices regarding the slow speed, output torque, motor supply type, it is important to know accurately its exact use and operating type in advance.

The selection of a gearbox or a geared motor should take account of the application:

ALL RAPID SELECTION CHARTS IN THIS CATALOGUE ARE SET UP FOR OPERATING IN CLASS I ( $K_p \geq 1$  - equivalent to the Agma I class).

The table below summarises the relationship between the "Agma" class and the duty factor  $K_p$  of the gearbox:

AGMA class	Duty factor $K_p$
I	1
II	1.4
III	2

The usage class is defined by the daily operating time and the type of application, according to the table below:

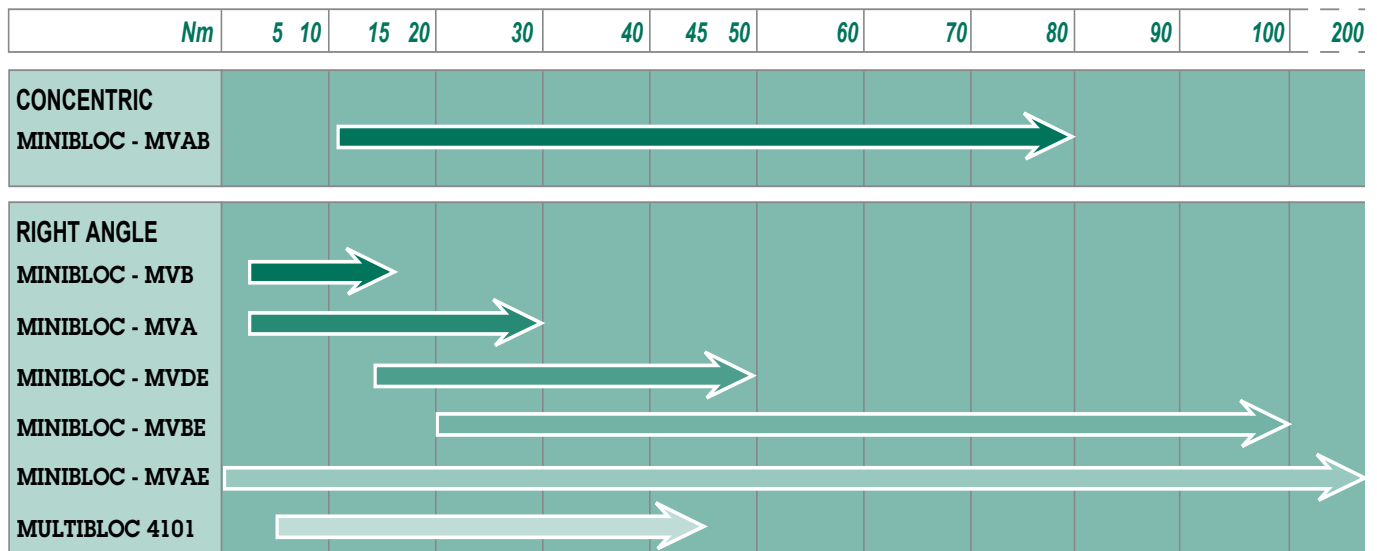
Application class	Time of operation daily	Duty factor $K_p$
"Shock" free, few starts	2 hrs/day	0.8
"Shock" free, few starts(*)	10 hrs/day	1
Damped "shocks"	10 hrs/day	1.4
"Shock" free, few starts	24 hrs/day	1.4
Violent "shocks", many starts	10 hrs/day	2
Damped "shocks"	24 hrs/day	2

(\*) Rapid selection chart.

If your application only comes in for very light use (for example 2 hrs/day with few starts), by consulting the characteristics tables you can select a device with a  $K_p$  duty factor of less than 1.

We advise you to consult your LEROY-SOMER contact if there is any doubt about the application and the conditions of use.

### MAXIMUM OUTPUT TORQUES

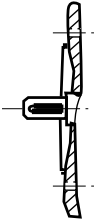
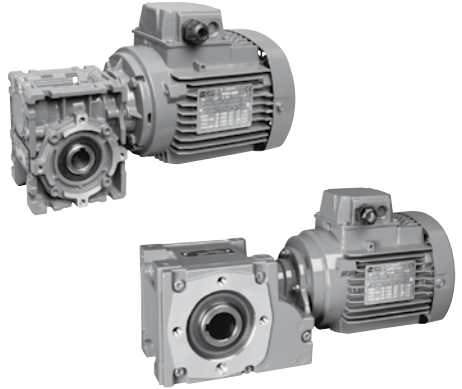
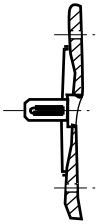
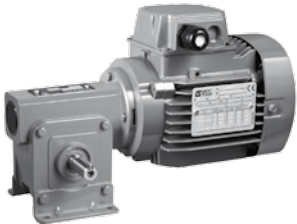
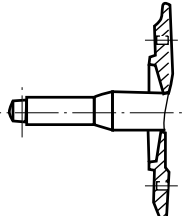
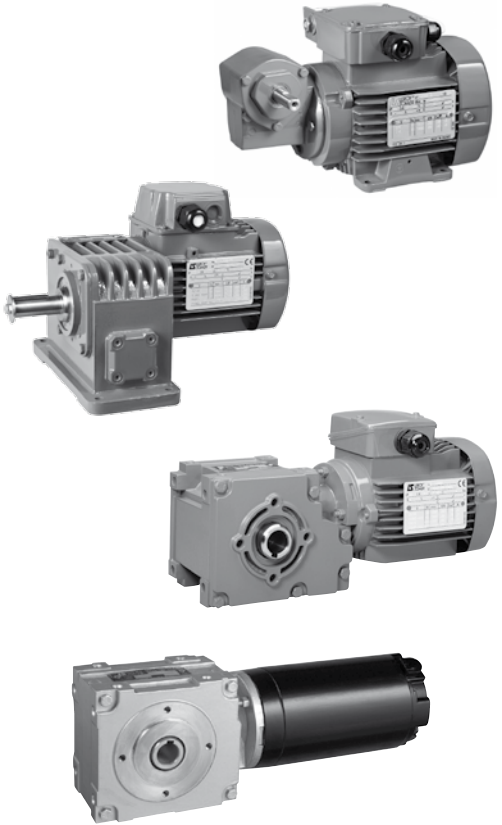


The useful torque values on the low speed shafts showing in the selection tables are given for:

- run in gearboxes,
- stable lubricant temperature,
- 4-pole motors supplied at frequency 50 Hz.

# Electromechanical products

## Motor shafts and flanges for gearboxes

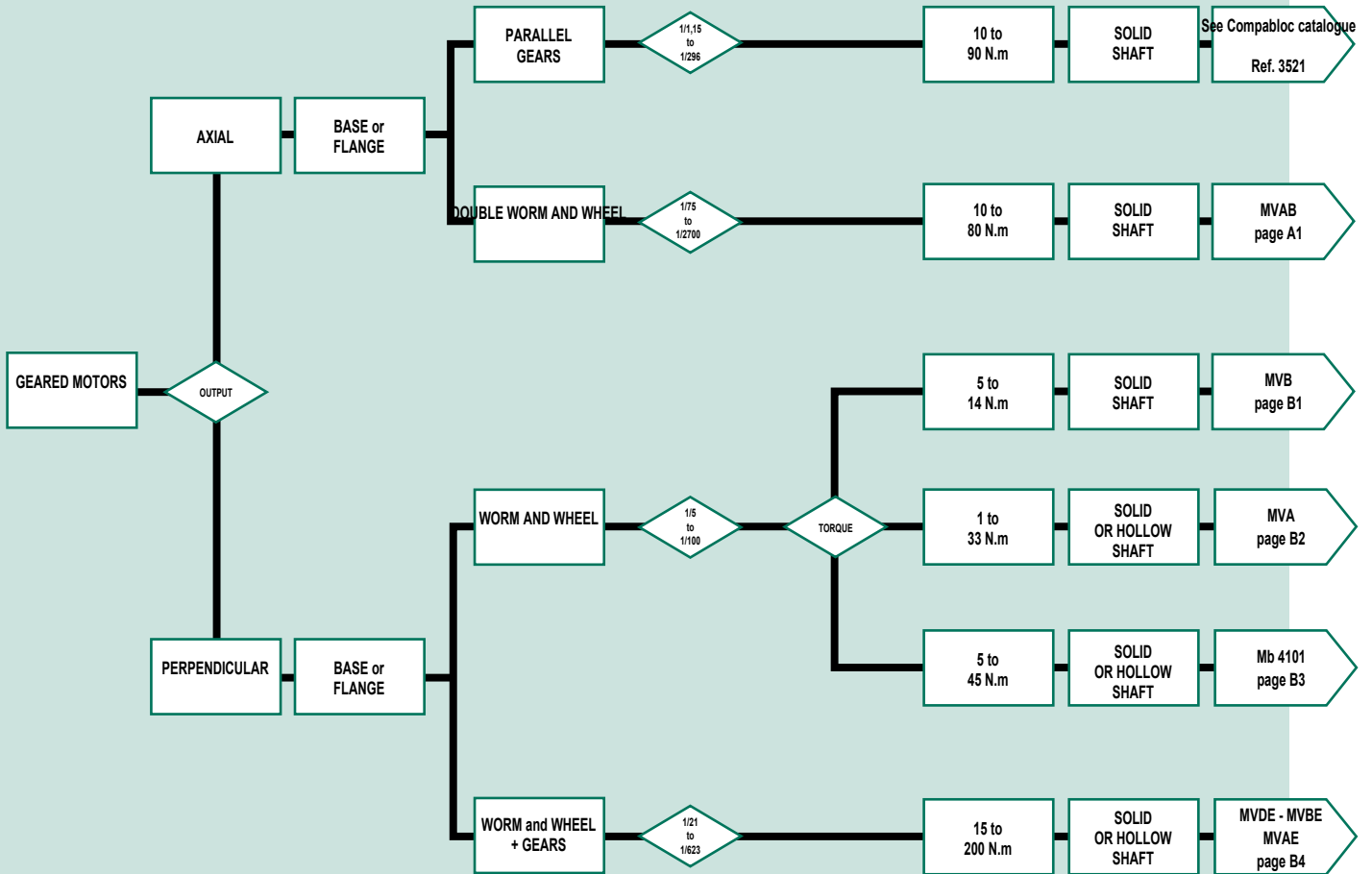
Type	Dimensions	Use
<b>Mb 4101</b> <b>MVAE</b>	Motor standards CEI B14 LS 56: Ø 9 x 20 - FT flange 65 (*) LS 63: Ø 11 x 23 - FT flange 75 LS 71: Ø 14 x 30 - FT flange 85  (*) B14 flange - 8 holes  MI mounting: LS 80: Ø 14 x 30 - FT flange 85	 
<b>MVA</b>	Ø 11 x 23 W = 0 FT flange 65 (8 holes)	 
<b>MVB</b> <b>MVAB</b> <b>MVBE</b> <b>MVDE</b>	Ø 10 x 36.5 W = 26.5 FT flange 65 (8 holes)	 
<b>FMD brake</b>	Ø 12 x 12 W = 6 + pin hole mounted by 3 x M4 holes on Ø 72 (to 120°)	at the rear of all motors (except MS)

All shaft diameters are created with tolerance j6.



# Electromechanical products

## Flow chart



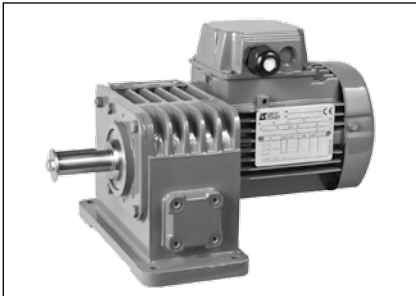




# Electromechanical products

## Minibloc MVAB

### General information



Minibloc MVAB geared motors are double worm and wheel devices. Their design allows for significant reduction in a highly compact size.

One size: MVAB  
 Rated output torque: from 10 to 80 N.m  
 Power ratings: from 0.06 to 0.18 kW  
 Reduction ratios: from 75 to 2700 (up to 1/8100 on request).  
 Very quiet operation.



GEARED MOTORS WITH AXIAL OUTPUT

### Construction

#### Description of Minibloc MVAB gearboxes

Description	Materials	Comments
Frame	Aluminium	<ul style="list-style-type: none"> <li>- die-cast aluminium</li> <li>- excellent sealing</li> <li>- neat and attractive appearance</li> </ul>
Ring Screw	Bronze Steel	1st train: <ul style="list-style-type: none"> <li>- bronze wheel</li> <li>- worm in heat-treated and tempered steel, ground sides</li> </ul> 2nd train: <ul style="list-style-type: none"> <li>- die-cast bronze wheel</li> <li>- worm in ion nitriding treated 42CD4 steel</li> </ul>
Shaft	Steel	<ul style="list-style-type: none"> <li>- solid</li> <li>- ground or grooved sealing surfaces</li> <li>- key in accordance with DIN 6883</li> <li>- tolerance of diameters in accordance with IEC 72-1</li> <li>- tapped hole at the shaft extension</li> </ul>
Lipseals	Acrylonitrile	<ul style="list-style-type: none"> <li>- antidust double lipseals on slow speed shaft</li> </ul>
Lubrication	Grease	<ul style="list-style-type: none"> <li>- synthetic grease</li> <li>- no maintenance</li> <li>- multi-position operation</li> <li>- no drain, level or fill holes</li> </ul>
Mounting		AP: gearbox with input shaft MI: gearbox with integrated motor
Standard motor		LS: multi-voltage 220/380 V, 230/400 V, 240/415 V three-phase and 230 V single-phase <ul style="list-style-type: none"> <li>- pressed steel fan cover, on request fitted with a drip cover for operation in vertical position (shaft facing down).</li> <li>- terminal box fitted with cable gland with cable anti-damage system</li> <li>- IP55 standard protection</li> <li>- fixed onto gearbox using B14 flange</li> </ul>
Brake motor		FMD: 3-phase or single-phase failsafe brake motor, from 0.06 to 0.18 kW
Other motors		MFA: IP23-IP44 D.C. motor from 0.075 to 0.37 kW (3000 min <sup>-1</sup> ). MBT: low voltage D.C. motor.
Finish	External finishing	Shade: RAL 6000 (green), system I (1 polyurethane acrylic layer of 25/30 µm)

# Electromechanical products

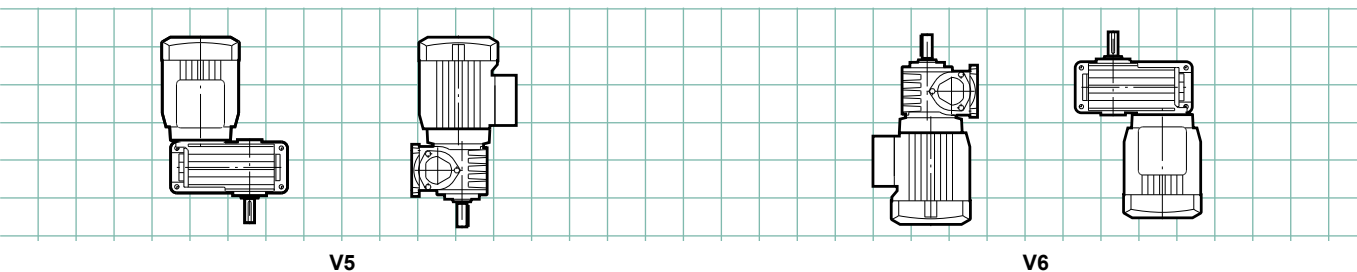
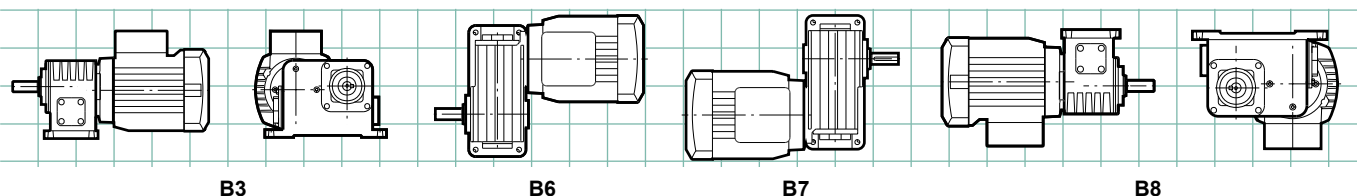
## Minibloc MVAB

### Mounting positions

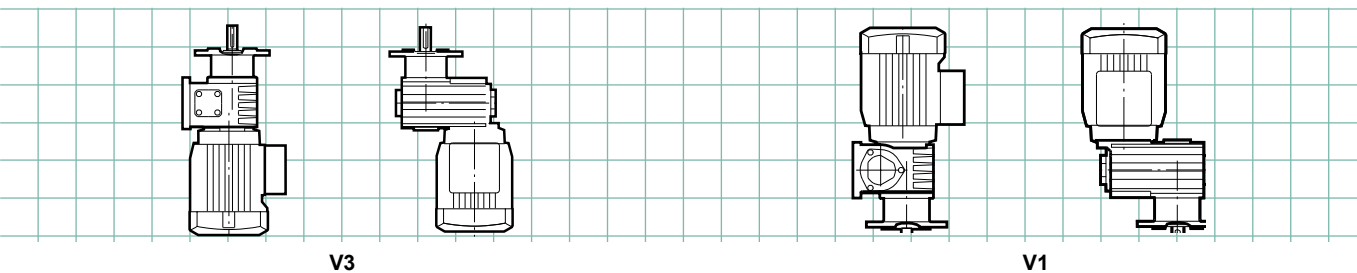
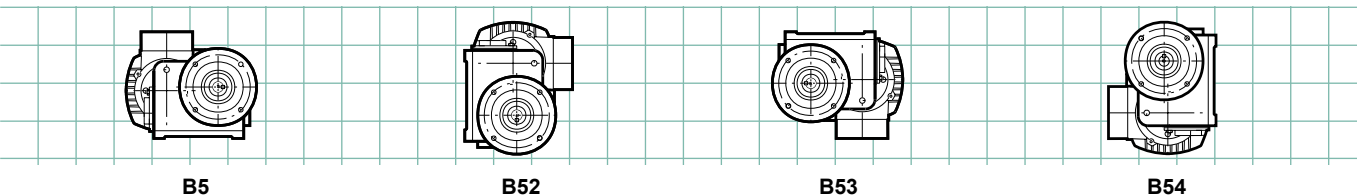
Positions must be specified for all these geared motors only if a vent hole is required on the geared motor and/or condensation drain holes on the motor.

All of these mounting positions also apply to the gearbox only input shafts (AP).

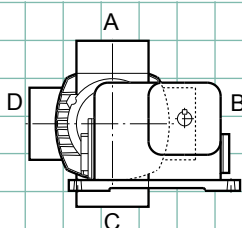
#### Minibloc MVAB - Multiposition M - with S base (standard)



#### Minibloc MVAB - Multiposition M - with BS flange (standard) - BD1 - BD2

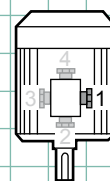


#### Terminal box positions (in relation to the gearbox frame base)



A: standard

#### Cable gland positions



1: standard

# Electromechanical products

## Minibloc MVAB

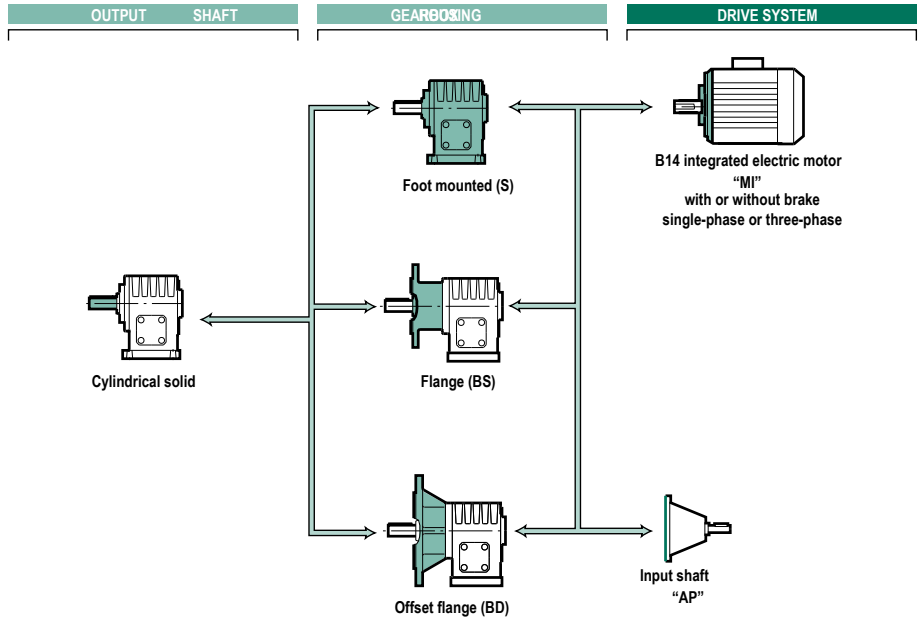
### Adaptation possibilities

Leroy-Somer offers different types of drive for its gearboxes which meet very wide-ranging needs. They are described in this catalogue. For other drives, consult the Leroy-Somer technical specialists who will be glad to assist.



Minibloc MVAB gearboxes can be used in conjunction with the following drives:

- **single-phase induction motors:**
  - LS motor from 0.06 to 0.18 kW
  - LS FMD brake motor from 0.06 to 0.18 kW
- **3-phase induction motors:**
  - LS motor from 0.06 to 0.18 kW
  - LS FMD brake motor from 0.06 to 0.18 kW
- **D.C. motors:**
  - MFA from 0.075 to 0.37 kW (3000 min<sup>-1</sup>)
- **electronic D.C. geared motors:**
  - MVE from 0.075 to 0.37 kW (3000 min<sup>-1</sup>)
- **low-voltage D.C. motors (12 to 48 V) :**
  - MBT from 0.07 to 0.37 kW



GEARED MOTORS WITH AXIAL OUTPUT

### Description / Coding

<b>MVAB</b>	<b>750</b>	<b>O</b>	<b>M</b>	<b>MI</b>	<b>4P</b>	<b>LS 56 M</b>	<b>0.06 kW</b>
Gearbox type	Exact reduction	Mounting form	Operating position	Integral mounting	Number of poles	LS motor type and frame size	Rated output power

**Example of coding:**


MVAB - 750 - S - M - MI - 4P - LS56M - 0.06 kW  
230/400 V - TRI - 50 Hz


# Electromechanical products


## Minibloc MVAB


### Selection



LS ; LSMV 4p - 1 speed			Gearbox				LS VARMECA			
$n_s$ (min <sup>-1</sup> )	M (N.m)	Kp	MVAB	i	$F_R E/2$ (N)		$n_{S MIN}$ (min <sup>-1</sup> )	$n_{S MAX}$ (min <sup>-1</sup> )	M (N.m)	Kp
LS 56 M; - LS 56 M FMD; -			<b>0.06 kW</b>				-			
0.51	56.2	1.58	MVAB	2700	1630	A2.7 to A2.10				
0.61	56.4	1.55	MVAB	2250	1630	A2.7 to A2.10				
0.77	59.5	1.44	MVAB	1800	1590	A2.7 to A2.10				
0.92	49.8	1.69	MVAB	1500	1650	A2.7 to A2.10				
1.21	52	1.47	MVAB	1140	1650	A2.7 to A2.10				
1.53	44.9	1.7	MVAB	900	1720	A2.7 to A2.10				
1.91	42	1.76	MVAB	720	1720	A2.7 to A2.10				
2.3	42.4	1.7	MVAB	600	1720	A2.7 to A2.10				
2.56	35.8	1.96	MVAB	540	1720	A2.7 to A2.10				
3.07	33.6	2	MVAB	450	1720	A2.7 to A2.10				
3.83	28.4	2.47	MVAB	360	1720	A2.7 to A2.10				
4.6	27.4	2.3	MVAB	300	1720	A2.7 to A2.10				
6.13	22.4	2.6	MVAB	225	1720	A2.7 to A2.10				
9.2	17.4	2.8	MVAB	150	1720	A2.7 to A2.10				
13.1	13.1	3	MVAB	105	1720	A2.7 to A2.10				
18.4	10.9	> 3	MVAB	75	1720	A2.7 to A2.10				

LS ; LSMV 4p - 1 speed			Gearbox				LS VARMECA			
$n_s$ (min <sup>-1</sup> )	M (N.m)	Kp	MVAB	i	$F_R E/2$ (N)		$n_{S MIN}$ (min <sup>-1</sup> )	$n_{S MAX}$ (min <sup>-1</sup> )	M (N.m)	Kp
LS 56 M; - LS 56 M FMD; -			<b>0.09 kW</b>				-			
0.78	99.2	0.85	MVAB	1800	1330	A2.7 to A2.10				
0.93	83.2	1	MVAB	1500	1370	A2.7 to A2.10				
1.23	83.9	0.96	MVAB	1140	1370	A2.7 to A2.10				
1.56	72	1.07	MVAB	900	1460	A2.7 to A2.10				
1.94	66.5	1.1	MVAB	720	1550	A2.7 to A2.10				
2.33	62.7	1.15	MVAB	600	1550	A2.7 to A2.10				
2.6	59.5	1.2	MVAB	540	1590	A2.7 to A2.10				
3.1	55.5	1.23	MVAB	450	1630	A2.7 to A2.10				
3.89	46.4	1.47	MVAB	360	1650	A2.7 to A2.10				
4.67	44.2	1.43	MVAB	300	1720	A2.7 to A2.10				
6.22	35.9	1.6	MVAB	225	1720	A2.7 to A2.10				
9.33	27.7	1.74	MVAB	150	1720	A2.7 to A2.10				
13.33	21.3	1.8	MVAB	105	1720	A2.7 to A2.10				
18.7	17.9	2.2	MVAB	75	1720	A2.7 to A2.10				

LS ; LSMV 4p - 1 speed			Gearbox				LS VARMECA			
$n_s$ (min <sup>-1</sup> )	M (N.m)	Kp	MVAB	i	$F_R E/2$ (N)		$n_{S MIN}$ (min <sup>-1</sup> )	$n_{S MAX}$ (min <sup>-1</sup> )	M (N.m)	Kp
LS 63 M; - LS 63 M FMD; -			<b>0.12 kW</b>				-			
3.13	76.9	0.89	MVAB	450	1460	A2.7 to A2.10				
3.92	64.3	1.06	MVAB	360	1550	A2.7 to A2.10				
4.7	61	1.03	MVAB	300	1590	A2.7 to A2.10				
6.27	49.3	1.25	MVAB	225	1650	A2.7 to A2.10				
9.4	39	1.23	MVAB	150	1720	A2.7 to A2.10				
13.4	29.9	1.3	MVAB	105	1720	A2.7 to A2.10				
18.8	24.4	1.48	MVAB	75	1720	A2.7 to A2.10				

LS ; LSMV 4p - 1 speed			Gearbox				LS VARMECA			
$n_s$ (min <sup>-1</sup> )	M (N.m)	Kp	MVAB	i	$F_R E/2$ (N)		$n_{S MIN}$ (min <sup>-1</sup> )	$n_{S MAX}$ (min <sup>-1</sup> )	M (N.m)	Kp
LS 63 M; LS MV 71 L; - LS 63 M FMD; -			<b>0.18 kW</b>				-			
13.6	46.8	0.83	MVAB	105	1650	A1.7 to A1.10				
19	38	0.98	MVAB	75	1720	A1.7 to A1.10				

# Electromechanical products

## Minibloc MVAB

### Gearbox only features (AP)

#### MVAB "AP" - 2,800 min<sup>-1</sup> - Kp = 1

##### Rated capacities

$n_s$ (min <sup>-1</sup> )	$i_{aR}$	kW	$M_{nS}$ (N.m)
1.0	2700	0.105	59.2
1.2	2250	0.107	63.2
1.6	1800	0.109	68.9
1.9	1500	0.109	59.2
2.5	1140	0.113	62.3
3.1	900	0.116	54.4
3.9	720	0.121	52.4
4.7	600	0.122	50.4
5.2	540	0.125	49.2
6.2	450	0.129	46.2
7.8	360	0.129	36.9
9.3	300	0.139	40.5
12.4	225	0.142	33.2
18.7	150	0.149	26.7
26.7	105	0.157	21.1
37.3	75	0.159	15.8

#### MVAB "AP" - 1,400 min<sup>-1</sup> - Kp = 1

##### Rated capacities

$n_s$ (min <sup>-1</sup> )	$i_{aR}$	kW	$M_{nS}$ (N.m)
0.5	2700	0.091	89.0
0.6	2250	0.087	87.5
0.8	1800	0.080	85.5
0.9	1500	0.090	84.0
1.2	1140	0.086	80.3
1.6	900	0.094	76.5
1.9	720	0.097	74.1
2.3	600	0.100	72.0
2.6	540	0.103	70.0
3.1	450	0.108	68.2
3.9	360	0.124	68.1
4.7	300	0.122	63.0
6.2	225	0.136	57.9
9.3	150	0.144	48.1
13.3	105	0.151	38.9
18.7	75	0.168	36.0

#### MVAB "AP" - 900 min<sup>-1</sup> - Kp = 1

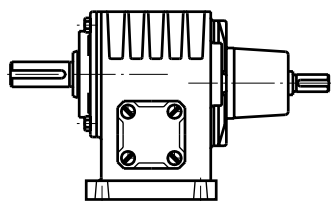
##### Rated capacities

$n_s$ (min <sup>-1</sup> )	$i_{aR}$	kW	$M_{nS}$ (N.m)
0.3	2700	0.074	93.5
0.4	2250	0.063	92.0
0.5	1800	0.059	90.0
0.6	1500	0.065	88.0
0.8	1140	0.063	84.5
1.0	900	0.069	80.5
1.3	720	0.072	78.0
1.5	600	0.075	75.0
1.7	540	0.077	73.0
2.0	450	0.081	71.5
2.5	360	0.093	71.5
3.0	300	0.093	66.0
4.0	225	0.089	66.0
6.0	150	0.120	56.5
8.6	105	0.126	44.9
12.0	75	0.132	40.4

#### MVAB "AP" - 500 min<sup>-1</sup> - Kp = 1

##### Rated capacities

$n_s$ (min <sup>-1</sup> )	$i_{aR}$	kW	$M_{nS}$ (N.m)
0.19	2700	0.050	100.0
0.22	2250	0.039	98.4
0.28	1800	0.039	96.3
0.33	1500	0.044	94.2
0.44	1140	0.043	90.4
0.56	900	0.048	86.1
0.69	720	0.048	83.5
0.83	600	0.049	80.3
0.93	540	0.051	78.1
1.11	450	0.054	76.5
1.39	360	0.061	76.5
1.67	300	0.061	70.6
2.22	225	0.068	70.6
3.33	150	0.078	60.5
4.76	105	0.091	54.6
6.67	75	0.121	54.0



GEARED MOTORS WITH AXIAL OUTPUT

# Electromechanical products

## Minibloc MVAB

### Low speed shaft load

Slow speed shaft loads permissible depend on the reduction and mounting with or without flange.

#### Newton force

Gearbox features	Clockwise or anti-clockwise			
	Torque N.m	$F_r$	$F_{a-}$	$F_{a+}$
The radial force is limited by the stress at the shaft shoulder				
45	1720	1391	2988	
50	1650	1346	2943	
55	1630	1301	2897	
60	1590	1256	2852	
65	1550	1211	2807	
70	1500	1166	2762	
75	1460	1120	2714	
80	1420	1075	2672	
85	1370	1030	2627	
90	1330	1030	2582	

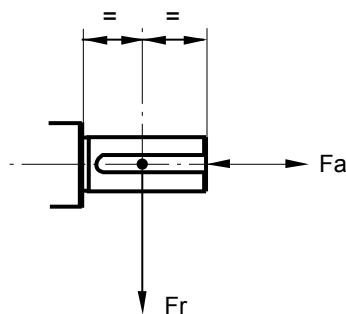
#### Direction of the forces

$F_{a+}$  = axial force PULLING on the shaft extension

$F_{a-}$  = axial force PUSHING on the shaft extension

$F_r$  = radial force on the shaft extension at 20mm from the shoulder

NB: these values correspond with the least favourable loads.  
SPECIFIC CASES: please consult Leroy-Somer.



# Electromechanical products

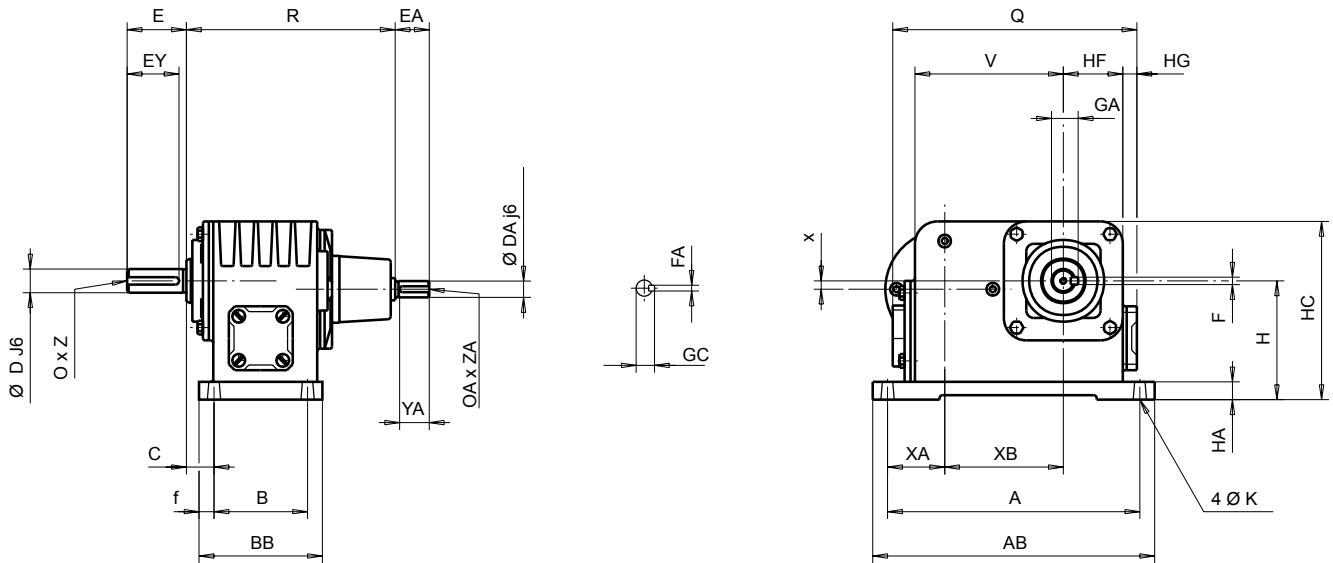
## Minibloc MVAB

### Dimensions

Dimensions of Minibloc MVAB geared motors, mounting with AP input shaft

Dimensions in millimetres

- S base form



GEARED MOTORS WITH AXIAL OUTPUT

Type	Gearboxes with S base															kg			
	S	x	A	AB	B	BB	C	f	H	FS	HC	K	XB	XA	V		HF	HG	Q
MVAB	140.5	5.6	170	190	63	83	18.5	10	80	12	120	$\Delta 7$	80	38.5	100	40	9.6	164	3.6

Type	Input shaft							Solid output shaft						
	DA	EA	YA	GC	FA	OA	ZA	D	O	EY	GA	F	O	Z
MVAB	11	23	18	12.5	4	M4	10	16	40	30	18	5	M5	15

# Electromechanical products

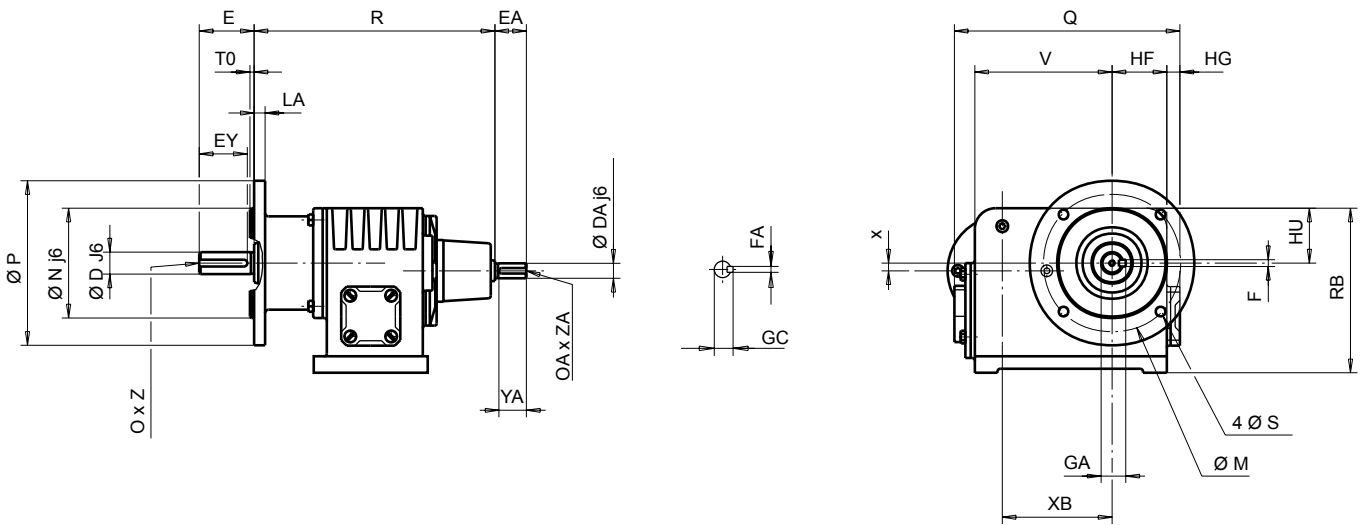
## Minibloc MVAB

### Dimensions

Dimensions of Minibloc MVAB geared motors, mounting with AP input shaft

Dimensions in millimetres

- BS, BD1, BD2 flange form



Type	Gearboxes with BS flange															kg
	S	x	M	N	P	O	LA	T	RB	HU	XB	V	HF	HG	Q	
<b>MVAB</b>	175.5	5.6	100	80	120	7	8	3	120	40	80	100	40	9.6	164	3.9

Type	Other possible flanges <sup>1</sup>											
	BD1						BD2					
	M1	N1	P1	S1	LA1	T1	M2	N2	P2	S2	LA2	T2
<b>MVAB</b>	85	70	105	7	8	3	115	95	140	9	10	3

1. The letters are numbered to distinguish them from the letters on the standard flange diagram.

Type	Input shaft							Solid output shaft						
	DA	EA	YA	GC	FA	OA	ZA	D	O	EY	GA	F	O	Z
<b>MVAB</b>	11	23	18	12.5	4	M4	10	16	40	30	18	5	M5	15



# Electromechanical products

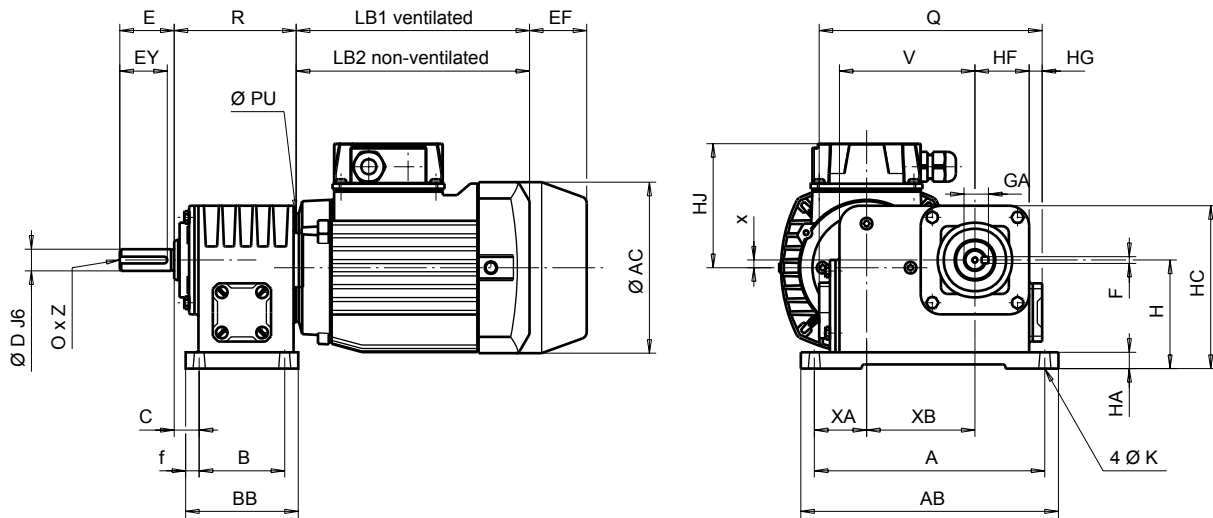
## Minibloc MVAB

### Dimensions

Dimensions of Minibloc MVAB geared motors, MI integral mounting

Dimensions in millimetres

- S base form



GEARED MOTORS WITH AXIAL OUTPUT

Type	Gearboxes with S base																	kg	
	S	x	A	AB	B	BB	C	f	H	FS	HC	XA	XB	V	HF	HG	Q		PU
MVAB	90	5.6	170	190	63	83	18.5	10	80	12	120	38.5	80	100	40	9.6	164	80	3.6

Type	Solid output shaft						
	D	O	EY	GA	F	O	Z
MVAB	16	40	30	18	5	M5	15

# Electromechanical products

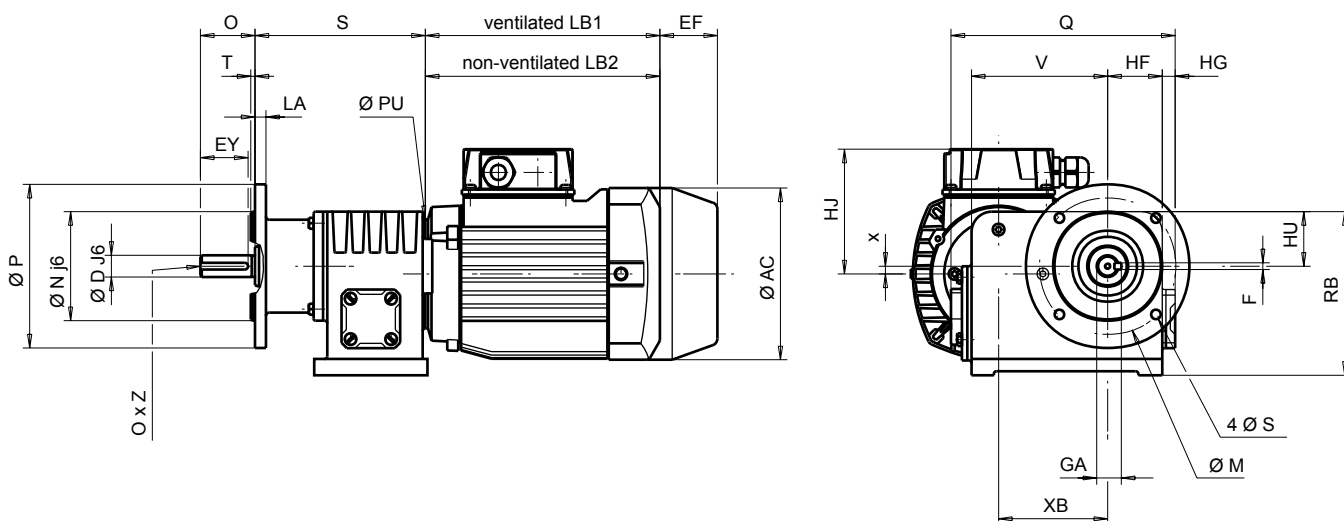
## Minibloc MVAB

### Dimensions

#### Dimensions of Minibloc MVAB geared motors, MI integral mounting

Dimensions in millimetres

- BS, BD1, BD2 flange form



Type	Gearboxes with BS flange														kg*		
	S	x	M	N	P	O	LA	T	RB	HU	XB	V	HF	HG		Q	PU
<b>MVAB</b>	125	5.6	100	80	120	7	8	3	120	40	80	100	40	9.6	164	80	3.9

\* Gearbox only

Type	Other possible flanges <sup>1</sup>											
	BD1						BD2					
	M1	N1	P1	S1	LA1	T1	M2	N2	P2	S2	LA2	T2
<b>MVAB</b>	85	70	105	7	8	3	115	95	140	9	10	3

1. The letters are numbered to distinguish them from the letters on the standard flange diagram.

Type	Solid output shaft						
	D	O	EY	GA	F	O	Z
<b>MVAB</b>	16	40	30	18	5	M5	15

Fr. size	Induction motors and brakes													
	3-phase LS					Single-phase LS					Brakes			
	AC	HJ	LB1	LB2	kg	AC	HJ	LB1	LB2	kg	EF max		kg <sup>1</sup>	
											FMD	FCR	FMD	FCR
<b>56</b>	110	85	156	135	3.4	110	90	156	135	3.5	50	-	0.9	-
<b>63</b>	124	95	172	150	4.3	124	110	172	150	4.5	50	-	0.9	-
<b>71<sup>2</sup></b>	140	102	183	155	6.5	140	129	183	155	7.5	50	90	0.9	2.5

1. Additional brake weight.

2. For LS 71: 0.25 kW 6 poles three-phase, 0.37 kW 4 poles single-phase, 0.55 kW 4 poles three-phase: LB dimension = +9.

# Electromechanical products

## Minibloc MVB

### General information



Minibloc MVB geared motors are worm type equipment. They are particularly compact and light but still offer excellent performance. Their design allows numerous adaptations so that the best solution can be found for any problem.

One size: MVB  
 Rated output torque: from 5 to 14 N.m  
 Power ratings: from 0.04 to 0.37 kW  
 Reduction ratios: from 5 to 90  
 Very quiet operation.



PERPENDICULAR OUTPUT GEARED MOTORS

### Construction

#### Description of Minibloc MVB gearboxes

Description	Materials	Comments
Frame	Aluminium	- pressure die cast aluminium - excellent sealing - neat and attractive appearance
Ring Screw	Bronze Steel	- bronze - worm in heat-treated and tempered steel, ground sides
Foot mounted	Steel	- zinc steel: protection from corrosion - removable: very adaptable
Shaft	Steel	- solid - ground or grooved sealing surfaces - key in accordance with DIN 6883 - tolerance of diameters in accordance with IEC 72-1
Lipseals	Acrylonitrile	- antidust double lipseals on slow speed shaft
Lubrication	Grease	- synthetic grease - no maintenance - multi-position operation - no drain, level or fill holes
Mounting		MI: geared motor with integrated motor
Standard motors		LS: multi-voltage 220/380 V, 230/400 V, 240/415 V three-phase and 230 V single-phase - pressed steel fan cover, on request fitted with a drip cover for operation in vertical position (shaft facing down) - terminal box fitted with cable gland with cable anti-damage system - IP55 standard protection - fixed onto gearbox using B14 flange
Brake motors		FMD: three-phase or single-phase failsafe brake motor, from 0.04 to 0.37 kW FCR: three-phase failsafe brake induction motor, from 0.25 to 0.37 kW
Other motors		MFA: IP23-IP44 D.C. motor from 0.075 to 0.37 kW (3000 min <sup>-1</sup> ) MBT: Low voltage D.C. motor
Finish	External finishing	Shade: RAL 6000 (green), system I (1 polyurethane acrylic layer of 25/30 µm)

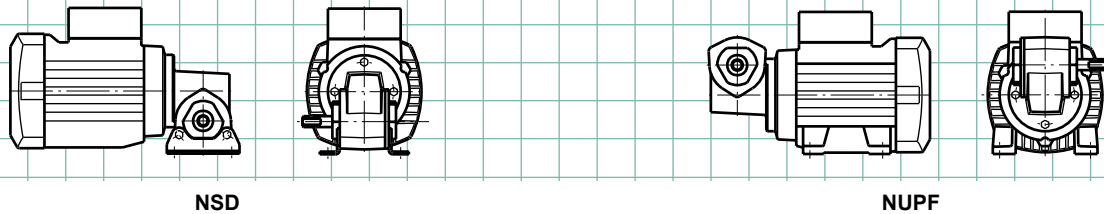
# Electromechanical products

## Minibloc MVB

### Mounting positions

Minibloc MVB is multi-position and can therefore be fixed in all positions regardless of its form.

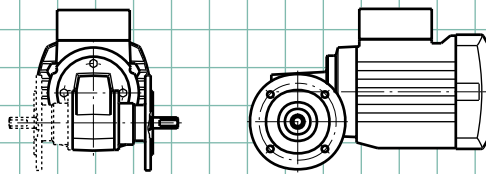
#### Minibloc MVB - Multi-position M - with base (NSD) or feet on the motor (NUPF)



NSD

NUPF

#### Minibloc MVAB - Multi-position M - with standard flange (BS) or offset (BD1-BD2)



BS or BD

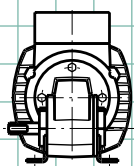
**Caution:** the "left" side shield is monobloc housing with the frame.

- Flange mounting "to the right" only as standard (see page B1.10).

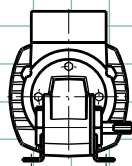
- For operation with the flange on the other side it is possible to turn the gearbox by a half revolution.

For symmetrical products: please consult Leroy-Somer.

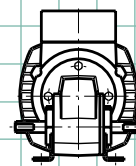
#### Output shaft



To the left (standard) (L)

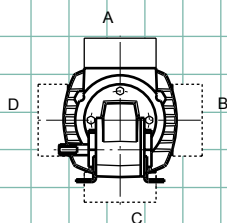


To the right (R)



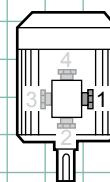
Left + right (LR)

#### Terminal box positions



A: standard

#### Cable gland positions



1: standard

# Electromechanical products Minibloc MVB

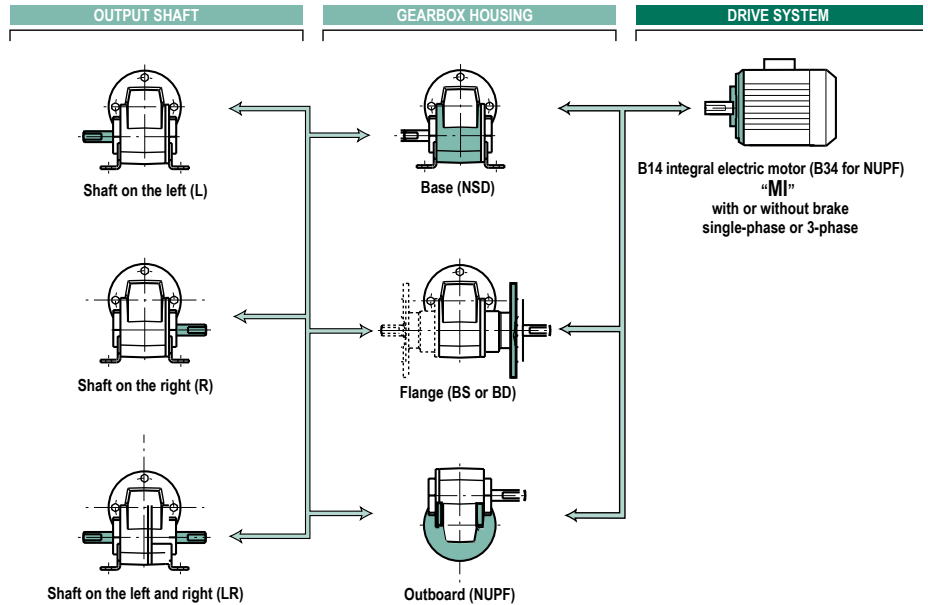
## Adaptation possibilities

Leroy-Somer offers different types of drive for its gearboxes which meet very wide-ranging needs. They are described in this catalogue.

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

**Minibloc MVB gearboxes can be used in conjunction with the following drives:**

- **single-phase induction motors:**
  - LS motor from 0.06 to 0.37 kW
  - LS FMD brake motor from 0.06 to 0.37 kW
- **three-phase induction motors:**
  - LS motor from 0.45 to 0.37 kW
  - LS FMD brake motor from 0.06 to 0.37 kW
  - LS FCR brake motor from 0.25 to 0.37 kW
- **D.C. motors:**
  - MFA from 0.075 to 0.37 kW (3000 min<sup>-1</sup>)
- **electronic D.C. geared motors:**
  - MVE from 0.075 to 0.37 kW (3000 min<sup>-1</sup>)
- **low-voltage D.C. motors (12 to 48 V):**
  - MBT from 0.07 to 0.37 kW



**B**

**PERPENDICULAR OUTPUT GEARED MOTORS**

## Description / Coding

### GEARBOX

<b>MVB</b>	<b>38</b>	<b>NS</b>	<b>D</b>	<b>P</b>	<b>M</b>	<b>MI</b>
Gearbox type	Exact reduction	Mounting form	Mounting position	Output shaft	Operating position	Integral mounting

### MOTOR

<b>4P</b>	<b>LS 56 M</b>	<b>0.06 kW</b>	<b>230/400V 50 Hz</b>
Number of poles	LS motor type and frame size	Rated output power	Standard mains voltage and frequency 230V 50 Hz 380-400V 50 Hz 415V 50 Hz 440-460V 60 Hz


### Example of coding:


MVB - 38 - NS D - L - M - MI - 4P - LS56M - 0.06 kW  
230/400 V - TRI - 50 Hz


# Electromechanical products

## Minibloc MVB

### Selection

LS ; LSMV 4p - 1 speed			Gearbox				LS VARMECA			
$n_s$ (min <sup>-1</sup> )	M (N.m)	Kp	MVB	i	$F_R E/2$ (N)		$n_{S MIN}$ (min <sup>-1</sup> )	$n_{S MAX}$ (min <sup>-1</sup> )	M (N.m)	Kp
LS 56 M; - LS 56 M FMD; -			<b>0.06 kW</b>				-			
15.11	6.15	1.12	MVB	90	550	B1.9 to B1.11				
18.13	6.56	1.39	MVB	75	530	B1.9 to B1.11				
22.67	6.9	1.62	MVB	60	530	B1.9 to B1.11				
27.2	5.77	1.76	MVB	50	530	B1.9 to B1.11				
35.79	5.65	2.43	MVB	38	520	B1.9 to B1.11				
45.33	4.67	2.76	MVB	30	515	B1.9 to B1.11				
56.67	4.21	3.19	MVB	24	515	B1.9 to B1.11				
68	3.81	3.39	MVB	20	515	B1.9 to B1.11				
90.67	3.12	4.11	MVB	15	510	B1.9 to B1.11				
136	2.36	5.6	MVB	10	510	B1.9 to B1.11				
272	1.3	10.59	MVB	5	525	B1.9 to B1.11				
388.57	0.93	14.46	MVB	3.5	525	B1.9 to B1.11				


LS ; LSMV 4p - 1 speed			Gearbox				LS VARMECA			
$n_s$ (min <sup>-1</sup> )	M (N.m)	Kp	MVB	i	$F_R E/2$ (N)		$n_{S MIN}$ (min <sup>-1</sup> )	$n_{S MAX}$ (min <sup>-1</sup> )	M (N.m)	Kp
LS 56 M; - LS 56 M FMD; -			<b>0.09 kW</b>				-			
18.67	10.43	0.87	MVB	75	530	B1.9 to B1.11				
23.33	10.95	1.02	MVB	60	530	B1.9 to B1.11				
28	9.16	1.1	MVB	50	530	B1.9 to B1.11				
36.84	8.96	1.52	MVB	38	520	B1.9 to B1.11				
46.67	7.4	1.74	MVB	30	515	B1.9 to B1.11				
58.33	6.67	2.0	MVB	24	515	B1.9 to B1.11				
70	6.04	2.13	MVB	20	515	B1.9 to B1.11				
93.33	4.94	2.58	MVB	15	510	B1.9 to B1.11				
140	3.74	3.52	MVB	10	510	B1.9 to B1.11				
280	2.05	6.66	MVB	5	525	B1.9 to B1.11				
400	1.48	9.09	MVB	3.5	525	B1.9 to B1.11				


LS ; LSMV 4p - 1 speed			Gearbox				LS VARMECA			
$n_s$ (min <sup>-1</sup> )	M (N.m)	Kp	MVB	i	$F_R E/2$ (N)		$n_{S MIN}$ (min <sup>-1</sup> )	$n_{S MAX}$ (min <sup>-1</sup> )	M (N.m)	Kp
LS 63 M; - LS 63 M FMD; -			<b>0.12 kW</b>				-			
27.6	12.91	0.79	MVB	50	530	B1.9 to B1.11				
36.32	12.65	1.08	MVB	38	520	B1.9 to B1.11				
46	10.45	1.23	MVB	30	515	B1.9 to B1.11				
57.5	9.42	1.42	MVB	24	515	B1.9 to B1.11				
69	8.53	1.51	MVB	20	515	B1.9 to B1.11				
92	6.97	1.83	MVB	15	510	B1.9 to B1.11				
138	5.28	2.5	MVB	10	510	B1.9 to B1.11				
276	2.9	4.72	MVB	5	525	B1.9 to B1.11				
394.29	2.09	6.45	MVB	3.5	525	B1.9 to B1.11				


# Electromechanical products


## Minibloc MVB

### Selection

LS ; LSMV 4p - 1 speed			Gearbox				LS VARMECA			
$n_s$ (min <sup>-1</sup> )	M (N.m)	Kp	MVB	i	$F_r E/2$ (N)		$n_{sMIN}$ (min <sup>-1</sup> )	$n_{sMAX}$ (min <sup>-1</sup> )	M (N.m)	Kp
LS 63 M; - LS 63 M FMD; -			<b>0.18 kW</b>				-			
46.33	16.19	0.79	MVB	30	515	B1.9 to B1.11				
57.92	14.59	0.92	MVB	24	515	B1.9 to B1.11				
69.5	13.21	0.97	MVB	20	515	B1.9 to B1.11				
92.67	10.8	1.18	MVB	15	510	B1.9 to B1.11				
139	8.18	1.61	MVB	10	510	B1.9 to B1.11				
278	4.49	3.05	MVB	5	525	B1.9 to B1.11				
397.14	3.24	4.16	MVB	3.5	525	B1.9 to B1.11				

LS ; LSMV 4p - 1 speed			Gearbox				LS VARMECA			
$n_s$ (min <sup>-1</sup> )	M (N.m)	Kp	MVB	i	$F_r E/2$ (N)		$n_{sMIN}$ (min <sup>-1</sup> )	$n_{sMAX}$ (min <sup>-1</sup> )	M (N.m)	Kp
LS 71 M; - LS 71 M FMD; -			<b>0.25 kW</b>				-			
95	14.97	0.85	MVB	15	510	B1.9 to B1.11				
142.5	11.33	1.16	MVB	10	510	B1.9 to B1.11				
285	6.21	2.19	MVB	5	525	B1.9 to B1.11				
407.14	4.48	2.99	MVB	3.5	525	B1.9 to B1.11				

LS ; LSMV 4p - 1 speed			Gearbox				LS VARMECA			
$n_s$ (min <sup>-1</sup> )	M (N.m)	Kp	MVB	i	$F_r E/2$ (N)		$n_{sMIN}$ (min <sup>-1</sup> )	$n_{sMAX}$ (min <sup>-1</sup> )	M (N.m)	Kp
LS 71 M; - LS 71 M FMD; -			<b>0.37 kW</b>				-			
284	9.4	1.45	MVB	5	525	B1.9 to B1.11				
405.71	6.78	1.98	MVB	3.5	525	B1.9 to B1.11				

LS ; LSMV 4p - 1 speed			Gearbox				LS VARMECA			
$n_s$ (min <sup>-1</sup> )	M (N.m)	Kp	MVB	i	$F_r E/2$ (N)		$n_{sMIN}$ (min <sup>-1</sup> )	$n_{sMAX}$ (min <sup>-1</sup> )	M (N.m)	Kp
LS 71 L; - LS 71 L FMD; -			<b>0.55 kW</b>				-			
280	14.34	0.95	MVB	5	525	B1.9 to B1.11				
400	10.34	1.3	MVB	3.5	525	B1.9 to B1.11				


**B**


PERPENDICULAR OUTPUT GEARED MOTORS


# Electromechanical products

## Minibloc MVB

### Selection

LS ; LSMV 6p - 1 speed			Gearbox				LS VARMECA			
$n_s$ (min <sup>-1</sup> )	M (N.m)	Kp	MVB	i	$F_R E/2$ (N)		$n_{S MIN}$ (min <sup>-1</sup> )	$n_{S MAX}$ (min <sup>-1</sup> )	M (N.m)	Kp
LS 56 M; - LS 56 M FMD; -			<b>0.06 kW</b>				-			
11.33	10.76	0.91	MVB	75	530	B1.9 to B1.11				
14.17	11.41	1.05	MVB	60	530	B1.9 to B1.11				
17.00	9.51	1.15	MVB	50	530	B1.9 to B1.11				
22.37	9.44	1.56	MVB	38	520	B1.9 to B1.11				
28.33	7.93	1.74	MVB	30	515	B1.9 to B1.11				
35.42	7.08	2.03	MVB	24	515	B1.9 to B1.11				
42.50	6.44	2.15	MVB	20	515	B1.9 to B1.11				
56.67	5.3	2.59	MVB	15	510	B1.9 to B1.11				
85.00	4.05	3.5	MVB	10	510	B1.9 to B1.11				
170.00	2.24	6.57	MVB	5	525	B1.9 to B1.11				
242.86	1.62	8.95	MVB	3.5	525	B1.9 to B1.11				

LS ; LSMV 6p - 1 speed			Gearbox				LS VARMECA			
$n_s$ (min <sup>-1</sup> )	M (N.m)	Kp	MVB	i	$F_R E/2$ (N)		$n_{S MIN}$ (min <sup>-1</sup> )	$n_{S MAX}$ (min <sup>-1</sup> )	M (N.m)	Kp
LS 63 M; - LS 63 M FMD; -			<b>0.09 kW</b>				-			
22.63	14.71	1	MVB	38	520	B1.9 to B1.11				
28.67	12.36	1.12	MVB	30	515	B1.9 to B1.11				
35.83	11.03	1.3	MVB	24	515	B1.9 to B1.11				
43.00	10.04	1.38	MVB	20	515	B1.9 to B1.11				
57.33	8.25	1.66	MVB	15	510	B1.9 to B1.11				
86.00	6.31	2.24	MVB	10	510	B1.9 to B1.11				
172.00	3.48	4.21	MVB	5	525	B1.9 to B1.11				
245.71	2.52	5.74	MVB	3.5	525	B1.9 to B1.11				


LS ; LSMV 6p - 1 speed			Gearbox				LS VARMECA			
$n_s$ (min <sup>-1</sup> )	M (N.m)	Kp	MVB	i	$F_R E/2$ (N)		$n_{S MIN}$ (min <sup>-1</sup> )	$n_{S MAX}$ (min <sup>-1</sup> )	M (N.m)	Kp
LS 71 M; - LS 71 M FMD; -			<b>0.12 kW</b>				-			
25.00	18.26	0.79	MVB	38	520	B1.9 to B1.11				
31.67	15.29	0.89	MVB	30	515	B1.9 to B1.11				
39.58	13.68	1.03	MVB	24	515	B1.9 to B1.11				
47.50	12.43	1.1	MVB	20	515	B1.9 to B1.11				
63.33	10.21	1.32	MVB	15	510	B1.9 to B1.11				
95.00	7.78	1.79	MVB	10	510	B1.9 to B1.11				
190.00	4.3	3.37	MVB	5	525	B1.9 to B1.11				
271.43	3.11	4.59	MVB	3.5	525	B1.9 to B1.11				




# Electromechanical products

## Minibloc MVB

### Selection

LS ; LSMV 6p - 1 speed			Gearbox				LS VARMECA			
$n_s$ (min <sup>-1</sup> )	M (N.m)	Kp	MVB	i	$F_R E/2$ (N)		$n_{S MIN}$ (min <sup>-1</sup> )	$n_{S MAX}$ (min <sup>-1</sup> )	M (N.m)	Kp
LS 71 M; - LS 71 M FMD; -			<b>0.18 kW</b>				-			
63.00	15.8	0.86	MVB	15	510	B1.9 to B1.11				
94.50	12.05	1.16	MVB	10	510	B1.9 to B1.11				
189.00	6.65	2.18	MVB	5	525	B1.9 to B1.11				
270.00	4.81	2.97	MVB	3.5	525	B1.9 to B1.11				

LS ; LSMV 6p - 1 speed			Gearbox				LS VARMECA			
$n_s$ (min <sup>-1</sup> )	M (N.m)	Kp	MVB	i	$F_R E/2$ (N)		$n_{S MIN}$ (min <sup>-1</sup> )	$n_{S MAX}$ (min <sup>-1</sup> )	M (N.m)	Kp
LS 71 L; - LS 71 L FMD; -			<b>0.25 kW</b>				-			
91.50	17.53	0.8	MVB	10	510	B1.9 to B1.11				
183.00	9.68	1.5	MVB	5	525	B1.9 to B1.11				
261.43	7	2.05	MVB	3.5	525	B1.9 to B1.11				

**B**

PERPENDICULAR OUTPUT GEARED MOTORS

# Electromechanical products

## Minibloc MVB

### Slow speed shaft load

Slow speed shaft loads permissible depend on the reduction and mounting with or without flange.

#### Newton force

Gearbox features			Clockwise or anti-clockwise									
Reduction	Speed min <sup>-1</sup>	Bevel N.m	NSD-L	BSL-L	BSL-L	NSD-L	NSD-R	BSR-R	NSD-R	BSR-R		
			$F_r$	$F_r$	$F_{a-}$	$F_{a-}$	$F_{a+}$	$F_r$	$F_r$	$F_{a-}$	$F_{a+}$	$F_{a+}$
5	284	10.5	525	558	112	230	497	525	558	497	230	112
10	142	13.5	510	569	379	515	893	510	569	893	515	379
15	94.7	13.5	510	572	638	838	1172	510	572	1172	838	638
20	71	12.5	515	579	851	1116	1464	515	579	1464	1116	851
30	47.3	12.5	515	588	1181	1485	1485	515	588	1485	1485	1181
40	35.5	11	520	590	1376	1501	1501	520	590	1501	1501	1376
50	28.4	10	530	590	1385	1510	1510	530	590	1510	1510	1385
60	23.7	10	530	590	1388	1513	1513	530	590	1513	1513	1388
75	18.9	10	530	590	1391	1516	1516	530	590	1516	1516	1391
90	15.7	6	550	590	1394	1519	1519	550	590	1519	1519	1394

#### Direction of the forces

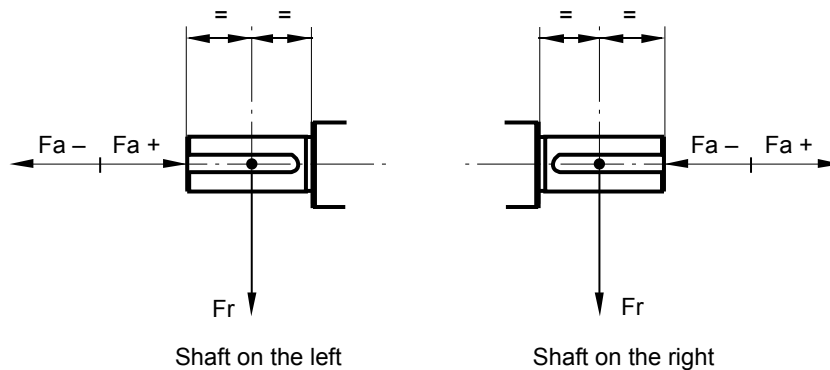
NSD-L & BSL-L	$F_{a+}$ = axial force PUSHING on the shaft extension $F_{a-}$ = axial force PULLING on the shaft extension
NSD-R & BSR-R	$F_{a+}$ = axial force PULLING on the shaft extension $F_{a-}$ = axial force PUSHING on the shaft extension

$F_r$  = radial force on the shaft extension at 15 mm from the shoulder

NB: 1 - If there are 2 shaft extensions the permissible load  $F_r$  must be distributed.

2 - These values correspond with the least favourable loads.

SPECIFIC CASES: please consult Leroy-Somer.

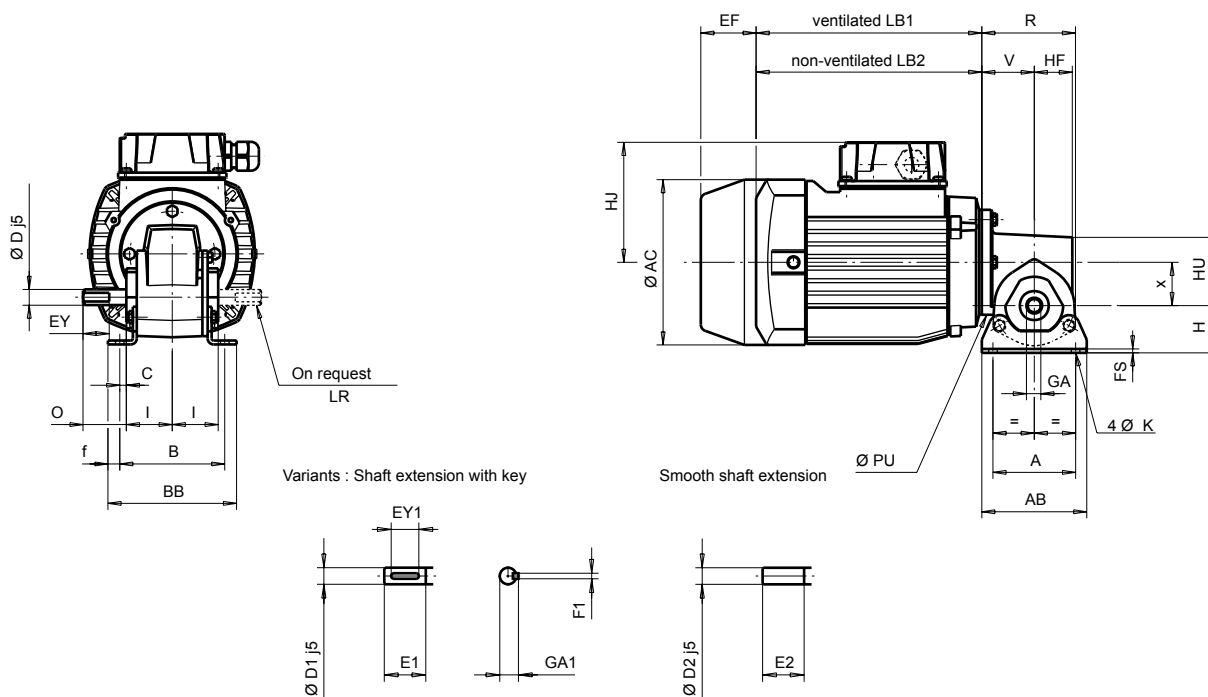



# Electromechanical products Minibloc MVB

## Dimensions

Dimensions in millimetres

### - NSD base form






Gearboxes with NSD base																	
Type	S	x	A	AB	B	BB	C	f	H	FS	V	HF	I	K	HU	PU	kg
MVB	72	33	63	80	80	98	5	9	36	3	40	29	35	6.5	55	80	0.96

\* Gearbox only

Type	Flat solid output shaft (standard)				Output shaft solid with key <sup>1</sup>					Output shaft solid smooth <sup>1</sup>	
	D	O	EY	GA	D1	E1	EY1	GA1	F1	D2	E2
MVB	12	30	20	11	12	30	25	13.5	4	12	30

1. The letters are numbered to distinguish them from the letters on the standard flange diagram.

Fr. size	Induction motors and brakes										Brakes			
	3-phase LS					Single-phase LS					Brakes			
	AC	HJ	LB1	LB2		AC	HJ	LB1	LB2		EF max		FMD	FCR
56	110	85	156	135	3.4	110	90	156	135	3.5	FMD	FCR	FMD	FCR
63	124	95	172	150	4.3	124	110	172	150	4.5	50	-	0.9	-
71 <sup>2</sup>	140	102	183	155	6.5	140	129	183	155	7.5	50	90	0.9	2.5

1. Additional brake weight.

2. For LS 71: 0.25 kW 6 poles three-phase, 0.37 kW 4 poles single-phase, 0.55 kW 4 poles three-phase: LB dimension = +9.

B

PERPENDICULAR OUTPUT GEARED MOTORS

# Electromechanical products

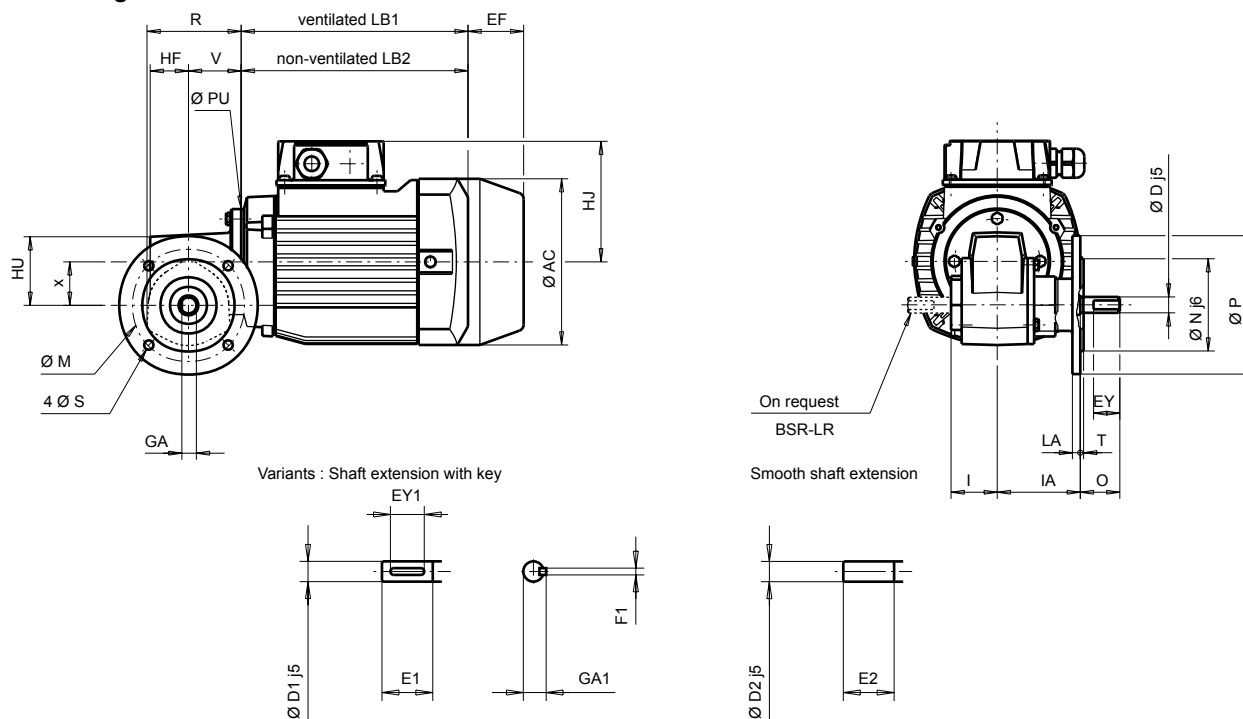
## Minibloc MVB

### Dimensions

Overall dimensions for the Minibloc MVB gearboxes, MI integral mounting, solid output shaft

Dimensions in millimetres

#### - BS or BD flange form



Gearboxes with BS flange																kg*
Type	S	x	M	N	P	O	LA	T	I	IA	V	HF	HU	PU		
MVB	72	33	85	70	105	7	7	2.5	35	63	40	29	55	80	1.1	

\* Gearbox only

Other possible flanges <sup>1</sup>												
Type	BD1						BD2					
	M1	N1	P1	S1	LA1	T1	M2	N2	P2	S2	LA2	T2
MVB	65	50	80	5.5	7	2.5	75	60	90	7	8	3

1. The letters are numbered to distinguish them from the letters on the standard flange diagram.

Type	Flat solid output shaft (standard)				Output shaft solid with key <sup>1</sup>					Output shaft solid smooth <sup>1</sup>	
	D	O	EY	GA	D1	E1	EY1	GA1	F1	D2	E2
MVB	12	30	20	11	12	30	25	13.5	4	12	30

1. The letters are numbered to distinguish them from the letters on the standard flange diagram.

Fr. size	Induction motors and brakes										Brakes			
	3-phase LS					Single-phase LS					Brakes			
	AC	HJ	LB1	LB2	kg	AC	HJ	LB1	LB2	kg	EF max		kg <sup>1</sup>	
56	110	85	156	135	3.4	110	90	156	135	3.5	FMD	FCR	FMD	FCR
63	124	95	172	150	4.3	124	110	172	150	4.5	50	-	0.9	-
71 <sup>2</sup>	140	102	183	155	6.5	140	129	183	155	7.5	50	90	0.9	2.5

1. Additional brake weight.

2. For LS 71: 0.25 kW 6 poles three-phase, 0.37 kW 4 poles single-phase, 0.55 kW 4 poles three-phase: LB dimension = +9.

# Electromechanical products

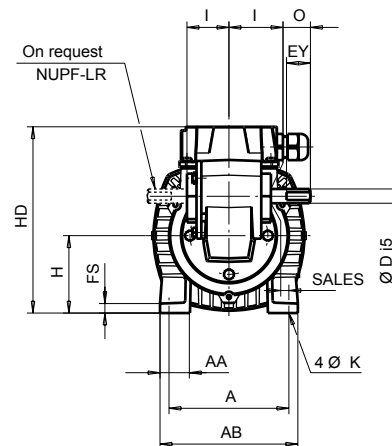
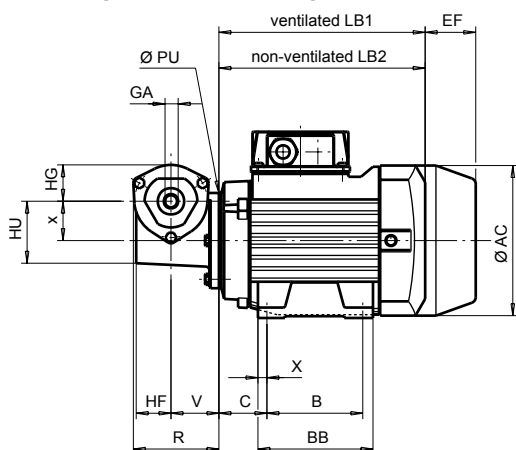
## Minibloc MVB

### Dimensions

#### Overall dimensions of Minibloc MVB geared motors, MI integral mounting

Dimensions in millimetres

#### - Motor foot mounting, NUPF outboard gearbox



**Definition of the positions:** see page B1.2

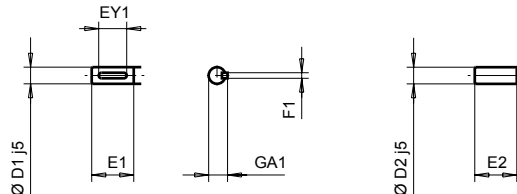
- The position of the output shaft on the left (L) and right (R) is defined from the gearbox side view, with axis of the low speed shaft below the motor shaft.
- Position of the terminal box to be specified as A, B, C or D.

**Diagrams shown:**

1. output shaft on left
2. terminal box position C

Variants : Shaft extension with key

Smooth shaft extension



Type	NUPF outboard gearboxes							kg*
	S	x	HG	V	HF	HU	PU	
MVB	72	33	31	40	29	55	80	0.84

\* Gearbox only

Type	Flat solid output shaft (standard)				Solid output shaft with key <sup>1</sup>					Smooth solid output shaft <sup>1</sup>	
	D	O	EY	GA	D1	E1	EY1	GA1	F1	D2	E2
MVB	12	30	20	11	12	30	25	13.5	4	12	30

1. The letters are numbered to distinguish them from the letters on the standard flange diagram.

Fr. size	Induction motors												3-phase LS		Single-phase LS			
	LS 3-phase and single phase												HD	kg	HD	kg		
	AC	A	AA	AB	B	BB	C	X	SALES	K	H	FS					LB1	LB2
56	110	90	24	104	71	89	36	9	5	6	56	5	156	132	141	3.4	146	3.5
63	124	100	30	115	80	94	40	8	10	7	63	6	172	150	158	4.3	173	4.5
71 <sup>1</sup>	140	112	22	126	90	104	45	7	16	7	71	6	183	155	173	6.5	200	7.5

1. For LS 71: 0.25 kW 6 poles three-phase, 0.37 kW 4 poles single-phase, 0.55 kW 4 poles three-phase: LB dimension = +9.

Type	Additional brake dimensions			
	EF max		kg	
	FMD	FCR	FMD	FCR
56	50	-	0.9	-
63	50	-	0.9	-
71 <sup>2</sup>	50	90	0.9	2.5

1. Additional brake weight.

2. For LS 71: 0.25 kW 6 poles three-phase, 0.37 kW 4 poles single-phase, 0.55 kW 4 poles three-phase: LB dimension = +9.



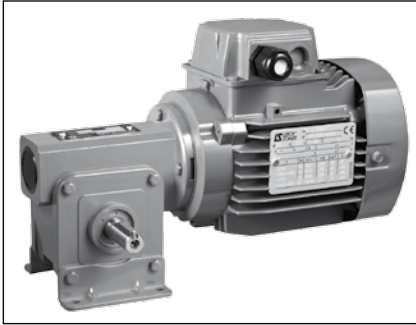
PERPENDICULAR OUTPUT GEARED MOTORS



# Electromechanical products

## Minibloc MVA

### General information



Minibloc MVA geared motors are worm type equipment. They are particularly compact and light but still offer excellent performance. Their design allows numerous adaptations so that the best solution can be found for any problem.

One size: MVA  
 Rated output torque: from 1 to 33 N.m  
 Power ratings: from 0.04 to 0.37 kW  
 Reduction ratios: from 5 to 90  
 Very quiet operation.



PERPENDICULAR OUTPUT GEARED MOTORS

### Construction

#### Description of Minibloc MVA gearboxes

Description	Materials	Comments
Frame	Aluminium	- pressure die cast aluminium - excellent sealing - neat and attractive appearance
Ring Screw	Bronze Steel	- die-cast bronze - worm in ion nitriding treated 42CD4 steel
Foot mounted	Steel	- zinc steel: protection from corrosion - removable: very adaptable
Shaft	Steel	- solid or hollow - ground or grooved sealing surfaces - key in accordance with DIN 6883 - tolerance of diameters in accordance with IEC 72-1 - tapped hole at the solid shaft extension
Lipseals	Acrylonitrile	- antidust double lipseals on slow speed shaft
Lubrication	Grease	- synthetic grease - no maintenance - multi-position operation - no drain, level or fill holes
Mounting		AP: gearbox with input shaft MI: geared motor with integrated motor
Standard motors		LS: multi-voltage 220/380 V, 230/400 V, 240/415 V three-phase and 230 V single-phase - pressed steel fan cover, on request fitted with a drip cover for operation in vertical position (shaft facing down) - terminal box fitted with cable gland with cable anti-damage system - IP55 standard protection - fixed onto gearbox using B14 flange
Brake motors		FMD: three-phase or single-phase fail-safe brake motor, from 0.06 to 0.37 kW FCR: three-phase fail-safe brake induction motor, from 0.25 to 0.55 kW
Other motors		MFA: IP23-IP44 D.C. motor from 0.075 to 0.37 kW (3000 min <sup>-1</sup> ) MBT: Low voltage D.C. motor
Safety	Plastics	Protective cover of the output on the opposite side of the working shaft for all gearboxes with hollow shaft or separate shaft
Finish	External finishing	Shade: RAL 6000 (green), system I (1 polyurethane acrylic layer of 25/30 µm)

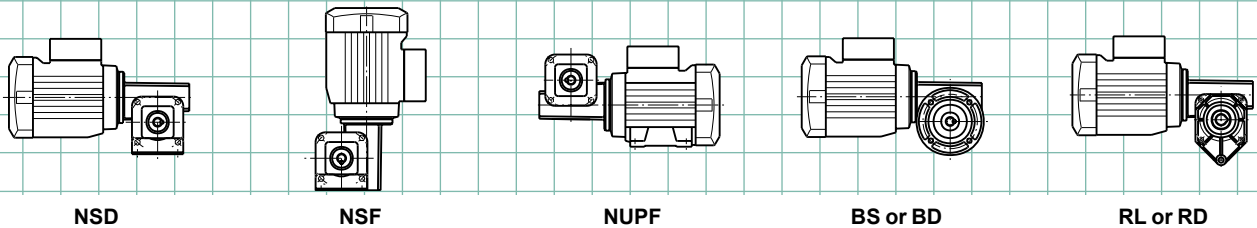
# Electromechanical products

## Minibloc MVA

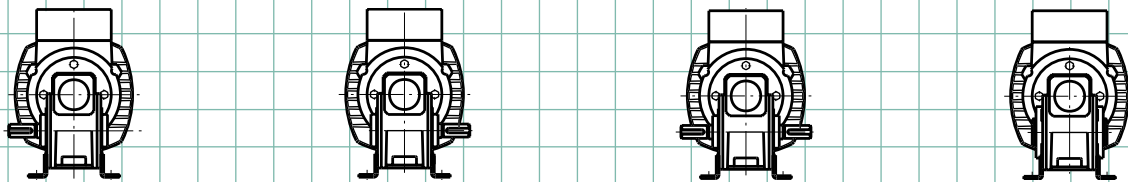
### Mounting positions

Minibloc MVA is multi-position and can therefore be fixed in all positions regardless of its form.

#### Minibloc MVA - Multi-position M



#### Output shaft



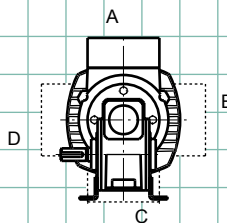
To the left (standard) (L)

To the right (R)

Left + right (LR)

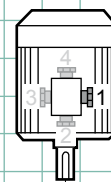
Through hollow (H)

#### Terminal box positions



A: standard

#### Cable gland positions



1 : standard



# Electromechanical products Minibloc MVA

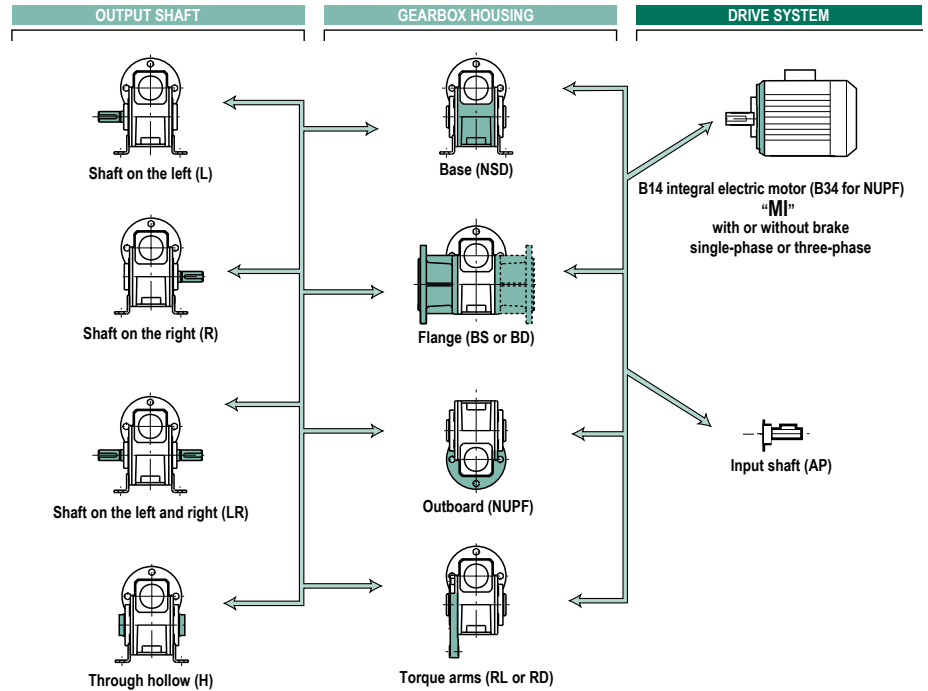
## Adaptation possibilities

Leroy-Somer offers different types of drive for its gearboxes which meet very wide-ranging needs. They are described in this catalogue.

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

**Minibloc MVA gearboxes can be used in conjunction with the following drives:**

- **single-phase induction motors:**
  - LS motor from 0.06 to 0.37 kW
  - LS FMD brake motor from 0.06 to 0.37 kW
- **three-phase induction motors:**
  - LS motor from 0.045 to 0.55 kW
  - LS FMD brake motor from 0.06 to 0.37 kW
  - LS FCR brake motor from 0.25 to 0.55 kW
- **D.C. motors:**
  - MFA from 0.075 to 0.37 kW (3000 min<sup>-1</sup>)
- **electronic D.C. geared motors:**
  - MVE from 0.075 to 0.37 kW (3000 min<sup>-1</sup>)
- **low-voltage D.C. motors (12 to 48 V):**
  - MBT from 0.07 to 0.37 kW



**B**  
**PERPENDICULAR OUTPUT GEARED MOTORS**

## Description / Coding

### GEARBOX

<b>MVA</b>	<b>40</b>	<b>NS</b>	<b>D</b>	<b>P</b>	<b>M</b>	<b>MI</b>
Gearbox type	Exact reduction	Mounting form	Mounting position	Output shaft	Operating position	Integral mounting

### MOTOR

<b>4P</b>	<b>LS 56 M</b>	<b>0.06 kW</b>	<b>230/400V 50 Hz</b>
Number of poles	LS motor type and frame size	Rated output power	Standard mains voltage and frequency 230V 50 Hz 380-400V 50 Hz 415V 50 Hz 440-460V 60 Hz


### Example of coding:


MVA - 40 - NS D - L - M - MI - 4P - LS56M - 0.06 kW  
230/400 V - TRI - 50 Hz


# Electromechanical products

## Minibloc MVA

### Selection

LS ; LSMV 4p - 1 speed			Gearbox				LS VARMECA			
$n_s$ (min <sup>-1</sup> )	M (N.m)	Kp	MVA	i	$F_R E/2$ (N)		$n_{S MIN}$ (min <sup>-1</sup> )	$n_{S MAX}$ (min <sup>-1</sup> )	M (N.m)	Kp
LS 56 M; - LS 56 M FMD; -			<b>0.06 kW</b>				-			
15.11	11.96	1.13	MVA	90	860	B2.11 to B2.21				
18.13	10.24	1.75	MVA	75	840	B2.11 to B2.21				
22.67	9.12	2.43	MVA	60	820	B2.11 to B2.21				
27.2	8.77	2.73	MVA	50	810	B2.11 to B2.21				
34	7.26	3.85	MVA	40	790	B2.11 to B2.21				
45.33	6.05	5.8	MVA	30	690	B2.11 to B2.21				
56.4	5.5	5.2	MVA	25	790	B2.11 to B2.21				
68	4.49	6.68	MVA	20	780	B2.11 to B2.21				
90.67	3.44	8.87	MVA	15	702	B2.11 to B2.21				
104.62	3.17	8.17	MVA	13	741	B2.11 to B2.21				
136	2.49	8.97	MVA	10	654	B2.11 to B2.21				
209.23	1.68	12.72	MVA	6.5	515	B2.11 to B2.21				
272	1.31	13.96	MVA	5	435	B2.11 to B2.21				


LS ; LSMV 4p - 1 speed			Gearbox				LS VARMECA			
$n_s$ (min <sup>-1</sup> )	M (N.m)	Kp	MVA	i	$F_R E/2$ (N)		$n_{S MIN}$ (min <sup>-1</sup> )	$n_{S MAX}$ (min <sup>-1</sup> )	M (N.m)	Kp
LS 56 M; - LS 56 M FMD; -			<b>0.09 kW</b>				-			
18.67	16.86	1.05	MVA	75	840	B2.11 to B2.21				
23.33	15.01	1.47	MVA	60	820	B2.11 to B2.21				
28	14.43	1.64	MVA	50	810	B2.11 to B2.21				
35	11.94	2.32	MVA	40	790	B2.11 to B2.21				
46.67	9.94	3.51	MVA	30	690	B2.11 to B2.21				
56	9.03	3.15	MVA	25	790	B2.11 to B2.21				
70	7.37	4.05	MVA	20	780	B2.11 to B2.21				
93.33	5.64	5.38	MVA	15	702	B2.11 to B2.21				
107.69	5.2	4.96	MVA	13	741	B2.11 to B2.21				
140	4.09	5.44	MVA	10	654	B2.11 to B2.21				
215.38	2.75	7.72	MVA	6.5	515	B2.11 to B2.21				
280	2.15	8.47	MVA	5	435	B2.11 to B2.21				

LS ; LSMV 4p - 1 speed			Gearbox				LS VARMECA			
$n_s$ (min <sup>-1</sup> )	M (N.m)	Kp	MVA	i	$F_R E/2$ (N)		$n_{S MIN}$ (min <sup>-1</sup> )	$n_{S MAX}$ (min <sup>-1</sup> )	M (N.m)	Kp
LS 63 M; - LS 63 M FMD; -			<b>0.12 kW</b>				-			
23	21.55	1.02	MVA	60	820	B2.11 to B2.21				
27.6	20.72	1.15	MVA	50	810	B2.11 to B2.21				
34.5	17.14	1.62	MVA	40	790	B2.11 to B2.21				
46	14.28	2.45	MVA	30	690	B2.11 to B2.21				
55.2	12.98	2.2	MVA	25	790	B2.11 to B2.21				
69	10.59	2.82	MVA	20	780	B2.11 to B2.21				
92	8.11	3.75	MVA	15	702	B2.11 to B2.21				
106.15	7.47	3.45	MVA	13	741	B2.11 to B2.21				
138	5.88	3.79	MVA	10	654	B2.11 to B2.21				
212.31	3.96	5.38	MVA	6.5	515	B2.11 to B2.21				
276	3.09	5.9	MVA	5	435	B2.11 to B2.21				

# Electromechanical products


## Minibloc MVA

### Selection

LS ; LSMV 4p - 1 speed			Gearbox				LS VARMECA			
$n_s$ (min <sup>-1</sup> )	M (N.m)	Kp	MVA	i	$F_R E/2$ (N)		$n_{S MIN}$ (min <sup>-1</sup> )	$n_{S MAX}$ (min <sup>-1</sup> )	M (N.m)	Kp

### 0.18 kW


34.75			MVA	40	790	B2.11 to B2.21				
46.33			MVA	30	690	B2.11 to B2.21				
55.6			MVA	25	790	B2.11 to B2.21				
69.5			MVA	20	780	B2.11 to B2.21				
92.67			MVA	15	702	B2.11 to B2.21				
106.92			MVA	13	741	B2.11 to B2.21				
139			MVA	10	654	B2.11 to B2.21				
213.85			MVA	6.5	515	B2.11 to B2.21				
278			MVA	5	435	B2.11 to B2.21				

LS ; LSMV 4p - 1 speed			Gearbox				LS VARMECA			
$n_s$ (min <sup>-1</sup> )	M (N.m)	Kp	MVA	i	$F_R E/2$ (N)		$n_{S MIN}$ (min <sup>-1</sup> )	$n_{S MAX}$ (min <sup>-1</sup> )	M (N.m)	Kp

LS 71 M; -  
LS 71 M FMD; -

### 0.25 kW


47.5	31.36	1.11	MVA	30	690	B2.11 to B2.21				
57	28.48	0.99	MVA	25	790	B2.11 to B2.21				
71.25	23.24	1.28	MVA	20	780	B2.11 to B2.21				
95	17.79	1.7	MVA	15	702	B2.11 to B2.21				
109.62	16.37	1.57	MVA	13	741	B2.11 to B2.21				
142.5	12.89	1.72	MVA	10	654	B2.11 to B2.21				
219.23	8.68	2.44	MVA	6.5	515	B2.11 to B2.21				
285	6.77	2.68	MVA	5	435	B2.11 to B2.21				

LS ; LSMV 4p - 1 speed			Gearbox				LS VARMECA			
$n_s$ (min <sup>-1</sup> )	M (N.m)	Kp	MVA	i	$F_R E/2$ (N)		$n_{S MIN}$ (min <sup>-1</sup> )	$n_{S MAX}$ (min <sup>-1</sup> )	M (N.m)	Kp

LS 71 M; -  
LS 71 M FMD; -

### 0.37 kW

71	35.38	0.84	MVA	20	780	B2.11 to B2.21				
94.67	27.08	1.12	MVA	15	702	B2.11 to B2.21				
109.23	24.93	1.03	MVA	13	741	B2.11 to B2.21				
142	19.62	1.13	MVA	10	654	B2.11 to B2.21				
218.46	13.21	1.6	MVA	6.5	515	B2.11 to B2.21				
284	10.31	1.76	MVA	5	435	B2.11 to B2.21				

LS ; LSMV 4p - 1 speed			Gearbox				LS VARMECA			
$n_s$ (min <sup>-1</sup> )	M (N.m)	Kp	MVA	i	$F_R E/2$ (N)		$n_{S MIN}$ (min <sup>-1</sup> )	$n_{S MAX}$ (min <sup>-1</sup> )	M (N.m)	Kp

LS 71 L; -  
LS 71 L FMD; -

### 0.55 kW

215.38	20.25	1.05	MVA	6.5	515	B2.11 to B2.21				
280	15.8	1.15	MVA	5	435	B2.11 to B2.21				


B


PERPENDICULAR OUTPUT GEARED MOTORS


# Electromechanical products

## Minibloc MVA

### Selection

LS ; LSMV 6p - 1 speed			Gearbox				LS VARMECA			
$n_s$ (min <sup>-1</sup> )	$M$ (N.m)	Kp	MVA	$i$	$F_R E/2$ (N)		$n_{S MIN}$ (min <sup>-1</sup> )	$n_{S MAX}$ (min <sup>-1</sup> )	$M$ (N.m)	Kp
LS 56 M; - LS 56 M FMD; -			<b>0.06 kW</b>				-			
9.44	20.46	0.84	MVA	90	860	B2.11 to B2.21				
11.33	17.44	1.16	MVA	75	840	B2.11 to B2.21				
14.17	15.67	1.56	MVA	60	820	B2.11 to B2.21				
17.00	15.27	1.79	MVA	50	810	B2.11 to B2.21				
21.25	12.7	2.48	MVA	40	790	B2.11 to B2.21				
28.33	10.64	3.53	MVA	30	690	B2.11 to B2.21				
34.00	9.78	3.17	MVA	25	790	B2.11 to B2.21				
42.50	7.99	4.02	MVA	20	780	B2.11 to B2.21				
56.67	6.12	5.33	MVA	15	702	B2.11 to B2.21				
65.38	5.69	4.92	MVA	13	741	B2.11 to B2.21				
85.00	4.49	5.32	MVA	10	654	B2.11 to B2.21				
130.77	3.04	7.54	MVA	6.5	515	B2.11 to B2.21				
170.00	2.38	8.22	MVA	5	435	B2.11 to B2.21				


LS ; LSMV 6p - 1 speed			Gearbox				LS VARMECA			
$n_s$ (min <sup>-1</sup> )	$M$ (N.m)	Kp	MVA	$i$	$F_R E/2$ (N)		$n_{S MIN}$ (min <sup>-1</sup> )	$n_{S MAX}$ (min <sup>-1</sup> )	$M$ (N.m)	Kp
LS 63 M; - LS 63 M FMD; -			<b>0.09 kW</b>				-			
14.33	24.91	0.98	MVA	60	820	B2.11 to B2.21				
17.20	24.27	1.12	MVA	50	810	B2.11 to B2.21				
21.50	20.17	1.55	MVA	40	790	B2.11 to B2.21				
28.67	16.91	2.22	MVA	30	690	B2.11 to B2.21				
34.40	15.54	1.99	MVA	25	790	B2.11 to B2.21				
43.00	12.7	2.53	MVA	20	780	B2.11 to B2.21				
57.33	9.73	3.35	MVA	15	702	B2.11 to B2.21				
66.15	9.03	3.09	MVA	13	741	B2.11 to B2.21				
86.00	7.13	3.35	MVA	10	654	B2.11 to B2.21				
132.31	4.82	4.74	MVA	6.5	515	B2.11 to B2.21				
172.00	3.77	5.17	MVA	5	435	B2.11 to B2.21				


LS ; LSMV 6p - 1 speed			Gearbox				LS VARMECA			
$n_s$ (min <sup>-1</sup> )	$M$ (N.m)	Kp	MVA	$i$	$F_R E/2$ (N)		$n_{S MIN}$ (min <sup>-1</sup> )	$n_{S MAX}$ (min <sup>-1</sup> )	$M$ (N.m)	Kp
LS 71 M; - LS 71 M FMD; -			<b>0.12 kW</b>				-			
19.00	30.33	0.88	MVA	50	810	B2.11 to B2.21				
23.75	25.18	1.22	MVA	40	790	B2.11 to B2.21				
31.67	21.08	1.75	MVA	30	690	B2.11 to B2.21				
38.00	19.33	1.58	MVA	25	790	B2.11 to B2.21				
47.50	15.79	2	MVA	20	780	B2.11 to B2.21				
63.33	12.1	2.66	MVA	15	702	B2.11 to B2.21				
73.08	11.21	2.44	MVA	13	741	B2.11 to B2.21				
95.00	8.85	2.66	MVA	10	654	B2.11 to B2.21				
146.15	5.98	3.77	MVA	6.5	515	B2.11 to B2.21				
190.00	4.68	4.12	MVA	5	435	B2.11 to B2.21				

# Electromechanical products

## Minibloc MVA

### Selection

LS ; LSMV 6p - 1 speed			Gearbox				LS VARMECA			
$n_s$ (min <sup>-1</sup> )	M (N.m)	Kp	MVA	i	$F_r E/2$ (N)		$n_{sMIN}$ (min <sup>-1</sup> )	$n_{sMAX}$ (min <sup>-1</sup> )	M (N.m)	Kp
LS 71 M; - LS 71 M FMD; -			<b>0.18 kW</b>				-			
23.62	39.37	0.78	MVA	40	790	B2.11 to B2.21				
31.50	32.96	1.12	MVA	30	690	B2.11 to B2.21				
37.80	30.23	1.01	MVA	25	790	B2.11 to B2.21				
47.25	24.69	1.28	MVA	20	780	B2.11 to B2.21				
63.00	18.91	1.7	MVA	15	702	B2.11 to B2.21				
72.69	17.53	1.56	MVA	13	741	B2.11 to B2.21				
94.50	13.83	1.7	MVA	10	654	B2.11 to B2.21				
145.38	9.35	2.41	MVA	6.5	515	B2.11 to B2.21				
189.00	7.31	2.63	MVA	5	435	B2.11 to B2.21				

LS ; LSMV 6p - 1 speed			Gearbox				LS VARMECA			
$n_s$ (min <sup>-1</sup> )	M (N.m)	Kp	MVA	i	$F_r E/2$ (N)		$n_{sMIN}$ (min <sup>-1</sup> )	$n_{sMAX}$ (min <sup>-1</sup> )	M (N.m)	Kp
LS 71 L; - LS 71 L FMD; -			<b>0.25 kW</b>				-			
45.75	36.09	0.88	MVA	20	780	B2.11 to B2.21				
61.00	27.65	1.17	MVA	15	702	B2.11 to B2.21				
70.38	25.65	1.08	MVA	13	741	B2.11 to B2.21				
91.50	20.24	1.17	MVA	10	654	B2.11 to B2.21				
140.77	13.69	1.66	MVA	6.5	515	B2.11 to B2.21				
183.00	10.7	1.81	MVA	5	435	B2.11 to B2.21				

B

PERPENDICULAR OUTPUT GEARED MOTORS

# Electromechanical products

## Minibloc MVA

### Gearbox only features (AP)

#### MVA "AP" - 2,800 min<sup>-1</sup> - Kp = 1

##### Rated capacities

$n_s$ (min <sup>-1</sup> )	$i_{aR}$	kW	$M_{nS}$ (N.m)
31.1	90	0.092	9.5
37.3	75	0.119	11.8
46.7	60	0.167	16.0
56.0	50	0.210	20.0
70.0	40	0.247	19.8
93.3	30	0.286	19.1
112.0	25	0.331	20.0
140.0	20	0.364	18.0
186.7	15	0.392	15.0
215.4	13	0.491	17.4
280.0	10	0.562	15.8
430.08	6.5	0.658	12.4
560.0	5	0.739	11.0

#### MVA "AP" - 1,400 min<sup>-1</sup> - Kp = 1

##### Rated capacities

$n_s$ (min <sup>-1</sup> )	$i_{aR}$	kW	$M_{nS}$ (N.m)
15.6	90	0.061	12.5
18.7	75	0.089	17.3
23.3	60	0.118	21.6
28.0	50	0.129	23.0
35.0	40	0.177	27.0
46.7	30	0.261	34.5
56.0	25	0.236	28.0
70.0	20	0.298	29.5
93.3	15	0.393	30.0
107.7	13	0.363	25.5
140.0	10	0.396	22.0
215.4	6.5	0.555	21.0
280.0	5	0.610	18.0

#### MVA "AP" - 900 min<sup>-1</sup> - Kp = 1

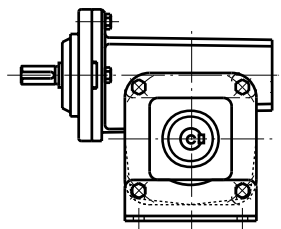
##### Rated capacities

$n_s$ (min <sup>-1</sup> )	$i_{aR}$	kW	$M_{nS}$ (N.m)
10.0	90	0.054	17.0
12.0	75	0.070	20.0
15.0	60	0.090	24.0
18.0	50	0.102	27.0
22.5	40	0.137	31.0
30.0	30	0.189	36.9
36.0	25	0.171	30.5
45.0	20	0.213	31.6
60.0	15	0.279	32.1
69.2	13	0.255	27.0
90.0	10	0.280	23.5
138.5	6.5	0.391	22.5
180.0	5	0.423	19.2

#### MVA "AP" - 500 min<sup>-1</sup> - Kp = 1

##### Rated capacities

$n_s$ (min <sup>-1</sup> )	$i_{aR}$	kW	$M_{nS}$ (N.m)
5.6	90	0.037	18.7
6.7	75	0.049	22.0
8.3	60	0.062	26.4
10.0	50	0.069	29.7
12.5	40	0.092	34.1
16.7	30	0.126	40.6
20.0	25	0.112	33.6
25.0	20	0.139	34.8
33.3	15	0.181	35.3
38.5	13	0.176	32.0
50.0	10	0.179	25.8
76.9	6.5	0.249	24.8
100.0	5	0.269	21.2



# Electromechanical products

## Minibloc MVA

### Low speed shaft load - Output shaft $\varnothing \leq 15$ mm

Slow speed shaft loads permissible depend on the reduction and mounting with or without flange.

#### Newton force

Gearbox features			Clockwise or anti-clockwise							
Reduction	Speed min <sup>-1</sup>	Bevel N.m	NSD-L	BSL-L	NSD-L & BSL-L		NSD-R	BSR-R	NSD-R & BSR-R	
			F <sub>r</sub>	F <sub>r</sub>	F <sub>a-</sub>	F <sub>a+</sub>	F <sub>r</sub>	F <sub>r</sub>	F <sub>a-</sub>	F <sub>a+</sub>
5	284	20	435	435	103	350	435	435	350	103
6.5	218	21	515	515	139	430	515	515	430	139
10	142	22	654	654	314	710	654	654	710	314
13	109	23	741	741	407	878	741	741	878	407
15	94.6	31.5	702	702	445	898	702	702	898	445
20	71	29.5	780	780	523	1043	780	780	1043	523
25	56.8	26.9	790	790	560	1012	790	790	1012	560
30	47.3	34.5	690	690	652	1177	690	690	1177	652
40	35.5	26.9	790	790	784	1347	790	790	1347	784
50	28.4	23.5	810	810	831	1415	810	810	1415	831
60	23.7	20	820	820	937	1589	820	820	1589	937
75	18.9	15	840	840	1290	1770	840	840	1770	1290
90	15.7	12	860	860	1370	1950	860	860	1950	1370

#### Direction of the forces

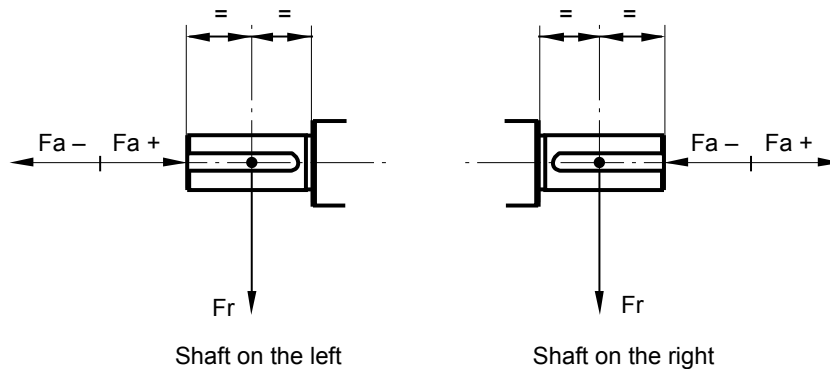
NSD-R & BSR-R	F <sub>a+</sub> = axial force PULLING on the shaft extension F <sub>a-</sub> = axial force PUSHING on the shaft extension
NSD-L & BSL-L	F <sub>a+</sub> = axial force PUSHING on the shaft extension F <sub>a-</sub> = axial force PULLING on the shaft extension

F<sub>r</sub> = radial force on the shaft extension at 15 mm from the shoulder

NB: 1 - If there are 2 shaft extensions the permissible load F<sub>r</sub> must be distributed.

2 - These values correspond with the least favourable loads.

SPECIFIC CASES: please consult Leroy-Somer.



B

PERPENDICULAR OUTPUT GEARED MOTORS

# Electromechanical products

## Minibloc MVA

### Slow speed load - Output shaft $\varnothing > 15$ mm or hollow shaft

Slow speed shaft loads permissible depend on the reduction and mounting with or without flange.

#### Newton force

Gearbox features			Clockwise or anti-clockwise							
Reduction	Speed min <sup>-1</sup>	Bevel N.m	NSD-L	BSL-L	NSD-L & BSL-L		NSD-R	BSR-R	NSD-R & BSR-R	
			$F_r$	$F_r$	$F_{a-}$	$F_{a+}$	$F_r$	$F_r$	$F_{a-}$	$F_{a+}$
5	284	20	828	578	290	720	828	578	720	290
6.5	218	21	944	659	451	1085	944	659	1085	451
10	142	22	1144	799	684	1343	1144	799	1343	684
13	109	23	1243	838	822	1589	1243	838	1589	822
15	94.6	31.5	1269	886	891	1669	1269	886	1669	891
20	71	29.5	1463	1021	1082	2016	1463	1021	2016	1082
25	56.8	26.9	1629	1138	1256	2338	1629	1138	2338	1256
30	47.3	34.5	1683	1150	1395	2545	1683	1150	2545	1395
40	35.5	26.9	1956	1150	1697	3116	1956	1150	3116	1697
50	28.4	23.5	2162	1150	1870	3294	2162	1150	3294	1870
60	23.7	20	2336	1150	2127	3325	2336	1150	3325	2127
75	18.9	15	2500	1150	2441	3349	2500	1150	3349	2441
90	15.7	12	2600	1150	2879	3357	2600	1150	3357	2879

#### Direction of the forces

NSD-R & BSR-R	$F_{a+}$ = axial force PULLING on the shaft extension $F_{a-}$ = axial force PUSHING on the shaft extension
NSD-L & BSL-L	$F_{a+}$ = axial force PUSHING on the shaft extension $F_{a-}$ = axial force PULLING on the shaft extension

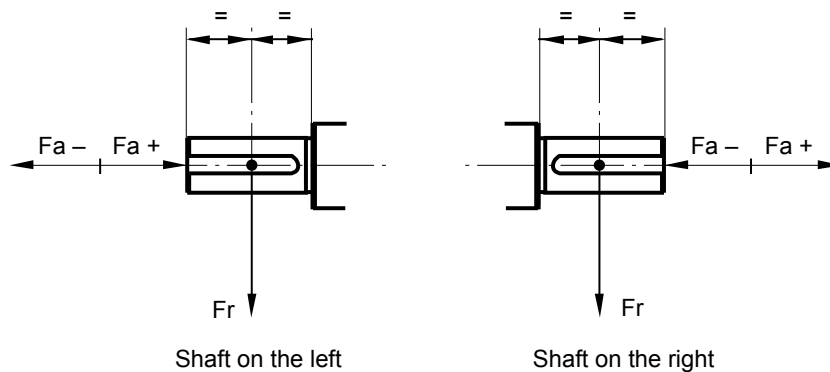
$F_r$  = radial force on the shaft extension at 20mm from the shoulder

NB: 1 - If there are 2 shaft extensions the permissible load  $F_r$  must be distributed.

2 - For BSL-L or BSR-R, the force corresponds with the separate shaft.

3 - These values correspond with the least favourable loads.

SPECIFIC CASES: please consult Leroy-Somer.





# Electromechanical products

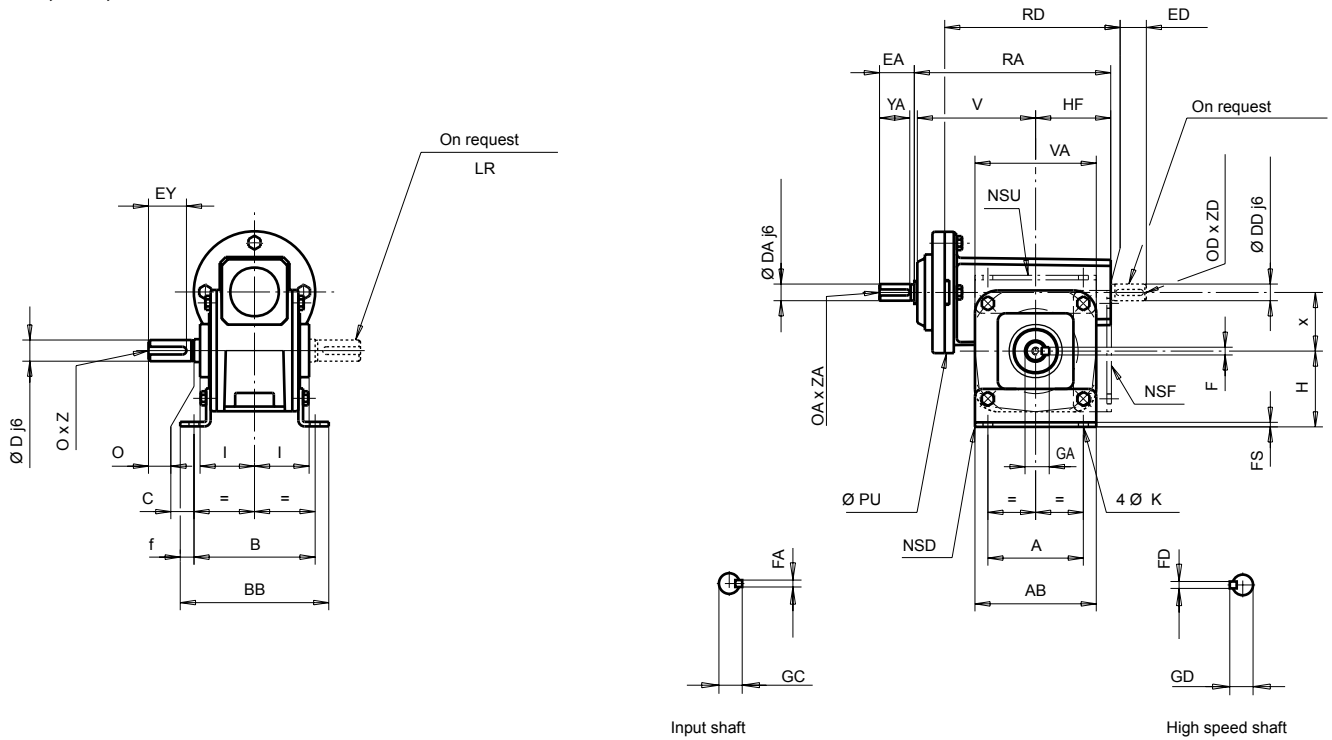
## Minibloc MVA

### Dimensions

Overall dimensions of Minibloc MVA gearboxes, mounting with AP input shaft, solid output shaft

Dimensions in millimetres

- NSD, NSF, NSU base form



**B**

PERPENDICULAR OUTPUT GEARED MOTORS

Gearboxes with NSD, NSF, NSU base																	kg	
Type	RD	RA	x	A	AB	B	BB	C	f	H	FS	V	VA	HF	I	K		PU
<b>MVA</b>	110	129.5	38.6	63	80	80	98	0	9	50	3	78	80	49	36	6.5	80	1.9

NB: in position NSF and NSU the axis side of the slow speed shaft against the feet fastenings is 50 mm.

Type	Input shaft							Solid output shaft						
	DA	EA	YA	GC	FA	OA	ZA	D	O	EY	GA	F	O	Z
<b>MVA</b>	11	23	18	12.5	4	M4	10	14	30	25	16	5	M5	15

High speed shaft (on request)						
Type	DD	ED	GD	FD	OD	ZD
<b>MVA</b>	11	23	12.5	4	M4	10

# Electromechanical products

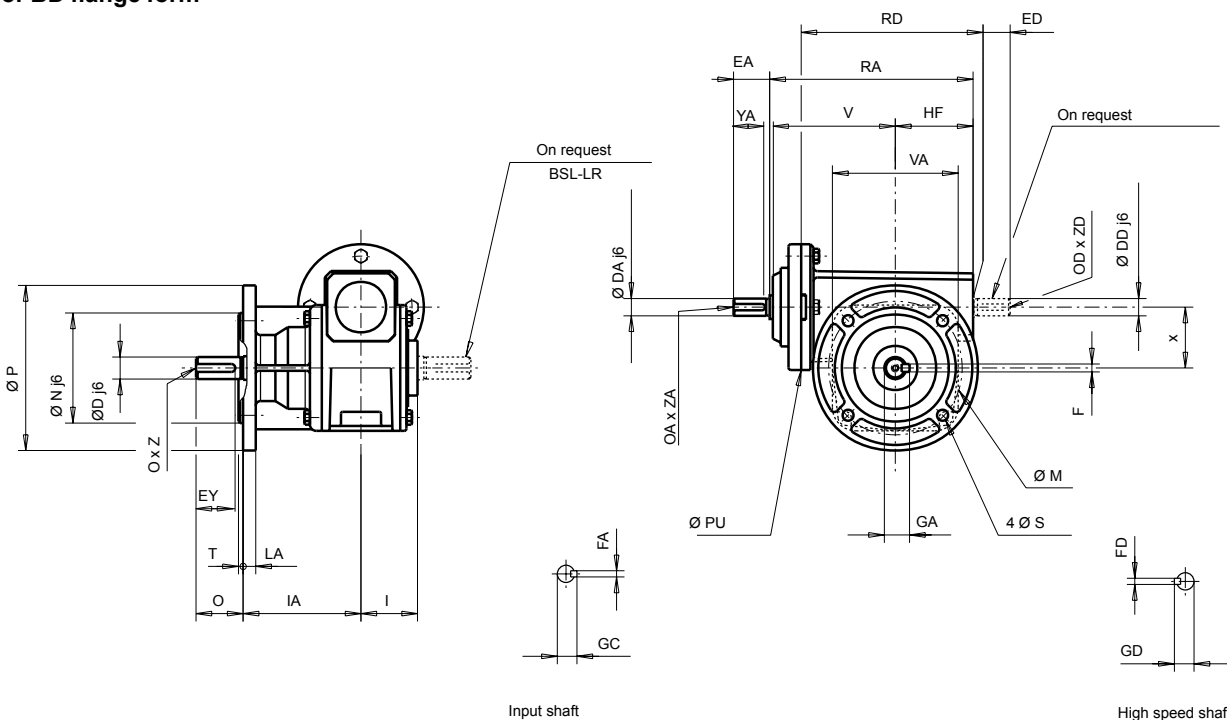
## Minibloc MVA

### Dimensions

Overall dimensions of Minibloc MVA gearboxes, mounting with AP input shaft, solid output shaft

Dimensions in millimetres

- BS or BD flange form



Type	Gearboxes with BS flange																kg
	RD	RA	x	M	N	P	O	LA	T	IA	I	V	VA	HF	PU		
MVA	110	129.5	38.6	85	70	105	7	8	2.5	75	36	78	80	49	80	2.2	

Type	Other possible flanges <sup>1</sup>																		
	BD1						BD2						BD3						
	M1	N1	P1	S1	LA1	T1	M2	N2	P2	S2	LA2	T2	M3	N3	P3	S3	LA3	T3	
MVA	65	50	80	5.5	8	2.5	100	80	120	7	8	3	115	95	140	9	8	3	

1. The letters are numbered to distinguish them from the letters on the standard flange diagram.

Type	Input shaft								Solid output shaft						
	DA	EA	YA	GC	FA	OA	ZA	D	O	EY	GA	F	O	Z	
MVA	11	23	18	12.5	4	M4	10	14	30	25	16	5	M5	15	

Type	High speed shaft (on request)					
	DD	ED	GD	FD	OD	ZD
MVA	11	23	12.5	4	M4	10

# Electromechanical products

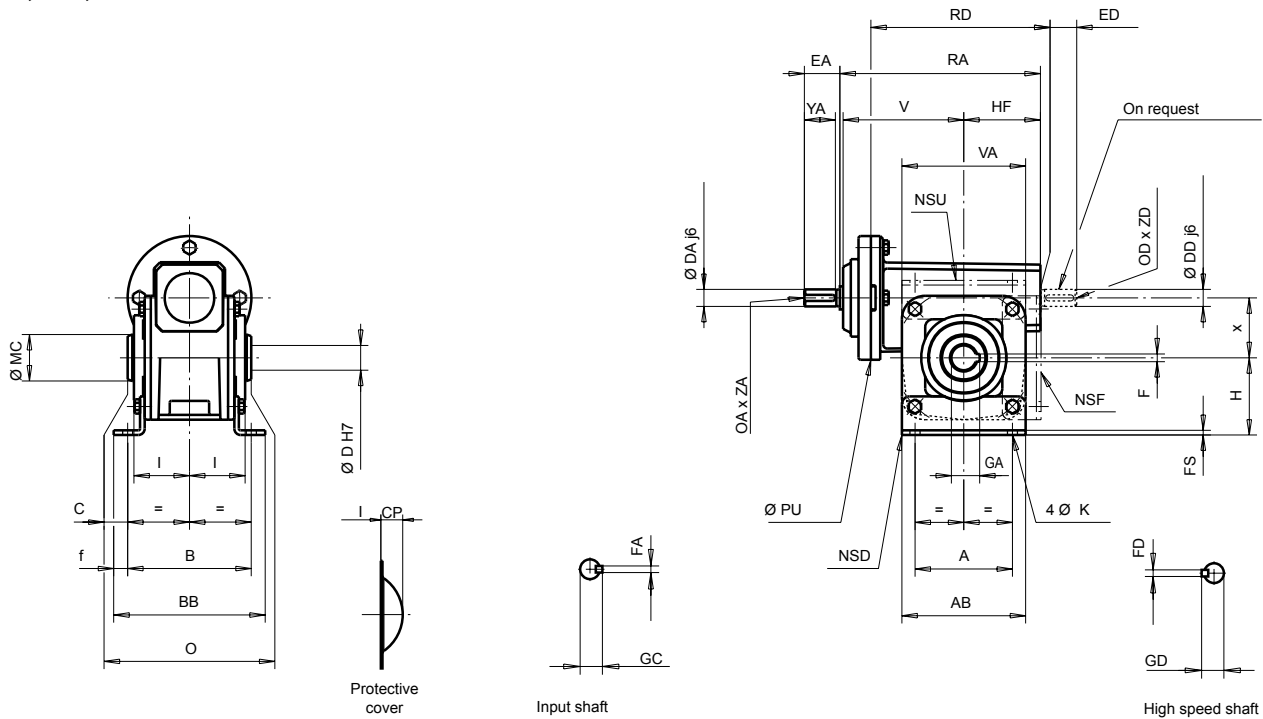
## Minibloc MVA

### Dimensions

Overall dimensions of Minibloc MVA gearboxes, mounting with AP input shaft, hollow output shaft (H)

Dimensions in millimetres

- NSD, NSF, NSU-H base form



Type	Gearboxes with NSD, NSF, NSU-H base																	kg
	RD	RA	x	A	AB	B	BB	C	f	H	FS	V	VA	HF	I	K	PU	
MVA	110	129.5	38.6	63	80	80	98	0	9	50	3	78	80	49	36	6.5	80	2.2

NB: in position NSF and NSU the axis side of the slow speed shaft against the feet fastenings is 50 mm.

Type	Input shaft						
	DA	EA	YA	GC	FA	OA	ZA
MVA	11	23	18	12.5	4	M4	10

Type	Hollow output shaft						Other possible hollow shaft <sup>1</sup>					
	D	O	MC	GA	F	CP	D1	E1	MC1	GA1	F1	CP1
MVA	16	80	30	18	5	16	20	80	30	23	6	16

1. The letters are numbered to distinguish them from the letters on the standard hollow shafts.

Type	High speed shaft (on request)					
	DD	ED	GD	FD	OD	ZD
MVA	11	23	12.5	4	M4	10

B  
PERPENDICULAR OUTPUT GEARED MOTORS

# Electromechanical products

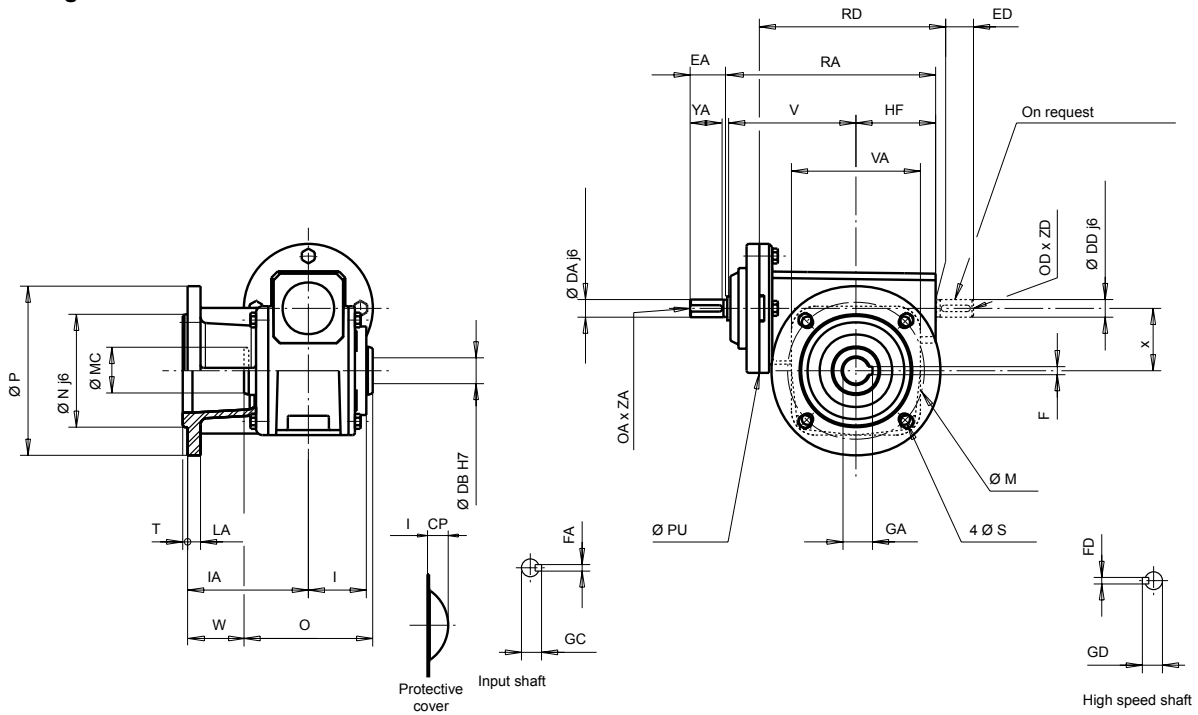
## Minibloc MVA


### Dimensions

Overall dimensions of Minibloc MVA gearboxes, mounting with AP input shaft, hollow output shaft (H)

Dimensions in millimetres

- BS - H flange form



Type	RD	RA	x	M	N	P	O	LA	T	IA	I	V	VA	HF	PU	 kg
	110	129.5	38.6	85	70	105	7	8	2.5	75	36	78	80	49	80	2.3

Type	DA	EA	YA	GC	FA	OA	ZA
	11	23	18	12.5	4	M4	10

Type	D	O	MC	GA	F	W	CP	D1	E1	MC1	GA1	F1	W1	CP1
	16	80	30	18	5	35	16	20	80	30	23	6	35	16

1. The letters are numbered to distinguish them from the letters on the standard hollow shafts.

Type	(on request)					
	DD	ED	GD	FD	OD	ZD
	11	23	12.5	4	M4	10

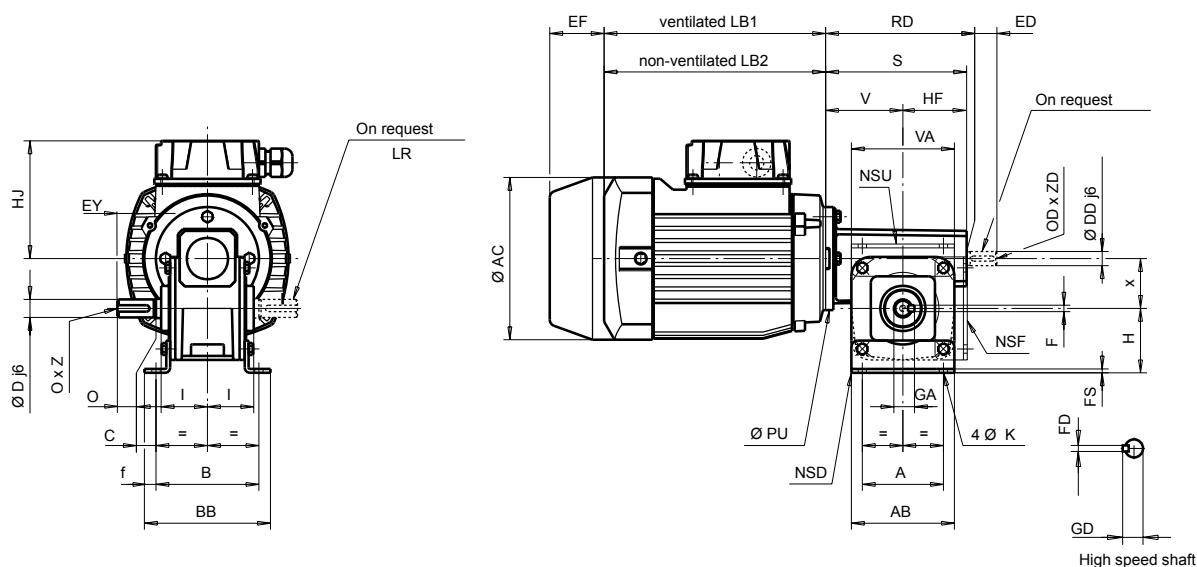
# Electromechanical products Minibloc MVA

## Dimensions

Overall dimensions for the Minibloc MVA geared motors, MI integral mounting, solid output shaft

Dimensions in millimetres

- NSD, NSF, NSU base form



Gearboxes with NSD, NSF, NSU base																	kg*	
Type	RD	RA	x	A	AB	B	BB	C	f	H	FS	V	VA	HF	I	K		PU
MVA	110	109.5	38.6	63	80	80	98	0	9	50	3	60.5	80	49	36	6.5	80	1.7

\* Gearbox only  
NB: in position NSF and NSU, the axis side of the slow speed shaft against the feet fastenings is 50 mm.

Solid output shaft							
Type	D	O	EY	GA	F	O	Z
MVA	14	30	25	16	5	M5	15

High speed shaft (on request)						
Type	DD	ED	GD	FD	OD	ZD
MVA	11	23	12.5	4	M4	10

Fr. size	Induction motors and brakes													
	3-phase LS					Single-phase LS					Brakes			
	AC	HJ	LB1	LB2	kg	AC	HJ	LB1	LB2	kg	EF max			
											FMD	FCR	FMD	FCR
56	110	85	156	135	3.4	110	90	156	135	3.5	50	-	0.9	-
63	124	95	172	150	4.3	124	110	172	150	4.5	50	-	0.9	-
71 <sup>2</sup>	140	102	183	155	6.5	140	129	183	155	7.5	50	90	0.9	2.5

1. Additional brake weight.  
2. For LS 71: 0.25 kW 6 poles three-phase, 0.37 kW 4 poles single-phase, 0.55 kW 4 poles three-phase: LB dimension = +9.

B

PERPENDICULAR OUTPUT GEARED MOTORS

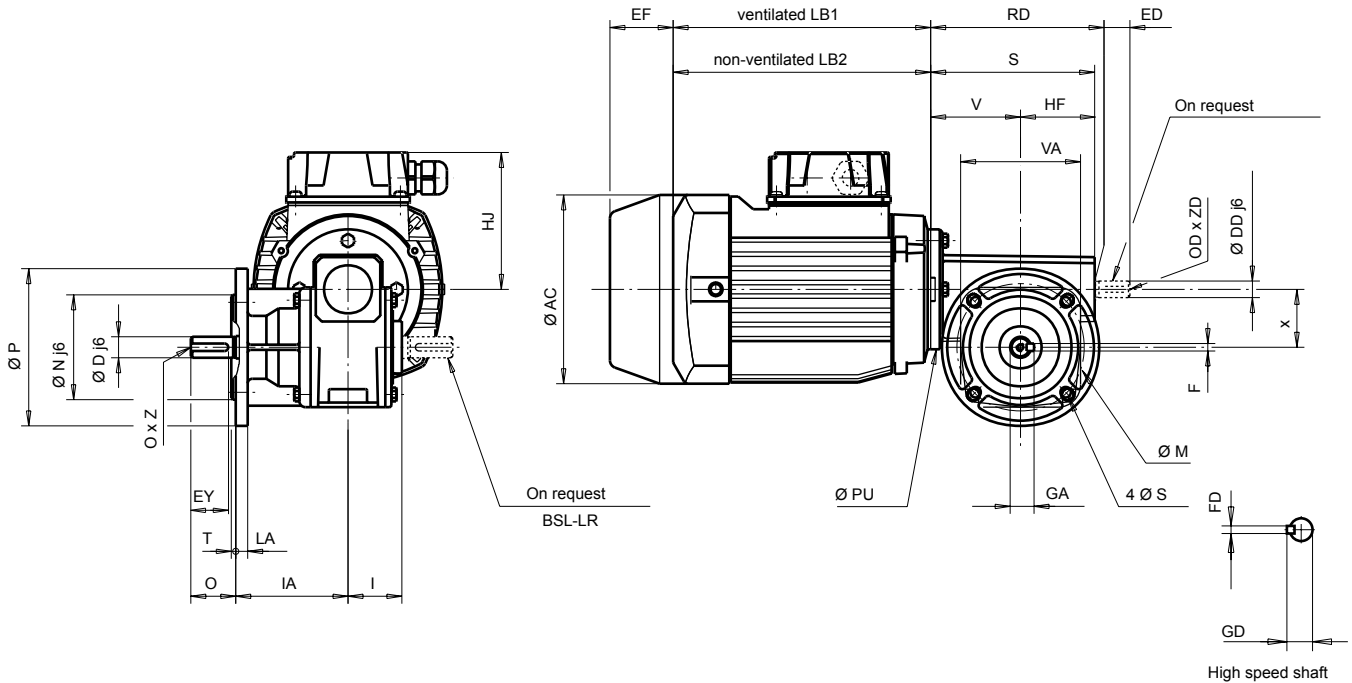
# Electromechanical products

## Minibloc MVA

### Dimensions

Dimensions in millimetres

- BS or BD flange form



Type	Gearboxes with BS flange																kg*
	RD	S	x	M	N	P	O	LA	T	IA	I	V	VA	HF	PU		
MVA	110	109.5	38.6	85	70	105	7	8	2.5	75	36	60.5	80	49	80	2	

\* Gearbox only

Type	Other possible flanges <sup>1</sup>																	
	BD1						BD2						BD3					
	M1	N1	P1	S1	LA1	T1	M2	N2	P2	S2	LA2	T2	M3	N3	P3	S3	LA3	T3
MVA	65	50	80	5.5	8	2.5	100	80	120	7	8	3	115	95	140	9	8	3

1. The letters are numbered to distinguish them from the letters on the standard flange diagram.

Type	Solid output shaft							High speed shaft (on request)					
	D	O	EY	GA	F	O	Z	DD	ED	GD	FD	OD	ZD
MVA	14	30	25	16	5	M5	15	11	23	12.5	4	M4	10

Fr. size	Induction motors and brakes													
	3-phase LS					Single-phase LS					Brakes			
	AC	HJ	LB1	LB2	kg	AC	HJ	LB1	LB2	kg	EF max			
56	110	85	156	135	3.4	110	90	156	135	3.5	FMD	FCR	FMD	FCR
63	124	95	172	150	4.3	124	110	172	150	4.5	50	-	0.9	-
71 <sup>2</sup>	140	102	183	155	6.5	140	129	183	155	7.5	50	90	0.9	2.5

1. Additional brake weight.

2. For LS 71: 0.25 kW 6 poles three-phase, 0.37 kW 4 poles single-phase, 0.55 kW 4 poles three-phase: LB dimension = +9.

# Electromechanical products

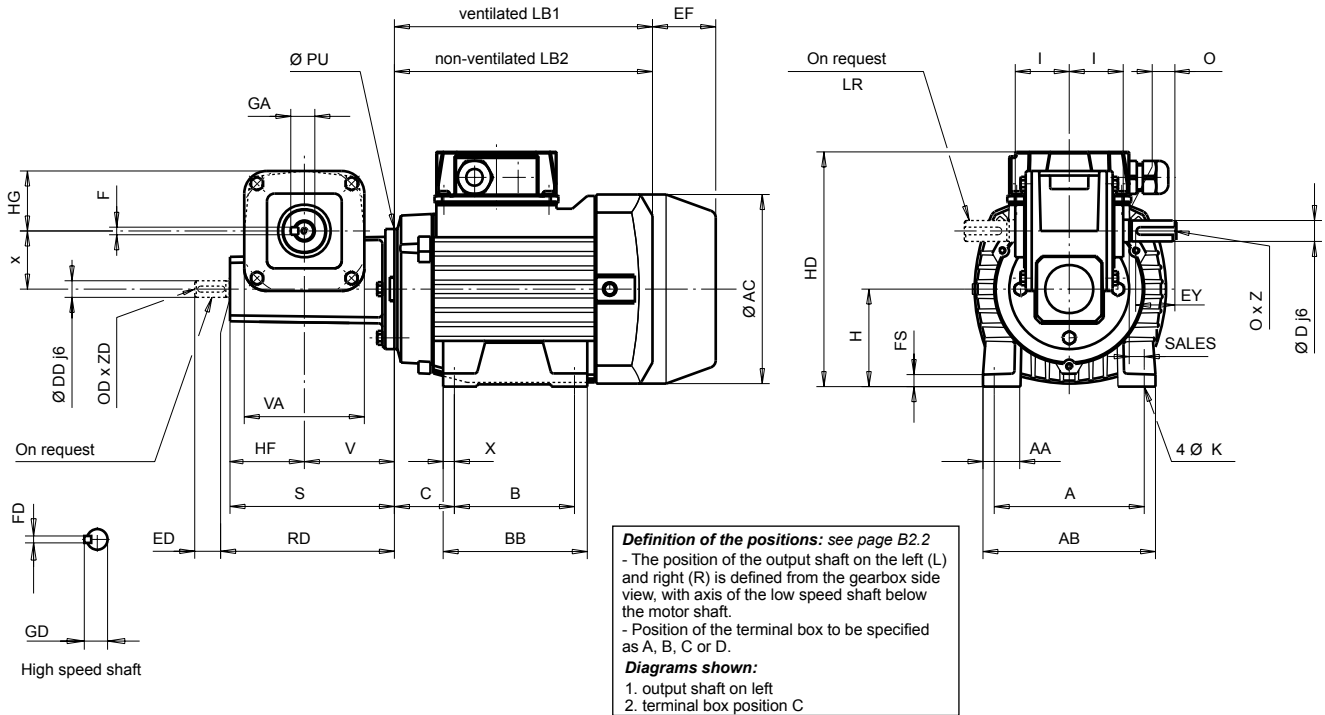
## Minibloc MVA

### Dimensions

Overall dimensions for the Minibloc MVA geared motors, MI integral mounting, solid output shaft

Dimensions in millimetres

#### - Motor foot mounting, NUPF outboard gearbox



Type	NUPF outboard gearboxes									kg*
	RD	S	x	HG	V	VA	HF	I	PU	
MVA	110	109.5	38.6	40	60.5	80	49	36	80	1.7

\* Gearbox only

Type	Solid output shaft							High speed shaft (on request)					
	D	O	EY	GA	F	O	Z	DD	ED	GD	FD	OD	ZD
MVA	14	30	25	16	5	M5	15	11	23	12.5	4	M4	10

Fr. size	Induction motors												3-phase LS		Single-phase LS	
	LS 3-phase and single phase												HD	kg	HD	kg
	AC	A	AA	AB	B	BB	C	SALES	H	FS	LB1	LB2				
56	110	90	24	104	71	89	36	5	56	5	156	132	141	3.4	146	3.5
63	124	100	30	115	80	94	40	10	63	6	172	150	158	4.3	173	4.5
71 <sup>1</sup>	140	112	22	126	90	104	45	16	71	6	183	155	173	6.5	200	7.5

1. For LS 71: 0.25 kW 6 poles three-phase, 0.37 kW 4 poles single-phase, 0.55 kW 4 poles three-phase: LB dimension = +9.

Type	Additional brake dimensions			
	EF max		kg <sup>1</sup>	
	FMD	FCR	FMD	FCR
56	50	-	0.9	-
63	50	-	0.9	-
71 <sup>2</sup>	50	90	0.9	2.5

1. Additional brake weight.

2. For LS 71: 0.25 kW 6 poles three-phase, 0.37 kW 4 poles single-phase, 0.55 kW 4 poles three-phase: LB dimension = +9.

**B**  
PERPENDICULAR OUTPUT GEARED MOTORS

# Electromechanical products

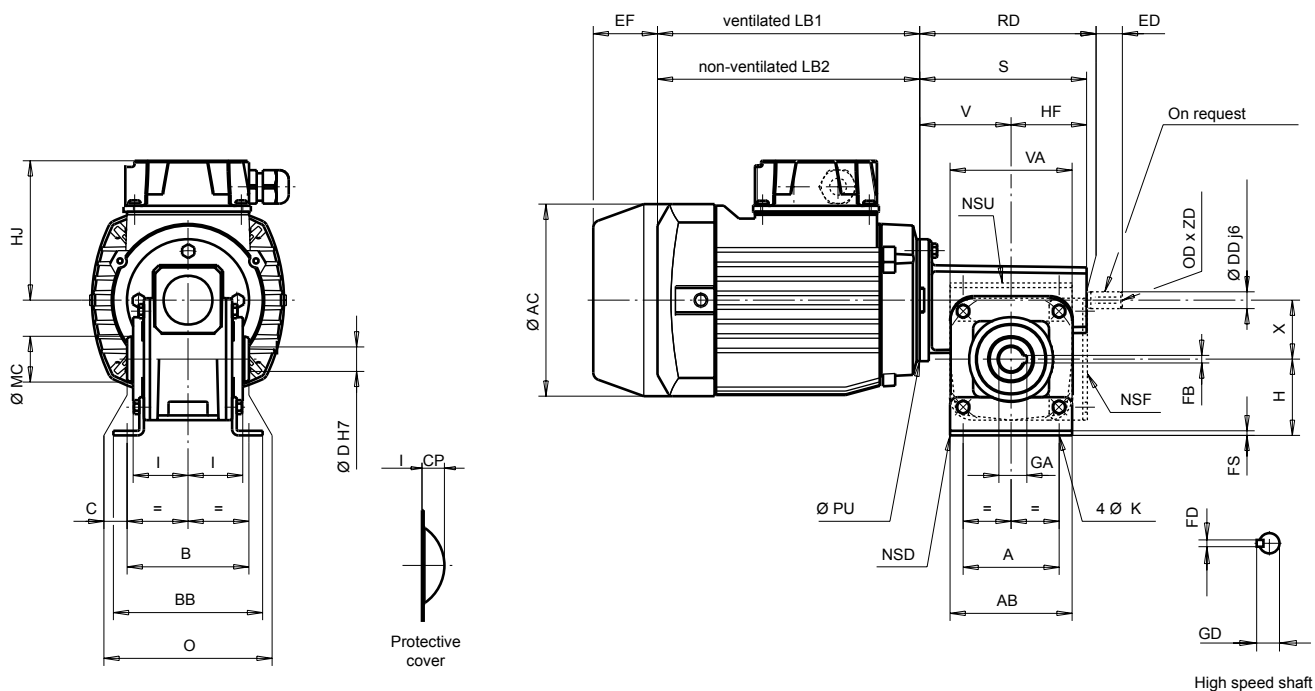
## Minibloc MVA

### Dimensions

Overall dimensions of Minibloc MVA geared motors, MI integrated mounting, hollow output shaft (H)

Dimensions in millimetres

- NSD, NSF, NSU-H base form



Type	Gearboxes with NSD, NSF, NSU-H base																	kg*
	RD	S	x	A	AB	B	BB	C	f	H	FS	V	VA	HF	I	K	PU	
MVA	110	109.5	38.6	63	80	80	98	0	9	50	3	60.5	80	49	36	6.5	80	2

\* Gearbox only

NB: in position NSF and S5 the axis side of the slow speed shaft against the feet fastenings is 50 mm.

Type	Hollow output shaft						Other possible hollow shaft <sup>1</sup>					
	D	O	MC	GA	F	CP	D1	E1	MC1	GA1	F1	CP1
MVA	16	80	30	18	5	16	20	80	30	23	6	16

1. The letters are numbered to distinguish them from the letters on the standard hollow shafts.

Type	High speed shaft (on request)					
	DD	ED	GD	FD	OD	ZD
MVA	11	23	12.5	4	M4	10

Fr. size	Induction motors and brakes										Brakes			
	3-phase LS					Single-phase LS					Brakes			
	AC	HJ	LB1	LB2	kg	AC	HJ	LB1	LB2	kg	EF max		kg <sup>1</sup>	
56	110	85	156	135	3.4	110	90	156	135	3.5	FMD	F CR	FMD	F CR
63	124	95	172	150	4.3	124	110	172	150	4.5	50	-	0.9	-
71 <sup>2</sup>	140	102	183	155	6.5	140	129	183	155	7.5	50	90	0.9	2.5

1. Additional brake weight.

2. For LS 71: 0.25 kW 6 poles three-phase, 0.37 kW 4 poles single-phase, 0.55 kW 4 poles three-phase: LB dimension = +9.



# Electromechanical products

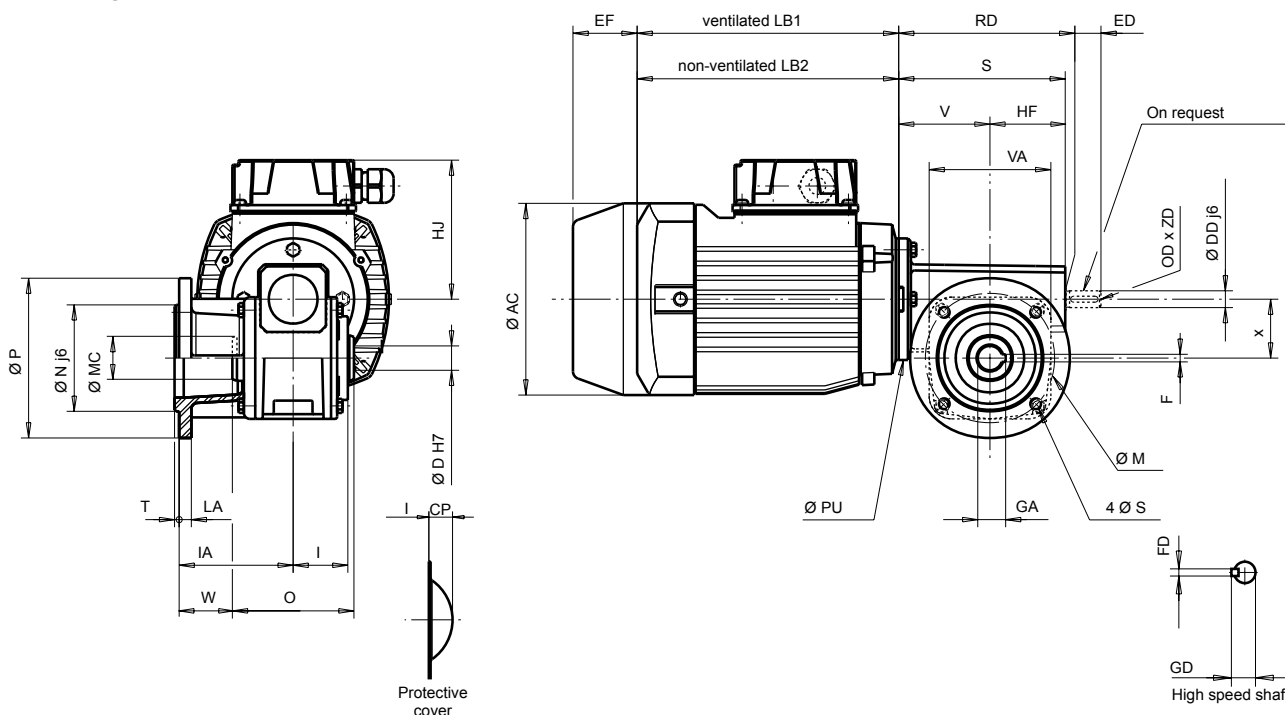
## Minibloc MVA

### Dimensions

Overall dimensions of Minibloc MVA geared motors, MI integrated mounting, hollow output shaft (H)

Dimensions in millimetres

- BS - H flange form



Gearboxes with BS-H flange

Type	RD	S	x	M	N	P	O	LA	T	IA	I	V	VA	HF	PU	kg*
MVA	110	109.5	38.6	85	70	105	7	8	2.5	75	36	60.5	80	49	80	2.1

\* Gearbox only

Hollow output shaft

Other possible hollow shaft<sup>1</sup>

Type	D	O	MC	GA	F	W	CP	D1	E1	MC1	GA1	F1	W1	CP1
MVA	16	80	30	18	5	35	16	20	80	30	23	6	35	16

1. The letters are numbered to distinguish them from the letters on the standard hollow shafts.

High speed shaft (on request)

Type	DD	ED	GD	FD	OD	ZD
MVA	11	23	12.5	4	M4	10

Induction motors and brakes

Fr. size	3-phase LS					kg	Single-phase LS				kg	Brakes			
	AC	HJ	LB1	LB2	AC		HJ	LB1	LB2	EF max		FMD	FCR		
										FMD				FCR	FMD
56	110	85	156	135	3.4	110	90	156	135	3.5	50	-	0.9	-	
63	124	95	172	150	4.3	124	110	172	150	4.5	50	-	0.9	-	
71 <sup>2</sup>	140	102	183	155	6.5	140	129	183	155	7.5	50	90	0.9	2.5	

1. Additional brake weight.

2. For LS 71: 0.25 kW 6 poles three-phase, 0.37 kW 4 poles single-phase, 0.55 kW 4 poles three-phase: LB dimension = +9.

B

PERPENDICULAR OUTPUT GEARED MOTORS

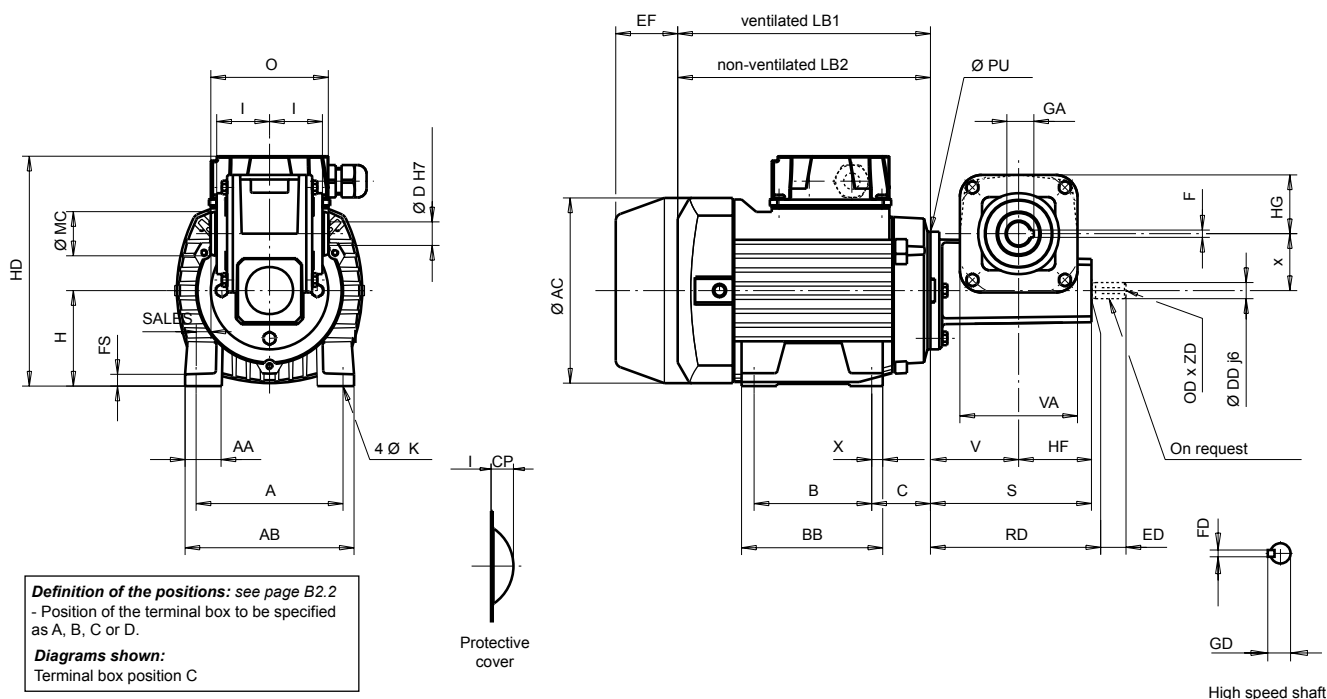
# Electromechanical products Minibloc MVA

## Dimensions

Overall dimensions of Minibloc MVA geared motors, MI integrated mounting, hollow output shaft (H)

Dimensions in millimetres

### - Motor foot mounting, NUPF - H outboard gearbox



Type	NUPF - H outboard gearboxes										kg*
	RD	S	x	HG	V	VA	HF	I	PU		
<b>MVA</b>	110	109.5	38.6	40	60.5	80	49	36	80	2	

\* Gearbox only

Type	Hollow output shaft						Other possible hollow shaft <sup>1</sup>						High speed shaft (on request)					
	D	O	MC	GA	F	CP	D1	E1	MC1	GA1	F1	CP1	DD	ED	GD	FD	OD	ZD
<b>MVA</b>	16	80	30	18	5	16	20	80	30	23	6	16	11	23	12.5	4	M4	10

1. The letters are numbered to distinguish them from the letters on the standard hollow shafts.

Fr. size	Induction motors															3-phase LS		Single-phase LS	
	LS 3-phase and single phase															kg	kg		
	AC	A	AA	AB	B	BB	C	X	SALES	K	H	FS	LB1	LB2	HD			kg	HD
<b>56</b>	110	90	24	104	71	89	36	9	5	6	56	5	156	132	141	3.4	146	3.5	
<b>63</b>	124	100	30	115	80	94	40	8	10	7	63	6	172	150	158	4.3	173	4.5	
<b>71<sup>1</sup></b>	140	112	22	126	90	104	45	7	16	7	71	6	183	155	173	6.5	200	7.5	

1. For LS 71: 0.25 kW 6 poles three-phase, 0.37 kW 4 poles single-phase, 0.55 kW 4 poles three-phase: LB dimension = +9.

Type	Additional brake dimensions			
	EF max		kg <sup>1</sup>	
	FMD	FCR	FMD	FCR
<b>56</b>	50	-	0.9	-
<b>63</b>	50	-	0.9	-
<b>71<sup>2</sup></b>	50	90	0.9	2.5

1. Additional brake weight.

2. For LS 71: 0.25 kW 6 poles three-phase, 0.37 kW 4 poles single-phase, 0.55 kW 4 poles three-phase: LB dimension = +9.

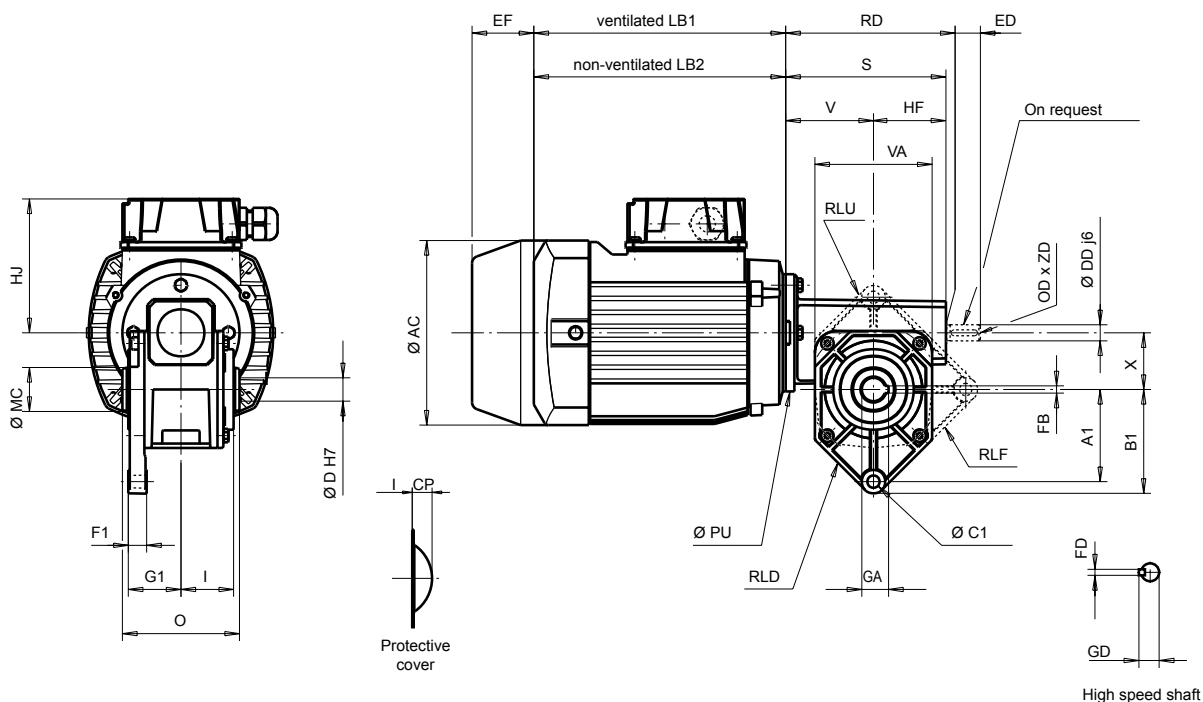
# Electromechanical products Minibloc MVA

## Dimensions

Dimensions of Minibloc MVA geared motors, MI integrated mounting, hollow output shaft (H) with torque arm

Dimensions in millimetres

- RLD, RLF, RLU, RRD, RRF, RRU - H form



B

PERPENDICULAR OUTPUT GEARED MOTORS

Gearboxes with RL, RR - H torque arm															kg*
Type	RD	S	x	B1	A1	I	G1	F1	C1	V	VA	HF	PU		
MVA	110	109.5	38.6	71.5	63	36	36	12.5	8.3	60.5	80	49	80	2	

\* Gearbox only

Type	Hollow output shaft						Other possible hollow shaft <sup>1</sup>					High speed shaft (on request)						
	D	O	MC	GA	F	CP	D1	E1	MC1	GA1	F1	CP1	DD	ED	GD	FD	OD	ZD
MVA	16	80	30	18	5	16	20	80	30	23	6	16	11	23	12.5	4	M4	10

1. The letters are numbered to distinguish them from the letters on the standard hollow shafts.

Fr. size	Induction motors and brakes													
	3-phase LS					Single-phase LS					Brakes			
	AC	HJ	LB1	LB2	kg	AC	HJ	LB1	LB2	kg	EF max			
											FMD	FCR	FMD	FCR
56	110	85	156	135	3.4	110	90	156	135	3.5	50	-	0.9	-
63	124	95	172	150	4.3	124	110	172	150	4.5	50	-	0.9	-
71 <sup>2</sup>	140	102	183	155	6.5	140	129	183	155	7.5	50	90	0.9	2.5

1. Additional brake weight.

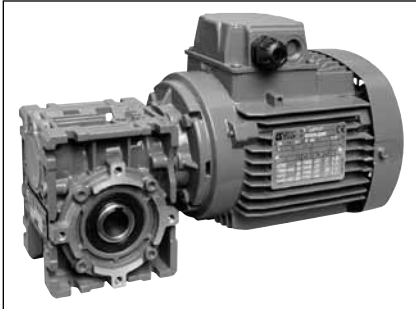
2. For LS 71: 0.25 kW 6 poles three-phase, 0.37 kW 4 poles single-phase, 0.55 kW 4 poles three-phase: LB dimension = +9.



# Electromechanical products

## Multibloc 4101

### General information



Multibloc 4101 geared motors with worm 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 (ns) in revolutions per minute (min<sup>-1</sup>). The main characteristic of speed reducers is the rated output torque (Mns) expressed in Newton-metres (Nm).

$$M_{ns} = \frac{P \times 9550}{n_s} \times \text{gearbox efficiency}$$

Rated output torque: up to 45 Nm.  
Power ratings: from 0.045 to 0.75 kW.  
Reduction ratios: from 5 to 100.  
Efficiency: from 47% to 88%.  
Very quiet operation.



PERPENDICULAR OUTPUT GEARED MOTORS

### Construction

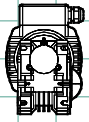
#### Description of Multibloc Mb 4101 gearboxes

Description	Materials	Comments
Frame	Aluminium	- multi-position - pressure die cast aluminium - heavily ribbed to improve the mechanical resistance and thermal dissipation
Gears	Steel + Bronze	- worm and wheel system • worm in tempered steel, ground sides • wheel in centrifuged bronze • angular play 10' to 25'
Shaft	Steel	- grinding of sealing surfaces - key in accordance with DIN 6883 - tolerance of diameters in accordance with IEC 72-1 (DIN 748) - for output shaft, tapped hole on shaft extension
Lipseals	Acrylonitrile Polyacrylate	- 100% sealing check before lubrication
Lubrication	Synthetic oil	- delivered with the quantity of oil corresponding to multi-position operation - maintenance-free, lubricated for the lifetime of the gearbox - no drain, level or fill plug - nominal ambient temperature range -16°C to +40°C
Mounting		MU: geared motor with CEI motor, completed with universal mounting (8 holes for LS56)
Motor		LS: multi-voltage 220/380V, 230/400V, 240/415V three-phase and 230V single-phase - pressed steel fan cover, on request fitted with a drip cover for operation in vertical position (shaft facing down) - terminal box fitted with cable gland with cable anti-damage system - IP55 standard protection - fixed onto gearbox using standard B14 flange
Brake motors		FMD: 3-phase or single-phase fail-safe brake induction motor, from 0.06 to 0.75 kW FCR: 3-phase failsafe brake induction motor, from 0.25 to 0.75 kW
Other motors		MFA: IP 44 D.C. motor from 0.075 to 0.37 kW (3000 min <sup>-1</sup> ) MBT: IP 40 or IP 44 low voltage D.C. motor (0.75 kW max)
Safety	Plastics	Protective cover of the output on the opposite side of the working shaft for all gearboxes with hollow shaft or separate shaft
Finish		Unpainted

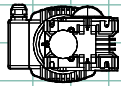
# Electromechanical products Multibloc 4101

## Mounting positions

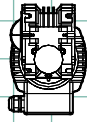
### Standard Multibloc 4101 multi-position M



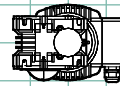
S - H - B3



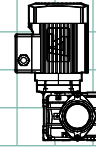
S - H - V5



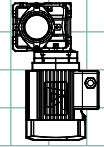
S - H - B8



S - H - V6



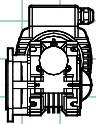
S - H - B7



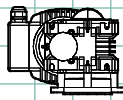
S - H - B6

Positions to be specified only if it is necessary to provide a drain hole on the motor.

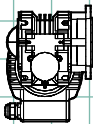
### Standard Multibloc 4101 with BS flange multi-position M, BSL or BSR



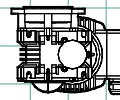
BSL - H - B5



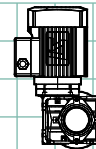
BSL - H - V1



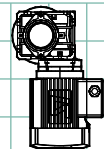
BSL - H - B53



BSL - H - V3



BSL - H - B54

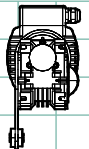


BSL - H - B52

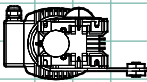
Other flange positions: on right (e.g.: BSR - H), on both sides (e.g.: BSLR - H).

Positions to be specified only if it is necessary to provide a drain hole on the motor.

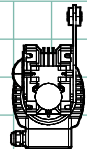
### Standard Multibloc 4101 with torque arm multi-position M, RKH (torque arm supplied separately)



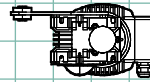
RKL - H - B3



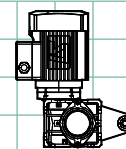
RKL - H - V5



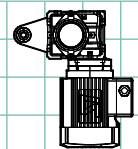
RKL - H - B8



RKL - H - V6



RKL - H - B7

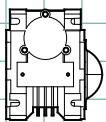


RKL - H - B6

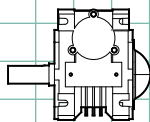
Positions to be specified only if it is necessary to provide a drain hole on the motor.

The torque arm kit is supplied unassembled as standard.

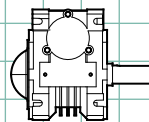
### Output types



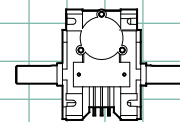
**H**  
Shaft: hollow,



**HL**  
Shaft: solid,  
output on the left

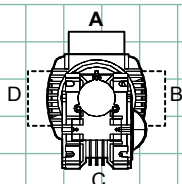


**HR**  
Shaft: solid,  
output on the right



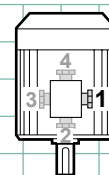
**HLR**  
Shaft: solid,  
double output

### Terminal box position



**A**: Standard

### Cable gland position



**1**: Standard

# Electromechanical products Multibloc 4101

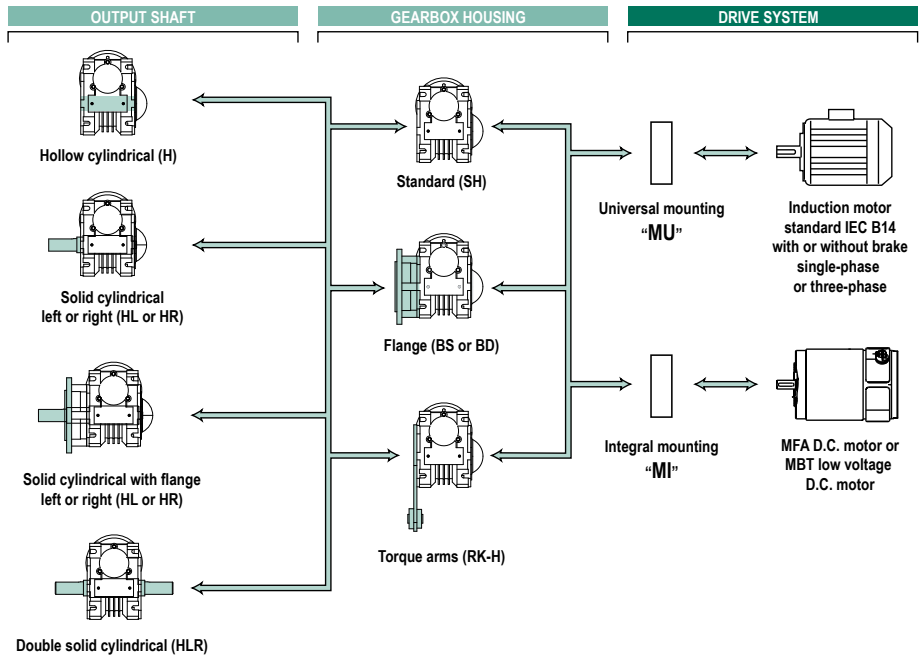
## Adaptation possibilities

Leroy-Somer offers different types of drive for its gearboxes which meet very wide-ranging needs. They are described in this catalogue.

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

*Multibloc Mb 4101 gearboxes can be used in conjunction with the following drives:*

- **single-phase induction motors:**
  - LS motor from 0.06 to 0.75 kW
  - LS FMD brake motor from 0.06 to 0.75 kW
- **three-phase induction motors:**
  - LS motor from 0.045 to 0.75 kW
  - LS FMD brake motor from 0.045 to 0.75 kW
  - LS FCR brake motor from 0.18 to 0.75 kW
- **D.C. motors:**
  - MFA from 0.075 to 0.37 kW (3000 min<sup>-1</sup>)
- **electronic D.C. geared motors:**
  - MVE from 0.075 to 0.37 kW (3000 min<sup>-1</sup>)
- **low-voltage D.C. motors (12 to 48 V):**
  - MBT from 0.07 to 0.75 kW



## Description / Coding

### GEARBOX

<b>Mb</b>	<b>4101</b>	<b>20</b>	<b>O</b>	<b>H</b>	<b>M</b>	<b>MU</b>
Gearbox type	Size and number of stages	Exact reduction	Mounting form	Output shaft	Operating position	Universal mounting

### MOTOR

<b>4P</b>	<b>LS 63 M</b>	<b>0.12 kW</b>	<b>230/400V 50 Hz</b>
Number of poles	LS motor type and frame size	Rated output power	Standard mains voltage and frequency: 230V 50 Hz 380-400V 50 Hz 415V 50 Hz 440-460V 60 Hz

### Example of coding:


Mb 4101 - 20 - S - H - M - MU - 4P - LS63M - 0.12 kW  
230/400 V - TRI - 50 Hz


**B**  
**PERPENDICULAR OUTPUT GEARED MOTORS**


# Electromechanical products

## Multibloc 4101

### Selection

LS ; LSMV 4p - 1 speed			Gearbox				LS VARMECA			
$n_s$ (min <sup>-1</sup> )	M (N.m)	Kp	Mb4101	i	$F_R E/2$ (N)		$n_{sMIN}$ (min <sup>-1</sup> )	$n_{sMAX}$ (min <sup>-1</sup> )	M (N.m)	Kp
LS 56 M; - LS 56 M FMD; -			<b>0.06 kW</b>				-			
13.6	12.71	2.34	Mb4101	100	3010	B3.10 to B3.14				
17	11.27	2.97	Mb4101	80	2750	B3.10 to B3.14				
22.67	9.44	3.89	Mb4101	60	2435	B3.10 to B3.14				
27.2	8.29	4.79	Mb4101	50	2215	B3.10 to B3.14				
34	7.12	5.89	Mb4101	40	2040	B3.10 to B3.14				
45.33	5.68	8.08	Mb4101	30	1780	B3.10 to B3.14				
54.4	5.06	7.73	Mb4101	25	1710	B3.10 to B3.14				
68	4.21	9.53	Mb4101	20	1545	B3.10 to B3.14				
90.67	3.29	12.52	Mb4101	15	1345	B3.10 to B3.14				
136	2.3	17.78	Mb4101	10	1090	B3.10 to B3.14				
181.33	1.76	23.25	Mb4101	7.5	985	B3.10 to B3.14				
272	1.2	29.56	Mb 4101	5	890	B3.10 to B3.14				

LS ; LSMV 4p - 1 speed			Gearbox				LS VARMECA			
$n_s$ (min <sup>-1</sup> )	M (N.m)	Kp	Mb4101	i	$F_R E/2$ (N)		$n_{sMIN}$ (min <sup>-1</sup> )	$n_{sMAX}$ (min <sup>-1</sup> )	M (N.m)	Kp
LS 56 M; - LS 56 M FMD; -			<b>0.09 kW</b>				-			
14	21.22	1.39	Mb4101	100	3010	B3.10 to B3.14				
17.5	18.8	1.77	Mb4101	80	2750	B3.10 to B3.14				
23.33	15.75	2.32	Mb4101	60	2435	B3.10 to B3.14				
28	13.82	2.86	Mb4101	50	2215	B3.10 to B3.14				
35	11.86	3.51	Mb4101	40	2040	B3.10 to B3.14				
46.67	9.47	4.82	Mb4101	30	1780	B3.10 to B3.14				
56	8.43	4.61	Mb4101	25	1710	B3.10 to B3.14				
70	7.02	5.68	Mb4101	20	1545	B3.10 to B3.14				
93.33	5.47	7.46	Mb4101	15	1345	B3.10 to B3.14				
140	3.83	10.62	Mb4101	10	1090	B3.10 to B3.14				
186.67	2.93	13.89	Mb4101	7.5	985	B3.10 to B3.14				
280	1.99	17.58	Mb4101	5	890	B3.10 to B3.14				


LS ; LSMV 4p - 1 speed			Gearbox				LS VARMECA			
$n_s$ (min <sup>-1</sup> )	M (N.m)	Kp	Mb4101	i	$F_R E/2$ (N)		$n_{sMIN}$ (min <sup>-1</sup> )	$n_{sMAX}$ (min <sup>-1</sup> )	M (N.m)	Kp
LS 63 M; - LS 63 M FMD; -			<b>0.12 kW</b>				-			
13.8	30.63	0.97	Mb4101	100	3010	B3.10 to B3.14				
17.25	27.15	1.23	Mb4101	80	2750	B3.10 to B3.14				
23	22.75	1.61	Mb4101	60	2435	B3.10 to B3.14				
27.6	19.96	1.98	Mb4101	50	2215	B3.10 to B3.14				
34.5	17.14	2.44	Mb4101	40	2040	B3.10 to B3.14				
46	13.68	3.35	Mb4101	30	1780	B3.10 to B3.14				
55.2	12.19	3.2	Mb4101	25	1710	B3.10 to B3.14				
69	10.14	3.94	Mb4101	20	1545	B3.10 to B3.14				
92	7.91	5.18	Mb4101	15	1345	B3.10 to B3.14				
138	5.54	7.36	Mb4101	10	1090	B3.10 to B3.14				
184	4.24	9.63	Mb4101	7.5	985	B3.10 to B3.14				
276	2.88	12.22	Mb4101	5	890	B3.10 to B3.14				





# Electromechanical products


## Multibloc 4101

### Selection

LS ; LSMV 4p - 1 speed			Gearbox				LS VARMECA			
$n_s$ (min <sup>-1</sup> )	M (N.m)	Kp	Mb4101	i	$F_R E/2$ (N)		$n_{S MIN}$ (min <sup>-1</sup> )	$n_{S MAX}$ (min <sup>-1</sup> )	M (N.m)	Kp
LS 63 M; - LS 63 M FMD; -			<b>0.18 kW</b>				-			
23.17	35.98	1.02	Mb4101	60	2435	B3.10 to B3.14				
27.8	31.57	1.25	Mb4101	50	2215	B3.10 to B3.14				
34.75	27.1	1.54	Mb4101	40	2040	B3.10 to B3.14				
46.33	21.63	2.11	Mb4101	30	1780	B3.10 to B3.14				
55.6	19.27	2.02	Mb4101	25	1710	B3.10 to B3.14				
69.5	16.04	2.49	Mb4101	20	1545	B3.10 to B3.14				
92.67	12.51	3.27	Mb4101	15	1345	B3.10 to B3.14				
139	8.76	4.65	Mb4101	10	1090	B3.10 to B3.14				
185.33	6.7	6.08	Mb4101	7.5	985	B3.10 to B3.14				
278	4.55	7.71	Mb4101	5	890	B3.10 to B3.14				

LS ; LSMV 4p - 1 speed			Gearbox				LS VARMECA			
$n_s$ (min <sup>-1</sup> )	M (N.m)	Kp	Mb4101	i	$F_R E/2$ (N)		$n_{S MIN}$ (min <sup>-1</sup> )	$n_{S MAX}$ (min <sup>-1</sup> )	M (N.m)	Kp
LS 71 M; - LS 71 M FMD; -			<b>0.25 kW</b>				-			
28.5	44.23	0.89	Mb4101	50	2215	B3.10 to B3.14				
35.62	37.95	1.09	Mb4101	40	2040	B3.10 to B3.14				
47.5	30.28	1.5	Mb4101	30	1780	B3.10 to B3.14				
57	26.96	1.43	Mb4101	25	1710	B3.10 to B3.14				
71.25	22.43	1.77	Mb4101	20	1545	B3.10 to B3.14				
95	17.5	2.32	Mb4101	15	1345	B3.10 to B3.14				
142.5	12.24	3.31	Mb4101	10	1090	B3.10 to B3.14				
190	9.36	4.33	Mb4101	7.5	985	B3.10 to B3.14				
285	6.36	5.46	Mb4101	5	890	B3.10 to B3.14				

LS ; LSMV 4p - 1 speed			Gearbox				LS VARMECA			
$n_s$ (min <sup>-1</sup> )	M (N.m)	Kp	Mb4101	i	$F_R E/2$ (N)		$n_{S MIN}$ (min <sup>-1</sup> )	$n_{S MAX}$ (min <sup>-1</sup> )	M (N.m)	Kp
LS 71 M; - LS 71 M FMD; -			<b>0.37 kW</b>				-			
47.33	46.2	0.99	Mb4101	30	1780	B3.10 to B3.14				
56.8	41.14	0.94	Mb4101	25	1710	B3.10 to B3.14				
71	34.22	1.16	Mb4101	20	1545	B3.10 to B3.14				
94.67	26.69	1.52	Mb4101	15	1345	B3.10 to B3.14				
142	18.68	2.17	Mb4101	10	1090	B3.10 to B3.14				
189.33	14.28	2.84	Mb4101	7.5	985	B3.10 to B3.14				
284	9.71	3.58	Mb4101	5	890	B3.10 to B3.14				

LS ; LSMV 4p - 1 speed			Gearbox				LS VARMECA			
$n_s$ (min <sup>-1</sup> )	M (N.m)	Kp	Mb4101	i	$F_R E/2$ (N)		$n_{S MIN}$ (min <sup>-1</sup> )	$n_{S MAX}$ (min <sup>-1</sup> )	M (N.m)	Kp
LS 71 L; - LS 71 L FMD; -			<b>0.55 kW</b>				-			
93.33	40.96	1	Mb4101	15	1345	B3.10 to B3.14				
140	28.67	1.42	Mb4101	10	1090	B3.10 to B3.14				
186.67	21.92	1.86	Mb4101	7.5	985	B3.10 to B3.14				
280	14.9	2.35	Mb4101	5	890	B3.10 to B3.14				


**B**


PERPENDICULAR OUTPUT GEARED MOTORS


# Electromechanical products

## Multibloc 4101

### Selection

LS ; LSMV 6p - 1 speed			Gearbox				LS VARMECA			
$n_s$ (min <sup>-1</sup> )	M (N.m)	Kp	Mb4101	$i$	$F_R E/2$ (N)		$n_{S MIN}$ (min <sup>-1</sup> )	$n_{S MAX}$ (min <sup>-1</sup> )	M (N.m)	Kp
LS 56 M; - LS 56 M FMD; -			<b>0.06 kW</b>				-			
8.50	21.91	1.49	Mb4101	100	3480	B3.10 to B3.14				
10.62	19.56	1.84	Mb4101	80	3190	B3.10 to B3.14				
14.17	16.54	2.44	Mb4101	60	2830	B3.10 to B3.14				
17.00	14.6	2.97	Mb4101	50	2615	B3.10 to B3.14				
21.25	12.61	3.68	Mb4101	40	2370	B3.10 to B3.14				
28.33	10.14	5	Mb4101	30	2070	B3.10 to B3.14				
34.00	9.11	4.83	Mb4101	25	1980	B3.10 to B3.14				
42.50	7.61	5.96	Mb4101	20	1790	B3.10 to B3.14				
56.67	5.97	7.84	Mb4101	15	1560	B3.10 to B3.14				
85.00	4.21	10.9	Mb4101	10	1280	B3.10 to B3.14				
113.33	3.23	14.21	Mb4101	7.5	1160	B3.10 to B3.14				
170.00	2.2	18.88	Mb4101	5	1050	B3.10 to B3.14				


LS ; LSMV 6p - 1 speed			Gearbox				LS VARMECA			
$n_s$ (min <sup>-1</sup> )	M (N.m)	Kp	Mb4101	$i$	$F_R E/2$ (N)		$n_{S MIN}$ (min <sup>-1</sup> )	$n_{S MAX}$ (min <sup>-1</sup> )	M (N.m)	Kp
LS 63 M; - LS 63 M FMD; -			<b>0.09 kW</b>				-			
8.60	35.08	0.93	Mb4101	100	3480	B3.10 to B3.14				
10.75	31.31	1.15	Mb4101	80	3190	B3.10 to B3.14				
14.33	26.47	1.52	Mb4101	60	2830	B3.10 to B3.14				
17.20	23.36	1.85	Mb4101	50	2615	B3.10 to B3.14				
21.50	20.17	2.3	Mb4101	40	2370	B3.10 to B3.14				
28.67	16.21	3.12	Mb4101	30	2070	B3.10 to B3.14				
34.40	14.57	3.01	Mb4101	25	1980	B3.10 to B3.14				
43.00	12.17	3.72	Mb4101	20	1790	B3.10 to B3.14				
57.33	9.54	4.89	Mb4101	15	1560	B3.10 to B3.14				
86.00	6.73	6.8	Mb4101	10	1280	B3.10 to B3.14				
114.67	5.16	8.86	Mb4101	7.5	1160	B3.10 to B3.14				
172.00	3.52	11.77	Mb4101	5	1050	B3.10 to B3.14				


LS ; LSMV 6p - 1 speed			Gearbox				LS VARMECA			
$n_s$ (min <sup>-1</sup> )	M (N.m)	Kp	Mb4101	$i$	$F_R E/2$ (N)		$n_{S MIN}$ (min <sup>-1</sup> )	$n_{S MAX}$ (min <sup>-1</sup> )	M (N.m)	Kp
LS 71 M; - LS 71 M FMD; -			<b>0.12 kW</b>				-			
11.88	39.36	0.9	Mb4101	80	3190	B3.10 to B3.14				
15.83	33.22	1.19	Mb4101	60	2830	B3.10 to B3.14				
19.00	29.28	1.45	Mb4101	50	2615	B3.10 to B3.14				
23.75	25.25	1.8	Mb4101	40	2370	B3.10 to B3.14				
31.67	20.27	2.44	Mb4101	30	2070	B3.10 to B3.14				
38.00	18.18	2.36	Mb4101	25	1980	B3.10 to B3.14				
47.50	15.18	2.91	Mb4101	20	1790	B3.10 to B3.14				
63.33	11.89	3.82	Mb4101	15	1560	B3.10 to B3.14				
95.00	8.37	5.33	Mb4101	10	1280	B3.10 to B3.14				
126.67	6.41	6.95	Mb4101	7.5	1160	B3.10 to B3.14				
190.00	4.37	9.18	Mb4101	5	1050	B3.10 to B3.14				

# Electromechanical products

## Multibloc 4101

### Selection

LS ; LSMV 6p - 1 speed			Gearbox				LS VARMECA			
$n_s$ (min <sup>-1</sup> )	$M$ (N.m)	Kp	Mb4101	$i$	$F_R E/2$ (N)		$n_{S MIN}$ (min <sup>-1</sup> )	$n_{S MAX}$ (min <sup>-1</sup> )	$M$ (N.m)	Kp
LS 71 M; - LS 71 M FMD; -			<b>0.18 kW</b>				-			
18.90	45.91	0.92	Mb4101	50	2615	B3.10 to B3.14				
23.62	39.6	1.15	Mb4101	40	2370	B3.10 to B3.14				
31.50	31.79	1.56	Mb4101	30	2070	B3.10 to B3.14				
37.80	28.51	1.51	Mb4101	25	1980	B3.10 to B3.14				
47.25	23.81	1.86	Mb4101	20	1790	B3.10 to B3.14				
63.00	18.65	2.44	Mb4101	15	1560	B3.10 to B3.14				
94.50	13.13	3.4	Mb4101	10	1280	B3.10 to B3.14				
126.00	10.06	4.44	Mb4101	7.5	1160	B3.10 to B3.14				
189.00	6.86	5.86	Mb4101	5	1050	B3.10 to B3.14				

LS ; LSMV 6p - 1 speed			Gearbox				LS VARMECA			
$n_s$ (min <sup>-1</sup> )	$M$ (N.m)	Kp	Mb4101	$i$	$F_R E/2$ (N)		$n_{S MIN}$ (min <sup>-1</sup> )	$n_{S MAX}$ (min <sup>-1</sup> )	$M$ (N.m)	Kp
LS 71 L; - LS 71 L FMD; -			<b>0.25 kW</b>				-			
22.88	57.92	0.79	Mb4101	40	2370	B3.10 to B3.14				
30.50	46.52	1.07	Mb4101	30	2070	B3.10 to B3.14				
36.60	41.74	1.04	Mb4101	25	1980	B3.10 to B3.14				
45.75	34.87	1.28	Mb4101	20	1790	B3.10 to B3.14				
61.00	27.32	1.68	Mb4101	15	1560	B3.10 to B3.14				
91.50	19.24	2.34	Mb4101	10	1280	B3.10 to B3.14				
122.00	14.75	3.05	Mb4101	7.5	1160	B3.10 to B3.14				
183.00	10.05	4.04	Mb4101	5	1050	B3.10 to B3.14				

B

PERPENDICULAR OUTPUT GEARED MOTORS

# Electromechanical products

## Multibloc 4101

### Slow speed shaft load

Slow speed shaft loads permissible depend on the reduction and mounting with or without flange.

#### Newton force (N)

2P motor (3000 min <sup>-1</sup> )						
Gearbox features			Clockwise or anti-clockwise			
Speed min <sup>-1</sup>	Reduction	Cmax Nm	HL or HR		BSL-HL and BSR-HR	
			Fr	Fa- or Fa+	Fr	Fa- or Fa+
28.0	100	23	2380	1900	1850	1900
35.0	80	25	2180	1690	1700	1690
46.7	60	28	1930	1440	1505	1440
56.0	50	30	1780	1290	1390	1290
70.1	40	31	1630	1140	1270	1140
93.4	30	34	1420	950	1110	950
112.1	25	28	1370	870	1070	870
140.1	20	29	1240	730	970	730
186.8	15	31	1070	560	835	560
280.2	10	21*	970	425	760	425
373.6	7.5	16*	890	355	700	355
560.4	5	11*	790	260	620	260

\* Limitation of the torque for 750W maximum power

4P motor (1500 min <sup>-1</sup> )						
Gearbox features			Clockwise or anti-clockwise			
Speed min <sup>-1</sup>	Reduction	Cmax Nm	HL or HR		BSL-HL and BSR-HR	
			Fr	Fa- or Fa+	Fr	Fa- or Fa+
14.0	100	29	3010	2000	2360	2600
17.4	80	33	2750	2000	2150	2365
23.3	60	36	2435	2000	1910	2000
27.9	50	39	2215	1800	1750	1800
34.9	40	41	2040	1700	1600	1500
46.5	30	45	1780	1300	1390	1300
55.8	25	38	1710	1340	1335	1180
69.8	20	39	1545	990	1200	1005
93.0	15	40	1345	770	1050	780
139.5	10	40	1090	430	850	435
186.0	7.5	33*	985	280	765	290
279.0	5	22*	890	160	690	170

\* Limitation of the torque for 750W maximum power

6P motor (1,000 min <sup>-1</sup> )						
Gearbox features			Clockwise or anti-clockwise			
Speed min <sup>-1</sup>	Reduction	Cmax Nm	HL or HR		BSL-HL and BSR-HR	
			Fr	Fa- or Fa+	Fr	Fa- or Fa+
9.1	100	32	3480	2500	2710	2500
11.3	80	35	3190	2500	2490	2500
15.1	60	39	2830	2500	2210	2500
18.1	50	42	2615	2240	2040	2240
22.6	40	45	2370	1970	1850	1970
30.2	30	49	2070	1645	1615	1645
36.2	25	43	1980	1460	1545	1460
45.3	20	44	1790	1240	1400	1240
60.3	15	45	1560	970	1220	970
90.5	10	44	1280	575	1000	575
120.7	7.5	36*	1160	400	905	400
181.0	5	24*	1050	240	820	240

\* Limitation of the torque for 550W maximum power

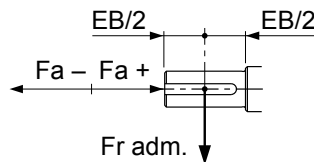
# Electromechanical products Multibloc 4101

## Slow speed shaft load

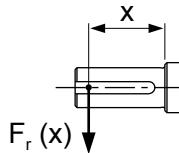
	Direction of the forces
SHR & BSR-HR	$F_{a+}$ = axial force PULLING on the shaft extension $F_{a-}$ = axial force PUSHING on the shaft extension
SHL & BSL-HL	$F_{a+}$ = axial force PUSHING on the shaft extension $F_{a-}$ = axial force PULLING on the shaft extension

$F_r$  adm. = radial force permissible on the shaft extension at 22.5 mm (EB/2) from the shoulder of the hollow shaft.

- NB: 1 - If there are 2 shaft extensions the permissible load  $F_r$  must be distributed.  
 2 - The force corresponds with the separate shaft in the hollow shaft.  
 3 - These values correspond with the least favourable loads.  
 SPECIFIC CASES: please consult Leroy-Somer.



Calculation of  $F_r(x)$  on non-concentric radial load:



### S-HL and S-HR

$$F_r(x) = \frac{94}{71.5 + x} \times F_r \text{ perm. and must be } \leq 3,100 \text{ N. max.}$$

### BSL-HL and BSR-HR

$$F_r(x) = \frac{120}{97.5 + x} \times F_r \text{ perm. and must be } \leq 2,500 \text{ N. max.}$$

B

PERPENDICULAR OUTPUT GEARED MOTORS

# Electromechanical products

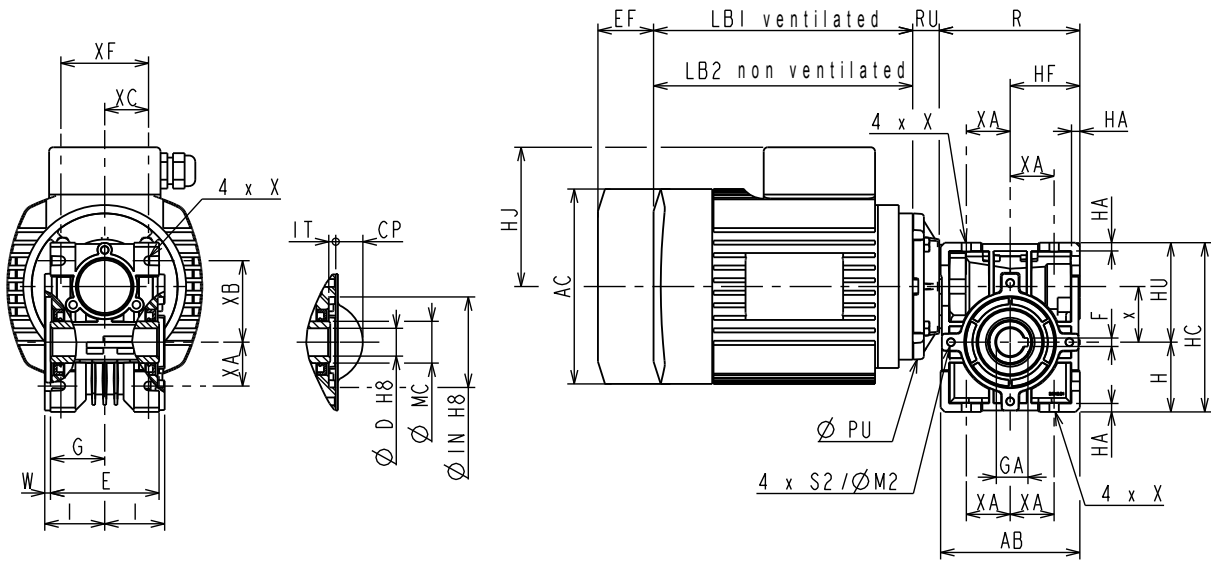
## Multibloc 4101

### Dimensions

Overall dimensions of Multibloc Mb 4101 geared motors, MU universal mounting, hollow output shaft (H)

Dimensions in millimetres

#### - S-H standard form



#### S-H standard gearboxes

Mb 4101

\* Gearbox only

#### Hollow output shaft

Mb 4101

#### Induction motors and brakes

3-phase LS

Single-phase LS

Brakes

1

56

63

71<sup>2</sup>

80

\*\* Motor only

1. Additional brake weight.

2. For LS 71: 0.25 kW 6 poles three-phase, 0.37 kW 4 poles single-phase, 0.55 kW 4 poles three-phase: LB dimension = +9.

LS56, LS63 and LS71 motors: B14 IEC standards (Note: LS56 = 8 holes).

LS80 motor: B14, F85, shaft extension 14x30.

# Electromechanical products

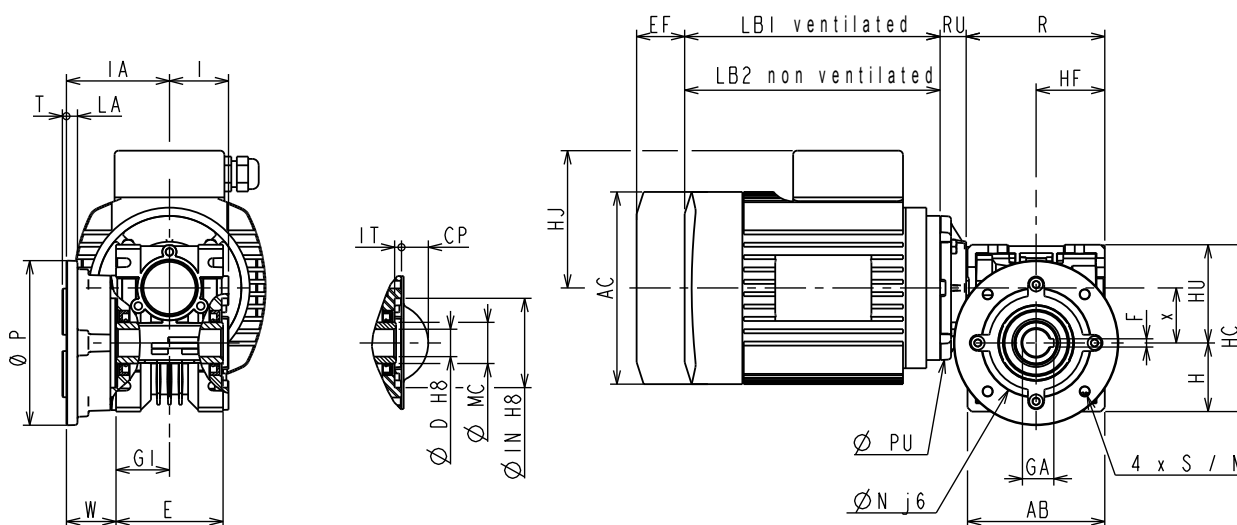
## Multibloc 4101

### Dimensions

Overall dimensions of Multibloc Mb 4101 geared motors, MU universal mounting, hollow output shaft (H)

Dimensions in millimetres

- BS-H or BD-H flange form



BS-H, BD-H standard gearboxes

Type	S	HC	AB	RU	H	x	HU	G	I	IA	IN	IT	M	N	P	O	LA	T	kg*	
<b>Mb 4101</b>	101	121.5	100	19	50	40	71.5	50	39	43	75	65	5	100	80	120	7	8	3	2.5

\* Gearbox only

Hollow output shaft

Type	D	O	GA	F	W	MC	CP
<b>Mb 4101</b>	20	78	22.8	6	36	30	20

Other possible flanges<sup>1</sup>

BD1						BD2					
M1	N1	P1	S1	LA1	T1	M2	N2	P2	S2	LA2	T2
85	70	105	7	7	3	115	95	140	9	8	3

1. The letters are numbered to distinguish them from the letters on the standard hollow shafts.

Induction motors and brakes

Fr. size	3-phase LS					kg	Single-phase LS					kg**	Brakes			
	AC	HJ	LB1	LB2	PU		AC	HJ	LB1	LB2	PU		EF max		kg <sup>1</sup>	
													FMD	FCR	FMD	FCR
<b>56</b>	110	85	156	135	80	3.4	110	93	156	135	80	3.5	50	-	0.9	-
<b>63</b>	124	90	172	150	90	4.3	124	98	172	150	90	4.5	50	-	0.9	-
<b>71<sup>2</sup></b>	140	102	183	155	105	6.5	140	110	183	155	105	7.5	50	88	0.9	2.5
<b>80</b>	170	114	215	177	105	10.9	170	122	215	177	105	11	-	77	-	7.2

\*\* Motor only

1. Additional brake weight.

2. For LS 71: 0.25 kW 6 poles three-phase, 0.37 kW 4 poles single-phase, 0.55 kW 4 poles three-phase: LB dimension = +9.

LS56, LS63 and LS71 motors: B14 IEC standards (Note: LS56 = 8 holes).

LS80 motor: B14, F85, shaft extension 14x30.

# Electromechanical products

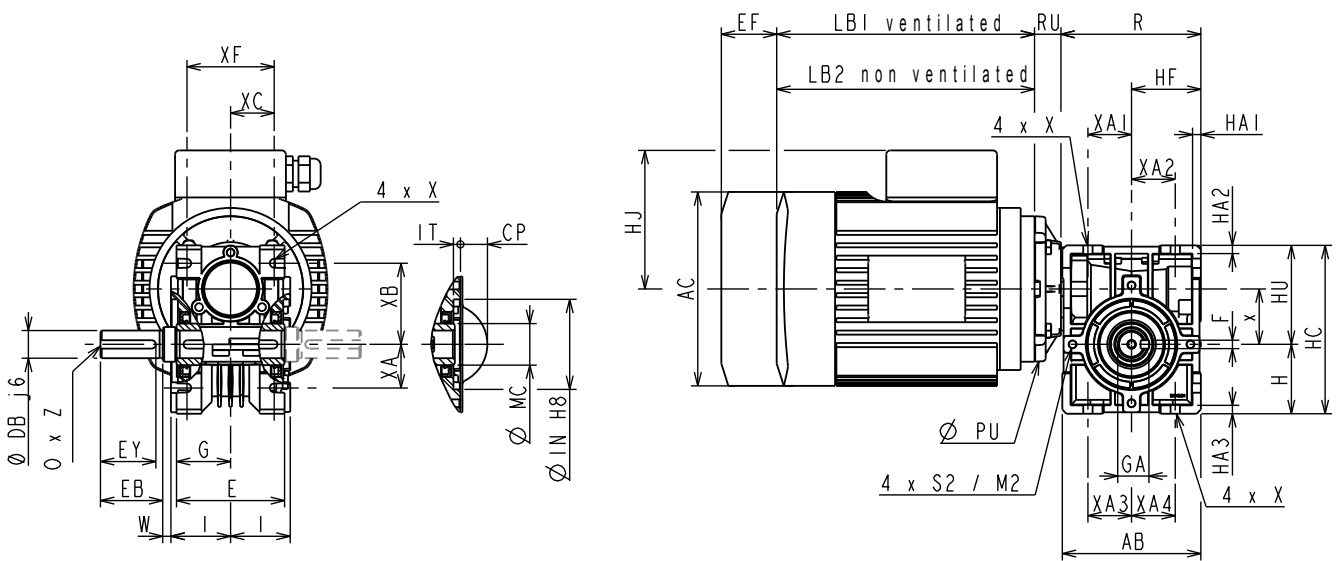
## Multibloc 4101

### Dimensions

Overall dimensions of the Multibloc Mb 4101 geared motors, MU universal mounting, separate solid output shaft (HL, HR, HLR)

Dimensions in millimetres

- S-HL, S-HR, S-HLR standard form



S-HL, S-HR, S-HLR standard gearboxes

Type	S	HC	AB	RU	H	x	HU	HF	FS	XA	XB	XC	XF	G	I	IN	IT	X	S2	M2	kg*
<b>Mb 4101</b>	101	121.5	100	19	50	40	71.5	50	6	31.5	58.5	31.5	63	39	43	65	5	6.5	M6x13	85	2.2

\* Gearbox only

Solid output shaft

Type	DB	EB	EY	O	GA	F	W	MC	O	Z
<b>Mb 4101</b>	20	45	40	78	22.5	6	0	30	M6	15

Induction motors and brakes

Fr. size	3-phase LS					kg	Single-phase LS					kg**	Brakes			
	AC	HJ	LB1	LB2	PU		AC	HJ	LB1	LB2	PU		EF max		kg <sup>1</sup>	
													FMD	FCR	FMD	FCR
<b>56</b>	110	85	156	135	80	3.4	110	93	156	135	80	3.5	50	-	0.9	-
<b>63</b>	124	90	172	150	90	4.3	124	98	172	150	90	4.5	50	-	0.9	-
<b>71<sup>2</sup></b>	140	102	183	155	105	6.5	140	110	183	155	105	7.5	50	88	0.9	2.5
<b>80</b>	170	114	215	177	105	10.9	170	122	215	177	105	11	-	77	-	7.2

\*\* Motor only

1. Additional brake weight.

2. For LS 71: 0.25 kW 6 poles three-phase, 0.37 kW 4 poles single-phase, 0.55 kW 4 poles three-phase: LB dimension = +9.

LS56, LS63 and LS71 motors: B14 IEC standards (Note: LS56 = 8 holes).

LS80 motor: B14, F85, shaft extension 14x30.



# Electromechanical products

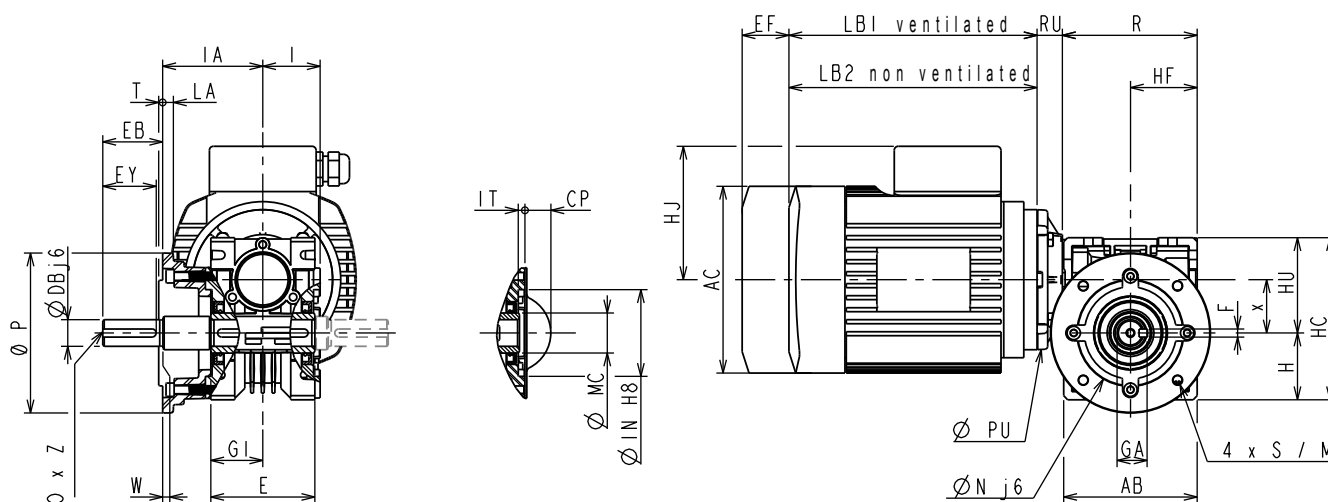
## Multibloc 4101

### Dimensions

Overall dimensions of the Multibloc Mb 4101 geared motors, MU universal mounting, separate solid output shaft (HL, HR, HLR)

Dimensions in millimetres

- BSL-HL, BSR-HR, BSL-HLR, BSR-HLR flange form  
or BDL-HL, BDR-HR, BDL-HLR, BDR-HLR



BSL-HL, BSR-HR, BSL-HLR, BSR-HLR standard gearboxes

Type	S	HC	AB	RU	H	x	HU	HF	G	I	IA	IN	IT	M	N	P	O	LA	T	kg*
<b>Mb 4101</b>	101	121.5	100	19	50	40	71.5	50	39	43	75	65	5	100	80	120	7	8	3	2.5

\* Gearbox only

Solid output shaft

Type	DB	EB	EY	O	GA	F	W	MC	O	Z
<b>Mb 4101</b>	20	45	40	78	22.5	6	0	30	M6	15

Other possible flanges<sup>1</sup>

Type	BD1						BD2					
	M1	N1	P1	S1	LA1	T1	M2	N2	P2	S2	LA2	T2
<b>Mb 4101</b>	85	70	105	7	7	3	115	95	140	9	8	3

1. The letters are numbered to distinguish them from the letters on the standard hollow shafts.

Induction motors and brakes

Fr. size	3-phase LS						Single-phase LS						Brakes			
	AC	HJ	LB1	LB2	PU	kg	AC	HJ	LB1	LB2	PU	kg**	EF max		kg <sup>1</sup>	
													FMD	FCR	FMD	FCR
<b>56</b>	110	85	156	135	80	3.4	110	93	156	135	80	3.5	50	-	0.9	-
<b>63</b>	124	90	172	150	90	4.3	124	98	172	150	90	4.5	50	-	0.9	-
<b>71<sup>2</sup></b>	140	102	183	155	105	6.5	140	110	183	155	105	7.5	50	88	0.9	2.5
<b>80</b>	170	114	215	177	105	10.9	170	122	215	177	105	11	-	77	-	7.2

\*\* Motor only

1. Additional brake weight.

2. For LS 71: 0.25 kW 6 poles three-phase, 0.37 kW 4 poles single-phase, 0.55 kW 4 poles three-phase: LB dimension = +9.

LS56, LS63 and LS71 motors: B14 IEC standards (Note: LS56 = 8 holes).

LS80 motor: B14, F85, shaft extension 14x30.

PERPENDICULAR OUTPUT GEARED MOTORS

B

# Electromechanical products

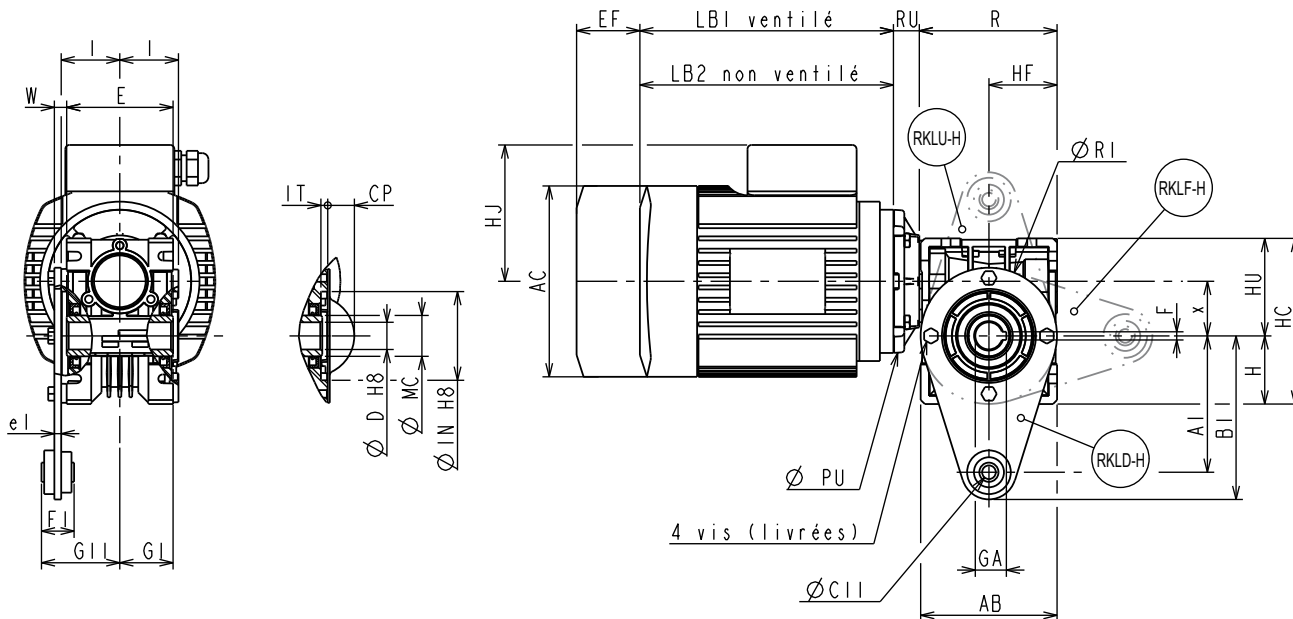
## Multibloc 4101

### Dimensions

Overall dimensions of Multibloc Mb 4101 geared motors, MU universal mounting, hollow output shaft (H), with torque arm

Dimensions in millimetres

- RK-K form (torque arm supplied separately)



Gearboxes with RK-H torque arm

Type	S	HC	AB	RU	H	x	HU	HF	G	I	IN	IT	A1	B1	R1	C1	F1	G1	e1	Screw	kg*
<b>Mb 4101</b>	101	121.5	100	19	50	40	71.5	50	39	43	65	5	100	120	100	10	24	57.5	5	M6x16	2.8

\* Gearbox only

To make it easier for adaptation on the machine, the torque arm is delivered (with its fixing screws) not mounted on the gearbox (RK-H).

Hollow output shaft

Type	D	O	GA	F	W	MC	CP
<b>Mb 4101</b>	20	78	22.8	6	9	30	20

Induction motors and brakes

Fr. size	3-phase LS						Single-phase LS						Brakes			
	AC	HJ	LB1	LB2	PU	kg	AC	HJ	LB1	LB2	PU	kg**	EF max		kg <sup>1</sup>	
													FMD	FCR	FMD	FCR
<b>56</b>	110	85	156	135	80	3.4	110	93	156	135	80	3.5	50	-	0.9	-
<b>63</b>	124	90	172	150	90	4.3	124	98	172	150	90	4.5	50	-	0.9	-
<b>71<sup>2</sup></b>	140	102	183	155	105	6.5	140	110	183	155	105	7.5	50	88	0.9	2.5
<b>80</b>	170	114	215	177	105	10.9	170	122	215	177	105	11	-	77	-	7.2

\*\* Motor only

1. Additional brake weight.

2. For LS 71: 0.25 kW 6 poles three-phase, 0.37 kW 4 poles single-phase, 0.55 kW 4 poles three-phase: LB dimension = +9.

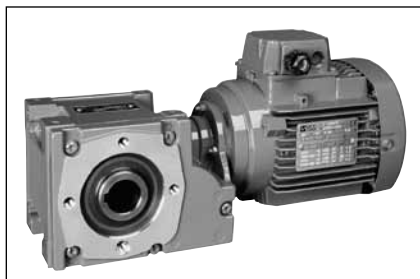
LS56, LS63 and LS71 motors: B14 IEC standards (Note: LS56 = 8 holes).

LS80 motor: B14, F85, shaft extension 14x30.

# Electromechanical products

## Minibloc MVDE - MVBE - MVAE

### General information



Minibloc MVDE-MVBE-MVAE gearboxes are machines with double reduction gear.

- Input train: high quality worm and wheel system used to ensure low noise level during operation.
- Output train: with hardened steel helical gears, used to ensure high output performance levels.

The unit is very compact and this combination achieves excellent efficiency with the stated reductions.

Three sizes: MVDE-MVBE-MVAE.  
 Rated output torque: from 15 to 200 N.m.  
 Power ratings: from 0.06 to 0.75 kW.  
 Reduction ratios: from 1/21 to 1/623.  
 Two reduction stages.  
 Reversible up to 1/100.  
 Very quiet operation.

For large batches, this type of gearbox can be supplied with a monobloc low speed shaft. Distinctions should be made between the different components:

- standard mounting: separate low speed shaft in the hollow shaft (S-HL, S-HR, S-HLR);
- customised mounting: monobloc low speed shaft (S-L, S-R, S-LR).

### Construction

#### Description of Minibloc gearboxes MVDE-MVBE-MVAE

Description	Materials	Comments
Frame	Aluminium	- monobloc - very compact - fixing holes on all sides - multi-position, adaptation possible for base, flange, etc. - heat treated to ensure high rigidity and ruggedness
Gears	Steel + bronze	- primary train: worm in heat-treated and tempered steel, ground threads, bronze wheel - secondary train: helical gears in Ni Cr Mo steel - ensures very quiet operation
Shaft	Steel	- solid or hollow - ground sealing surfaces - key in accordance with DIN 6883 - tolerance of diameters in accordance with IEC 72-1 (DIN 748) - tapped holes at solid or removable shaft extensions
Lipseals	Acrylonitrile	- antidust lipseals on slow speed shaft
End shield	Aluminium	- ensures the ruggedness of the gearbox with heavy loads
Lubrication	Oil	- maintenance-free, lubricated for the lifetime of the gearbox - no drain, level or fill plug - vent hole on request - delivered with the quantity of oil corresponding to multi-position operation - nominal ambient temperature range -16°C to +40°C
Mounting		MU: with CEI motor, completed with universal mounting (8 holes for LS56) MI: geared motor with integrated motor
Standard motors		LS: multi-voltage 220/380 V, 230/400 V, 240/415 V three-phase and 230 V single-phase - pressed steel fan cover, on request fitted with a drip cover for operation in vertical position (shaft facing down) - terminal box fitted with cable gland with cable anti-damage system - IP55 standard protection
Brake motors		FMD: 3-phase or single-phase failsafe brake motor, from 0.06 to 0.75 kW FCR: fail-safe brake induction motor, from 0.25 to 0.75 kW
Other motors		MFA: IP 44 D.C. motor from 0.075 to 0.37 kW (3000 min <sup>-1</sup> ) MBT: low voltage D.C. motor (0.75 kW max)
Safety	Plastics	Protective cover of the output on the opposite side of the working shaft for all gearboxes with hollow shaft or separate shaft
Finish	External finishing	Shade: RAL 6000 (green), system I (1 polyurethane acrylic layer of 25/30 µm)



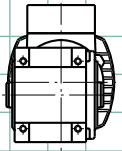
PERPENDICULAR OUTPUT GEARED MOTORS

# Electromechanical products

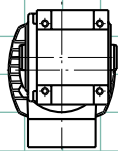
## Minibloc MVDE - MVBE - MVAE

### Mounting positions

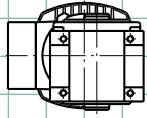
#### Standard Minibloc MVDE-MVBE-MVAE multi-position M



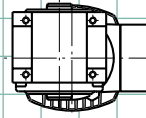
NU-H B3



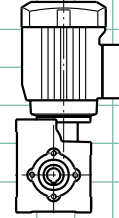
NU-H B8



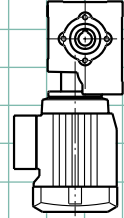
NU-H V5



NU-H V6

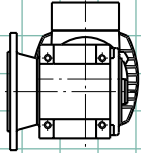


NU-H B7

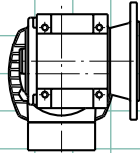


NU-H B6

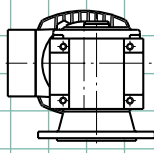
#### Standard Minibloc MVDE-MVBE-MVAE with B flange multi-position M, BSL or BSR



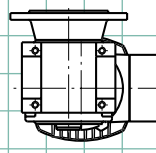
BSL-H B5



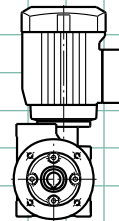
BSL-H B53



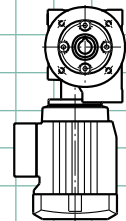
BSL-H V1



BSL-H V3



BSL-H B54

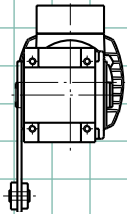


BSL-H B52

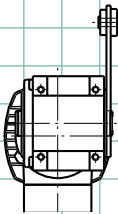
Other flange positions: on right (e.g.: BS), on both sides (e.g.: BSLR).

Positions to be specified only if it is necessary to provide: vent, fill, level or drain hole.

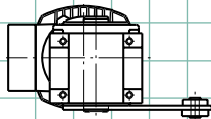
#### Standard Minibloc MVDE-MVBE-MVAE with torque arm multi-position M, RKLH (torque arm supplied separately)



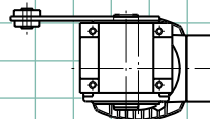
RKL-H B3



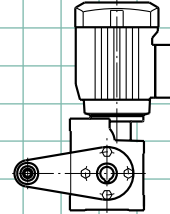
RKL-H B8



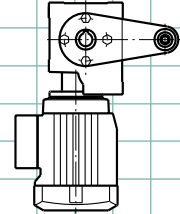
RKL-H V5



RKL-H V6



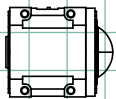
RKL-H B7



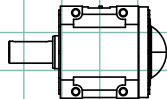
RKL-H B6

Positions to be specified only if it is necessary to provide: vent, fill, level or drain hole.

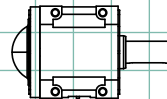
#### Output type



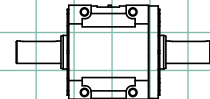
H  
Shaft: hollow



HL  
Solid shaft output on left

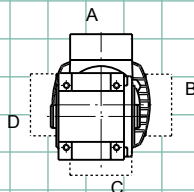


HR  
Solid shaft output on right



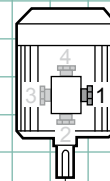
HLR  
Double solid shaft output

#### Terminal box positions



A: standard

#### Cable gland positions



1: standard

# Electromechanical products

## Minibloc MVDE - MVBE - MVAE

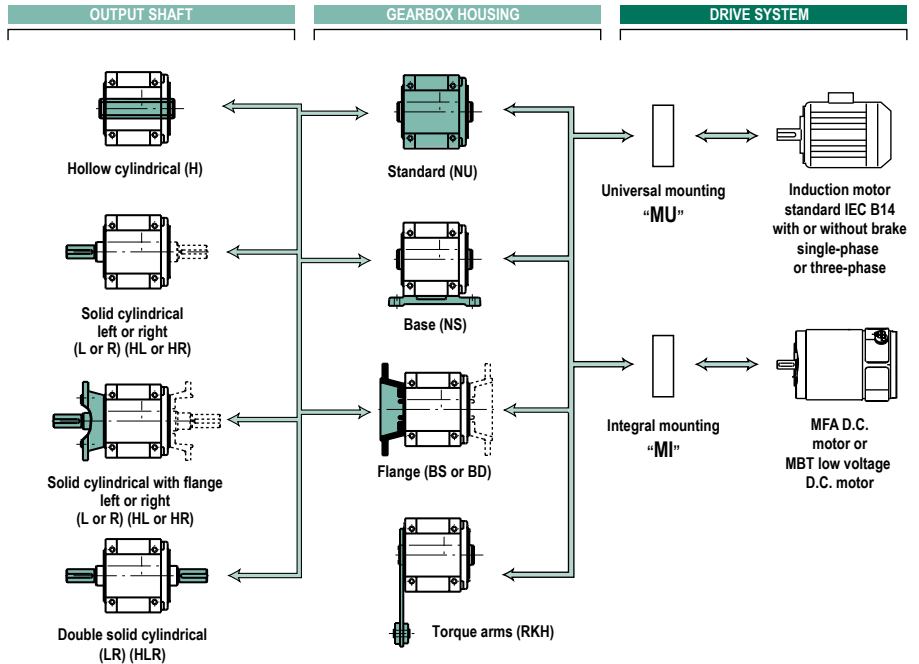
### Adaptation possibilities

Leroy-Somer offers different types of drive for its gearboxes which meet very wide-ranging needs. They are described in this catalogue.

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

*Minibloc MVDE-MVBE-MVAE gearboxes can be used in conjunction with the following drives:*

- **single-phase induction motors:**
  - LS motor from 0.06 to 0.75 kW
  - LS FMD brake motor from 0.06 to 0.55 kW
- **three-phase induction motors:**
  - LS motor from 0.06 to 0.75 kW
  - LS FMD brake motor from 0.06 to 0.55 kW
  - LS FCR brake motor from 0.18 to 0.75 kW
- **D.C. motors:**
  - MFA from 0.075 to 0.37 kW (3000 min<sup>-1</sup>)
- **electronic D.C. geared motors:**
  - MVE from 0.075 to 0.37 kW (3000 min<sup>-1</sup>)
- **low-voltage D.C. motors (12 to 48 V):**
  - MBT from 0.07 to 0.55 kW



**B**  
**PERPENDICULAR OUTPUT GEARED MOTORS**

### Description / Coding

#### GEARBOX

<b>MV</b>	<b>Design Office</b>	<b>120</b>	<b>NS</b>	<b>D</b>	<b>H</b>	<b>M</b>	<b>MI</b>
Gearbox type	Size and number of stages	Exact reduction	Mounting form	Mounting position	Output shaft	Operating position	Integral mounting

#### MOTOR

<b>4P</b>	<b>LS 63 M</b>	<b>0.12 kW</b>	<b>230/400V 50 Hz</b>
Number of poles	LS motor type and frame size	Rated output power	Standard mains voltage and frequency: 230V 50 Hz 380-400V 50 Hz 415V 50 Hz 440-460V 60 Hz


#### Example of coding:

MVBE - 120 - NS D - H - M - MI - 4P - LS63M - 0.12 kW  
230/400 V - TRI - 50 Hz

# Electromechanical products

## Minibloc MVDE - MVBE - MVAE


### Selection

LS ; LSMV 4p - 1 speed			Gearbox				LS VARMECA			
$n_s$ (min <sup>-1</sup> )	$M$ (N.m)	Kp	MV (DE-BE-AE)	$i$	$F_r E/2$ (N)		$n_{sMIN}$ (min <sup>-1</sup> )	$n_{sMAX}$ (min <sup>-1</sup> )	$M$ (N.m)	Kp
LS 56 M; - LS 56 M FMD; -			<b>0.06 kW</b>				-			
2.18	69	1.33	MVAE	623	5000	B4.31				
2.43	62.16	1.33	MVAE	561	5000	B4.31				
2.52	36.89	1.07	MVBE	540	2500	B4.21				
2.62	59.05	2.06	MVAE	519	5000	B4.31				
2.91	53.2	2.06	MVAE	467	5000	B4.31				
3.02	39.37	1.45	MVBE	450	2500	B4.21				
3.28	52.62	2.85	MVAE	415	5000	B4.31				
3.78	41.38	1.73	MVBE	360	2500	B4.21				
3.93	50.61	3.21	MVAE	346	5000	B4.31				
3.94	32.05	1.34	MVDE	345.5	1640	B4.17				
4.05	34.97	1.96	MVBE	336	2500	B4.21				
4.35	29	1.34	MVDE	312.5	1760	B4.17				
4.37	45.59	3.21	MVAE	312	5000	B4.31				
4.53	34.59	1.97	MVBE	300	2500	B4.21				
4.84	26.05	1.34	MVDE	280.8	1760	B4.17				
4.92	41.88	4.47	MVAE	277	5000	B4.31				
4.93	28.69	1.96	MVBE	275.7	2500	B4.21				
5.44	29.67	1.56	MVDE	250	1760	B4.17				
5.46	37.72	4.52	MVAE	249.2	5000	B4.31				
5.52	28.38	1.97	MVBE	246.2	2500	B4.21				
5.96	33.9	2.8	MVBE	228	2500	B4.21				
6.05	26.66	1.56	MVDE	224.6	1760	B4.17				
6.55	34.89	5.73	MVAE	208	5000	B4.31				
6.56	27.7	1.8	MVDE	207.3	1760	B4.17				
7.25	25.05	1.8	MVDE	187.5	1760	B4.17				
7.27	27.81	2.8	MVBE	187.1	2500	B4.21				
7.28	31.43	6.36	MVAE	187	5000	B4.31				
7.56	28.02	3.08	MVBE	180	2500	B4.21				
8.07	22.51	1.8	MVDE	168.5	1760	B4.17				
8.73	28.58	6.11	MVAE	155.8	5000	B4.31				
9.44	25.24	3.53	MVBE	144	2500	B4.21				
9.83	25.89	7.72	MVAE	138	5000	B4.31				
9.84	22.71	2.16	MVDE	138.2	1760	B4.17				
10.88	20.54	2.16	MVDE	125	1760	B4.17				
10.91	23.33	7.85	MVAE	125	5000	B4.31				
11.33	22.86	3.73	MVBE	120	2500	B4.21				
12.11	18.45	2.16	MVDE	112.3	1760	B4.17				
12.59	20.66	4.15	MVBE	108	2500	B4.21				
13.11	19.82	9.51	MVAE	103.8	4630	B4.31				
13.12	20.36	2.35	MVDE	103.6	1760	B4.17				
13.81	18.76	3.73	MVBE	98.5	2500	B4.21				
14.51	18.41	2.35	MVDE	93.8	1760	B4.17				
14.55	17.86	10.43	MVAE	93.5	4390	B4.31				
15.11	18.7	4.71	MVBE	90	2500	B4.21				
16.15	16.54	2.35	MVDE	84.2	1760	B4.17				
16.79	16.45	9.6	MVAE	81	4330	B4.31				
18.89	16.17	5.51	MVBE	72	2500	B4.21				
19.66	14.37	10.54	MVAE	69	4140	B4.31				
19.68	15.2	3.28	MVDE	69.1	1760	B4.17				
21.76	13.75	3.28	MVDE	62.5	1760	B4.17				
21.83	12.95	10.54	MVAE	62.3	4050	B4.31				
22.67	14.16	6.09	MVBE	60	2500	B4.21				
24.22	12.36	3.28	MVDE	56.2	1760	B4.17				
27.54	10.26	10.54	MVAE	49	3880	B4.31				
27.62	11.62	6.09	MVBE	49.2	2437	B4.21				
30.25	9.71	14.91	MVAE	45	3460	B4.31				
30.28	11.13	4.54	MVDE	44.9	1760	B4.17				
32.38	10.24	7.26	MVBE	42	2437	B4.21				
33.48	10.07	4.54	MVDE	40.6	1760	B4.17				
33.58	8.74	14.91	MVAE	40.5	3410	B4.31				
37.26	9.04	4.54	MVDE	36.5	1760	B4.17				
39.33	7.6	16.31	MVAE	34.6	3240	B4.31				
39.46	8.41	7.26	MVBE	34.5	2164	B4.21				
43.52	8.22	6.03	MVDE	31.3	1760	B4.17				
43.65	6.85	16.31	MVAE	31.2	3180	B4.31				
45.33	7.77	8.83	MVBE	30	1969	B4.21				
48.44	7.39	6.03	MVDE	28.1	1760	B4.17				
54.4	6.68	5.8	MVDE	25	1760	B4.17				
55.09	5.42	16.31	MVAE	24.7	3050	B4.31				
55.25	6.38	8.83	MVBE	24.6	1969	B4.21				
60.55	6.01	5.8	MVDE	22.5	1728	B4.17				
64.76	5.61	10.86	MVBE	21	1651	B4.21				

# Electromechanical products

## Minibloc MVDE - MVBE - MVAE

### Selection

LS ; LSMV 4p - 1 speed			Gearbox				LS VARMECA			
$n_s$ (min <sup>-1</sup> )	M (N.m)	Kp	MV (DE-BE-AE)	$i$	$F_r E/2$ (N)		$n_{sMIN}$ (min <sup>-1</sup> )	$n_{sMAX}$ (min <sup>-1</sup> )	M (N.m)	Kp
LS 56 M; - LS 56 M FMD; -			<b>0.09 kW</b>				:			
2.7	104.81	1.15	MVAE	519	5000	B4.31				
3	94.42	1.15	MVAE	467	5000	B4.31				
3.11	62.55	0.93	MVBE	450	2350	B4.21				
3.37	93.34	1.6	MVAE	415	5000	B4.31				
3.89	65.7	1.1	MVBE	360	2350	B4.21				
4.05	89.7	1.79	MVAE	346	5000	B4.31				
4.05	50.94	0.84	MVDE	345.5	1540	B4.17				
4.17	55.53	1.25	MVBE	336	2500	B4.21				
4.48	46.08	0.84	MVDE	312.5	1540	B4.17				
4.49	80.81	1.79	MVAE	312	5000	B4.31				
4.67	54.93	1.26	MVBE	300	2500	B4.21				
4.99	41.4	0.84	MVDE	280.8	1640	B4.17				
5.06	74.2	2.5	MVAE	277	5000	B4.31				
5.08	45.57	1.25	MVBE	275.7	2500	B4.21				
5.6	47.12	0.98	MVDE	250	1540	B4.17				
5.62	66.84	2.53	MVAE	249.2	5000	B4.31				
5.69	45.07	1.26	MVBE	246.2	2500	B4.21				
6.14	53.79	1.79	MVBE	228	2500	B4.21				
6.23	42.34	0.98	MVDE	224.6	1540	B4.17				
6.75	61.8	3.24	MVAE	208	5000	B4.31				
6.75	43.98	1.13	MVDE	207.3	1540	B4.17				
7.47	39.79	1.13	MVDE	187.5	1640	B4.17				
7.48	44.13	1.79	MVBE	187.1	2500	B4.21				
7.49	55.67	3.59	MVAE	187	5000	B4.31				
7.78	44.41	1.97	MVBE	180	2500	B4.21				
8.31	35.75	1.13	MVDE	168.5	1640	B4.17				
8.99	50.58	3.43	MVAE	155.8	5000	B4.31				
9.72	40.04	2.26	MVBE	144	2500	B4.21				
10.12	45.83	4.36	MVAE	138	5000	B4.31				
10.13	36.03	1.36	MVDE	138.2	1640	B4.17				
11.2	32.59	1.36	MVDE	125	1640	B4.17				
11.23	41.29	4.41	MVAE	125	5000	B4.31				
11.67	36.24	2.39	MVBE	120	2500	B4.21				
12.47	29.28	1.36	MVDE	112.3	1760	B4.17				
12.96	32.76	2.66	MVBE	108	2500	B4.21				
13.49	35.08	5.35	MVAE	103.8	4630	B4.31				
13.51	32.28	1.47	MVDE	103.6	1640	B4.17				
14.22	29.74	2.38	MVBE	98.5	2500	B4.21				
14.93	29.2	1.47	MVDE	93.8	1640	B4.17				
14.98	31.6	5.86	MVAE	93.5	4390	B4.31				
15.56	29.64	3.01	MVBE	90	2500	B4.21				
16.62	26.24	1.47	MVDE	84.2	1760	B4.17				
17.28	29.09	5.4	MVAE	81	4330	B4.31				
19.44	25.62	3.53	MVBE	72	2500	B4.21				
20.24	25.42	5.93	MVAE	69	4140	B4.31				
20.26	24.1	2.06	MVDE	69.1	1760	B4.17				
22.4	21.8	2.06	MVDE	62.5	1760	B4.17				
22.47	22.9	5.93	MVAE	62.3	4050	B4.31				
23.33	22.43	3.9	MVBE	60	2500	B4.21				
24.93	19.59	2.06	MVDE	56.2	1760	B4.17				
28.35	18.15	5.93	MVAE	49	3880	B4.31				
28.44	18.41	3.9	MVBE	49.2	2437	B4.21				
31.14	17.16	8.39	MVAE	45	3460	B4.31				
31.17	17.63	2.86	MVDE	44.9	1760	B4.17				
33.33	16.23	4.65	MVBE	42	2437	B4.21				
34.46	15.94	2.86	MVDE	40.6	1760	B4.17				
34.57	15.46	8.39	MVAE	40.5	3410	B4.31				
38.36	14.33	2.86	MVDE	36.5	1760	B4.17				
40.48	13.43	9.18	MVAE	34.6	3240	B4.31				
40.62	13.31	4.65	MVBE	34.5	2164	B4.21				
44.8	13.02	3.79	MVDE	31.3	1760	B4.17				
44.94	12.1	9.18	MVAE	31.2	3180	B4.31				
46.67	12.31	5.65	MVBE	30	1969	B4.21				
49.86	11.69	3.79	MVDE	28.1	1760	B4.17				
56	10.58	3.64	MVDE	25	1760	B4.17				
56.71	9.59	9.18	MVAE	24.7	3050	B4.31				
56.88	10.10	5.65	MVBE	24.6	1969	B4.21				
62.33	9.51	3.64	MVDE	22.5	1728	B4.17				
66.67	8.88	6.94	MVBE	21	1651	B4.21				




PERPENDICULAR OUTPUT GEARED MOTORS

# Electromechanical products

## Minibloc MVDE - MVBE - MVAE

### Selection


LS ; LSMV 4p - 1 speed			Gearbox				LS VARMECA			
$n_s$ (min <sup>-1</sup> )	$M$ (N.m)	Kp	MV (DE-BE-AE)	$i$	$F_r E/2$ (N)		$n_{sMIN}$ (min <sup>-1</sup> )	$n_{sMAX}$ (min <sup>-1</sup> )	$M$ (N.m)	Kp
LS 63 M; - LS 63 M FMD; -			<b>0.12 kW</b>				-			
3.33	138.57	1.08	MVAE	415	5000	B4.31				
3.99	133.23	1.21	MVAE	346	5000	B4.31				
4.11	78.31	0.88	MVBE	336	2350	B4.21				
4.43	120.02	1.21	MVAE	312	5000	B4.31				
4.6	77.47	0.88	MVBE	300	2350	B4.21				
4.99	110.22	1.69	MVAE	277	5000	B4.31				
5.01	64.26	0.88	MVBE	275.7	2350	B4.21				
5.54	99.29	1.71	MVAE	249.2	5000	B4.31				
5.61	63.56	0.88	MVBE	246.2	2350	B4.21				
6.05	75.88	1.26	MVBE	228	2350	B4.21				
6.65	91.82	2.18	MVAE	208	5000	B4.31				
6.66	62.03	0.8	MVDE	207.3	1540	B4.17				
7.36	56.11	0.8	MVDE	187.5	1540	B4.17				
7.38	62.26	1.26	MVBE	187.1	2350	B4.21				
7.38	82.72	2.42	MVAE	187	5000	B4.31				
7.67	62.69	1.39	MVBE	180	2350	B4.21				
8.19	50.41	0.8	MVDE	168.5	1540	B4.17				
8.86	75.18	2.31	MVAE	155.8	5000	B4.31				
9.58	56.5	1.59	MVBE	144	2500	B4.21				
9.98	68.12	2.94	MVAE	138	5000	B4.31				
9.99	50.83	0.96	MVDE	138.2	1540	B4.17				
11.04	45.98	0.96	MVDE	125	1540	B4.17				
11.07	61.36	2.98	MVAE	125	5000	B4.31				
11.5	51.15	1.68	MVBE	120	2500	B4.21				
12.29	41.31	0.96	MVDE	112.3	1640	B4.17				
12.78	46.24	1.87	MVBE	108	2500	B4.21				
13.3	52.14	3.61	MVAE	103.8	4630	B4.31				
13.32	45.56	1.05	MVDE	103.6	1540	B4.17				
14.02	41.97	1.68	MVBE	98.5	2500	B4.21				
14.72	41.21	1.05	MVDE	93.8	1640	B4.17				
14.77	46.97	3.95	MVAE	93.5	4390	B4.31				
15.33	41.84	2.12	MVBE	90	2500	B4.21				
16.38	37.03	1.05	MVDE	84.2	1640	B4.17				
17.04	43.25	3.64	MVAE	81	4330	B4.31				
19.17	36.17	2.48	MVBE	72	2500	B4.21				
19.95	37.8	4.0	MVAE	69	4140	B4.31				
19.97	34.02	1.46	MVDE	69.1	1640	B4.17				
22.08	30.77	1.46	MVDE	62.5	1760	B4.17				
22.15	34.05	4.0	MVAE	62.3	4050	B4.31				
23	31.68	2.74	MVBE	60	2500	B4.21				
24.58	27.65	1.46	MVDE	56.2	1760	B4.17				
27.95	26.98	4.0	MVAE	49	3880	B4.31				
28.03	25.99	2.74	MVBE	49.2	2437	B4.21				
30.7	25.52	5.66	MVAE	45	3460	B4.31				
30.73	24.89	2.03	MVDE	44.9	1760	B4.17				
32.86	22.91	3.27	MVBE	42	2437	B4.21				
33.97	22.51	2.03	MVDE	40.6	1760	B4.17				
34.07	22.99	5.66	MVAE	40.5	3410	B4.31				
37.81	20.23	2.03	MVDE	36.5	1760	B4.17				
39.9	19.98	6.19	MVAE	34.6	3240	B4.31				
40.04	18.8	3.27	MVBE	34.5	2164	B4.21				
44.16	18.38	2.69	MVDE	31.3	1760	B4.17				
44.3	18.0	6.19	MVAE	31.2	3180	B4.31				
46	17.38	3.98	MVBE	30	1969	B4.21				
49.15	16.52	2.69	MVDE	28.1	1760	B4.17				
55.2	14.95	2.59	MVDE	25	1760	B4.17				
55.9	14.26	6.19	MVAE	24.7	3050	B4.31				
56.06	14.26	3.98	MVBE	24.6	1969	B4.21				
61.44	13.43	2.59	MVDE	22.5	1760	B4.17				
65.71	12.54	4.88	MVBE	21	1651	B4.21				




# Electromechanical products

## Minibloc MVDE - MVBE - MVAE

### Selection

LS ; LSMV 4p - 1 speed			Gearbox				LS VARMECA			
$n_s$ (min <sup>-1</sup> )	M (N.m)	Kp	MV (DE-BE-AE)	i	$F_R E/2$ (N)		$n_{sMIN}$ (min <sup>-1</sup> )	$n_{sMAX}$ (min <sup>-1</sup> )	M (N.m)	Kp
LS 63 M; - LS 63 M FMD; -			<b>0.18 kW</b>				:			
5.58	160.49	1.06	MVAE	249.2	5000	B4.31				
6.1	117.62	0.82	MVBE	228	2200	B4.21				
6.7	148.4	1.35	MVAE	208	5000	B4.31				
7.43	96.51	0.82	MVBE	187.1	2200	B4.21				
7.44	133.69	1.5	MVAE	187	5000	B4.31				
7.72	97.14	0.9	MVBE	180	2200	B4.21				
8.92	121.49	1.43	MVAE	155.8	5000	B4.31				
9.65	87.56	1.03	MVBE	144	2350	B4.21				
10.05	110.07	1.82	MVAE	138	5000	B4.31				
11.15	99.16	1.84	MVAE	125	5000	B4.31				
11.58	79.27	1.09	MVBE	120	2350	B4.21				
12.87	71.65	1.21	MVBE	108	2350	B4.21				
13.4	84.25	2.23	MVAE	103.8	4630	B4.31				
14.12	65.04	1.09	MVBE	98.5	2350	B4.21				
14.87	75.9	2.44	MVAE	93.5	4390	B4.31				
15.44	64.83	1.37	MVBE	90	2350	B4.21				
17.16	69.89	2.25	MVAE	81	4330	B4.31				
19.31	56.04	1.61	MVBE	72	2500	B4.21				
20.1	61.07	2.47	MVAE	69	4140	B4.31				
20.12	52.71	0.94	MVDE	69.1	1540	B4.17				
22.24	47.68	0.94	MVDE	62.5	1540	B4.17				
22.31	55.01	2.47	MVAE	62.3	4050	B4.31				
23.17	49.08	1.78	MVBE	60	2500	B4.21				
24.75	42.84	0.94	MVDE	56.2	1540	B4.17				
28.15	43.59	2.47	MVAE	49	3880	B4.31				
28.23	40.27	1.78	MVBE	49.2	2437	B4.21				
30.92	41.23	3.5	MVAE	45	3460	B4.31				
30.95	38.56	1.31	MVDE	44.9	1540	B4.17				
33.1	35.5	2.12	MVBE	42	2437	B4.21				
34.22	34.88	1.31	MVDE	40.6	1640	B4.17				
34.32	37.14	3.5	MVAE	40.5	3410	B4.31				
38.08	31.34	1.31	MVDE	36.5	1760	B4.17				
40.19	32.27	3.83	MVAE	34.6	3240	B4.31				
40.33	29.13	2.12	MVBE	34.5	2164	B4.21				
44.48	28.48	1.73	MVDE	31.3	1760	B4.17				
44.62	29.07	3.83	MVAE	31.2	3180	B4.31				
46.33	26.93	2.58	MVBE	30	1969	B4.21				
49.51	25.59	1.73	MVDE	28.1	1760	B4.17				
55.6	23.16	1.67	MVDE	25	1760	B4.17				
56.3	23.04	3.83	MVAE	24.7	3050	B4.31				
56.47	22.1	2.58	MVBE	24.6	1969	B4.21				
61.88	20.81	1.67	MVDE	22.5	1760	B4.17				
66.19	19.43	3.16	MVBE	21	1651	B4.21				

LS ; LSMV 4p - 1 speed			Gearbox				LS VARMECA			
$n_s$ (min <sup>-1</sup> )	M (N.m)	Kp	MV (DE-BE-AE)	i	$F_R E/2$ (N)		$n_{sMIN}$ (min <sup>-1</sup> )	$n_{sMAX}$ (min <sup>-1</sup> )	M (N.m)	Kp
LS 71 M; - LS 71 M FMD; -			<b>0.25 kW</b>				:			
6.87	209.93	0.95	MVAE	208	5000	B4.31				
7.62	189.11	1.06	MVAE	187	5000	B4.31				
9.15	171.75	1.01	MVAE	155.8	5000	B4.31				
10.3	155.6	1.29	MVAE	138	5000	B4.31				
11.44	140.17	1.3	MVAE	125	5000	B4.31				
11.88	109.85	0.79	MVBE	120	2200	B4.21				
13.19	99.28	0.88	MVBE	108	2200	B4.21				
13.73	119.1	1.57	MVAE	103.8	4630	B4.31				
14.47	90.13	0.79	MVBE	98.5	2200	B4.21				
15.25	107.29	1.72	MVAE	93.5	4390	B4.31				
15.83	89.81	1.0	MVBE	90	2200	B4.21				
17.59	98.75	1.59	MVAE	81	4330	B4.31				
19.79	77.61	1.18	MVBE	72	2350	B4.21				
20.6	86.27	1.74	MVAE	69	4140	B4.31				
22.87	77.72	1.74	MVAE	62.3	4050	B4.31				
23.75	67.96	1.3	MVBE	60	2349	B4.21				
28.86	61.59	1.74	MVAE	49	3880	B4.31				
28.95	55.76	1.3	MVBE	49.2	2437	B4.21				


**B**


PERPENDICULAR OUTPUT GEARED MOTORS


# Electromechanical products

## Minibloc MVDE - MVBE - MVAE

### Selection

LS ; LSMV 4p - 1 speed			Gearbox				LS VARMECA			
$n_s$ (min <sup>-1</sup> )	M (N.m)	Kp	MV (DE-BE-AE)	i	$F_R E/2$ (N)		$n_{S MIN}$ (min <sup>-1</sup> )	$n_{S MAX}$ (min <sup>-1</sup> )	M (N.m)	Kp
LS 71 M; - LS 71 M FMD; -			<b>0.25 kW</b>				-			
31.7	58.23	2.47	MVAE	45	3460	B4.31				
31.73	53.39	0.94	MVDE	44.9	1540	B4.17				
33.93	49.15	1.55	MVBE	42	2437	B4.21				
35.08	48.3	0.94	MVDE	40.6	1540	B4.17				
35.19	52.46	2.47	MVAE	40.5	3410	B4.31				
39.04	43.39	0.94	MVDE	36.5	1540	B4.17				
41.2	45.57	2.7	MVAE	34.6	3240	B4.31				
41.35	40.32	1.55	MVBE	34.5	2164	B4.21				
45.6	39.42	1.25	MVDE	31.3	1640	B4.17				
45.74	41.05	2.7	MVAE	31.2	3180	B4.31				
47.5	37.28	1.88	MVBE	30	1969	B4.21				
50.75	35.42	1.25	MVDE	28.1	1640	B4.17				
57	32.05	1.2	MVDE	25	1640	B4.17				
57.72	32.53	2.7	MVAE	24.7	3050	B4.31				
57.89	30.59	1.88	MVBE	24.6	1969	B4.21				
63.44	28.8	1.2	MVDE	22.5	1728	B4.17				
67.86	26.89	2.31	MVBE	21	1651	B4.21				


LS ; LSMV 4p - 1 speed			Gearbox				LS VARMECA			
$n_s$ (min <sup>-1</sup> )	M (N.m)	Kp	MV (DE-BE-AE)	i	$F_R E/2$ (N)		$n_{S MIN}$ (min <sup>-1</sup> )	$n_{S MAX}$ (min <sup>-1</sup> )	M (N.m)	Kp
LS 71 M; - LS 71 M FMD; -			<b>0.37 kW</b>				-			
10.27	239.58	0.83	MVAE	138	5000	B4.31				
11.4	215.82	0.84	MVAE	125	5000	B4.31				
13.69	183.37	1.02	MVAE	103.8	4630	B4.31				
15.19	165.19	1.12	MVAE	93.5	4390	B4.31				
17.53	152.05	1.03	MVAE	81	4330	B4.31				
20.53	132.84	1.13	MVAE	69	4140	B4.31				
22.79	119.67	1.13	MVAE	62.3	4050	B4.31				
23.67	102.78	0.86	MVBE	60	2075	B4.21				
28.76	94.83	1.13	MVAE	49	3880	B4.31				
28.84	84.33	0.86	MVBE	49.2	2162	B4.21				
31.58	89.66	1.6	MVAE	45	3460	B4.31				
33.81	74.33	1.02	MVBE	42	2162	B4.21				
35.06	80.77	1.6	MVAE	40.5	3410	B4.31				
41.06	70.17	1.75	MVAE	34.6	3240	B4.31				
41.21	60.99	1.02	MVBE	34.5	2164	B4.21				
45.44	59.63	0.83	MVDE	31.3	1540	B4.17				
45.58	63.21	1.75	MVAE	31.2	3180	B4.31				
47.33	56.38	1.24	MVBE	30	1969	B4.21				
50.58	53.57	0.83	MVDE	28.1	1540	B4.17				
56.8	48.48	0.79	MVDE	25	1540	B4.17				
57.52	50.09	1.75	MVAE	24.7	3050	B4.31				
57.69	46.26	1.24	MVBE	24.6	1969	B4.21				
63.22	43.56	0.79	MVDE	22.5	1640	B4.17				
67.62	40.67	1.52	MVBE	21	1651	B4.21				

LS ; LSMV 4p - 1 speed			Gearbox				LS VARMECA			
$n_s$ (min <sup>-1</sup> )	M (N.m)	Kp	MV (DE-BE-AE)	i	$F_R E/2$ (N)		$n_{S MIN}$ (min <sup>-1</sup> )	$n_{S MAX}$ (min <sup>-1</sup> )	M (N.m)	Kp
LS 71 M; - LS 71 M FMD; -			<b>0.55 kW</b>				-			
31.14	138.47	1.04	MVAE	45	3460	B4.31				
34.57	124.74	1.04	MVAE	40.5	3410	B4.31				
40.48	108.38	1.14	MVAE	34.6	3240	B4.31				
44.94	97.63	1.14	MVAE	31.2	3180	B4.31				
46.67	86.03	0.81	MVBE	30	1695	B4.21				
56.71	77.37	1.14	MVAE	24.7	3050	B4.31				
56.88	70.59	0.81	MVBE	24.6	1695	B4.21				
66.67	62.06	0.99	MVBE	21	1377	B4.21				

# Electromechanical products

## Minibloc MVDE - MVBE - MVAE

### Selection

LS ; LSMV 6p - 1 speed			Gearbox				LS VARMECA			
$n_s$ (min <sup>-1</sup> )	$M$ (N.m)	Kp	MV (DE-BE-AE)	$i$	$F_r E/2$ (N)		$n_{sMIN}$ (min <sup>-1</sup> )	$n_{sMAX}$ (min <sup>-1</sup> )	$M$ (N.m)	Kp
LS 56 M; - LS 56 M FMD; -			<b>0.06 kW</b>				-			
1.37	128.74	0.9	MVAE	623	5000	B4.31				
1.52	115.97	0.9	MVAE	561	5000	B4.31				
1.64	109.75	1.25	MVAE	519	5000	B4.31				
1.82	98.87	1.25	MVAE	467	5000	B4.31				
1.89	64.56	0.8	MVBE	450	2500	B4.21				
2.05	98.59	1.68	MVAE	415	5000	B4.31				
2.36	68.49	0.94	MVBE	360	2500	B4.21				
2.46	96.12	1.93	MVAE	346	5000	B4.31				
2.46	52.36	0.88	MVDE	345.5	1640	B4.17				
2.53	57.64	1.06	MVBE	336	2500	B4.21				
2.72	47.36	0.88	MVDE	312.5	1760	B4.17				
2.73	86.59	1.93	MVAE	312	5000	B4.31				
2.83	57.05	1.06	MVBE	300	2500	B4.21				
3.03	42.55	0.88	MVDE	280.8	1760	B4.17				
3.07	79.88	2.49	MVAE	277	5000	B4.31				
3.08	47.29	1.06	MVBE	275.7	2500	B4.21				
3.4	48.97	1.01	MVDE	250	1760	B4.17				
3.41	71.96	2.64	MVAE	249.2	5000	B4.31				
3.45	46.81	1.06	MVBE	246.2	2500	B4.21				
3.73	56.61	1.48	MVBE	228	2500	B4.21				
4.1	66.96	2.99	MVAE	208	5000	B4.31				
4.1	45.69	1.17	MVDE	207.3	1760	B4.17				
4.53	41.33	1.17	MVDE	187.5	1760	B4.17				
4.54	46.45	1.48	MVBE	187.1	2500	B4.21				
4.55	60.32	3.32	MVAE	187	5000	B4.31				
4.72	47.61	1.61	MVBE	180	2500	B4.21				
5.05	37.13	1.17	MVDE	168.5	1760	B4.17				
5.46	55.46	3.39	MVAE	155.8	5000	B4.31				
5.9	42.48	1.87	MVBE	144	2500	B4.21				
6.14	50.3	3.98	MVAE	138	5000	B4.31				
6.15	37.88	1.39	MVDE	138.2	1760	B4.17				
6.8	34.27	1.39	MVDE	125	1760	B4.17				
6.82	45.31	4.28	MVAE	125	5000	B4.31				
7.08	38.66	1.98	MVBE	120	2500	B4.21				
7.57	30.79	1.39	MVDE	112.3	1760	B4.17				
7.87	35	2.19	MVBE	108	2500	B4.21				
8.19	38.54	5.17	MVAE	103.8	4630	B4.31				
8.2	34.32	1.49	MVDE	103.6	1760	B4.17				
8.63	31.72	1.97	MVBE	98.5	2500	B4.21				
9.07	31.05	1.49	MVDE	93.8	1760	B4.17				
9.09	34.72	5.65	MVAE	93.5	4390	B4.31				
9.44	31.78	2.47	MVBE	90	2500	B4.21				
10.09	27.89	1.49	MVDE	84.2	1760	B4.17				
10.49	32.24	5.29	MVAE	81	4330	B4.31				
11.81	27.65	2.89	MVBE	72	2500	B4.21				
12.29	28.25	5.73	MVAE	69	4140	B4.31				
12.3	25.82	2.07	MVDE	69.1	1760	B4.17				
13.6	23.36	2.07	MVDE	62.5	1760	B4.17				
13.64	25.45	5.73	MVAE	62.3	4050	B4.31				
14.17	24.28	3.2	MVBE	60	2500	B4.21				
15.14	20.99	2.07	MVDE	56.2	1760	B4.17				
17.22	20.17	5.73	MVAE	49	3880	B4.31				
17.27	19.92	3.2	MVBE	49.2	2437	B4.21				
18.91	19.18	8.09	MVAE	45	3460	B4.31				
18.93	19.09	2.84	MVDE	44.9	1760	B4.17				
20.24	17.62	3.87	MVBE	42	2437	B4.21				
20.92	17.27	2.84	MVDE	40.6	1760	B4.17				
20.99	17.28	8.09	MVAE	40.5	3410	B4.31				
23.29	15.51	2.84	MVDE	36.5	1760	B4.17				
24.58	15.05	8.8	MVAE	34.6	3240	B4.31				
24.67	14.46	3.87	MVBE	34.5	2164	B4.21				
27.2	14.18	3.74	MVDE	31.3	1760	B4.17				
27.28	13.56	8.8	MVAE	31.2	3180	B4.31				
28.33	13.42	4.62	MVBE	30	1969	B4.21				
30.27	12.74	3.74	MVDE	28.1	1760	B4.17				
34	11.54	3.6	MVDE	25	1760	B4.17				
34.43	10.75	8.8	MVAE	24.7	3050	B4.31				
34.53	11.01	4.62	MVBE	24.6	1969	B4.21				
37.84	10.37	3.6	MVDE	22.5	1728	B4.17				
40.48	9.71	5.9	MVBE	21	1651	B4.21				




PERPENDICULAR OUTPUT GEARED MOTORS

# Electromechanical products

## Minibloc MVDE - MVBE - MVAE


### Selection

LS ; LSMV 6p - 1 speed			Gearbox				LS VARMECA			
$n_s$ (min <sup>-1</sup> )	$M$ (N.m)	Kp	MV (DE-BE-AE)	$i$	$F_r E/2$ (N)		$n_{sMIN}$ (min <sup>-1</sup> )	$n_{sMAX}$ (min <sup>-1</sup> )	$M$ (N.m)	Kp
LS 63 M; - LS 63 M FMD; -			<b>0.09 kW</b>				-			
2.07	162.48	1.01	MVAE	415	5000	B4.31				
2.49	158.35	1.17	MVAE	346	5000	B4.31				
2.76	142.65	1.17	MVAE	312	5000	B4.31				
3.11	131.60	1.51	MVAE	277	5000	B4.31				
3.45	118.55	1.6	MVAE	249.2	5000	B4.31				
3.77	88.25	0.95	MVBE	228	2500	B4.21				
4.14	110.28	1.81	MVAE	208	5000	B4.31				
4.60	72.41	0.95	MVBE	187.1	2500	B4.21				
4.60	99.35	2.01	MVAE	187	5000	B4.31				
4.78	74.19	1.04	MVBE	180	2500	B4.21				
5.52	91.33	2.06	MVAE	155.8	5000	B4.31				
5.97	66.21	1.2	MVBE	144	2500	B4.21				
6.22	82.82	2.41	MVAE	138	5000	B4.31				
6.22	59.05	0.89	MVDE	138.2	1640	B4.17				
6.88	53.42	0.89	MVDE	125	1640	B4.17				
6.90	74.61	2.59	MVAE	125	5000	B4.31				
7.17	60.26	1.27	MVBE	120	2500	B4.21				
7.66	48.00	0.89	MVDE	112.3	1760	B4.17				
7.96	54.54	1.41	MVBE	108	2500	B4.21				
8.29	63.46	3.14	MVAE	103.8	4630	B4.31				
8.30	53.49	0.95	MVDE	103.6	1640	B4.17				
8.73	49.44	1.27	MVBE	98.5	2500	B4.21				
9.17	48.39	0.96	MVDE	93.8	1640	B4.17				
9.20	57.16	3.43	MVAE	93.5	4390	B4.31				
9.56	49.52	1.59	MVBE	90	2500	B4.21				
10.21	43.48	0.95	MVDE	84.2	1760	B4.17				
10.62	53.08	3.21	MVAE	81	4330	B4.31				
11.94	43.09	1.85	MVBE	72	2500	B4.21				
12.43	46.51	3.48	MVAE	69	4140	B4.31				
12.45	40.24	1.33	MVDE	69.1	1760	B4.17				
13.76	36.40	1.33	MVDE	62.5	1760	B4.17				
13.80	41.89	3.48	MVAE	62.3	4050	B4.31				
14.33	37.83	2.05	MVBE	60	2500	B4.21				
15.32	32.70	1.33	MVDE	56.2	1760	B4.17				
17.42	33.20	3.48	MVAE	49	3880	B4.31				
17.47	31.04	2.05	MVBE	49.2	2437	B4.21				
19.13	31.57	4.91	MVAE	45	3460	B4.31				
19.15	29.74	1.82	MVDE	44.9	1760	B4.17				
20.48	27.45	2.49	MVBE	42	2437	B4.21				
21.17	26.90	1.82	MVDE	40.6	1760	B4.17				
21.23	28.44	4.91	MVAE	40.5	3410	B4.31				
23.56	24.17	1.82	MVDE	36.5	1760	B4.17				
24.87	24.78	5.34	MVAE	34.6	3240	B4.31				
24.96	22.52	2.49	MVBE	34.5	2164	B4.21				
27.52	22.09	2.4	MVDE	31.3	1760	B4.17				
27.60	22.32	5.34	MVAE	31.2	3180	B4.31				
28.67	20.91	2.97	MVBE	30	1969	B4.21				
30.63	19.85	2.4	MVDE	28.1	1760	B4.17				
34.40	17.98	2.31	MVDE	25	1760	B4.17				
34.84	17.69	5.34	MVAE	24.7	3050	B4.31				
34.94	17.16	2.97	MVBE	24.6	1969	B4.21				
38.29	16.16	2.31	MVDE	22.5	1728	B4.17				
40.95	15.12	3.79	MVBE	21	1651	B4.21				

# Electromechanical products

## Minibloc MVDE - MVBE - MVAE

### Selection

LS ; LSMV 6p - 1 speed			Gearbox				LS VARMECA			
$n_s$ (min <sup>-1</sup> )	M (N.m)	Kp	MV (DE-BE-AE)	i	$F_r E/2$ (N)		$n_{sMIN}$ (min <sup>-1</sup> )	$n_{sMAX}$ (min <sup>-1</sup> )	M (N.m)	Kp
LS 71 M; - LS 71 M FMD; -			<b>0.12 kW</b>				-			
2.29	205.94	0.79	MVAE	415	5000	B4.31				
2.75	200.15	0.9	MVAE	346	5000	B4.31				
3.05	180.30	0.9	MVAE	312	5000	B4.31				
3.43	166.17	1.19	MVAE	277	5000	B4.31				
3.81	149.69	1.25	MVAE	249.2	5000	B4.31				
4.58	139.10	1.44	MVAE	208	5000	B4.31				
5.08	125.31	1.6	MVAE	187	5000	B4.31				
5.28	91.74	0.84	MVBE	180	2350	B4.21				
6.10	114.92	1.61	MVAE	155.8	5000	B4.31				
6.60	82.05	0.97	MVBE	144	2500	B4.21				
6.87	104.20	1.92	MVAE	138	5000	B4.31				
7.62	93.86	2.04	MVAE	125	5000	B4.31				
7.92	74.60	1.03	MVBE	120	2500	B4.21				
8.80	67.50	1.14	MVBE	108	2500	B4.21				
9.16	79.82	2.47	MVAE	103.8	4630	B4.31				
9.65	61.21	1.03	MVBE	98.5	2500	B4.21				
10.16	71.91	2.7	MVAE	93.5	4390	B4.31				
10.56	61.25	1.29	MVBE	90	2500	B4.21				
11.73	66.65	2.51	MVAE	81	4330	B4.31				
13.19	53.22	1.51	MVBE	72	2500	B4.21				
13.73	58.37	2.73	MVAE	69	4140	B4.31				
13.75	49.78	1.06	MVDE	69.1	1640	B4.17				
15.20	45.03	1.06	MVDE	62.5	1760	B4.17				
15.25	52.58	2.73	MVAE	62.3	4050	B4.31				
15.83	46.71	1.67	MVBE	60	2500	B4.21				
16.92	40.46	1.06	MVDE	56.2	1760	B4.17				
19.24	41.66	2.73	MVAE	49	3880	B4.31				
19.30	38.33	1.67	MVBE	49.2	2437	B4.21				
21.13	39.57	3.86	MVAE	45	3460	B4.31				
21.15	36.71	1.45	MVDE	44.9	1760	B4.17				
22.62	33.86	2.01	MVBE	42	2437	B4.21				
23.38	33.21	1.45	MVDE	40.6	1760	B4.17				
23.46	35.65	3.86	MVAE	40.5	3410	B4.31				
26.03	29.84	1.45	MVDE	36.5	1760	B4.17				
27.47	31.04	4.2	MVAE	34.6	3240	B4.31				
27.57	27.79	2.01	MVBE	34.5	2164	B4.21				
30.40	27.24	1.92	MVDE	31.3	1760	B4.17				
30.49	27.96	4.2	MVAE	31.2	3180	B4.31				
31.67	25.78	2.41	MVBE	30	1969	B4.21				
33.84	24.48	1.92	MVDE	28.1	1760	B4.17				
38.00	22.17	1.84	MVDE	25	1760	B4.17				
38.48	22.16	4.2	MVAE	24.7	3050	B4.31				
38.59	21.15	2.41	MVBE	24.6	1969	B4.21				
42.29	19.92	1.84	MVDE	22.5	1760	B4.17				
45.24	18.63	3.05	MVBE	21	1651	B4.21				





PERPENDICULAR OUTPUT GEARED MOTORS

# Electromechanical products

## Minibloc MVDE - MVBE - MVAE

### Selection

LS ; LSMV 6p - 1 speed			Gearbox				LS VARMECA			
$n_s$ (min <sup>-1</sup> )	$M$ (N.m)	Kp	MV (DE-BE-AE)	$i$	$F_r E/2$ (N)		$n_{sMIN}$ (min <sup>-1</sup> )	$n_{sMAX}$ (min <sup>-1</sup> )	$M$ (N.m)	Kp
LS 71 M; - LS 71 M FMD; -			<b>0.18 kW</b>				-			
3.79	238.07	0.78	MVAE	249.2	5000	B4.31				
4.55	221.24	0.9	MVAE	208	5000	B4.31				
5.06	199.30	1	MVAE	187	5000	B4.31				
6.07	182.80	1.02	MVAE	155.8	5000	B4.31				
6.83	165.74	1.21	MVAE	138	5000	B4.31				
7.58	149.31	1.28	MVAE	125	5000	B4.31				
9.11	126.98	1.56	MVAE	103.8	4630	B4.31				
10.11	114.38	1.7	MVAE	93.5	4390	B4.31				
10.50	94.83	0.83	MVBE	90	2350	B4.21				
11.67	106.04	1.58	MVAE	81	4330	B4.31				
13.12	82.41	0.97	MVBE	72	2500	B4.21				
13.66	92.85	1.72	MVAE	69	4140	B4.31				
15.17	83.65	1.72	MVAE	62.3	4050	B4.31				
15.75	72.32	1.08	MVBE	60	2500	B4.21				
19.14	66.28	1.72	MVAE	49	3880	B4.31				
19.20	59.34	1.08	MVBE	49.2	2437	B4.21				
21.02	62.96	2.43	MVAE	45	3460	B4.31				
21.04	56.85	0.94	MVDE	44.9	1540	B4.17				
22.50	52.44	1.3	MVBE	42	2437	B4.21				
23.26	51.43	0.94	MVDE	40.6	1640	B4.17				
23.33	56.72	2.43	MVAE	40.5	3410	B4.31				
25.89	46.20	0.94	MVDE	36.5	1760	B4.17				
27.33	49.39	2.64	MVAE	34.6	3240	B4.31				
27.42	43.03	1.3	MVBE	34.5	2164	B4.21				
30.24	42.19	1.24	MVDE	31.3	1760	B4.17				
30.33	44.49	2.64	MVAE	31.2	3180	B4.31				
31.50	39.92	1.56	MVBE	30	1969	B4.21				
33.66	37.90	1.24	MVDE	28.1	1760	B4.17				
37.80	34.33	1.19	MVDE	25	1760	B4.17				
38.28	35.26	2.64	MVAE	24.7	3050	B4.31				
38.39	32.75	1.56	MVBE	24.6	1969	B4.21				
42.07	30.85	1.19	MVDE	22.5	1760	B4.17				
45.00	28.86	1.97	MVBE	21	1651	B4.21				

LS ; LSMV 6p - 1 speed			Gearbox				LS VARMECA			
$n_s$ (min <sup>-1</sup> )	$M$ (N.m)	Kp	MV (DE-BE-AE)	$i$	$F_r E/2$ (N)		$n_{sMIN}$ (min <sup>-1</sup> )	$n_{sMAX}$ (min <sup>-1</sup> )	$M$ (N.m)	Kp
LS 71 L; - LS 71 L FMD; -			<b>0.25 kW</b>				-			
6.61	244.62	0.82	MVAE	138	5000					
7.34	220.37	0.87	MVAE	125	5000					
8.82	187.41	1.06	MVAE	103.8	4630					
9.79	168.83	1.15	MVAE	93.5	4390					
11.30	156.60	1.08	MVAE	81	4330					
13.23	137.15	1.17	MVAE	69	4140					
14.69	123.55	1.17	MVAE	62.3	4050					
18.53	97.91	1.17	MVAE	49	3880					
20.35	93.03	1.65	MVAE	45	3460					
21.79	76.28	0.89	MVBE	42	2437					
22.59	83.81	1.65	MVAE	40.5	3410					
26.46	72.99	1.8	MVAE	34.6	3240					
26.55	62.59	0.89	MVBE	34.5	2164					
29.28	61.37	0.86	MVDE	31.3	1640					
29.37	65.76	1.8	MVAE	31.2	3180					
30.50	58.08	1.07	MVBE	30	1969					
32.59	55.14	0.86	MVDE	28.1	1640					
36.60	49.95	0.82	MVDE	25	1640					
37.06	52.11	1.8	MVAE	24.7	3050					
37.17	47.66	1.07	MVBE	24.6	1969					
40.74	44.88	0.82	MVDE	22.5	1728					
43.57	41.99	1.36	MVBE	21	1651					

# Electromechanical products

## Minibloc MVDE

### Slow speed shaft load

Slow speed shaft loads permissible depend on the reduction and mounting with or without flange.

#### Newton force

Gearbox features		Clockwise or anti-clockwise							
Speed min <sup>-1</sup>	Bevel N.m	NSD-L	BSL-L	NSD-L & BSL-L		NSD-R	BSR-R	NSD-R & BSR-R	
		F <sub>r</sub>	F <sub>r</sub>	F <sub>a-</sub>	F <sub>a+</sub>	F <sub>r</sub>	F <sub>r</sub>	F <sub>a-</sub>	F <sub>a+</sub>
135	25	1396	810	759	1413	1217	810	1735	757
135	37.5	1328	760	667	1166	1060	760	1670	667
135	50	1261	700	574	925	903	700	1584	574
100	25	1557	810	901	1692	1379	810	2055	901
100	37.5	1490	760	787	1434	1221	760	1965	773
100	50	1422	700	590	1182	1064	700	1880	690
75	25	1728	810	1060	2005	1549	810	2430	1159
75	37.5	1640	760	974	1746	1392	760	2307	920
75	50	1540	700	919	1505	1235	700	2225	810
50	25	1760	810	1594	2610	1760	810	2610	1366
50	37.5	1640	760	1570	2467	1640	760	2517	1228
50	50	1540	700	1521	2200	1504	700	2425	1137
40	25	1760	810	1998	2610	1760	810	2610	1749
40	37.5	1640	760	1981	2517	1640	760	2517	1606
40	50	1540	700	1936	2425	1540	700	2425	1438
30	25	1760	810	1998	2610	1760	810	2610	2347
30	37.5	1640	760	1981	2517	1640	760	2517	2197
30	50	1540	700	2425	2425	1540	700	2425	2019
≤ 25	25	1760	810	2610	2610	1760	810	2610	2610
≤ 25	37.5	1640	760	2517	2517	1640	760	2517	2517
≤ 25	50	1540	700	2425	2425	1540	700	2425	2425

#### Direction of the forces

NSD-L & BSL-L	F <sub>a+</sub> = axial force PUSHING on the shaft extension F <sub>a-</sub> = axial force PULLING on the shaft extension
NSD-R & BSR-R	F <sub>a+</sub> = axial force PULLING on the shaft extension F <sub>a-</sub> = axial force PUSHING on the shaft extension

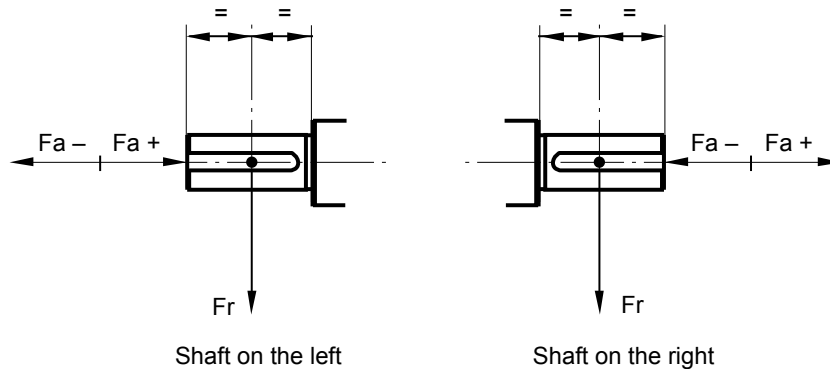
F<sub>r</sub> = radial force on the shaft extension at 20mm from the shoulder

NB: 1 - If there are 2 shaft extensions the permissible load F<sub>r</sub> must be distributed.

2 - For BSL-L or BSR-R, the force corresponds with the separate shaft.

3 - These values correspond with the least favourable loads.

SPECIFIC CASES: please consult Leroy-Somer.



B

PERPENDICULAR OUTPUT GEARED MOTORS

# Electromechanical products

## Minibloc MVBE

### Slow speed shaft load

Slow speed shaft loads permissible depend on the reduction and mounting with or without flange.

#### Newton force

Gearbox features		Clockwise or anti-clockwise							
Speed min <sup>-1</sup>	Bevel N.m	NSD-L	BSL-L	NSD-L & BSL-L		NSD-R	BSR-R	NSD-R & BSR-R	
		F <sub>r</sub>	F <sub>r</sub>	F <sub>a-</sub>	F <sub>a+</sub>	F <sub>r</sub>	F <sub>r</sub>	F <sub>a-</sub>	F <sub>a+</sub>
135	50	1260	1074	855	2042	1666	1360	1488	851
135	75	985	840	727	1934	1550	1270	1094	719
135	100	711	606	598	1825	1433	1180	716	588
100	50	1450	1237	1020	2394	1866	1360	1810	1015
100	75	1176	1003	892	2287	1750	1270	1397	885
100	100	901	769	764	2179	1633	1180	1016	781
75	50	1651	1360	1208	2780	2078	1360	2176	1198
75	75	1377	1174	1078	2695	1961	1270	1736	1065
75	100	1102	940	951	2590	1844	1180	1323	936
50	50	1969	1360	1501	3131	2412	1360	2817	1508
50	75	1695	1270	1382	2999	2295	1270	2324	1374
50	100	1421	1180	1259	2868	2179	1180	1875	1242
40	50	2164	1360	1711	3131	2500	1360	3136	2332
40	75	1889	1270	1563	2999	2350	1270	3007	2315
40	100	1615	1180	1463	2868	2200	1180	2817	1508
30	50	2437	1360	1917	3121	2500	1360	3136	2332
30	75	2162	1270	1810	2999	2350	1270	3007	2315
30	100	1888	1180	1735	2868	2200	1180	2878	2295
25	50	2500	1360	2183	3121	2500	1360	3136	2832
25	75	2349	1270	2058	2999	2350	1270	3007	2821
25	100	2075	1180	1938	2868	2200	1180	2878	2597
≤ 20	50	2500	1360	2964	3131	2500	1360	3136	3131
≤ 20	75	2350	1270	2641	2999	2350	1270	3007	1999
≤ 20	100	2200	1180	2319	2868	2200	1180	2878	2868

#### Direction of the forces

NSD-L & BSL-L	F <sub>a+</sub> = axial force PUSHING on the shaft extension F <sub>a-</sub> = axial force PULLING on the shaft extension
NSD-R & BSR-R	F <sub>a+</sub> = axial force PULLING on the shaft extension F <sub>a-</sub> = axial force PUSHING on the shaft extension

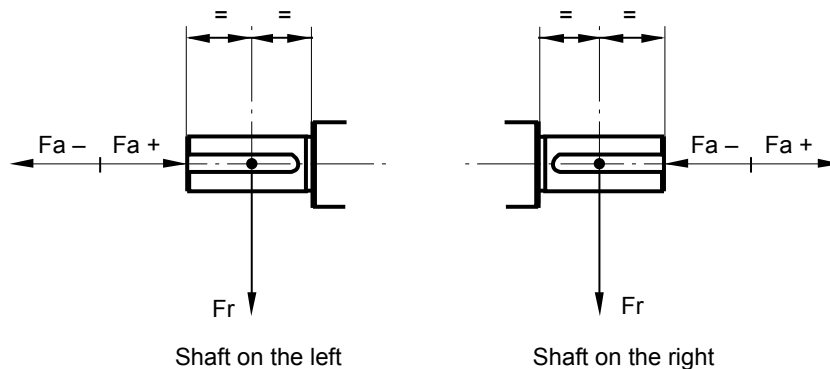
F<sub>r</sub> = radial force on the shaft extension at 22.5 mm from the shoulder

NB: 1 - If there are 2 shaft extensions the permissible load F<sub>r</sub> must be distributed.

2 - For BSL-L or BSR-R, the force corresponds with the separate shaft.

3 - These values correspond with the least favourable loads.

SPECIFIC CASES: please consult Leroy-Somer.





# Electromechanical products

## Minibloc MVAE

### Slow speed shaft load

Slow speed shaft loads permissible depend on the reduction and mounting with or without flange.

#### Newton force (N)

2P motor (3000 min <sup>-1</sup> )										
Gearbox features			Clockwise or anti-clockwise							
Speed min <sup>-1</sup>	Reduction	Cmax Nm	NSD-R		NSD-L		BSR-R		BSL-L	
			Fr	Fa+ or Fa-	Fr	Fa+ or Fa-	Fr	Fa+ or Fa-	Fr	Fa+ or Fa-
5	622.5	64	5000	1000	5000	1000	4270	854	4270	854
5	560.8	58	5000	1000	5000	1000	4270	854	4270	854
5	518.8	80	5000	1000	5000	1000	4270	854	4270	854
6	467.3	72	5000	1000	5000	1000	4270	854	4270	854
7	415	108	5000	1000	5000	1000	4270	854	4270	854
8	345.8	136	5000	1000	5000	1000	4270	854	4270	854
9	311.5	122	5000	1000	5000	1000	4270	854	4270	854
10	276.7	134	5000	1000	5000	1000	4270	854	4270	854
11	249.2	121	5000	1000	5000	1000	4270	854	4270	854
14	207.5	129	5000	1000	5000	1000	4270	854	4270	854
15	186.9	117	4910	982	5000	1000	4190	838	4270	854
18	155.8	122	4520	904	4890	978	3860	772	4170	834
20	138.3	122	4340	868	4690	938	3700	740	4000	800
23	124.6	110	4230	846	4560	912	3610	722	3890	778
27	103.8	102	4010	802	4310	862	3420	684	3680	736
30	93.5	92	3900	780	4180	836	3330	666	3570	714
35	81	106	3570	714	3890	778	3050	610	3320	664
41	69.2	107	3360	672	3670	734	2870	574	3130	626
45	62.3	96	3280	656	3570	714	2800	560	3050	610
57	49.4	76	3130	626	3370	674	2670	534	2870	574
62	45	84	2980	596	3230	646	2540	508	2760	552
69	40.5	76	2900	580	3130	626	2470	494	2670	534
81	34.6	75	2750	550	2970	594	2340	468	2530	506
90	31.2	67	2680	536	2880	576	2290	458	2460	492
114	24.7	53	2550	510	2710	542	2170	434	2310	462

4P motor (1500 min <sup>-1</sup> )										
Gearbox features			Clockwise or anti-clockwise							
Speed min <sup>-1</sup>	Reduction	Cmax Nm	NSD-R		NSD-L		BSR-R		BSL-L	
			Fr	Fa+ or Fa-	Fr	Fa+ or Fa-	Fr	Fa+ or Fa-	Fr	Fa+ or Fa-
2	622.5	85	5000	1000	5000	1000	4270	854	4270	854
2	560.8	76	5000	1000	5000	1000	4270	854	4270	854
3	518.8	117	5000	1000	5000	1000	4270	854	4270	854
3	467.3	106	5000	1000	5000	1000	4270	854	4270	854
3	415	146	5000	1000	5000	1000	4270	854	4270	854
4	345.8	156	5000	1000	5000	1000	4270	854	4270	854
4	311.5	140	5000	1000	5000	1000	4270	854	4270	854
5	276.7	183	5000	1000	5000	1000	4270	854	4270	854
6	249.2	165	5000	1000	5000	1000	4270	854	4270	854
7	207.5	200	5000	1000	5000	1000	4270	854	4270	854
7	186.9	200	5000	1000	5000	1000	4270	854	4270	854
9	155.8	171	5000	1000	5000	1000	4270	854	4270	854
10	138.3	200	5000	1000	5000	1000	4270	854	4270	854
11	124.6	180	5000	1000	5000	1000	4270	854	4270	854
13	103.8	185	4630	926	5000	1000	3950	790	4270	854
15	93.5	183	4390	878	4930	986	3750	750	4210	842
17	81	156	4330	866	4800	960	3690	738	4100	820
20	69.2	149	4140	828	4570	914	3530	706	3900	780
22	62.3	134	4050	810	4450	890	3460	692	3800	760
28	49.4	106	3880	776	4200	840	3310	662	3580	716
31	45	142	3460	692	3890	778	2950	590	3320	664
34	40.5	128	3410	682	3790	758	2910	582	3230	646
40	34.6	122	3240	648	3610	722	2760	552	3080	616
45	31.2	110	3180	636	3510	702	2710	542	2990	598
56	24.7	87	3050	610	3320	664	2600	520	2830	566



PERPENDICULAR OUTPUT GEARED MOTORS

# Electromechanical products

## Minibloc MVAE

### Slow speed shaft load

Slow speed shaft loads permissible depend on the reduction and mounting with or without flange.

#### Newton force (N)

Gearbox features			6P motor (3000 min <sup>-1</sup> )							
Speed min <sup>-1</sup>	Reduction	Cmax Nm	Clockwise or anti-clockwise							
			NSD-R		NSD-L		BSR-R		BSL-L	
			Fr	Fa+ or Fa-	Fr	Fa+ or Fa-	Fr	Fa+ or Fa-	Fr	Fa+ or Fa-
1	622.5	115	5000	1000	5000	1000	4270	854	4270	854
2	560.8	104	5000	1000	5000	1000	4270	854	4270	854
2	518.8	136	5000	1000	5000	1000	4270	854	4270	854
2	467.3	122	5000	1000	5000	1000	4270	854	4270	854
2	415	163	5000	1000	5000	1000	4270	854	4270	854
3	345.8	183	5000	1000	5000	1000	4270	854	4270	854
3	311.5	165	5000	1000	5000	1000	4270	854	4270	854
3	276.7	200	5000	1000	5000	1000	4270	854	4270	854
4	249.2	189	5000	1000	5000	1000	4270	854	4270	854
4	207.5	200	5000	1000	5000	1000	4270	854	4270	854
5	186.9	200	5000	1000	5000	1000	4270	854	4270	854
6	155.8	186	5000	1000	5000	1000	4270	854	4270	854
7	138.3	200	5000	1000	5000	1000	4270	854	4270	854
7	124.6	193	5000	1000	5000	1000	4270	854	4270	854
9	103.8	200	5000	1000	5000	1000	4270	854	4270	854
10	93.5	196	5000	1000	5000	1000	4270	854	4270	854
11	81	165	5000	1000	5000	1000	4270	854	4270	854
13	69.2	159	4860	972	5000	1000	4150	830	4270	854
15	62.3	143	4740	948	5000	1000	4050	810	4270	854
19	49.4	114	4520	904	4870	974	3860	772	4160	832
20	45	153	4080	816	4520	904	3480	696	3860	772
23	40.5	137	4000	800	4410	882	3410	682	3760	752
26	34.6	130	3820	764	4200	840	3260	652	3580	716
29	31.2	117	3730	746	4080	816	3180	636	3480	696
37	24.7	93	3570	714	3850	770	3050	610	3280	656

#### Direction of the forces

NSD-HR & BSR-HR

F<sub>a+</sub> = axial force PULLING on the shaft extension  
F<sub>a-</sub> = axial force PUSHING on the shaft extension

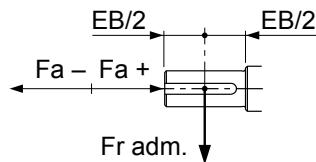
NSD-HL & BSL-HL

F<sub>a+</sub> = axial force PUSHING on the shaft extension  
F<sub>a-</sub> = axial force PULLING on the shaft extension

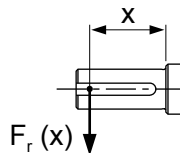
F<sub>r adm.</sub> = radial force permissible on the shaft extension at 22.5 mm (EB/2) from the shoulder of the hollow shaft.

- NB: 1 - If there are 2 shaft extensions the permissible load F<sub>r</sub> must be distributed.  
2 - The force corresponds with the separate shaft in the hollow shaft.  
3 - These values correspond with the least favourable loads.

SPECIFIC CASES: please consult Leroy-Somer.



Calculation of F<sub>r</sub> (X) on non-concentric radial load:



#### NSD-HL and NSD-HR

$$F_r(x) = \frac{138}{108 + x} \times F_r \text{ perm. and must be } \leq 5000 \text{ N. max.}$$

#### BSL-HL and BSR-HR

$$F_r(x) = \frac{162}{132 + x} \times F_r \text{ perm. and must be } \leq 5000 \text{ N. max.}$$

# Electromechanical products

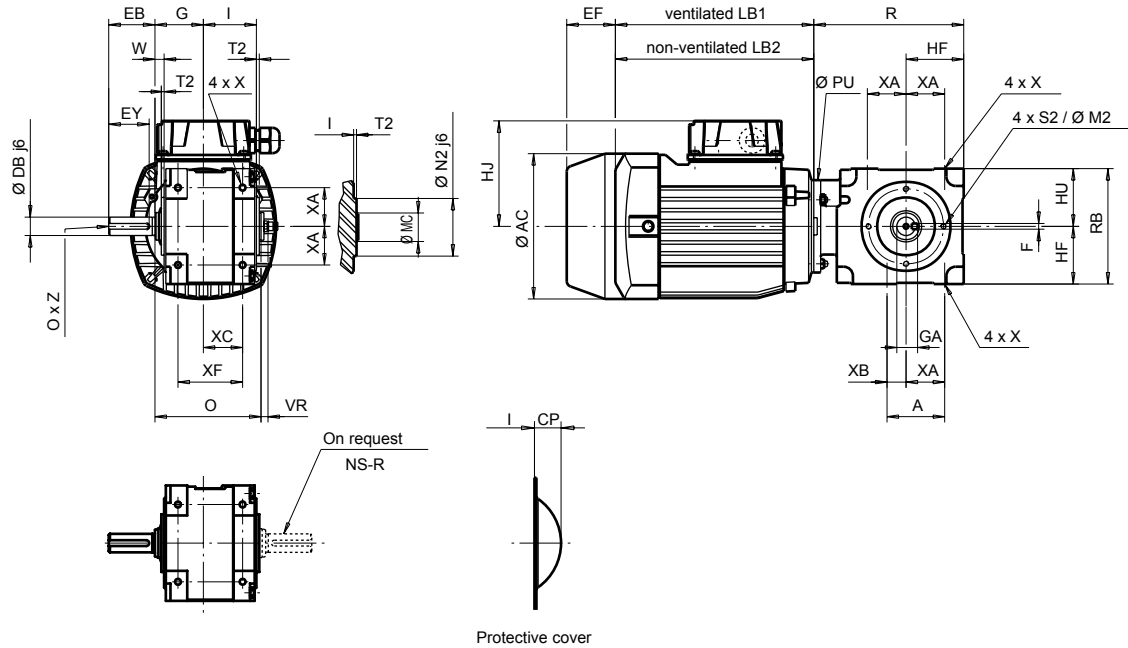
## Minibloc MVDE

### Dimensions

Overall dimensions of the Minibloc MVDE geared motors, MI integrated mounting, integral (L, R) or separate (HL, HR) solid output shaft

Dimensions in millimetres

#### - NU standard form



Protective cover

#### NU standard gearboxes

Type	S	A	XF	XA	XB	RB	HU	HF	X	XC	G	I	N2	T2	S2	M2	PU	kg*
MVDE	130	50	56	33.5	16.5	100	50	50	M6x10	34	42	46	50	2.5	M5x12	65	80	2.4

\* Gearbox only

#### Solid output shaft

Type	DB	EB	EY	O	VR	GA	F	W	MC	O	Z	CP
MVDE	16	40	35	92	6	18	5	8	25	M5	15	20

#### Induction motors and brakes

Fr. size	3-phase LS					Single-phase LS					Brakes			
	AC	HJ	LB1	LB2	kg	AC	HJ	LB1	LB2	kg	EF max		kg <sup>1</sup>	
											FMD	FCR	FMD	FCR
56	110	85	156	135	3.4	110	90	156	135	3.5	50	-	0.9	-
63	124	95	172	150	4.3	124	110	172	150	4.5	50	-	0.9	-
71 <sup>2</sup>	140	102	183	155	6.5	140	129	183	155	7.5	50	90	0.9	2.5

1. Additional brake weight.

2. For LS 71: 0.25 kW 6 poles three-phase, 0.37 kW 4 poles single-phase, 0.55 kW 4 poles three-phase: LB dimension = +9.



PERPENDICULAR OUTPUT GEARED MOTORS

# Electromechanical products

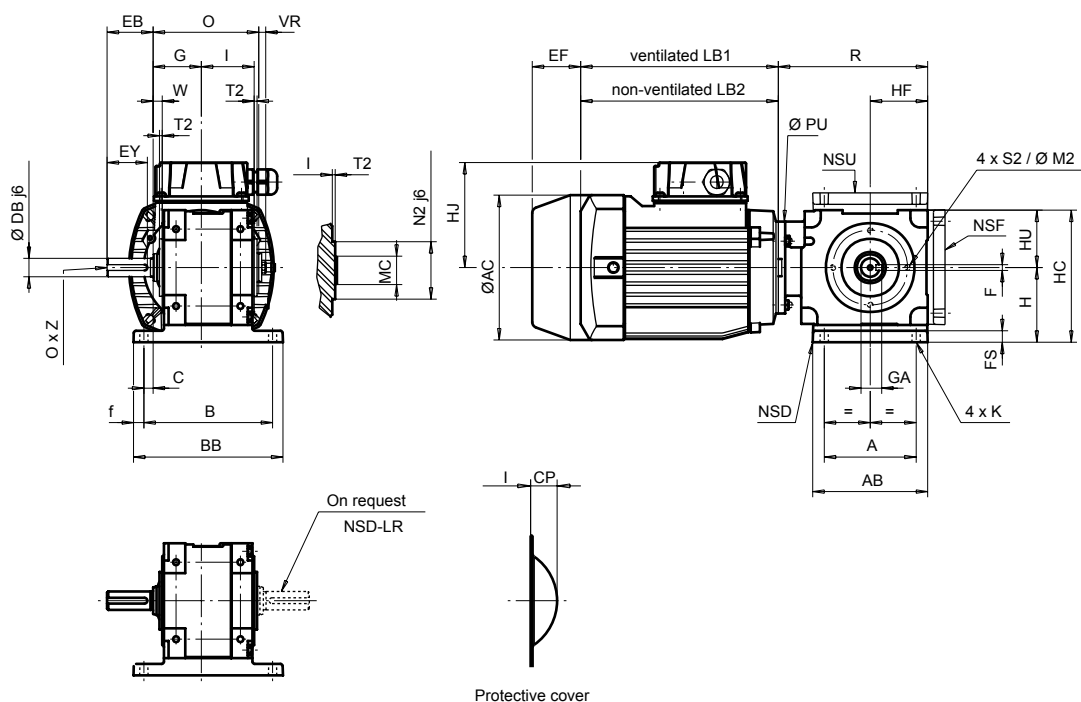
## Minibloc MVDE

### Dimensions


Dimensions of Minibloc MVDE geared motors, MI integrated mounting  
integral (L, R) or separate (HL, HR) solid output shaft

Dimensions in millimetres

#### - NSD, NSF, NSU base form



Gearboxes with NSD, NSF, NSU base

Type	S	A	AB	B	BB	I	HF	HC	H	HU	f	FS	K	G	N2	T2	C	S2	M2	PU	 *
MVDE	130	80	100	112	130	46	50	115	65	50	9	10	6.8	42	50	2.5	8	M5x12	65	80	2.6



\* Gearbox only

NB: in position NSF and S5 the axis side of the slow speed shaft against the feet fastenings is 65 mm.

Solid output shaft

Type	DB	EB	EY	O	VR	GA	F	W	MC	O	Z	CP
MVDE	16	40	35	92	6	18	5	8	25	M5	15	20

Induction motors and brakes

Fr. size	3-phase LS					 kg	Single-phase LS				 kg	Brakes			
	AC	HJ	LB1	LB2	AC		HJ	LB1	LB2	EF max		FMD	FCR	FMD	FCR
56	110	85	156	135	3.4	110	90	156	135	3.5	50	-	0.9	-	
63	124	95	172	150	4.3	124	110	172	150	4.5	50	-	0.9	-	
71 <sup>2</sup>	140	102	183	155	6.5	140	129	183	155	7.5	50	90	0.9	2.5	

1. Additional brake weight.

2. For LS 71: 0.25 kW 6 poles three-phase, 0.37 kW 4 poles single-phase, 0.55 kW 4 poles three-phase: LB dimension = +9.

# Electromechanical products

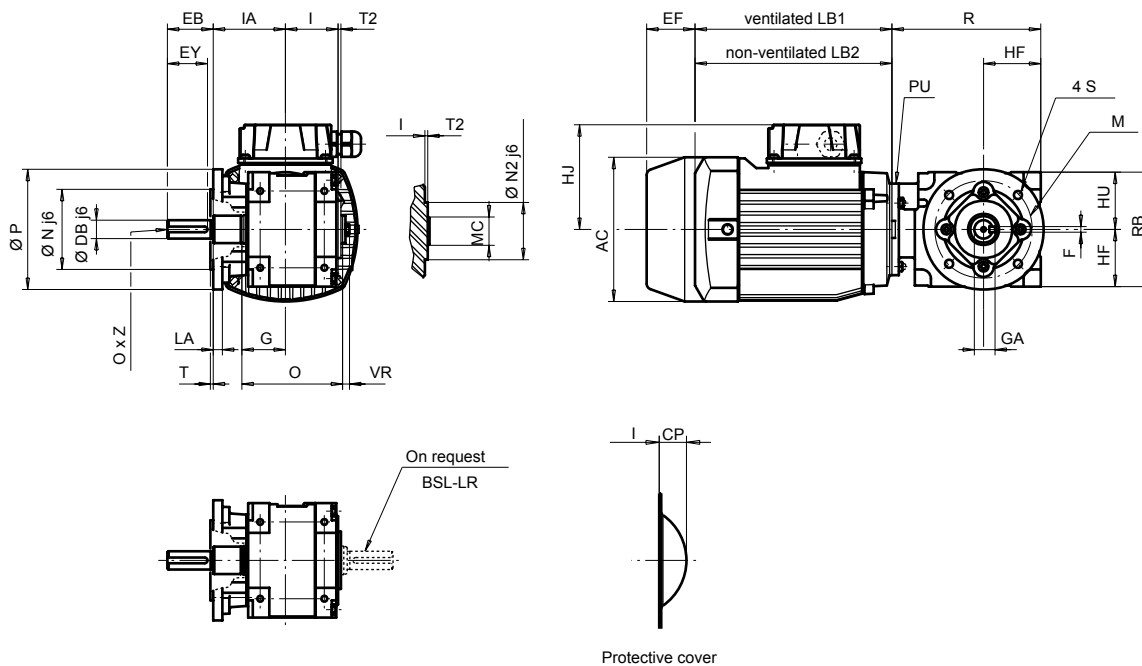
## Minibloc MVDE

### Dimensions

Overall dimensions of the Minibloc MVDE geared motors, M1 integrated mounting, integral (L, R) or separate (HL, HR) solid output shaft

Dimensions in millimetres

- BS or BD flange form



Gearboxes with BS flange

Type	S	RB	HU	HF	M	N	P	O	LA	T	IA	G	I	N2	T2	PU	kg*
MVDE	130	100	50	50	85	70	105	7	8	2.5	63	38	46	50	2.5	80	2.7

\* Gearbox only

Other possible flange

BD1						
Type	M1	N1	P1	S1	LA1	T1
MVDE	100	80	120	7	8	3

1. The letters are numbered to distinguish them from the letters on the standard flange diagram.

Solid output shaft

Type	DB	EB	EY	O	VR	GA	F	MC	O	Z	CP
MVDE	16	40	35	88	6	18	5	25	M5	15	20

Induction motors and brakes

Fr. size	3-phase LS					Single-phase LS					Brakes			
	AC	HJ	LB1	LB2	kg	AC	HJ	LB1	LB2	kg	EF max		kg <sup>1</sup>	
											FMD	FCR	FMD	FCR
56	110	85	156	135	3.4	110	90	156	135	3.5	50	-	0.9	-
63	124	95	172	150	4.3	124	110	172	150	4.5	50	-	0.9	-
71	140	102	183	155	6.5	140	129	183	155	7.5	50	90	0.9	2.5

1. Additional brake weight.

2. For LS 71: 0.25 kW 6 poles three-phase, 0.37 kW 4 poles single-phase, 0.55 kW 4 poles three-phase: LB dimension = +9.

# Electromechanical products

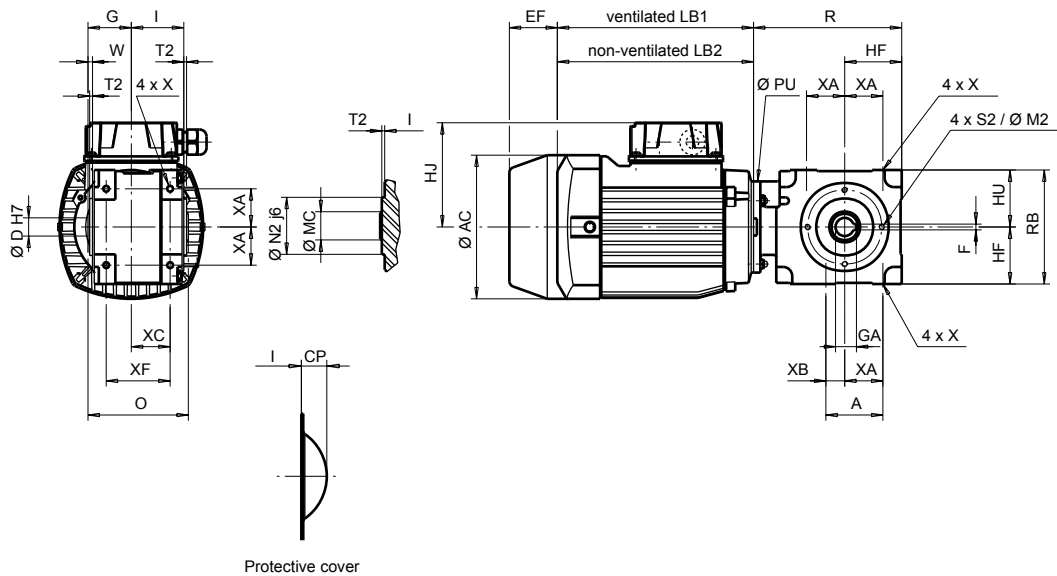
## Minibloc MVDE

### Dimensions

Dimensions of Minibloc MVDE geared motors, MI integrated mounting, hollow output shaft (H)

Dimensions in millimetres

#### - NU-H standard form



Type	NU-H standard gearboxes																	kg*
	S	A	XF	XA	XB	RB	HU	HF	X	XC	G	I	N2	T2	S2	M2	PU	
MVDE	130	50	56	33.5	16.5	100	50	50	M6x10	34	38	46	50	2.5	M5x12	65	80	2.2

\* Gearbox only

Type	Hollow output shaft						
	D	O	GA	F	W	MC	CP
MVDE	16	88	18.3	5	4	25	20

Fr. size	Induction motors and brakes													
	3-phase LS					Single-phase LS					Brakes			
	AC	HJ	LB1	LB2	kg	AC	HJ	LB1	LB2	kg	EF max		kg <sup>1</sup>	
56	110	85	156	135	3.4	110	90	156	135	3.5	FMD	FCR	FMD	FCR
63	124	95	172	150	4.3	124	110	172	150	4.5	50	-	0.9	-
71 <sup>2</sup>	140	102	183	155	6.5	140	129	183	155	7.5	50	90	0.9	2.5

1. Additional brake weight.

2. For LS 71: 0.25 kW 6 poles three-phase, 0.37 kW 4 poles single-phase, 0.55 kW 4 poles three-phase: LB dimension = +9.

# Electromechanical products

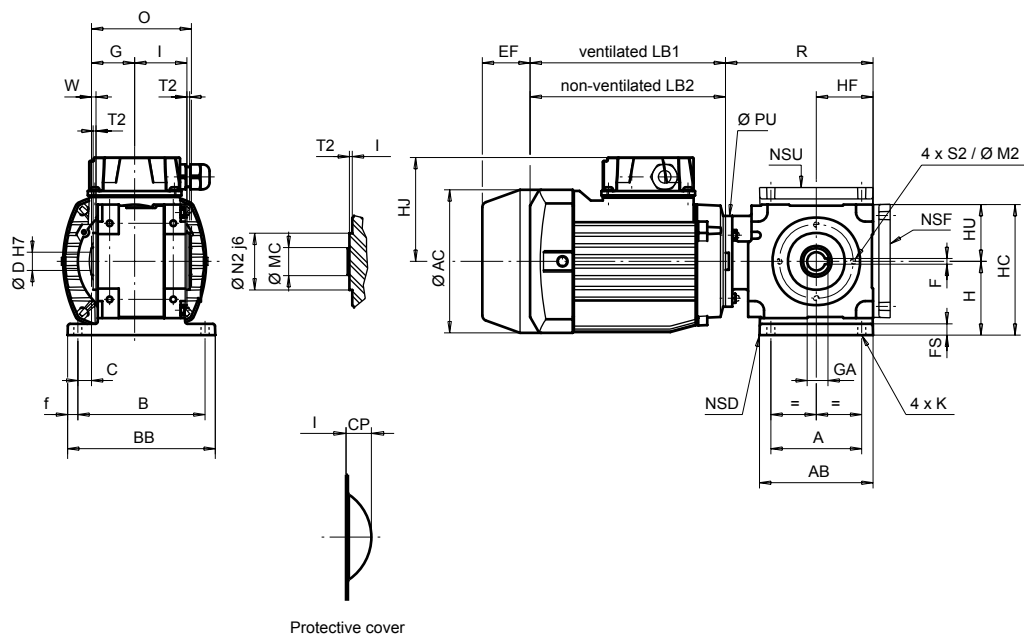
## Minibloc MVBE

### Dimensions

Dimensions of Minibloc MVDE geared motors, MI integrated mounting, hollow output shaft (H)

Dimensions in millimetres

- NSD, NSF, NSU-H base form



Type	Gearboxes with NSD, NSF, NSU-H base																			kg*	
	S	A	AB	B	BB	I	HF	HC	H	HU	f	FS	K	G	N2	T2	C	S2	M2		PU
MVDE	130	80	100	112	130	46	50	115	65	50	9	10	6.8	38	50	2.5	12	M5x12	65	80	2.2

\* Gearbox only

Type	Hollow output shaft						
	D	O	GA	F	W	MC	CP
MVDE	16	88	18.3	5	4	25	20

Fr. size	Induction motors and brakes													
	3-phase LS				kg	Single-phase LS				kg	Brakes			
	AC	HJ	LB1	LB2		AC	HJ	LB1	LB2		EF max		kg <sup>1</sup>	
FMD	FCR	FMD	FCR											
56	110	85	156	135	3.4	110	90	156	135	3.5	50	-	0.9	-
63	124	95	172	150	4.3	124	110	172	150	4.5	50	-	0.9	-
71 <sup>2</sup>	140	102	183	155	6.5	140	129	183	155	7.5	50	90	0.9	2.5

1. Additional brake weight.

2. For LS 71: 0.25 kW 6 poles three-phase, 0.37 kW 4 poles single-phase, 0.55 kW 4 poles three-phase: LB dimension = +9.

B

PERPENDICULAR OUTPUT GEARED MOTORS

# Electromechanical products

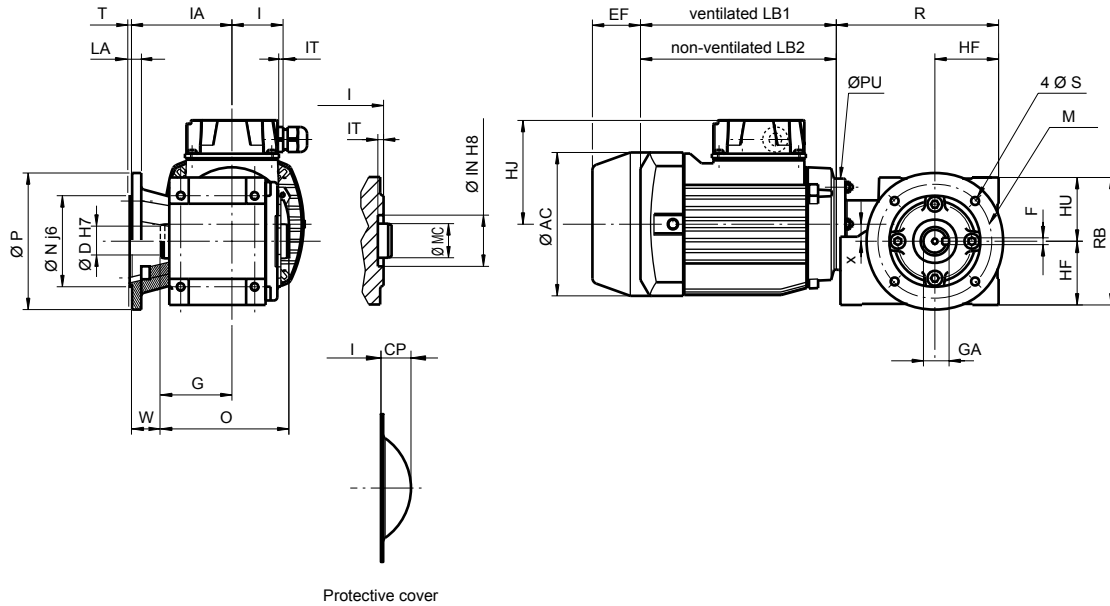
## Minibloc MVDE

### Dimensions

Dimensions of Minibloc MVDE geared motors, MI integrated mounting, hollow output shaft (H)

Dimensions in millimetres

- BS or BD-H flange form



Type	Gearboxes with BS-H flange																kg*
	S	RB	HU	HF	M	N	P	O	LA	T	IA	G	I	N2	T2	PU	
MVDE	130	100	50	50	85	70	105	7	8	2.5	63	38	46	50	2.5	80	2.5

\* Gearbox only

Type	Other possible flange <sup>1</sup>					
	BD1					
	M1	N1	P1	S1	LA1	T1
MVDE	100	80	120	7	8	3

1. The letters are numbered to distinguish them from the letters on the standard flange diagram.

Type	Hollow output shaft						
	D	O	GA	F	W	MC	CP
MVDE	16	88	18.3	5	25	25	20

Fr. size	Induction motors and brakes													
	3-phase LS					Single-phase LS					Brakes			
	AC	HJ	LB1	LB2	kg	AC	HJ	LB1	LB2	kg	EF max		kg <sup>1</sup>	
56	110	85	156	135	3.4	110	90	156	135	3.5	FMD	FCR	FMD	FCR
63	124	95	172	150	4.3	124	110	172	150	4.5	50	-	0.9	-
71 <sup>2</sup>	140	102	183	155	6.5	140	129	183	155	7.5	50	90	0.9	2.5

1. Additional brake weight.

2. For LS 71: 0.25 kW 6 poles three-phase, 0.37 kW 4 poles single-phase, 0.55 kW 4 poles three-phase: LB dimension = +9.



# Electromechanical products

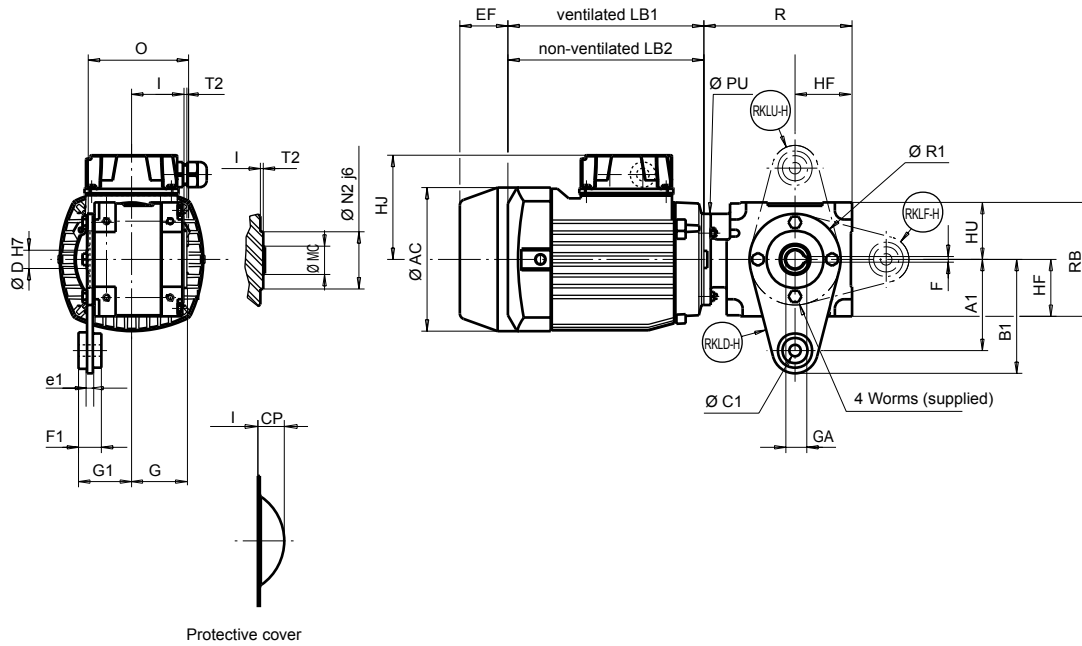
## Minibloc MVDE

### Dimensions

Dimensions of Minibloc MVDE geared motors, MI integrated mounting, hollow output shaft (H), with torque arm

Dimensions in millimetres

- RK-K form (torque arm supplied separately)



Type	Gearboxes with RK-H torque shaft																		kg*
	S	HF	RB	HU	G	I	N2	T2	A1	B1	R1	C1	F1	G1	e1	Screw	PU		
MVDE	130	50	100	50	50	46	50	2.5	80	100	80	10	20	46.5	5	M5x16	80	2.6	

\* Gearbox only

Type	Hollow output shaft					
	D	O	GA	F	MC	CP
MVDE	16	88	18.3	5	25	20

Fr. size	Induction motors and brakes										Brakes			
	3-phase LS					Single-phase LS					Brakes			
	AC	HJ	LB1	LB2	kg	AC	HJ	LB1	LB2	kg	EF max		kg <sup>1</sup>	
											FMD	FCR	FMD	FCR
56	110	85	156	135	3.4	110	90	156	135	3.5	50	-	0.9	-
63	124	95	172	150	4.3	124	110	172	150	4.5	50	-	0.9	-
71 <sup>2</sup>	140	102	183	155	6.5	140	129	183	155	7.5	50	90	0.9	2.5

1. Additional brake weight.

2. For LS 71: 0.25 kW 6 poles three-phase, 0.37 kW 4 poles single-phase, 0.55 kW 4 poles three-phase: LB dimension = +9.

# Electromechanical products

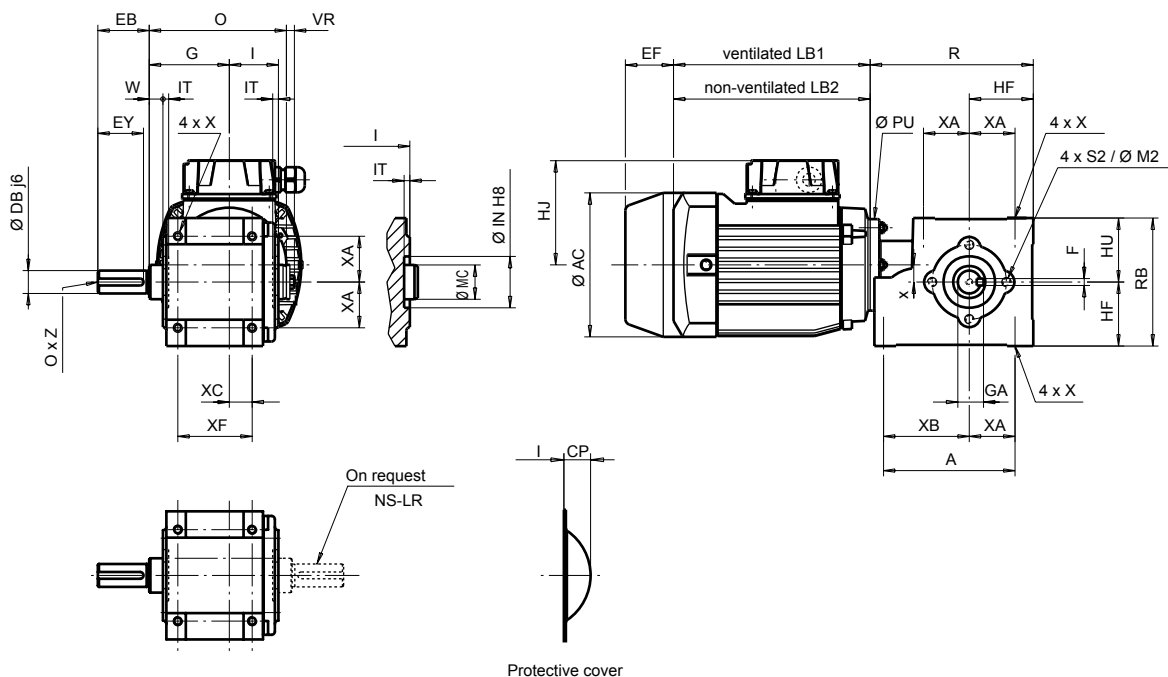
## Minibloc MVBE

### Dimensions

Overall dimensions of the Minibloc MVBE geared motors, MI integrated mounting, integral (L, R) or separate (HL, HR) solid output shaft


Dimensions in millimetres

#### - NU standard form



Protective cover

#### NU standard gearboxes




Type	S	x	A	XF	XA	XB	RB	HU	HF	X	XC	G	I	IN	IT	S2	M2	PU	 kg*
MVBE	143	15	115	65	40	75	112	56	56	M8x12	20	70	43	45	5	M8x12	65	80	6.6

\* Gearbox only

#### Solid output shaft

Type	DB	EB	EY	O	VR	GA	F	W	MC	O	Z	CP
MVBE	20	45	40	120	7	22.5	6	12	30	M6	15	20

#### Induction motors and brakes

Fr. size	3-phase LS				 kg	Single-phase LS				 kg	Brakes			
	AC	HJ	LB1	LB2		AC	HJ	LB1	LB2		EF max		 kg <sup>1</sup>	
										FMD	FCR	FMD	FCR	
56	110	85	156	135	3.4	110	90	156	135	3.5	50	-	0.9	-
63	124	95	172	150	4.3	124	110	172	150	4.5	50	-	0.9	-
71 <sup>2</sup>	140	102	183	155	6.5	140	129	183	155	7.5	50	90	0.9	2.5

1. Additional brake weight.

2. For LS 71: 0.25 kW 6 poles three-phase, 0.37 kW 4 poles single-phase, 0.55 kW 4 poles three-phase: LB dimension = +9.

# Electromechanical products

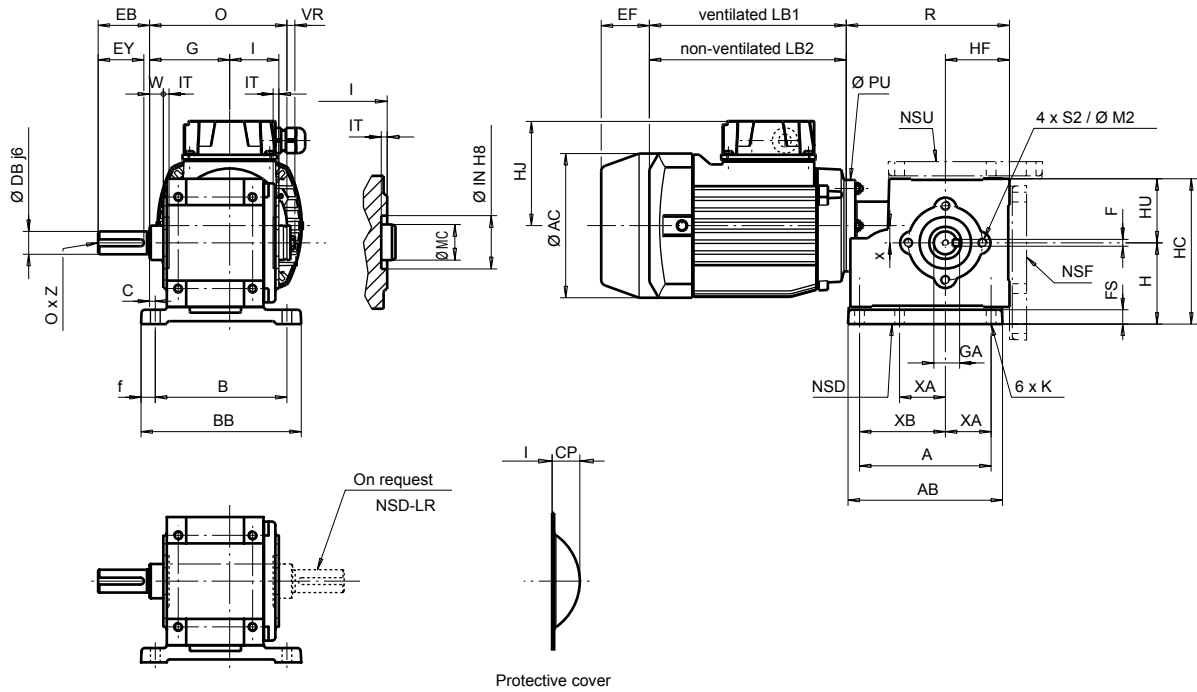
## Minibloc MVBE

### Dimensions

Overall dimensions of the Minibloc MVBE geared motors, MI integrated mounting, integral (L, R) or separate (HL, HR) solid output shaft

Dimensions in millimetres

#### - NSD, NSF, NSU base form



Protective cover

Gearboxes with NSD, NSF, NSU base

Type	S	x	A	AB	B	BB	I	XA	XB	HF	HC	H	HU	f	FS	K	G	IN	IT	C	S2	M2	PU	kg*
MVBE	143	15	115	135	115	140	43	40	75	56	127	71	56	12.5	12	8.5	70	45	5	5	M8x12	65	80	6.2

\* Gearbox only

Solid output shaft

Type	DB	EB	EY	O	VR	GA	F	W	MC	O	Z	CP
MVBE	20	45	40	120	7	22.5	6	12	30	M6	15	20

Induction motors and brakes

Fr. size	3-phase LS					Single-phase LS					Brakes			
	AC	HJ	LB1	LB2	kg	AC	HJ	LB1	LB2	kg	EF max		kg <sup>1</sup>	
											FMD	FCR	FMD	FCR
56	110	85	156	135	3.4	110	90	156	135	3.5	50	-	0.9	-
63	124	95	172	150	4.3	124	110	172	150	4.5	50	-	0.9	-
71 <sup>2</sup>	140	102	183	155	6.5	140	129	183	155	7.5	50	90	0.9	2.5

1. Additional brake weight.

2. For LS 71: 0.25 kW 6 poles three-phase, 0.37 kW 4 poles single-phase, 0.55 kW 4 poles three-phase: LB dimension = +9.

B  
PERPENDICULAR OUTPUT GEARED MOTORS

# Electromechanical products

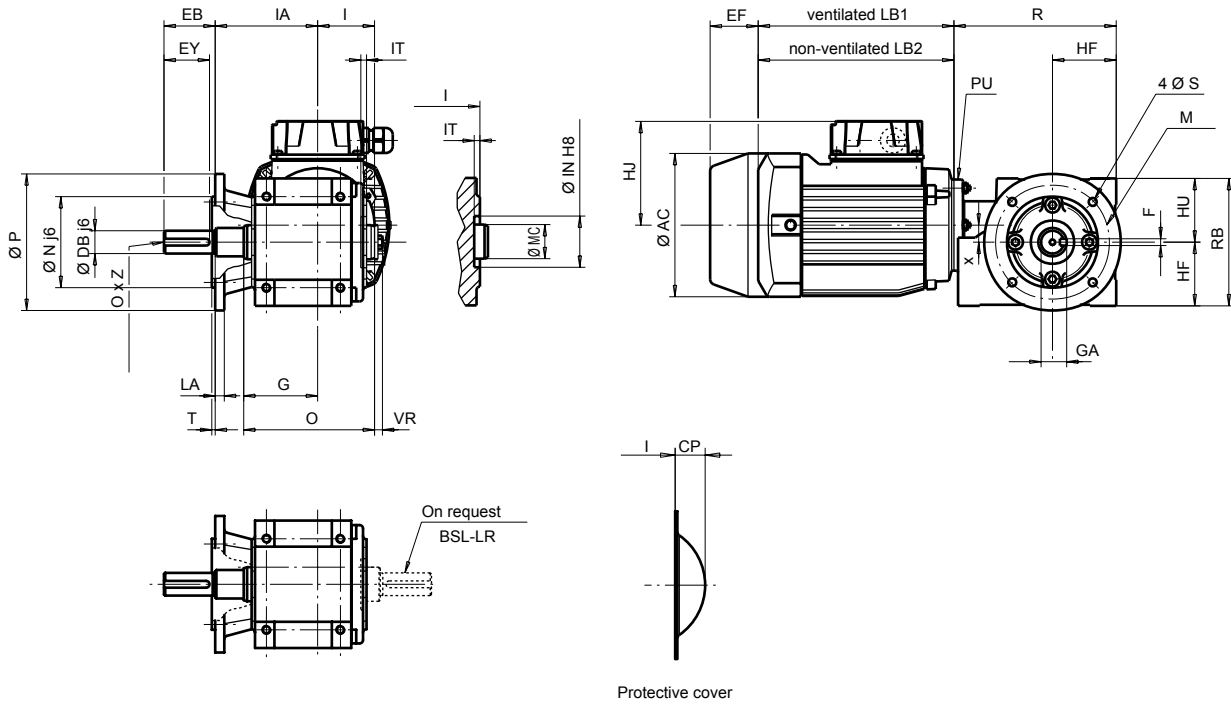
## Minibloc MVBE

### Dimensions

Overall dimensions of the Minibloc MVBE geared motors, MI integrated mounting, integral (L, R) or separate (HL, HR) solid output shaft

Dimensions in millimetres

#### - BS or BD flange form



Type	Gearboxes with BS flange																kg*	
	S	x	RB	HU	HF	M	N	P	O	LA	T	IA	G	I	IN	IT		PU
MVBE	143	15	112	56	56	100	80	120	7	8	3	90	65	43	45	5	80	7.4

\* Gearbox only

Type	Other possible flanges <sup>1</sup>											
	BD1						BD2					
	M1	N1	P1	S1	LA1	T1	M2	N2	P2	S2	LA2	T2
MVBE	85	70	105	7	8	3	115	95	140	9	8	3

1. The letters are numbered to distinguish them from the letters on the standard flange diagram.

Type	Solid output shaft										
	DB	EB	EY	O	VR	GA	F	MC	O	Z	CP
MVBE	20	45	40	115	7	22.5	6	30	M6	15	20

Fr. size	Induction motors and brakes											
	3-phase LS				Single-phase LS				Brakes			
	AC	HJ	LB1	LB2	AC	HJ	LB1	LB2	EF max			
56	110	85	156	135	110	90	156	135	FMD	FCR	FMD	FCR
63	124	95	172	150	124	110	172	150	50	-	0.9	-
71 <sup>2</sup>	140	102	183	155	140	129	183	155	50	90	0.9	2.5

1. Additional brake weight.

2. For LS 71: 0.25 kW 6 poles three-phase, 0.37 kW 4 poles single-phase, 0.55 kW 4 poles three-phase: LB dimension = +9.

# Electromechanical products

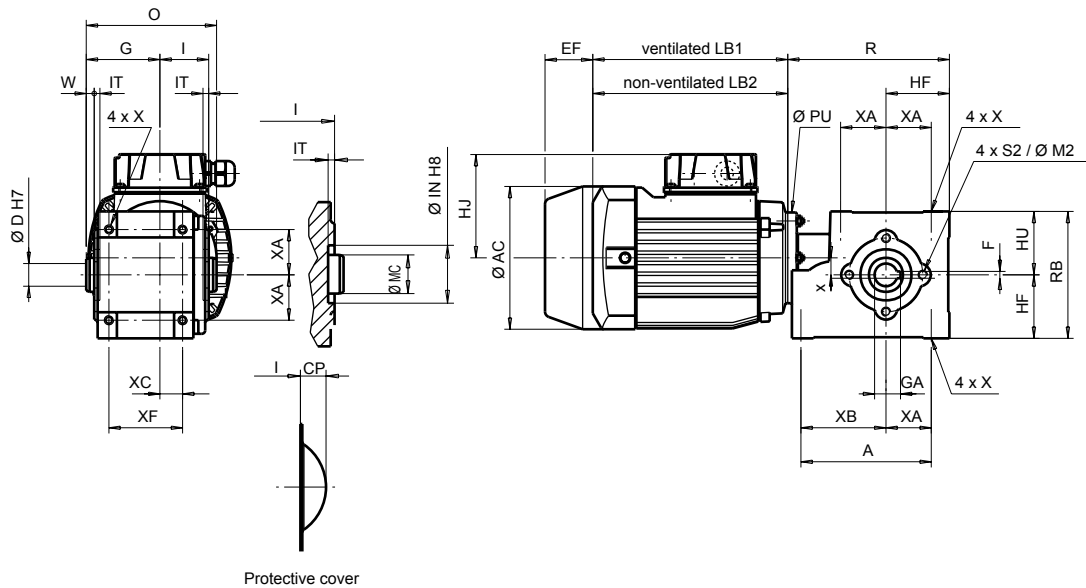
## Minibloc MVBE

### Dimensions

Dimensions of Minibloc MVBE geared motors, MI integrated mounting, hollow output shaft (H)

Dimensions in millimetres

- NU-H standard form



B

PERPENDICULAR OUTPUT GEARED MOTORS

NU-H standard gearboxes																	kg*		
Type	S	x	A	XF	XA	XB	RB	HU	HF	X	XC	G	I	IN	IT	S2		M2	PU
MVBE	143	15	115	65	40	75	112	56	56	M8x12	20	65	43	45	5	M8x12	65	80	6.2

\* Gearbox only

Hollow output shaft							
Type	D	O	GA	F	W	MC	CP
MVBE	20	115	22.8	6	7	30	20

Fr. size	Induction motors and brakes										Brakes			
	3-phase LS					Single-phase LS					Brakes			
	AC	HJ	LB1	LB2	kg	AC	HJ	LB1	LB2	kg	EF max		kg <sup>1</sup>	
56	110	85	156	135	3.4	110	90	156	135	3.5	FMD	FCR	FMD	FCR
63	124	95	172	150	4.3	124	110	172	150	4.5	50	-	0.9	-
71 <sup>2</sup>	140	102	183	155	6.5	140	129	183	155	7.5	50	90	0.9	2.5

1. Additional brake weight.

2. For LS 71: 0.25 kW 6 poles three-phase, 0.37 kW 4 poles single-phase, 0.55 kW 4 poles three-phase: LB dimension = +9.

# Electromechanical products

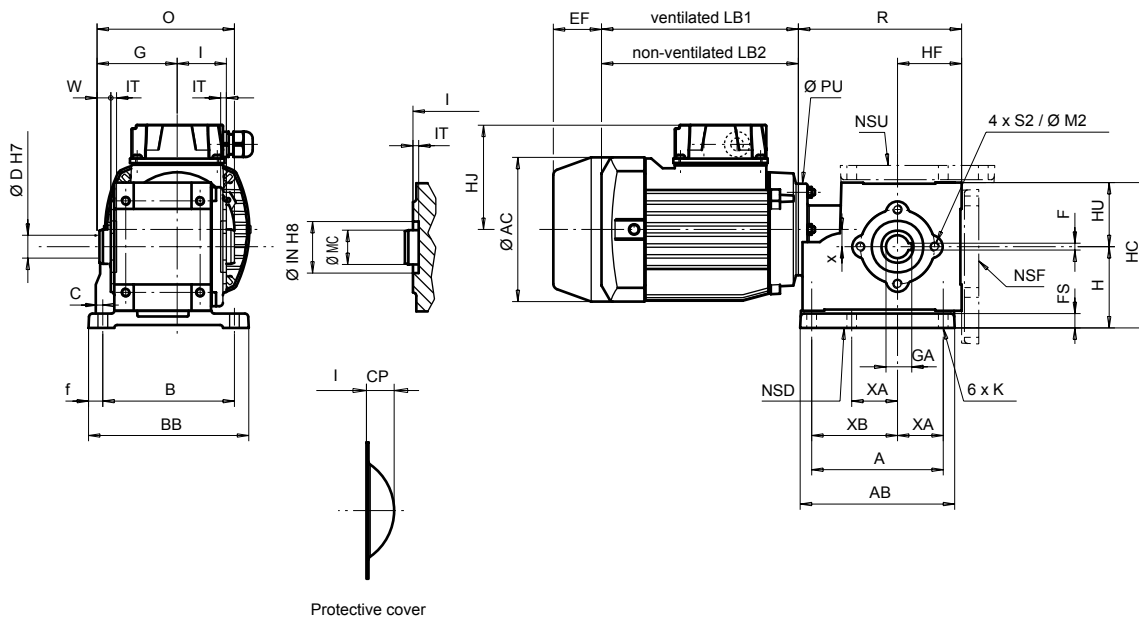
## Minibloc MVBE

### Dimensions

Dimensions of Minibloc MVBE geared motors, MI integrated mounting, hollow output shaft (H)

Dimensions in millimetres

- NSD, NSF, NSU-H base form



Gearboxes with NSD, NSF, NSU-H base

Type	S	x	A	AB	B	BB	I	XA	XB	HF	HC	H	HU	f	FS	K	G	IN	IT	C	S2	M2	PU	kg*
MVBE	143	15	115	135	115	140	43	40	75	56	127	71	56	12.5	12	8.5	65	45	5	0	M8x12	65	80	7.6

\* Gearbox only

NB: in position NSF and S5 the axis side of the slow speed shaft against the feet fastenings is 71mm.

Hollow output shaft

Type	D	O	GA	F	W	MC	CP
MVBE	20	115	22.8	6	7	30	20

Induction motors and brakes

Fr. size	3-phase LS				kg	Single-phase LS				kg	Brakes			
	AC	HJ	LB1	LB2		AC	HJ	LB1	LB2		EF max		FMD	FCR
											FMD	FCR		
56	110	85	156	135	3.4	110	90	156	135	3.5	50	-	0.9	-
63	124	95	172	150	4.3	124	110	172	150	4.5	50	-	0.9	-
71 <sup>2</sup>	140	102	183	155	6.5	140	129	183	155	7.5	50	90	0.9	2.5

1. Additional brake weight.

2. For LS 71: 0.25 kW 6 poles three-phase, 0.37 kW 4 poles single-phase, 0.55 kW 4 poles three-phase: LB dimension = +9.

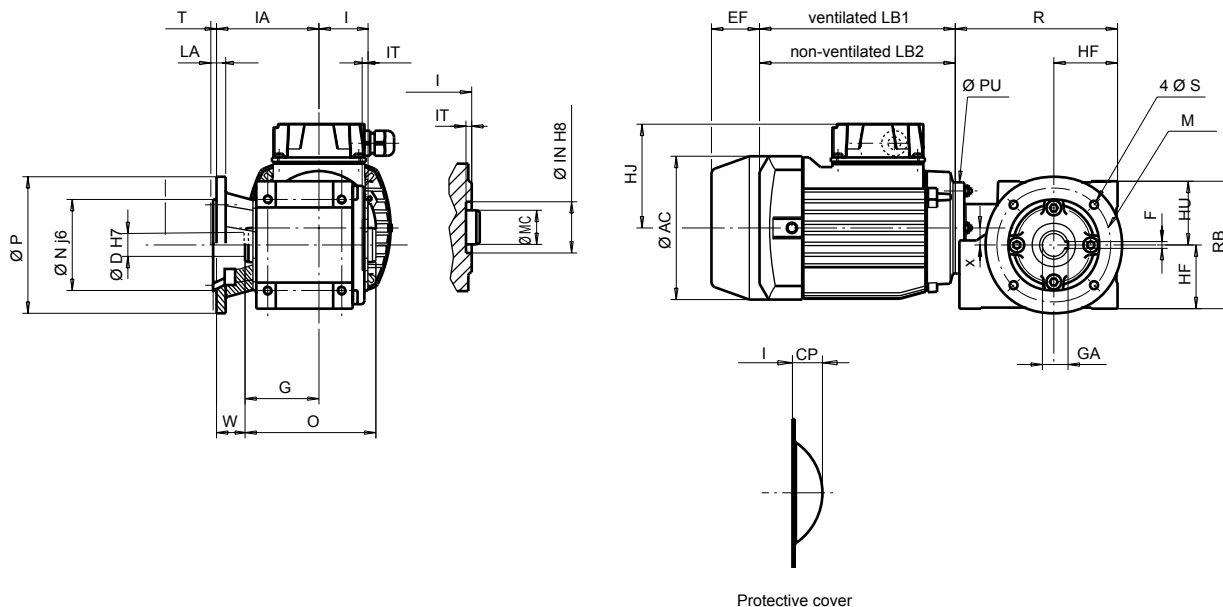
# Electromechanical products

## Minibloc MVBE

### Dimensions

Dimensions in millimetres

#### - BS or BD-H flange form



Type	Gearboxes with BS-H flange																	kg*
	S	x	RB	HU	HF	M	N	P	O	LA	T	IA	G	I	IN	IT	PU	
MVBE	143	15	112	56	56	100	80	120	7	8	3	90	65	43	45	5	80	7

\* Gearbox only

Type	Other possible flanges <sup>1</sup>											
	BD1						BD2					
	M1	N1	P1	S1	LA1	T1	M2	N2	P2	S2	LA2	T2
MVBE	85	70	105	7	8	3	115	95	140	9	8	3

1. The letters are numbered to distinguish them from the letters on the standard flange diagram.

Type	Hollow output shaft						
	D	O	GA	F	W	MC	CP
MVBE	20	115	22.8	6	25	30	20

Fr. size	Induction motors and brakes										Brakes			
	3-phase LS					Single-phase LS					EF max			
	AC	HJ	LB1	LB2	kg	AC	HJ	LB1	LB2	kg	FMD	FCR	FMD	FCR
											kg <sup>1</sup>			
56	110	85	156	135	3.4	110	90	156	135	3.5	50	-	0.9	-
63	124	95	172	150	4.3	124	110	172	150	4.5	50	-	0.9	-
71 <sup>2</sup>	140	102	183	155	6.5	140	129	183	155	7.5	50	90	0.9	2.5

1. Additional brake weight.

2. For LS 71: 0.25 kW 6 poles three-phase, 0.37 kW 4 poles single-phase, 0.55 kW 4 poles three-phase: LB dimension = +9.

B

PERPENDICULAR OUTPUT GEARED MOTORS

# Electromechanical products

## Minibloc MVBE

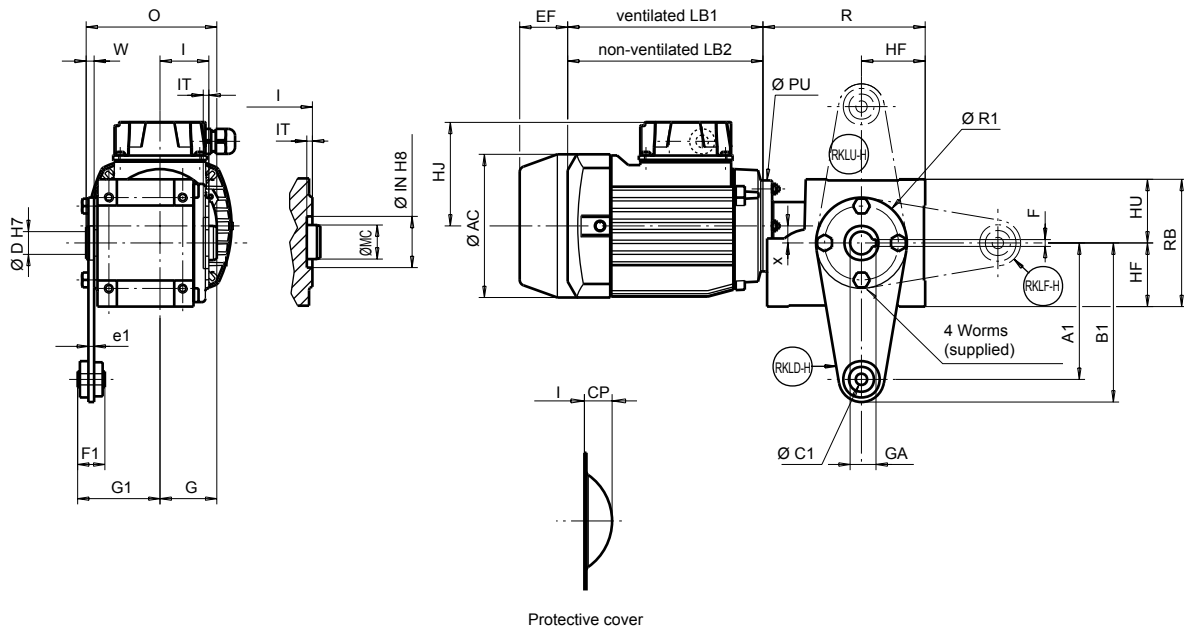
### Dimensions

Dimensions of Minibloc MVBE geared motors, MI integrated mounting, hollow output shaft (H), with torque arm

Dimensions in millimetres

To make it easier for adaptation on the machine, the torque arm is delivered (with its fixing screws) not mounted on the gearbox.

- RK-K form (torque arm supplied separately)



Gearboxes with RK-H torque shaft

Type	S	x	HF	RB	HU	G	I	IN	IT	A1	B1	R1	C1	F1	G1	e1	Screw	PU	kg*
MVBE	143	15	56	112	56	50	43	45	5	120	140	80	10	24	72.5	5	M8x16	80	6.6

\* Gearbox only

Hollow output shaft

Type	D	O	GA	F	W	MC	CP
MVBE	20	115	22.8	6	7	30	20

Induction motors and brakes

Fr. size	3-phase LS					Single-phase LS					Brakes			
	AC	HJ	LB1	LB2	kg	AC	HJ	LB1	LB2	kg	EF max		kg <sup>1</sup>	
											FMD	FCR	FMD	FCR
56	110	85	156	135	3.4	110	90	156	135	3.5	50	-	0.9	-
63	124	95	172	150	4.3	124	110	172	150	4.5	50	-	0.9	-
71 <sup>2</sup>	140	102	183	155	6.5	140	129	183	155	7.5	50	90	0.9	2.5

1. Additional brake weight.

2. For LS 71: 0.25 kW 6 poles three-phase, 0.37 kW 4 poles single-phase, 0.55 kW 4 poles three-phase: LB dimension = +9.



# Electromechanical products

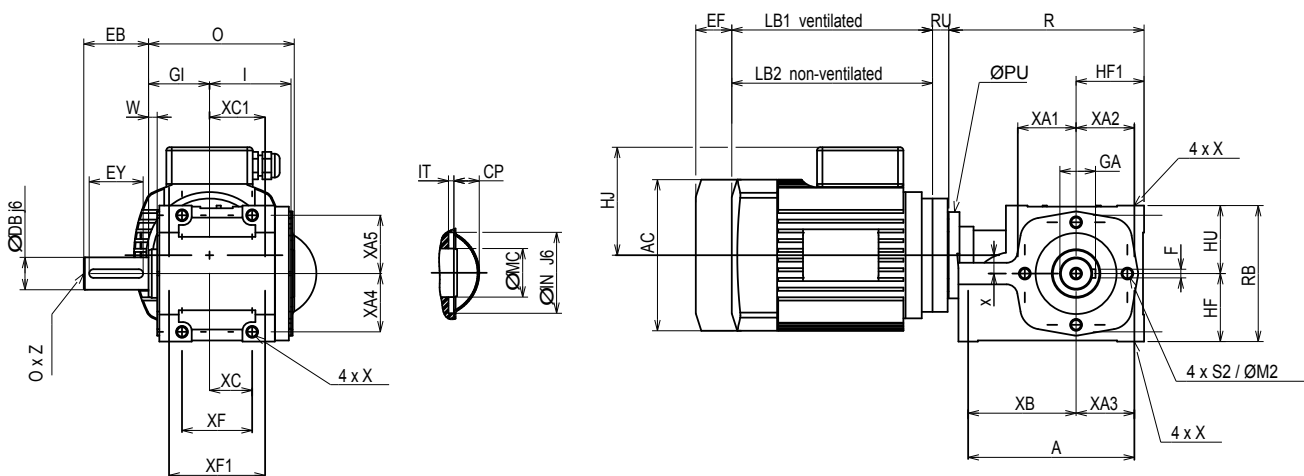
## Minibloc MVAE

### Dimensions

Overall dimensions of the Minibloc MVAE geared motors, MU universal mounting, integral (L, R) or separate (HL, HR) solid output shaft

Dimensions in millimetres

#### - NU standard form



NU standard gearboxes																			kg*		
Type	S	x	A	XF	XA	XB	RB	RU	HU	HF	X	XC	G	I	IN	IT	S2	M2		XC1	XF1
MVAE	181	17	154	65	54	100	126	15	63	63	M10x20	39.5	51.5	75.5	75	5	M10x15	95	51.5	89	9

\* Gearbox only

Solid output shaft											
Type	DB	EB	EY	O	GA	F	W	MC	O	Z	CP
MVAE	30	60	50	135	33	8	8	45	M10	22	23.5

Fr. size	Induction motors and brakes										Brakes							
	3-phase LS					kg	Single-phase LS					kg**	EF max		kg <sup>1</sup>	EF max		
	AC	HJ	LB1	LB2	PU		AC	HJ	LB1	LB2	PU		FMD	FCR		FMD	FCR	
56	110	85	156	135	80	3.4	110	93	156	135	80	3.5	50	-	0.9	-	-	-
63	124	90	172	150	90	4.3	124	98	172	150	90	4.5	50	-	0.9	-	-	-
71 <sup>2</sup>	140	102	183	155	105	6.5	140	110	183	155	105	7.5	50	88	0.9	2.5	-	-
80	170	114	215	177	105	10.9	170	122	215	177	105	11	-	77	-	7.2	-	-

\*\* Motor only

1. Additional brake weight.

2. For LS 71: 0.25 kW 6 poles three-phase, 0.37 kW 4 poles single-phase, 0.55 kW 4 poles three-phase: LB dimension = +9.

LS56, LS63 and LS71 motors: B14 IEC standards (Note: LS56 = 8 holes).

LS80 motor: B14, F85, shaft extension 14x30.

# Electromechanical products

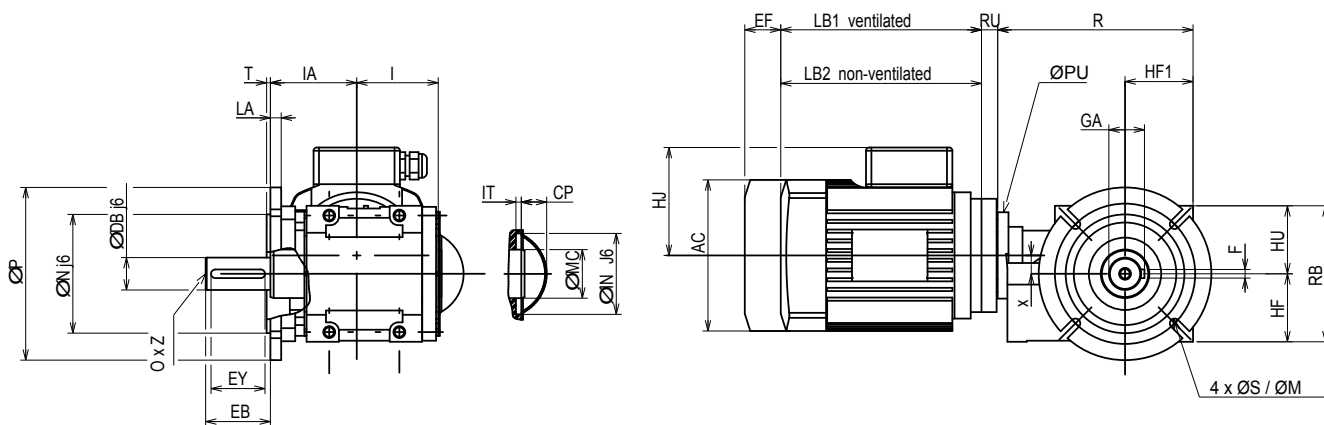
## Minibloc MVAE

### Dimensions

Overall dimensions of the Minibloc MVAE geared motors, MU universal mounting, integral (L, R) or separate (HL, HR) solid output shaft

Dimensions in millimetres

- BS or BD flange form



Type	BS standard gearboxes																	kg*			
	S	HC	AB	RU	H	x	HU	HF	FS	XA	XB	XC	XF	G	I	IN	IT		X	S2	M2
MVAE	101	121.5	100	19	50	40	71.5	50	6	31.5	58.5	31.5	63	39	43	65	5	6.5	M6x13	85	2.2

\* Gearbox only

Type	Solid output shaft									
	DB	EB	EY	GA	F	W	MC	O	Z	CP
MVAE	30	60	50	33	8	0	45	M10	22	23.5

Type	Other possible flanges <sup>1</sup>											
	BD1						BD2					
	M1	N1	P1	S1	LA1	T1	M2	N2	P2	S2	LA2	T2
MVAE	115	95	140	9	8	3.5	165	130	200	11	10	3.5

1. The letters are numbered to distinguish them from the letters on the standard flange diagram.

Fr. size	Induction motors and brakes															
	3-phase LS						Single-phase LS					Brakes				
	AC	HJ	LB1	LB2	PU	kg	AC	HJ	LB1	LB2	PU	kg**	EF max		kg	
56	110	85	156	135	80	3.4	110	93	156	135	80	3.5	FMD	FCR	FMD	FCR
63	124	90	172	150	90	4.3	124	98	172	150	90	4.5	50	-	0.9	-
71 <sup>2</sup>	140	102	183	155	105	6.5	140	110	183	155	105	7.5	50	88	0.9	2.5
80	170	114	215	177	105	10.9	170	122	215	177	105	11	-	77	-	7.2

\*\* Motor only

1. Additional brake weight.

2. For LS 71: 0.25 kW 6 poles three-phase, 0.37 kW 4 poles single-phase, 0.55 kW 4 poles three-phase: LB dimension = +9.

LS56, LS63 and LS71 motors: B14 IEC standards (Note: LS56 = 8 holes).  
LS80 motor: B14, F85, shaft extension 14x30.

# Electromechanical products

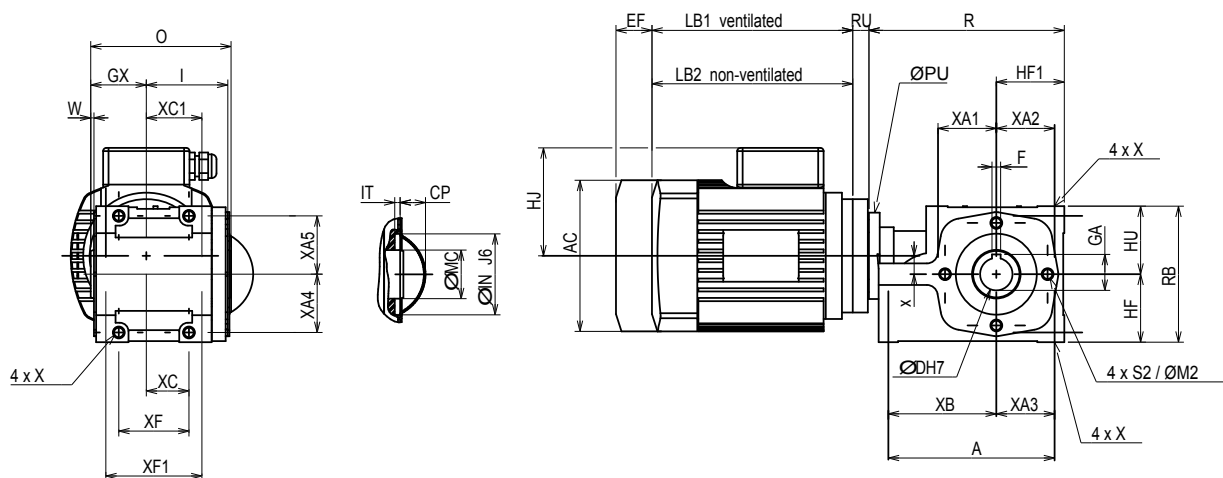
## Minibloc MVAE

### Dimensions

Dimensions of Minibloc MVAE geared motors, MU universal mounting, hollow output shaft (H)

Dimensions in millimetres

- NU-H standard form



NU-H standard gearboxes

Type	S	x	A	XF	XA	XB	RB	HU	HF	X	XC	G	I	IN	IT	S2	M2	XC1	XF1	*
MVAE	181	17	154	65	54	100	126	15	63	M10x20	39.5	51.5	75.5	75	5	M10x15	95	51.5	89	9

\* Gearbox only

Hollow output shaft

Type	D	O	GA	F	W	MC	CP
MVAE	30	130	33.3	8	3	45	23.5

Induction motors and brakes

Fr. size	3-phase LS					kg	Single-phase LS					**	Brakes			
	AC	HJ	LB1	LB2	PU		AC	HJ	LB1	LB2	PU		EF max		<sup>1</sup> kg	
											FMD	FCR	FMD	FCR		
56	110	85	156	135	80	3.4	110	93	156	135	80	3.5	50	-	0.9	-
63	124	90	172	150	90	4.3	124	98	172	150	90	4.5	50	-	0.9	-
71 <sup>2</sup>	140	102	183	155	105	6.5	140	110	183	155	105	7.5	50	88	0.9	2.5
80	170	114	215	177	105	10.9	170	122	215	177	105	11	-	77	-	7.2

\*\* Motor only

1. Additional brake weight.

2. For LS 71: 0.25 kW 6 poles three-phase, 0.37 kW 4 poles single-phase, 0.55 kW 4 poles three-phase: LB dimension = +9.

LS56, LS63 and LS71 motors: B14 IEC standards (Note: LS56 = 8 holes).  
LS80 motor: B14, F85, shaft extension 14x30.



# Electromechanical products

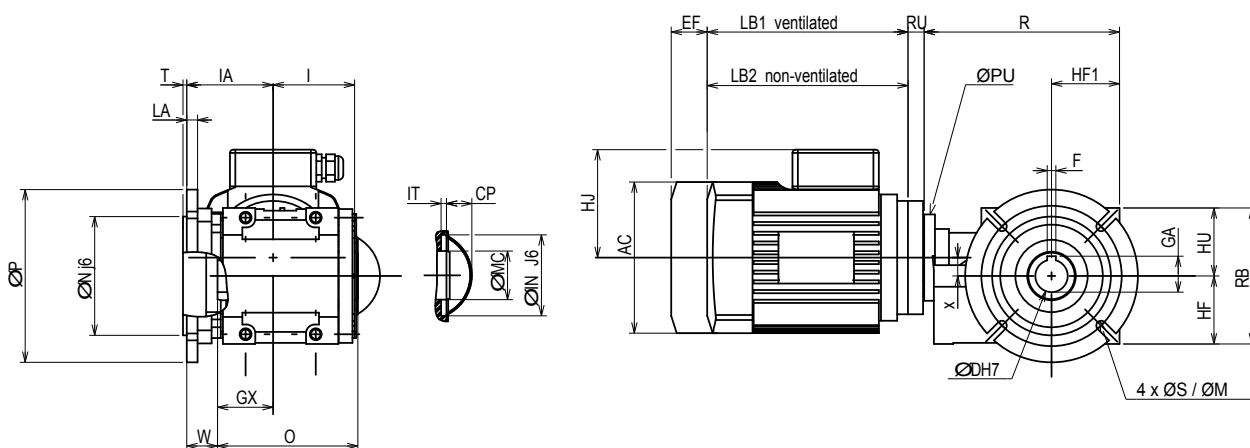
## Minibloc MVAE

### Dimensions


Dimensions of Minibloc MVAE geared motors, MU universal mounting, hollow output shaft (H)

Dimensions in millimetres

- BS or BD-H flange form



BS-H standard gearboxes

Type	S	x	RB	HU	HF	M	N	P	O	LA	T	IA	G	I	IN	IT	RU	 kg*
MVAE	181	17	126	63	63	130	110	160	9	10	3.5	80	51.5	75.5	75	5	15	9.5

\* Gearbox only

Hollow output shaft




Type	D	O	GA	F	W	MC	CP
MVAE	30	130	33.3	8	28.5	45	23.5

Other possible flanges<sup>1</sup>

BD1						BD2					
M1	N1	P1	S1	LA1	T1	M2	N2	P2	S2	LA2	T2
115	95	140	9	8	3.5	165	130	200	11	10	3.5

1. The letters are numbered to distinguish them from the letters on the standard flange diagram.

Induction motors and brakes

Fr. size	3-phase LS					 kg	Single-phase LS					 kg**	Brakes			
	AC	HJ	LB1	LB2	PU		AC	HJ	LB1	LB2	PU		EF max		 kg <sup>1</sup>	
											FMD	FCR	FMD	FCR		
56	110	85	156	135	80	3.4	110	93	156	135	80	3.5	50	-	0.9	-
63	124	90	172	150	90	4.3	124	98	172	150	90	4.5	50	-	0.9	-
71 <sup>2</sup>	140	102	183	155	105	6.5	140	110	183	155	105	7.5	50	88	0.9	2.5
80	170	114	215	177	105	10.9	170	122	215	177	105	11	-	77	-	7.2

\*\* Motor only

1. Additional brake weight.

2. For LS 71: 0.25 kW 6 poles three-phase, 0.37 kW 4 poles single-phase, 0.55 kW 4 poles three-phase: LB dimension = +9.

LS56, LS63 and LS71 motors: B14 IEC standards (Note: LS56 = 8 holes).  
LS80 motor: B14, F85, shaft extension 14x30.

# Electromechanical products

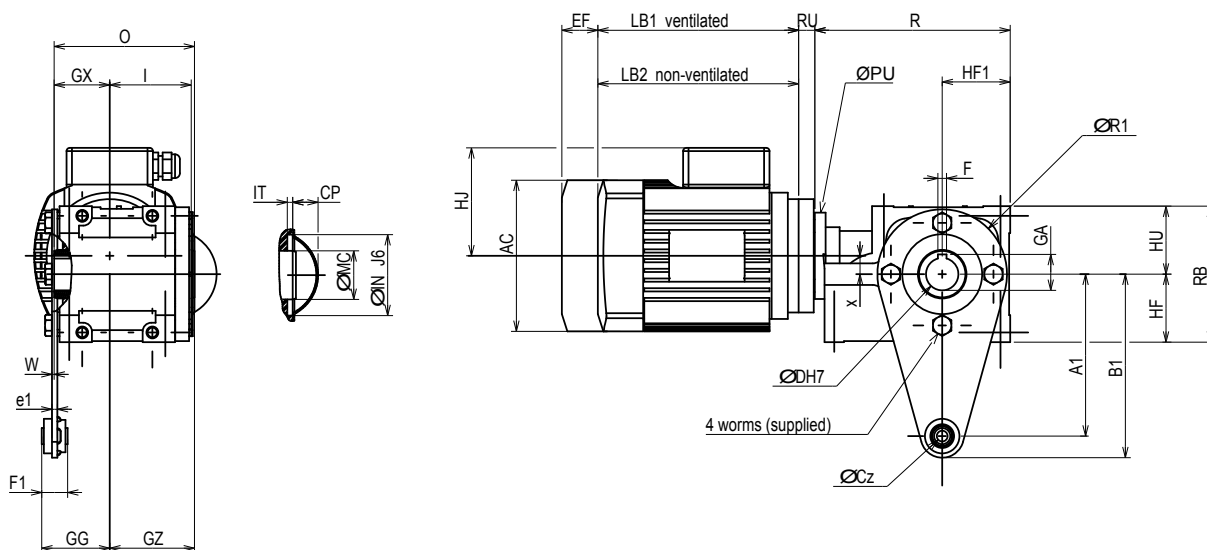
## Minibloc MVAE

### Dimensions

Dimensions of Minibloc MVAE geared motors, MU universal mounting, hollow output shaft (H),  
with torque arm

Dimensions in millimetres

- RK-K form (torque arm supplied separately)



Gearboxes with RK-H torque arm

Type	S	x	HF	RB	RU	HU	G2	I	IN	IT	A1	B1	R1	C1	F1	G1	G	e1	Screw	kg*
MVAE	181	17	63	126	15	63	78.5	75.5	75	5	150	170	60	10	24	63	51.5	5	M10x20	9.7

\* Gearbox only

To make it easier for adaptation on the machine, the torque arm is delivered (with its fixing screws) not mounted on the gearbox (RKL-H).

Hollow output shaft

Type	D	O	GA	F	W	MC	CP
MVAE	30	130	33.3	8	2	45	23.5

Induction motors and brakes

Fr. size	3-phase LS						Single-phase LS					Brakes				
	AC	HJ	LB1	LB2	PU	kg	AC	HJ	LB1	LB2	PU	kg**	EF max		kg <sup>1</sup>	
													FMD	FCR	FMD	FCR
56	110	85	156	135	80	3.4	110	93	156	135	80	3.5	50	-	0.9	-
63	124	90	172	150	90	4.3	124	98	172	150	90	4.5	50	-	0.9	-
71 <sup>2</sup>	140	102	183	155	105	6.5	140	110	183	155	105	7.5	50	88	0.9	2.5
80	170	114	215	177	105	10.9	170	122	215	177	105	11	-	77	-	7.2

\*\* Motor only

1. Additional brake weight.

2. For LS 71: 0.25 kW 6 poles three-phase, 0.37 kW 4 poles single-phase, 0.55 kW 4 poles three-phase: LB dimension = +9.

LS56, LS63 and LS71 motors: B14 IEC standards (Note: LS56 = 8 holes).  
LS80 motor: B14, F85, shaft extension 14x30.





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