



Best in class energy efficient motors



Stark group of companies was established by

**Er. C. Muthusami** at **Coimbatore** in the year **1984** to manufacture electric motors.

ENERGY EFFICIENT,  
POWER SAVING

# MOTORS & PUMPS

## Proven Quality & Performance



### Our Mission

Supporting the vision statement by providing motors and pumps with class leading efficiency. Meet all and any of the customer's requirements in the field of Electric motors and pumps.



[www.starkengg.com](http://www.starkengg.com)

## PROFILE

Stark motors was established by Mr.C.Muthusami at Coimbatore in the year 1984 to manufacture electric motors. Initially we were engaged in the manufacture of small FHP motors later we grew from strength to strength and today we are one of the leading manufacturers of single phase motors, NEMA standard motors, vibrator motors and motors suitable for Variable Frequency Drives (inverter application).

Combining years of experience, we endeavour to offer innovative energy efficient products that help our clients achieve their business objectives. Our forte to deliver quality products gave us a repute & strong presence among large Indian companies throughout India.

## PRODUCTS

### Single Phase Motor (0.18kw to 2.2kw.1440/2880rpm, 50/60cycles)



#### Features

- Design and performance as per IS 996
- Totally enclosed fan cooled type
- 180-240 volts 50HZ power supply
- Class F insulation
- IP44/IP55 Protection
- Vacuum Impregnated, stators with an additional moisture proof coating
- Pressure Die Cast Aluminium Rotors
- Dynamically balanced for vibration-free operation
- Double shield SKF ball bearings, factory lubricated for long service
- High quality centrifugal switches
- Special film wound capacitors

### As per IS 12615:2018 / CM/L: 6500059112

### Three phase Motors (0.18kw to 22kw . rpm- 720/960/1440/2880) (volt-415) (Freq- 50Hz)



#### Features

- Winding design takes care of excess heat generated
- Suitable for Speed up to 9000 rpm
- IEC frame motors available upto 160
- Forced cooling on request
- Motors are with a S.F. 1.15
- Rotors balanced with an accuracy of 1 gm



#### Features

- Ring frame(10,12.5,15,20,25,30hp/1440rpm)
- Over head cleaners, looms(3hp/2880rpm)
- Opening roller motors(4kw 1440rpm suitable for SNOE, RNOE)
- Pneumofil motors(2.2kw /2880 rpm,for shanthi carding, DJ5 m/c's)
- Carding motors(2hp/960rpm, 5hp 960rpm available on request)
- Reeling motors(0.5hp /1440rpm)
- Cone winding(2,3,5,7.5,10hp/1440rpm/3phase)

### Vibrators all 4pole 0.18kw to 11kw motors are



#### Features

- SMV series of vibrator motors are specially developed for variable individual application to suit all working environments.
- The vibrator motor develops centrifugal force from 5 kg (50 N) to as much as 6000 kg (60000 N).
- Higher and non standard rating vibro motors on request

## PROMOTED BY



C.Muthusami, BE, AIE.



Satish Kumar Muthusami, BE, MBA.



Gokul Muthusami, BE, MS.

### Bench Grinders (0.8hp/single/threephase)



#### Features

- Compact and mechanically robust
- Conforms to IS 2538- 1963
- Economical in power consumption

### Self Priming Pumps (0.5hp &1.0hp)



#### Features

- High Discharge
- Light Weight
- Aluminium Extrusion Body
- Capacitors start & run design
- Stainless Steel Shaft
- Brass Forged Impeller
- Maintenance free ceramic mechanical seal
- Contain High quality raw materials
- Consumes less Power

### Coolant Pumps(0.1hp,170mm,40lpm) (0.25hp,170mm, 60lpm) (0.5hp,220mm,100lpm)(0.5hp,220mm,160lpm)



#### Features

- Dust and Splash-proof (IP 54) terminal box
- Triple Protection to prevent coolant ingress into the winding
- Position of conduit entry can be adjusted through every 90° by rotating the terminal box Relative Position of terminal box to coolant out-let can be adjusted through every 90° by rotating the body
- The mounting of the cover on to the terminal box is independent of mounting of the terminal box on to the motor
- Earthing bolts provided
- Sturdier shaft to prevent bending at pump end
- Aluminium impeller offers high resistance to abrasion
- Large passages prevent clogging of coolant
- Dynamically balanced rotor ensures silent and vibration free running
- Stator winding impregnated under vacuum to work in tropical climate
- Class ' F' Insulation
- High discharge with low power consumption

### Brake Motors (0.18kw to 22kw) ac/dc brake



#### Features

- Low rotor Inertia
- Manual Release
- Adjustable Brake Torque
- Simple Wear Adjustment
- Low Power Requirement
- Residual Free
- Fast Switching Times
- Simple Construction

## Who We Are

Stark was established by Mr. C. Muthusami at Coimbatore in the year 1984 to manufacture electric motors. Initially we were engaged in the manufacture of small FHP motors later we grew from strength to strength and today we are one of the leading manufacturers of single phase motors, NEMA standard motors, vibrator motors and motors suitable for Variable Frequency Drives (inverter application).

Combining years of experience, we endeavour to offer innovative energy efficient products that help our clients achieve their business objectives. Our forte to deliver quality products gave us a repute & strong presence among large Indian companies throughout India.

## Vision

Stark engineers will aim to provide high efficiency motors and pumps to help achieve a clean and sustainable green environment for the future generations.

## Mission

Supporting the vision statement by providing motors and pumps with class leading efficiency. Ensuring the manufacturing processes are tuned to achieve the best possible outcomes in terms of product and service. Meet all and any of the customer's requirements in the field of Electric motors and pumps.

## Infrastructure

Our state-of-the-art production unit with cutting edge technology machineries and technocrats with voluminous experience has carved a niche for us in this Industry. We constantly provide periodical training to our manpower in order to manufacture products at par with the best available in the market.



## Future Expansion Plannision

- CMM for measurements
  - 3D scanner
- 
- ▶ A built up area of 15000 sqft under a single roof on an plot of 2.5 acres
  - ▶ 70 kW LT-CT connection
  - ▶ Vacuum Impregnation plant with capacity of 100 stators/4hrs
  - ▶ All stampings are rigour sly tested to achieve high grade efficiency
  - ▶ Precision brand copper wires
  - ▶ 5s and lean production practices to ensure maximum control of processes
  - ▶ Automatic paper cutting and scaffolding machine
  - ▶ Semi-automatic coil forming machine
  - ▶ Since we have in house machining facilities we are able to maintain the close tolerances required to calculate the efficiencies based on the residual loss method

## Test Equipments

- ▶ Yokogawa power analyser – range 200 amps
- ▶ Eddy current dynamometer – capacity 1hp
- ▶ Eddy current dynamometer – capacity 5hp
- ▶ Eddy current dynamometer – capacity 30hp
- ▶ MEA inertial dynamometer – capacity 30hp
- ▶ Jabbals surge tester
- ▶ Agronic high voltage tester
- ▶ Agronic ohm meter
- ▶ Megger
- ▶ Three phase Power panel – 100 amps CT
- ▶ Self priming pump testing panel
- ▶ Openwell Pump Testing panel
- ▶ Monobloc pump test setup capable of testing upto 15hp three phase pumps with flow meter
- ▶ ABRO balancing machine capacity 100 Kgs



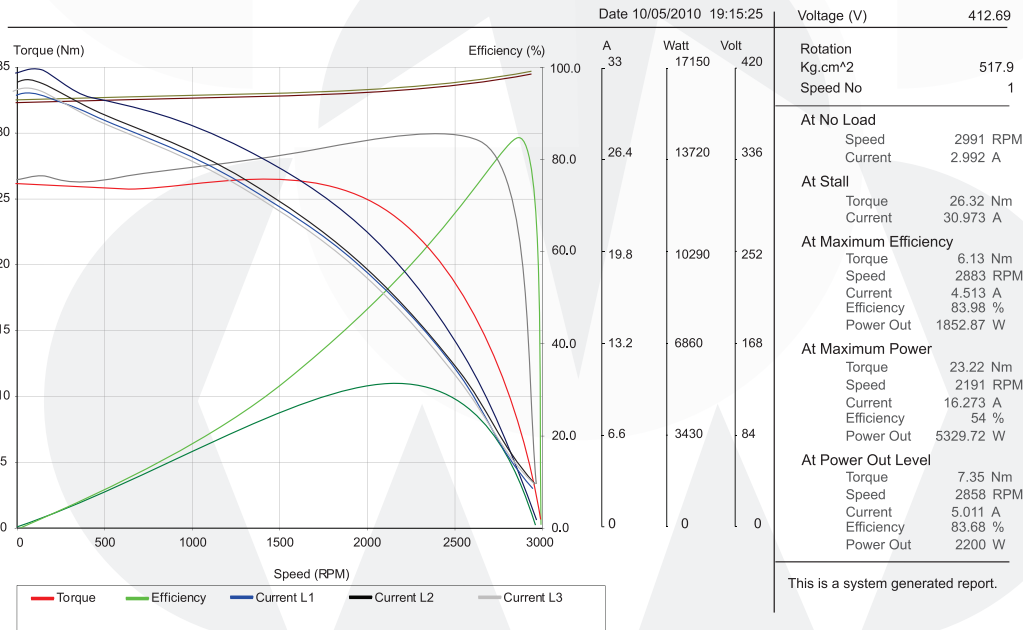
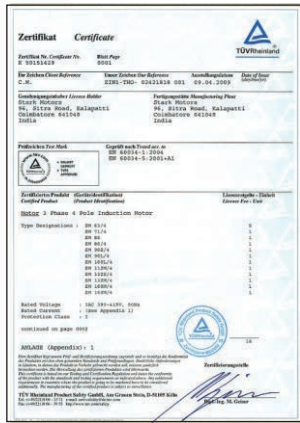
## Machining Facilities

Our group company has a machining facility with the following machines

- ▶ CNC turning centres -3
- ▶ Conventional VMC with z axis 1 metre
- ▶ HMT Radial drilling machine 75mm capacity
- ▶ Huron radial drilling machine 100mm drill capacity
- ▶ Huron Milling machine with digital readout
- ▶ Slotting machine of capacity 18mm
- ▶ Automatic Keyway milling machine with a capacity of 18mm and length 200mm
- ▶ Cylindrical grinding machine with a between centre of 1.5m
- ▶ CNC tapping machine capacity of M32
- ▶ Fully computerised automatic quality control of machined components with air gauges
- ▶ Conventional lathes – 5nos
- ▶ Conventional drilling machines with multi spindle drill heads – 3 nos
- ▶ Band saw machine of capacity 100mm

# QUALITY

For sustaining higher standards in quality we went in for ISO - 9001 in year 2000 and CE Marking in 2009, ISO - 9001 - 2008 in 2010 from TUV, Rheinland



Power In Power Out Power Factor Speed Volt Urs Speed Volt Ust



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# Zertifikat Certificate



Zertifikat Nr. Certificate No. CC 50154169  
Blatt Page 0001

Ihr Zeichen Client Reference C.M.  
Unser Zeichen Our Reference ZIN1-THO- 02421581 001  
Ausstellungsdatum Date of Issue 01.06.2009 (day/month/yr)

**Genehmigungsinhaber License Holder**  
Stark Motors  
96, Sitra Road, Kalapatti  
Coimbatore 641048  
India

**Fertigungsstätte Manufacturing Plant**  
Stark Motors  
96, Sitra Road, Kalapatti  
Coimbatore 641048  
India

## Prüfzeichen Test Mark



**Geprüft nach Tested acc. to**  
EN 60034-1:2004  
EN 55011:2007+A2  
EN 61000-3-2:2006  
EN 61000-3-3:1995+A1+A2

**Zertifiziertes Produkt (Geräteidentifikation)**  
**Certified Product (Product Identification)**

**Lizenzentgelte - Einheit**  
**License Fee - Unit**

Motor 3 Phase 4 Pole Induction Motor

|                   |             |   |
|-------------------|-------------|---|
| Type Designations | : SM 63/4   | 6 |
|                   | : SM 71/4   | 1 |
|                   | : SM 80     | 1 |
|                   | : SM 80/4   | 1 |
|                   | : SM 90S/4  | 1 |
|                   | : SM 90L/4  | 1 |
|                   | : SM 100L/4 | 1 |
|                   | : SM 112M/4 | 1 |
|                   | : SM 132S/4 | 1 |
|                   | : SM 132M/4 | 1 |
|                   | : SM 160M/4 | 1 |
|                   | : SM 160M/4 | 1 |

Rated Voltage : 3AC 380-415V, 50Hz  
Rated Current : (see Appendix 1)  
Protection Class : I  
Equipment Class : B (EN 55011)

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ANLAGE (Appendix): 1

Dem Zertifikat liegt unsere Prüf- und Zertifizierungsordnung zugrunde.  
Das Produkt entspricht den o.g. Anforderungen, die Herstellung wird überwacht.  
This certificate is based on our Testing and Certification Regulation. The product fulfills above mentioned requirements, the production is subject to surveillance.



Zertifizierungsstelle

TÜV Rheinland Product Safety GmbH, Am Grauen Stein, D-51105 Köln  
Tel.: (+49/221)8 06 - 13 71 e-mail: cert-validity@de.tuv.com  
Fax: (+49/221)8 06 - 39 35 http://www.tuv.com/safety

Dipl.-Ing. M. Geiser



# Zertifikat Certificate



Zertifikat Nr. *Certificate No.*  
R 50151429

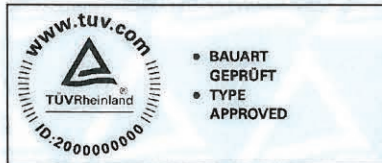
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0002

| Ihr Zeichen <i>Client Reference</i> | Unser Zeichen <i>Our Reference</i> | Ausstellungsdatum | <i>Date of Issue</i><br>(day/mo/yr) |
|-------------------------------------|------------------------------------|-------------------|-------------------------------------|
| C.M.                                | ZIN1-THO- 02421818 001             | 09.04.2009        |                                     |

**Genehmigungsinhaber *License Holder***  
Stark Motors  
96, Sitra Road, Kalapatti  
Coimbatore 641048  
India

**Fertigungsstätte *Manufacturing Plant***  
Stark Motors  
96, Sitra Road, Kalapatti  
Coimbatore 641048  
India

## Prüfzeichen *Test Mark*



- BAUART  
GEPRÜFT
- TYPE  
APPROVED

## Geprüft nach *Tested acc. to*

EN 60034-1:2004  
EN 60034-5:2001+A1

**Zertifiziertes Produkt (Geräteidentifikation)**  
***Certified Product (Product Identification)***

**Lizenzentgelte - Einheit**  
***License Fee - Unit***

Motor 3 Phase 4 Pole Induction Motor

Continuation

Number of Poles : 4  
IP Degree : IP55  
Pollution Degree : 2  
Ambient Temperature : 0 - 40°C  
Overvoltage Category : II  
Duty Type : S1  
Insulation Class : F



Dem Zertifikat liegt unsere Prüf- und Zertifizierungsordnung zugrunde und es bestätigt die Konformität des Produktes mit den oben genannten Standards und Prüfgrundlagen. Zusätzliche Anforderungen in Ländern, in denen das Produkt in Verkehr gebracht werden soll, müssen zusätzlich betrachtet werden. Die Herstellung des zertifizierten Produktes wird überwacht.

This certificate is based on our Testing and Certification Regulation and states the conformity of the product with the standards and testing requirements as indicated above. Any additional requirements in countries where the product is going to be marketed have to be considered additionally. The manufacturing of the certified product is subject to surveillance.

**TÜV Rheinland Product Safety GmbH, Am Grauen Stein, D-51105 Köln**  
Tel.: (+49/221)8 06 - 13 71 e-mail: cert-validity@de.tuv.com  
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Zertifizierungsstelle

Dipl.-Ing. M. Geiser

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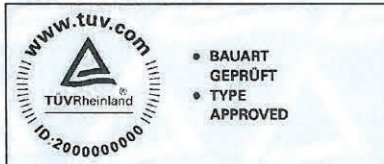
Zertifikat Nr. Certificate No. R 50151429  
Blatt Page 0001

Ihr Zeichen Client Reference C.M.  
Unser Zeichen Our Reference ZIN1-THO- 02421818 001  
Ausstellungsdatum Date of Issue 09.04.2009 (day/mo/yr)

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India

**Fertigungsstätte Manufacturing Plant**  
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96, Sitra Road, Kalapatti  
Coimbatore 641048  
India

## Prüfzeichen Test Mark



**Geprüft nach Tested acc. to**  
EN 60034-1:2004  
EN 60034-5:2001+A1

**Zertifiziertes Produkt (Geräteidentifikation)**  
**Certified Product (Product Identification)**

**Lizenzentgelte - Einheit**  
**License Fee - Unit**

**Motor 3 Phase 4 Pole Induction Motor**

|                     |           |   |
|---------------------|-----------|---|
| Type Designations : | SM 63/4   | 5 |
|                     | SM 71/4   | 1 |
|                     | SM 80     | 1 |
|                     | SM 80/4   | 1 |
|                     | SM 90S/4  | 1 |
|                     | SM 90L/4  | 1 |
|                     | SM 100L/4 | 1 |
|                     | SM 112M/4 | 1 |
|                     | SM 132S/4 | 1 |
|                     | SM 132M/4 | 1 |
|                     | SM 160M/4 | 1 |
|                     | SM 160M/4 | 1 |

Rated Voltage : 3AC 380-415V, 50Hz  
Rated Current : (see Appendix 1)  
Protection Class : I

continued on page 0002



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**ANLAGE (Appendix): 1**

Dem Zertifikat liegt unsere Prüf- und Zertifizierungsordnung zugrunde und es bestätigt die Konformität des Produktes mit den oben genannten Standards und Prüfgrundlagen. Zusätzliche Anforderungen in Ländern, in denen das Produkt in Verkehr gebracht werden soll, müssen zusätzlich betrachtet werden. Die Herstellung des zertifizierten Produktes wird überwacht.  
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**Zertifizierungsstelle**

**TÜV Rheinland Product Safety GmbH, Am Grauen Stein, D-51105 Köln**  
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Fax: (+49/221)8 06 - 39 35 http://www.tuv.com/safety

**Dipl.-Ing. M. Geiser**

## Single Phase Motor



### Features

- ▶ Design and performance as per IS:996
- ▶ Totally enclosed fan cooled type
- ▶ 180-240 volts 50HZ power supply
- ▶ Class F insulation
- ▶ IP44/IP55 Protection
- ▶ Vacuum Impregnated, stators with an additional moisture proof coating
- ▶ Pressure Die Cast Aluminium Rotors
- ▶ Dynamically balanced for vibration-free operation
- ▶ Double side shield SKF ball bearings factory lubricated for long service
- ▶ High quality centrifugal switches
- ▶ Special film wound Aluminium can capacitors
- ▶ Very high starting torque (minimum 200%)

## Frame Selection Chart

| KW/ HP      | CS &R | CSIR | CSCR |
|-------------|-------|------|------|
| 0.18 / 0.25 | 71    | 80   | 71   |
| 0.37 / 0.50 | 71    | 80   | 80   |
| 0.75 / 1.00 | 90 L  | 100L | 90 L |
| 1.10 / 1.50 | 90 L  | 100L | 100L |
| 1.50 / 2.0  | 100L  | 112M | 100L |
| 2.2 / 3.0   |       |      | 112M |
| 3.0 / 4.0   |       |      | 112M |

### CSIR -1440RPM

| KW/HP      | Frame | FL Current | Efficiency% | Power Factor | Breakaway Starting Torque% | Pullout Torque% |
|------------|-------|------------|-------------|--------------|----------------------------|-----------------|
| 0.18/ 0.25 | 80    | 2.5        | 56          | 0.6          | 210                        | 250             |
| 0.37/ 0.50 | 80    | 4.5        | 60          | 0.7          | 210                        | 260             |
| 0.75/ 1.00 | 100L  | 7.5        | 65          | 0.8          | 220                        | 260             |
| 1.10/1.50  | 100L  | 10.5       | 70          | 0.8          | 220                        | 250             |
| 1.50/2.0   | 112M  | 15.0       | 75          | 0.8          | 220                        | 250             |

### CSCR -1440 RPM

| KW/HP      | Frame | FL Current | Efficiency% | Power Factor | Breakaway Starting Torque% | Pullout Torque% |
|------------|-------|------------|-------------|--------------|----------------------------|-----------------|
| 0.18/ 0.25 | 71    | 1.6        | 65          | 0.8          | 180                        | 21 <sup>0</sup> |
| 0.37/ 0.50 | 80    | 3.3        | 70          | 0.85         | 200                        | 220             |
| 0.75/ 1.00 | 90L   | 5.5        | 70          | 0.85         | 210                        | 220             |
| 1.10/1.50  | 100L  | 9.5        | 72          | 0.85         | 210                        | 230             |
| 1.50/2.0   | 100L  | 10         | 75          | 0.9          | 210                        | 240             |
| 2.2/3.0    | 112M  | 15         | 78          | 0.9          | 210                        | 240             |
| 3.0/4.0    | 112M  | 19         | 79          | 0.9          | 210                        | 240             |

### CS&R - 1440RPM

| KW/HP      | Frame | FL Current | Efficiency% | Power Factor | Breakaway Starting Torque% | Pullout Torque% |
|------------|-------|------------|-------------|--------------|----------------------------|-----------------|
| 0.18/ 0.25 | 71    | 1.6        | 65          | 0.8          | 30                         | 150             |
| 0.37/0.50  | 71    | 2.2        | 70          | 0.85         | 30                         | 150             |
| 0.75/ 1.00 | 90L   | 4.0        | 70          | 0.85         | 60                         | 150             |
| 1.10/1.50  | 90L   | 7.5        | 72          | 0.85         | 60                         | 150             |

### CSCR -2880 RPM

| KW/HP      | Frame | FL Current | Efficiency% | Power Factor | Breakaway Starting Torque% | Pullout Torque% |
|------------|-------|------------|-------------|--------------|----------------------------|-----------------|
| 0.18/ 0.25 | 71    | 1.6        | 65          | 0.8          | 180                        | 210             |
| 0.37/ 0.50 | 80    | 2.2        | 70          | 0.85         | 200                        | 220             |
| 0.75/ 1.00 | 90L   | 5.6        | 70          | 0.85         | 210                        | 220             |
| 1.10/1.50  | 100L  | 7.5        | 72          | 0.85         | 210                        | 230             |
| 1.50/2.0   | 100L  | 11.0       | 75          | 0.9          | 210                        | 240             |
| 3.7/5.0    | 112M  | 16         | 72          | 0.9          | 220                        | 210             |

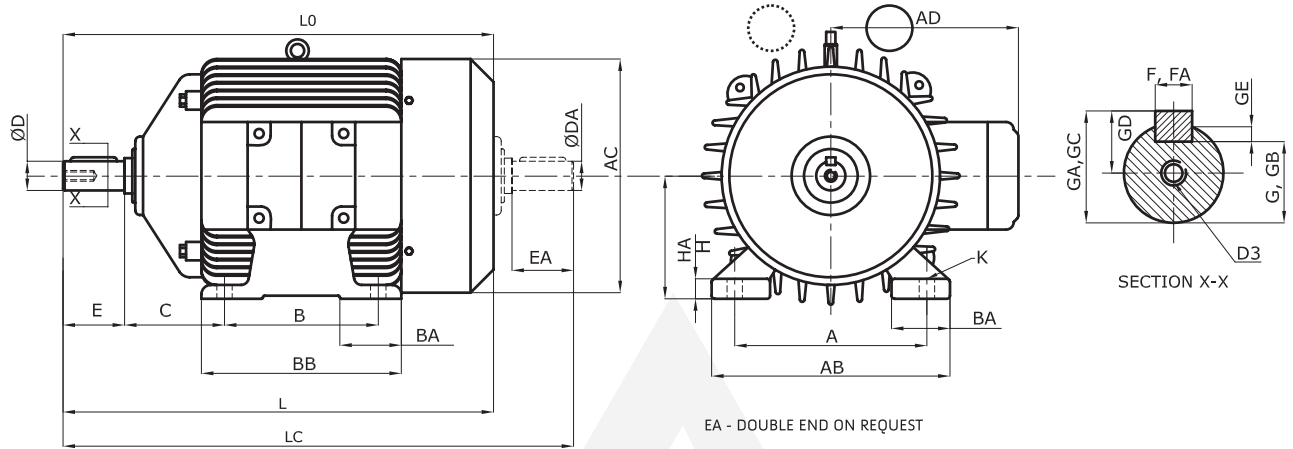
### CS&R - 2880RPM

| KW/HP      | Frame | FL Current | Efficiency% | Power Factor | Breakaway Starting Torque% | Pullout Torque% |
|------------|-------|------------|-------------|--------------|----------------------------|-----------------|
| 0.18/ 0.25 | 71    | 1.6        | 60          | 0.8          | 40                         | 150             |
| 0.37/0.50  | 71    | 2.3        | 65          | 0.85         | 40                         | 150             |
| 0.75/ 1.00 | 90L   | 5.8        | 70          | 0.85         | 40                         | 150             |
| 1.10/1.50  | 90L   | 7.6        | 72          | 0.85         | 60                         | 150             |
| 1.50/2.0   | 100L  | 10.0       | 75          | 0.90         | 60                         | 150             |

### CSIR -2880RPM

| KW/HP      | Frame | FL Current | Efficiency% | Power Factor | Breakaway Starting Torque% | Pullout Torque% |
|------------|-------|------------|-------------|--------------|----------------------------|-----------------|
| 0.18/ 0.25 | 80    | 2.5        | 56          | 0.6          | 180                        | 210             |
| 0.37/ 0.50 | 80    | 4.4        | 60          | 0.6          | 210                        | 230             |
| 0.75/ 1.00 | 100L  | 7.0        | 62          | 0.7          | 210                        | 230             |
| 1.10/1.50  | 100L  | 10.0       | 64          | 0.7          | 210                        | 230             |
| 1.50/2.0   | 112M  | 15.0       | 70          | 0.7          | 220                        | 240             |

## Dimension Chart For Foot Mounted Motor ( B3) Ref : IS 1231 - 1974



| size | A   | B   | C  | H   | K  | L   | LC  | LO  | AB  | AD  | BB  | D,DA | E,EA | F,FA | GA,GC | G,GB | D3 | GD | GE  |
|------|-----|-----|----|-----|----|-----|-----|-----|-----|-----|-----|------|------|------|-------|------|----|----|-----|
| 71   | 112 | 90  | 45 | 71  | 7  | 235 | 270 | 120 | 142 | -   | 130 | 14j6 | 30   | 5    | 16    | 11   | M5 | 5  | 3   |
| 80   | 125 | 100 | 50 | 80  | 10 | 272 | 317 | 140 | 155 | 122 | 130 | 19j6 | 40   | 6    | 21.5  | 15.5 | M6 | 6  | 3.5 |
| 90S  | 140 | 100 | 56 | 90  | 10 | 290 | 345 | 168 | 170 | 133 | 155 | 24j6 | 50   | 8    | 27    | 20   | M8 | 7  | 4   |
| 90L  | 140 | 125 | 56 | 90  | 10 | 315 | 370 | 168 | 170 | 133 | 155 | 24j6 | 50   | 8    | 27    | 20   | M8 | 7  | 4   |
| 100L | 160 | 140 | 63 | 100 | 12 | 360 | 425 | 193 | 195 | 146 | 170 | 28j6 | 60   | 8    | 31    | 24   | M8 | 7  | 4   |
| 112M | 190 | 140 | 70 | 112 | 12 | 385 | 450 | 200 | 230 | 170 | 175 | 28j6 | 60   | 8    | 31    | 24   | M8 | 7  | 4   |

## Three Phase Motor



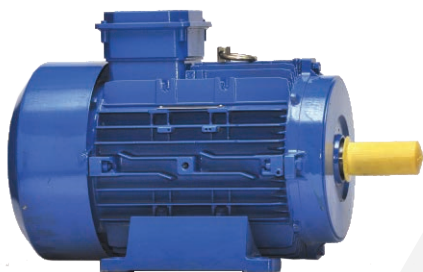
**71 Frame B4**



**80 Frame B3**



**80 Frame B5**



**132 Frame  
B3**



**200L Frame  
B3**



**90L Frame  
B3 - Double end**

### Features

- ▶ IS : 12615 certified CM/L: 6500059112 IE2, IE3
- ▶ Speed: Speed 720/960/1440/2880 rpm
- ▶ Volt: 415v
- ▶ Special motors to use with inverters
- ▶ Fitted with SKF Bearings
- ▶ Duty cycle S1

### Application

- ▶ Compressors, Blowers, Fans
- ▶ Vacuum pumps, Air curtains
- ▶ Printing Machinery
- ▶ Knitting Machines
- ▶ Drilling Machines
- ▶ Buffing & Polishing Machines
- ▶ Mosaic floor polishing machines
- ▶ Grinders
- ▶ General m/c tools
- ▶ Hydraulic Power Packs

## Three Phase Motors Confirm to following Indian & International Standards

### Standards

|                  |   |  |
|------------------|---|--|
| IS : 325         | : | Three phase Induction motors-specification   |
| IS : 12065-1987  | : | Permissible noise level for Rotating Machinery   |
| IS : 8789-1996   | : | Values of performance Characteristics For Three Phase Induction Motors   |
| IS : 12802-1989  | : | Temperature Rise Measurements of Rotating Electrical Machines  |
| IS : 4029-1967   | : | Guide for testing Three phase Induction motors.  |
| IS : 3043-1987   | : | Degree of protection provided by Enclosures for Rotating Electrical Machinery  |
| IS : 900-1992    | : | Code of Practice for Instillation & Maintenance of Induction Motors  |
| IS : 6362-1995   | : | Designation of Methods of Cooling of Rotating Electrical Machines  |
| IS:12824-1989    | : | Types of Duty & Classes of Rating Assigned to Rotating Electrical Machines   |
| IS: 12615 - 2018 | : | Induction Motors -Energy Efficient, Three Phase Squirrel Cage-Specification  |
| IS:4961-1985     | : | Degrees of Protection Provided by Enclosures for Rotating Electrical Machinery   |
| IS:8223-1976     | : | Dimensions &* Output Rating for Foot Monted Rotating Electrical Machines with Frame Nos. - 355 to 1000   |
| IS:2253-1974     | : | Designations for Types of Construction & Mounting Arrangements of Rotating Electrical Machines   |
| IS:2223-1983     | : | Dimensions of Flange Mounted AC Induction Motors   |
| IS:1231-1974     | : | Dimensions of Three Phase, Foot Mounted Induction Motors   |
| IS:4728:1975     | : | Terminal Markings & Direction of Rotation for Rotating Electrical Machinery  |
| IS:12075-1987    | : | Mechanical Vibration of Rotating Electrical Machines with Shaft Height 56mm & Higher Measurement.<br>Evaluation & Limits of Vibration Severity |

### International Standards

|             |   |  |
|-------------|---|--|
| IEC 60034-1 | : | Rotating Electrical Machines - Rating and Performance, Degrees of Protection         |
| IEC 60072   | : | Dimension and output ratings of Rotating Electrical machines.International Standards |
| IEC 60072   | : | Dimension and output ratings of Rotating Electrical machines.                        |

|                         |            |                             |
|-------------------------|------------|-----------------------------|
| Insulation              | -          | Class H (on request)        |
| Supply                  | -          | 415v, 50Hz                  |
| Standard cooling        | -          | Totally enclosed fan cooled |
| TENV                    | on request |                             |
| External forced cooling | on request |                             |
| Enclosure               | -          | (IP 54 or IP 55 on request) |



## Construction

### Stator Frames and End Shields

These are rugged components of cast iron conforming to IS 210  
The stator frames are of deep fin construction to ensure adequate cooling surface

### Terminal Box

Terminal box is located on the right hand side of the motor when viewed from Drive end  
The terminal box is turnable at 180°C to permit cable entry from any direction  
Multi mount option is available on request (80 Frame to 132 Frame)

### Bearings

| Frame Size | Drive End         | Non Drive End |
|------------|-------------------|---------------|
| 63         | 6301zz            | 6201zz        |
| 72         | 6203zz            | 6203zz        |
| 80         | 6204zz            | 6204zz        |
| 90s        | 6205zz            | 6205zz        |
| 90L        | 6205zz            | 6205zz        |
| 100L       | 6206zz            | 6206zz        |
| 112M       | 6306 c3 / NJ 2307 | 6306c3        |
| 132S       | 6308 c3           | 6307c3        |
| 132M       | 6308 c3           | 6307c3        |
| 160M       | 6310 c3           | 6310c3        |
| 160L       | 6310 c3           | 6310c3        |
| 180M       | 6311 c3 / NJ 2311 | 6311c3        |
| 180L       | 6311 c3 / NJ 2311 | 6311c3        |
| 200L       | 6312 c3 / NJ 2312 | 6312c3        |

Grease - SKF LGEP2 / LGHEP2

Bearing caps with grease nipple - From 180 Frame

## **Rotor and Shaft Assembly**

- Pressure die-cast aluminium rotors
- Dynamically balanced for vibration free operation

## **Stators**

- All copper windings, copper wires confirm to IS 4800 - Part V
- Surge tested for short grounds and phase unbalance
- Multiple dips protect against heat, moisture and contaminants
- Wound Stators are Vacuum Impregnated with high temperature insulating varnish.
- A final dip in epoxy insulating enamel provides a protective over coat

## **Insulation**

- Class F
- Non-hygroscopic, high dielectric and mechanical strength
- Epoxy coating provides additional protection

## **Bearing**

- Cast iron housing
- Double side shielded bearing upto 100 frame
- Pre-packed lubricants from SKF BEARING

## **Testing**

- All motors are tested in the course of manufacture and before dispatch as per relevant Bureau of Indian Standards (IS12615) and EN60034-1

## **Paint**

- MRF Polyurethane paints, Stark Blue & Grey

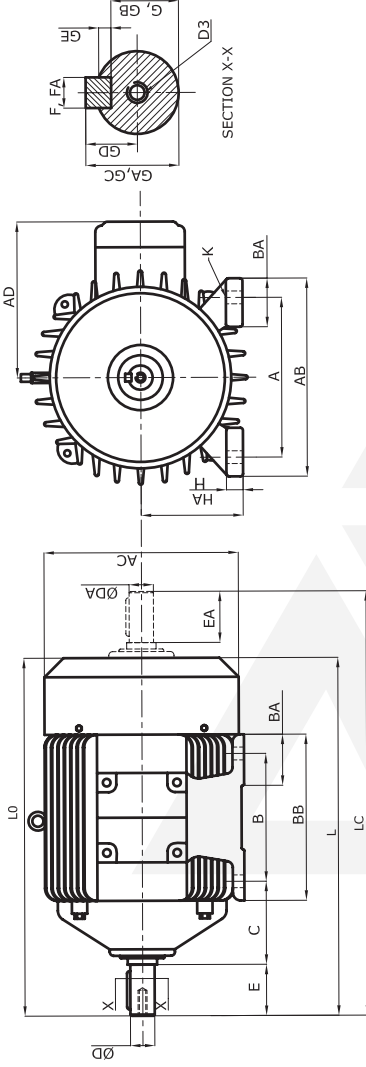
## **Ranges**

- Range : 0.18 KW (0.25 HP) to 22 KW (30 HP)
- Speed : 720/960/1440/2880 rpm
- Volt : 415v

## Mounting Positions

|  |  |
|--|--|
| <p>B3 - Foot Mounting IS 1231 - 1974</p>   | <p>B34 Flange type 'C' according to IS : 2223 Foot Cum Flange Mounting shaft extension at flange end</p> |
| <p>B5 Flange type 'B' according to IS : 2223 Flange Mounting shaft extension at flange end</p>           | <p>V1 Flange type 'B' according to IS : 2223 Flange Mounting shaft extension at flange end</p>           |
| <p>B6 Foot Mounting</p>  | <p>V3 Flange type 'B' according to IS : 2223 Flange Mounting shaft extension at flange end</p>           |
| <p>B7 Foot Mounting</p>  | <p>V5 Foot Mounting</p>  |
| <p>B8 Foot Mounting</p>  | <p>V6 Foot Mounting</p>  |
| <p>B14 Flange type 'C' according to IS : 2223 Flange Mounting shaft extension at flange end</p>          | <p>V18 Flange type 'C' according to IS : 2223 Flange Mounting shaft extension at flange end</p>          |
| <p>B35 Flange type 'B' according to IS : 2223 Foot Cum Flange Mounting shaft extension at flange end</p> | <p>V19 Flange type 'C' according to IS : 2223 Flange Mounting shaft extension at flange end</p>          |

# Dimension chart for foot mounted motor (B3) REF : IS 1231 - 2019



Frame 80 B3



Frame 132 B3 dbl end

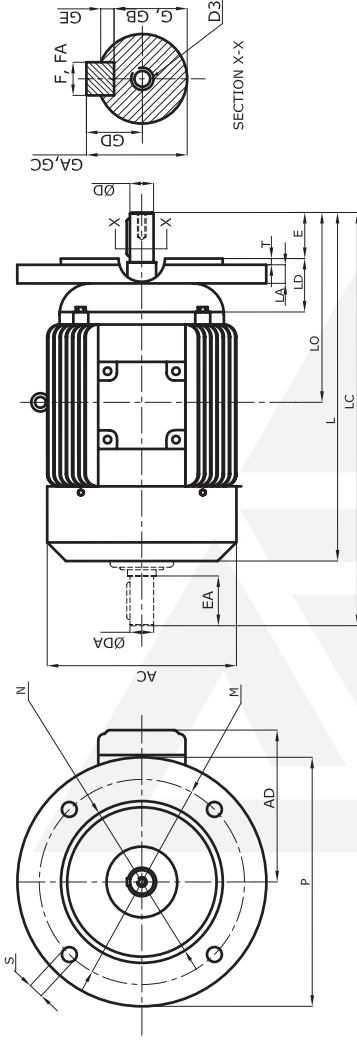


Frame 180 B3

EA - DOUBLE END ON REQUEST

| Size | A   | B   | C   | H   | K   | L   | LC  | LOI | AB  | AD  | BB  | D,DA | E,EA | F,FA | GA,GC | G,GB | D3  | GD | GE  |
|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|------|-------|------|-----|----|-----|
| 56   | 90  | 71  | 36  | 56  | 5.8 | 192 | 217 | -   | 117 | 90  | 90  | 9/6  | 20   | 3    | 10.2  | 7.2  | -   | -  | -   |
| 63   | 100 | 80  | 40  | 63  | 7   | 200 | 228 | 103 | 130 | -   | 110 | 11/6 | 23   | 4    | 12.5  | 8.5  | M4  | 4  | 2.5 |
| 71   | 112 | 90  | 45  | 71  | 7   | 235 | 270 | 120 | 142 | -   | 130 | 14/6 | 30   | 5    | 16    | 11   | M5  | 5  | 3   |
| 80   | 125 | 100 | 50  | 80  | 10  | 272 | 317 | 140 | 155 | 122 | 130 | 19/6 | 40   | 6    | 21.5  | 15.5 | M6  | 6  | 3.5 |
| 90S  | 140 | 100 | 56  | 90  | 10  | 290 | 345 | 168 | 170 | 133 | 155 | 24/6 | 50   | 8    | 27    | 20   | M8  | 7  | 4   |
| 90L  | 140 | 125 | 56  | 90  | 10  | 315 | 370 | 168 | 170 | 133 | 155 | 24/6 | 50   | 8    | 27    | 20   | M8  | 7  | 4   |
| 100L | 160 | 140 | 63  | 100 | 12  | 360 | 425 | 193 | 195 | 146 | 170 | 28/6 | 60   | 8    | 31    | 24   | M8  | 7  | 4   |
| 112M | 190 | 140 | 70  | 112 | 12  | 385 | 450 | 200 | 230 | 170 | 175 | 28/6 | 60   | 8    | 31    | 24   | M8  | 7  | 4   |
| 132S | 216 | 140 | 89  | 132 | 12  | 438 | 523 | 239 | 265 | 189 | 180 | 38/6 | 80   | 10   | 41    | 33   | M12 | 8  | 5   |
| 132M | 216 | 178 | 89  | 132 | 12  | 478 | 563 | 258 | 265 | 189 | 225 | 38/6 | 80   | 10   | 41    | 33   | M12 | 8  | 5   |
| 160M | 254 | 210 | 108 | 160 | 15  | 580 | 695 | 323 | 305 | 210 | 260 | 42/6 | 110  | 12   | 45    | 37   | M16 | 8  | 5   |
| 160L | 254 | 254 | 108 | 160 | 15  | 622 | 740 | 355 | 305 | 210 | 304 | 42/6 | 110  | 12   | 45    | 37   | M16 | 8  | 5   |
| 180M | 279 | 241 | 121 | 180 | 15  | 635 | 857 | 352 | 360 | 260 | 300 | 48/6 | 110  | 14   | 51.5  | 42.5 | M16 | 9  | 5.5 |
| 180L | 279 | 279 | 121 | 180 | 15  | 673 | 895 | 370 | 360 | 260 | 338 | 48/6 | 110  | 14   | 51.5  | 42.5 | M16 | 9  | 5.5 |
| 200L | 318 | 315 | 133 | 200 | 19  | 705 | 995 | 357 | 398 | 19  | 338 | 55m6 | 110  | 16   | 63    | 51   | M16 | 10 | 6   |

## Dimension chart for flange mounted motor (B5) Ref : IS 2223 - 1983



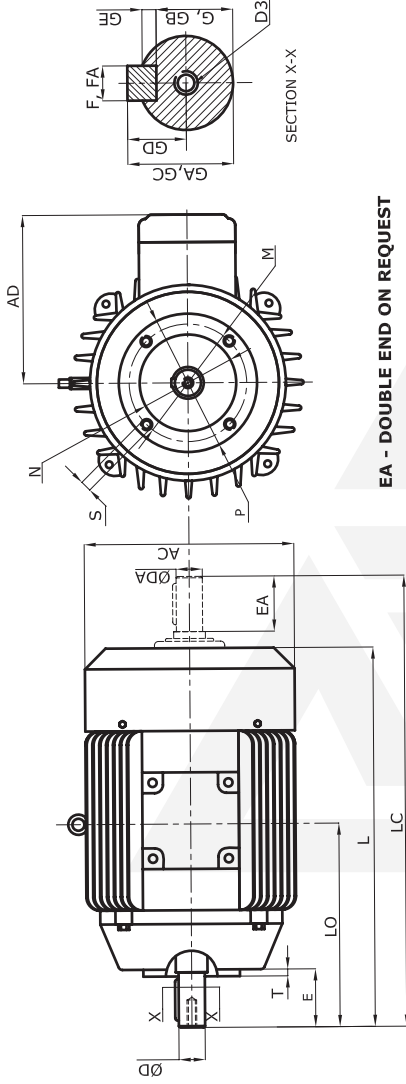
EA - DOUBLE END ON REQUEST

| Frame Size | Flange | +0.3<br>-M | N     | P<br>Max | S  | T<br>Max | LA | LD<br>Min | L   | LC  | LOI | AD  | AC  | D,DA | E,EA | F,FA | CA<br>GC | G<br>GB | D3  | GD | GE  |
|------------|--------|------------|-------|----------|----|----------|----|-----------|-----|-----|-----|-----|-----|------|------|------|----------|---------|-----|----|-----|
| 56         | F115B  | 115        | 95j6  | 140      | 10 | 3        | 9  | 16        | 190 | 210 | 95  | 95  | -   | 9j6  | 20   | 3    | 10.2     | 7.2     | -   | 3  | -   |
| 63         | F115B  | 115        | 95j6  | 140      | 10 | 3        | 9  | 16        | 200 | 228 | 103 | 102 | 124 | 11j6 | 23   | 4    | 12.5     | 8.5     | M4  | 4  | 2.5 |
| 71         | F130B  | 130        | 110j6 | 160      | 10 | 3.5      | 9  | 16        | 235 | 270 | 120 | 110 | 140 | 14j6 | 30   | 5    | 16       | 11      | M5  | 5  | 3   |
| 80         | F165B  | 165        | 130j6 | 200      | 12 | 3.5      | 10 | 20        | 272 | 317 | 140 | 122 | 156 | 19j6 | 40   | 6    | 21.5     | 15.5    | M6  | 6  | 3.5 |
| 90S        | F165B  | 165        | 130j6 | 200      | 12 | 3.5      | 10 | 20        | 290 | 345 | 156 | 133 | 176 | 24j6 | 50   | 8    | 27       | 20      | M8  | 7  | 4   |
| 90L        | F165B  | 165        | 130j6 | 200      | 12 | 3.5      | 10 | 20        | 315 | 370 | 168 | 133 | 176 | 24j6 | 50   | 8    | 27       | 20      | M8  | 7  | 4   |
| 100L       | F215B  | 215        | 180j6 | 250      | 15 | 4        | 11 | 24        | 360 | 425 | 193 | 146 | 212 | 28j6 | 60   | 8    | 31       | 24      | M8  | 7  | 4   |
| 112M       | F215B  | 215        | 180j6 | 250      | 15 | 4        | 11 | 24        | 385 | 450 | 200 | 170 | 234 | 28j6 | 60   | 8    | 31       | 24      | M8  | 7  | 4   |
| 132S       | F265B  | 265        | 230j6 | 300      | 15 | 4        | 12 | 24        | 438 | 523 | 239 | 189 | 265 | 38k6 | 80   | 10   | 41       | 33      | M12 | 8  | 5   |
| 132M       | F265B  | 265        | 230j6 | 300      | 15 | 4        | 12 | 24        | 478 | 563 | 258 | 189 | 265 | 38k6 | 80   | 10   | 41       | 33      | M12 | 8  | 5   |
| 160M       | F300B  | 300        | 250j6 | 350      | 19 | 5        | 13 | 30        | 580 | 695 | 323 | 210 | 305 | 42k6 | 110  | 12   | 45       | 37      | M16 | 8  | 5   |
| 160L       | F300B  | 300        | 250j6 | 350      | 19 | 5        | 13 | 30        | 622 | 740 | 355 | 210 | 305 | 42k6 | 110  | 12   | 45       | 37      | M16 | 8  | 5   |
| 180M       | F300B  | 300        | 250j6 | 350      | 19 | 5        | 13 | 52        | 582 | 708 | 323 | 260 | 372 | 48k6 | 110  | 14   | 51.5     | 42.5    | M16 | 9  | 5   |
| 180L       | F300B  | 300        | 250j6 | 350      | 19 | 5        | 13 | 52        | 626 | 752 | 360 | 260 | 372 | 48k6 | 110  | 14   | 51.5     | 42.5    | M16 | 9  | 5   |
| 200L       | F350B  | 350        | 300j6 | 400      | 19 | 5        | 15 | 65        | 705 | 995 | 357 | 398 | 19  | 55m6 | 100  | 16   | 63       | 51      | M16 | 10 | 6   |



Frame 80 B5

## Dimension chart for face mounted motor (B14) Ref : IS 2223 - 1983



Frame 71 B14

EA - DOUBLE END ON REQUEST



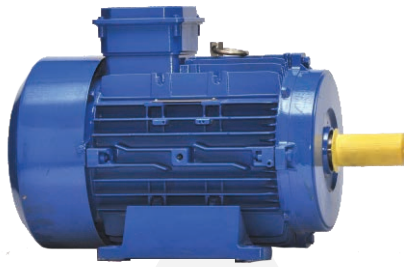
Frame 112 B5

| Size | Flange | M   | N     | P<br>Max | S   | T<br>Max | L   | LC  | LOI | AD  | AC  | D,<br>DA | E,<br>DA | F,<br>FA | GA<br>GC | G<br>GB | GD | GE  |
|------|--------|-----|-------|----------|-----|----------|-----|-----|-----|-----|-----|----------|----------|----------|----------|---------|----|-----|
| 63   | F75C   | 75  | 60j6  | 90       | M5  | 2.5      | 200 | 228 | 103 | 102 | 124 | 11j6     | 23       | 4        | 12.5     | 8.5     | 4  | 2.5 |
| 71   | F85C   | 85  | 70j6  | 105      | M6  | 2.5      | 235 | 270 | 120 | 110 | 140 | 14j6     | 30       | 5        | 16       | 11      | 5  | 3   |
| 80   | F100C  | 100 | 80j6  | 120      | M6  | 3.0      | 272 | 317 | 140 | 122 | 156 | 19j6     | 40       | 6        | 21.5     | 15.5    | 6  | 3.5 |
| 90S  | F115C  | 115 | 95j6  | 140      | M8  | 3.0      | 290 | 345 | 156 | 133 | 176 | 24j6     | 50       | 8        | 27       | 20      | 7  | 4   |
| 90L  | F115C  | 115 | 95j6  | 140      | M8  | 3.0      | 315 | 370 | 168 | 133 | 176 | 24j6     | 50       | 8        | 27       | 20      | 7  | 4   |
| 100L | F130C  | 130 | 110j6 | 160      | M8  | 3.5      | 360 | 425 | 193 | 146 | 212 | 28j6     | 60       | 8        | 31       | 24      | 7  | 4   |
| 112M | F130C  | 130 | 110j6 | 160      | M8  | 3.5      | 385 | 450 | 200 | 170 | 234 | 28j6     | 60       | 8        | 31       | 24      | 7  | 4   |
| 132S | F165C  | 165 | 165   | 200      | M12 | 3.5      | 438 | 523 | 239 | 182 | 262 | 38k6     | 80       | 10       | 41       | 33      | 8  | 5   |
| 132M | F165C  | 165 | 165   | 200      | M12 | 3.5      | 488 | 575 | 258 | 182 | 262 | 38k6     | 80       | 10       | 41       | 33      | 8  | 5   |

## Two Speed Single Winding Motors



Frame 80 B5



Frame 132 B3



| RPM  | 1500 /3000  |             | 750 /1500   |           | 1000/1500  |           | 750 /1000  |            |
|------|-------------|-------------|-------------|-----------|------------|-----------|------------|------------|
|      | K.W         | H.P         | K.W         | H.P       | K.W        | H.P       | K.W        | H.P        |
| 63   | 0.09 / 0.12 | 0.125/0.16  | -           | -         | -          | -         | -          | -          |
| 71   | 0.25/ 0.25  | 0.33 / 0.33 | -           | -         | -          | -         | -          | -          |
| 71   | 0.3 / 0.4   | 0.4 / 0.53  | 0.075/ 0.11 | 0.10/0.15 | 0.12/ 0.15 | 0.16/ 0.2 |            |            |
| 80   | 0.37/ 0.55  | 0.5/ 0.75   | 0.09/0.12   | 0.12/0.16 | -          | -         | -          | -          |
| 80   | 0.45/0.6    | 0.6/0.8     | 0.18/ 0.25  | 0.25/0.33 | 0.3/0.45   | 0.4 /0.6  | 0.09/0.12  | 0.125/0.16 |
| 90S  | 0.75 /1.1   | 1.0/1.5     | 0.25/0.37   | 0.33/ 0.5 | 0.45/0.67  | 0.6 /0.9  | 0.18 /0.25 | 0.25/0.33  |
| 90L  | 1.05/1.65   | 1.4 /2.2    | 0.37 /0.55  | 0.5/ 0.75 | 0.75/ 1.1  | 1.0/1.1   | 0.25 /0.37 | 0.33/ 0.5  |
| 100L | 1.5 / 1.5   | 2.0/ 2.0    | 0.55/0.93   | 0.75/1.25 |            |           |            |            |
| 100L | 1.65/ 2.2   | 2.2/3.0     | 0.75 /1.1   | 1.0/1.5   | 1.05/ 1.5  | 1.4/ 2.0  | 0.55/0.75  | 0.75/1.0   |
| 112M | 2.2/2.2     | 3.0/3.0     |             |           |            |           |            |            |
| 112M | 3.0/4.1     | 4.0/5.5     | 1.1/1.8     | 1.5/2.4   | 1.65/ 2.2  | 2.2/ 3.0  | 0.75/0.9   | 1.0/1.2    |
| 132S | 3.7/3.7     | 5.0/5.0     | 1.8/2.7     | 2.4/3.6   |            |           |            |            |
| 132S | 4.0/5.1     | 5.33/6.8    |             |           | 2.7/3.9    | 3.6/5.2   | 1.1/1.5    | 1.5/2.0    |
| 132M | 5.5/5.5     | 7.5/7.5     | 2.2/3.7     | 3.0/ 5.0  |            |           |            |            |
| 132M | 6.0/ 7.5    | 8.0/10.0    | 3.0/3.9     | 4.0/5.2   | 4.2/5.7    | 5.6/7.6   | 1.8/2.4    | 2.4/3.2    |
| 160M | 9.3/11      | 12.5/15     | -           | -         | -          | -         | -          | -          |
| 160L | 11/15       | 15/20       | -           | -         | -          | -         | -          | -          |

## IE 2 – 2poles

### Electrical performance values of Line Operated Three Phase AC Motors as per IS 12615 : 2018 – 2pole – IE 2 efficiency class

| Sl NO | Kw   | Frame Size | Duty | Degree of protection | Clash of Insulation | Type of connection | No. of phase | voltage v | Full Load Current (A) | Frequency | Nominal Efficiency (%) | Efficiency Class | Full Load Speed (rpm) |
|-------|------|------------|------|----------------------|---------------------|--------------------|--------------|-----------|-----------------------|-----------|------------------------|------------------|-----------------------|
| 1     | 0.37 | 71         | S1   | IP 55/ IP44          | F                   | STAR               | 3            | 415       | 1.2                   | 50        | 69.5                   | IE 2             | 2750                  |
| 2     | 0.55 | 71         | S1   | IP 55/ IP44          | F                   | STAR               | 3            | 415       | 1.6                   | 50        | 74.1                   | IE 2             | 2760                  |
| 3     | 0.75 | 80         | S1   | IP 55/ IP44          | F                   | STAR               | 3            | 415       | 2                     | 50        | 77.4                   | IE 2             | 2780                  |
| 4     | 1.1  | 80         | S1   | IP 55/ IP44          | F                   | STAR               | 3            | 415       | 2.8                   | 50        | 79.6                   | IE 2             | 2790                  |
| 5     | 1.5  | 90         | S1   | IP 55/ IP44          | F                   | STAR               | 3            | 415       | 3.7                   | 50        | 81.3                   | IE 2             | 2800                  |
| 6     | 2.2  | 90         | S1   | IP 55/ IP44          | F                   | STAR               | 3            | 415       | 5                     | 50        | 83.2                   | IE 2             | 2810                  |
| 7     | 3.7  | 100 L      | S1   | IP 55/ IP44          | F                   | STAR-DELTA         | 3            | 415       | 8                     | 50        | 85.5                   | IE 2             | 2820                  |
| 8     | 3.7  | 112 M      | S1   | IP 55/ IP44          | F                   | STAR-DELTA         | 3            | 415       | 8                     | 50        | 85.5                   | IE 2             | 2820                  |
| 9     | 5.5  | 132S       | S1   | IP 55/ IP44          | F                   | STAR-DELTA         | 3            | 415       | 11                    | 50        | 87                     | IE 2             | 2830                  |
| 10    | 7.5  | 132 S      | S1   | IP 55/ IP44          | F                   | STAR-DELTA         | 3            | 415       | 15                    | 50        | 88.1                   | IE 2             | 2840                  |
| 11    | 11   | 160M       | S1   | IP 55/ IP44          | F                   | STAR-DELTA         | 3            | 415       | 21.5                  | 50        | 89.4                   | IE 2             | 2860                  |
| 12    | 15   | 160 M      | S1   | IP 55/ IP44          | F                   | STAR-DELTA         | 3            | 415       | 29                    | 50        | 90.3                   | IE 2             | 2870                  |
| 13    | 18.5 | 160 L      | S1   | IP 55/ IP44          | F                   | STAR-DELTA         | 3            | 415       | 35                    | 50        | 90.9                   | IE 2             | 2880                  |
| 14    | 22   | 180 L      | S1   | IP 55/ IP44          | F                   | STAR-DELTA         | 3            | 415       | 41.5                  | 50        | 91.3                   | IE 2             | 2890                  |



**IE 2 – 4 poles**

**Electrical performance values of Line Operated Three Phase AC Motors as per IS 12615 : 2018 – 4 poles – IE 2 efficiency class**

| Sl NO | Kw   | Frame Size | Duty | Degree of protection | Class of Insulation | Type of connection | No. of phase | voltage v | Full Load Current (A) | Frequency | Nominal Efficiency (%) | Efficiency Class | Full Load Speed (rpm) |
|-------|------|------------|------|----------------------|---------------------|--------------------|--------------|-----------|-----------------------|-----------|------------------------|------------------|-----------------------|
| 1     | 0.25 | 71         | S1   | IP 55/ IP44          | F                   | STAR               | 3            | 415       | 1.05                  | 50        | 68.5                   | IE 2             | 1330                  |
| 2     | 0.25 | 100        | S1   | IP 55/ IP44          | F                   | STAR               | 3            | 415       | 1.05                  | 50        | 68.5                   | IE 2             | 1330                  |
| 3     | 0.37 | 71         | S1   | IP 55/ IP44          | F                   | STAR               | 3            | 415       | 1.4                   | 50        | 72.7                   | IE 2             | 1330                  |
| 4     | 0.55 | 71         | S1   | IP 55/ IP44          | F                   | STAR               | 3            | 415       | 1.7                   | 50        | 77.1                   | IE 2             | 1340                  |
| 5     | 0.55 | 80         | S1   | IP 55/ IP44          | F                   | STAR               | 3            | 415       | 1.7                   | 50        | 77.1                   | IE 2             | 1340                  |
| 6     | 0.75 | 80         | S1   | IP 55/ IP44          | F                   | STAR               | 3            | 415       | 2.2                   | 50        | 79.6                   | IE 2             | 1360                  |
| 7     | 1.1  | 90         | S1   | IP 55/ IP44          | F                   | STAR               | 3            | 415       | 2.9                   | 50        | 81.4                   | IE 2             | 1370                  |
| 8     | 2.2  | 100L       | S1   | IP 55/ IP44          | F                   | STAR               | 3            | 415       | 5.1                   | 50        | 84.3                   | IE 2             | 1390                  |
| 9     | 3.7  | 112        | S1   | IP 55/ IP44          | F                   | STAR- DELTA        | 3            | 415       | 8.1                   | 50        | 86.3                   | IE 2             | 1410                  |
| 10    | 5.5  | 132        | S1   | IP 55/ IP44          | F                   | STAR-DELTA         | 3            | 415       | 12                    | 50        | 87.7                   | IE 2             | 1420                  |
| 11    | 7.5  | 132        | S1   | IP 55/ IP44          | F                   | STAR-DELTA         | 3            | 415       | 15.4                  | 50        | 88.7                   | IE 2             | 1430                  |
| 12    | 11   | 160        | S1   | IP 55/ IP44          | F                   | STAR-DELTA         | 3            | 415       | 22                    | 50        | 89.8                   | IE 2             | 1440                  |
| 13    | 15   | 160        | S1   | IP 55/ IP44          | F                   | STAR-DELTA         | 3            | 415       | 30                    | 50        | 90.6                   | IE 2             | 1440                  |
| 14    | 18.5 | 180        | S1   | IP 55/ IP44          | F                   | STAR-DELTA         | 3            | 415       | 36                    | 50        | 91.2                   | IE 2             | 1440                  |
| 15    | 22   | 180        | S1   | IP 55/ IP44          | F                   | STAR-DELTA         | 3            | 415       | 43                    | 50        | 91.6                   | IE 2             | 1440                  |

**IE 2 – 6poles**

**Electrical performance values of Line Operated Three Phase AC Motors as per IS 12615 : 2018 – 6 poles – IE 2 efficiency class**

| Sl NO | Kw   | Frame Size | Duty | Degree of protection | Class of Insulation | Type of connection | No. of phase | voltage v | Full Load Current (A) | Frequency | Nominal Efficiency (%) | Efficiency Class | Full Load Speed (rpm) |
|-------|------|------------|------|----------------------|---------------------|--------------------|--------------|-----------|-----------------------|-----------|------------------------|------------------|-----------------------|
| 1     | 0.18 | 71         | S1   | IP 55/ IP44          | F                   | STAR               | 3            | 415       | 0.92                  | 50        | 56.6                   | IE 2             | 860                   |
| 2     | 0.25 | 71         | S1   | IP 55/ IP44          | F                   | STAR               | 3            | 415       | 1.1                   | 50        | 61.6                   | IE 2             | 860                   |
| 3     | 0.37 | 80         | S1   | IP 55/ IP44          | F                   | STAR               | 3            | 415       | 1.4                   | 50        | 67.6                   | IE 2             | 870                   |
| 4     | 0.55 | 80         | S1   | IP 55/ IP44          | F                   | STAR               | 3            | 415       | 1.9                   | 50        | 73.1                   | IE 2             | 870                   |
| 5     | 0.75 | 90         | S1   | IP 55/ IP44          | F                   | STAR               | 3            | 415       | 2.3                   | 50        | 75.9                   | IE 2             | 890                   |
| 6     | 1.1  | 90         | S1   | IP 55/ IP44          | F                   | STAR               | 3            | 415       | 3.4                   | 50        | 78.1                   | IE 2             | 900                   |
| 7     | 1.5  | 100L       | S1   | IP 55/ IP44          | F                   | STAR               | 3            | 415       | 4                     | 50        | 79.8                   | IE 2             | 900                   |
| 8     | 2.2  | 112 M      | S1   | IP 55/ IP44          | F                   | STAR- DELTA        | 3            | 415       | 5.7                   | 50        | 81.8                   | IE 2             | 910                   |
| 9     | 3.7  | 132 S      | S1   | IP 55/ IP44          | F                   | STAR- DELTA        | 3            | 415       | 8.8                   | 50        | 84.3                   | IE 2             | 920                   |
| 10    | 5.5  | 132        | S1   | IP 55/ IP44          | F                   | STAR- DELTA        | 3            | 415       | 12.9                  | 50        | 86                     | IE 2             | 920                   |
| 11    | 7.5  | 160        | S1   | IP 55/ IP44          | F                   | STAR- DELTA        | 3            | 415       | 16.7                  | 50        | 87.2                   | IE 2             | 930                   |
| 12    | 11   | 160        | S1   | IP 55/ IP44          | F                   | STAR- DELTA        | 3            | 415       | 23.3                  | 50        | 88.7                   | IE 2             | 935                   |
| 13    | 15   | 180        | S1   | IP 55/ IP44          | F                   | STAR- DELTA        | 3            | 415       | 32                    | 50        | 89.7                   | IE 2             | 940                   |
| 14    | 18.5 | 200        | S1   | IP 55/ IP44          | F                   | STAR- DELTA        | 3            | 415       | 37.5                  | 50        | 90.4                   | IE 2             | 940                   |

**IE 3 – 2poles**

**Electrical performance values of Line Operated Three Phase AC Motors as per IS 12615 : 2018 – 4 poles – IE 2 efficiency class**

| Sl NO | Kw   | Frame Size | Duty | Degree of protection | Clash of Insulation | Type of connection | No. of phase | voltage v | Full Load Current (A) | Frequency | Nominal Efficiency (%) | Efficiency Class | Full Load Speed (rpm) |
|-------|------|------------|------|----------------------|---------------------|--------------------|--------------|-----------|-----------------------|-----------|------------------------|------------------|-----------------------|
| 1     | 0.37 | 71         | S1   | IP 55/ IP44          | F                   | STAR               | 3            | 415       | 1.2                   | 50        | 73.8                   | IE 3             | 2750                  |
| 2     | 0.55 | 71         | S1   | IP 55/ IP44          | F                   | STAR               | 3            | 415       | 1.6                   | 50        | 77.8                   | IE 3             | 2760                  |
| 3     | 0.75 | 80         | S1   | IP 55/ IP44          | F                   | STAR               | 3            | 415       | 2                     | 50        | 80.7                   | IE 3             | 2780                  |
| 4     | 1.1  | 80         | S1   | IP 55/ IP44          | F                   | STAR               | 3            | 415       | 2.8                   | 50        | 82.7                   | IE 3             | 2790                  |
| 5     | 1.5  | 90         | S1   | IP 55/ IP44          | F                   | STAR               | 3            | 415       | 3.7                   | 50        | 84.2                   | IE 3             | 2800                  |
| 6     | 1.8  | 100        | S1   | IP 55/ IP44          | F                   | STAR               | 3            | 415       | 3.8                   | 50        | 85                     | IE 3             | 2810                  |
| 7     | 2.2  | 90         | S1   | IP 55/ IP44          | F                   | STAR               | 3            | 415       | 5                     | 50        | 85.9                   | IE 3             | 2810                  |
| 8     | 2.2  | 100 L      | S1   | IP 55/ IP44          | F                   | STAR               | 3            | 415       | 5                     | 50        | 85.9                   | IE 3             | 2810                  |
| 9     | 3.7  | 100 L      | S1   | IP 55/ IP44          | F                   | STAR-DELTA         | 3            | 415       | 8                     | 50        | 87.8                   | IE 3             | 2820                  |
| 10    | 3.7  | 112 M      | S1   | IP 55/ IP44          | F                   | STAR-DELTA         | 3            | 415       | 8                     | 50        | 87.8                   | IE 3             | 2820                  |
| 11    | 5.5  | 132S       | S1   | IP 55/ IP44          | F                   | STAR-DELTA         | 3            | 415       | 11                    | 50        | 89.2                   | IE 3             | 2830                  |
| 12    | 7.5  | 132 S      | S1   | IP 55/ IP44          | F                   | STAR-DELTA         | 3            | 415       | 15                    | 50        | 90.1                   | IE 3             | 2840                  |
| 13    | 11   | 160M       | S1   | IP 55/ IP44          | F                   | STAR-DELTA         | 3            | 415       | 21.2                  | 50        | 91.2                   | IE 3             | 2860                  |
| 14    | 13   | 160M       | S1   | IP 55/ IP44          | F                   | STAR-DELTA         | 3            | 415       | 25.054                | 50        | 91.5                   | IE 3             | 2865                  |
| 15    | 15   | 160 M      | S1   | IP 55/ IP44          | F                   | STAR-DELTA         | 3            | 415       | 29                    | 50        | 91.9                   | IE 3             | 2870                  |
| 16    | 18.5 | 160 L      | S1   | IP 55/ IP44          | F                   | STAR-DELTA         | 3            | 415       | 35                    | 50        | 92.4                   | IE 3             | 2880                  |
| 17    | 22   | 180 L      | S1   | IP 55/ IP44          | F                   | STAR-DELTA         | 3            | 415       | 41.5                  | 50        | 92.7                   | IE 3             | 2890                  |

## IE3 - 4 POLES

### Electrical performance values of Line Operated Three Phase AC Motors as per IS 12615 : 2018 - 4 poles IE 3 efficiency class

| Sl NO | Kw   | Frame Size | Duty | Degree of protection | Clash of Insulation | Type of connection | No. of phase | voltage v | Full Load Current (A) | Frequency | Nominal Efficiency (%) | Efficiency Class | No of poles | Full Load Speed (rpm) |
|-------|------|------------|------|----------------------|---------------------|--------------------|--------------|-----------|-----------------------|-----------|------------------------|------------------|-------------|-----------------------|
| 1     | 0.37 | 71         | S1   | IP 55/ IP44          | F                   | STAR               | 415          | 415       | 1.4                   | 50        | 77.3                   | IE 3             | 4           | 1330                  |
| 2     | 0.55 | 80         | S1   | IP 55/ IP44          | F                   | STAR               | 415          | 415       | 1.7                   | 50        | 80.8                   | IE 3             | 4           | 1340                  |
| 3     | 0.75 | 80         | S1   | IP 55/ IP44          | F                   | STAR               | 415          | 415       | 2.2                   | 50        | 82.5                   | IE 3             | 4           | 1360                  |
| 4     | 1.1  | 90         | S1   | IP 55/ IP44          | F                   | STAR               | 415          | 415       | 2.9                   | 50        | 84.1                   | IE 3             | 4           | 1370                  |
| 5     | 2.2  | 100L       | S1   | IP 55/ IP44          | F                   | STAR               | 415          | 415       | 5.1                   | 50        | 86.7                   | IE 3             | 4           | 1390                  |
| 6     | 3.7  | 112        | S1   | IP 55/ IP44          | F                   | STAR- DELTA        | 415          | 415       | 8.1                   | 50        | 88.4                   | IE 3             | 4           | 1410                  |
| 7     | 5.5  | 132        | S1   | IP 55/ IP44          | F                   | STAR-DELTA         | 415          | 415       | 12                    | 50        | 89.6                   | IE 3             | 4           | 1420                  |
| 8     | 7.5  | 132        | S1   | IP 55/ IP44          | F                   | STAR-DELTA         | 415          | 415       | 15.4                  | 50        | 90.4                   | IE 3             | 4           | 1430                  |
| 9     | 11   | 160        | S1   | IP 55/ IP44          | F                   | STAR-DELTA         | 415          | 415       | 22                    | 50        | 91.4                   | IE 3             | 4           | 1440                  |
| 10    | 15   | 160        | S1   | IP 55/ IP44          | F                   | STAR-DELTA         | 415          | 415       | 30                    | 50        | 92.1                   | IE 3             | 4           | 1440                  |
| 11    | 18.5 | 180        | S1   | IP 55/ IP44          | F                   | STAR-DELTA         | 415          | 415       | 36                    | 50        | 92.6                   | IE 3             | 4           | 1440                  |
| 12    | 22   | 180        | S1   | IP 55/ IP44          | F                   | STAR-DELTA         | 415          | 415       | 43                    | 50        | 93                     | IE 3             | 4           | 1440                  |

## IE 3 – 6POLES

### Electrical performance values of Line Operated Three Phase AC Motors as per IS 12615 : 2018 – 6 poles IE 3 efficiency class

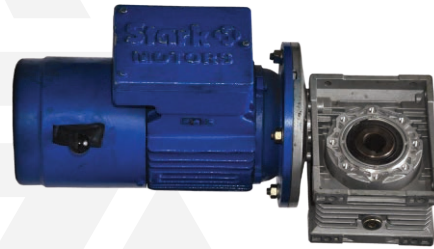
| Sl NO | Kw   | Frame Size | Duty | Degree of protection | Clash of Insulation | Type of connection | No. of phase | voltage v | Full Load Current (A) | Frequency | Nominal Efficiency (%) | Efficiency Class | No of poles | Full Load Speed (rpm) |
|-------|------|------------|------|----------------------|---------------------|--------------------|--------------|-----------|-----------------------|-----------|------------------------|------------------|-------------|-----------------------|
| 1     | 0.37 | 80         | S1   | IP 55/IP44           | F                   | STAR               | 3            | 415       | 1.4                   | 50        | 73.5                   | IE 3             | 6           | 870                   |
| 2     | 0.55 | 80         | S1   | IP 55/IP44           | F                   | STAR               | 3            | 415       | 1.9                   | 50        | 77.2                   | IE 3             | 6           | 870                   |
| 3     | 0.75 | 90         | S1   | IP 55/IP44           | F                   | STAR               | 3            | 415       | 2.3                   | 50        | 78.9                   | IE 3             | 6           | 890                   |
| 4     | 1.1  | 90         | S1   | IP 55/IP44           | F                   | STAR               | 3            | 415       | 3.4                   | 50        | 81                     | IE 3             | 6           | 900                   |
| 5     | 1.5  | 100L       | S1   | IP 55/IP44           | F                   | STAR               | 3            | 415       | 4                     | 50        | 82.5                   | IE 3             | 6           | 900                   |
| 6     | 2.2  | 112 M      | S1   | IP 55/IP44           | F                   | STAR- DELTA        | 3            | 415       | 5.7                   | 50        | 84.3                   | IE 3             | 6           | 910                   |
| 7     | 3.7  | 132 S      | S1   | IP 55/IP44           | F                   | STAR- DELTA        | 3            | 415       | 8.8                   | 50        | 86.5                   | IE 3             | 6           | 920                   |
| 8     | 5.5  | 132        | S1   | IP 55/IP44           | F                   | STAR- DELTA        | 3            | 415       | 12.9                  | 50        | 88                     | IE 3             | 6           | 920                   |
| 9     | 7.5  | 160        | S1   | IP 55/IP44           | F                   | STAR- DELTA        | 3            | 415       | 16.7                  | 50        | 89.1                   | IE 3             | 6           | 930                   |
| 10    | 11   | 160        | S1   | IP 55/IP44           | F                   | STAR- DELTA        | 3            | 415       | 23.3                  | 50        | 90.3                   | IE 3             | 6           | 935                   |
| 11    | 15   | 180        | S1   | IP 55/IP44           | F                   | STAR- DELTA        | 3            | 415       | 32                    | 50        | 91.2                   | IE 3             | 6           | 940                   |
| 12    | 18.5 | 200        | S1   | IP 55/IP44           | F                   | STAR- DELTA        | 3            | 415       | 37.5                  | 50        | 91.7                   | IE 3             | 6           | 940                   |

## Inverter duty motors



### Features

- Winding design takes care of excess heat generated
- Suitable for Speed up to 9000 rpm
- Forced cooling on request
- Motors are with a S.F. 1.15
- Rotors balanced with an accuracy of 1 gm
- All drives available on request with complete panel enclosures



### Synchronous Speed 3000 RPM

| Frame Size | Mains Output 50 Hz in kW | Variable Torque 50-25 HZ in kW | Const Torque 50-25 HZ in kW | Const Torque 50-16.7 Hz in kW | Const Torque 50-10 HZ in kW | kW   |
|------------|--------------------------|--------------------------------|-----------------------------|-------------------------------|-----------------------------|------|
| 80         | 0.75                     | 0.8                            | 0.8                         | 0.7                           | 0.6                         | 0.75 |
| 90s        | 1.1                      | 1.2                            | 1.1                         | 1.0                           | 0.9                         | 1.1  |
| 90L        | 1.5                      | 1.6                            | 1.6                         | 1.4                           | 1.2                         | 1.5  |
| 100L       | 2.2                      | 2.4                            | 2.3                         | 2.1                           | 1.8                         | 2.0  |
| 112M       | 3.7                      | 3.0                            | 3.8                         | 3.0                           | 2.8                         | 3.7  |
| 132S       | 5.5                      | 5.9                            | 5.7                         | 5.1                           | 4.6                         | 5.5  |
| 132M       | 7.5                      | 8.1                            | 7.8                         | 7.0                           | 6.2                         | 7.5  |
| 160M       | 11.0                     | 11.0                           | 10.7                        | 9.6                           | 8.5                         | 11.0 |
| 160L       | 15.0                     | 15.0                           | 14.6                        | 13.1                          | 11.6                        | 11.0 |

## Synchronous Speed 1500 RPM

| Frame Size | Mains Output 50 Hz in kW | Variable Torque 50-25 HZ in kW | Const Torque 50-25 HZ in kW | Const Torque 50-16.7 Hz in kW | Const Torque 50-10 HZ in kW | kW   |
|------------|--------------------------|--------------------------------|-----------------------------|-------------------------------|-----------------------------|------|
| 80         | 0.75                     | 0.8                            | 0.8                         | 0.7                           | 0.6                         | 0.75 |
| 90s        | 1.1                      | 1.2                            | 1.1                         | 1.0                           | 0.9                         | 1.1  |
| 90L        | 1.5                      | 1.6                            | 1.5                         | 1.4                           | 1.2                         | 1.5  |
| 100L       | 2.2                      | 2.4                            | 2.2                         | 2.0                           | 1.3                         | 2.2  |
| 112M       | 3.7                      | 3.5                            | 3.0                         | 3.0                           | 2.8                         | 3.7  |
| 132S       | 5.5                      | 5.9                            | 5.5                         | 5.0                           | 4.4                         | 5.5  |
| 132M       | 7.5                      | 8.0                            | 7.5                         | 6.8                           | 6.0                         | 7.5  |
| 160M       | 11.0                     | 11.0                           | 10.7                        | 9.6                           | 8.5                         | 11.0 |
| 160L       | 15.0                     | 15.0                           | 14.6                        | 13.1                          | 11.6                        | 15.0 |

### Motors for VFD drives

We offer the entire range of motors to run with vfd

- ▶ Constant torque applications like crane, hoist, compressors, auto cones, winding m/c, printing m/c etc
- ▶ Variable torque applications like centrifugal pump , fan, blowers etc
- ▶ Entire textile applications.
- ▶ Motors for constant torque application suitable for speed range of 1:10, 1:5, 1:2, etc can be provided. Depending upon the speed range motors can be offered with forced cooling (IC 416). Forced cooling arrangement is available from 71 frame onwards. ,
- ▶ Insulated Bearing on request
- ▶ Encoder mounting on NDE on request

## Brake Motors



- ▶ Factory fitted Motors with Temporiti / Mod-E-Tech 14.458 and AC brake, AC 1000, other brand of brakes on request
- ▶ Brake Motors are available with the braking torque of 4NM to 800 NM (Size 6 - Size 40)
- ▶ Other Brand of Brakes on customer request

### Features

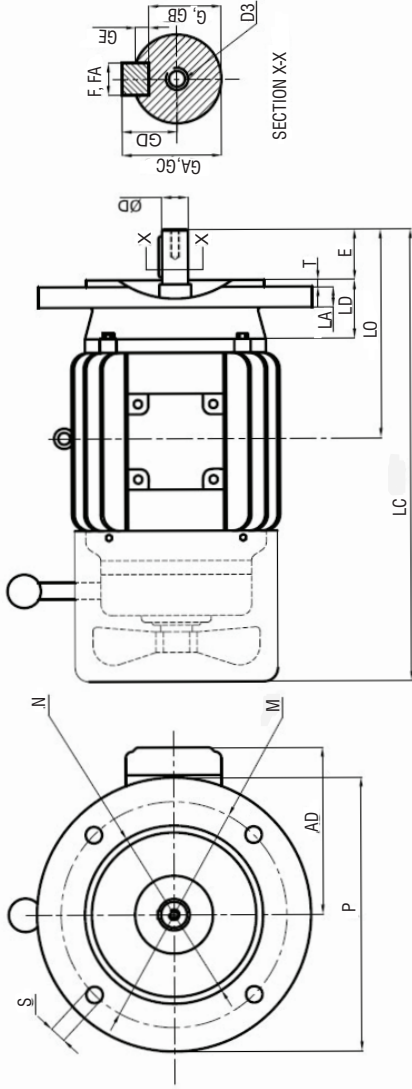
- ▶ Low rotor Inertia
- ▶ Torque in 4 to 800 NM
- ▶ Manual Release
- ▶ Dust Protecting Seal
- ▶ Compact Robust Unit
- ▶ Simple Installation
- ▶ Adjustable Brake Torque
- ▶ Optimized Torque Steps
- ▶ Simple Wear Adjustment
- ▶ High Operating Frequency & Reliability
- ▶ Fast Switching Time
- ▶ Low Power Requirement
- ▶ Simple Construction

### Features

- ▶ Stationery Field (No Slip Rings)
- ▶ Two Friction Surfaces
- ▶ Consistent Operating Characteristics
- ▶ All Metal Parts Protected From Rust
- ▶ Raw Materials To DIN Standards
- ▶ Coil With Class F Insulation
- ▶ No Restrictions On Mounting Positions
- ▶ Residual - Free

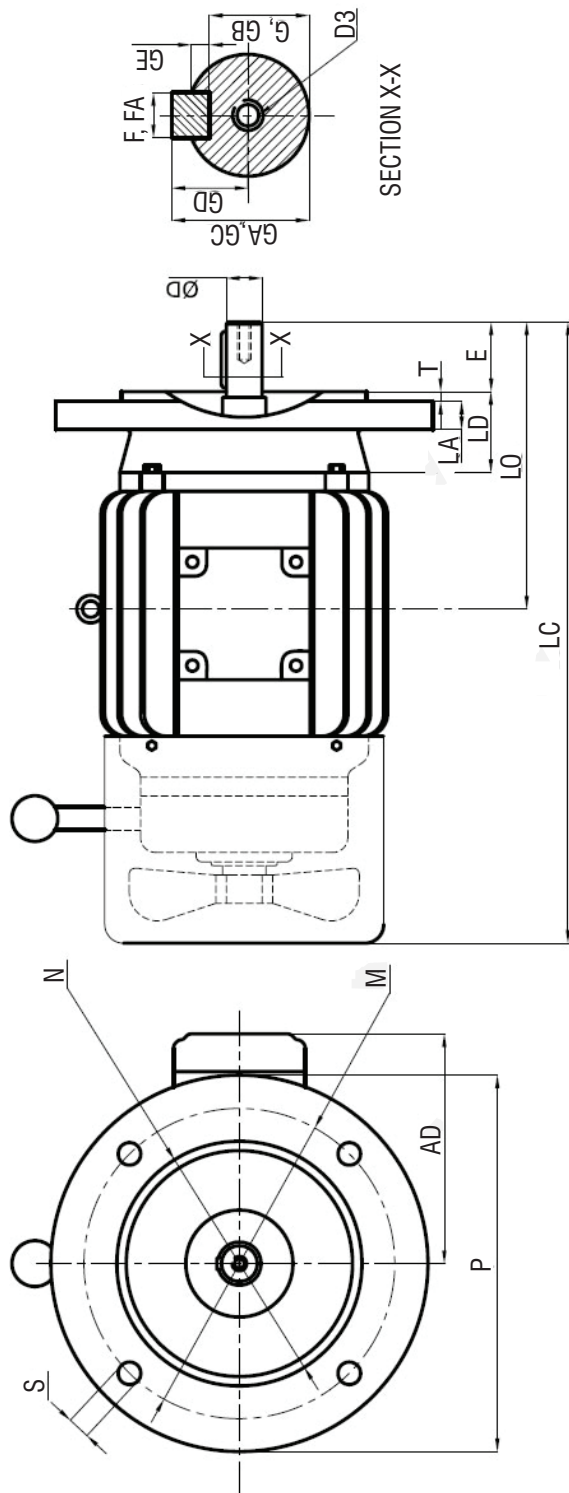


# Dimension Chart for flange mounted AC Brake Motors Type 1000



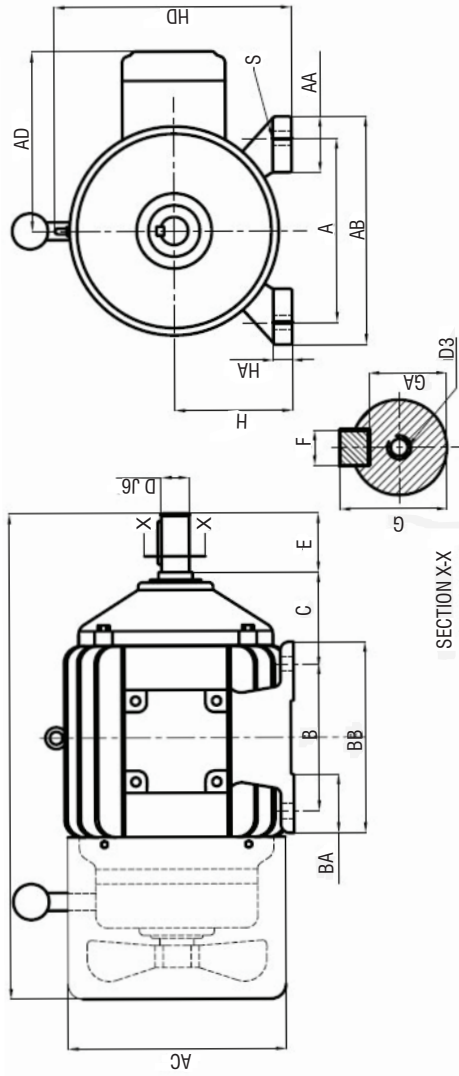
| Pump Size | Flange | +0.3<br>-M | N     | P<br>Max | S  | T<br>Max | LA | LD<br>Min | L   | LC  | LO  | AD  | AC  | D,<br>DA | E,<br>DA | F,<br>FA | GA<br>GC | G<br>GB | D3  | GD | GE  | L1<br>Max |
|-----------|--------|------------|-------|----------|----|----------|----|-----------|-----|-----|-----|-----|-----|----------|----------|----------|----------|---------|-----|----|-----|-----------|
| 63        | F115B  | 115        | 95/6  | 140      | 10 | 3        | 9  | 16        | 200 | 228 | 103 | 102 | 124 | 111/6    | 23       | 4        | 12.5     | 8.5     | M4  | 4  | 2.5 | 282       |
| 71        | F130B  | 130        | 110/6 | 160      | 10 | 3.5      | 9  | 16        | 235 | 270 | 120 | 110 | 140 | 141/6    | 30       | 5        | 16       | 11      | M5  | 5  | 3   | 312       |
| 80        | F165B  | 165        | 130/6 | 200      | 12 | 3.5      | 10 | 20        | 272 | 317 | 140 | 122 | 156 | 191/6    | 40       | 6        | 21.5     | 15.5    | M6  | 6  | 3.5 | 358       |
| 90S       | F165B  | 165        | 130/6 | 200      | 12 | 3.5      | 10 | 20        | 290 | 345 | 156 | 133 | 176 | 241/6    | 50       | 8        | 27       | 20      | M8  | 7  | 4   | 403       |
| 90L       | F115B  | 165        | 130/6 | 200      | 12 | 3.5      | 10 | 20        | 315 | 370 | 168 | 133 | 176 | 241/6    | 50       | 8        | 27       | 20      | M8  | 7  | 4   | 429       |
| 100L      | F215B  | 215        | 180/6 | 250      | 15 | 4        | 11 | 24        | 360 | 425 | 193 | 146 | 212 | 281/6    | 60       | 8        | 31       | 24      | M8  | 7  | 4   | 469       |
| 112M      | F265B  | 215        | 180/6 | 250      | 15 | 4        | 11 | 24        | 385 | 450 | 200 | 170 | 234 | 281/6    | 60       | 8        | 31       | 24      | M8  | 7  | 4   | 509       |
| 132S      | F265B  | 265        | 230/6 | 300      | 15 | 4        | 12 | 24        | 438 | 523 | 239 | 189 | 265 | 381/6    | 80       | 10       | 41       | 33      | M12 | 8  | 5   | 567       |
| 132M      | F265B  | 265        | 230/6 | 300      | 15 | 4        | 12 | 24        | 478 | 563 | 258 | 189 | 265 | 381/6    | 80       | 10       | 41       | 33      | M12 | 8  | 5   | 605       |
| 160M      | F300B  | 300        | 250/6 | 350      | 19 | 5        | 13 | 30        | 580 | 695 | 323 | 210 | 305 | 421/6    | 110      | 12       | 45       | 37      | M16 | 8  | 5   | 712       |
| 160L      | F300B  | 300        | 250/6 | 350      | 19 | 5        | 13 | 30        | 622 | 740 | 355 | 210 | 305 | 421/6    | 110      | 12       | 45       | 37      | M16 | 8  | 5   | 772       |
| 180M      | F300B  | 300        | 250/6 | 350      | 19 | 5        | 13 | 32        | 582 | 708 | 323 | 260 | 372 | 481/6    | 110      | 14       | 51.5     | 42.5    | M16 | 9  | 5   | -         |
| 180L      | F300B  | 300        | 250/6 | 350      | 19 | 5        | 13 | 32        | 626 | 752 | 360 | 260 | 372 | 481/6    | 110      | 14       | 51.5     | 42.5    | M16 | 9  | 5   | -         |

## Dimension Chart for flange mounted DC Brake Motors Type 14.458



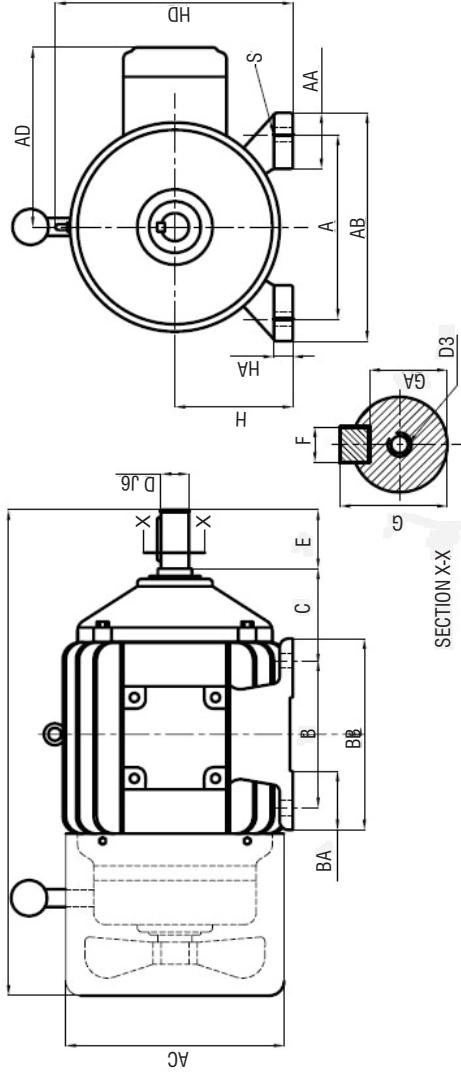
| Frame Size | Flange | +0.3 -M | N     | P Max | S  | T Max | LA | LD Min | L   | LC  | LO  | AD  | AC  | D, DA | E, DA | F, FA | GA GC | G GB | D3  | GD | GE  | L1 Max |
|------------|--------|---------|-------|-------|----|-------|----|--------|-----|-----|-----|-----|-----|-------|-------|-------|-------|------|-----|----|-----|--------|
| 63         | F115B  | 115     | 95j6  | 140   | 10 | 3     | 9  | 16     | 200 | 228 | 103 | 102 | 124 | 11j6  | 23    | 4     | 12.5  | 8.5  | M4  | 4  | 2.5 | 282    |
| 71         | F130B  | 130     | 110j6 | 160   | 10 | 3.5   | 9  | 16     | 235 | 270 | 120 | 110 | 140 | 14j6  | 30    | 5     | 16    | 11   | M5  | 5  | 3   | 312    |
| 80         | F165B  | 165     | 130j6 | 200   | 12 | 3.5   | 10 | 20     | 272 | 317 | 140 | 122 | 156 | 19j6  | 40    | 6     | 21.5  | 15.5 | M6  | 6  | 3.5 | 358    |
| 90S        | F165B  | 165     | 130j6 | 200   | 12 | 3.5   | 10 | 20     | 290 | 345 | 156 | 133 | 176 | 24j6  | 50    | 8     | 27    | 20   | M8  | 7  | 4   | 403    |
| 90L        | F165B  | 165     | 130j6 | 200   | 12 | 3.5   | 10 | 20     | 315 | 370 | 168 | 133 | 176 | 24j6  | 50    | 8     | 27    | 20   | M8  | 7  | 4   | 429    |
| 100L       | F215B  | 215     | 180j6 | 250   | 15 | 4     | 11 | 24     | 360 | 425 | 193 | 146 | 212 | 28j6  | 60    | 8     | 31    | 24   | M8  | 7  | 4   | 469    |
| 112M       | F215B  | 215     | 180j6 | 250   | 15 | 4     | 11 | 24     | 385 | 450 | 200 | 170 | 234 | 28j6  | 60    | 8     | 31    | 24   | M8  | 7  | 4   | 509    |
| 132S       | F265B  | 265     | 230j6 | 300   | 15 | 4     | 12 | 24     | 438 | 523 | 239 | 189 | 265 | 38k6  | 80    | 10    | 41    | 33   | M12 | 8  | 5   | 567    |
| 132M       | F265B  | 265     | 230j6 | 300   | 15 | 4     | 12 | 24     | 478 | 563 | 258 | 189 | 265 | 38k6  | 80    | 10    | 41    | 33   | M12 | 8  | 5   | 605    |

# TEFC Foot Mounted Motor with DC Brake Type 14.458



| Motor Frame | A   | B   | C   | H   | S  | AA | AB  | BA | BB  | HA | D    | E   | F  | GA | G    | AD  | AC  | HD  | L1 Max |
|-------------|-----|-----|-----|-----|----|----|-----|----|-----|----|------|-----|----|----|------|-----|-----|-----|--------|
| 63          | 100 | 8   | 400 | 63  | 7  | 35 | 130 | 28 | 110 | 10 | 11j6 | 23  | 4  | 23 | 8.5  | -   | 118 | 158 | 3282   |
| 71          | 112 | 90  | 45  | 71  | 7  | 35 | 142 | 35 | 130 | 10 | 14j6 | 30  | 5  | 30 | 11   | -   | 142 | 176 | 312    |
| 80          | 125 | 100 | 50  | 80  | 10 | 38 | 155 | 40 | 130 | 13 | 19j6 | 40  | 6  | 40 | 15.5 | 122 | 162 | 161 | 356    |
| 90S         | 165 | 100 | 56  | 90  | 10 | 37 | 170 | 45 | 155 | 14 | 24j6 | 50  | 8  | 50 | 20   | 133 | 178 | 177 | 403    |
| 90L         | 140 | 125 | 56  | 90  | 10 | 37 | 170 | 45 | 155 | 14 | 24j6 | 50  | 8  | 50 | 0    | 133 | 178 | 177 | 428    |
| 100L        | 160 | 140 | 63  | 100 | 12 | 42 | 195 | 50 | 170 | 14 | 28j6 | 60  | 8  | 60 | 24   | 146 | 200 | 245 | 469    |
| 112M        | 190 | 140 | 70  | 112 | 12 | 50 | 230 | 57 | 175 | 14 | 28j6 | 60  | 8  | 60 | 24   | 170 | 218 | 285 | 509    |
| 132S        | 216 | 140 | 89  | 132 | 12 | 55 | 265 | 60 | 180 | 18 | 38k6 | 80  | 10 | 80 | 33   | 189 | 265 | 320 | 567    |
| 132M        | 216 | 178 | 89  | 132 | 12 | 55 | 265 | 60 | 225 | 18 | 38k6 | 80  | 10 | 80 | 33   | 199 | 265 | 320 | 605    |
| 160M        | 254 | 210 | 108 | 160 | 15 | 72 | 305 | 78 | 260 | 25 | 42k6 | 110 | 12 | 80 | 37   | 210 | 308 | 390 | 712    |
| 160L        | 254 | 254 | 108 | 160 | 15 | 72 | 305 | 78 | 304 | 25 | 42k6 | 110 | 12 | 80 | 37   | 210 | 308 | 390 | 772    |

## TEFC Foot Mounted Motor with AC Brake Type 1000



| Motor Frame | A   | B   | C   | H   | S  | AA | AB  | BA | BB  | HA | D    | E   | F  | GA | G    | AD  | AC  | HD  | L1 Max |
|-------------|-----|-----|-----|-----|----|----|-----|----|-----|----|------|-----|----|----|------|-----|-----|-----|--------|
| 63          | 100 | 8   | 400 | 63  | 7  | 35 | 130 | 28 | 110 | 10 | 11j6 | 23  | 4  | 23 | 8.5  | -   | 118 | 158 | 3282   |
| 71          | 112 | 90  | 45  | 71  | 7  | 35 | 142 | 35 | 130 | 10 | 14j6 | 30  | 5  | 30 | 11   | -   | 142 | 176 | 312    |
| 80          | 125 | 100 | 50  | 80  | 10 | 38 | 155 | 40 | 130 | 13 | 19j6 | 40  | 6  | 40 | 15.5 | 122 | 162 | 161 | 356    |
| 90S         | 165 | 100 | 56  | 90  | 10 | 37 | 170 | 45 | 155 | 14 | 24j6 | 50  | 8  | 50 | 20   | 133 | 178 | 177 | 403    |
| 90L         | 140 | 125 | 56  | 90  | 10 | 37 | 170 | 45 | 155 | 14 | 24j6 | 50  | 8  | 50 | 0    | 133 | 178 | 177 | 428    |
| 100L        | 160 | 140 | 63  | 100 | 12 | 42 | 195 | 50 | 170 | 14 | 28j6 | 60  | 8  | 60 | 24   | 146 | 200 | 245 | 469    |
| 112M        | 190 | 140 | 70  | 112 | 12 | 50 | 230 | 57 | 175 | 14 | 28j6 | 60  | 8  | 60 | 24   | 170 | 218 | 285 | 509    |
| 132S        | 216 | 140 | 89  | 132 | 12 | 55 | 265 | 60 | 180 | 18 | 38k6 | 80  | 10 | 80 | 33   | 189 | 265 | 320 | 567    |
| 132M        | 216 | 178 | 89  | 132 | 12 | 55 | 265 | 60 | 225 | 18 | 38k6 | 80  | 10 | 80 | 33   | 199 | 265 | 320 | 605    |
| 160M        | 254 | 210 | 108 | 160 | 15 | 72 | 305 | 78 | 260 | 25 | 42k6 | 110 | 12 | 80 | 37   | 210 | 308 | 390 | 712    |
| 160L        | 254 | 254 | 108 | 160 | 15 | 72 | 305 | 78 | 304 | 25 | 42k6 | 110 | 12 | 80 | 37   | 210 | 308 | 390 | 772    |

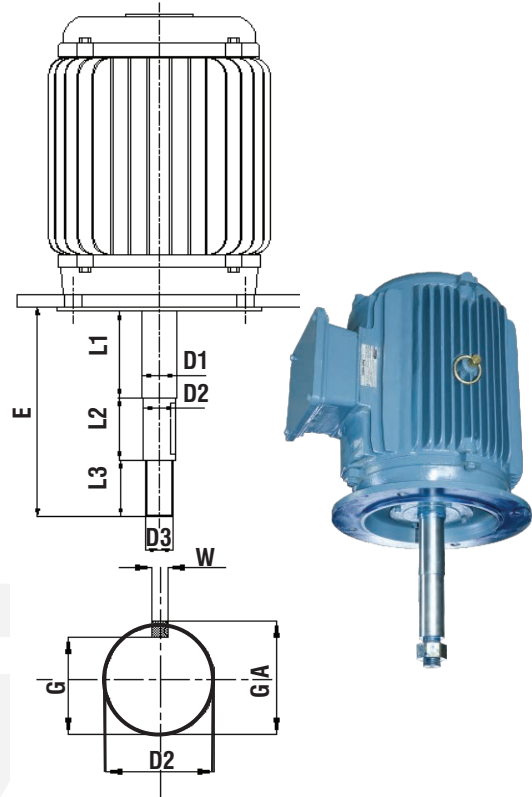
## Cooling Tower Motors



“Cooling Tower Motors” are used in cooling Towers of Air conditioning and refrigeration plants. These motors are unique in design.

### Features

- Drip-proof
- Stainless steel shaft
- Totally enclosed surface cooled
- IP 55 protection to suit the working environment
- Special long shaft as per customer's design
- Precision balanced rotors
- Moisture-proof windings
- Double side shield ball bearings
- RANGE - 0.5 HP (0.37) to 20 HP (17.5 kw) in 4, 6 and 8 poles



| HP   | RPM | FRAME | ØD1 | ØD2 | ØD3 | G    | GA   | L1  | L2  | L3 | W  | X  | E   |
|------|-----|-------|-----|-----|-----|------|------|-----|-----|----|----|----|-----|
| 0.5  | 910 | 80    | 20  | 19  | M16 | 15.5 | 21.5 | 80  | 55  | 50 | 6  | 45 | 185 |
| 0.5  | 710 | 90S   | 25  | 24  | M20 | 20.0 | 27.0 | 80  | 55  | 50 | 8  | 45 | 185 |
| 1.0  | 710 | 100L  | 30  | 28  | M24 | 24.0 | 31.0 | 80  | 55  | 50 | 8  | 45 | 185 |
| 1.0  | 910 | 90S   | 25  | 24  | M20 | 20.0 | 27.0 | 80  | 55  | 50 | 8  | 45 | 185 |
| 1.5  | 910 | 90L   | 25  | 24  | M20 | 20.0 | 27.0 | 80  | 55  | 50 | 8  | 45 | 185 |
| 2.0  | 910 | 100L  | 30  | 28  | M24 | 24.0 | 31.0 | 80  | 55  | 50 | 8  | 45 | 185 |
| 2.0  | 710 | 112M  | 40  | 38  | M30 | 33.0 | 41.0 | 80  | 55  | 50 | 10 | 45 | 185 |
| 3.0  | 960 | 112M  | 30  | 28  | M24 | 24.0 | 31.0 | 80  | 55  | 50 | 8  | 45 | 185 |
| 3.0  | 710 | 132S  | 40  | 38  | M30 | 33.0 | 41.0 | 80  | 55  | 50 | 10 | 45 | 185 |
| 5.0  | 960 | 132S  | 40  | 38  | M30 | 33.0 | 41.0 | 100 | 75  | 50 | 10 | 65 | 225 |
| 5.0  | 710 | 160M  | 40  | 38  | M30 | 33.0 | 41.0 | 100 | 75  | 50 | 10 | 65 | 225 |
| 7.5  | 710 | 160M  | 45  | 42  | M30 | 37.0 | 45.0 | 100 | 75  | 50 | 12 | 65 | 225 |
| 10.0 | 710 | 160L  | 45  | 42  | M30 | 37.0 | 45.0 | 100 | 105 | 50 | 12 | 95 | 225 |



### Salient Features

- ▶ Dust and Splash-proof (IP 54) terminal box
- ▶ Triple Protection to prevent coolant ingress into the winding
- ▶ Position of conduit entry can be adjusted through every 90° by rotating the terminal box
- ▶ Relative Position of terminal box to coolant out-let can be adjusted through every 90° by rotating the body
- ▶ The mounting of the cover on to the terminal box is independent of mounting of the terminal box on to the motor
- ▶ Earthing bolts provided
- ▶ Sturdier shaft to prevent bending at pump end
- ▶ Aluminium impeller offers high resistance to abrasion
- ▶ Large passages prevent clogging of coolant
- ▶ Dynamically balanced rotor ensures silent and vibration free running
- ▶ Stator winding impregnated under vacuum to work in tropical climate
- ▶ Class ' F ' Insulation
- ▶ High discharge with low power consumption

Coolant Pump is a combined unit of squirrel cage stator-rotor and uni-built immersion type centrifugal pump. These are used for the supply of coolant on the working surface of machine tools. Coolant pumps are fitted on the chamber containing the coolant and the pump portion is immersed in the liquid. Hence no priming is required

- ▶ SM1 is recommended for centre lathe, drilling, milling and light duty machine tools
- ▶ SM2 is recommended for turret lathe, grinding and heavy duty machine tools

These pumps are suitable for all types of coolant having viscosity upto 150 centristrokes at 60°C temperature.

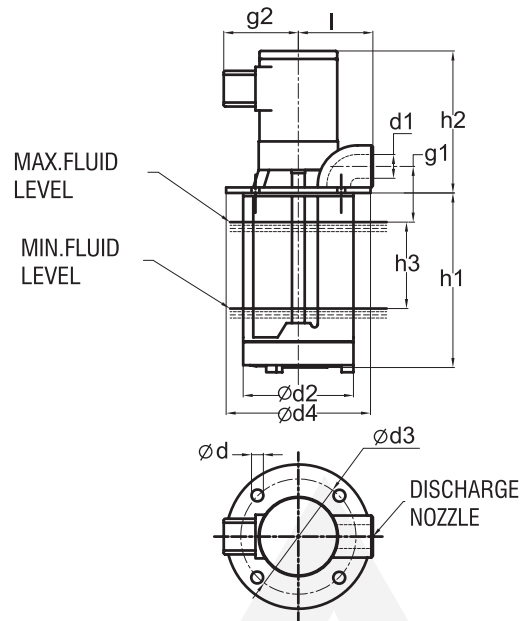
Coolant pump is designed for continuous operation on 415 Volts, 50 Hz, 3 Phase supply and suitable for direct-on-line starting.

### On request we can offer

- ▶ Coolant pump for other voltages, single or dual up to 600 Volts and 60 Hz
- ▶ ON-OFF rotary switch in place of terminal box
- ▶ Pump for 240 volts single phase supply

**Note : Due to continuous Research & Development based on Market Feedback models, shapes and dimensions are subject to changes without notice.**

**Kindly confirm the dimensions at the time of order.**



| Nominal Capacity<br>2pm<br>± 15 Percent | Immersion Depth H | d1    | 0   | d3<br>± 0.2 | d4  | l<br>± 2 | g1<br>± 2 | g2<br>Max | h2<br>Max | h3  | kW<br>Max | Min head at no flow |
|---|-------------------|-------|-----|-------------|-----|----------|-----------|-----------|-----------|-----|-----------|---------------------|
| SM 25 / 120                             | 120               | R 3/4 | 100 | 115         | 130 | 70       | 30        | 130       | 190       | 30  | 0.14      | 20                  |
| SM 25 / 170                             | 170               | R 3/4 |     |             |     |          |           |           |           |     |           |                     |
| SM 40 / 120                             | 120               | R 3/4 | 100 | 115         | 130 | 70       | 30        | 130       | 190       | 30  | 0.12      | 5                   |
| SM 40 / 170                             | 170               | R 3/4 |     |             |     |          |           |           |           |     |           |                     |
| SM 63 / 120                             | 120               | R / 4 | 100 | 115         | 130 | 70       | 30        | 130       | 190       | 30  | 0.37      | 6                   |
| SM 63 / 170                             | 170               | R 3/4 |     |             |     |          |           |           |           |     |           |                     |
| SM 80 / 220                             | 220               | G1    | 135 | 155         | 180 | 70       | 30        | 180       | 200       | 150 | 0.37      | 8                   |
| SM 80 / 270                             | 270               | G1    |     |             |     |          |           |           |           |     |           |                     |
| SM 100 / 220                            | 220               | G1    | 135 | 155         | 180 | 70       | 30        | 180       | 200       | 150 | 0.37      | 8                   |
| SM 100 / 270                            | 270               | G1    |     |             |     |          |           |           |           |     |           |                     |
| sm 160 / 220                            | 270               | G1    |     |             |     |          |           |           |           |     |           |                     |
| sm 160 / 270                            | 270               | G1    |     |             |     |          |           |           |           |     |           |                     |

**Note :**

- ▶ Capacity and dimensions are based on motor for 3000 rpm (synchronous) at 50 Hz.
- ▶ The capacity data in the table relate to water with a kinematic viscosity of 1 sq mm/s at a total head of 2 m.  
More precise capacity data can be obtained from the manufacturer's documentation
- ▶ Threads conforming to IS 554 : 1985 (where pressure tight joints are required on the threads)

| Cooling Type   | Cooling Code |
|----------------|--------------|
| TEFC           | IC 411       |
| TESE           | IC 410       |
| Forced cooling | IC 416       |

**Cooling :**

- ▶ Effected by self driven, bi-directional centrifugal fan protected by fan cover. The type of cooling is IC 411 as per IS: 6362.
- ▶ Motor with natural ventilation (TESE) or with forced cooled arrangement can be offered on request.

## Hollow shaft motors

|                             |   |
|-----------------------------|---|
| <b>Range</b>                | : 0.18kw to 22kW  |
| <b>Voltage</b>              | : 20V/415V/670v/48V/42V                                   |
| <b>Speed</b>                | : 2880/1440/960   |
| <b>Class of insulation</b>  | : F   |
| <b>Mounting</b>             | : foot, flange as per custom built on request             |
| <b>Degree of protection</b> | : IP55 standard   |
| <b>Pumps</b>                | : Dowty, Boss, rest on request<br>Yuken PVVM10 and RVM 20 |



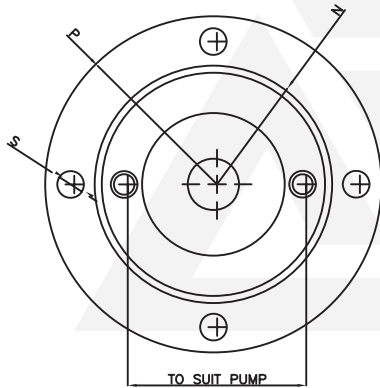
### Design features

Energy efficient (IE2 / IE3) motor and optimal fits based on the pump dimensions provides trouble free operations. This model comes with bigger series of bearings on the drive end and non drive end when compared to the standard motors

### Alignment

Concentricity between pump and motor is within 20microns

## Hollow shaft flange mounted motors

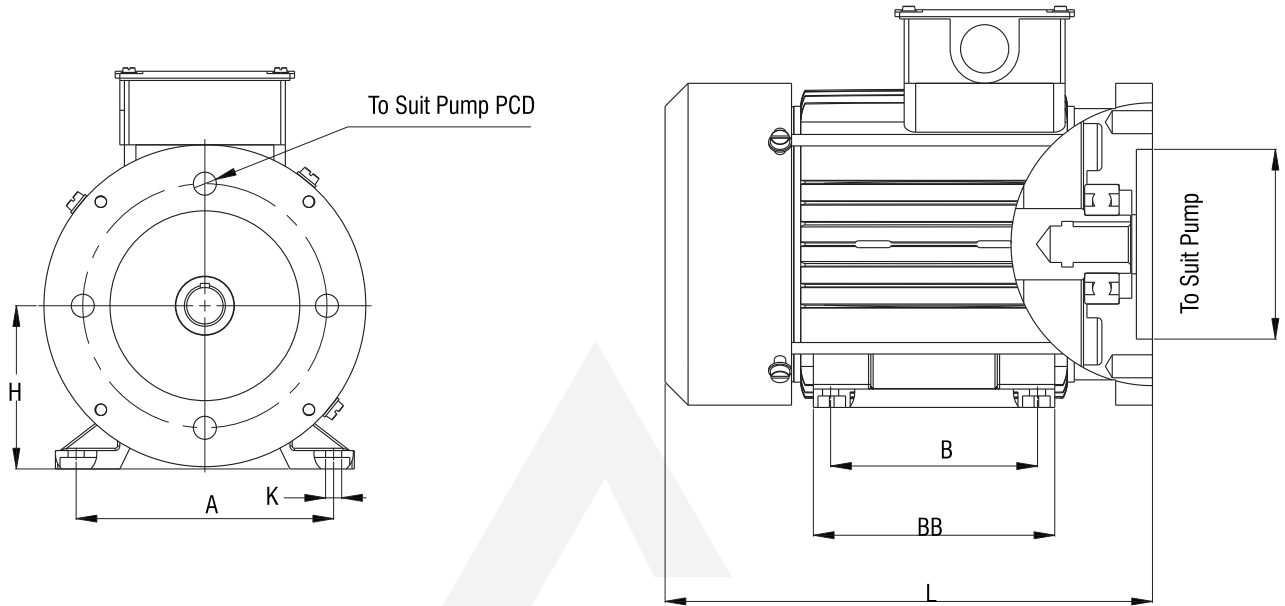


**Note :** Due to continuous Research & Development based on Market Feedback models, shapes and dimensions are subject to changes without notice.  
Kindly confirm the dimensions at the time of order.

| Frame | HP      | Flange | P   | M   | N      | S  | L   |
|-------|---------|--------|-----|-----|--------|----|-----|
| 71    | 0.5 HP  | F130B  | 160 | 130 | 110 J6 | 10 | 200 |
| 80    | 1.0 HP  | F165B  | 200 | 165 | 130 J6 | 12 | 230 |
| 90S   | 1.5 HP  | F165B  | 200 | 165 | 130 J6 | 12 | 240 |
| 90L   | 2.0 HP  | F165B  | 200 | 165 | 130 J6 | 12 | 265 |
| 100L  | 3.0 HP  | F215 B | 250 | 215 | 180J6  | 15 | 300 |
| 112M  | 5.0 HP  | F215 B | 250 | 215 | 180J6  | 15 | 325 |
| 132S  | 7.5HP   | F265 B | 300 | 265 | 250J6  | 15 | 358 |
| 132M  | 10.0 HP | F265B  | 300 | 265 | 250J6  | 15 | 398 |
| 160M  | 15hp    | F300 B | 350 | 300 | 250J6  | 19 | 622 |
| 160L  | 20 HP   | F300B  | 350 | 300 | 250J6  | 19 | 622 |



## Hollow shaft foot mounted motors



| Frame | HP     | A   | B   | H   | K  | L   |
|-------|--------|-----|-----|-----|----|-----|
| 71    | 0.5 HP | 112 | 90  | 71  | 7  | 235 |
| 80    | 1.0 HP | 125 | 100 | 80  | 10 | 270 |
| 90S   | 1.5 HP | 140 | 100 | 90  | 10 | 290 |
| 90L   | 2.0 HP | 140 | 125 | 90  | 10 | 315 |
| 100L  | 3.0 HP | 160 | 140 | 100 | 12 | 360 |
| 112M  | 5.0 HP | 190 | 140 | 112 | 12 | 385 |
| 132S  | 7.5HP  | 216 | 140 | 132 | 12 | 438 |
| 132M  | 10.HP  | 216 | 178 | 132 | 12 | 478 |
| 160M  | 15Hp   | 254 | 210 | 160 | 15 | 580 |
| 160L  | 20 HP  | 254 | 254 | 160 | 15 | 622 |
| 180 L | 30HP   | 279 | 279 | 180 | 15 | 795 |

**Note :** Due to continuous Research & Development based on Market Feedback models, shapes and dimensions are subject to changes without notice.

Kindly confirm the dimensions at the time of order.

## Features

- Compact and mechanically robust
- Conforms to IS 2538- 1963
- Economical in power consumption

## Constructional Features

- 8" Bench grinder is of Cast Iron construction
- Deep grooved ball bearings for ample load bearing capacity

## Wheel Specification

- A 60-P 5-V 99 Fine for 152 mm - 178 mm and 203 mm
- A 45-Q 5-V 99 Coarse
- A 60 -P 5-V 99 Fine for 250 mm 1420 RPM Machine
- A 24-S 4-B 14 Coarse
- A 46-R 5-B 14 Fine for 250 mm 2800 RPM Machine



## Wheel Guards

### Heavy C.I. Wheel Guards

- 1 Designed to afford full protection to the worker with maximum freedom of operation
- 2 Fitted with adjustable spark deflectors to provide maximum safety to the operator
- 3 Fitted with easily-detachable covers for quick replacement of wheels.

### Tool Rests

Adjustable tool rests ensure maximum grinding; fitted with a single mounting-screw that locks them rigidly in place, yet may be quickly removed for accessory attachments  
They adjust completely for the exact grinding angle desired. Note the special wrap – around ledges that permit grinding from both sides as well as the face of the wheel

## Motors

Totally enclosed, naturally cooled  
Suitable for intermittent duty, slim design of motor with the extra-long and bells assures ample clearance for grinding odd-shaped items and long stock  
Windings insulated with Class 'F' materials and varnished to suit tropical conditions  
Three phase motors suitable for 400-440 V, 50 CY A.C. supply. Performance conforms to IS 996.  
They are of the permanent split phase capacitor type  
Rotors, dynamically balanced, assure extra-smooth operation

## Switch

Rotary Switch on 3 Phase and Single Phase Machines

## Lubrication

Ball Bearing grease, preferably SKF LGEP 2

## Bench Polishers

HP : 0.33 to 1 HP  
Speed : 3000 RPM Syn  
Phase : Single (or) 3 Phase

## Vibrator Motor

- ▶ SMV series of vibrator motors are specially developed for variable individual application to suit all working environments.
- ▶ The vibrator motor develops centrifugal force from 5 kg (50 N) to as much as 8000 kg (80000 N)..
- ▶ Higher and non standard rating vibro motors on request

### Technical Specification

|                              |   |
|------------------------------|---|
| <b>Bearings</b>              | : Roller Bearings   |
| <b>Material</b>              | : C.I. Grade 25, Spheriodical C.I & Steel ( Optional)   |
| <b>Power Supply</b>          | : Vibrator motors are suitable for 220V - 1Ø, 415V -3Ø, and 50 / 60 Hz. Power supply  |
| <b>Operations</b>            | : S1, S4, S7  |
| <b>Mechanical Protection</b> | : IP 44, IP 55, IP 66 (on request)  |
| <b>Electrical motor</b>      | : Energy Efficient motor with vacuum Impregnated stators.<br>An extra moisture proof coating is provided on the status for improving the mechanical strength.         |
| <b>Insulation Class</b>      | : Class F ( 155°C ), Class H ( 180°C ).   |
| <b>Drive Shaft</b>           | : This is made of treated steel alloy able to withstand high stress   |
| <b>Eccentric Weights</b>     | : Each vibrator is supplied with two weights on each side as per the requirement of centrifugal force, along with a graduated scale.                                  |
| <b>Casing &amp; Bearings</b> | : Casings made of high graded CI (Grade 25) and cast steel castings are also available.<br>The bearings are exclusively supplied by SKF for vibro motor applications. |
| <b>Thermal protection</b>    | : Thermistor of class F (155°C) available on request.   |
| <b>Safety Causes</b>         | : Die-cast Aluminum Alloy Cover for Safety  |

**Note : Due to continuous Research & Development based on Market Feedback models, shapes and dimensions are subject to changes without notice.**

**Kindly confirm the dimensions at the time of order.**

## Vibrator Motor



0.5hp vibrator



0.5hp vibrator



0.25hp vibrator



0.37kw vibrator



0.25hp sphase vibrator



2.0hp tiles vibrator

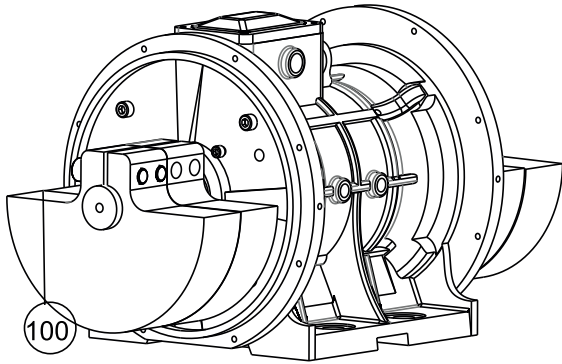


1.5kw vibrator

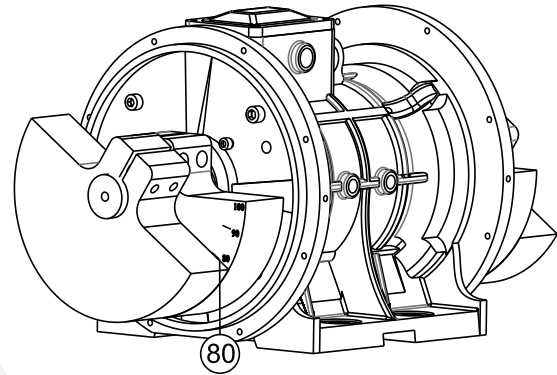


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Kindly confirm the dimensions at the time of order.

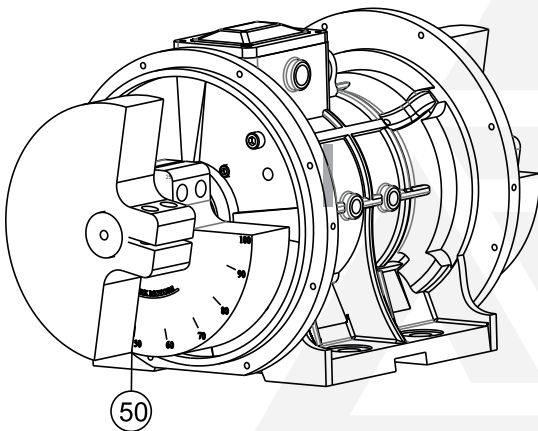
## Centrifugal Force Adjustment



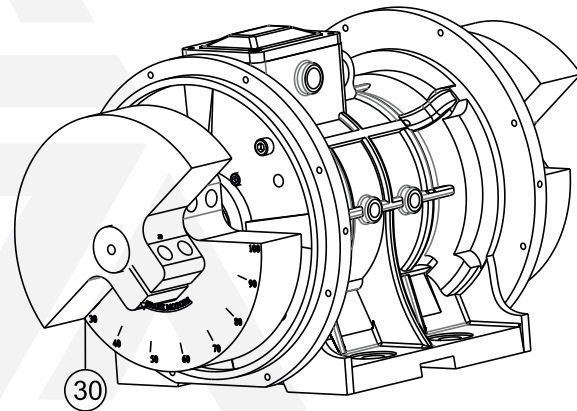
Centrifugal Force 100%



Centrifugal Force 80%



Centrifugal Force 50%



Centrifugal Force 30%

## Vibromotors Selection Chart

| Sl.No | Frame | Kw        | HP   | Speed | BB Series | RB Series | CS Series |
|-------|-------|-----------|------|-------|-----------|-----------|-----------|
| 1     | 63    | 100 watts | 0.1  | 2880  | Y         | -         | -         |
| 2     |       | 0.18      | 0.25 | 2880  | Y         | -         | -         |
| 3     |       | 0.18      | 0.25 | 1440  | Y         | -         | -         |
| 4     | 71    | 0.18      | 0.25 | 960   | Y         | Y         | -         |
| 5     |       | 0.37      | 0.5  | 1440  | Y         | Y         | -         |
| 6     |       | 0.37      | 0.5  | 2880  | Y         | Y         | Y         |
| 7     |       | 0.37      | 0.5  | 960   | Y         | Y         | Y         |
| 8     |       | 0.55      | 0.75 | 960   | Y         | Y         | Y         |
| 9     |       | 0.75      | 1    | 1440  | Y         | Y         | Y         |
| 10    |       | 0.75      | 1    | 2880  | Y         | Y         | Y         |
| 11    | 90    | 0.55      | 0.75 | 960   | Y         | Y         | Y         |
| 12    |       | 1.1       | 1    | 960   | Y         | Y         | Y         |
| 13    |       | 1.1       | 1.5  | 960   | Y         | Y         | Y         |
| 14    |       | 1.1       | 1.5  | 2880  | Y         | Y         | Y         |
| 15    |       | 1.5       | 1.5  | 1440  | Y         | Y         | Y         |
| 16    |       | 1.5       | 2    | 2880  | Y         | Y         | Y         |
| 17    |       | 2.25      | 2    | 1440  | Y         | Y         | Y         |
| 18    |       | 1.5       | 3    | 2880  | -         | Y         | Y         |
| 19    | 100L  | 0.75      | 2    | 960   | -         | Y         | Y         |
| 20    |       | 2.2       | 1    | 720   | -         | Y         | Y         |
| 21    |       | 2.2       | 3    | 1440  | -         | Y         | Y         |
| 22    |       | 2.2       | 3    | 2880  | -         | Y         | Y         |
| 23    | 112M  | 3.7       | 3    | 960   | -         | Y         | Y         |
| 24    |       | 3.7       | 5    | 1440  | -         | Y         | Y         |
| 25    |       | 4.3       | 5    | 2880  | -         | Y         | Y         |
| 26    | 132   | 3.7       | 5.8  | 960   | -         | -         | Y         |
| 27    |       | 5.5       | 5    | 960   | -         | Y         | Y         |
| 28    |       | 5.5       | 7.5  | 960   | -         | -         | Y         |
| 29    |       | 5.5       | 7.5  | 1440  | -         | Y         | Y         |
| 30    |       | 7.5       | 7.5  | 2880  | -         | Y         | Y         |
| 31    |       | 3.7       | 10   | 1440  | -         | -         | Y         |
| 32    | 160   | 3.7       | 5    | 720   | -         | -         | Y         |
| 33    |       | 7.5       | 10   | 960   | -         | -         | Y         |
| 34    |       | 11        | 15   | 960   | -         | -         | Y         |
| 35    |       | 11        | 15   | 1440  | -         | -         | Y         |
| 36    |       | 11        | 15   | 2880  | -         | -         | Y         |
| 37    |       | 15        | 20   | 1440  | -         | -         | Y         |
| 38    |       | 15        | 20   | 2880  | -         | -         | Y         |

BB Series Vibromotors with ball bearings for light duty applications

RB Series Vibromotors with roller bearings for heavy duty applications

CS Series Vibromotors for stone crushers and conveyors with mounting dimensions similar to OLI vibrators

Centrifugal force and dimensions will be provided upon request

## ELECTRICAL PERFORMANCE

### 2Pole - 50Hz [2880rpm]

| S.No | H Model   | Input Power in watts | Output Power in watts | Motor Rating |      | Starting Current Amps | Rated Current Amps | Rated RPM | Rated Torque kgm | Power Factor | Efficiency% |
|------|-----------|----------------------|-----------------------|--------------|------|-----------------------|--------------------|-----------|------------------|--------------|-------------|
|      |           |                      |                       | kW           | H.P  |                       |                    |           |                  |              |             |
| 1    | SMV2 - 1  | 290                  | 180                   | 0.18         | 0.25 | 1.10                  | 0.55               | 2700      | 0.066            | 0.720        | 62          |
| 2    | SMV2 - 2  | 552                  | 370                   | 0.37         | 0.5  | 2.00                  | 1.00               | 2800      | 0.127            | 0.760        | 67          |
| 3    | SMV2 - 3  | 764                  | 550                   | 0.55         | 0.75 | 2.70                  | 1.35               | 2820      | 0.190            | 0.780        | 72          |
| 4    | SMV2 - 4  | 1000                 | 750                   | 0.75         | 1    | 3.50                  | 1.75               | 2840      | 0.250            | 0.790        | 75          |
| 5    | SMV2 - 51 | 1447                 | 1100                  | 1.10         | 1.5  | 5.00                  | 2.50               | 2840      | 0.380            | 0.810        | 76          |
| 6    | SMV2 - 61 | 1899                 | 1500                  | 1.50         | 2    | 6.40                  | 3.20               | 2850      | 0.500            | 0.830        | 79          |
| 7    | SMV2 - 71 | 2683                 | 2200                  | 2.20         | 3    | 9.10                  | 4.55               | 2850      | 0.750            | 0.830        | 82          |
| 8    | SMV2 - 8  | 4458                 | 3700                  | 3.70         | 5    | 14.60                 | 7.30               | 2880      | 1.240            | 0.850        | 83          |

### 4Pole - 50Hz [1440rpm]

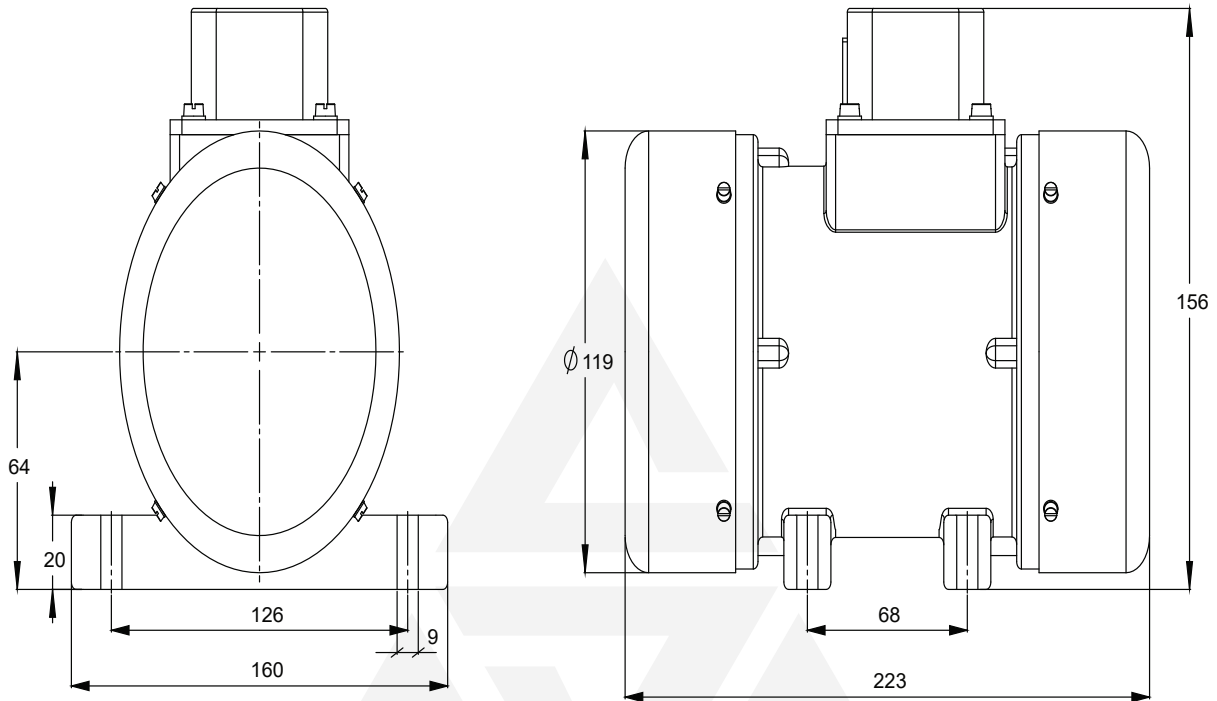
| S.No | Model    | Input Power in watts | Output Power in watts | Motor Rating |      | Starting Current Amps | Rated Current Amps | Rated RPM | Rated Torque kgm | Power Factor | Efficiency% |
|------|----------|----------------------|-----------------------|--------------|------|-----------------------|--------------------|-----------|------------------|--------------|-------------|
|      |          |                      |                       | kW           | H.P  |                       |                    |           |                  |              |             |
| 1    | SMV4 - 1 | 295                  | 180                   | 0.18         | 0.25 | 1.20                  | 0.60               | 1350      | 0.130            | 0.680        | 61          |
| 2    | SMV4 - 2 | 561                  | 370                   | 0.37         | 0.5  | 2.10                  | 1.05               | 1380      | 0.260            | 0.720        | 66          |
| 3    | SMV4 - 3 | 764                  | 550                   | 0.55         | 0.75 | 2.90                  | 1.45               | 1400      | 0.380            | 0.740        | 72          |
| 4    | SMV4 - 4 | 1000                 | 750                   | 0.75         | 1    | 3.72                  | 1.86               | 1400      | 0.510            | 0.750        | 75          |
| 5    | SMV4 - 5 | 1429                 | 1100                  | 1.10         | 1.5  | 5.20                  | 2.60               | 1410      | 0.760            | 0.790        | 77          |
| 6    | SMV4 - 6 | 1852                 | 1500                  | 1.50         | 2    | 6.90                  | 3.45               | 1410      | 1.000            | 0.790        | 81          |
| 7    | SMV4 - 7 | 2651                 | 2200                  | 2.20         | 3    | 9.60                  | 4.80               | 1425      | 1.500            | 0.820        | 83          |
| 8    | SMV4 - 8 | 4405                 | 3700                  | 3.70         | 5    | 15.00                 | 7.50               | 1430      | 2.500            | 0.850        | 84          |

### 6Pole - 50Hz [960rpm]

| S.No | Model    | Input Power in watts | Output Power in watts | Motor Rating |      | Starting Current Amps | Rated Current Amps | Rated RPM | Rated Torque kgm | Power Factor | Efficiency% |
|------|----------|----------------------|-----------------------|--------------|------|-----------------------|--------------------|-----------|------------------|--------------|-------------|
|      |          |                      |                       | kW           | H.P  |                       |                    |           |                  |              |             |
| 1    | SMV6 - 1 | 327                  | 180                   | 0.18         | 0.25 | 1.40                  | 0.70               | 900       | 0.190            | 0.640        | 55          |
| 2    | SMV6 - 2 | 569                  | 370                   | 0.37         | 0.5  | 2.40                  | 1.20               | 910       | 0.390            | 0.670        | 65          |
| 3    | SMV6 - 3 | 797                  | 550                   | 0.55         | 0.75 | 3.26                  | 1.63               | 925       | 0.590            | 0.680        | 69          |
| 4    | SMV6 - 4 | 1042                 | 750                   | 0.75         | 1    | 4.00                  | 2.00               | 925       | 0.770            | 0.730        | 72          |
| 5    | SMV6 - 5 | 1486                 | 1100                  | 1.10         | 1.5  | 5.60                  | 2.80               | 930       | 0.160            | 0.740        | 74          |
| 6    | SMV6 - 6 | 1974                 | 1500                  | 1.50         | 2    | 7.50                  | 3.75               | 935       | 1.540            | 0.760        | 76          |
| 7    | SMV6 - 7 | 2750                 | 2200                  | 2.20         | 3    | 9.30                  | 4.65               | 950       | 2.300            | 0.790        | 80          |

## Shutter Vibrators

### 0.25 hp Vibrator



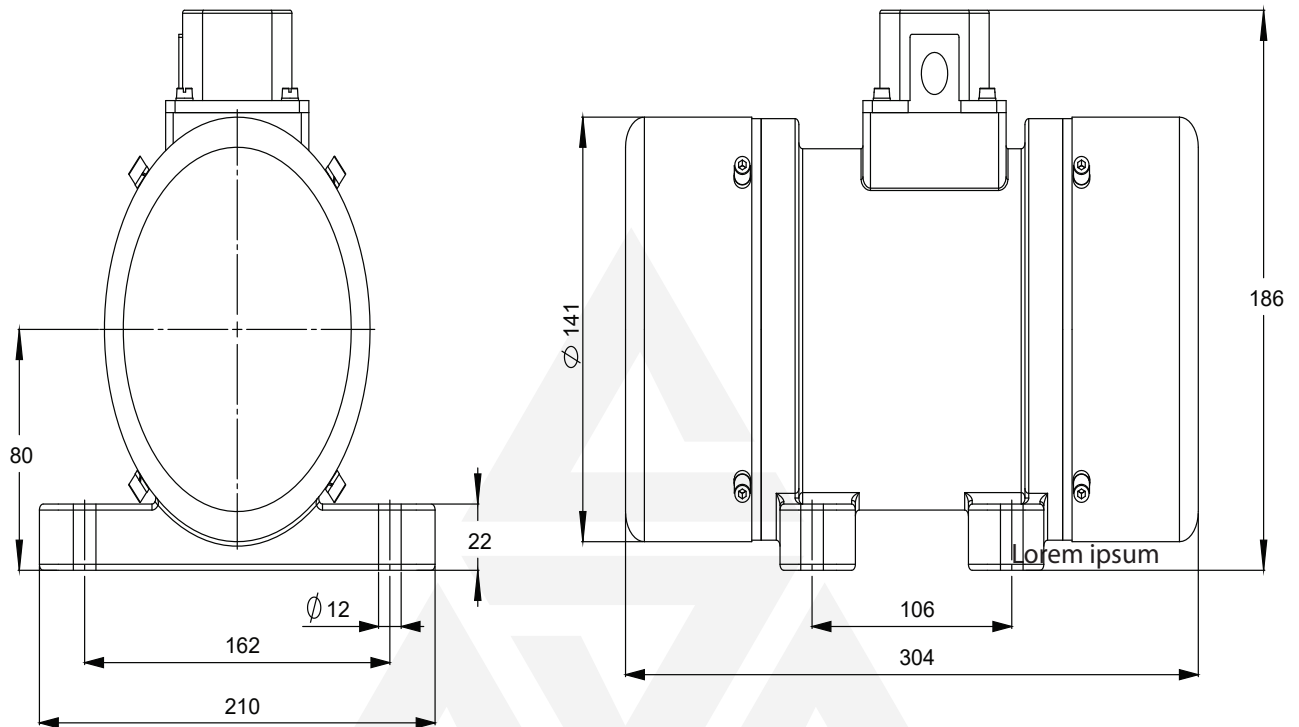
| SPECIFICATIONS       |                 |
|----------------------|-----------------|
| Model No.            | SMV4 - 1        |
| Kw/HP                | 0.18 / 0.25     |
| RPM                  | 1440            |
| Volt                 | 230 / 415       |
| Degree of Protection | IP44 / IP55     |
| Amps                 | 0.6             |
| Working Moment       | 0.3 kgcm        |
| Centrifugal Force    | 336 N           |
| Paint                | French Blue(PU) |

| SPECIFICATIONS       |                 |
|----------------------|-----------------|
| Model No.            | SMV2 - 1        |
| Kw/HP                | 0.18 / 0.25     |
| RPM                  | 2800            |
| Volt                 | 230 / 415       |
| Degree of Protection | IP44 / IP55     |
| Amps                 | 0.55            |
| Working Moment       | 1.139 kgcm      |
| Centrifugal Force    | 350N            |
| Paint                | French Blue(PU) |



# Shutter Vibrators

## 0.5 hp Vibrator



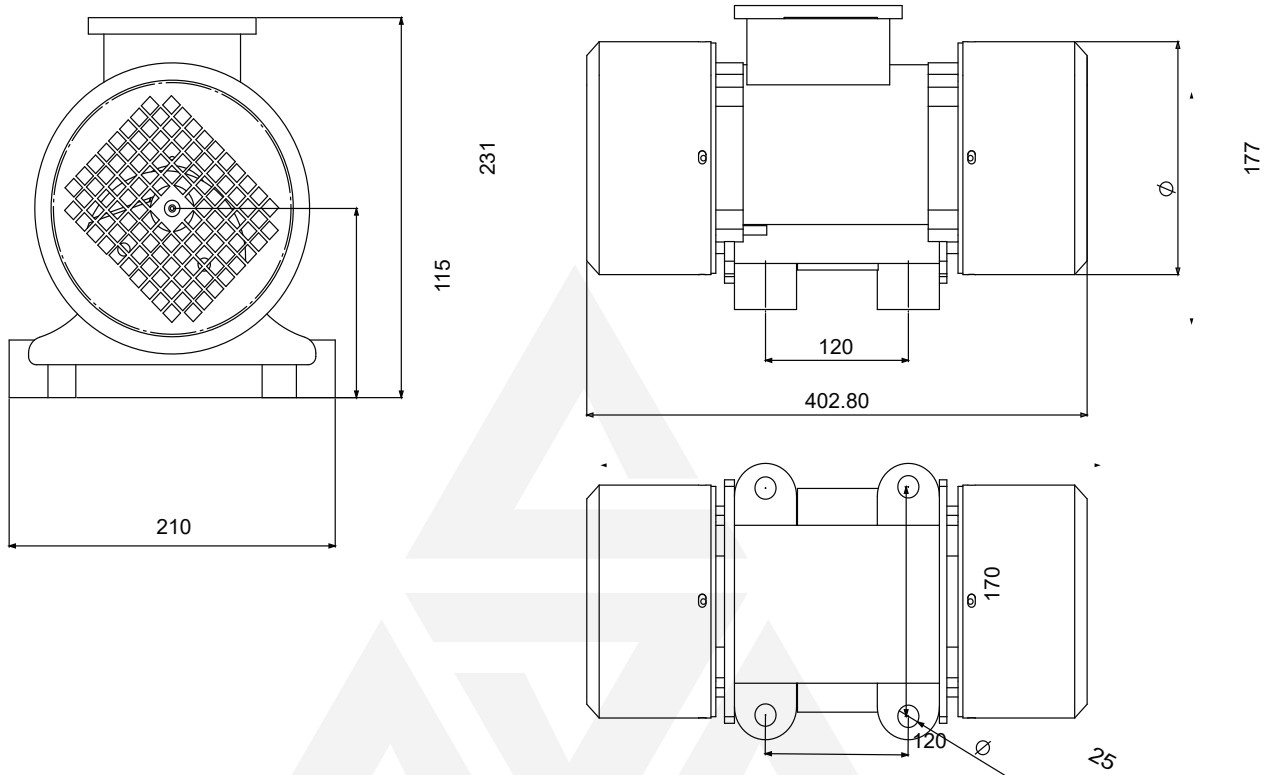
| SPECIFICATIONS       |                 |
|----------------------|-----------------|
| Model No.            | SMV2 - 2        |
| Kw/HP                | 0.37 / 0.5      |
| RPM                  | 2800            |
| Volt                 | 230 / 415       |
| Degree of Protection | IP44 / IP55     |
| Amps                 | 1.0             |
| Working Moment       | 3.57 kgcm       |
| Centrifugal Force    | 550N            |
| Paint                | French Blue(PU) |

| SPECIFICATIONS       |                 |
|----------------------|-----------------|
| Model No.            | SMV4 - 2        |
| Kw/HP                | 0.37 / 0.5      |
| RPM                  | 1440            |
| Volt                 | 230 / 415       |
| Degree of Protection | IP44 / IP55     |
| Amps                 | 1.0             |
| Working Moment       | 0.45 kgcm       |
| Centrifugal Force    | 610N            |
| Paint                | French Blue(PU) |

| SPECIFICATIONS       |                 |
|----------------------|-----------------|
| Model No.            | SMV6 - 2        |
| Kw/HP                | 0.18 / 0.25     |
| RPM                  | 960             |
| Volt                 | 230 / 415       |
| Degree of Protection | IP44 / IP55     |
| Amps                 | 1.0             |
| Working Moment       | 0.5 kgcm        |
| Centrifugal Force    | 335 N           |
| Paint                | French Blue(PU) |

# Shutter Vibrators

## 1.0 hp Vibrator



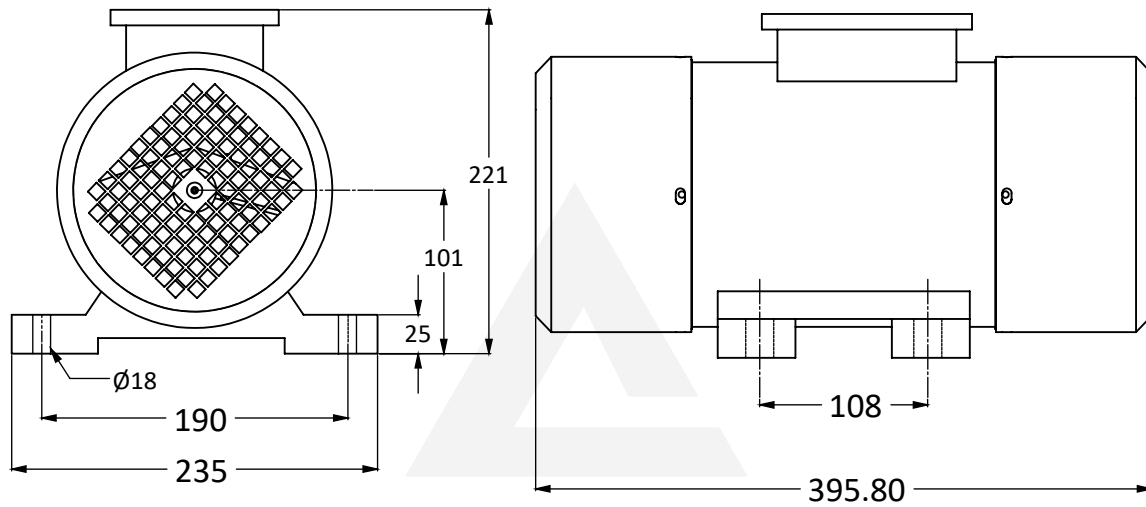
| SPECIFICATIONS       |                 |
|----------------------|-----------------|
| Model No.            | SMV4 - 4        |
| Kw/HP                | 0.75 / 1        |
| RPM                  | 1440            |
| Volt                 | 230 / 415       |
| Degree of Protection | IP44 / IP55     |
| Amps                 | 1.86            |
| Working Moment       | 0.55 kgcm       |
| Centrifugal Force    | 956 N           |
| Paint                | French Blue(PU) |

| SPECIFICATIONS       |                 |
|----------------------|-----------------|
| Model No.            | SMV2 - 4        |
| Kw/HP                | 0.75 / 1        |
| RPM                  | 2800            |
| Volt                 | 230 / 415       |
| Degree of Protection | IP44 / IP55     |
| Amps                 | 1.75            |
| Working Moment       | 2.8 kgcm        |
| Centrifugal Force    | 1015 N          |
| Paint                | French Blue(PU) |

| SPECIFICATIONS       |                 |
|----------------------|-----------------|
| Model No.            | SMV6 - 4        |
| Kw/HP                | 0.75 / 1        |
| RPM                  | 960             |
| Volt                 | 230 / 415       |
| Degree of Protection | IP44 / IP55     |
| Amps                 | 2.0             |
| Working Moment       | 4.7 kgcm        |
| Centrifugal Force    | 2000 N          |
| Paint                | French Blue(PU) |

## Shutter Vibrators

2HP/ 2880 RPM / 3  $\phi$  / 50 Hz



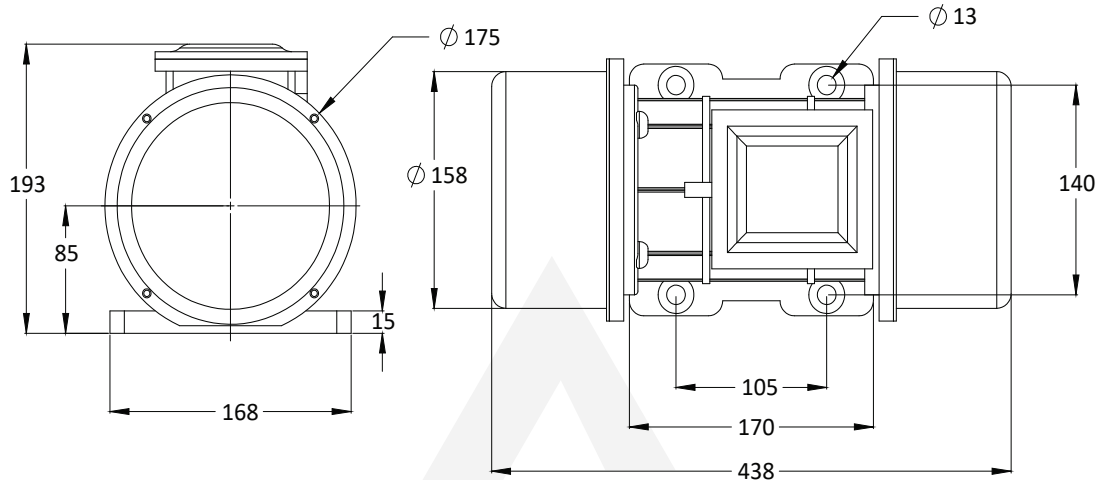
Dimensional Features (mm)

| <b>SPECIFICATIONS</b> |                  |
|-----------------------|------------------|
| Model No.             | SMV1.5/2         |
| Kw/HP                 | 1.5 / 2          |
| RPM                   | 2880             |
| Volt                  | 415              |
| Degree of Protection  | IP44 / IP55      |
| Amps                  | 1.0              |
| Working Moment        | 3.57 kgcm        |
| Centrifugal Force     | 6639 N           |
| Paint                 | Stark Orange(PU) |

Due to continuous R&D Dimensions may change without notice

## 4Pole Vibro Motors

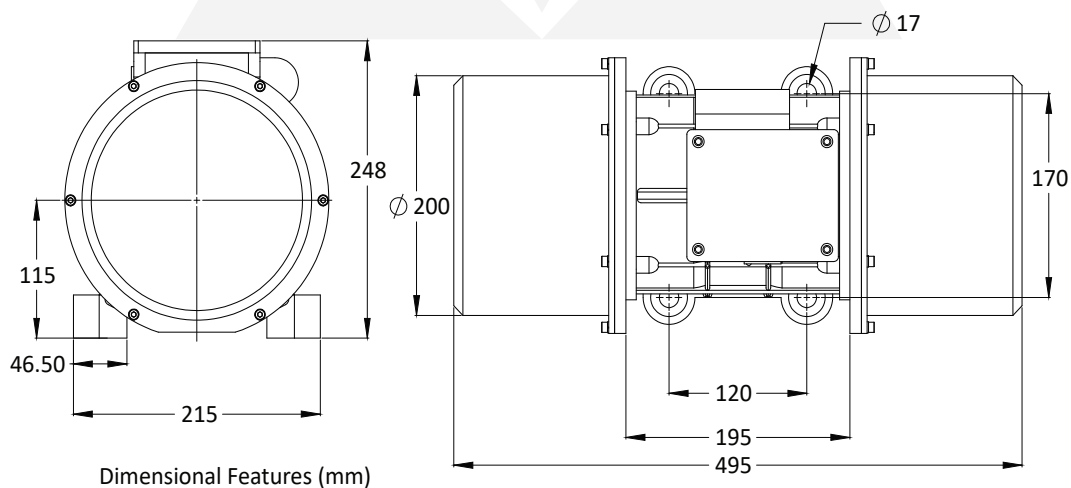
0.35 Kw / 1440 RPM / 3  $\phi$  / 50 Hz



Dimensional Features (mm)

| Weight (Kg) | Screw | Washer(mm)    | Clamping Torque | Cable Type      | Cable Gland        |
|-------------|-------|---------------|-----------------|-----------------|--------------------|
| 29.5        | M12   | $\phi$ 13x 24 | 80 Nm           | 4G x 2.5 sq. mm | M20 x 1.5 mm pitch |

0.55 Kw / 0.75/ 1440 RPM / 3 $\phi$  / 50 Hz

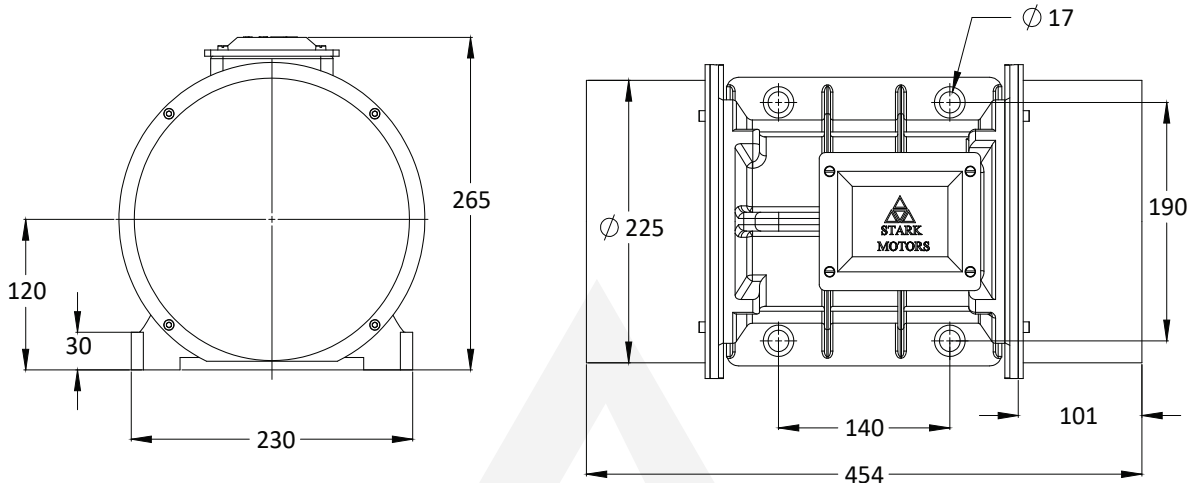


Dimensional Features (mm)

| Weight  | Screw | Washer         | Clamping Torque | Cable Type    | Cable Gland     |
|---------|-------|----------------|-----------------|---------------|-----------------|
| 47.5 Kg | M16   | $\phi$ 17 x 30 | 185 Nm          | 4G x 4 sq. mm | M25 x 1.5 pitch |

## 4Pole Vibro Motors

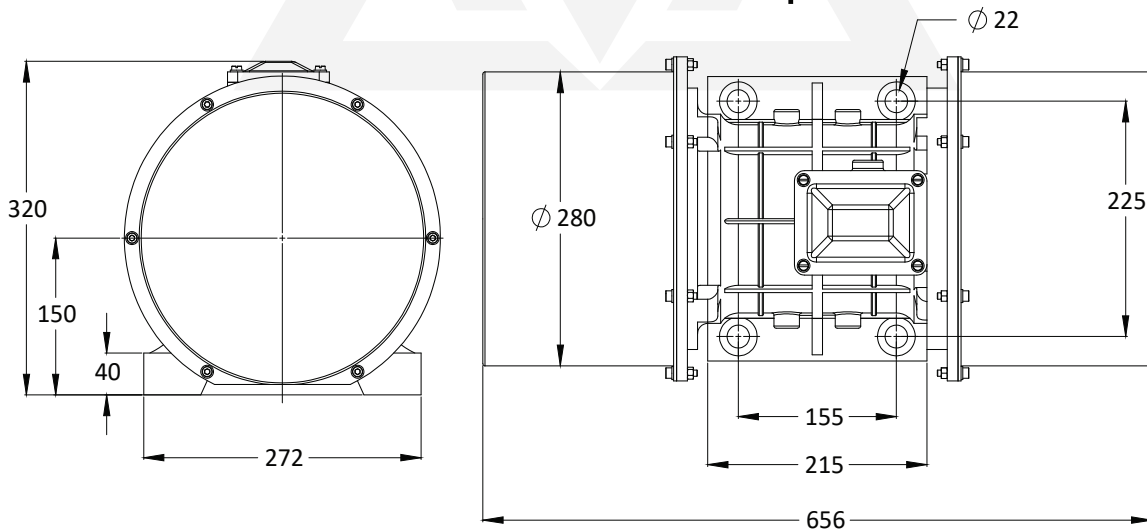
### 1.15 KW / 1440 RPM / 3 $\phi$ / 50 Hz



Dimensional Features (mm)

| Weight (Kg) | Screw | Washer         | Clamping Torque | Cable Type    | Cable Gland    |
|-------------|-------|----------------|-----------------|---------------|----------------|
| 62          | M16   | $\phi$ 17 x 30 | 185 Nm          | 4G x 4 sq. mm | PG 11 mm pitch |

### 1.6 KW / 1440 RPM / 3 $\phi$ / 50 Hz

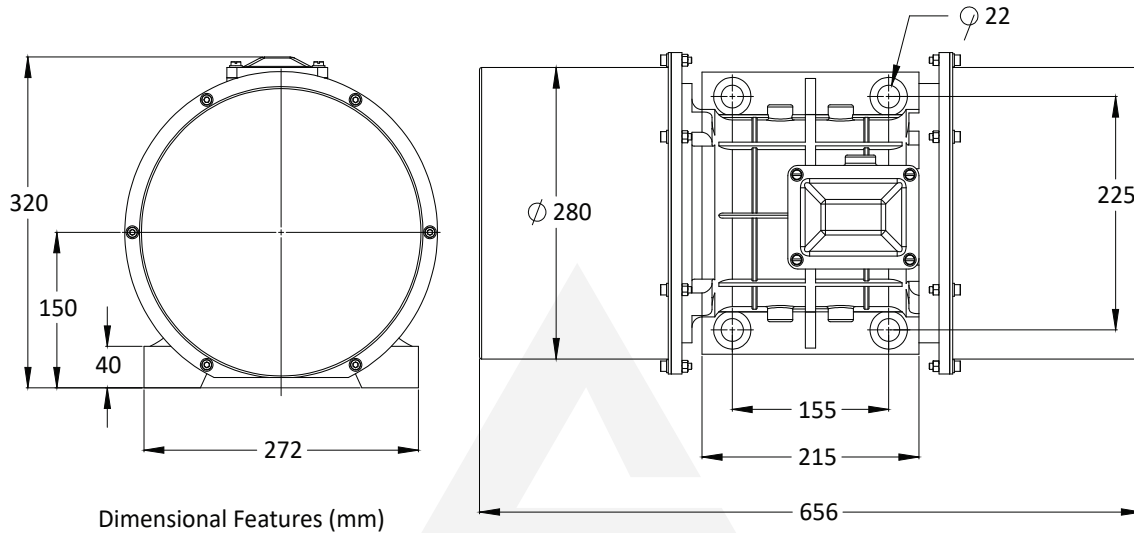


Dimensional Features (mm)

| Weight | Screw | Washer         | Clamping Torque | Cable Type    | Cable Gland         |
|--------|-------|----------------|-----------------|---------------|---------------------|
| 112 Kg | M20   | $\phi$ 23 x 39 | 373 Nm          | 4G x 4 Sq. mm | M 25 x 1.5 mm pitch |

## 4Pole Vibro Motors

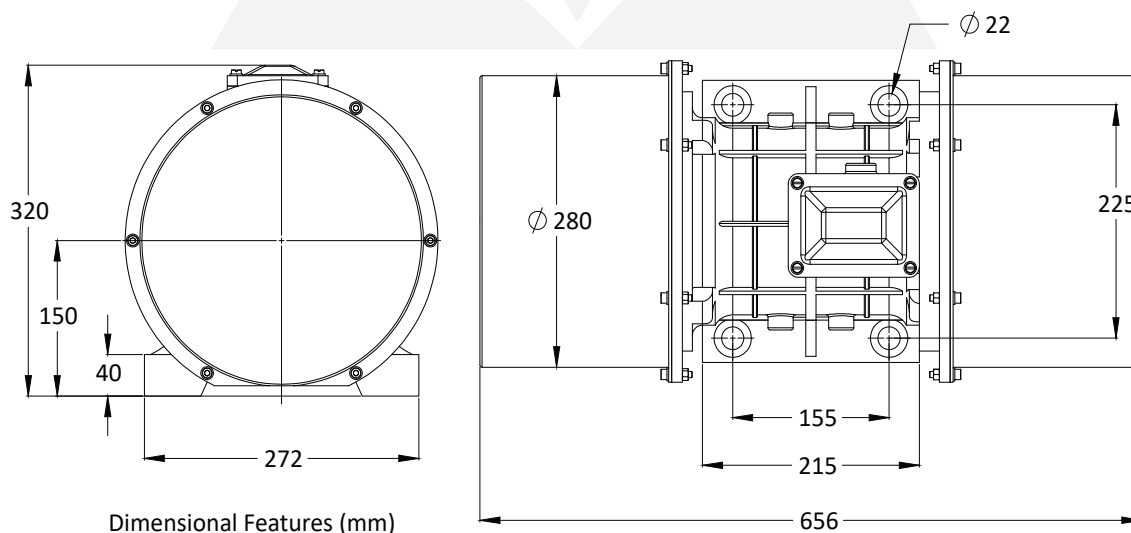
1.8 KW / 1440 RPM / 3  $\phi$  / 50 Hz



Dimensional Features (mm)

| Weight | Screw | Washer         | Clamping Torque | Cable Type    | Cable Gland         |
|--------|-------|----------------|-----------------|---------------|---------------------|
| 112 Kg | M20   | $\phi$ 23 x 39 | 373 Nm          | 4G x 4 Sq. mm | M 25 x 1.5 mm pitch |

1.9KW / 1440 RPM / 3  $\phi$  / 50 Hz

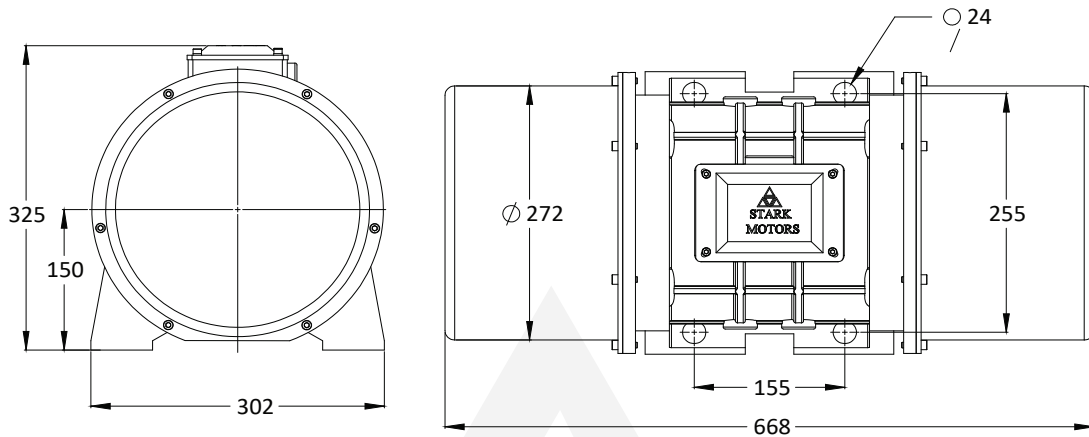


Dimensional Features (mm)

| Weight | Screw | Washer         | Clamping Torque | Cable Type    | Cable Gland         |
|--------|-------|----------------|-----------------|---------------|---------------------|
| 112 Kg | M20   | $\phi$ 23 x 39 | 373 Nm          | 4G x 4 Sq. mm | M 25 x 1.5 mm pitch |

## 4Pole Vibro Motors

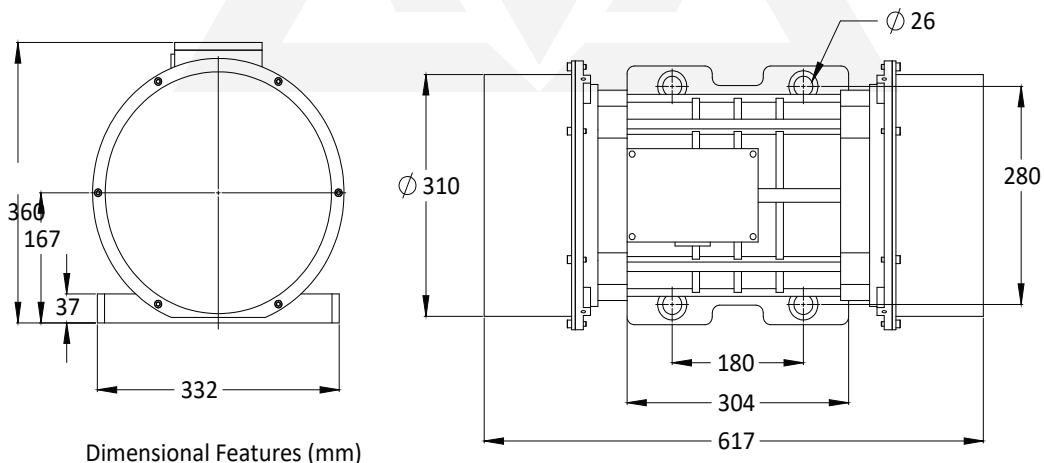
### 2.2 KW / 1440 RPM / 3 $\phi$ / 50 Hz



Dimensional Features (mm)

| Weight | Screw | Washer         | Clamping Torque | Cable Type    | Cable Gland         |
|--------|-------|----------------|-----------------|---------------|---------------------|
| 152 Kg | M22   | $\phi$ 23 x 39 | 550 Nm          | 4G x 6 Sq. mm | M 25 x 1.5 mm pitch |

### 3.6KW / 1440 RPM / 3 $\phi$ / 50 Hz

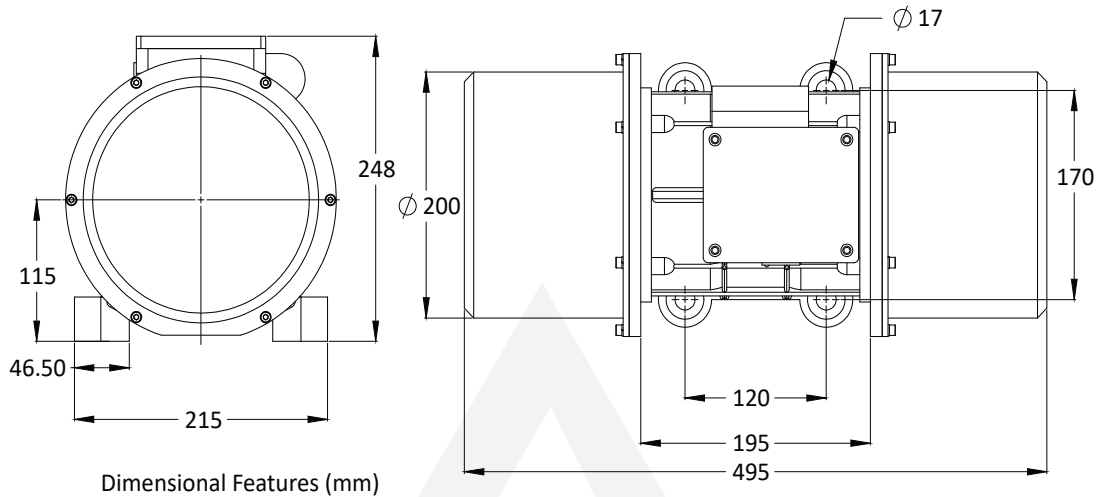


Dimensional Features (mm)

| Weight | Screw | Washer         | Clamping Torque | Cable Type    | Cable Gland        |
|--------|-------|----------------|-----------------|---------------|--------------------|
| 200 Kg | M24   | $\phi$ 25 x 44 | 696 Nm          | 4G x 6 Sq. mm | M32 x 2.0 mm pitch |

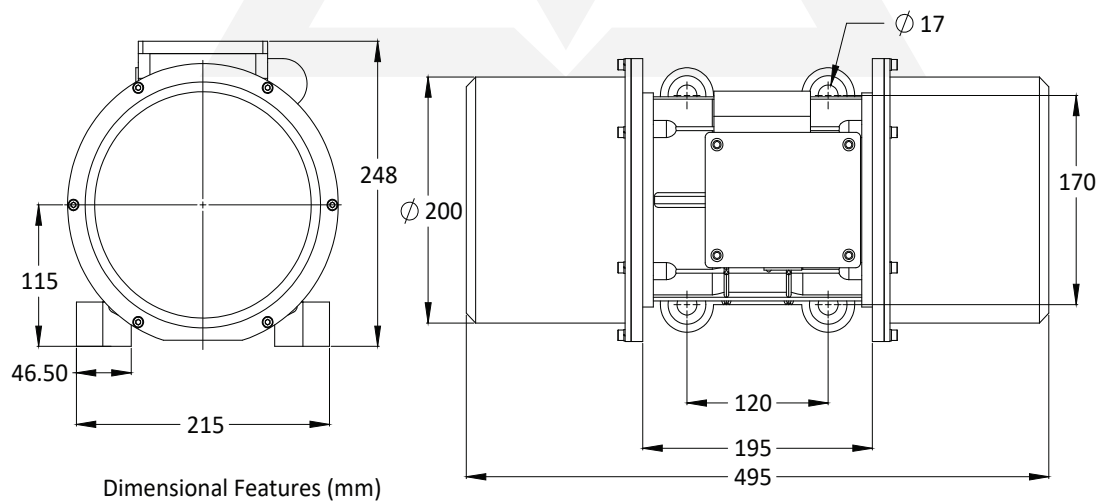
## 6Pole Vibro Motors

0.35 Kw / 960 RPM / 3  $\phi$  / 50 Hz



| Weight  | Screw | Washer         | Clamping Torque | Cable Type    | Cable Gland     |
|---------|-------|----------------|-----------------|---------------|-----------------|
| 47.5 Kg | M16   | $\phi$ 17 x 30 | 185 Nm          | 4G x 4 sq. mm | M25 x 1.5 pitch |

0.55 Kw / 960 RPM / 3  $\phi$  / 50 Hz

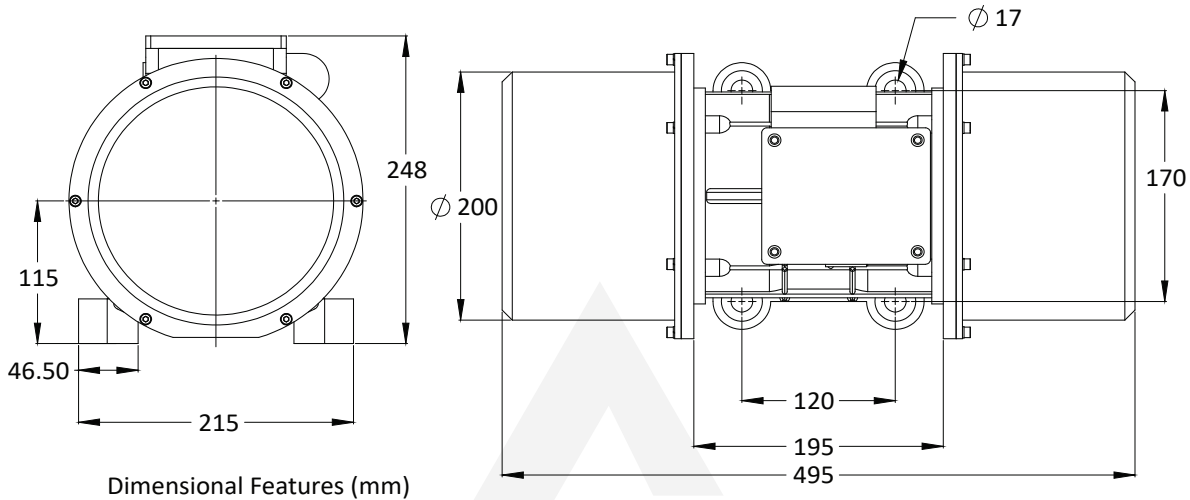


| Weight  | Screw | Washer         | Clamping Torque | Cable Type    | Cable Gland     |
|---------|-------|----------------|-----------------|---------------|-----------------|
| 47.5 Kg | M16   | $\phi$ 17 x 30 | 185 Nm          | 4G x 4 sq. mm | M25 x 1.5 pitch |



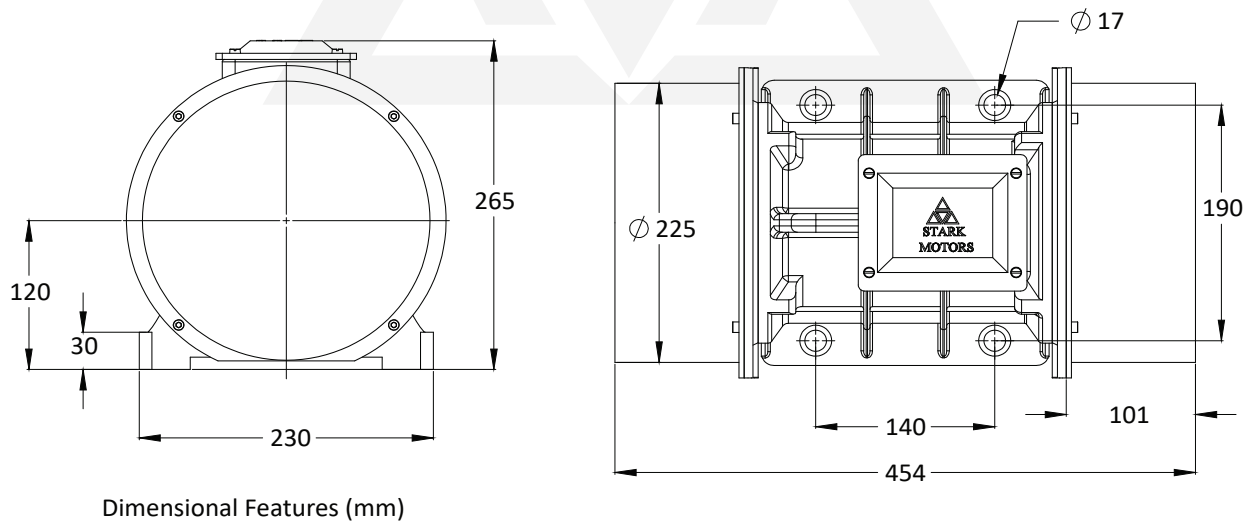
## 6Pole Vibro Motors

0.75 Kw / 960 RPM / 3  $\phi$  / 50 Hz



| Weight  | Screw | Washer         | Clamping Torque | Cable Type    | Cable Gland     |
|---------|-------|----------------|-----------------|---------------|-----------------|
| 47.5 Kg | M16   | $\phi$ 17 x 30 | 185 Nm          | 4G x 4 sq. mm | M25 x 1.5 pitch |

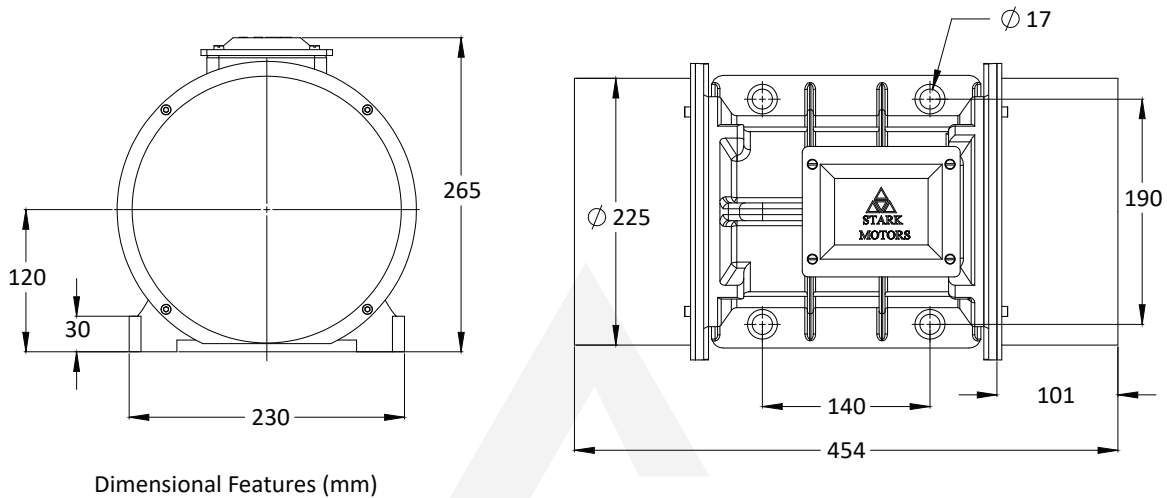
1.0 KW / 960 RPM / 3  $\phi$  / 50 Hz



| Weight (Kg) | Screw | Washer         | Clamping Torque | Cable Type    | Cable Gland    |
|-------------|-------|----------------|-----------------|---------------|----------------|
| 62          | M16   | $\phi$ 17 x 30 | 185 Nm          | 4G x 4 sq. mm | PG 11 mm pitch |

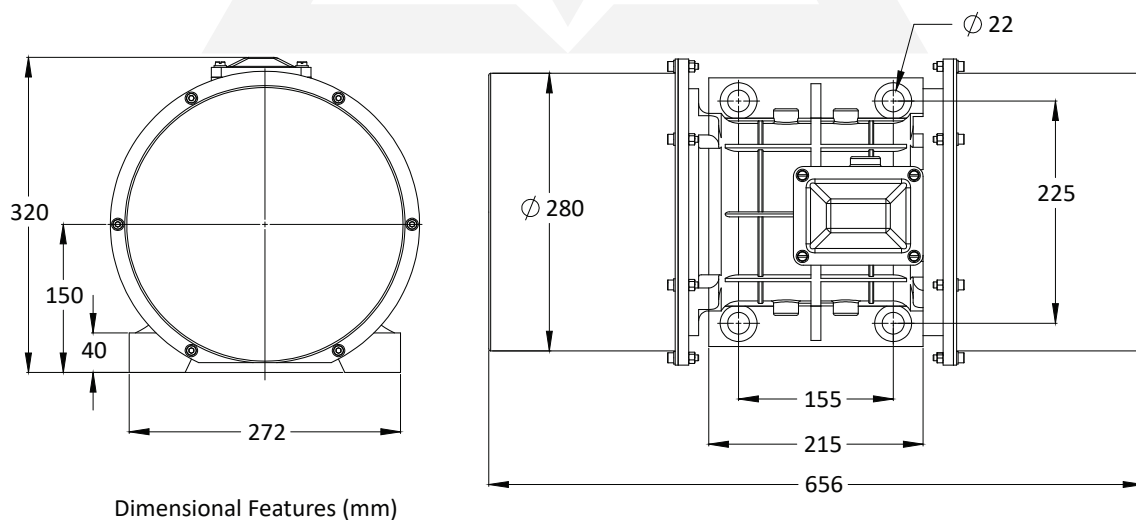
## 6Pole Vibro Motors

1.15 KW / 960 RPM / 3  $\phi$  / 50 Hz



| Weight (Kg) | Screw | Washer         | Clamping Torque | Cable Type    | Cable Gland    |
|-------------|-------|----------------|-----------------|---------------|----------------|
| 62          | M16   | $\phi$ 17 x 30 | 185 Nm          | 4G x 4 sq. mm | PG 11 mm pitch |

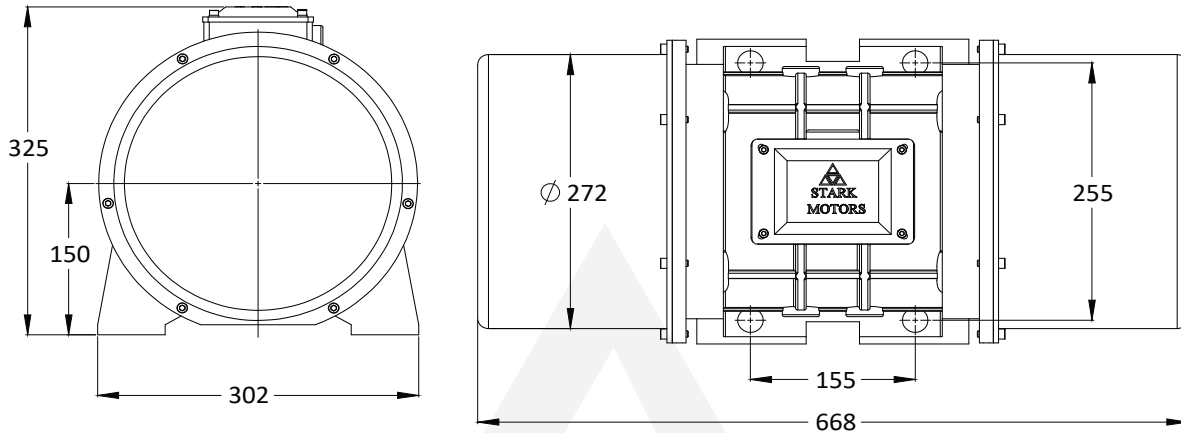
1.50 KW / 960 RPM / 3  $\phi$  / 50 Hz



| Weight | Screw | Washer         | Clamping Torque | Cable Type   | Cable Gland         |
|--------|-------|----------------|-----------------|--------------|---------------------|
| 114 Kg | M20   | $\phi$ 21 x 37 | 373 Nm          | 4G x 4 sq.mm | M 25 x 1.5 mm pitch |

## 6Pole Vibro Motors

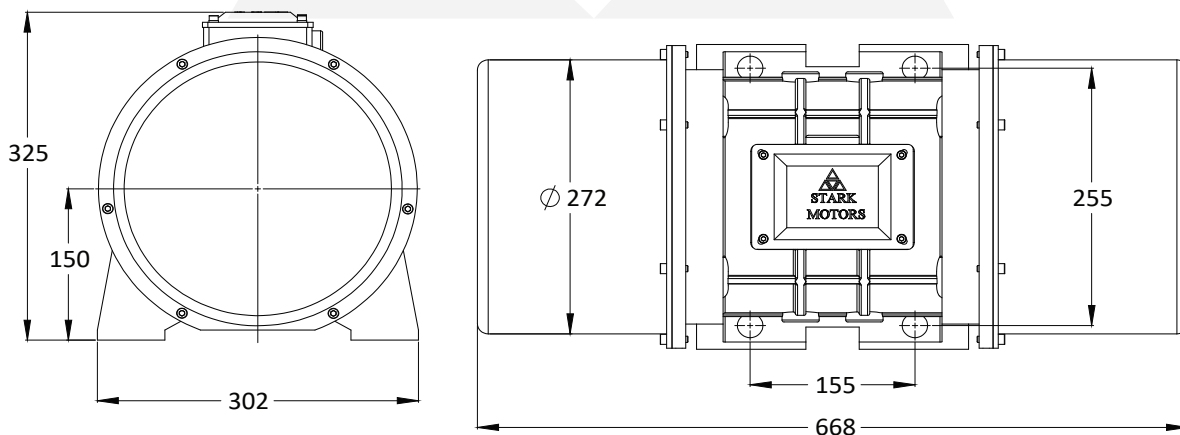
1.96 KW / 960 RPM / 3  $\phi$  / 50 Hz



Dimensional Features (mm)

| Weight (Kg) | Screw | Washer         | Clamping Torque | Cable Type    | Cable Gland         |
|-------------|-------|----------------|-----------------|---------------|---------------------|
| 152 Kg      | M22   | $\phi$ 23 x 39 | 550 Nm          | 4G x 6 Sq. mm | M 25 x 1.5 mm pitch |

2.2 KW / 960 RPM / 3  $\phi$  / 50 Hz

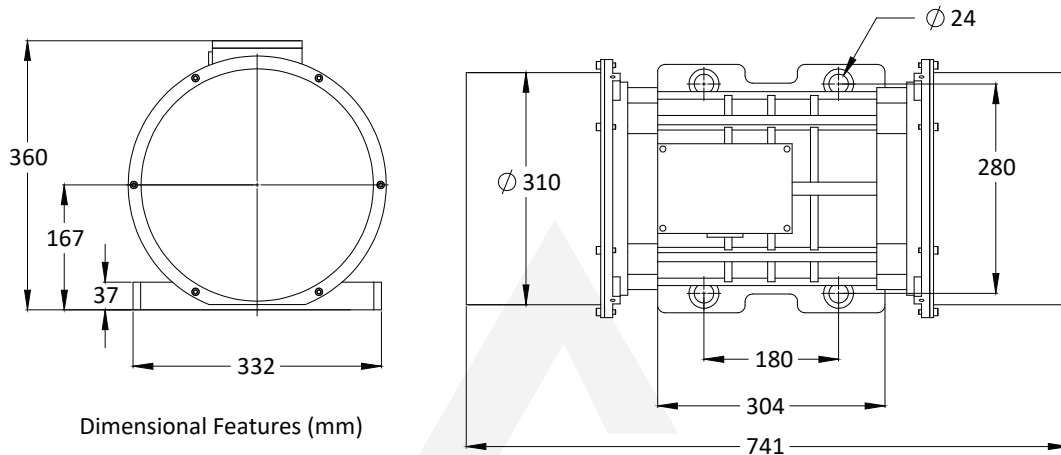


Dimensional Features (mm)

| Weight (Kg) | Screw | Washer         | Clamping Torque | Cable Type    | Cable Gland         |
|-------------|-------|----------------|-----------------|---------------|---------------------|
| 152 Kg      | M22   | $\phi$ 23 x 39 | 550 Nm          | 4G x 6 Sq. mm | M 25 x 1.5 mm pitch |

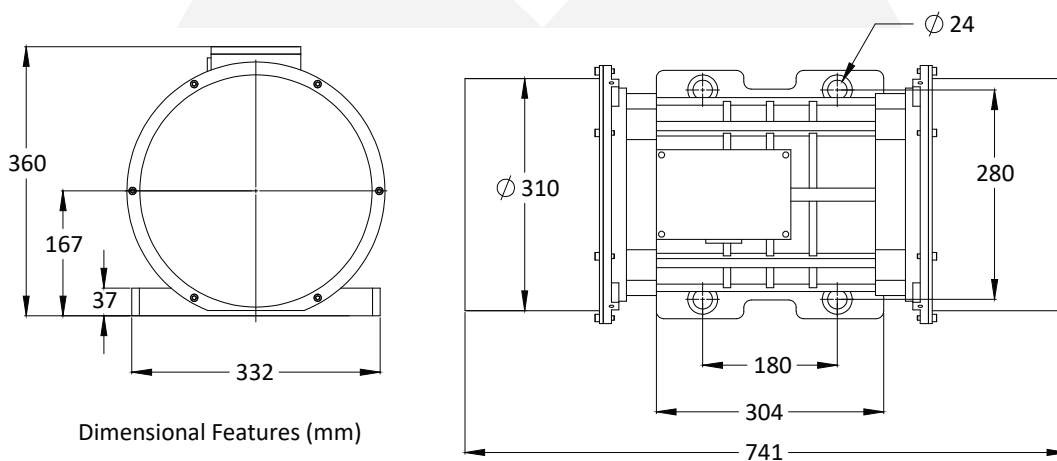
## 6Pole Vibro Motors

2.5 Kw / 960 RPM / 3  $\phi$  / 50 Hz



| Weight (Kg) | Screw | Washer         | Clamping Torque | Cable Type    | Cable Gland        |
|-------------|-------|----------------|-----------------|---------------|--------------------|
| 235         | M24   | $\phi$ 25 x 44 | 696 Nm          | 4G x 6 Sq. mm | M32 x 2.0 mm pitch |

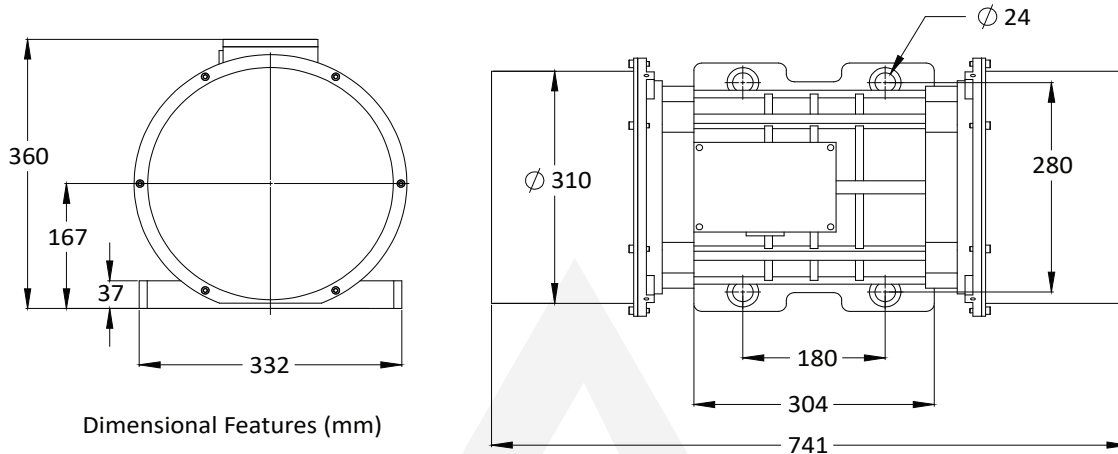
3.2 Kw / 960 RPM / 3 f / 50 Hz



| Weight (Kg) | Screw | Washer         | Clamping Torque | Cable Type    | Cable Gland        |
|-------------|-------|----------------|-----------------|---------------|--------------------|
| 235         | M24   | $\phi$ 25 x 44 | 696 Nm          | 4G x 6 Sq. mm | M32 x 2.0 mm pitch |

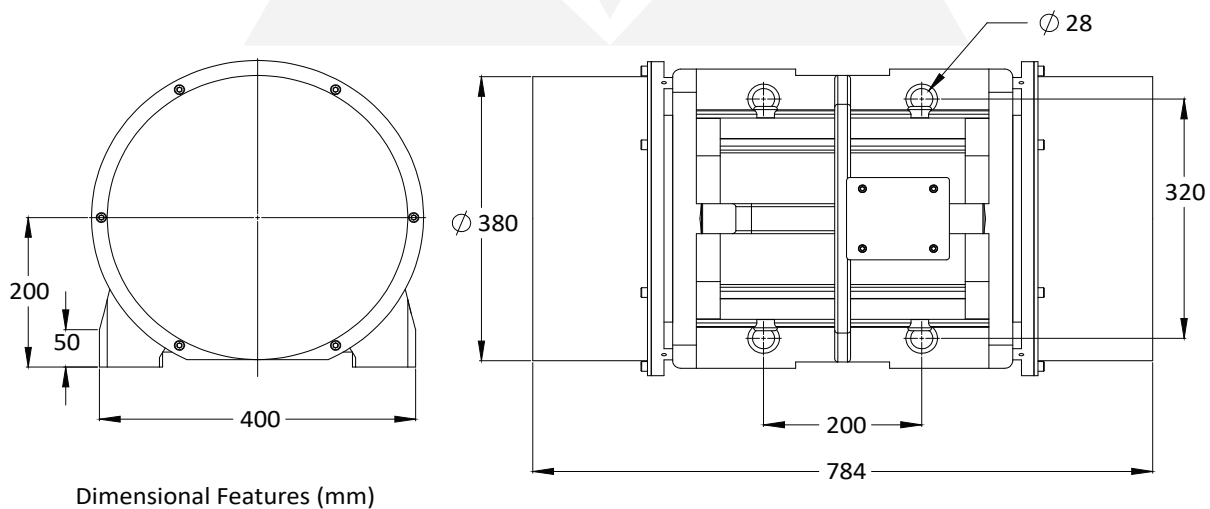
## 6Pole Vibro Motors

### 3.5 Kw / 960 RPM / 3 φ / 50 Hz



| Weight (Kg) | Screw | Washer    | Clamping Torque | Cable Type    | Cable Gland        |
|-------------|-------|-----------|-----------------|---------------|--------------------|
| 335         | M24   | ∅ 25 x 44 | 696 Nm          | 4G x 6 Sq. mm | M32 x 2.0 mm pitch |

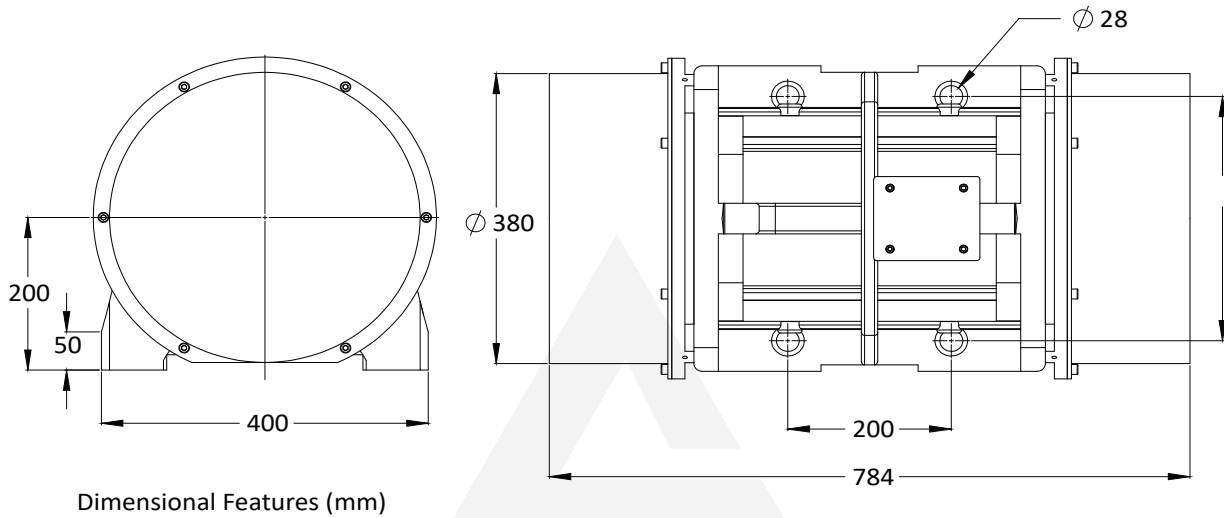
### 4.3 Kw / 960 RPM / 3 f / 50 Hz



| Weight (Kg) | Screw | Washer    | Clamping Torque | Cable Type    | Cable Gland        |
|-------------|-------|-----------|-----------------|---------------|--------------------|
| 400         | M27   | ∅ 28 x 50 | 870 Nm          | 4G x 6 Sq. mm | M32 x 2.0 mm pitch |

## 6Pole Vibro Motors

7.10 Kw / 960 RPM / 3  $\phi$  / 50 Hz



| Weight (Kg) | Screw | Washer         | Clamping Torque | Cable Type    | Cable Gland        |
|-------------|-------|----------------|-----------------|---------------|--------------------|
| 400         | M27   | $\phi$ 28 x 50 | 870 Nm          | 4G x 6 Sq. mm | M32 x 2.0 mm pitch |

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