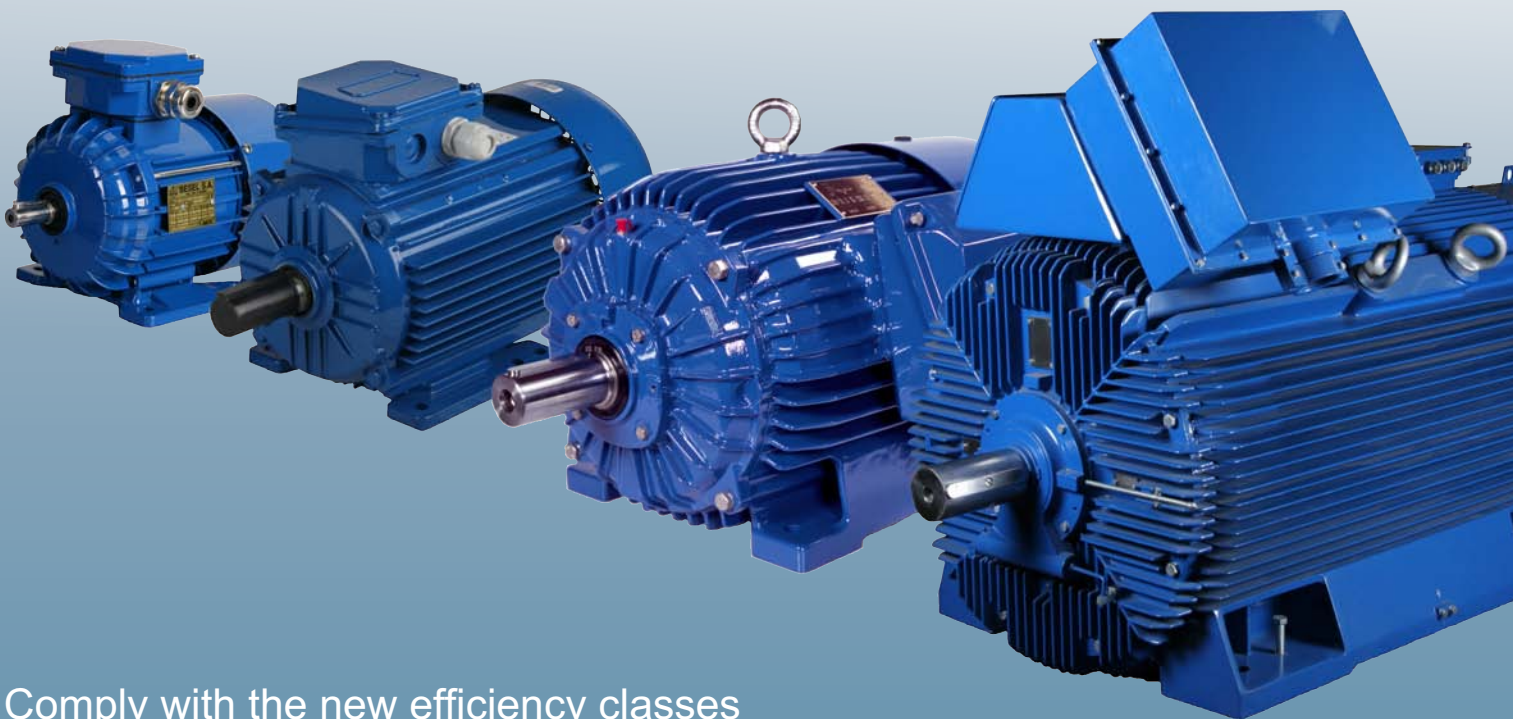


General Purpose Energy Efficient Induction Motors

Energy Efficient Motors Series 2VTB

IE2



Comply with the new efficiency classes
for low-voltage three-phase motors

IEC 60034-30 standard and EU Regulation 640/2009

Product Catalogue

Certificates



**DNV BUSINESS ASSURANCE
MANAGEMENT SYSTEM CERTIFICATE**

Certificato No. / Certificate No. **CERT-11553-2003-AQ-VEN-SINCERT**

Si attesta che / This is to certify that

VEMAT MOTORI S.r.l.

Via Gualda, 10 - 36075 Montecchio Maggiore (VI) - Italy

*è conforme ai requisiti della norma per i sistemi di gestione:
has been found to conform to the management system standard:*

UNI EN ISO 9001:2008 (ISO 9001:2008)

*Questa Certificazione è valida per il seguente campo applicativo:
This Certificate is valid for the following product or service ranges:*

**Progettazione, sviluppo, produzione e vendita di motori elettrici asincroni monofase e trifase
(Settore EA : 19)**

*Design and manufacture of asynchronous three-phase and single-phase electric motors
(Sector EA : 19)*

Data Prima Emissione/Initial Certification Date:

2003-01-07

Il Certificato è valido fino al:

This Certificate is valid until:

2017-12-06

L'audit è stato eseguito sotto la supervisione di/
The audit has been performed under the supervision of

Mauro Sanguinetti
Lead Auditor



SGQ N°003 A PRD N°003 B
SGA N°003 D SSI N°002 G
SCR N°004 F FSM N°001 I
Membro di MLA EA per gli schemi di accreditamento SGQ,
SGA, PRD, PRS, ISP e LAB, di MLA IAF per gli schemi di
accreditamento SSG, SGA, SSI, TSH e PRD
e di MRA ILAC per gli schemi di accreditamento LAB

Luogo e Data/Place and Date:

Vimercate (MB), 2014-10-14

Per l'Organismo di Certificazione:

For the Certification Body:

Zeno Beltrami
Management Representative

La validità del presente Certificato è subordinata al rispetto delle condizioni contenute nel Contratto di Certificazione.
Lack of fulfilment of conditions as set out in the Certification Agreement may render this Certificate invalid.

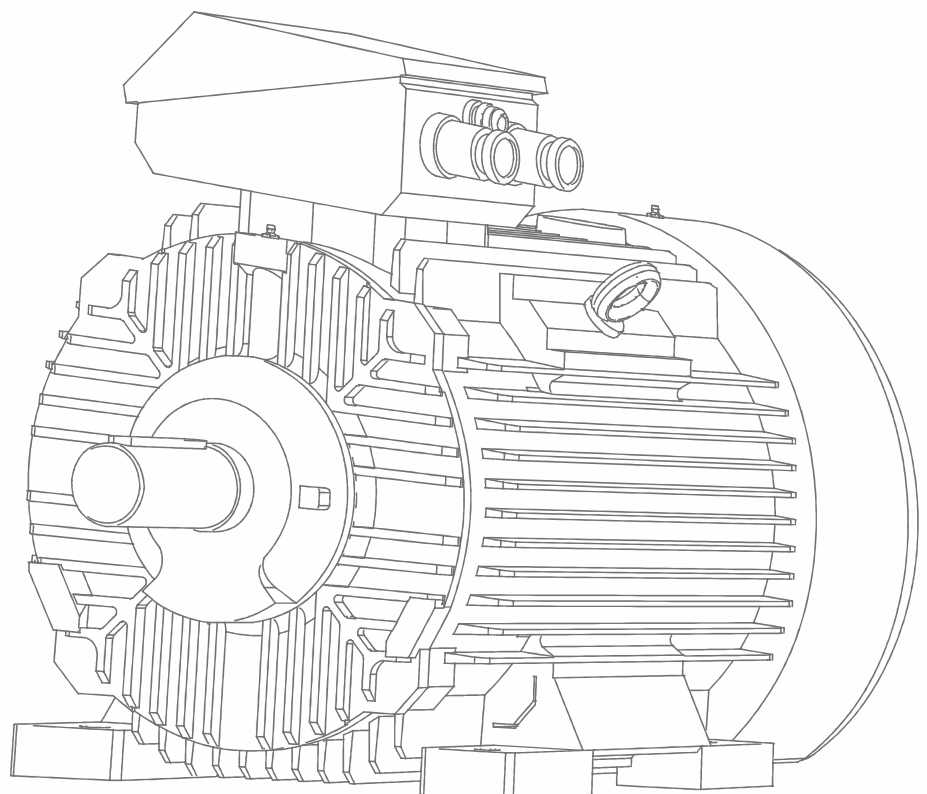
DNV GL BUSINESS ASSURANCE ITALIA S.R.L. - VIA ENERGY PARK, 14 - 20871 VIMERCATE (MB) - ITALY - TEL. 039.68 99 905 - WWW.DNVGL.COM/IT

Vemat Motori is a company which has been producing electric motors from many years and is recognised among the Italian and International market leaders.

Research, experience and continuous technological updating, always and exclusively aimed at perfecting its production, mean that Vemat Motori is a company which can meet the most varied market demands.

The investment policy which has always been pursued privileges the quality and reliability of the products, while flexible organization of production and the high professionalism of the personnel and technicians allow us to offer a range of products which are the result of continuous research and development activities.

The production cycle ensures a high and constant quality guaranteed by the certification of the materials used and by the continuous controls carried out during the machining processes.



Contents

General information

pages 5-14

Introduction to 2VTB motors

Efficiency of motors

Ratings-tolerances

Standards

Insulation classification

Terminal box

Vibration and noise level

Degree of protection

Mounting arrangements

Bearings

Permissible loads on the shaft end

Housing, endshields

Description of the customised executions

Ordering information

Technical data

pages 16-20

Dimensional drawings

pages 21-30

List of motor parts

pages 31-34

Production program

page 35

New efficiency classes for the low-voltage three-phase motors (IE = International Efficiency).

Along with the international discussion on energy efficiency a worldwide harmonized energy efficiency classification system has been established for low-voltage three-phase asynchronous motors.

For many years low-voltage three-phase motors in the European Union have been sold in three efficiency classes EFF3, EFF2 and EFF1. Aside from this, many different efficiency classification systems have been introduced and well-proven in many countries all over the world.

This was the reason for the International Electrotechnical Commission IEC to develop and publish an energy efficiency standard which replaces all previous national issues. In parallel IEC developed and issued a new standard for determining motor efficiency. The new standard IEC 60034-30 defines and harmonizes worldwide the efficiency classes IE1, IE2 and IE3 for low-voltage three-phase motors in the power range from 0.75 kW to 375 kW (2p=2, 4, 6):

- IE1 = Standard Efficiency**
- IE2 = High Efficiency**
- IE3 = Premium Efficiency**

From now motors can be offered and sold with the new classes IE1, IE2 and IE3. In that case the efficiency has to be determined according to the new requirements given in the IEC 60034-2-1 standard.

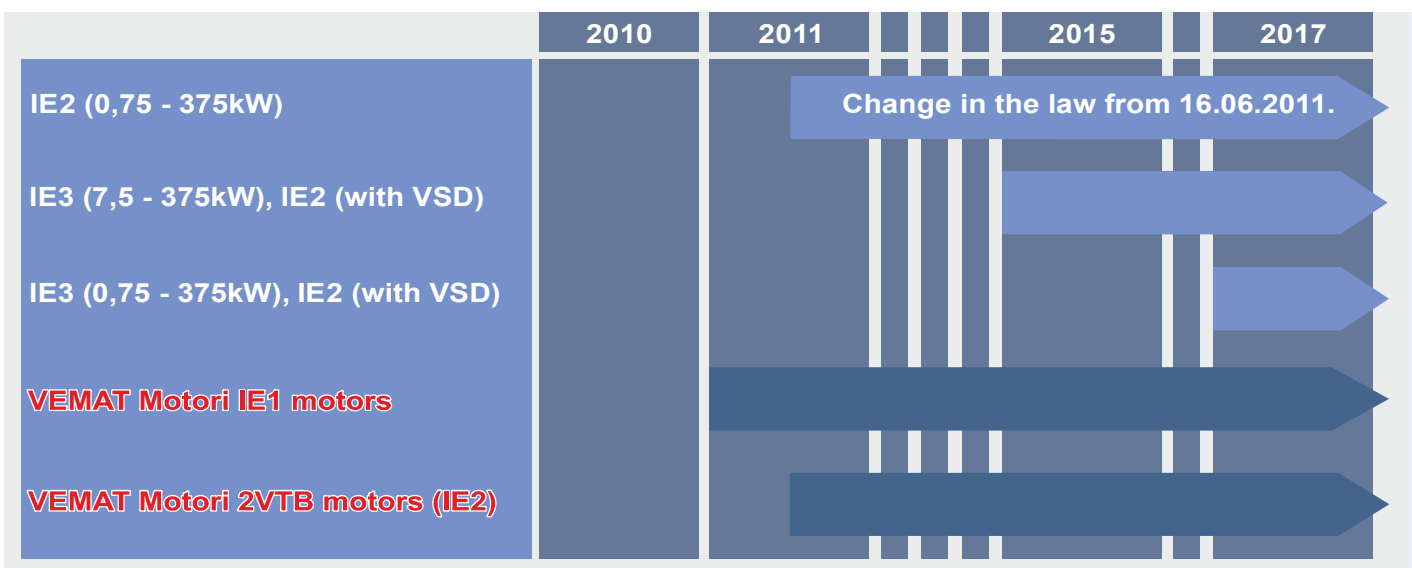
According to the Commission Regulation (EC) No 640/2009 (introduced in July 2009) the required efficiency class of general-purpose motors (introduced to the market in future) will be as follows:

From 16 June 2011, motors placed for the first-time on the market shall have a minimum efficiency class of IE2.

From 1 January 2015: motors with a rated output between 7.5 - 375 kW shall have a minimum efficiency class of IE3, or IE2 if they are operated/equipped with electronic speed control (VSD).

From 1 January 2017: motors with a rated output between 0.75 - 375 kW shall have a minimum efficiency class of IE3, or IE2 if they are operated/equipped with electronic speed control (VSD).

Electronic speed control is carried out using a frequency converter (VSD) that adjusts the speed of the motor - and therefore the torque produced - based on the energy needed.



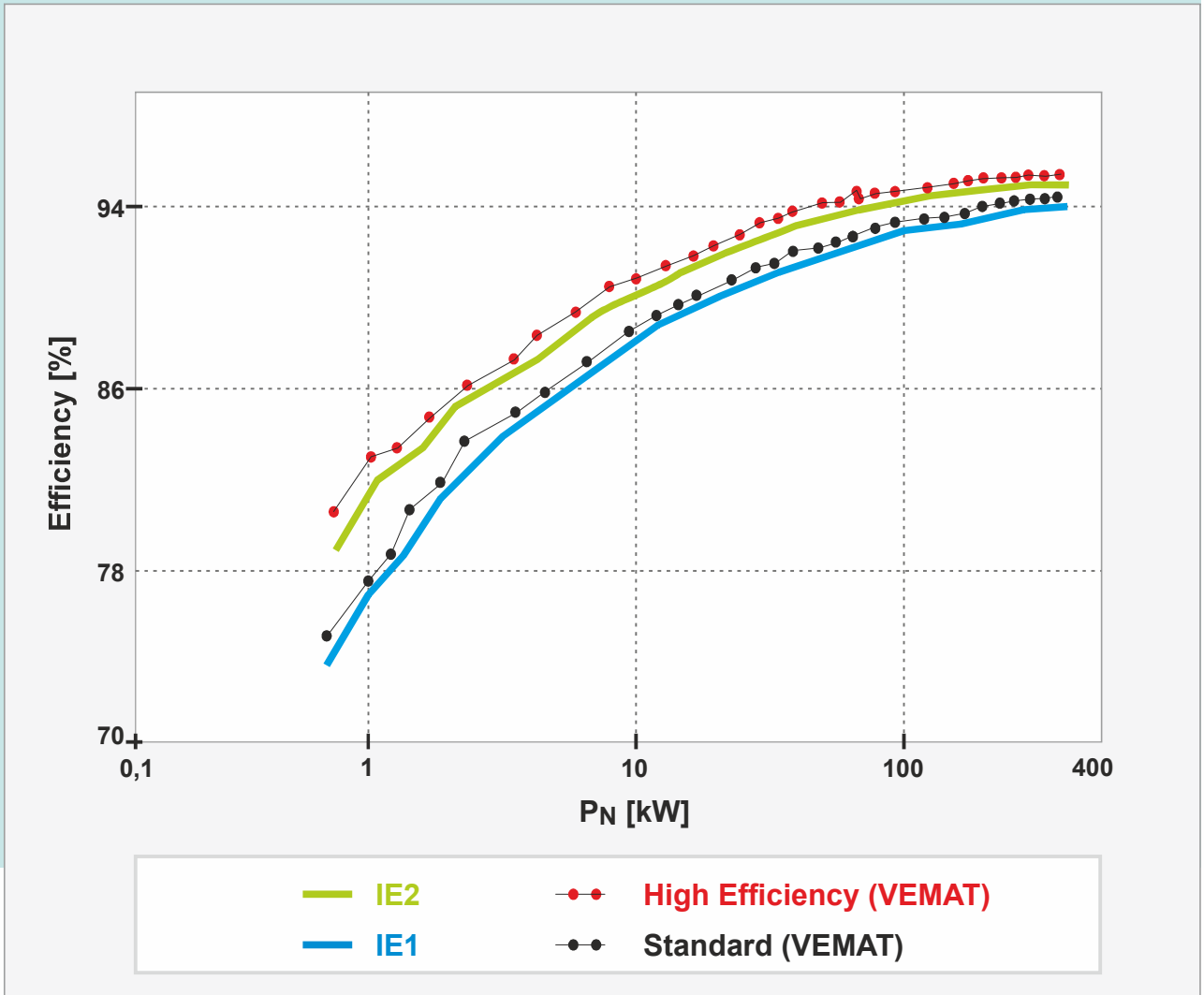
VEMAT Motori has offered energy efficiency motors for several years. Our motors of VTB series fulfil EFF1 standards according to CEMEP.

We carry out intensive research and measurement of the motors according to the new standards IEC 60034-30 and IEC 60034-2-1.

EFFICIENCY OF MOTORS

- VEMAT Motori has in offer general purpose standard efficiency motors of VTB series which fulfil IE1 class requirements according to the IEC 60034-30 standard.
- The present catalogue describes the electric motors which belong to the efficiency class IE2 (High Efficiency) and motors excluded from the IEC 60034-30 standard (motors with $2p = 8, 10, 12$ and with rated output below 0.75kW and above 375kW).

Comparison between the efficiency of VEMAT motors (for example $2p=4$) and efficiency class IE1/IE2 requirements according to the IEC 60034-30.



The efficiency class system specified under IEC 60034-30 is valid for low voltage three phase squirrel cage induction motors with the following specifications:

- Rated voltage up to 1.000 V
- Rated output between 0.75 kW and 375 kW
- Either 2, 4 or 6 poles
- Rated on the basis of continuous duty (S1) or intermittent periodic duty (S3) with cyclic duration factor of 80% or higher
- Capable of operating direct on-line
- Rated for operating conditions in accordance with IEC 60034-1 (temperature, installation altitude, etc.)

Motors with flanges, feet and/or shafts with mechanical dimensions different from IEC 60072-1 are also covered by this standard.

RATINGS - TOLERANCES

Permissible deviations between real values and catalogue values according to the IEC 60034-1:

Power factor $\cos \varphi$	$\Delta \cos \varphi = -1/6 (1 - \cos \varphi_N)$
Efficiency η	$\Delta \eta = -15\% (100 - \eta_N)$ for $P_N \leq 150 \text{ kW}$ $\Delta \eta = -10\% (100 - \eta_N)$ for $P_N > 150 \text{ kW}$
Speed n	$\Delta n = \pm 20\% (n_s - n_N)$ for $P_N > 1 \text{ kW}$ $\Delta n = \pm 30\% (n_s - n_N)$ for $P_N \leq 1 \text{ kW}$
Locked rotor current I_L/I_N Locked rotor torque T_L/T_N	$\Delta(I_L/I_N) = +20\% (I_L/I_N)$ $\min(T_L/T_N) = -15\% (T_L/T_N)$ $\max(T_L/T_N) = +25\% (T_L/T_N)$
Breakdown torque T_B/T_N	$\Delta(T_B/T_N) = -10\% (T_B/T_N)$
Moment of inertia J [kgm ²]	$\Delta J = \pm 10\% J$
Sound pressure level L_{pA} [dB]	$\Delta L_{pA} = +3 \text{ dB /A/}$

STANDARDS

The electric motors are manufactured according to the international standards:

Rating and performance	IEC 60034-1
Methods for determining losses and efficiency	IEC 60034-2-1
Classification of degrees of protection	IEC 60034-5
Methods of cooling	IEC 60034-6
Symbols of construction and mounting arrangements	IEC 60034-7
Terminal markings and direction of rotation	IEC 60034-8
Noise limits	IEC 60034-9
Dimensions and output of electric machines	IEC 60072-1
Vibration limits	IEC 60034-14

New IEC standards regarding efficiency classes (IEC 60034-30) and efficiency measurements (IEC 60034-2-1)

The resulting efficiency values differ from those obtained under the previous IEC 60034-2:1996 testing standard. It must be noted that the efficiency values are only comparable if they are obtained using the same measuring method.

EU Regulation 640/2009

Commission Regulation 640/2009, adapted on 22 July 2009, specifies the requirements regarding the ecodesign of electric motors and the use of electronic speed control (VSD).

IE1
IE2
IE3

All the motors are manufactured in Quality Assurance System consistent with ISO 9001.

ISO9001

The motors covered by the present catalogue comply with the regulations and standards effective in other countries, consistent with IEC standards.

IEC

All the motors described in the present catalogue are provided with CE mark.

CE

INSULATION CLASSIFICATION

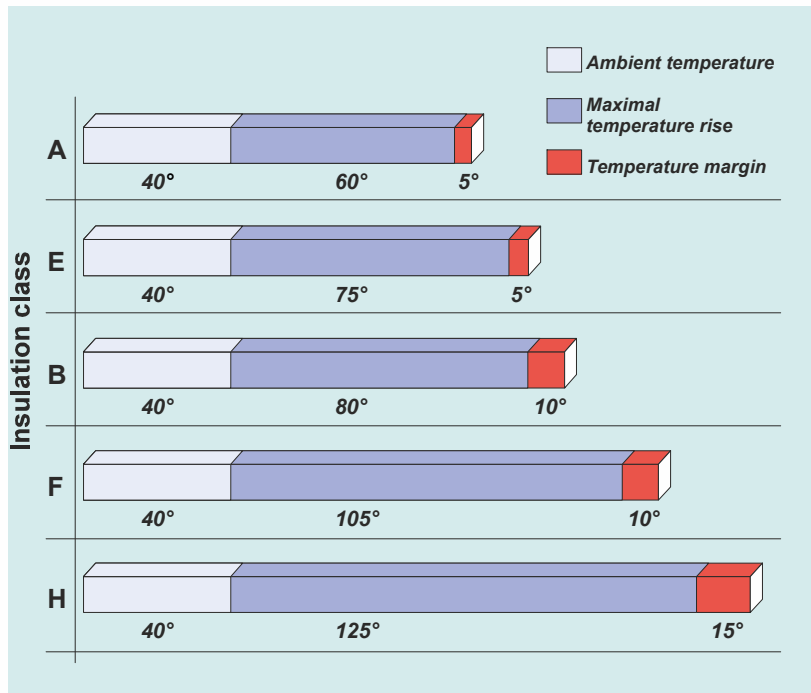
The insulation system of an electric motor is determined by a given insulation class on the basis of its thermal resistance. This thermal resistance should be guaranteed by the entire set of electric insulating materials used in the motor insulating system.

Thermal resistance classification is related to the temperature of the hotspot in the insulation occurring during rated operating conditions of the electric motor, allowing for the highest permissible rise in average temperature.

This rise should be selected so that at the highest permissible ambient temperature, the temperature of the hotspot in insulation will not exceed the value assigned to a given thermal resistance class.

Symbols of thermal resistance classes (permissible insulation temperatures at 40°C ambient temperature)

Symbol	Temperature [°C]
A	105
E	120
B	130
F	155
H	180



Insulation class F in an electric motor means that at ambient temperature of 40°C the temperature rise of the winding may be max. 105°C with the additional temperature margin of 10°C (under specified measuring conditions in accordance with the IEC 60034-1 standard).

Class F

The standard motors made by VEMAT Motori in their basic version have the insulation class F while the temperature rise is for class B. This means longer life for motors.

For special request we can deliver motors equipped with insulation class H.

Strengthened insulation system gives possibility to safe operation with converters.

MOTOR FEET

Motors with frame size ≤ 112 have screwed feet.
 Motors with frame size 132 have screwed feet or feet integrated with the motor housing.
 Motors with frame size 160 and 180 have feet integrated with the motor housing.
 Motors with frame size > 180 up to 315 have feet integrated with the motor housing.
 Motors with frame size 315 have screwed feet or feet integrated with the motor housing.
 Motors with frame size 355 have feet integrated with the motor housing.

TERMINAL BOX

The terminal boxes of low voltage motors have threaded inlet holes designed for mounting cable glands. The box contains a terminal board with marked terminals making possible connection of supply cables.

In addition, terminal boxes may be provided with additional terminals connected to the ends of thermal protection or anticondensation heater circuits and extra glands to connect these circuits.

Low voltage high-power motors contain terminal boxes with cable gland seals.

The circuits of thermal protection and anticondensation heaters are connected to separate terminal boxes.

Inside the boxes there are special clamps used to ground the supply cable armouring.

VIBRATION LEVEL AND NOISE LEVEL


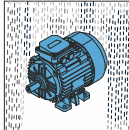
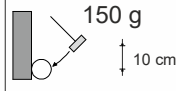

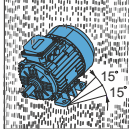
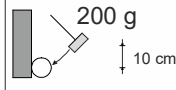
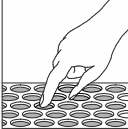
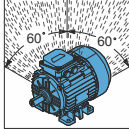
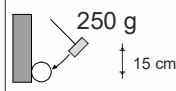
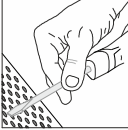
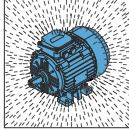
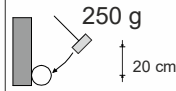
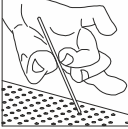
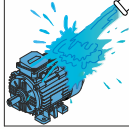
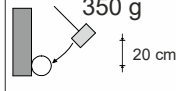
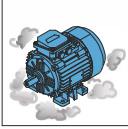
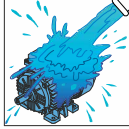
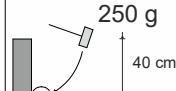
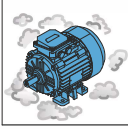
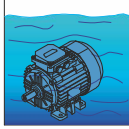
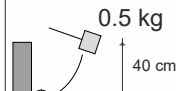


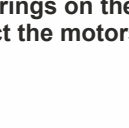
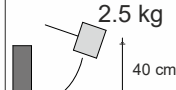
The rotor balancing method guarantees that a standard vibration level A is maintained in accordance with the IEC 60034-14 and a standard sound power level is maintained in accordance with the IEC 60034-9. On customer's demand the motors can be made with reduced vibration or noise level.

level A

INTERNATIONAL PROTECTION IP

According to the IEC 60034-5 standard the electric motors are provided with IP code which determines the degree of protection (ensured by the housing) against penetration of solid matter and fluids.

IP55

PROTECTION AGAINST PENETRATION OF SOLID MATTER		PROTECTION AGAINST PENETRATION OF FLUIDS		IK	MECHANICAL PROTECTION							
1st digit	DESCRIPTION	2nd digit	DESCRIPTION	3rd digit	DESCRIPTION							
				00	No protection							
0	 Not protected	0	 Not protected	01	 Striking energy: 0.15 J							
	 Protected against solid bodies larger than 50 mm		1		 Protected against vertically falling drops of water	02	 Striking energy: 0.20 J					
	 Protected against solid bodies larger than 12 mm		2		 Protected against vertically falling drops of water up to 15°		03	 Striking energy: 0.37 J				
	 Protected against solid bodies larger than 2.5 mm		3		 Protected against rain up to 60°			04	 Striking energy: 0.50 J			
	 Protected against solid bodies larger than 1 mm		4		 Protected against rain falling from any direction				05	 Striking energy: 0.70 J		
	 Protected against deposition of dust		5		 Protected against sprayed water from any direction					06	 Striking energy: 1 J	
	 Totally protected against deposition of dust		6		 Protected against temporary immersion						07	 Striking energy: 2 J
	7	 Protected against immersion between 0.15 and 1 m	08		 Striking energy: 5 J							
	8	 Protected against immersion at preset pressure and time			09							 Striking energy: 10 J
												10

All VEMAT Motori standard motors are manufactured with IP 55 degree of protection according to the standard in force (IEC 60034-5). The following table lists its characteristics.

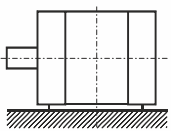
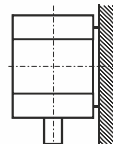
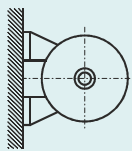
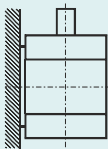
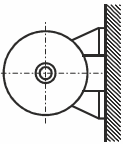
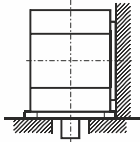
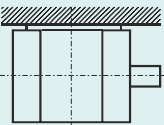
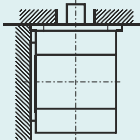
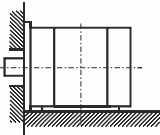
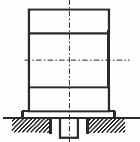
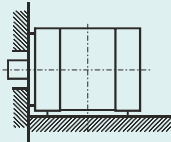
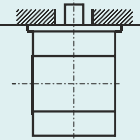
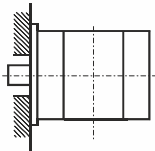
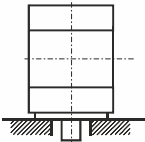
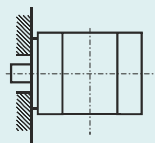
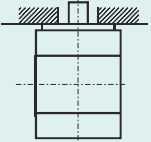
Each size 80 to 180 motor is equipped with seal rings on the control side and on the opposite side. Labyrinth seals protect the motors from size 200 and above.

The terminal board box is sealed with a gasket.

Motors with a higher degree of protection are available on request.

MOUNTING ARRANGEMENTS

According to the IEC 60034-7 standard

Horizontal shaft				Vertical shaft			
	Designation		Frame size		Designation		Frame size
	Code II	Code I			Code II	Code I	
	IM 1001	IM B3	56 ÷ 500		IM 1011	IM V5	56 ÷ 315 without 2VTB 315 M6B,C,D without VTB 315 M8C,D
	IM 1051	IM B6	56 ÷ 280		IM 1031	IM V6	56 ÷ 315 without 2VTB 315 M6B,C,D without VTB 315 M8C,D
	IM 1061	IM B7	56 ÷ 280		IM 2011 or IM 2111	IM V15	56 ÷ 355
	IM 1071	IM B8	56 ÷ 280		IM 2031 or IM 2131	IM V36	56 ÷ 355
	IM 2001	IM B35	56 ÷ 500		IM 3011	IM V1	56 ÷ 500
	IM 2101	IM B34	56 ÷ 132		IM 3031	IM V3	56 ÷ 280
	IM 3001	IM B5	56 ÷ 315 without 2VTB 315 M6B,C,D without VTB 315 M8C,D		IM 3611	IM V18	56 ÷ 180
	IM 3601	IM B14	56 ÷ 132		IM 3631	IM V19	56 ÷ 180

PERMISSIBLE LOADS ON THE SHAFT END

Frame size	Number of poles	Horizontal operation		Vertical operation			Frame size	Number of poles	Horizontal operation		Vertical operation		
				$F_R(x=0)$	$F_R(x = \max)$	F_p			F_{a1}	F_{a2}	$F_R(x=0)$	$F_R(x = \max)$	F_p
		[kN]		[kN]					[kN]		[kN]		
VTB 56	2	0,20	0,16	0,04	0,03	0,05	2VTB 200 LA	2	3,00	2,50	2,30	1,80	2,90
VTB 56	4	0,25	0,20	0,05	0,04	0,06	2VTB 200 LB	2	3,00	2,50	2,30	1,80	2,90
VTB 56	6	0,25	0,20	0,06	0,05	0,07	2VTB 200 L	4	3,70	3,10	2,80	2,00	3,90
VTB 63	2	0,20	0,16	0,04	0,04	0,06	2VTB 200 LA	6	4,30	3,60	3,60	2,90	4,60
VTB 63	4	0,25	0,20	0,06	0,05	0,07	2VTB 200 LB	6	4,20	3,50	3,60	2,80	4,60
VTB 63	6	0,27	0,22	0,06	0,05	0,07	2VTB 225 S	4	4,20	3,40	3,20	2,50	4,10
VTB 63	8	0,27	0,22	0,07	0,06	0,08	2VTB 225 M	2	3,30	2,80	2,50	1,90	3,30
VTB 71	2	0,29	0,24	0,07	0,05	0,09	2VTB 225 M	4	4,10	3,30	3,20	2,30	4,20
VTB 71	4	0,36	0,30	0,09	0,07	0,11	2VTB 225 M	6	4,70	3,80	4,00	3,00	5,30
VTB 71	6	0,40	0,35	0,10	0,08	0,12	2VTB 250 M	2	4,10	3,40	3,10	2,30	4,10
VTB 71	8	0,40	0,35	0,11	0,09	0,13	2VTB 250 M	4	5,20	4,30	3,90	2,90	5,20
2VTB 80	2	0,33	0,27	0,09	0,06	0,12	2VTB 250 M	6	5,60	4,60	5,00	3,60	6,70
2VTB 80	4	0,44	0,37	0,12	0,09	0,15	2VTB 280 S	2	3,90	3,30	3,10	2,00	4,40
VTB 80	6	0,51	0,42	0,14	0,11	0,17	2VTB 280 S	4	6,70	5,70	5,00	3,60	6,80
VTB 80	8	0,51	0,42	0,17	0,15	0,20	2VTB 280 S	6	7,70	6,60	5,80	4,20	7,70
2VTB 90	2	0,68	0,44	0,68	0,35	0,38	2VTB 280 M	2	3,80	3,20	3,00	1,90	4,50
2VTB 90	4	0,78	0,44	0,78	0,35	0,38	2VTB 280 M	4	6,50	5,50	4,90	3,40	6,90
2VTB 90	6	0,96	0,44	0,96	0,35	0,38	2VTB 280 M	6	7,40	6,30	5,70	3,90	7,90
2VTB 100	2	0,88	0,46	0,90	0,28	0,40	2VTB 315 S	2	3,60	3,10	3,00	1,60	4,70
2VTB 100	4	1,06	0,46	0,98	0,38	0,40	2VTB 315 S	4	6,20	5,20	4,90	3,10	7,20
2VTB 100	6	1,20	0,46	1,10	0,38	0,40	2VTB 315 S	6	7,00	5,90	5,60	3,80	7,80
2VTB 112	2	1,00	0,48	1,00	0,40	0,45	2VTB 315 MA	2	3,30	2,80	2,90	1,40	4,80
2VTB 112	4	1,45	0,48	1,40	0,40	0,45	2VTB 315 MB	2	2,90	2,50	2,80	1,10	5,00
2VTB 112	6	1,62	0,48	1,60	0,40	0,45	2VTB 315 MA	4	5,80	4,80	4,70	2,70	7,30
2VTB 132	2	1,82	0,66	1,90	0,43	0,60	2VTB 315 MB	4	5,40	4,50	4,60	2,40	7,50
2VTB 132	4	2,10	0,66	2,20	0,45	0,60	2VTB 315 MA	6	6,20	5,20	5,30	2,70	8,70
2VTB 132	6	2,80	0,66	2,80	0,50	0,60	2VTB 315 MB	6	5,60	4,80	5,20	2,00	9,20
2VTB 160	2	2,22	0,98	2,30	0,92	0,95	2VTB 315 MC	2	2,80	2,50	2,70	0,60	5,40
2VTB 160	4	2,40	0,98	2,40	0,92	0,95	2VTB 315 MC	4	6,30	5,30	4,30	1,10	8,50
2VTB 160	6	2,85	1,10	2,90	0,98	1,00	2VTB 315 MC	6	7,50	6,30	5,10	1,80	9,20
2VTB 180	2	2,92	1,30	3,00	1,10	1,20	2VTB 315 MD	6	7,50	6,30	5,00	1,80	9,20
2VTB 180	4	3,60	1,30	3,60	1,10	1,30	VTB 315 MC	8	9,40	8,00	6,50	3,90	10,10
2VTB 180	6	4,00	1,80	4,10	1,40	1,70	VTB 315 MD	8	9,20	7,90	5,80	3,00	9,50

PERMISSIBLE LOADS ON THE SHAFT END for motors VTB ($2p = 8 \div 12$)

	Number of poles	$F_R(x=0)$ $F_R(x = \max)$		F_p	F_{a1} F_{a2}			Number of poles	$F_R(x=0)$ $F_R(x = \max)$		F_p	F_{a1} F_{a2}	
		[kN]			[kN]				[kN]			[kN]	
VTB 200L8	8	5,10	4,20	4,10	3,40	5,00	VTB 280S8	8	8,30	6,90	6,60	5,20	8,50
VTB 200L10A	10	5,50	4,60	4,20	3,50	5,10	VTB 280S10	10	9,30	7,70	6,70	5,40	8,40
VTB 200L10B	10	5,50	4,50	4,10	3,40	5,10	VTB 280S12	12	9,80	8,10	7,00	5,70	8,70
VTB 200L12	12	5,90	4,90	4,40	3,70	5,40	VTB 280M8	8	8,00	6,60	6,50	4,90	8,60
VTB 225S8	8	5,90	4,70	4,70	3,90	5,70	VTB 280M10	10	8,80	7,30	6,50	5,20	8,20
VTB 225S10	10	6,50	5,10	4,70	4,00	5,60	VTB 280M12	12	9,20	7,60	6,80	5,00	9,30
VTB 225S12	12	6,70	5,30	4,80	4,20	6,00	VTB 315S8	8	8,40	7,00	7,00	5,00	9,60
VTB 225M8	8	5,70	4,60	4,60	3,70	5,80	VTB 315S10	10	9,30	7,70	7,60	5,60	10,20
VTB 225M10	10	6,30	4,90	5,70	4,40	7,40	VTB 315S12	12	9,80	8,10	8,00	5,90	10,80
VTB 225M12	12	6,70	5,30	4,90	3,90	6,20	VTB 315M8A	8	8,20	6,80	6,90	4,80	9,70
VTB 250M8	8	6,90	5,60	5,60	4,30	7,20	VTB 315M8B	8	7,70	6,40	6,80	4,30	10,00
VTB 250M10	10	7,50	6,20	5,70	4,40	7,40	VTB 315M10	10	8,40	7,00	7,30	4,80	10,70
VTB 250M12	12	8,10	6,70	6,10	4,80	7,80	VTB 315M12A	12	9,30	7,70	7,90	5,50	11,10
							VTB 315M12B	12	9,10	7,60	7,80	5,30	11,20

VERSION WITH ROLLER BEARINGS for motors 2VTB315 and 355

Mechanical Size	Type of construction	No. of poles, 2p	D.E. bearing	N.D.E. bearing
2VTB 315 ML	IM1001 (B3)	4 ÷ 6	NU319 EM1C3	6314 C3
2VTB 355 ML	IM1001 (B3)	4 ÷ 6	NU222 EM1C3	6222 C3
2VTB 355 H	IM1001 (B3)	4 ÷ 6	NU322 EM1C3	6322 C3

Horizontal mounting						Vertical operation
			Permissible radial forces		Permissible axial forces	
			FX0	FXmax	FA	
Motor type	Number of poles	Length of shaft extension E(mm)	kN	kN	kN	
2VTB 315 ML	4	170	27	13	3,5	on request
	6	170	29	12	4	on request
2VTB 355 ML	4	210	22	18	5	on request
	6	210	23	15	5,5	on request
2VTB 355 H	4	210	27	17	6	on request
	6	210	29	15	7	on request

VERSION WITH ROLLER BEARINGS for motors VTB355-500

Mechanical Size	Type of construction	No. of poles, 2p	D.E. bearing	N.D.E. bearing
VTB 355	IM1001 (B3)	8	NU222 EM1C3	6222 C3
VTB 355..s	IM1001 (B3)	4 ÷ 8	NU322 EM1C3	6322 C3
VTB 400..s	IM1001 (B3)	4 ÷ 10	on request	on request
VTB 450..s	IM1001 (B3)	4 ÷ 12	on request	on request
VTB 500..s	IM1001 (B3)	4 ÷ 10	on request	on request

Horizontal mounting						Vertical operation
			Permissible radial forces		Permissible axial forces	
			FX0	FXmax	FA	
Motor type	Number of poles	Length of VTBaft extension E(mm)	kN	kN	kN	
VTB 355	8	210	24	14	6	on request
VTB 355..s	4	210	27	17	6	on request
	8	210	30	15	8	on request
VTB 400 VTB 450 VTB 500	4 ÷ 8		on request			

PERMISSIBLE LOADS ON THE SHAFT END

Value of radial force F_R acting on the shaft end for a given belt pulley diameter is calculated according to the following formula:

$$F_R = \frac{19600 \times P \times k}{D_k \times n} \text{ [N]}$$

where: P - motor output [kW]
 D_k - belt pulley diameter [m]
 n - speed [rpm]
 k - belt tension factor:
 for V-belts k=2,2
 for flat belts k=3

Value of force F_R acting on any point of the shaft end (between points X=max and X=0) may be calculated according to the following formula:

$$F_R = F_{X0} - \frac{X}{E} \times (F_{X0} - F_{XMAX}) \text{ [N]}$$

where: F_{X0} - value of F_R force acting on the beginning of the shaft end
 F_{XMAX} - value of F_R force acting on the end of the shaft end
 E - length of the shaft end

Other specifications dependent on the frame size:

Frame size	Degree of protection	Position of the terminal box	Number of terminals	Number of cable outlets	Optional rotation of the terminal box	Glands	Temperature sensors in winding	Bearing lubrication on the run	Thermal protection of bearings
56	IP 55	top	6	1	180°	M 20	on request	no	no
63	IP 55	top	6	1	180°	M 20	on request	no	no
71	IP 55	top	6	1	180°	M 20	on request	no	no
80	IP 55	top	6	1	180°	M 20	on request	no	no
90	IP 55	top	6	2	180°	M 20	on request	no	no
100	IP 55	top	6	2	180°	M 20	on request	no	no
112	IP 55	top	6	2	180°	M 25	on request	no	no
132	IP 55	top	6	2	180°	M 25	on request	no	no
160	IP 55	top	6	2	180°	M 40	on request	on request	on request
180	IP 55	top	6	2	180°	M 40	on request	on request	on request
200	IP 55	top *	6	2	4 × 90°	M 50	PTC	yes	on request
225	IP 55	top *	6	2	4 × 90°	M 50	PTC	yes	on request
250	IP 55	top *	6	2	4 × 90°	M 63	PTC	yes	on request
280	IP 55	top *	6	2	4 × 90°	M 63	PTC	yes	on request
315	IP 55	top *	6	2	4 × 90°	M 76	PTC	yes	on request
355ML	IP 55	top	6	2	4 × 90°	M 76	PTC Mark A	yes	on request
355H	IP 55	top	6	2	4 × 90°	M 90	Pt 100	yes	Pt 100
400	IP 55	top	6 (bars)	3	180°	3×φ55	Pt 100	yes	Pt 100
450	IP 55	top	3 (bars)	3	180°	3×φ55	Pt 100	yes	Pt 100
500	IP 55	top	3 (bars)	3	180°	3×φ55	Pt 100	yes	Pt 100

* right position of the terminal box for VTB 200 - 315 motors series

BEARINGS

Frame size	Number of poles	Bearings
VTB 56	2 ÷ 6	6201 2Z
VTB 63	2 ÷ 8	6202 2Z
VTB 71	2 ÷ 8	6203 2Z
2VTB 80	2 ÷ 6	6204 2Z
2VTB 90	2 ÷ 6	6205 2Z C3
2VTB 100	2 ÷ 6	6206 2Z C3
2VTB 112	2 ÷ 6	6306 2Z C3
2VTB 132	2 ÷ 6	6308 2Z C3
2VTB 160	2 ÷ 6	6309 2Z C3
2VTB 180	2 ÷ 6	6311 2Z C3
2VTB 200	2 ÷ 6	6312 C3
2VTB 225	2 ÷ 6	6313 C3
2VTB 250	2 ÷ 6	6315 C3
2VTB 280	2	6315 C3
2VTB 280	4 ÷ 6	6318 C3
2VTB 315S,MA, MB	2	6315 C3
2VTB 315MC	2	6316 C3
2VTB 315S,MA, MB	4 ÷ 6	6318 C3
2VTB 315MC, MD	4 ÷ 6	6320C3/6318C3
VTB 315MC, MD	8	6320C3/6318C3

The bearings in basic version of motors for horizontal and vertical duty, excluding 2VTB 315 with 2p=2.

BEARINGS for VTB (2p = 8 ÷ 12)

Frame size	Number of poles	Bearings
VTB 200	8 ÷ 12	6312 C3
VTB 225	8 ÷ 12	6313 C3
VTB 250	8 ÷ 12	6315 C3
VTB 280	8 ÷ 12	6317 C3
VTB 315	8 ÷ 12	6318 C3

Frame Size	Type of construction	No. of poles, 2p	D.E. bearing	N.D.E. bearing
2VTB 315 ML	IM1001 (B3)	4 ÷ 6	6319 C3	6314 C3
2VTB 315 ML	IM2001 (B35)	4 ÷ 6	6319 C3	6314 C3
2VTB 355 ML	IM1001 (B3)	2	6217 C3	6217 C3
2VTB 355 ML	IM2001 (B35)	4 ÷ 6	6222 C3	6222 C3
2VTB 355 ML	IM3011 (V1)	4 ÷ 6	6322 C3	6322 C3
2VTB 355 H	IM1001 (B3)	2	6217 C3	6217 C3
2VTB 355 H	IM2001 (B35)	4 ÷ 6	6322 C3	6322 C3
2VTB 355 H	IM3011 (V1)	4 ÷ 6	6322 C3	6322 C3

The bearings in basic version of motors for horizontal and vertical duty.

Frame Size	Type of construction	No. of poles, 2p	D.E. bearing	N.D.E. bearing
VTB 355	IM1001 (B3)	8	6222 C3	6222 C3
VTB 355	IM2001 (B35)	8	6222 C3	6222 C3
VTB 355	IM3011 (V1)	8	6322 C3	6322 C3
VTB 355..s	IM1001 (B3)	2	6217 C3	6217 C3
VTB 355..s	IM2001 (B35)	4 ÷ 8	6322 C3	6322 C3
VTB 355..s	IM3001 (V1)	4 ÷ 8	6322 C3	6322 C3
VTB 400..s	IM1001 (B3)	2	on request	
VTB 400..s	IM2001 (B35)	4 ÷ 10		
VTB 400..s	IM3011 (V1)	4 ÷ 10		
VTB 450..s	IM1001 (B3)	4 ÷ 12		
VTB 450..s	IM2001 (B35)	4 ÷ 12		
VTB 450..s	IM3011 (V1)	4 ÷ 12		
VTB 500..s	IM1001 (B3)	4 ÷ 10		
VTB 500..s	IM2001 (B35)	4 ÷ 10		
VTB 500..s	IM3011 (V1)	4 ÷ 10		

HOUSING, END SHIELDS, FEET

Frame size [mm]	Motor housing	End shields	Feet
56	Aluminium	Aluminium	Aluminium - screwed
63	Aluminium	Aluminium	Aluminium - screwed
71	Aluminium	Aluminium	Aluminium - screwed
80	Aluminium	Aluminium	Aluminium - screwed
90	Aluminium	Aluminium	Aluminium - screwed
100	Aluminium	Aluminium	Aluminium - screwed
112	Aluminium	Cast iron	Aluminium - screwed
132	Cast iron	Cast iron	Cast iron - screwed
160	Cast iron	Cast iron	Cast iron - integrated
180	Cast iron	Cast iron	Cast iron - integrated
200	Cast iron	Cast iron	Cast iron - integrated
225	Cast iron	Cast iron	Cast iron - integrated
250	Cast iron	Cast iron	Cast iron - integrated
280	Cast iron	Cast iron	Cast iron - integrated
315	Cast iron	Cast iron	Cast iron - screwed or integrated
355	Cast iron	Cast iron	Cast iron - integrated
400	Cast iron	Cast iron	Cast iron - integrated
450	Cast iron	Cast iron	Cast iron - integrated
500	Cast iron	Cast iron	Cast iron - integrated

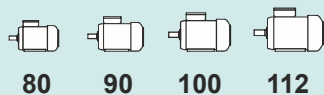
In motors series VTB of frame size 80, 90 and 100mm: on request end shields may be made of cast iron.

In motors series 2VTB of frame size 80 and 90mm: on request end shields may be made of cast iron.

In motors of frame size 132: feet may be integrated with housing.

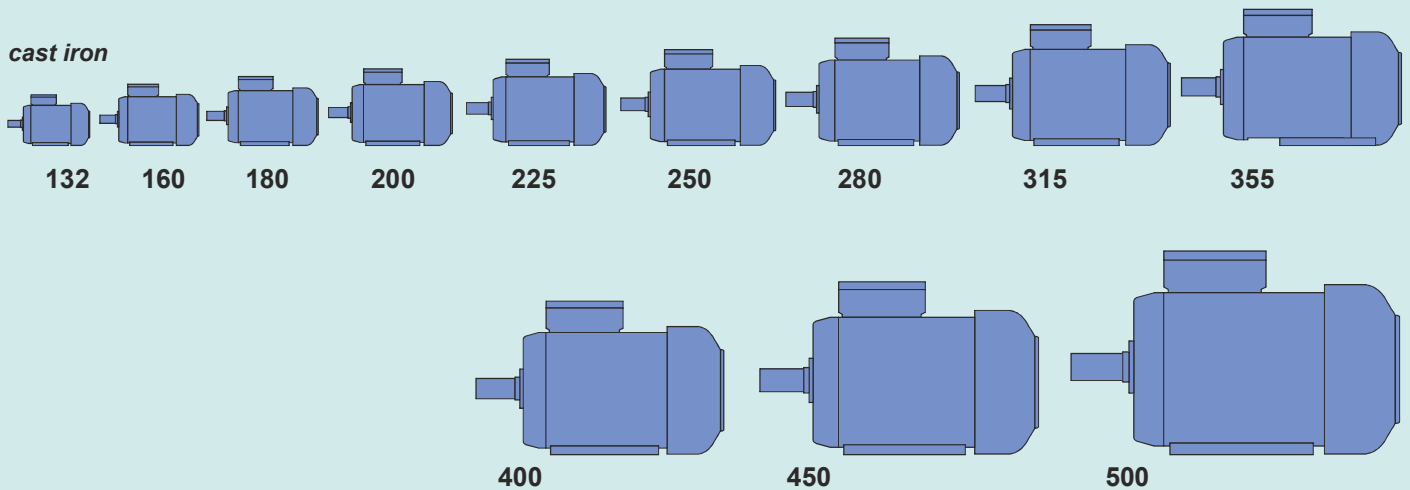
Motor housing

aluminium



□ aluminium ■ cast iron

cast iron



DESCRIPTION OF THE CATALOGUE VERSION

2VTB	315	M	4	B
VTB	315	M	8	B

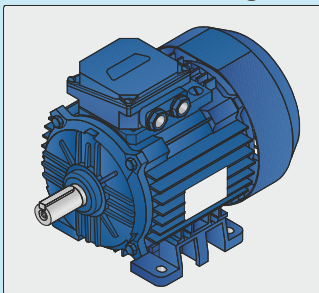
A=Lower power
B=Higher power
C,D=Increased Power

No. of poles
(Speed)

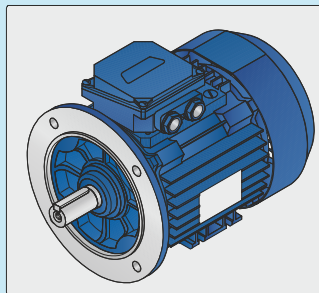
Frame length
L=long
M=medium
S=short

Shaft h
(in B3)

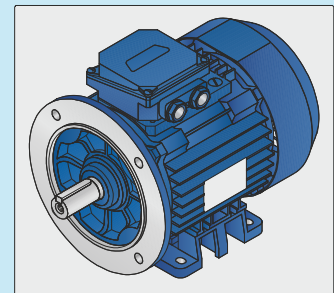
2VTB-VTB
feet mounting



2VTB-VTB
flange mounting



2VTB-VTB
feet-flange mounting



ORDERING INFORMATION

Orders for motors should specify:

- motor type designation,
- rated output,
- rated speed,
- operating duty,
- supply voltage and connection,
- frequency,
- mounting arrangements, end shield material,
- degree of protection,
- type of machine driven,
- other details of regarding special requests,

and information concerning additional accessories e.g.

- thermal protection,
- anticondensation heaters,
- vibration sensors,
- etc.

When ordering high-power or special purpose motors one should also indicate:

- required direction of rotation,
- required degree of interior protection,
- method of start-up,
- method of coupling with the driven unit (gears, dimensions of belt pulleys, etc.),
- type of machine driven (nature of load), including the moment of inertia J or flywheel effect GD² brought to the motor shaft,
- other customer's specifications.

When ordering spare parts one should specify:

- full designation of the motor type including its serial number (provided on the nameplate) or catalogue number,
- degree of protection,
- mounting arrangement,
- name of part,
- number of pieces.

As part of our development program, we reserve the right to alter or amend any of the specifications without giving prior notice

Totally Enclosed Motors IP 55

Item	Type	Rated output		Rated speed	Rated torque	Efficiency			Power factor	Full load current			Locked rotor torque	Locked rotor current	Breakdown torque	Moment of Inertia	Weight				
		P _N	[kW]			[HP]	n _N	T _N		η _N [%]	50%	75%						100%	cos φ _N	I _N at rated voltage [A]	230V
		[min ⁻¹]	[Nm]	50%	75%	100%	[-]	230V	380V	400V	[-]	[-]	[-]	[kgm ²]	[kg]						
		2p=2			n_s=3000 rpm					f=50Hz											
1	VTB 56-2A	0,09	0,12	2820	0,30	43	50	60	0,63	0,60	0,35	0,35	2,5	3,4	2,7	0,000076	2,9				
2	VTB 56-2B	0,12	0,17	2800	0,41	50	58	65	0,70	0,70	0,40	0,40	2,0	3,0	2,0	0,000095	3,2				
3	VTB 63-2A	0,18	0,25	2760	0,62	58	63	65	0,80	0,85	0,50	0,50	2,1	3,4	2,1	0,000175	3,5				
4	VTB 63-2B	0,25	0,33	2780	0,86	66	69	72	0,80	1,1	0,65	0,65	2,0	3,3	2,5	0,000235	4,1				
5	VTB 71-2A	0,37	0,50	2800	1,262	67	69	71	0,77	1,73	1,0	1,0	2,2	4,4	2,2	0,000389	5,0				
6	VTB 71-2B	0,55	0,75	2790	1,883	69	72	75	0,82	2,35	1,35	1,35	2,0	4,0	2,1	0,000484	6,0				
7	2VTB 80-2A	0,75	1	2840	2,52	72,0	76,5	79,0	0,74	3,3	2,0	1,9	3,2	5,0	3,0	0,0008	8,5	IE2			
8	2VTB 80-2B	1,1	1,5	2840	3,7	77,0	80,0	80,0	0,75	4,8	2,8	2,7	3,4	5,5	3,4	0,0011	9,8	IE2			
9	2VTB 90S2	1,5	2	2880	5	80,0	82,0	81,8	0,81	5,7	3,4	3,3	3,3	7,6	3,4	0,0014	13,9	IE2			
10	2VTB 90L2	2,2	3	2870	7,3	83,4	84,4	83,5	0,81	8,2	4,9	4,7	3,7	7,3	3,7	0,0016	17,3	IE2			
11	2VTB 100L2	3	4	2905	9,8	82,1	84,4	84,6	0,83	10,7	6,5	6,2	3,1	8,3	3,3	0,0039	23,0	IE2			
12	2VTB 112M2	4	5,5	2915	13,1	86,9	87,3	86,3	0,87	13,4	8,1	7,7	2,4	8,5	2,7	0,006	33,5	IE2			
13	2VTB 132S2A	5,5	7,5	2930	17,9	88,5	89,2	87,5	0,90	17,5	10,6	10,1	2,7	8,8	3,4	0,014	59,5	IE2			
14	2VTB 132S2B	7,5	10	2920	24,5	88,2	89,1	88,6	0,92	23,1	14,0	13,2	2,7	8,5	3,3	0,017	70,8	IE2			
15	2VTB 160M2A	11	15	2940	35,7	89,4	90,3	90,0	0,87	35,3	21,3	20,3	2,0	7,2	2,7	0,042	96	IE2			
16	2VTB 160M2B	15	20	2935	48,8	90,6	91,0	90,3	0,89	46,9	28,4	26,9	2,0	7,0	2,8	0,048	103	IE2			
17	2VTB 160L2	18,5	25	2935	60,2	92,2	92,3	91,5	0,91	55,8	33,8	32,1	2,3	7,7	2,9	0,059	118	IE2			
18	2VTB 180M2	22	30	2945	71,3	90,8	91,7	91,3	0,88	68,7	41,6	39,5	2,6	7,5	3,2	0,062	156	IE2			
19	2VTB 200L2A	30	40	2953	97	92,0	92,5	92,0	0,90	91	55	52	2,1	6,0	2,4	0,15	266	IE2			
20	2VTB 200L2B	37	50	2954	120	92,7	93,1	92,6	0,91	110	67	63	1,8	6,1	2,6	0,18	290	IE2			
21	2VTB 225M2	45	60	2970	145	93,5	94,0	93,8	0,88	137	83	79	2,0	6,6	2,6	0,26	380	IE2			
22	2VTB 250M2	55	75	2963	177	94,0	94,1	93,6	0,91	162	98	93	1,7	6,0	2,2	0,42	492	IE2			
23	2VTB 280S2	75	100	2978	241	93,4	94,1	94,0	0,91	220	133	127	1,7	6,7	2,4	0,76	655	IE2			
24	2VTB 280M2	90	125	2978	289	94,0	94,6	94,4	0,91	263	159	151	1,8	7,0	2,8	0,95	688	IE2			
25	2VTB 315S2	110	150	2978	353	94,5	94,9	94,6	0,92	317	192	182	1,9	6,9	2,9	0,98	860	IE2			
26	2VTB 315M2A	132	175	2979	423	94,8	95,1	94,9	0,92	380	230	218	2,1	7,8	3,0	1,15	925	IE2			
27	2VTB 315M2B	160	220	2980	513	94,9	95,4	95,2	0,92	459	278	264	2,4	8,8	3,4	1,40	1005	IE2			
28	2VTB 315M2C*	200	270	2979	641	95,5	95,6	95,4	0,93	-	342	325	2,3	8,1	3,1	1,74	1183	IE2			
29	2VTB 355ML2	200	270	2987	639	94,0	95,2	95,6	0,90	-	353	336	1,9	8,0	3,4	2,8	1600	IE2			
30	2VTB 355ML2A	250	340	2982	801	94,7	95,6	95,7	0,91	-	436	414	1,8	7,0	2,8	2,8	1600	IE2			
31	2VTB 355ML2B	315	430	2982	1009	95,0	95,7	95,7	0,91	-	550	522	1,9	7,3	3,0	3,0	1680	IE2			
32	2VTB 355H2D	355	480	2985	1136	94,7	95,5	95,7	0,91	-	619	588	1,7	7,4	2,7	4,9	2140	IE2			
33	VTB 355H2Es	400	540	2985	1280	95,5	96,6	96,7	0,91	-	-	656	1,6	8,0	2,8	5,7	2160				
34	VTB 400H2Cs	450	610	2983	1441	95,5	96,3	96,5	0,91	-	-	741	1,3	6,6	2,6	6,7	2800				
35	VTB 400H2Ds	500	680	2985	1600	95,8	96,5	96,6	0,91	-	-	821	1,4	7,2	2,8	7,7	2800				
36	VTB 400H2Es	560	760	2989	1789	95,9	96,7	96,9	0,90	-	-	927	1,7	8,0	3,0	8,7	3100				
37	VTB 400H2Es	600	816	2987	1918	96,0	96,8	97,0	0,91	-	-	981	1,7	8,0	3,0	8,7	3100				

* insulation class F/F

Totally Enclosed Motors IP 55

Item	Type	Rated output		Rated speed	Rated torque	Efficiency			Power factor	Full load current			Locked rotor torque	Locked rotor current	Breakdown torque	Moment of inertia	Weight (IMB3)
		P _N				η _N	T _N	η _N [%] at % of full load			I _N at rated voltage						
		[kW]	[HP]	[min ⁻¹]	[Nm]	50%	75%	100%	cos φ _N	[A] _{230V}	[A] _{380V}	[A] _{400V}	T _L /T _N	I _L /I _N	T _b /T _N	J	[kg]
2p=8 n_s=750 rpm																	
128	VTB 63-8A	0,04	0,05	670	0,57	20	31	35	0,60	0,6	0,35	0,35	1,6	1,7	1,7	0,00024	3,5
129	VTB 63-8B	0,06	0,08	660	0,87	20	31	35	0,63	0,85	0,50	0,50	1,4	1,5	1,6	0,000307	4,1
130	VTB 71-8A	0,09	0,12	680	1,26	25	31	35	0,5	1,3	0,75	0,75	1,9	1,9	1,9	0,000736	4,9
131	VTB 71-8B	0,12	0,17	670	1,71	40	45	47	0,63	1,25	0,7	0,7	1,7	1,9	1,8	0,000946	5,8
132	VTB 80-8A	0,18	0,25	680	2,53	43	51	53	0,57	1,55	0,9	0,9	1,8	2,3	2,0	0,001693	7,5
133	VTB 80-8B	0,25	0,33	680	3,51	52	55	57	0,6	2,1	1,2	1,2	1,7	2,5	1,7	0,00207	8,9
134	VTB 90S-8	0,37	0,5	695	5,08	54,2	60,8	63,4	0,59	2,5	1,5	1,4	1,7	2,9	2,3	0,0021	13,4
135	VTB 90L-8	0,55	0,75	675	7,78	60,4	65,3	65	0,64	3,3	2	1,9	1,7	2,8	1,9	0,0024	15,3
136	VTB 100L-8A	0,75	1	710	10,1	65,9	70,5	71,1	0,66	4	2,4	2,3	1,4	3,5	1,9	0,009	23,6
137	VTB 100L-8B	1,1	1,5	705	14,9	67,6	71,8	72,2	0,65	5,9	3,6	3,4	1,6	3,6	1,9	0,01	26,3
138	VTB 112M-8	1,5	2	720	19,9	72,5	76,2	76,8	0,71	6,9	4,2	4,0	1,9	4,6	2,3	0,0192	31
139	VTB 132S-8	2,2	3	710	29,6	75,4	78,2	78	0,74	9,6	5,8	5,5	2,0	4,7	2,4	0,033	53
140	VTB 132M-8	3	4	710	40,4	78,5	80,7	80	0,74	12,7	7,7	7,3	2,3	5,0	3,0	0,044	65
141	VTB 160M-8A	4	5,5	705	54,2	81,5	82,7	81,5	0,76	16,2	9,8	9,3	2,2	5,0	2,7	0,06	85
142	VTB 160M-8B	5,5	7,5	710	74	82,1	83,7	83	0,75	22,2	13,4	12,8	2,7	5,5	3,0	0,077	95
143	VTB 160L-8	7,5	10	705	102	84,5	85,5	84,5	0,78	28,6	17,3	16,4	2,7	5,8	3,0	0,102	115
144	VTB 180L-8	11	15	730	144	87,7	89,2	89	0,76	40,8	24,7	23,5	2,0	5,5	2,4	0,213	165
145	VTB 200L8	15	20	733	195	88,8	90	89,5	0,83	51	30,5	29,1	2,2	5,5	2,1	0,45	255
146	VTB 225S8	18,5	25	735	240	88,8	90	89,5	0,81	64	39	37	2,0	5,6	2,0	0,58	280
147	VTB 225M8	22	30	735	286	90,0	90,8	90,4	0,80	76	46	44	2,0	5,2	1,8	0,68	315
148	VTB 250M8	30	40	738	388	91,0	92	91,5	0,84	98	59	56	2,5	6,3	2,1	1,27	430
149	VTB 280S8	37	50	737	479	92,0	93,1	92,8	0,83	121	73	69	2,0	5,3	1,8	1,47	535
150	VTB 280M8	45	60	737	583	92,0	92,8	92,5	0,84	145	88	84	2,1	5,4	2,0	1,8	590
151	VTB 315S8	55	75	735	715	92,0	93,0	92,7	0,81	184	111	106	2,0	5,3	1,9	2,16	720
152	VTB 315M8A	75	100	737	972	92,5	93,5	93,2	0,82	246	149	142	2,5	6,2	1,9	2,29	750
153	VTB 315M8B	90	125	737	1166	92,5	93,5	93,2	0,82	296	179	170	2,4	6,5	1,9	2,86	840
154	VTB 315M8C ¹	110	150	737	1425	92,3	93,1	93,3	0,79	375	227	215	2,3	5,4	2,2	3,46	1105
155	VTB 315M8D ¹	132	175	734	1717	92,7	93,3	93,2	0,81	439	266	252	2,3	5,4	2,2	3,69	1136
156	VTB 355ML8A	160	220	739	2068	95,1	95,5	95,0	0,80	-	-	305	1,6	5,8	2,0	7,0	1680
157	VTB 355ML8B	200	270	740	2581	95,1	95,6	95,2	0,79	-	-	384	1,8	6,2	2,1	7,7	1750
158	VTB 355H8Ds	250	340	742	3218	95,5	96,0	95,6	0,78	-	-	484	1,3	6,0	2,0	12,9	2440
159	VTB 355H8Es	315	430	742	4054	95,6	96,0	95,8	0,78	-	-	609	1,3	6,0	2,0	16,0	2590
160	VTB 400H8Ds	355	480	742	4569	95,3	95,9	95,9	0,77	-	-	695	1,2	5,8	2,0	18,8	3200
161	VTB 400H8Es	400	540	742	5148	95,4	96,0	96,0	0,77	-	-	782	1,2	5,9	2,0	21,0	3350
162	VTB 450H8Bs	450	610	746	5761	95,5	96,3	96,4	0,78	-	-	501 ²	1,0	5,8	2,1	41,6	4400
163	VTB 450H8Cs	500	680	746	6401	95,5	96,3	96,4	0,78	-	-	557 ²	1,0	5,8	2,1	46,0	4600
164	VTB 450H8Ds	560	760	746	7169	95,6	96,4	96,5	0,78	-	-	623 ²	1,0	5,7	2,1	49,0	4770
165	VTB 450H8Es	630	850	746	8065	95,8	96,4	96,5	0,79	-	-	692 ²	1,0	5,6	2,0	53,8	4980
166	VTB 500H8Bs	710	960	746	9089	96,0	96,6	96,7	0,81	-	-	758 ²	1,0	6,0	2,4	92,4	6680
167	VTB 500H8Cs	800	1080	746	10241	96,0	96,6	96,7	0,80	-	-	865 ²	1,1	6,3	2,5	95,8	6800
168	VTB 500H8Ds	900	1210	746	11522	96,1	96,8	96,9	0,80	-	-	971 ²	1,0	6,0	2,4	108	7240
169	VTB 500H8Es	1000	1350	746	12802	96,1	96,8	96,9	0,80	-	-	1079 ²	1,1	6,5	2,5	118	7570

¹ insulation class H
² at rated voltage 690 V

Totally Enclosed Motors IP 55

TECHNICAL DATA

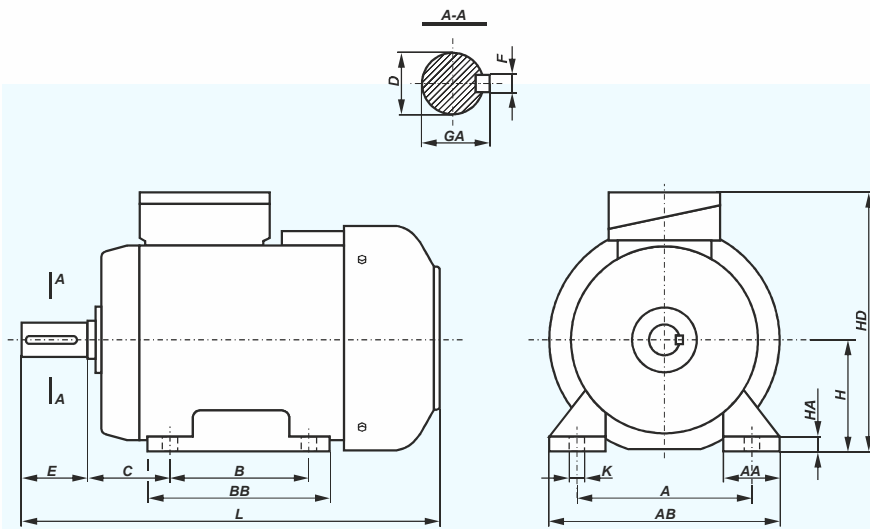
Item	Type	Rated output		Rated speed n_N [min ⁻¹]	Rated torque T_N [Nm]	Efficiency			Power factor $\cos \varphi_N$ [-]	Full load current			Locked rotor torque T_L/T_N [-]	Locked rotor current I_L/I_N [-]	Breakdown torque T_b/T_N [-]	Moment of inertia J [kgm ²]	Weight (IMB3) [kg]
		P_N [kW]	[HP]			η_N [%] at % of full load	50%	75%		100%	I_N at rated voltage						
											[A] _{230V}	[A] _{380V}	[A] _{400V}				
2p=10 $n_s=600$ rpm																	
170	VTB 200L10A	7,5	10	580	123	82,5	84	85	0,68	32,5	19,7	18,7	1,7	3,5	2,1	0,4	240
171	VTB 200L10B	11	15	590	178	84,7	86,7	87,5	0,68	46,5	28,1	26,7	3,2	5,9	2,4	0,47	255
172	VTB 225S10	13	18	592	210	87,5	89,3	90,5	0,67	54	32,5	31	1,8	3,8	2	0,6	280
173	VTB 225M10	15	20	590	243	86	88	89	0,67	63	38	36,5	2,8	5,4	2	0,76	315
174	VTB 225M10z	18,5	25	590	299	84,3	87,1	87,7	0,64	83	50	47,5	2,8	5,5	2,1	0,76	325
175	VTB 250M10	22	30	592	355	87,5	89,6	90	0,70	88	53	50	3	5,8	2	1,27	430
176	VTB 280S10A	30	40	586	489	85,3	87,3	88,8	0,71	119	72	69	2	4,5	1,7	1,35	525
177	VTB 280S10B	37	50	583	606	87	90	91	0,75	136	82	78	1,9	4,5	1,5	1,61	565
178	VTB 280M10	45	60	587	732	88	90,5	91,6	0,76	162	98	93	2	4,5	1,6	2,03	630
179	VTB 315S10	45	60	588	731	90	91,5	92,1	0,71	173	105	99	2	4,1	2	2,16	720
180	VTB 315S10z	55	75	583	901	88	90,5	91,5	0,75	201	122	116	1,7	4,7	1,9	2,86	840
181	VTB 315M10	75	100	583	1229	88	90,5	91,5	0,75	274	166	158	1,8	4,9	1,5	3,01	895
182	VTB 400H10As	200	270	594	3216	94,4	95,1	95,0	0,82	-	-	371	1,0	5,4	2,5	25,6	3010
183	VTB 400H10Bs	250	340	594	4019	94,4	95,2	95,2	0,79	-	-	480	1,1	5,6	2,6	31,3	3270
184	VTB 450H10As	315	430	594	5064	94,9	95,5	95,5	0,81	-	-	341 ²	1,0	5,9	2,2	49,4	4050
185	VTB 450H10Bs	355	480	594	5708	95,0	95,7	95,7	0,81	-	-	384 ²	1,0	6,0	2,3	53,9	4130
186	VTB 450H10Cs	400	540	594	6431	95,0	95,7	95,7	0,81	-	-	432 ²	1,1	6,4	2,3	58,3	4300
187	VTB 500H10As	450	610	594	7235	95,1	95,8	95,7	0,81	-	-	486 ²	1,4	6,3	2,1	74,1	5420
188	VTB 500H10Bs	500	680	594	8039	95,2	95,9	95,8	0,82	-	-	533 ²	1,5	6,6	2,2	85,5	5700
189	VTB 500H10Cs	560	760	593	9019	95,4	95,9	95,8	0,82	-	-	597 ²	1,3	6,2	2,0	94,2	5950
190	VTB 500H10Ds	630	850	594	10129	95,5	96,0	96,0	0,82	-	-	670 ²	1,7	6,9	2,2	108	6400
2p=12 $n_s=500$ rpm																	
191	VTB 200L12	9	12	490	175	75,3	80,1	81,8	0,55	50	30,5	28,9	2,7	4,3	2,5	0,47	255
192	VTB 225S12	11	15	490	214	83,1	85,0	86,0	0,63	51	31	29,3	1,7	3,5	1,7	0,58	315
193	VTB 225M12	13	18	475	261	81,5	82,2	82,5	0,59	67	40,5	38,5	1,7	3,5	1,7	0,68	320
194	VTB 225M12z	15	20	491	292	80,5	83,5	84,4	0,58	77	46,5	44	2,7	4,6	1,8	0,68	350
195	VTB 250M12	18,5	25	490	361	84,0	86,0	87,8	0,65	81	49,5	47	1,7	3,5	1,8	1,27	430
196	VTB 280S12	22	30	491	428	86,9	89,2	89,6	0,61	101	61	58	2,3	4,5	1,8	1,47	535
197	VTB 280M12	30	40	490	585	85,6	88,2	89,0	0,62	136	83	78	1,8	3,5	1,8	1,8	570
198	VTB 315S12	37	50	492	718	87,5	89,9	90,4	0,58	177	107	102	2,6	4,5	1,9	2,29	730
199	VTB 315M12A	45	60	490	877	87,9	89,9	90,1	0,58	216	131	124	2	3,5	1,8	2,86	870
200	VTB 315M12B	55	75	490	1072	87,5	90,0	89,5	0,58	266	161	153	2,5	4,4	1,8	3,01	885
201	VTB 450H12As	160	220	495	3087	94,1	95,0	95,0	0,79	-	-	308	0,9	5,9	2,6	30,0	3470
202	VTB 450H12Bs	200	270	495	3859	94,7	94,9	94,9	0,80	-	-	381	0,9	5,7	2,3	33,7	3600
203	VTB 450H12Cs	250	340	493	4843	94,7	95,0	94,7	0,82	-	-	465	0,8	5,1	2,2	40,0	3750

² - at rated voltage 690 V

As part of our development program the technical specifications indicated may change, and we reserve the right to alert or to amend any of this specifications without giving prior notice.

In any such instance, you will find any possible change on our web-site: www.cantonigroup.com

FOOT MOUNTED MOTORS - IM B3



Motor type	A	B	C	D	E	F	GA	H	K	AA	AB	BB	HA	HD	L
VTB 56-.A	90	71	36	9j6	20	3h9	10,2	56	5,8	30	110	92	7	154	183
VTB 56-.B	90	71	36	9j6	20	3h9	10,2	56	5,8	30	110	92	7	154	193
VTB 63-.A	100	80	40	11j6	23	4h9	12,5	63	7	36	124	106	8,5	165	200
VTB 63-.B	100	80	40	11j6	23	4h9	12,5	63	7	36	124	106	8,5	165	210
VTB 71-.A	112	90	45	14j6	30	5h9	16	71	7	45	142	116	8	182	223
VTB 71-.B	112	90	45	14j6	30	5h9	16	71	7	45	142	116	8	182	245
VTB 80-.A	125	100	50	19j6	40	6h9	21,5	80	10	55	160	130	9	200	266
VTB 80-.B	125	100	50	19j6	40	6h9	21,5	80	10	55	160	130	9	200	278
2VTB 80-.A	125	100	50	19j6	40	6h9	21,5	80	10	55	160	130	9	200	266
2VTB 80-.B	125	100	50	19j6	40	6h9	21,5	80	10	55	160	130	9	200	278
2VTB 90S-2,4,6	140	100	56	24j6	50	8h9	27	90	10	41	170	153	10	228	331
2VTB 90L-2	140	125	56	24j6	50	8h9	27	90	10	41	170	153	10	228	331
2VTB 90L-4,6	140	125	56	24j6	50	8h9	27	90	10	41	170	153	10	228	356
2VTB 100L-2,6	160	140	63	28j6	60	8h9	31	100	12	44	197	174	14	250	377
2VTB 100L-4A,4B	160	140	63	28j6	60	8h9	31	100	12	44	197	174	14	250	421
2VTB 112M-2,6	190	140	70	28j6	60	8h9	31	112	12	49	230	174	14	276	389
2VTB 112M-4	190	140	70	28j6	60	8h9	31	112	12	49	230	174	14	276	416
2VTB 132S-2A,6	216	140	89	38k6	80	10h9	41	132	12	62	274	182	17	310	461
2VTB 132S-2B,4	216	140	89	38k6	80	10h9	41	132	12	62	274	182	17	310	499
2VTB 132M-4,6A,6B	216	178	89	38k6	80	10h9	41	132	12	62	274	220	17	310	499
2VTB 160M-2A,2B,4,6	254	210	108	42k6	110	12h9	45	160	15	60	305	256	22	365	611
2VTB 160L-2,4,6	254	254	108	42k6	110	12h9	45	160	15	60	305	300	22	365	655
2VTB 180M-2,4	279	241	121	48k6	110	14h9	51,5	180	15	70	350	315	23	403	701
2VTB 180L-4,6	279	279	121	48k6	110	14h9	51,5	180	15	70	350	315	23	403	701

MOTORS series VTB 2p=8

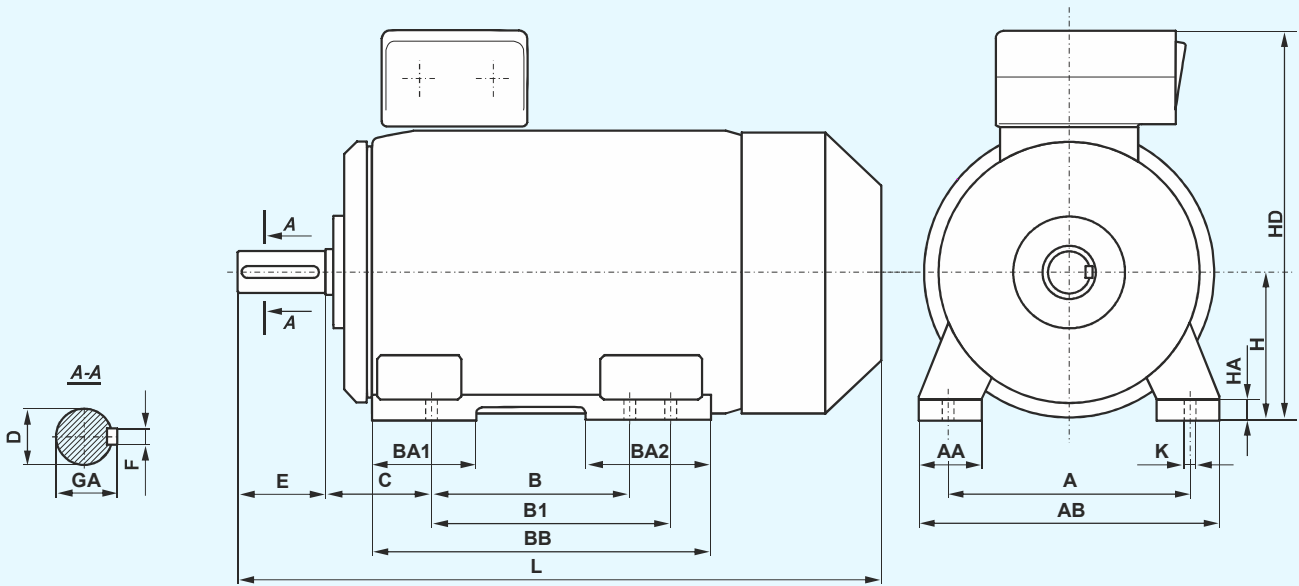
Motor type	A	B	C	D	E	F	GA	H	HA	K	AA	AB	BB	HD	L
VTB 90S ...	140	100	56	24j6	50	8h9	27	90	10	10	50	170	153	220	305
VTB 90L ...	140	125	56	24j6	50	8h9	27	90	10	10	50	170	153	220	330
VTB 100L ...	160	140	63	28j6	60	8h9	31	100	14	12	45	200	172	240	376
VTB 112M ...	190	140	70	28j6	60	8h9	31	112	14	12	54	230	174	276	384
VTB 132S ...	216	140	89	38k6	80	10h9	41	132	16	12	56	278	182	310	463
VTB 132S-2B	216	140	89	38k6	80	10h9	41	132	16	12	56	278	220	310	501
VTB 132M ...	216	178	89	38k6	80	10h9	41	132	16	12	56	278	220	310	501
VTB 160M ...	254	210	108	42k6	110	12h9	45	160	20	15	60	305	256	370	612
VTB 160L ...	254	254	108	42k6	110	12h9	45	160	20	15	60	305	300	370	656
VTB 180M ...	279	241	121	48k6	110	14h9	51,5	180	26	15	70	350	320	408	705
VTB 180L ...	279	279	121	48k6	110	14h9	51,5	180	26	15	70	350	320	408	705

DIMENSIONAL DRAWINGS

FOOT MOUNTED MOTORS - IM B3

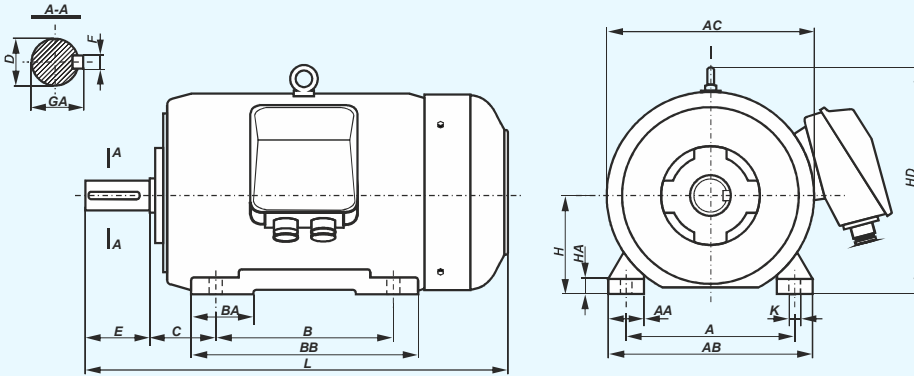


DIMENSIONAL DRAWINGS



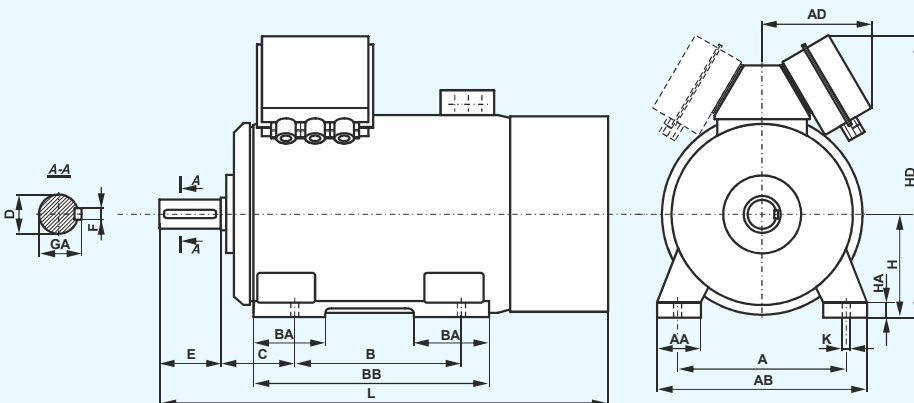
Motor type	A	B	B1	C	D	E	F	GA	H	HA	K	AA	AB	BA1	BA2	BB	HD	L
2VTB200	318	305	-	133	55	110	16	59	200	32	19	80	400	113	113	380	520	850
2VTB225S4	356	286	311	149	60	140	18	64	225	34	19	85	440	115	115	380	570	930
2VTB225M2	356	286	311	149	55	110	16	59	225	34	19	85	440	115	115	380	570	900
2VTB225M4-6	356	286	311	149	60	140	18	64	225	34	19	85	440	115	115	380	570	930
2VTB250M2	406	349	-	168	60	140	18	64	250	37	24	90	480	135	135	445	635	1010
2VTB250M4-6	406	349	-	168	65	140	18	69	250	37	24	90	480	135	135	445	635	1040
2VTB280S2	457	368	419	190	65	140	18	69	280	40	24	105	550	130	165	520	720	1135
2VTB280S4-6	457	368	419	190	75	140	20	79,5	280	40	24	105	550	130	165	520	720	1135
2VTB280M2	457	368	419	190	65	140	18	69	280	40	24	105	550	130	165	520	720	1135
2VTB280M4-6	457	368	419	190	75	140	20	79,5	280	40	24	105	550	130	165	520	720	1135
2VTB315S2	508	406	457	216	65	140	18	69	315	48	28	120	610	160	160	565	805	1235
2VTB315S4-6	508	406	457	216	80	170	22	85	315	48	28	120	610	160	160	565	805	1265
2VTB315M2A;B	508	406	457	216	65	140	18	69	315	48	28	120	610	160	160	565	805	1235
2VTB315M4A;B;6A	508	406	457	216	80	170	22	85	315	48	28	120	610	160	160	565	805	1265
2VTB315M6B	508	406	457	216	80	170	22	85	315	48	28	135	610	135	205	600	805	1355
2VTB315M2C	508	406	457	216	70	140	20	74,5	315	48	28	135	610	135	205	600	805	1290
2VTB315M4C	508	406	457	216	80	170	22	85	315	48	28	135	610	135	205	600	805	1320
2VTB315M6C	508	406	457	216	80	170	22	85	315	48	28	135	610	135	205	600	805	1320
2VTB315M6D	508	406	457	216	90	170	25	95	315	48	28	135	610	135	205	600	805	1320
2VTB 315 ML (4, 6)	508	457	508	216	80	170	22	85	315	40	28	120	620	150	180	637	865	1345
2VTB 355 ML (2)	610	560	630	254	80	170	22	85	355	50	28	150	720	250	300	890	935	1580
2VTB 355 ML (4, 6)	610	560	630	254	100	210	28	106	355	50	28	150	720	250	300	890	935	1620
2VTB 355 H (2)	610	900	-	200	70	140	20	74,5	355	45	28	160	730	265	265	1045	995	1800
2VTB 355 H (4, 6)	610	900	-	200	100	210	28	106	355	45	28	160	730	265	265	1045	995	1870
VTB 355 ML8	610	560	630	254	100	210	28	106	355	50	28	150	720	250	300	890	935	1620

FOOT MOUNTED MOTORS - IM B3



Motor type	A	B	C	D	E	F	GA	H	HA	K	AA	AB	AC	BA	BB	HD	L
VTB 200 L8-12	318	305	133	55m6	110	16h9	59	200	32	19	80	400	450	100	380	485	825
VTB 225 S8-12	356	286	149	60m6	140	18h9	64	225	34	19	85	445	505	110	355	535	865
VTB 225 M8-12	356	311	149	60m6	140	18h9	64	225	34	19	85	445	505	110	380	535	890
VTB 250 M8-12	406	349	168	65m6	140	18h9	69	250	36	24	90	495	540	120	420	590	965
VTB 280 S8-12	457	368	190	75m6	140	20h9	79,5	280	40	24	100	560	620	165	520	660	1040
VTB 280 M8-12	457	419	190	75m6	140	20h9	79,5	280	40	24	100	560	620	165	520	660	1040
VTB 315 S8-12	508	406	216	80m6	170	22h9	85	315	46	28	105	610	620	190	560	695	1210
VTB 315 M8-12	508	457	216	80m6	170	22h9	85	315	46	28	105	610	620	190	560	695	1210

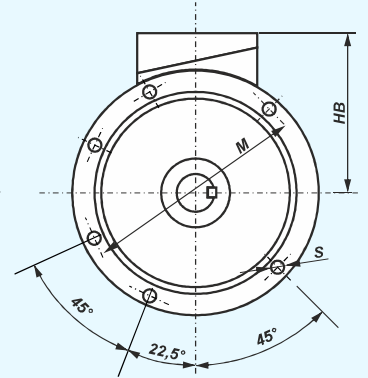
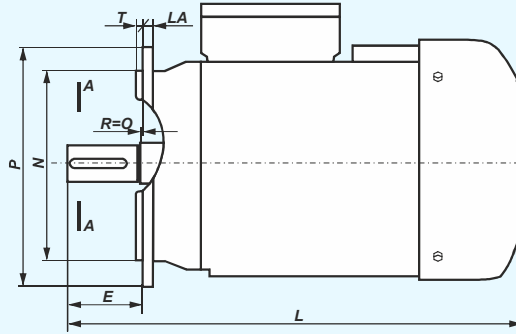
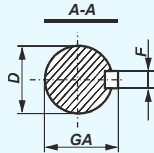
FOOT MOUNTED MOTORS - IM B3



Motor type	Poles	A	B	C	D	E	F	GA	H	HA	K	AA	AB	AD	BA	BB	HD	L
VTB 355...s	2	610	900	200	70	140	20	74,5	355	45	28	160	730	-	265	1045	995	1800
VTB 355...s	4÷8	610	900	200	100	210	28	106	355	45	28	160	730	-	265	1045	995	1870
VTB 400...s	2	686	1000	224	80	170	22	85	400	50	35	175	840	520	265	1160	1255	1980
VTB 400...s	4÷8	686	1000	224	110	210	28	116	400	50	35	175	840	520	265	1160	1255	1960
VTB 450...s	4÷12	750	1120	254	110	210	28	116	450	60	35	205	940	560	340	1320	1356	2105
VTB 500...s	4÷10	850	1250	280	120	210	32	127	500	70	42	223	1050	560	300	1450	1470	2430

DIMENSIONAL DRAWINGS

FLANGE MOUNTED MOTORS - IM B5, IM V1



DIMENSIONAL DRAWINGS

Motor type	D	E	F	GA	M	N	P	LA	T	HB	L	S (f)	S (holes)
VTB 56-.A	9j6	20	3h9	10,2	100	80j6	120	8	3	98	183	7	4
VTB 56-.B	9j6	20	3h9	10,2	100	80j6	120	8	3	98	193	7	4
VTB 63-.A	11j6	23	4h9	12,5	115	95j6	140	9	3	102	200	10	4
VTB 63-.B	11j6	23	4h9	12,5	115	95j6	140	9	3	102	210	10	4
VTB 71-.A	14j6	30	5h9	16	130	110j6	160	9	3,5	111	223	10	4
VTB 71-.B	14j6	30	5h9	16	130	110j6	160	9	3,5	111	245	10	4
VTB 80-.A	19j6	40	6h9	21,5	165	130j6	200	10	3,5	120	266	12	4
VTB 80-.B	19j6	40	6h9	21,5	165	130j6	200	10	3,5	120	278	12	4
2VTB 80-.A	19j6	40	6h9	21,5	165	130j6	200	10	3,5	120	266	12	4
2VTB 80-.B	19j6	40	6h9	21,5	165	130j6	200	10	3,5	120	278	12	4
2VTB 90S-2,4,6	24j6	50	8h9	27	165	130j6	200	8	3,5	139	331	12	4
2VTB 90L-2	24j6	50	8h9	27	165	130j6	200	8	3,5	139	331	12	4
2VTB 90L-4,6	24j6	50	8h9	27	165	130j6	200	8	3,5	139	356	12	4
2VTB 100L-2,6	28j6	60	8h9	31	215	180j6	250	11	4	150	377	15	4
2VTB 100L-4A,4B	28j6	60	8h9	31	215	180j6	250	11	4	150	421	15	4
2VTB 112M-2,6	28j6	60	8h9	31	215	180j6	250	12	4	165	385	15	4
2VTB 112M-4	28j6	60	8h9	31	215	180j6	250	12	4	165	416	15	4
2VTB 132S-2A,6	38k6	80	10h9	41	265	230j6	300	12	4	178	461	15	4
2VTB 132S-2B,4	38k6	80	10h9	41	265	230j6	300	12	4	178	499	15	4
2VTB 132M-4,6A,6B	38k6	80	10h9	41	265	230j6	300	12	4	178	499	15	4
2VTB 160M-2A,2B,4,6	42k6	110	12h9	45	300	250j6	350	13	5	205	611	19	4
2VTB 160L-2,4,6	42k6	110	12h9	45	300	250j6	350	13	5	205	655	19	4
2VTB 180M-2,4	48k6	110	14h9	51,5	300	250j6	350	13	5	224	701	19	4
2VTB 180L-4,6	48k6	110	14h9	51,5	300	250j6	350	13	5	224	701	19	4
2VTB 200	55	110	16	59	350	300	400	16,5	5	320	850	19	4
2VTB 225S4	60	140	18	64	400	350	450	18	5	345	930	19	8
2VTB 225M2	55	110	16	59	400	350	450	18	5	345	900	19	8
2VTB 225M4-6	60	140	18	64	400	350	450	18	5	345	930	19	8
2VTB 250M2	60	140	18	64	500	450	550	23	5	385	1010	19	8
2VTB 250M4-6	65	140	18	69	500	450	550	23	5	385	1040	19	8
2VTB 280S2	65	140	18	69	500	450	550	23	5	440	1135	19	8
2VTB 280S4-6	75	140	20	79,5	500	450	550	23	5	440	1135	19	8
2VTB 280M2	65	140	18	69	500	450	550	23	5	440	1135	19	8
2VTB 280M4-6	75	140	20	79,5	500	450	550	23	5	440	1135	19	8
2VTB 315S2	65	140	18	69	600	550	660	23	6	490	1235	24	8
2VTB 315S4-6	80	170	22	85	600	550	660	23	6	490	1265	24	8
2VTB 315M2A;B	65	140	18	69	600	550	660	23	6	490	1235	24	8
2VTB 315M4A;B;6A	80	170	22	85	600	550	660	23	6	490	1265	24	8
2VTB 315M6B*	80	170	22	85	600	550	660	23	6	490	1355	24	8
2VTB 315M2C*	70	140	20	74,5	600	550	660	23	6	490	1290	24	8
2VTB 315M4C*	80	170	22	85	600	550	660	23	6	490	1320	24	8
2VTB 315M6C*	80	170	22	85	600	550	660	23	6	490	1320	24	8
2VTB 315M6D*	90	170	22	95	600	550	660	23	6	490	1320	24	8
2VTB 355 ML (4 - 6)*	100m6	210	28h9	106	740	680	800	24	6	580	1620	22	8
2VTB 355 H (4 - 6)*	100m6	210	28h9	106	740	680	800	24	6	638	1955	22	8
VTB 355ML8*	100	210	28	106	740	680	800	24	6	580	1620	22	8

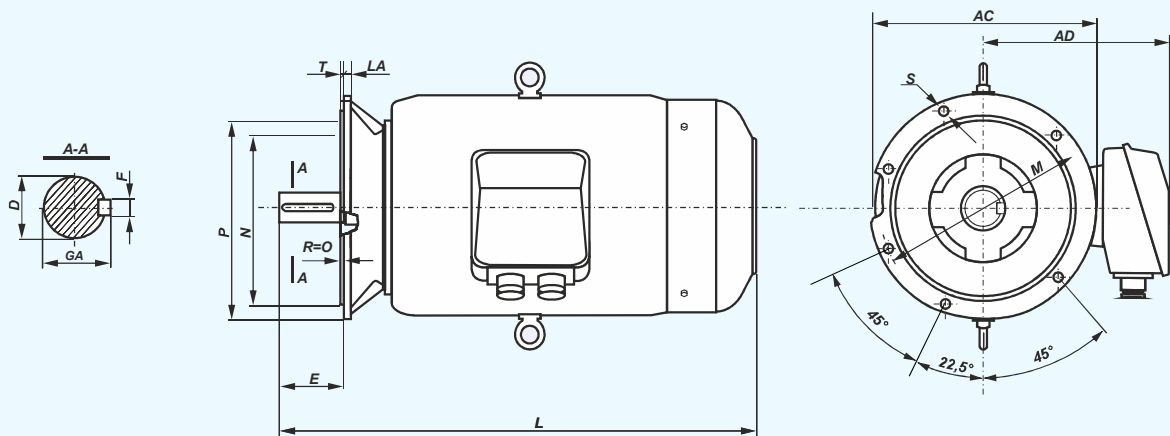
* only in vertical position IM V1

FLANGE MOUNTED MOTORS - IM B5, IM V1

MOTORS series VTB 2p=8

Type of motor	D	E	F	GA	M	N	P	LA	T	S	HB	L
VTB 90S ...	24j6	50	8h9	27	165	130j6	200	8	3,5	12	130	305
VTB 90L ...	24j6	50	8h9	27	165	130j6	200	8	3,5	12	130	330
VTB 100L ...	28j6	60	8h9	31	215	180j6	250	11	4	15	140	376
VTB 112M ...	28j6	60	8h9	31	215	180j6	250	12	4	15	164	384
VTB 132S ...	38k6	80	10h9	41	265	230j6	300	12	4	15	178	463
VTB 132S-2B	38k6	80	10h9	41	265	230j6	300	12	4	15	178	501
VTB 132M ...	38k6	80	10h9	41	265	230j6	300	12	4	15	178	501
VTB 160M ...	42k6	110	12h9	45	300	250j6	350	13	5	19	210	612
VTB 160L ...	42k6	110	12h9	45	300	250j6	350	13	5	19	210	656
VTB 180M ...	48k6	110	14h9	51,5	300	250j6	350	13	5	19	228	705
VTB 180L ...	48k6	110	14h9	51,5	300	250j6	350	13	5	19	228	705

FLANGE MOUNTED MOTORS - IM B5, IM V1

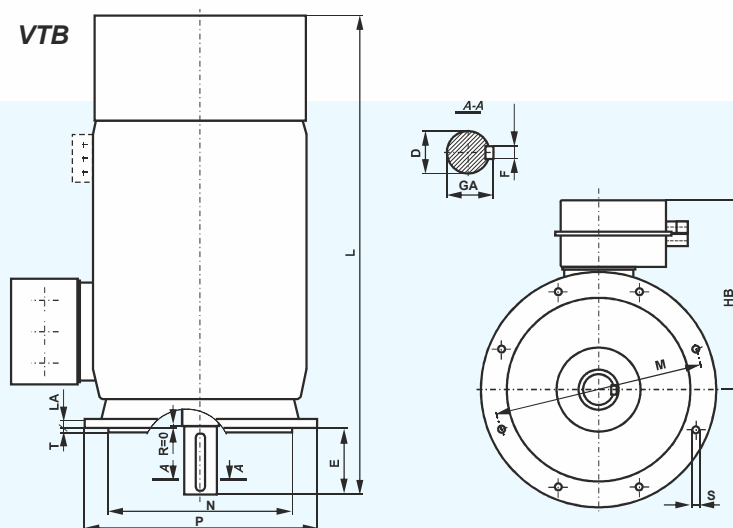


Motor type	D	E	F	GA	AC	AD	L	LA	M	N	P	T	S	φ	Holes
VTB 200 L8-12	55m6	110	16h9	59	450	340	825	16,5	350	300j6	400	5	18	4	
VTB 225 S8-12	60m6	140	18h9	64	505	360	865	18	400	350j6	450	5	18	8	
VTB 225 M8-12	60m6	140	18h9	64	505	360	890	18	400	350j6	450	5	18	8	
VTB 250 M8-12	65m6	140	18h9	69	540	405	965	19	500	450j6	550	5	18	8	
VTB 280 S8-12	75m6	140	20h9	79,5	620	440	1040	20	500	450j6	550	5	18	8	
VTB 280 M8-12	75m6	140	20h9	79,5	620	440	1040	20	500	450j6	550	5	18	8	
VTB 315 S8-12	80m6	170	22h9	85	620	440	1210	22	600	550j6	660	6	22	8	
VTB 315 M8-12	80m6	170	22h9	85	620	440	1210	22	600	550j6	660	6	22	8	

DIMENSIONAL DRAWINGS

FLANGE MOUNTED MOTORS - IM B5, IM V1

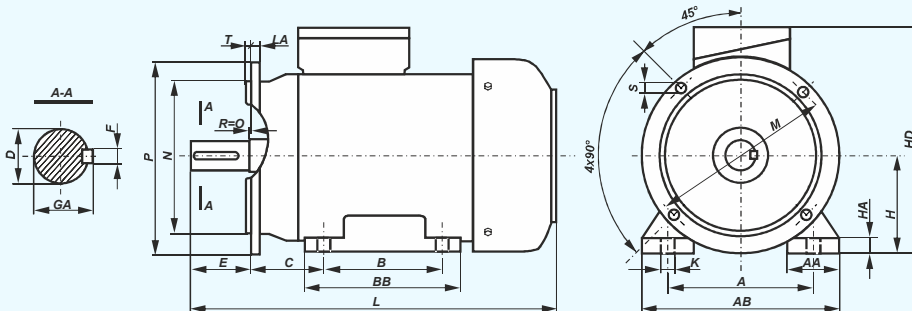
DIMENSIONAL DRAWINGS



Motor type	Poles	D	E	F	GA	HB	L	LA	M	N	P	S	T
VTB 355...s*	4+8	100	210	28	106	640	1955	24	740	680	800	22	6
VTB 400...s*	4+8	110	210	28	116	725	2016	37	940	880	1000	23	6
VTB 450...s*	4+12	110	210	28	116	835	2162	30	1080	1000	1150	28	6
VTB 500...s*	4+12	120	210	32	127	835	2505	30	1080	1000	1150	28	6

* - the SVh motors may operate only in vertical position IM V1.

FOOT/FLANGE MOUNTED MOTORS - IM B35



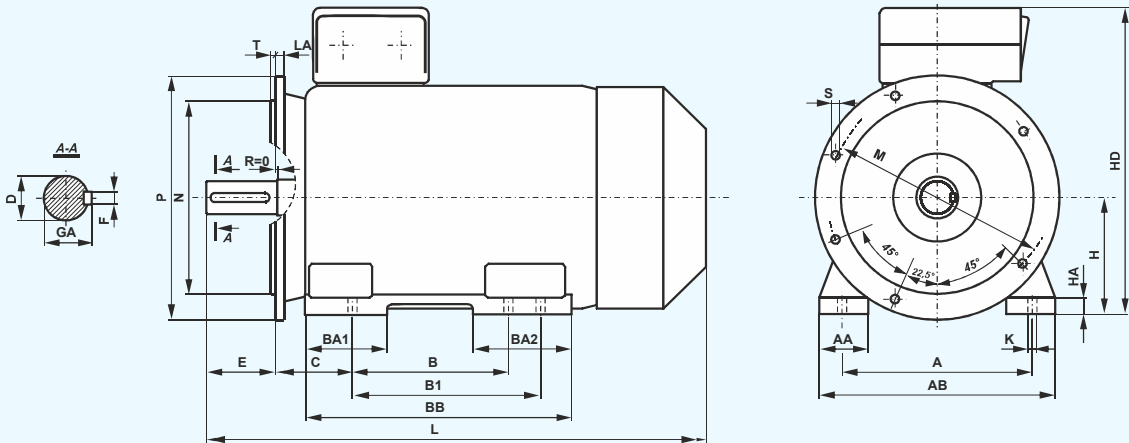
Motor type	A	B	C	D	E	F	GA	H	K	M	N	P	S	LA	T	AA	AB	BB	HA	HD	L
VTB 56-.A	90	71	36	9j6	20	3h9	10,2	56	8	100	80j6	120	7	8	3	30	110	92	7	154	183
VTB 56-.B	90	71	36	9j6	20	3h9	10,2	56	8	100	80j6	120	7	8	3	30	110	92	7	154	193
VTB 63-.A	100	80	40	11j6	23	4h9	12,5	63	10	115	95j6	140	10	9	3	36	124	106	8,5	165	200
VTB 63-.B	100	80	40	11j6	23	4h9	12,5	63	10	115	95j6	140	10	9	3	36	124	106	8,5	165	210
VTB 71-.A	112	90	45	14j6	30	5h9	16	71	10	130	110j6	160	10	9	3,5	45	142	116	8	182	223
VTB 71-.B	112	90	45	14j6	30	5h9	16	71	10	130	110j6	160	10	9	3,5	45	142	116	8	182	245
VTB 80-.A	125	100	50	19j6	40	6h9	21,5	80	10	165	130j6	200	12	10	3,5	55	160	130	9	200	266
VTB 80-.B	125	100	50	19j6	40	6h9	21,5	80	10	165	130j6	200	12	10	3,5	55	160	130	9	200	278
2VTB 80-.A	125	100	50	19j6	40	6h9	21,5	80	10	165	130j6	200	12	10	3,5	55	160	130	9	200	266
2VTB 80-.B	125	100	50	19j6	40	6h9	21,5	80	10	165	130j6	200	12	10	3,5	55	160	130	9	200	278
2VTB 90S-2,4,6	140	100	56	24j6	50	8h9	27	90	10	165	130j6	200	12	8	3,5	41	170	153	10	228	331
2VTB 90L-2	140	125	56	24j6	50	8h9	27	90	10	165	130j6	200	12	8	3,5	41	170	153	10	228	331
2VTB 90L-4,6	140	125	56	24j6	50	8h9	27	90	10	165	130j6	200	12	8	3,5	41	170	153	10	228	356
2VTB 100L-2,6	160	140	63	28j6	60	8h9	31	100	12	215	180j6	250	15	11	4	44	197	174	14	250	377
2VTB 100L-4A,4B	160	140	63	28j6	60	8h9	31	100	12	215	180j6	250	15	11	4	44	197	174	14	250	421
2VTB 112M-2,6	190	140	70	28j6	60	8h9	31	112	12	215	180j6	250	15	12	4	49	230	174	14	276	389
2VTB 112M-4	190	140	70	28j6	60	8h9	31	112	12	215	180j6	250	15	12	4	49	230	174	14	276	416
2VTB 132S-2A,6	216	140	89	38k6	80	10h9	41	132	12	265	230j6	300	15	12	4	62	274	182	17	310	461
2VTB 132S-2B,4	216	140	89	38k6	80	10h9	41	132	12	265	230j6	300	15	12	4	62	274	182	17	310	499
2VTB 132M-4,6A,6B	216	178	89	38k6	80	10h9	41	132	12	265	230j6	300	15	12	4	62	274	220	17	310	499
2VTB 160M-2A,2B,4,6	254	210	108	42k6	110	12h9	45	160	15	300	250j6	350	19	13	5	60	305	256	22	370	611
2VTB 160L-2,4,6	254	254	108	42k6	110	12h9	45	160	15	300	250j6	350	19	13	5	60	305	300	22	370	655
2VTB 180M-2,4	279	241	121	48k6	110	14h9	51,5	180	15	300	250j6	350	19	13	5	70	350	315	23	408	701
2VTB 180L-4,6	279	279	121	48k6	110	14h9	51,5	180	15	300	250j6	350	19	13	5	70	350	315	23	408	701

FOOT/FLANGE MOUNTED MOTORS - IM B35

MOTORS series VTB 2p=8

Motor type	A	B	C	D	E	F	GA	H	HA	K	AA	AB	BB	HD	L	LA	M	N	P	T	S
VTB 90S ...	140	100	56	24j6	50	8h9	27	90	10	10	50	170	153	220	305	8	165	130j6	200	3,5	12
VTB 90L ...	140	125	56	24j6	50	8h9	27	90	10	10	50	170	153	220	330	8	165	130j6	200	3,5	12
VTB 100L ...	160	140	63	28j6	60	8h9	31	100	14	12	45	200	172	240	376	11	215	180j6	250	4	15
VTB 112M ...	190	140	70	28j6	60	8h9	31	112	14	12	54	230	174	276	384	12	215	180j6	250	4	15
VTB 132S ...	216	140	89	38k6	80	10h9	41	132	16	12	56	278	182	310	463	12	265	230j6	300	4	15
VTB 132S-2B	216	140	89	38k6	80	10h9	41	132	16	12	56	278	220	310	501	12	265	230j6	300	4	15
VTB 132M ...	216	178	89	38k6	80	10h9	41	132	16	12	56	278	220	310	501	12	265	230j6	300	4	15
VTB 160M ...	254	210	108	42k6	110	12h9	45	160	20	15	60	305	256	370	612	13	300	250j6	350	5	19
VTB 160L ...	254	254	108	42k6	110	12h9	45	160	20	15	60	305	300	370	656	13	300	250j6	350	5	19
VTB 180M ...	279	241	121	48k6	110	14h9	51,5	180	26	15	70	350	320	408	705	13	300	250j6	350	5	19
VTB 180L ...	279	279	121	48k6	110	14h9	51,5	180	26	15	70	350	320	408	705	13	300	250j6	350	5	19

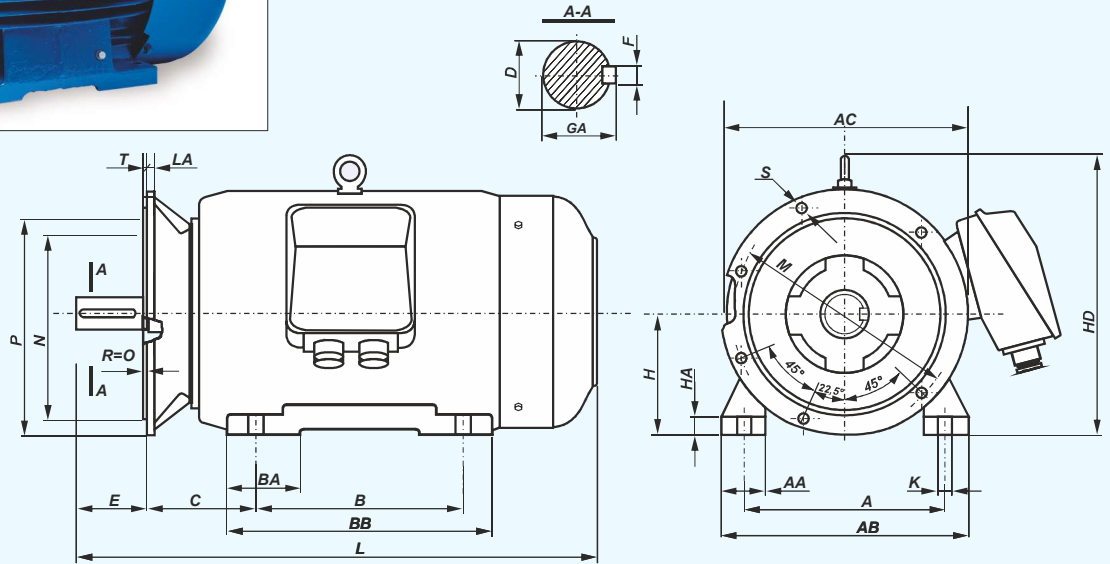
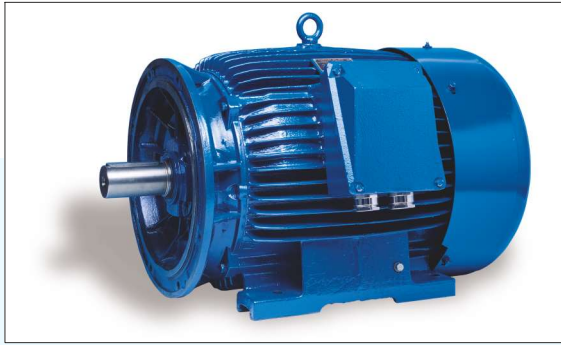
FOOT/FLANGE MOUNTED MOTORS - IM B35



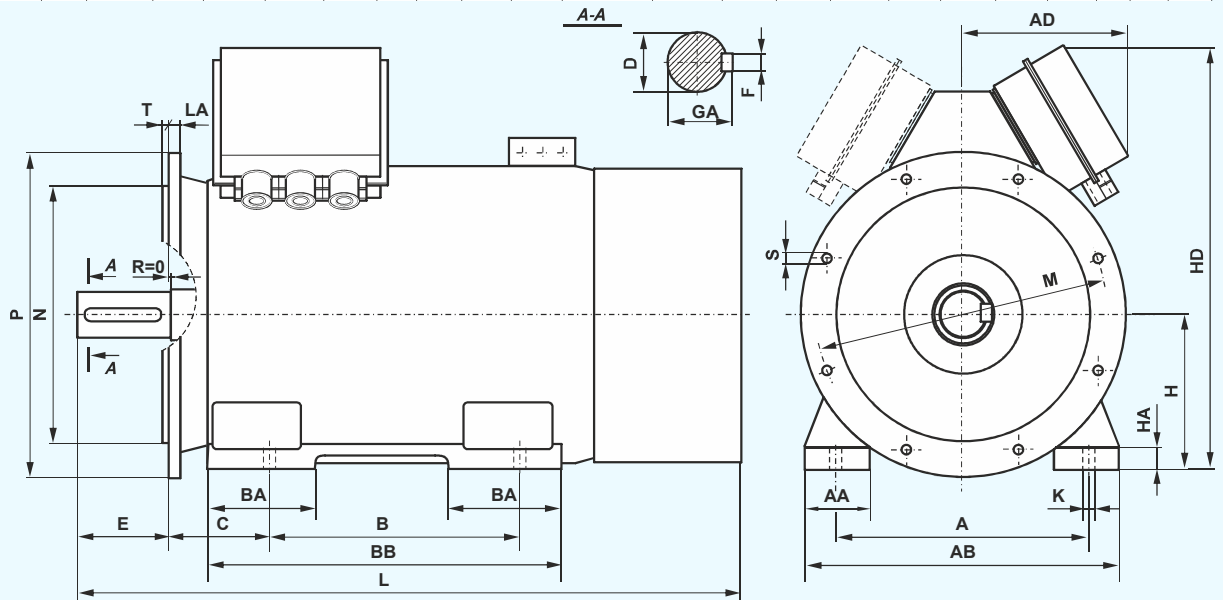
Motor type	A	B	B1	C	D	E	F	GA	H	HA	K	AA	AB	BA1	BA2	BB	HD	LA	P	M	N	T	L	S (φ)	S (holes)
2VTB 200	318	305	-	133	55	110	16	59	200	32	19	80	400	113	113	380	520	16,5	400	350	300	5	850	19	4
2VTB 225S4	356	286	311	149	60	140	18	64	225	34	19	85	440	115	115	380	570	18	450	400	350	5	930	19	8
2VTB 225M2	356	286	311	149	55	110	16	59	225	34	19	85	440	115	115	380	570	18	450	400	350	5	900	19	8
2VTB 225M4-6	356	286	311	149	60	140	18	64	225	34	19	85	440	115	115	380	570	18	450	400	350	5	930	19	8
2VTB 250M2	406	349	-	168	60	140	18	64	250	37	24	90	480	135	135	445	635	23	550	500	450	5	1010	19	8
2VTB 250M4-6	406	349	-	168	65	140	18	69	250	37	24	90	480	135	135	445	635	23	550	500	450	5	1040	19	8
2VTB 280S2	457	368	419	190	65	140	18	69	280	40	24	105	550	130	165	520	720	23	550	500	450	5	1135	19	8
2VTB 280S4-6	457	368	419	190	75	140	20	79,5	280	40	24	105	550	130	165	520	720	23	550	500	450	5	1135	19	8
2VTB 280M2	457	368	419	190	65	140	18	69	280	40	24	105	550	130	165	520	720	23	550	500	450	5	1135	19	8
2VTB 280M4-6	457	368	419	190	75	140	20	79,5	280	40	24	105	550	130	165	520	720	23	550	500	450	5	1135	19	8
2VTB 315S2	508	406	457	216	65	140	18	69	315	48	28	120	610	160	160	565	805	23	660	600	550	6	1235	24	8
2VTB 315S4-6	508	406	457	216	80	170	22	85	315	48	28	120	610	160	160	565	805	23	660	600	550	6	1265	24	8
2VTB 315M2A;B	508	406	457	216	65	140	18	69	315	48	28	120	610	160	160	565	805	23	660	600	550	6	1235	24	8
2VTB 315M4A;B;6A	508	406	457	216	80	170	22	85	315	48	28	120	610	160	160	565	805	23	660	600	550	6	1265	24	8
2VTB 315M6B	508	406	457	216	80	170	22	85	315	48	28	135	610	135	205	600	805	23	660	600	550	6	1355	24	8
2VTB 315M2C	508	406	457	216	70	140	20	74,5	315	48	28	135	610	135	205	600	805	23	660	600	550	6	1290	24	8
2VTB 315M4C	508	406	457	216	80	170	22	85	315	48	28	135	610	135	205	600	805	23	660	600	550	6	1320	24	8
2VTB 315M6C	508	406	457	216	80	170	22	85	315	48	28	135	610	135	205	600	805	23	660	600	550	6	1320	24	8
2VTB 315M6D;8C;8D	508	406	457	216	90	170	25	95	315	48	28	135	610	135	205	600	805	23	660	600	550	6	1320	24	8
2VTB 315 ML (4,6)	508	457	508	216	80	170	22	85	315	40	28	120	620	150	180	637	865	22	660	600	550	6	1345	22	8
2VTB 355 ML (2)	610	560	630	254	80	170	22	85	355	50	28	150	720	250	300	890	935	24	800	740	680	6	1580	22	8
2VTB 355 ML (4,6)	610	560	630	254	100	210	28	106	355	50	28	150	720	250	300	890	935	24	800	740	680	6	1620	22	8
2VTB 355 H (2)	610	900	-	254	70	140	20	74,5	355	45	28	160	730	265	265	1045	995	24	800	740	680	6	1854	22	8
2VTB 355 H (4,6)	610	900	-	254	100	210	28	106	355	45	28	160	730	265	265	1045	995	24	800	740	680	6	1924	22	8
VTB 355 ML8	610	560	630	254	100	210	28	106	355	50	28	150	720	250	300	890	935	24	800	740	680	6	1620	22	8

DIMENSIONAL DRAWINGS

FOOT/FLANGE MOUNTED MOTORS - IM B35



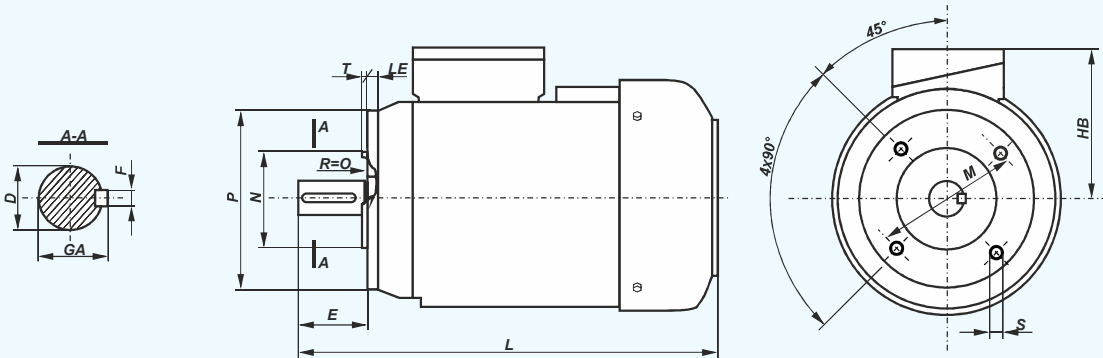
Motor type	A	B	C	D	E	F	GA	H	HA	K	AA	AB	AC	BA	BB	HD	L	LA	M	N	P	T	S	φ Holes
VTB 200 L8-12	318	305	133	55m6	110	16h9	59	200	32	19	80	400	450	100	380	485	825	16,5	350	300	400	5	18	4
VTB 225 S8-12	356	286	149	60m6	140	18h9	64	225	34	19	85	445	505	110	355	535	865	18	400	350	450	5	18	8
VTB 225 M8-12	356	311	149	60m6	140	18h9	64	225	34	19	85	445	505	110	380	535	890	18	400	350	450	5	18	8
VTB 250 M8-12	406	349	168	65m6	140	18h9	69	250	36	24	90	495	540	120	420	590	965	19	500	450	550	5	18	8
VTB 280 S8-12	457	368	190	75m6	140	20h9	79,5	280	40	24	100	560	620	165	520	660	1040	20	500	450	550	5	18	8
VTB 280 M8-12	457	419	190	75m6	140	20h9	79,5	280	40	24	100	560	620	165	520	660	1040	20	500	450	550	5	18	8
VTB 315 S8-12	508	406	216	80m6	170	22h9	85	315	46	28	105	610	620	190	560	695	1210	22	600	550	660	6	22	8
VTB 315 M8-12	508	457	216	80m6	170	22h9	85	315	46	28	105	610	620	190	560	695	1210	22	600	550	660	6	22	8



Type of motor	Poles	A	B	C	D	E	F	GA	H	HA	K	AA	AB	AD	BA	BB	HD	L	LA	M	N	P	S	T
VTB 355...s	2	610	900	254	70	140	20	74.5	355	45	28	160	730	344	265	1045	995	1854	24	740	680	800	22	6
VTB 355...s	4+8	610	900	254	100	210	28	106	355	45	28	160	730	344	265	1045	995	1924	24	740	680	800	22	6
VTB 400...s	2	686	1000	280	80	170	22	85	400	50	35	175	840	520	265	1160	1255	2031	30	940	880	1000	25	6
VTB 400...s	4+8	686	1000	280	110	210	28	116	400	50	35	175	840	520	265	1160	1255	2016	30	940	880	1000	25	6
VTB 450...s	4+12	750	1120	315	110	210	28	116	450	60	35	205	940	560	340	1320	1356	2162	30	1080	1000	1150	28	6
VTB 500...s	4+10	850	1250	355	120	210	32	127	500	70	42	223	1050	560	300	1450	1470	2505	30	1080	1000	1150	28	6

DIMENSIONAL DRAWINGS

FLANGE MOUNTED MOTORS - IM B14

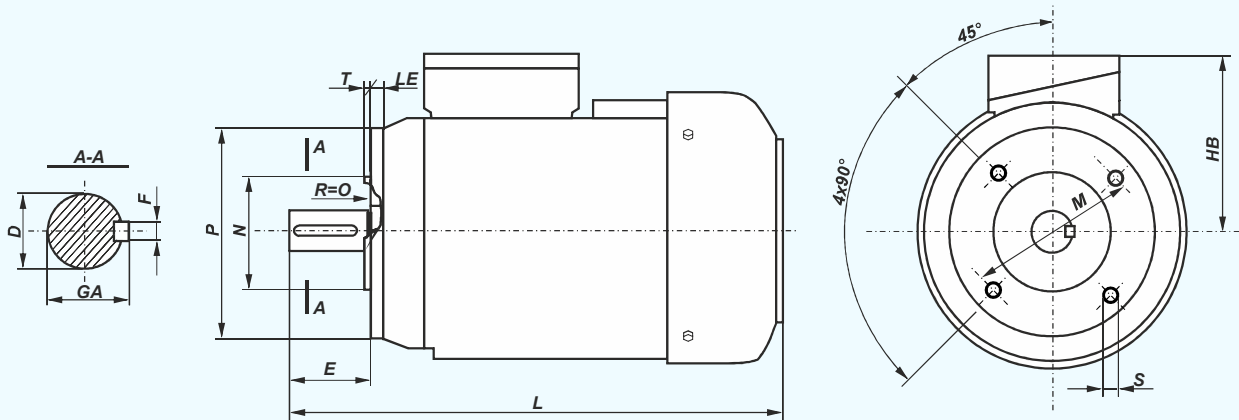


Motor type	Flange	D	E	F	GA	M	N	P	S	T	LE	HB	L
VTB 56- .A1	B14/C1	9j6	20	3h9	10,2	85	70j6	105	M6	2,5	15	98	183
VTB 56- .A2	B14/C2	9j6	20	3h9	10,2	65	50j6	80	M5	2,5	12,5	98	183
VTB 56- .B1	B14/C1	9j6	20	3h9	10,2	85	70j6	105	M6	2,5	15	98	193
VTB 56- .B2	B14/C2	9j6	20	3h9	10,2	65	50j6	80	M5	2,5	12,5	98	193
VTB 63- .A1	B14/C1	11j6	23	4h9	12,5	100	80j6	120	M6	3	14	102	200
VTB 63- .A2	B14/C2	11j6	23	4h9	12,5	75	60j6	90	M5	2,5	9,5	102	200
VTB 63- .B1	B14/C1	11j6	23	4h9	12,5	100	80j6	120	M6	3	14	102	210
VTB 63- .B2	B14/C2	11j6	23	4h9	12,5	75	60j6	90	M5	2,5	9,5	102	210
VTB 71- .A1	B14/C1	14j6	30	5h9	16	115	95j6	140	M8	3	14	111	223
VTB 71- .A2	B14/C2	14j6	30	5h9	16	85	70j6	105	M6	2,5	12	111	223
VTB 71- .B1	B14/C1	14j6	30	5h9	16	115	95j6	140	M8	3	14	111	245
VTB 71- .B2	B14/C2	14j6	30	5h9	16	85	70j6	105	M6	2,5	12	111	245
VTB 80- .A1	B14/C1	19j6	40	6h9	21,5	130	110j6	160	M8	3,5	14	120	266
VTB 80- .A2	B14/C2	19j6	40	6h9	21,5	100	80j6	120	M6	3	12	120	266
VTB 80- .B1	B14/C1	19j6	40	6h9	21,5	130	110j6	160	M8	3,5	14	120	278
VTB 80- .B2	B14/C2	19j6	40	6h9	21,5	100	80j6	120	M6	3	12	120	278
2VTB 80- .A1	B14/C1	19j6	40	6h9	21,5	130	110j6	160	M8	3,5	14	120	266
2VTB 80- .A2	B14/C2	19j6	40	6h9	21,5	100	80j6	120	M6	3	12	120	266
2VTB 80- .B1	B14/C1	19j6	40	6h9	21,5	130	110j6	160	M8	3,5	14	120	278
2VTB 80- .B2	B14/C2	19j6	40	6h9	21,5	100	80j6	120	M6	3	12	120	278
2VTB 90S 2,4,6	B14/C1	24j6	50	8h9	27	130	110j6	160	M8	3,5	10	139	331
2VTB 90S 2,4,6	B14/C2	24j6	50	8h9	27	115	95j6	140	M8	3	10	139	331
2VTB 90L 2	B14/C1	24j6	50	8h9	27	130	110j6	160	M8	3,5	10	139	331
2VTB 90L 2	B14/C2	24j6	50	8h9	27	115	95j6	140	M8	3	10	139	331
2VTB 90L 4,6	B14/C1	24j6	50	8h9	27	130	110j6	160	M8	3,5	10	139	356
2VTB 90L 4,6	B14/C2	24j6	50	8h9	27	115	95j6	140	M8	3	10	139	356
2VTB 100L2,6	B14/C1	28j6	60	8h9	31	165	130j6	200	M10	3,5	12	150	377
2VTB 100L2,6	B14/C2	28j6	60	8h9	31	130	110j6	160	M8	3,5	12	150	377
2VTB 100L4A,4B	B14/C1	28j6	60	8h9	31	165	130j6	200	M10	3,5	12	150	421
2VTB 100L4A,4B	B14/C2	28j6	60	8h9	31	130	110j6	160	M8	3,5	12	150	421
2VTB 112M2,6	B14/C1	28j6	60	8h9	31	165	130j6	200	M10	3,5	12	165	389
2VTB 112M2,6	B14/C2	28j6	60	8h9	31	130	110j6	160	M8	3,5	12	165	389
2VTB 112M4	B14/C1	28j6	60	8h9	31	165	130j6	200	M10	3,5	12	165	416
2VTB 112M4	B14/C2	28j6	60	8h9	31	130	110j6	160	M8	3,5	12	165	416
2VTB 132S2A,6	B14/C1	38k6	80	10h9	41	215	180j6	250	M12	4	12	178	461
2VTB 132S2A,6	B14/C2	38k6	80	10h9	41	165	130j6	200	M10	3,5	12	178	461
2VTB 132S2B,4	B14/C1	38k6	80	10h9	41	215	180j6	250	M12	4	12	178	499
2VTB 132S2B,4	B14/C2	38k6	80	10h9	41	165	130j6	200	M10	3,5	12	178	499
2VTB 132M4,6A,6B	B14/C1	38k6	80	10h9	41	215	180j6	250	M12	4	12	178	499
2VTB 132M4,6A,6B	B14/C2	38k6	80	10h9	41	165	130j6	200	M10	3,5	12	178	499

DIMENSIONAL DRAWINGS

FLANGE MOUNTED MOTORS - IM B14

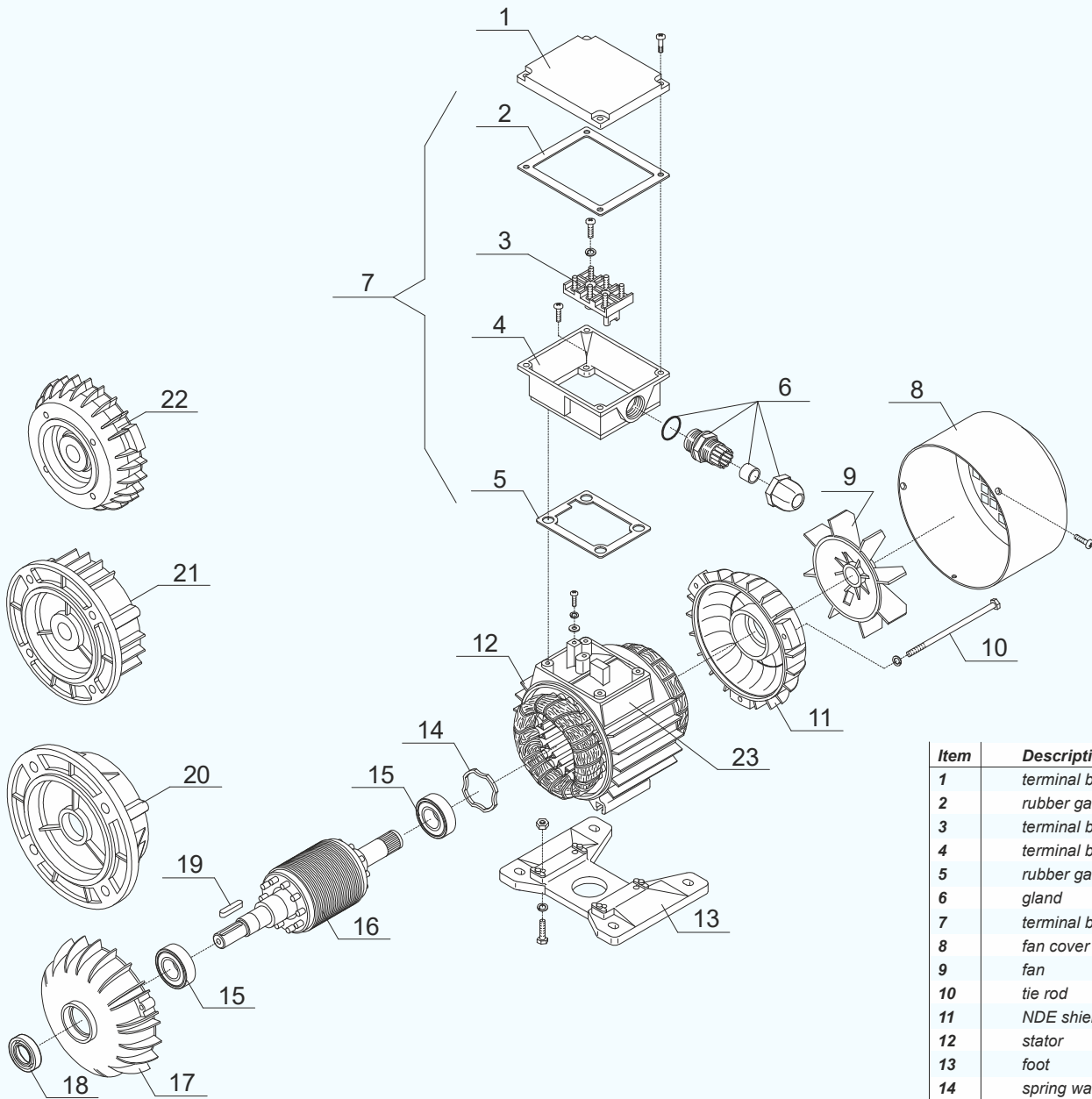
MOTORS series VTB 2p=8



DIMENSIONAL DRAWINGS

Motor type	Flange	D	E	F	GA	M	N	P	S	T	LE	HB	L
VTB 90S ...	B14/C2	24j6	50	8h9	27	115	95j6	140	M8	3	10	130	305
VTB 90L ...	B14/C1	24j6	50	8h9	27	130	110j6	160	M8	3,5	10	130	330
VTB 90L ...	B14/C2	24j6	50	8h9	27	115	95j6	140	M8	3	10	130	330
VTB 100L ...	B14/C1	28j6	60	8h9	31	165	130j6	200	M10	3,5	12	140	376
VTB 100L ...	B14/C2	28j6	60	8h9	31	130	110j6	160	M8	3,5	12	140	376
VTB 112M ...	B14/C1	28j6	60	8h9	31	165	130j6	200	M10	3,5	12	164	384
VTB 112M ...	B14/C2	28j6	60	8h9	31	130	110j6	160	M8	3,5	12	164	384
VTB 132S ...	B14/C1	38k6	80	10h9	41	215	180j6	250	M12	4	12	178	463
VTB 132S ...	B14/C2	38k6	80	10h9	41	165	130j6	200	M10	3,5	12	178	463
VTB 132S-2B	B14/C1	38k6	80	10h9	41	215	180j6	250	M12	4	12	178	501
VTB 132S-2B	B14/C2	38k6	80	10h9	41	165	130j6	200	M10	3,5	12	178	501
VTB 132M ...	B14/C1	38k6	80	10h9	41	215	180j6	250	M12	4	12	178	501
VTB 132M ...	B14/C2	38k6	80	10h9	41	165	130j6	200	M10	3,5	12	178	501
VTB 160M ...	B14/C1	42k6	110	12h9	45	265	230j6	300	M12	4	13	210	612
VTB 160M...	B14/C2	42k6	110	12h9	45	215	180j6	250	M12	4	20	210	612
VTB 160L ...	B14/C1	42k6	110	12h9	45	265	230j6	300	M12	4	13	210	656
VTB 160L ...	B14/C2	42k6	110	12h9	45	215	180j6	250	M12	4	20	210	656

Frame Size: 56-80
Motor series 2VTB and VTB

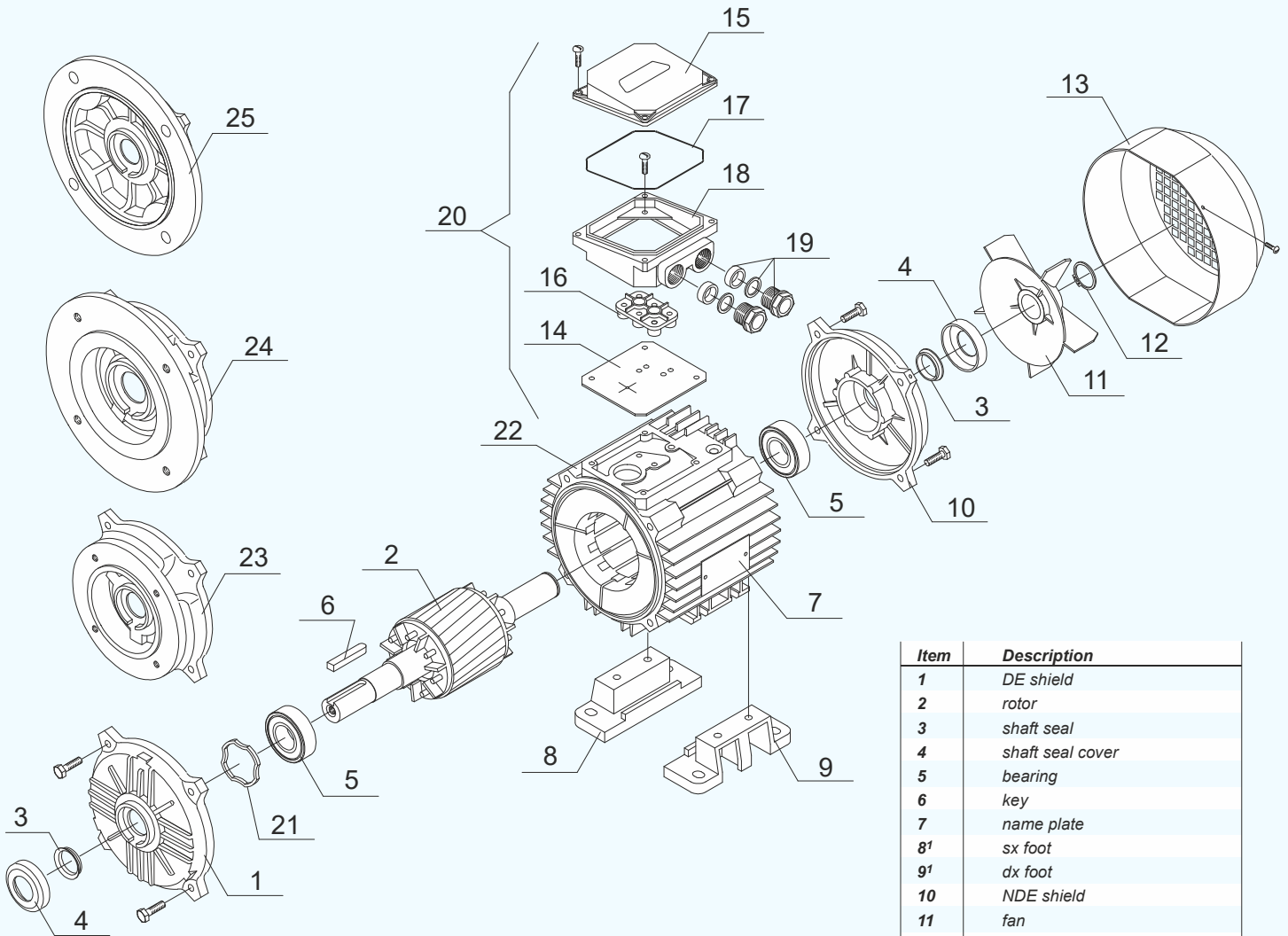


Item	Description
1	terminal box cover
2	rubber gasket
3	terminal board
4	terminal box
5	rubber gasket
6	gland
7	terminal box complete
8	fan cover
9	fan
10	tie rod
11	NDE shield
12	stator
13	foot
14	spring washer
15	bearing
16	rotor
17	DE shield
18	shaft seal
19	key
20	flange B5
21	flange B14/C1
22	flange B14/C2
23	name plate

DE - drive end
NDE - non drive end

LIST OF MOTOR PARTS

Frame Size: 90÷180
Motor series 2VTB

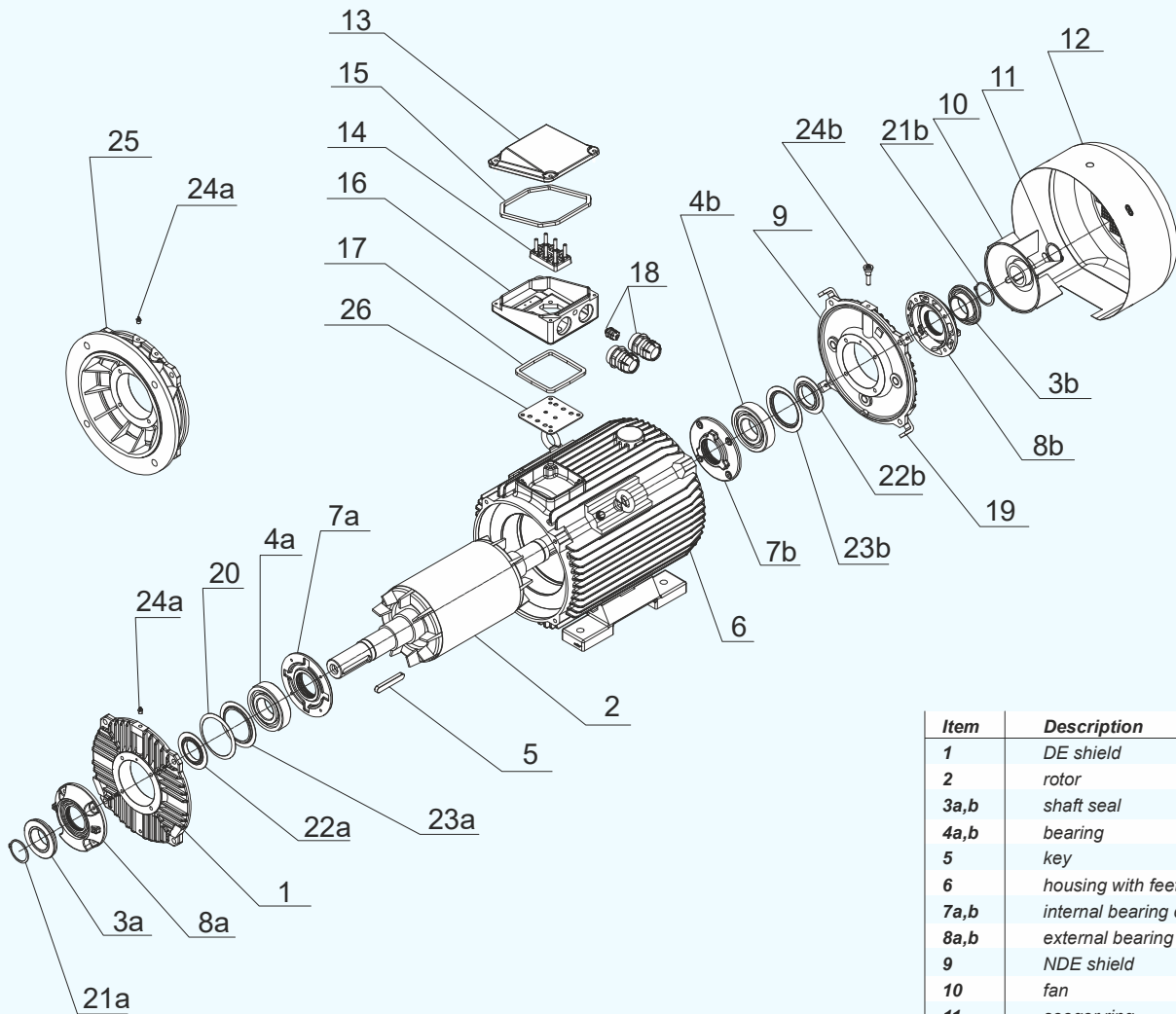


Item	Description
1	DE shield
2	rotor
3	shaft seal
4	shaft seal cover
5	bearing
6	key
7	name plate
8 ¹	sx foot
9 ¹	dx foot
10	NDE shield
11	fan
12	seeger ring
13	fan cover
14	rubber gasket
15	terminal box cover
16	terminal board
17	rubber gasket
18	terminal box
19	glands
20	terminal box complete
21	spring washer
22	stator
23 ²	flange B14/C2
24 ²	flange B14/C1
25	flange B5

DE - drive end
NDE - non drive end

1 - for frame size 132 feet can be screwed or integrated with the motor housing, for frame size 160 -180 feet are integrated with the motor housing.
2 - only for frame size 90 - 132.

Frame Size: 200÷355
Motor series 2VTB

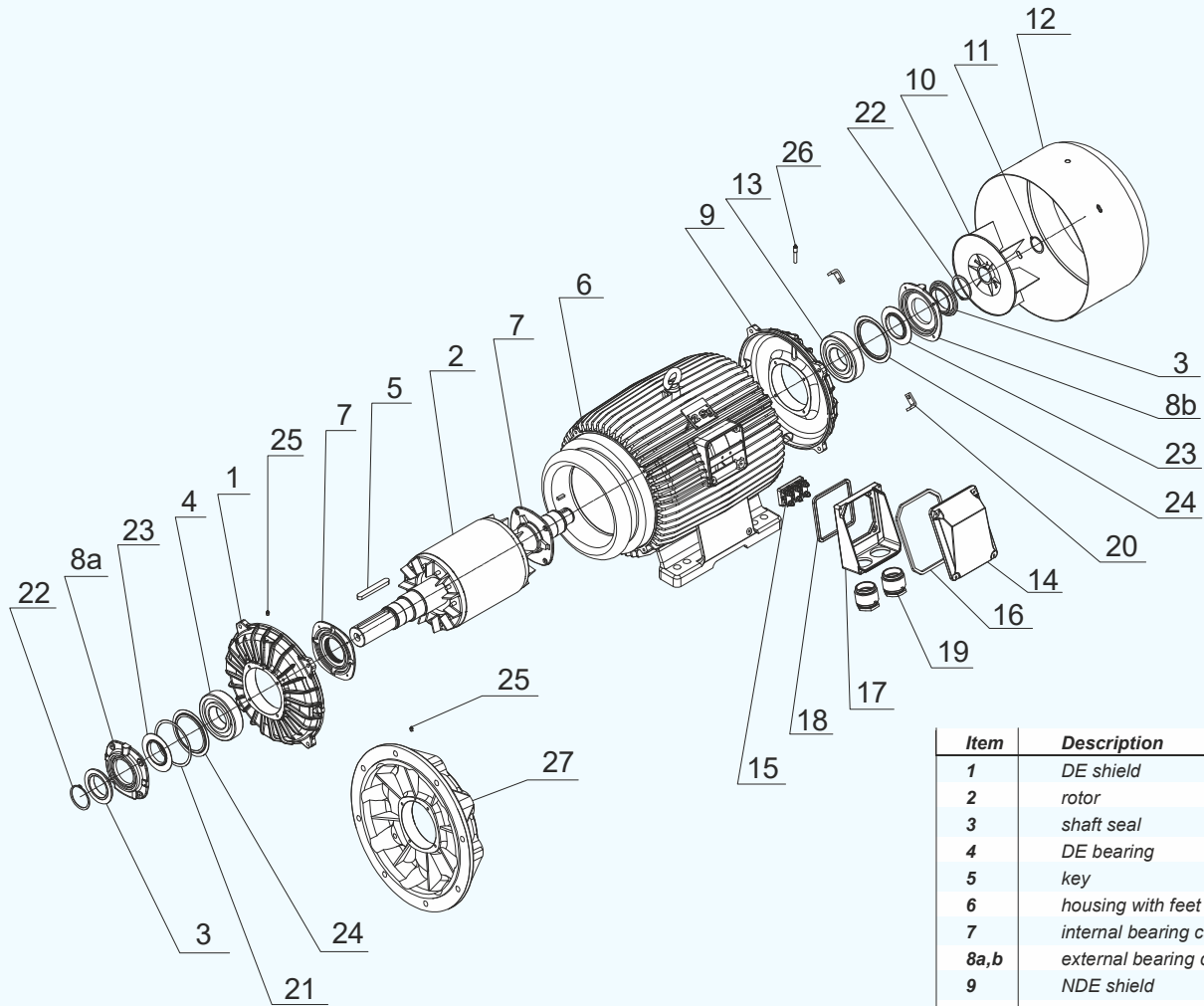


Item	Description
1	DE shield
2	rotor
3a,b	shaft seal
4a,b	bearing
5	key
6	housing with feet
7a,b	internal bearing cap
8a,b	external bearing cap
9	NDE shield
10	fan
11	seeger ring
12	fan cover
13	terminal box cover
14	terminal board
15	rubber gasket
16	terminal box housing
17	rubber gasket
18	cable glands
19	fan cover support
20	spring washer
21a,b	seeger ring
22a,b	grease shield
23a,b	bearing internal ring
24a,b	grease nipple
25	flange B5
26	rubber gasket

DE - drive end
NDE - non drive end

LIST OF MOTOR PARTS

Frame Size: 200÷315
Motor series VTB



Item	Description
1	DE shield
2	rotor
3	shaft seal
4	DE bearing
5	key
6	housing with feet
7	internal bearing cap
8a,b	external bearing cap
9	NDE shield
10	fan
11	seeger ring
12	fan cover
13	NDE bearing
14	terminal box cover
15	terminal cover support
16	rubber gasket
17	terminal box housing
18	rubber gasket
19	cable glands
20	fan cover support
21	spring washer
22	seeger ring
23	grease shield *
24	bearing internal ring *
25	DE grease nipple
26	NDE grease nipple
27	flange B5

DE - drive end
NDE - non drive end

* only for size 315

PRODUCTION PROGRAM

GENERAL PURPOSE 3-PHASE INDUCTION MOTORS

GENERAL PURPOSE 1-PHASE INDUCTION MOTORS

HIGH VOLTAGE INDUCTION MOTORS

- Totally enclosed motors IP55
- Totally enclosed motors for power engineering IP55
- Open drip proof motors IP23

MOTORS WITH INCREASED RATED OUTPUT

MOTORS WITH FOREIGN COOLING

- Motors with foreign cooling IP54 (IP55)
- Motors with foreign cooling IP20

3-PHASE INDUCTION MOTORS FOR PUMPS

- Standard motors for pumps
- Explosion-proof motors for pumps
- Explosion-proof marine motors for pumps

MOTORS TO BE BUILT-IN

- 1-phase motors to be built-in
- 3-phase motors to be built-in

BRAKE MOTORS

- Brake motors (with DC brake)
- Brake motors (with AC brake)

EXPLOSION-PROOF MOTORS

- Increased safety motors
- Flame-proof motors
- Flame-proof marine motors
- Special purpose flame-proof motors for mining
- Special purpose flame-proof motors for chemical industry
- Special purpose flame-proof marine motors
- High voltage flame-proof motors

MOTORS FOR AXIAL-FLOW FANS

- 1-phase motors for axial-flow fans
- 3-phase motors for axial-flow fans
- 3-phase motors for axial-flow mining fans
- 3-phase explosion-proof motors for air duct axial-flow fans
- 3-phase marine motors for axial-flow fans
- 3-phase explosion-proof marine motors for axial-flow fans
- 3-phase multi-speed motors for axial-flow fans
- 3-phase multi-speed motors for air duct axial-flow fans

MULTI-SPEED MOTORS

- General purpose 2-speed motors
- General purpose multi-speed motors

MARINE MOTORS

- General purpose marine motors
- Marine motors for pumps
- Marine motors for axial-flow fans
- Marine motors for boat davits
- Marine motors for tubular rudders
- General purpose explosion-proof marine motors
- Explosion-proof marine motors for pumps
- Explosion-proof marine motors for axial-flow fans

SLIP RING INDUCTION MOTORS

- Totally enclosed (IP 54, 55) wound rotor induction motors
- Open drip proof (IP 23) wound rotor induction motors

CRANE MOTORS

- Squirrel cage crane motors
- Slip ring rotor crane motors
- Two-speed crane motors with brake

SPECIAL PURPOSE INDUCTION MOTORS

- Motors with increased slip
- Roller table motors for iron and steel industry
- 1-phase motors with shaft height 65 mm
- 3-phase motors with shaft height 65 mm

MOTORS ACCORDING TO EPACT AND PREMIUM REQUIREMENTS

ACCESSORIES

- DC electromagnetic disc brakes
- AC electromagnetic disc brakes
- Powder brakes and clutches
- Thrusters



VEMAT MOTORI S.r.l. - Registered office: Via Pantano, 2 - 20122 Milano - Italy
Productive unit and administrative offices: Via Gualda, 10 Z.I. - 36075 Montecchio Maggiore (VI) - Italy
Tel. +39 0444 491973 r.a. - Fax +39 0444 491978 - e-mail: vemat@vemat.it - www.vemat.it