

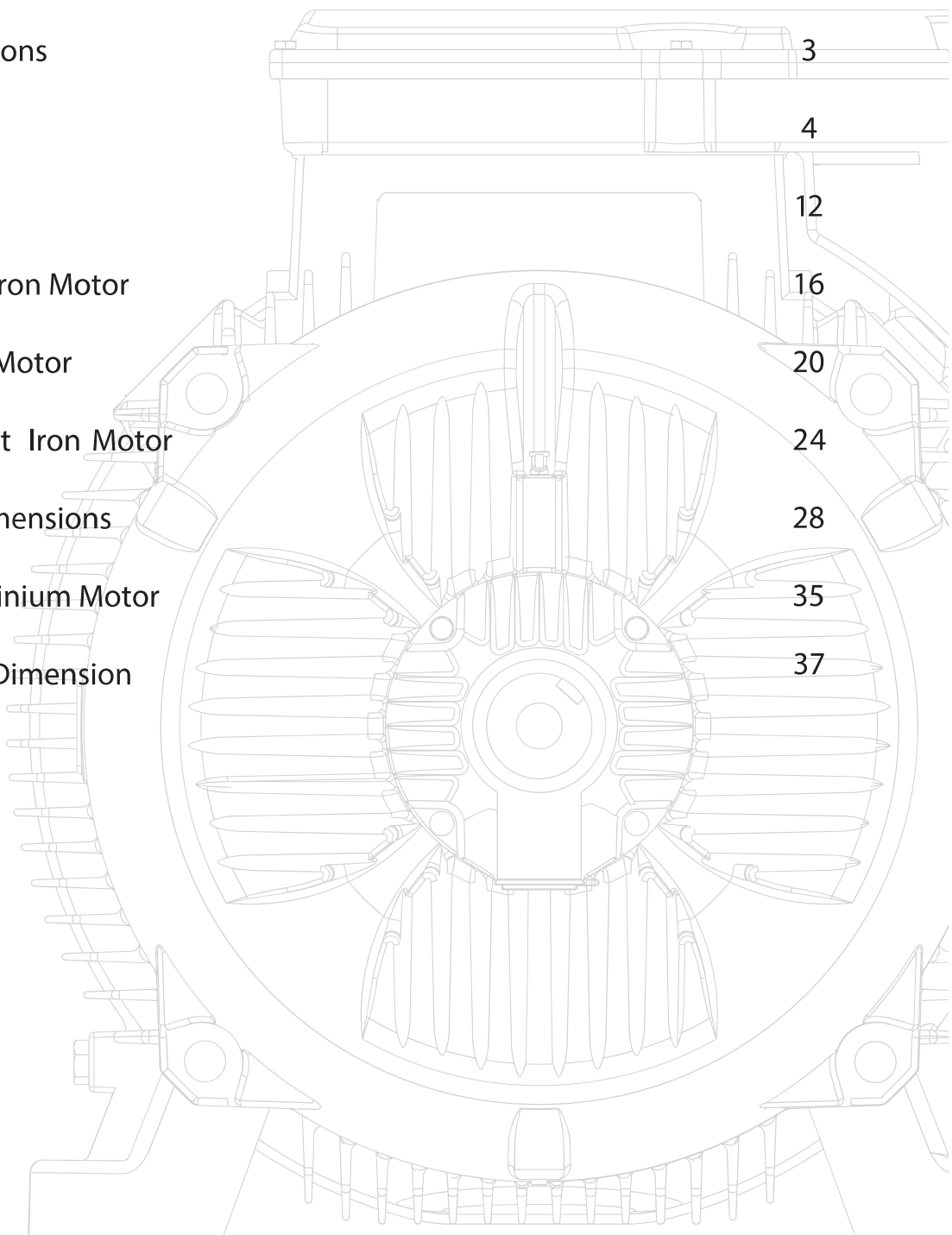
## Transmax Transmission



## Electric Motor

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# Introduction

Transmax is a time-tested brand that supplies variety of engineering transmission components designed to increase both uptime and productivity. Each of our brands brings years of time-tested reliability and proven performance results. Together they deliver a product line unparalleled in its breadth.

## Induction Motor

With **tmx** straightforward, robust design, these high quality motors offer extensive potential for modification. They are available with standard variants, ensuring they can be used in wide range of industrial applications. Most General performance motors are stocked both centrally and locally for global off-the-shelf availability and fast delivery worldwide.

## Gear / Reducer

Wide range of ratio and type of reduction gear to suit industrial application needs. Quality consistency is our promises to customer. With years of experience gained, we are capable to provide appropriate transmission solution to maximized cost effectiveness of our client machine.

## Taper Lock Pulley

TRANSMAX Taper Bushing Pulleys have been re-designed to ensure suitability for the demands of modern industry. The new design incorporates advantages of modern materials to give the optimum weight strength ratio in the finished pulleys. TRANSMAX Taper Bushing Pulleys are produced with accuracy and consistency of form and are suitable for use on drives with belt speed up to 40 meters per second.

## Bearing

Industrial and Automotive bearings which are market relevant, ensure quality manufacturing products, wide range of ready stock to fulfil the market demand. We have unparalleled expertise in the distribution of bearings products which is all available from one single source. We do provide trade, OEM and aftermarket industries. Your need, we deliver.

## Chain Couplings

TRANSMAX chain coupling is a flexible coupling of simple design consisting of a double strand chain coupled with a pair of sprockets. It is simple, compact and has high torque capacity that is normally in excess of the torque transmitted by shaft.

## Variable Speed Drive (Frequency Inverter)

Artemis series variable speed drive features excellent drive control performance with V/F and sensorless vector control (SVC) technology, which provides efficient solution for most types of variable speed drive applications.

# Standards & Regulations

The Motors comply with the relevant standards and regulations, especially:

Title	IEC	EU CENELES	D DIN/VDE	I CEI/UNEL	GB BS	F NFC	E UNE
<b>Electrical</b>							
General stipulations for electrical machines	60034-1	EN 60034-1	DIN EN 60034-1	CEI EN 60034-1	4999-1 4999-69	51-200 51-111	UNE EN 60034-1
Rotating electrical machines: methods for determining losses and efficiency using tests	60034-2	HD 53 2	DIN EN 60034-2	CEI EN 60034-2	4999-34	51-112	UNE EN 60034-2
Terminal markings and direction of rotation of rotating electrical machines	60034-8	HD 53 8 54	DIN VDE 0530-8	CEI 2-8	4999-3	51-118	20113-8-96
Starting performance	60034-12	EN 60034-12	DIN EN 60034-12	CEI EN 60034-12	4999-1 12		UNE EN 60034-12
Standard voltages	60038	HD 472 51	DIN IEC 60038	CEI 8-6			
Insulating materials	60085		DIN IEC 60085	CEI 15-26			
<b>Mechanical</b>							
Dimensions and output ratings	60072			UNEL 131 13			
Mounting dimensions and relationship frame sizes-output rating, IM B3	60072	HD 231	DIN 42673-1	UNEL 131 13	4999-10 51-110	51-105 51-104	201061/26 1980
Mounting dimensions and relationship frame sizes-output ratings, IM B5	60072	HD 231	DIN 42677-1	UNEL 131 17		20106-2-74	
Mounting dimensions and relationship frame sizes-output rating, IM B14	60072	HD 231	DIN 42677-1	UNEL 131 18	4999-10 51-110	51-105 51-104	20106-2-IC-80
Cylindrical shaft ends for electric motors	60072	HD 231	DIN 784-3	UNEL 13502	4999-10	51-111	
Degrees of protection	60034-5	EN 60034-5	DIN IEC 60034-5	CEI EN 60034-5	4999-20	EN 60034-5	20111-5
Methods of cooling	60034-6	EN 60034-6	DIN EN 60034-6	CEI EN 60034-7	4999-21		EN 60034-6
Mounting arrangements	60034-7	EN 60034-7	DIN EN 60034-7	CEI EN 60034-7	4999-22	51-1 17	EN 60034-7
Noise limits	60034-9	EN 60034-9	DIN EN 60034-9	CEI EN 60034-9	4999-51	51-1 19	EN 60034-9
Mechanical vibration	60034-14	EN 60034-14	DIN EN 60034-14	CEI EN 60034-14	4999-50	51-1 11	EN 60034-14
Mounting Flanges			DIN 42948	UNEL 13501			
Tolerances of mounting and shaft extensions			DIN 42955	UNEL 13501/ 13502			
Classification of environmental conditions	600721-2-1		DIN IEC 60721-2-1	CEI 75-1			
Mechanical vibration; balancing	ISO 8821		DIN ISO 8821				

# Conditions of Installations

The Motors are designed for operation at altitudes  $\leq 1000$  m above sea-level and at ambient temperatures of up to 40° C. Exceptions are indicated on the rating plate.

Permissible temperature rises to various standards

Standard/Regulation	Temperature of coolant °C	Permissible temperature rise in K (measured by resistance method) Temperature class		
		B	F	H
VDE 0530 part 1	40	80	105	125
International IEC 34-1	40	80	105	125
Britain BS 2613	40	80	105	
Canada CSA	40	80	105	
USA NEW A and ANSI	40	80	105	
italy CEI	40	80	105	
Sweden SEN	40	80	105	
Norway NEK	40	80	105	
Belgium NBN	40	80	105	
France NF	40	80	105	
Switzerland SEV	40	80	105	
India IS	40	80	-	
Germanischer Lloyd <sup>1)</sup>	45	75	90	
American Bureau Of Shipping <sup>1)</sup>	50	70	95	
Bureau Veritas <sup>1)</sup>	45	70	100	
Norske Veritas <sup>1)</sup>	45	70	90 <sup>2)</sup>	
Lloyds Register <sup>1)</sup>	45	70	90	
Registro Italiano Navale <sup>1)</sup>	45	70	90	
Korean Register <sup>1)</sup>	50	70	90	
China Classification Society <sup>1)</sup>	45	75	95	

on request

1) Classification societies for marine motors

2) Only with special approval



# Mechanical Design

# Mechanical Design

## Degrees of protection

Degrees of protection for mechanical machines are designated in accordance with IEC 60034-5 by the letters **IP** and two characteristic numerals.

First numeral: Protection against contact and ingress of foreign bodies

Second numeral: Protection against ingress of water

IP	Description	IP	Description
0	No special protection	0	No special protection
1	Protection against solid foreign bodies larger than 50 mm (Example: inadvertent contact with the hand)	1	Protection against vertically falling water drops (condensation)
2	Protection against solid foreign bodies larger than 12 mm (Example: inadvertent contact with the fingers)	2	Protection against dropping water when inclined by up to 15°
3	Protection against solid foreign bodies larger than 2.5 mm (Example: Wires, tools)	3	Protection against waterspray at up to 60° from vertical
4	Protection against solid foreign bodies larger than 1 mm (Example: Wires, bands)	4	Protection against water splashed from any direction
5	Protection against dust (harmful deposits of dust)	5	Protection against water projected by a nozzle from any direction
6	Complete protection against dust. Is not described for electrical machines tp IEC 34-5.	6	Protection against heavy seas or water projected in powerful jets
		7	Protection when submerged between 0.15 and 1m
		8	Protection when continuously submerged in water at conditions agreed between the manufacturer and the user .

The motors conform to degree of protection IP55 to IEC 60034-5. Higher protection on request.

The standard design for horizontal mounting is suitable for indoor and protected outdoor installation, climate group MODERATE ( temperature of coolant -20° to +40° C )

For unprotected outdoor installation or severe climatic conditions (moisture category wet, climate group WORLDWIDE, extremely dusty site conditions, aggressive industrial atmosphere, danger of storm rain and coastal climate, danger of attack by termites, etc.), as well as vertical mounting, special protective measures are recommended, such as

- Protective cowl (for vertical *shaft-down* motors)
- For vertical shaft-up motors additional bearing seal and flange drainage
- Special paint finish
- Treatment of winding with protective moisture-proof varnish
- Anti-condensation heating (possibly winding heating)
- Condensation drain holes

The special measures to be applied have to be agreed with the factory once the conditions of installation have been settled.

The corresponding conditions of installation have to be clearly indicated in the order .



# Tolerances

For industrial motors to EN 60034-1, certain tolerances must be allowed on guaranteed values, taking into consideration the necessary tolerances for the manufacture of such motors and the materials used. The standard includes the following remarks:

1. It is not intended that guarantees necessarily have to be given for all or any of the items involved. Quotations including guaranteed values subject to tolerances should say so, and the tolerances should be in accordance with the table.
2. Attention is drawn to the different interpretation of the term guarantee. In some countries a distinction is made between guaranteed values and typical or declared values.
3. Where a tolerance is stated in only one direction, the value is not limited in the other direction.

Values for	Tolerance
Efficiency ( $\eta$ ) (by indirect determination)	- 0.15 (1- $\eta$ ) at $P_N \leq 150$ kW - 0.1 (1- $\eta$ ) at $P_N > 150$ kW
Power Factor ( $\cos \varphi$ )	$\frac{1 - \cos \varphi}{6}$ , minimum 0.02, maximum 0.07
Slip (s) (at rated load and at working temperature)	$\pm 20$ % of the guaranteed slip at $P_N \leq 1$ kW $\pm 30$ % of the guaranteed slip at $P_N > 1$ kW
Breakaway starting current ( $I_A$ ) (in the starting circuit envisaged)	$\pm 20$ % of the guaranteed starting current (no lower limit)
Breakaway torque ( $M_A$ )	- 15 % and + 25 % of the guaranteed breakaway torque (+ 25 % may be exceeded by agreement)
Pull-up torque ( $M_s$ )	- 15 % of the guaranteed value
Pull-out torque ( $M_K$ )	- 10 % of the guaranteed value (after allowing for this tolerance, $M_K/M_N$ not less than 1.6)
Moment of inertia (J)	$\pm 10$ % of the guaranteed value

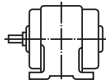
# Mounting Arrangements

Mounting arrangements for rotating electrical machines are designated according to IEC 60034-7, Code I (in brackets Code II)

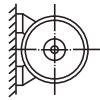
Our motors are available with the mounting arrangements listed below, depending on design and frame size. Motors with aluminium frame are equipped with removable feet that allow easy change of mounting arrangement.

## Foot Mounting

IM B3 (IM 1001)



IM B6 (IM 1051)



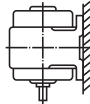
IM B7 (IM 1061)



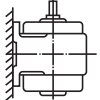
IM B8 (IM 1071)



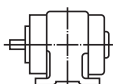
IM V5 (IM 101 1)



IM V6 (IM 1031)



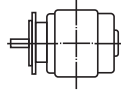
IM B33 (IM 2101)



Flange type C to  
DIN 42 948 at  
drive end

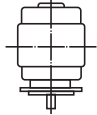
## Flange Mounting

IM B5 (IM 3001)



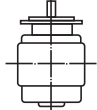
Flange type A to  
DIN 42 948 at  
drive end

IM V1 (IM 301 1)



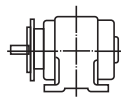
Flange type A to  
DIN 42 948 at  
drive end

IM V3 (IM 3031)



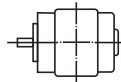
Flange type A to  
DIN 42 948 at  
drive end

IM B35 (IM 2001)



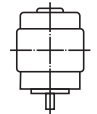
Flange type A to  
DIN 42 948 at  
drive end

IM B14 (IM 3601)



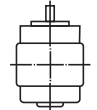
Flange type C to  
DIN 42 948 at  
drive end

IM V18 (IM 361 1)



Flange type C to  
DIN 42 948 at  
drive end

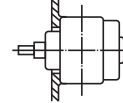
IM V19 (IM 3631)



Flange type C to  
DIN 42 948 at  
drive end

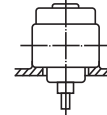
## Motor Without Endshield Mounting

IM B9 (IM 9101)



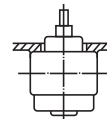
Without endshield  
and without  
ball bearings on  
drive end

IM V8 (IM 91 11)



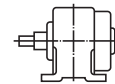
Without endshield  
and without  
ball bearings on  
drive end

IM V9 (IM 9131)



Without endshield  
and without  
ball bearings on  
drive end

IM B15 (IM 1201)



Without endshield  
and without  
ball bearings on  
drive end

*It is essential to state the desired mounting arrangement when ordering, as the constructive design depends partly on the mounting arrangement.*

# Bearings

## BA Aluminium Motor Bearing Size

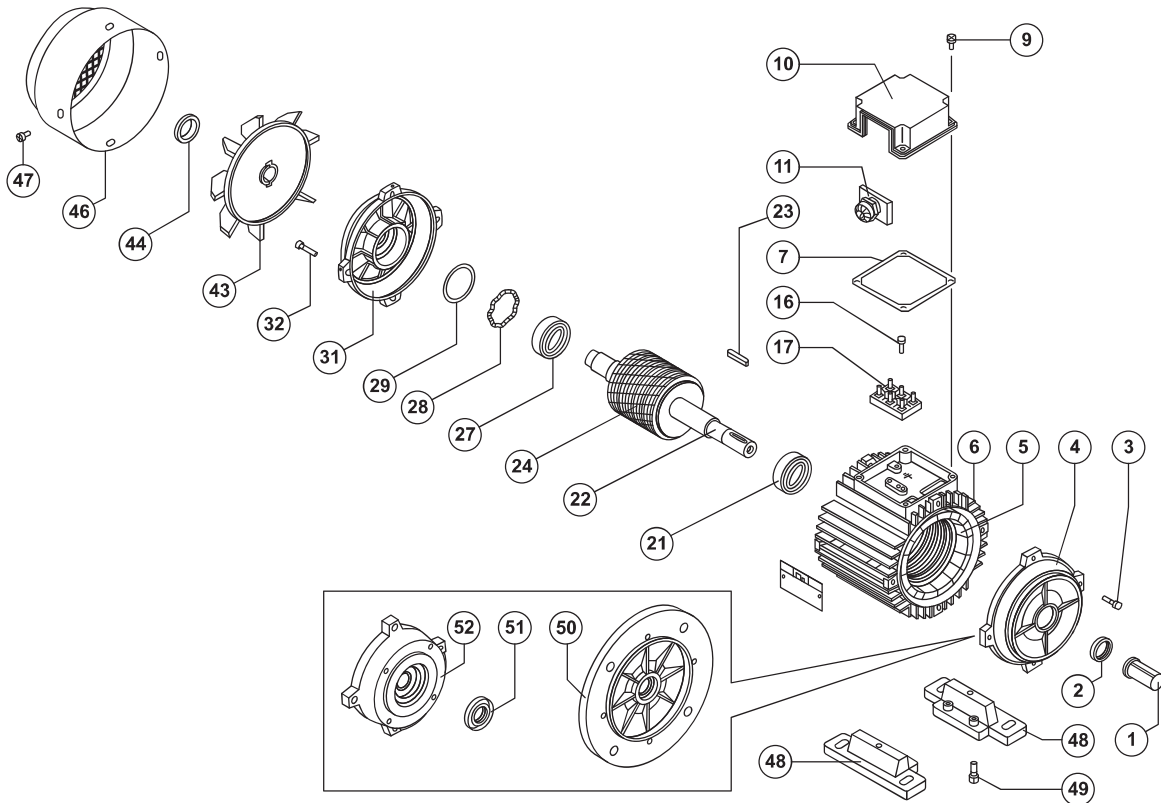
Frame	BA ( Aluminium )	
	Drive end	Non-Drive end
56	6201ZZ	6201ZZ
63	6201ZZ	6201ZZ
71	6202ZZ	6202ZZ
80	6204ZZ	6204ZZ
90	6205ZZ	6204ZZ
100	6206ZZ	6206ZZ
112	6306ZZ	6306ZZ
132	6308ZZ	6308ZZ
160	6309ZZ	6309ZZ

# Bearings

## BR Cast Iron Motor Bearing Size

Frame Size	Poles	Drive end		Non-Drive end	
		Horizontal	Vertical	Horizontal	Vertical
80	2 to 8	6204ZZ	6204ZZ	6204ZZ	6204ZZ
90	2 to 8	6205ZZ	6205ZZ	6205ZZ	6205ZZ
100	2 to 8	6206ZZ	6206ZZ	6206ZZ	6206ZZ
112	2 to 8	6306ZZ	6306ZZ	6306ZZ	6306ZZ
132	2 to 8	6308ZZ	6308ZZ	6308ZZ	6308ZZ
160	2 to 8	6309	6309	6309	6309
180	2 to 8	6311	6311	6311	6311
200	2 to 8	6312	6312	6312	6312
225	2 to 8	6313	6313	6313	6313
250	2 to 8	6314	6314	6314	7314
280	2	6314	6314	6314	7314
	4 to 8	6317	6317	6317	7317
315	2	6316	6316	6316	7316
	4 to 8	NU319	6319	NU319	7319B
355	2	6319	6319	6319	7319B
	4 to 8	NU322	6322	NU322	7322B

# Spare Parts



## Part description

1 Shaft protection	24 Rotor assembly
2 Drive end dust seal	27 Non-drive end bearing
3 Drive end endshield fixing screw	28 Non-drive end pre-load washer
4 Drive end endshield	29 Non-drive end shim ring
5 Stator	31 Non-drive end endshield
6 Stator Frame	32 Non-drive end endshield fixing screw
7 Terminal box gasket	43 Fan
9 Terminal box fixing screw	44 Fan hose clamp
10 Terminal box	46 Fan cowl
11 Cable gland	47 Fan cowl fixing screw
16 Terminal board fixing screw	48 Feet
17 Terminal board	49 Feet fixing bolt
21 Drive end bearing	50 Flange B5
22 Motor shaft	51 Seal ring
23 Hub key	52 Flange B14

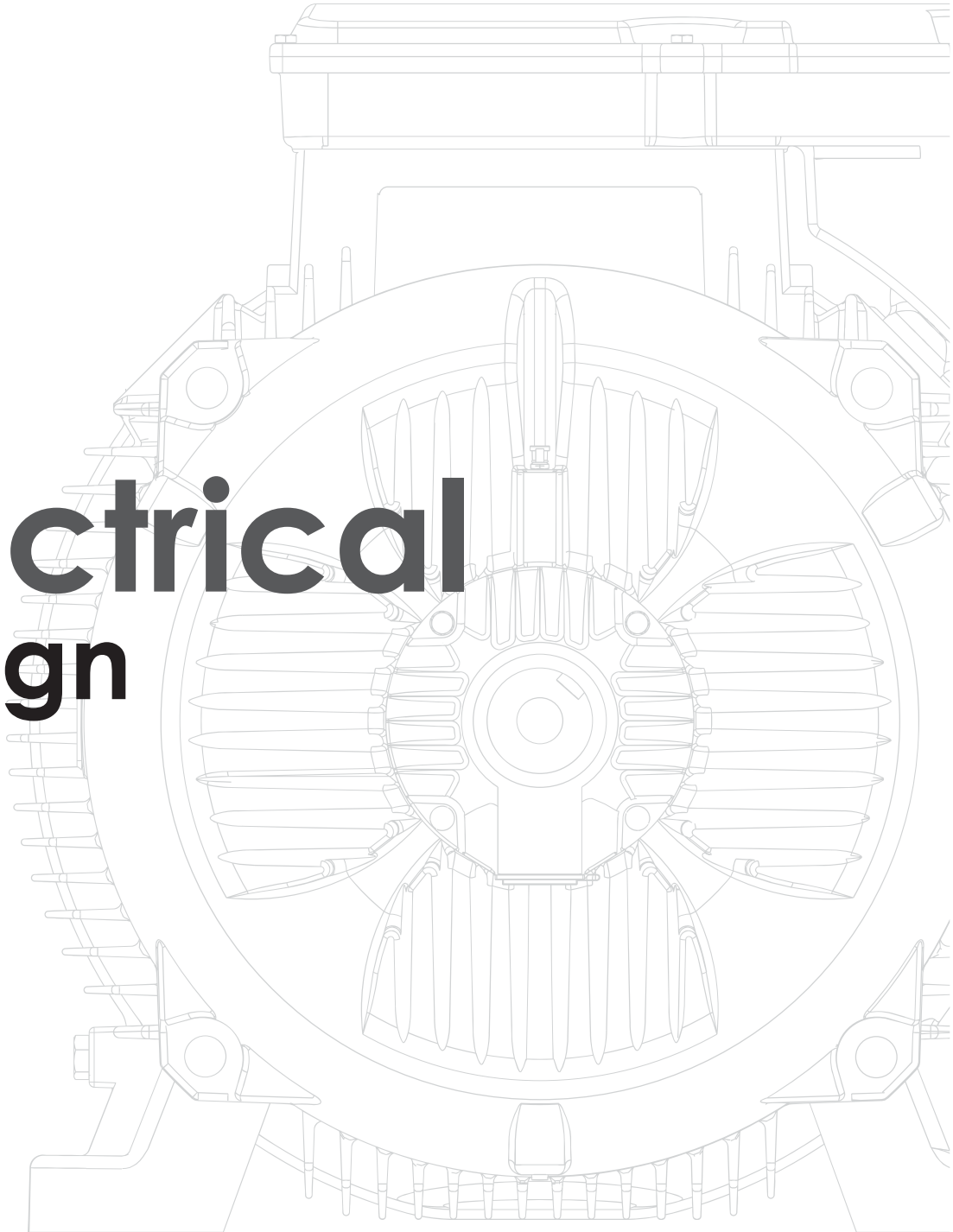
## In enquires and orders for spare parts please state always:

Designation of spare part, motor type, mounting arrangement, motor serial number

(Product No. when available)

Enquire and orders cannot be handled without these data.

# Electrical Design



# Electrical Design

## Rated voltage

For the rated voltage of the motors, EN 60034-1 allows a tolerance of  $\pm 5\%$ . According to IEC 60038, the mains voltages may have a tolerance of  $\pm 10\%$ .

Therefore the motors are designed for the following rated voltage ranged (exceptions are shown in the data tables):

Mains voltage to DIN IEC 38	Rated voltage range of motor
230 V $\pm 10\%$	218-242 V $\pm 5\%$
400 V $\pm 10\%$	380-420 V $\pm 5\%$
690 V $\pm 10\%$	655-725 V $\pm 5\%$

Within the rated motor voltage range, the permissible maximum temperature is not exceeded. When the motors are operated at the limits of the voltage tolerance, the permissible overtemperature of the stator winding may be exceeded by 10 K.

## Rated frequency

50 Hz motors can also be operated on 60Hz mains, provided the mains voltage increases proportionally to the frequency. The relative values for starting and breakaway torque remain nearly unchanged and slightly increase for the starting current. The rated speed increases by the factor 1.2 and output by factor 1.15. Should a motor designed for 50 Hz be operated at 60Hz without the voltage being increased, the rated output of the motor cannot be increased. Under these operating conditions, rated speed increases by factor 1.2. The relative values for starting and breakaway torque are reduced by factor 0.82 and for starting current by factor 0.9.

## Rated current

The rated currents listed in the data tables apply to an operating voltage of 400 V. The conversion to other operating voltages, with output and frequency remaining unchanged, is to be made as follows:

Norminal voltage ( V)	230	380	<b>400</b>	440	500	660	690
Conversion factor x I <sub>n</sub>	1.74	1.05	<b>1.0</b>	0.91	0.80	0.61	0.58

## Rated torque

$$\text{Rated torque in Nm} = 9550 \times \frac{\text{Rated voltage in kW}}{\text{Rated Speed in min}^{-1}}$$

## Output

The outputs stated in this catalogue are for constant load in continuous running duty S1 according to EN 60034-1, based on an ambient temperature of 40° C and installation at altitudes up to 1000m above sea level.

For severe operating conditions, e.g. high switching rate , long run-up time or electric braking , a thermal reserve is necessary, which could call for higher thermal class or the use of a motor with a higher rating. In these cases we recommend to enquire with detailed information on the operating conditions.

## Overload

At operating temperature three-phase motors are capable of withstanding an overload for 15 seconds at 1.5 times the rated torque at rated voltage. This overload is according to EN 60034-1 and will not result in excessive heating.

Utilizing thermal class F, motors can be operated continuously with an overload of 12 %. Nevertheless this is not valid for motors which to catalogue are utilized to thermal class F.



# Connection diagrams

Windings of standard three-phase motors can be connected either in star or delta connection.

## Star connection

A star connection is obtained by connecting W2, U2, V2 terminals to each other and U1, V1, W1 terminals to the mains. The phase current and voltage are:

$$I_{ph} = I_n ; U_{ph} = U_n / \sqrt{3}$$

where  $I_n$  is the line current and  $V_n$  the line voltage referred to the star connection.

## Delta connection

A delta connection is obtained by connecting the end of a phase to the beginning of the next phase.

The phase current  $I_{ph}$  and the phase voltage  $U_{ph}$  are:

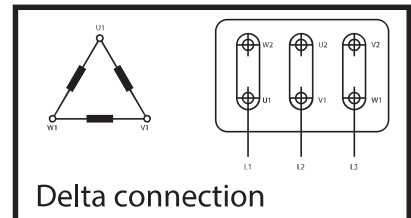
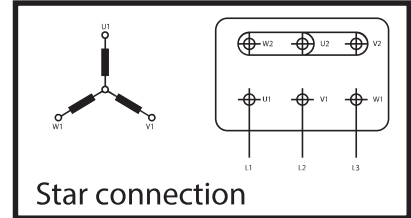
$$I_{ph} = I_n / \sqrt{3} ; U_{ph} = U_n$$

where  $I_n$  and  $U_n$  are referred to the delta connection.

## Star-delta starting

Star-delta starting allows a peak current reduction, ensuring however that the peak torque obtained is bigger than the resistant torque. Actually, it should be noted that the torque of an induction squirrel-cage motor is directly proportional to the square of the voltage. Motors whose rated voltage with delta connection corresponds to the mains voltage, can be started with the star-delta method.

All motors can be supplied with windings designed for star-delta starting (for example: 400V $\Delta$  / 690V $Y$ ).



A detailed line drawing of a motor, showing the cooling fan and the motor housing. The drawing is rendered in a light gray color, serving as a background for the text.

# Cast Iron IE1 Efficiency Motor

# CAST IRON IE1 Efficiency Motor

## BR1 Series

Three-Phase Squirrel Cage Motors  
380-415 V  
Protection IP55

SPEED 1000RPM 6-POLE 50HZ

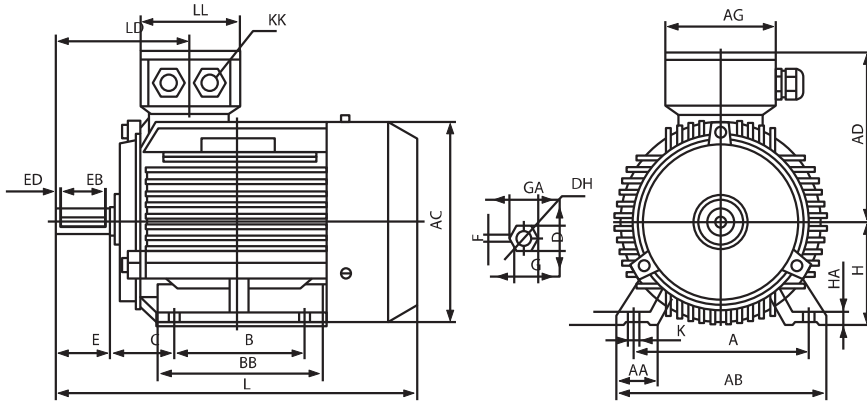
Type	Rated Output		Rated Speed rpm	Efficiency $\eta\%$ (Load)	Power factor $\cos \Phi$	Rated current A			Rated Torque Nm	Ts/Tn	Tmax/Tn	Is/In	Weight kg
	Kw	HP				380	400	415					
BR1-80M1-6	0.37	0.55	890	61.0	0.69	1.34	1.27	1.22	3.5	2.0	2.1	4.0	16.5
BR1-90S-6	0.75	1	910	69.1	0.72	2.3	2.2	2.1	7.9	2.3	2.7	4.1	21
BR1-90L-6	1.1	1.5	910	72	0.73	3.2	3.0	2.9	11.5	2.3	2.7	4.6	23
BR1-100L-6	1.5	2	920	76	0.75	4.1	3.9	3.8	15.6	2.4	2.8	5	29
BR1-112M-6	2.2	3	940	79.1	0.76	5.6	5.3	5.1	22.4	2.1	2.5	5.2	37
BR1-132S-6	3	4	960	81.0	0.76	7.4	7.0	6.8	29.9	1.9	2.5	5.6	52
BR1-132M1-6	4	5.5	960	82.0	0.76	9.8	9.2	8.9	39.8	2.1	2.7	6.2	59
BR1-132M2-6	5.5	7.5	960	84.0	0.77	12.9	12.2	11.7	54.7	2.3	2.8	6.5	72
BR1-160M-6	7.5	10	970	86.0	0.77	17.2	16.2	15.7	73.9	2	2.6	5.6	98
BR1-160L-6	11	15	970	87.5	0.78	24.2	23.3	22.4	108	2.1	2.4	5.8	121
BR1-180L-6	15	20	970	89	0.81	31.6	30.0	28.9	148	2	2.4	5.7	164
BR1-200L1-6	18.5	25	970	90.2	0.81	38.5	36.6	35.3	182	2.2	2.8	6.7	208
BR1-200L2-6	22	30	970	90.2	0.83	44.7	42.5	40.9	217	2.3	2.9	6.6	217
BR1-225M-6	30	40	980	91.5	0.84	59.3	56.3	54.3	293	2.2	2.7	6.8	287
BR1-250M-6	37	50	980	92.2	0.86	70.1	66.6	64.2	361	2	2.5	6.2	355
BR1-280S-6	45	60	980	92.5	0.86	86	81.7	78.7	438	1.9	2.5	6.1	456
BR1-280M-6	55	75	985	92.9	0.86	105	99.8	96.1	536	2.1	2.7	6.7	502
BR1-315S-6	75	100	990	93.7	0.86	142	134.9	130.0	724	2	2.7	6.5	786
BR1-315M-6	90	125	990	93.9	0.86	170	161.5	155.7	869	2	2.6	6.2	884
BR1-315L1-6	110	150	990	94.5	0.86	206	195.7	188.6	1062	1.9	2.7	6	964
BR1-315L2-6	132	180	990	94.6	0.87	244	231.8	223.4	1274	2	2.7	5.8	1060
BR1-355M1-6	160	200	990	95.4	0.87	291	275	267	1544	2.28	2.95	7.13	1554
BR1-355M2-6	200	270	990	95.5	0.88	361	342	330	1930	2.3	2.89	7.09	1768
BR1-355L1-6	220	300	990	95.5	0.88	395	376	365	2122	1.84	2.73	5.9	1796
BR1-355L2-6	250	340	990	95.6	0.89	448	425	409	2413	2.16	2.64	6.59	1902



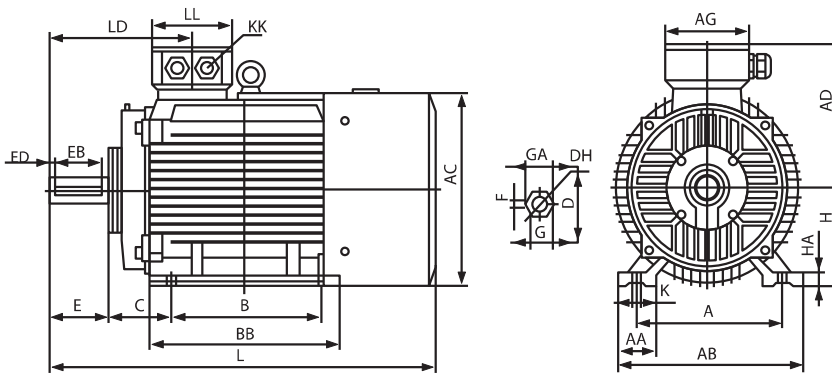
# Cast Iron Motor Dimensions

# CAST IRON Motor Dimensions

## Foot Mounting IM B3 #71-355



FR#80-132



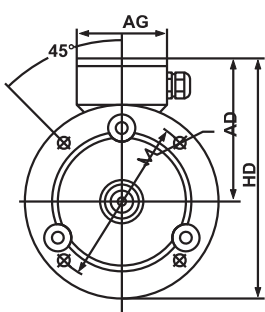
FR#160-355

Type	Pole	A	AA	AB	AC
71M	2,4,6	112	28	150	135
80	2,4,6,8	125	34	165	155.4
90S	2,4,6,8	140	36	180	175.4
90L	2,4,6,8	140	36	180	175.4
100L	2,4,6,8	160	40	205	195.4
112M	2,4,6,8	190	45	230	219.5
132S	2,4,6,8	216	55	270	258.4
132M	4,6,8	216	55	270	258.4
160M	2,4,6,8	254	65	320	314
160L	2,4,6,8	254	65	320	314
180M	2,4,8	279	70	355	355
180L	4,6,8	279	70	355	355
200L	2,4,6,8	318	70	395	397
225S	4,6,8	356	75	435	446
225M	2	356	75	435	446
225M	4,6,8	356	75	435	446
250M	2	406	80	484	485
250M	4,6,8	406	80	484	485
280S	2	457	85	542	547
280S	4,6,8	457	85	542	547
280M	2	457	85	542	547
280M	4,6,8	457	85	542	547
315S	2	508	120	628	620
315S	4,6,8,10	508	120	628	620
315M	2	508	120	628	620
315M	4,6,8,10	508	120	628	620
315L	2	508	120	628	620
315L	4,6,8,10	508	120	628	620
355M	2	610	116	726	698
355M	4,6,8,10	610	116	726	698
355L	2	610	116	726	698
355L	4,6,8,10	610	116	726	698

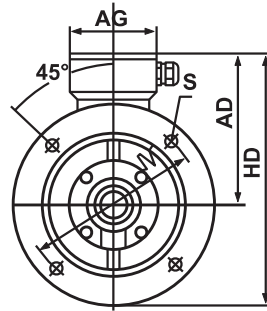
AD	AG	B	BB	C	D	DH	E	EB	ED	F	G	GA	H	HA	K	KK	L	LD	LL
124	78	90	105	45	14	M5X20	30	24	4	5	11	16	71	10	4-φ07	1-M25X1.5	258	100	78
149	94	100	130	50	19	M6X16	40	30	5	6	15.5	21.5	80	10	4-φ10	1-M25X1.5	305	112	94
170	102	100	130	56	24	M8X19	50	40	5	8	20	27	90	12	4-φ10	1-M25X1.5	360	130	102
175	102	125	155	56	24	M8X19	50	40	5	8	20	27	90	12	4-φ10	1-M25X1.5	390	130	102
175	102	140	176	63	28	M10X22	60	50	5	8	24	31	100	14	4-φ12	1-M32X1.5	435	139	102
198	118	140	180	70	28	M10X22	60	50	5	8	24	31	112	15	4-φ12	2-M32X1.5	480	147	110
233	118	140	200	89	38	M12X28	80	65	7.5	10	33	41	132	18	4-φ12	2-M32X1.5	510	172	110
233	118	178	238	89	38	M12X28	80	65	7.5	10	33	41	132	18	4-φ12	2-M32X1.5	550	172	110
265	162	210	260	108	42	M16X36	110	90	10	12	37	45	160	20	4-φ14.5	2-M40X1.5	730	256	152
265	162	254	304	108	42	M16X36	110	90	10	12	37	45	160	20	4-φ14.5	2-M40X1.5	760	256	152
280	162	241	311	121	48	M16X36	110	90	10	14	42.5	51.5	180	22	4-φ14.5	2-M40X1.5	770	271	152
280	162	279	349	121	48	M16X36	110	90	10	14	42.5	51.5	180	22	4-φ14.5	2-M40X1.5	800	271	152
320	210	305	369	133	55	M20X42	110	100	5	16	49	59	200	25	4-φ18.5	2-M50X1.5	860	296	190
335	210	286	368	149	60	M20X42	140	125	7.5	18	53	64	225	28	4-φ18.5	2-M50X1.5	841	329	190
335	210	311	393	149	55	M20X42	110	100	5	16	49	59	225	28	4-φ18.5	2-M50X1.5	831	299	190
335	210	311	393	149	60	M20X42	140	125	7.5	18	53	64	225	28	4-φ18.5	2-M50X1.5	866	329	190
385	248	349	445	168	60	M20X42	140	125	7.5	18	53	64	250	30	4-φ24	2-M63X1.5	990	347	218
385	248	349	445	168	65	M20X42	140	125	7.5	18	58	69	250	30	4-φ24	2-M63X1.5	990	347	218
425	248	368	485	190	65	M20X42	140	125	7.5	18	58	69	280	35	4-φ24	2-M63X1.5	990	355.5	218
425	248	368	485	190	75	M20X42	140	125	7.5	20	67.5	79.5	280	35	4-φ24	2-M63X1.5	990	355.5	218
425	248	419	536	190	65	M20X42	140	125	7.5	18	58	69	280	35	4-φ24	2-M63X1.5	1040	355.5	218
425	248	419	536	190	75	M20X42	140	125	7.5	20	67.5	79.5	280	35	4-φ24	2-M63X1.5	1040	355.5	218
530	320	406	570	216	65	M20X42	140	125	7.5	18	58	69	315	45	4-φ28	2-M63X1.5	1180	397	280
530	320	406	570	216	80	M20X42	170	160	5	22	71	85	315	45	4-φ28	2-M63X1.5	1270	427	280
530	320	457	680	216	65	M20X42	140	125	7.5	18	58	69	315	45	4-φ28	2-M63X1.5	1270	397	280
530	320	457	680	216	80	M20X42	170	160	5	22	71	85	315	45	4-φ28	2-M63X1.5	1290	427	280
530	320	508	680	216	65	M20X42	140	125	7.5	18	58	69	315	45	4-φ28	2-M63X1.5	1320	397	280
530	320	508	680	216	80	M20X42	170	160	5	22	71	85	315	45	4-φ28	2-M63X1.5	1320	427	280
645	380	560	750	254	75	M20X50	140	130	5	20	67.5	79.5	355	52	5-φ28	2-M63X1.5	1500	414	330
645	380	560	750	254	95	M24X50	170	160	5	25	86	100	355	52	6-φ28	2-M63X1.5	1500	444	330
645	380	630	750	254	75	M20X50	140	130	5	20	67.5	79.5	355	52	6-φ28	2-M63X1.5	1530	414	330
645	380	630	750	254	95	M24X50	170	160	5	25	86	100	355	52	6-φ28	2-M63X1.5	1630	444	330

# CAST IRON Motor Dimensions

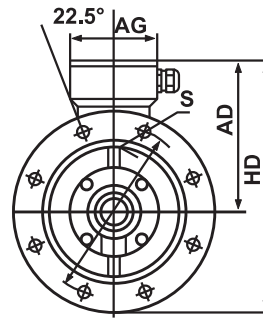
# Flange Mounting IM B5 #71-355



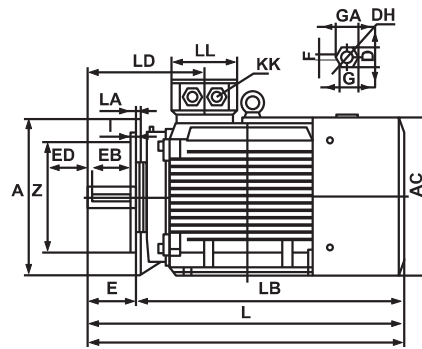
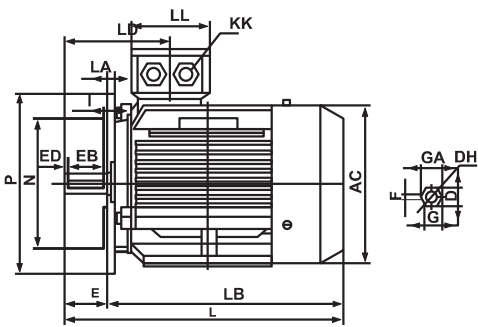
FR#80-132



FR#160-200



FR#225-355



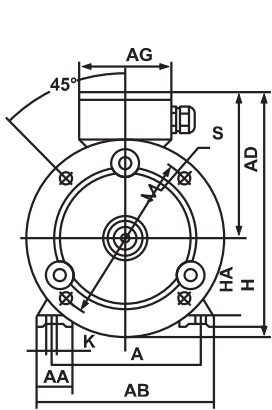
Type	Pole	AC	AD	AG
71M	2,4,6	139	107	78
80	2,4,6,8	155.4	131	94
90S	2,4,6,8	175.4	148	102
90L	2,4,6,8	175.4	148	102
100L	2,4,6,8	195.4	162	102
112M	2,4,6,8	219.4	190	118
132S	2,4,6,8	258.4	203	118
132M	4,6,8	258.4	203	118
160M	2,4,6,8	314	251	162
160L	2,4,6,8	314	251	162
180M	2,4,8	355	267	162
180L	4,6,8	355	267	162
200L	2,4,6,8	397	299	210
225S	4,6,8	446	322	210
225M	2	446	322	210
225M	4,6,8	446	322	210
250M	2	485	358	248
250M	4,6,8	485	358	248
280S	2	547	387	248
280S	4,6,8	547	387	248
280M	2	547	387	248
280M	4,6,8	547	387	248
315S	2	620	527	320
315S	4,6,8,10	620	527	320
315M	2	620	527	320
315M	4,6,8,10	620	527	320
315L	2	620	527	320
315L	4,6,8,10	620	527	320
355M	2	698	642	380
355M	4,6,8,10	698	642	380
355L	2	698	642	380
355L	4,6,8,10	698	642	380

D	DH	E	EB	ED	F	G	GA	HD	KK	L	LA	LB	LD	LL	M	N	P	S	T
14	M5X20	30	24	4	5	11	16	186	1-M25X1.5	258	10	95	100	78	130	110	160	10	3.5
19	M6X16	40	30	5	6	15.5	21.5	231	1-M25X1.5	305	12	244	112	94	165	130	200	12	3.5
24	M8X19	50	40	5	8	20	27	248	1-M25X1.5	360	12	258	130	102	165	130	200	12	3.5
24	M8X19	50	40	5	8	20	27	248	1-M25X1.5	390	12	283	130	102	165	130	200	12	3.5
28	M10X22	60	50	5	8	24	31	287	1-M32X1.5	435	13	320	139	102	215	180	250	15.0	4
28	M10X22	60	50	5	8	24	31	308	2-M32X1.5	480	14	334	147	110	215	180	250	15.0	4
38	M12X28	80	65	1.5	10	33	41	353	2-M32X1.5	510	14	390	172	110	265	230	300	15.0	4
38	M12X28	80	65	7.5	10	33	41	353	2-M32X1.5	550	14	428	173	110	265	230	300	15.0	4
42	M16X36	110	90	10	12	37	45	426	2-M40X1.5	730	15	498	256	152	300	250	350	19.0	5
42	M16X36	110	90	10	12	37	45	426	2-M40X1.5	760	15	542	256	152	300	250	350	19.0	5
48	M16X36	110	90	10	14	42.5	51.5	444.5	2-M40X1.5	770	15	578	271	152	300	250	350	19.0	5
48	M16X36	110	90	10	14	42.5	51.5	444.5	2-M40X1.5	800	15	616	271	152	300	250	350	19.0	5
55	M20X42	110	100	5	16	49	59	499	2-M50X1.5	860	17	661	296	190	350	300	400	18.5	5
60	M20X42	140	125	7.5	18	53	64	547	2-M50X1.5	841	20	684	329	190	400	350	450	18.5	5
55	M20X42	110	100	5	16	49	59	547	2-M50X1.5	831	20	709	299	190	400	350	450	18.5	5
60	M20X42	140	125	7.5	18	53	64	547	2-M50X1.5	866	20	709	329	190	400	350	450	18.5	5
60	M20X42	140	125	7.5	18	53	64	633	2-M63X1.5	990	22	770	347	218	500	450	550	18.5	5
65	M20X42	140	125	7.5	18	58	69	633	2-M63X1.5	990	22	770	347	218	500	450	550	18.5	5
65	M20X42	140	125	7.5	18	58	69	662	2-M63X1.5	990	22	842	355.5	218	500	450	550	18.5	5
75	M20X42	140	125	7.5	20	67.5	79.5	662	2-M63X1.5	990	22	842	355.5	218	500	450	550	18.5	5
65	M20X42	140	125	7.5	18	58	69	662	2-M63X1.5	1040	22	893	355.5	218	500	450	550	18.5	5
75	M20X42	140	125	7.5	20	67.5	79.5	662	2-M63X1.5	1040	22	893	355.5	218	500	450	550	18.5	5
65	M20X42	140	125	7.5	18	58	69	857	2-M63X1.5	1180	22	1038	397	280	600	550	660	24	6
80	M20X42	170	160	5	22	71	85	857	2-M63X1.5	1270	22	1038	427	280	600	550	660	24	6
65	M20X42	140	125	7.5	18	58	69	857	2-M63X1.5	1270	22	1148	397	280	600	550	660	24	6
80	M20X42	170	160	5	22	71	85	857	2-M63X1.5	1290	22	1148	427	280	600	550	660	24	6
65	M20X42	140	125	7.5	18	58	69	857	2-M63X1.5	1320	22	1148	397	280	600	550	660	24	6
80	M20X42	170	160	5	22	71	85	857	2-M63X1.5	1320	22	1148	427	280	600	550	660	24	6
75	M20X50	140	130	5	20	67.5	79.5	1042	2-M63X1.5	1500	25	1346	414	330	740	680	800	24	6
95	M24X50	170	160	5	25	86	100	1042	2-M63X1.5	1500	25	1346	444	330	740	680	800	24	6
75	M20X50	140	130	5	20	67.5	79.5	1042	2-M63X1.5	1530	25	1346	414	330	740	680	800	24	6
95	M24X50	170	160	5	25	86	100	1042	2-M63X1.5	1630	25	1346	444	330	740	680	800	24	6

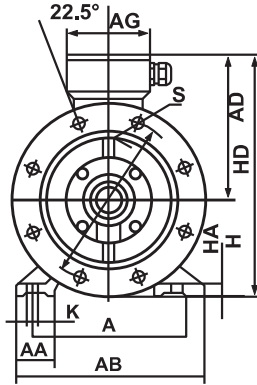


# CAST IRON Motor Dimensions

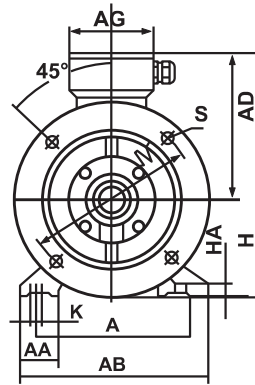
# Foot Flange Mounting IM B35 #71-355



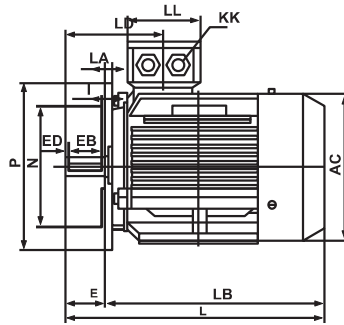
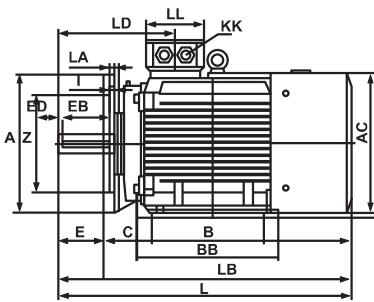
FR#80-132



FR#225-355



FR#160-200



Type	Pole	A	AA	AB	AC	AD
71M	2,4,6,8	125	34	160	155.4	105
80	2,4,6,8	125	34	160	155.4	131
90S	2,4,6,8	140	36	176	175.4	148
90L	2,4,6,8	140	36	176	175.4	148
100L	2,4,6,8	160	40	200	195.4	162
112M	2,4,6,8	190	50	240	219.4	190
132S	2,4,6,8	216	55	262	258.4	203
132M	4,6,8	216	55	262	258.4	203
160M	2,4,6,8	254	65	314	314	251
160L	2,4,6,8	254	65	314	314	251
180M	2,4,8	279	70	349	355	267
180L	4,6,8	279	70	349	355	267
200L	2,4,6,8	318	70	388	397	299
225S	4,6,8	356	75	431	446	322
225M	2	356	75	431	446	322
225M	4,6,8	356	75	431	446	322
250M	2	406	80	484	485	358
250M	4,6,8	406	80	484	485	358
280S	2	457	85	542	547	387
280S	4,6,8	457	85	542	547	387
280M	2	457	85	542	547	387
280M	4,6,8	457	85	542	547	387
315S	2	508	120	628	620	527
315S	4,6,8,10	508	120	628	620	527
315M	2	508	120	628	620	527
315M	4,6,8,10	508	120	628	620	527
315L	2	508	120	628	620	527
315L	4,6,8,10	508	120	628	620	527
355M	2	610	116	726	698	642
355M	4,6,8,10	610	116	726	698	642
355L	2	610	116	726	698	642
355L	4,6,8,10	610	116	726	698	642

nting

AG	B	BB	C	D	DH	E	EB	ED	F	G	GA	H	HA	HD	K	KK	L	LA	LB	LD	LL	M	N	P	S	T
78	90	105	45	14	M5X20	30	24	4	5	11	16	71	10	186	4-Φ10	1-M25X1.5	258	10	95	100	78	130	110	160	10	3.5
94	100	130	50	19	M6X16	40	30	5	6	15.5	21.5	80	10	231	4-Φ10	1-M25X1.5	305	12	244	112	94	165	130	200	12	3.5
102	100	130	56	24	M8X19	50	40	5	8	20	27	90	12	248	4-Φ10	1-M25X1.5	360	12	258	130	102	165	130	200	12	3.5
102	125	155	56	24	M8X19	50	40	5	8	20	27	90	12	248	4-Φ10	1-M25X1.5	390	12	283	130	102	165	130	200	12	3.5
102	140	176	63	28	M10X22	60	50	5	8	24	31	100	14	287	4-Φ12	1-M32X1.5	435	13	320	139	102	215	180	250	14.5	4
118	140	225	70	28	M10X22	60	50	5	8	24	31	112	15	308	4-Φ12	2-M32X1.5	480	14	334	147	110	215	180	250	14.5	4
118	140	200	89	38	M12X28	80	65	7.5	10	33	41	132	18	353	4-Φ12	2-M32X1.5	510	14	390	172	110	265	230	300	14.5	4
118	178	238	89	38	M12X28	80	65	7.5	10	33	41	132	18	353	4-Φ12	2-M32X1.5	550	14	428	172	110	265	230	300	14.5	4
162	210	260	108	42	M16X36	110	90	10	12	37	45	160	20	426	4-Φ14.5	2-M40X1.5	730	15	498	256	152	300	250	350	18.5	5
162	254	304	108	42	M16X36	110	90	10	12	37	45	160	20	426	4-Φ14.5	2-M40X1.5	760	15	542	256	152	300	250	350	18.5	5
162	241	311	121	48	M16X36	110	90	10	14	42.5	51.5	180	22	444.5	4-Φ14.5	2-M40X1.5	770	15	578	271	152	300	250	350	18.5	5
162	279	349	121	48	M16X36	110	90	10	14	42.5	51.5	180	22	444.5	4-Φ14.5	2-M40X1.5	800	15	616	271	152	300	250	350	18.5	5
210	305	369	133	55	M20X42	110	100	5	16	49	59	200	25	499	4-Φ16.5	2-M50X1.5	860	17	661	296	190	350	300	400	18.5	5
210	286	368	149	60	M20X42	140	125	7.5	18	53	64	225	28	547	4-Φ18.5	2-M50X1.5	841	20	684	329	190	400	350	450	18.5	5
210	311	393	149	55	M20X42	110	100	5	16	49	59	225	28	547	4-Φ18.5	2-M50X1.5	831	20	709	299	190	400	350	450	18.5	5
210	311	393	149	60	M20X42	140	125	7.5	18	53	64	225	28	547	4-Φ18.5	2-M50X1.5	866	20	709	329	190	400	350	450	18.5	5
248	349	445	168	60	M20X42	140	125	7.5	18	53	64	250	30	633	4-Φ24	2-M63X1.5	990	22	770	347	218	500	450	550	18.5	5
248	349	445	168	65	M20X42	140	125	7.5	18	58	69	250	30	633	4-Φ24	2-M63X1.5	990	22	770	347	218	500	450	550	18.5	5
248	368	485	190	65	M20X42	140	125	7.5	18	58	69	280	35	662	4-Φ24	2-M63X1.5	990	22	842	355.5	218	500	450	550	18.5	5
248	368	485	190	75	M20X42	140	125	7.5	20	67.5	79.5	280	35	662	4-Φ24	2-M63X1.5	990	22	842	355.5	218	500	450	550	18.5	5
248	419	536	190	65	M20X42	140	125	7.5	18	58	69	280	35	662	4-Φ24	2-M63X1.5	1040	22	893	355.5	218	500	450	550	18.5	5
248	419	536	190	75	M20X42	140	125	7.5	20	67.5	79.5	280	35	662	4-Φ24	2-M63X1.5	1040	22	893	355.5	218	500	450	550	18.5	5
320	406	570	216	65	M20X42	140	125	7.5	18	58	69	315	45	857	4-Φ28	2-M63X1.5	1180	22	1038	397	280	600	550	660	24	6
320	406	570	216	80	M20X42	170	160	5	22	71	85	315	45	857	4-Φ28	2-M63X1.5	1270	22	1038	427	280	600	550	660	24	6
320	457	680	216	65	M20X42	140	125	7.5	18	58	69	315	45	857	4-Φ28	2-M63X1.5	1270	22	1148	397	280	600	550	660	24	6
320	457	680	216	80	M20X42	170	160	5	22	71	85	315	45	857	4-Φ28	2-M63X1.5	1290	22	1148	427	280	600	550	660	24	6
320	508	680	216	65	M20X42	140	125	7.5	18	58	69	315	45	857	4-Φ28	2-M63X1.5	1320	22	1148	397	280	600	550	660	24	6
320	508	680	216	80	M20X42	170	160	5	22	71	85	315	45	857	4-Φ28	2-M63X1.5	1320	22	1148	427	280	600	550	660	24	6
380	560	750	254	75	M20X50	140	130	5	20	67.5	79.5	355	52	1042	5-Φ28	2-M63X1.5	1500	25	1346	414	330	740	680	800	24	6
380	560	750	254	95	M24X50	170	160	5	25	86	100	355	52	1042	6-Φ28	2-M63X1.5	1500	25	1346	444	330	740	680	800	24	6
380	630	750	254	75	M20X50	140	130	5	20	67.5	79.5	355	52	1042	6-Φ28	2-M63X1.5	1530	25	1346	414	330	740	680	800	24	6
380	630	750	254	95	M24X50	170	160	5	25	86	100	355	52	1042	6-Φ28	2-M63X1.5	1630	25	1346	444	330	740	680	800	24	6

A detailed technical line drawing of an aluminium motor, showing the stator, rotor, and cooling fan. The drawing is rendered in a light grey color and serves as a background for the text.

# **Aluminium IE1 Efficiency Motor**

# SPEED 3000 RPM 2-POLE 50HZ

Model	Power kW	Current(A)			Current(A)			Current(A)			Speed r.p.m	eff %	Power factor Cos Φ	Tst/Tn (Times)	Tmax/Tn (Times)	Tmin/Tn (Times)	Ist/In (Times)	Noise dB(A)	WT (Kg)
		220V	380V	660V	230V	400V	690V	240V	415V	720V									
BA1-63-2	0.18	1.00	0.58	0.33	0.95	0.55	0.32	0.92	0.53	0.31	2710	63	0.75	2.2	2.4	1.6	6	61	4.00
BA1-711-2	0.37	1.76	1.02	0.59	1.67	0.97	0.56	1.61	0.93	0.54	2730	70	0.79	2.2	2.4	1.6	6	64	5.20
BA1-712-2	0.55	2.57	1.49	0.86	2.45	1.42	0.82	2.36	1.36	0.79	2760	71	0.79	2.2	2.4	1.6	6	64	6.00
BA1-801-2	0.75	3.21	1.83	1.07	3.06	1.77	1.02	2.94	1.70	0.98	2770	73	0.84	2.2	2.4	1.5	6	67	8.70
BA1-802-2	1.1	4.56	2.64	1.52	4.35	2.51	1.45	4.18	2.42	1.39	2770	76.2	0.83	2.2	2.4	1.5	6	67	10.00
BA1-90S-2	1.5	5.97	3.46	1.99	5.76	3.28	1.90	5.47	3.16	1.82	2840	78.5	0.84	2.2	2.4	1.5	6	72	12.00
BA1-90L1-2	2.2	8.39	4.85	2.80	8.0	4.61	2.66	7.69	4.45	2.56	2840	81	0.85	2.2	2.4	1.4	6	72	14.50
BA1-100L1-2	3	11.0	6.34	3.65	10.4	6.03	3.48	10.0	5.81	3.35	2840	82.6	0.87	2.2	2.3	1.4	7	76	20.00
BA1-112M-2	4	14.3	8.30	4.78	13.7	7.88	4.55	13.1	7.60	4.38	2880	84.2	0.87	2.2	2.3	1.4	7.5	77	26.00
BA1-132S1-2	5.5	19.1	11.1	6.38	18.2	10.5	6.08	17.5	10.1	5.85	2900	85.7	0.88	2	2.2	1.2	7.5	80	38.40
BA1-132S2-2	7.5	25.7	14.9	8.57	24.5	14.1	8.16	23.6	13.6	7.86	2920	87	0.88	2	2.2	1.2	7.5	80	41.30
BA1-160M1-2	11	36.3	21.0	12.1	34.6	20.0	11.5	33.3	19.2	11.1	2940	88.4	0.9	2	2.2	1.2	7.5	86	76.00
BA1-160M2-2	15	48.4	28.0	16.1	46.1	26.6	15.4	44.4	25.7	14.8	2940	89.4	0.91	2	2.2	1.2	7.5	86	77.50

# SPEED 1500 RPM 4-POLE 50HZ

Model	Power kW	Current(A)			Current(A)			Current(A)			Speed r.p.m	eff %	Power factor Cos Φ	Tst/Tn (Times)	Tmax/Tn (Times)	Tmin/Tn (Times)	Ist/In (Times)	Noise dB(A)	WT (Kg)
		220V	380V	660V	230V	400V	690V	240V	415V	720V									
BA1-63-4	0.18	1.28	0.74	0.43	1.21	0.70	0.40	1.17	0.67	0.39	1310	57	0.65	2.2	2.4	2	4	52	4.20
BA1-71-4	0.37	2.02	1.17	0.67	1.92	1.11	0.64	1.85	1.07	0.62	1370	65	0.74	2.2	2.4	1.7	6	55	5.80
BA1-801-4	0.55	2.67	1.66	0.96	2.74	1.58	0.91	2.63	1.52	0.88	1370	67	0.75	2.3	2.4	1.7	6	58	8.10
BA1-802-4	0.75	3.50	2.03	1.17	3.34	1.93	1.11	3.21	1.86	1.07	1380	72	0.78	2.3	2.4	1.6	6	58	9.10
BA1-90S-4	1.1	4.80	2.78	1.60	4.57	2.64	1.52	4.40	2.54	1.47	1400	76.2	0.79	2.2	2.4	1.6	6	61	11.70
BA1-90L1-4	1.5	6.27	3.63	2.09	5.97	3.45	1.99	5.75	3.32	1.92	1400	78.5	0.8	2.2	2.4	1.6	6	61	14.40
BA1-100L1-4	2.2	8.80	5.09	2.93	8.38	4.84	2.79	8.07	4.66	2.69	1420	81	0.81	2.2	2.3	1.5	7	64	19.20
BA1-100L2-4	3	11.8	6.81	3.92	11.2	6.47	3.74	10.8	6.24	3.60	1420	82.6	0.81	2.2	2.3	1.5	7	64	22.50
BA1-112M-4	4	15.0	8.70	5.01	14.3	8.26	4.77	13.8	7.96	4.59	1430	84.2	0.83	2.2	2.2	1.5	7	65	29.00
BA1-132S-4	5.5	20.1	11.6	6.68	19.1	11.0	6.37	18.4	10.6	6.13	1450	85.7	0.84	2.2	2.2	1.4	7	71	39.00
BA1-132M-4	7.5	26.6	15.4	8.87	25.4	14.6	8.45	24.4	14.1	8.13	1450	87	0.85	2.2	2.2	1.4	7	71	48.60
BA1-160M-4	11	37.5	21.7	12.5	35.8	20.6	11.9	34.4	19.9	11.5	1460	88.4	0.87	2.2	2.2	1.4	7	75	73.00
BA1-160L1-4	15	51.2	29.6	17.1	48.8	28.2	16.3	46.9	27.1	15.6	1460	88.4	0.87	2.2	2.2	1.4	7.5	75	88.50

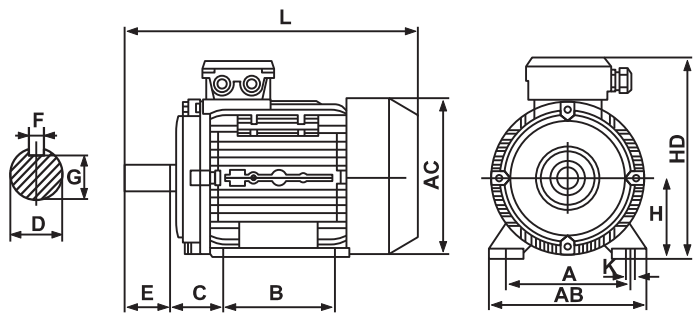
# SPEED 1000 RPM 4-POLE 50HZ

Model	Power kW	Current(A)			Current(A)			Current(A)			Speed r.p.m	eff %	Power factor Cos Φ	Tst/Tn (Times)	Tmax/Tn (Times)	Tmin/Tn (Times)	Ist/In (Times)	Noise dB(A)	WT (Kg)
		220V	380V	660V	230V	400V	690V	240V	415V	720V									
BA1-71-6	0.18	1.28	0.74	0.43	1.22	0.70	0.41	1.17	0.68	0.39	860	56	0.66	1.6	1.7	1.5	4	52	5.60
BA1-801-6	0.37	2.24	1.30	0.75	2.13	1.23	0.71	2.05	1.19	0.68	900	62	0.7	1.9	1.9	1.5	4	56	8.10
BA1-802-6	0.55	2.99	1.73	1.00	2.85	1.65	0.95	2.74	1.59	0.91	900	67	0.72	2	2.3	1.5	4	56	9.60
BA1-90S-6	0.75	3.96	2.29	1.32	3.77	2.18	1.26	3.63	2.10	1.21	920	69	0.72	2.2	2.2	1.5	5.5	59	11.30
BA1-90L-6	1.1	5.49	3.18	1.83	5.23	3.02	1.74	5.03	2.91	1.68	925	72	0.73	2.2	2.2	1.3	5.5	59	14.40
BA1-100L1-6	1.5	7.00	4.05	2.33	6.67	3.85	2.22	6.42	3.71	2.14	945	74	0.76	2.2	2.2	1.3	6	61	18.80
BA1-112M-6	2.2	9.70	5.64	3.25	9.28	5.36	3.09	8.93	5.16	2.98	955	78	0.76	2.2	2.2	1.3	6	64	25.00
BA1-132S-6	3	13.1	7.59	4.37	12.5	7.21	4.16	12.0	6.95	4.01	960	79	0.76	2	2	1.3	6.5	64	35.00
BA1-132M1-6	4	17.2	9.93	5.72	16.4	9.44	5.45	15.7	9.10	5.24	960	80.5	0.76	2	2	1.3	6.5	68	47.60
BA1-132M2-6	5.5	22.6	13.1	7.53	21.5	12.4	7.17	20.7	12.0	6.9	960	83	0.77	2	2	1.3	6.5	68	50.70
BA1-160M-6	7.5	28.6	16.6	9.5	27.3	15.7	9.08	26.2	15.2	8.7	960	86	0.8	2	2.2	1.3	6.5	68	70.0
BA1-160L-6	11	41.8	24.2	13.9	39.8	23.0	13.3	38.3	22.1	12.8	960	87.5	0.79	2	2.2	1.2	6.5	73	87.0

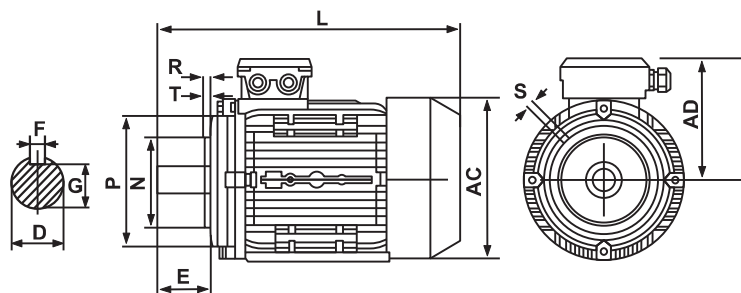


# Aluminium Motor Dimensions

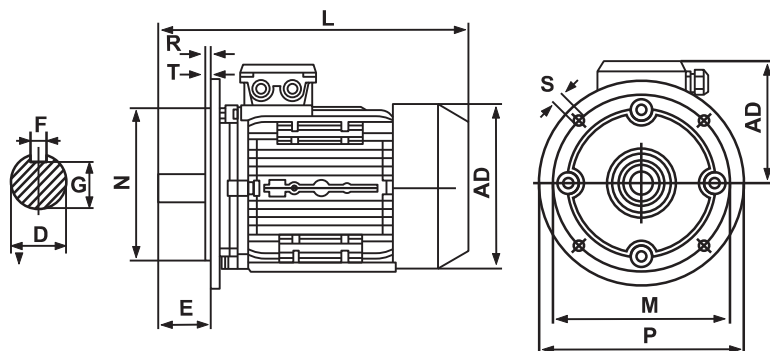
Frame Size	Installation Size (mm) IMB3			Installation Size (mm) IMB14					Installation Size (mm) IMB5					Outline Dimension (mm)										
	A	B	C	D	E	F	G	H	K	M	N	P	S	T	M	N	P	S	T	AB	AC	AD	HD	L
56	90	71	36	9	20	3	7.2	56	6	65	50	80	M5	2.5	98	80	120	7	3	110	120	110	155	195
63	100	80	40	11	23	4	8.5	63	7	75	60	90	M5	2.5	115	95	140	10	3	130	130	115	165	230
71	112	90	45	14	30	5	11	71	7	85	70	105	M6	2.5	130	110	160	10	3.5	145	145	125	185	255
80	125	100	50	19	40	6	15.5	80	10	100	80	120	M6	3	165	130	200	12	3.5	160	165	135	215	295
90S	140	100	56	24	50	8	20	90	10	115	95	140	M8	3	165	130	200	12	3.5	180	185	145	235	335
90L	140	125	56	24	50	8	20	90	10	115	95	140	M8	3	165	130	200	12	3.5	180	185	145	235	360
100L	160	140	63	28	60	8	24	100	12	130	110	160	M8	3.5	215	180	250	15	4	205	215	170	255	380
112M	190	140	70	28	60	8	24	112	12	130	110	160	M8	3.5	215	180	250	15	4	245	240	180	285	400
132S	216	140	89	38	80	10	33	132	12	165	130	200	M10	4.0	265	230	300	15	4	280	275	195	325	475
132M	216	178	89	38	80	10	33	132	12	165	130	200	M10	4.0	265	230	300	15	4	280	275	195	325	515
160M	254	210	108	42	110	12	37	160	15	215	180	250	M12	4.0	300	250	350	15	5	320	330	255	420	615
160L	254	254	108	42	110	12	37	160	15	215	180	250	M12	4.0	300	250	350	15	5	320	330	255	420	670
180M	279	241	121	48	110	14	42.5	180	15	265	230	300	M15	4.0	300	250	350	19	5	355	380	280	455	700
180L	279	279	121	48	110	14	42.5	180	15	265	230	300	M15	4.0	300	250	350	19	5	355	380	280	455	740



IM B3 # 56-180



IM B14 # 56-180



IM B5 # 56-180



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