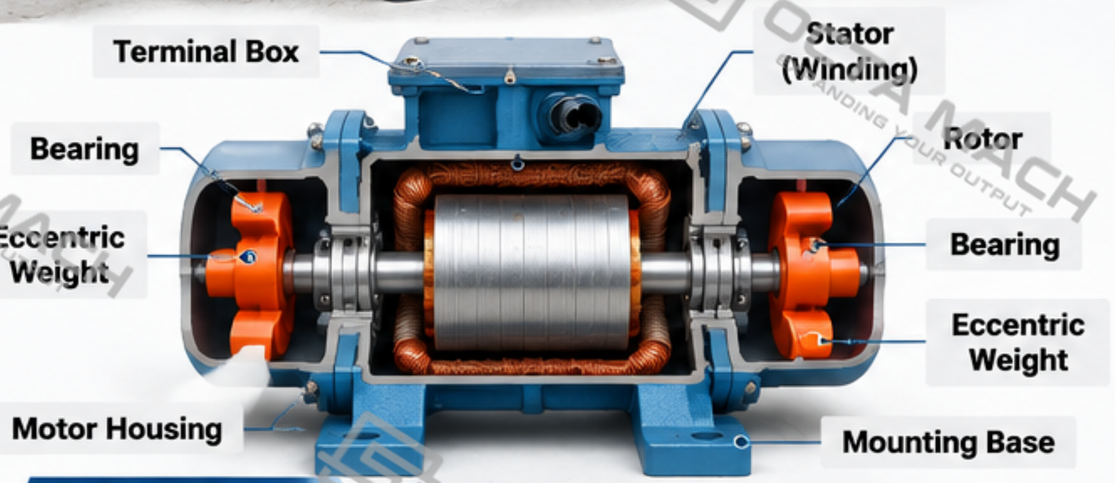
Industrial Vibration Motor

Product Overview & Working Concept





Working Concept

Rotating eccentric weights generate centrifugal force, which produces vibration and is transmitted to the driven equipment through the motor housing and mounting base.

Product Overview

An industrial vibration motor is a three-phase asynchronous motor designed to generate controlled centrifugal excitation force through rotating eccentric weights.

The generated vibration is transmitted through the motor housing and mounting structure to the driven equipment.

Main Functions

- Controlled mechanical excitation.
- Adjustable eccentric-weight configuration.
- Multiple rotational speed configurations.
- Application in vibrating screens and feeders.
- Integration with bulk material handling equipment, equipment.

Product Series

YZ Series



Standard Vibratory Motor

YZE Series



Three-Phase Asynchronous Vibratory Motor

YZB Series



Explosion-Proof Vibratory Motor

YZCB Series



Explosion-Proof Vibratory Motor

Main Applications



Vibrating Screens



Vibrating Feeders



Vibrating Conveyors



Mineral Processing Equipment

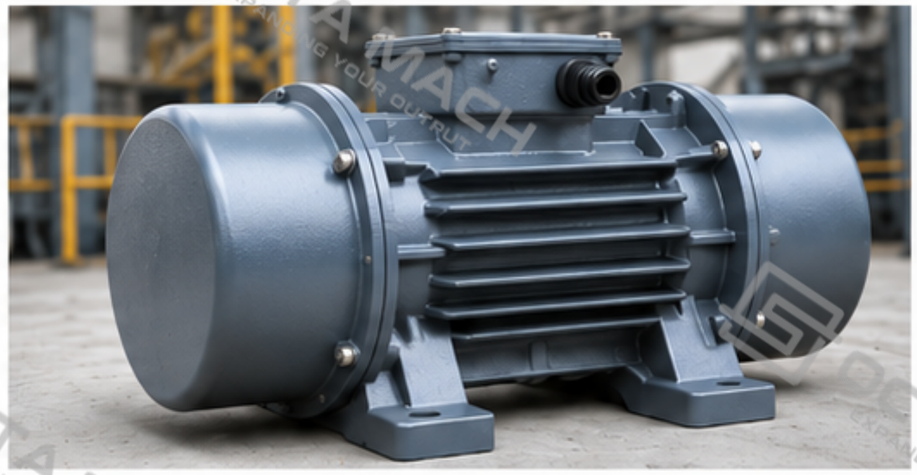
Industrial Vibration Motor

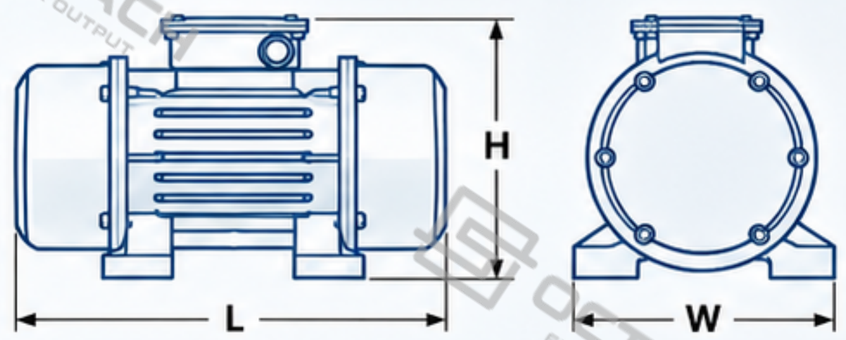
Main Technical Specifications



Mechanical Parameters

Motor Type	Three-Phase Asynchronous Vibratory Motor
Motor Series	YZ, YZE, YZB, YZCB
Maximum Excitation Force	3–180 kN across the listed YZ range
Rated Power	0.12–13 kW across the listed YZ range
Number of Poles	2, 4, 6 and 8 poles, depending on series
Rated Speed	Approximately 725–2,880 rpm, depending on model
Mounting Direction	Model-dependent
Excitation Force Adjustment	Adjustable eccentric weights





Electrical & Operating Parameters

Standard Rated Voltage	380 V
Standard Frequency	50 Hz
Insulation Class	Class F
Protection Rating	IP55 for listed standard configurations
Duty Type	S1 – Continuous Duty
Electrical Connection	Star / Delta (Y/Δ)
Ambient Temperature	-20°C to +40°C
Maximum Installation Altitude	1,000 m

Technical Notes

- The listed specifications represent available model ranges rather than one single motor configuration.
- Excitation force, speed, power, current and mounting dimensions vary by series and pole number.
- Other voltage and 60 Hz configurations can be considered according to electrical requirements.

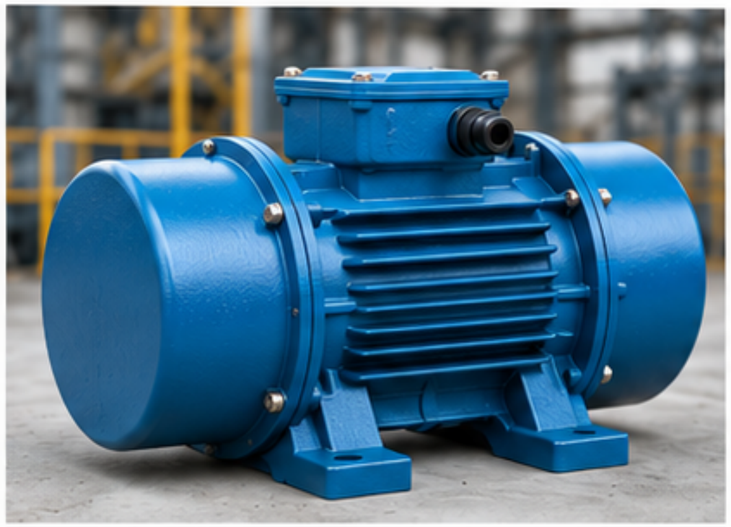
Industrial Vibration Motor

YZ and YZE Series – Technical Parameters



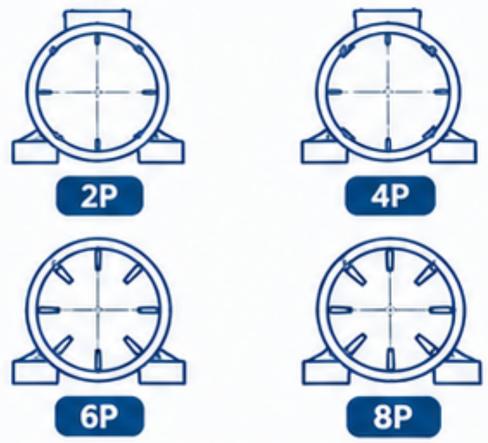
YZ Series

The YZ series provides 2-pole, 4-pole, 6-pole and 8-pole configurations for different vibration speeds and excitation force requirements.



Poles	Excitation Force	Speed	Rated Power
2 Poles	3–20 kN	2,600–2,880 rpm	0.20–1.80 kW
4 Poles	3–100 kN	1,400–1,460 rpm	0.12–6.30 kW
6 Poles	3–180 kN	950–986 rpm	0.20–13.00 kW
8 Poles	50–100 kN	725–735 rpm	3.00–7.50 kW

Pole configuration overview: 2P, 4P, 6P, 8P



YZE Series

YZE is a four-pole three-phase asynchronous vibratory motor series.



Excitation Force: 15–52 kN

Rated Speed: 1,430–1,460 rpm

Rated Power: 0.75–2.20 kW

Model	Excitation Force	Speed	Rated Power	Rated Current
YZE-15-4	15 kN	1,435 rpm	0.75 kW	1.80 A
YZE-25-4	25 kN	1,450 rpm	1.25 kW	2.77 A
YZE-38-4	38 kN	1,440 rpm	1.80 kW	3.83 A
YZE-52-4	52 kN	1,460 rpm	2.20 kW	4.82 A

All technical figures shown are series-specific and should be confirmed against the selected motor model.

Industrial Vibration Motor

YZB and YZCB – Explosion-Proof Vibratory Motors



YZB Series — Explosion-Proof Vibratory Motor

The YZB series is an explosion-proof three-phase asynchronous vibration motor, designed for applications where the motor must meet specific explosion-protection requirements in addition to its vibration performance.



Technical Range

Pole Configuration	Excitation Force	Speed	Rated Power
4 Poles	10–38 kN	1,420–1,450 rpm	0.50–2.20 kW
6 Poles	10–60 kN	960–975 rpm	0.70–3.70 kW

Representative YZB Models

Model	Excitation Force	Speed	Rated Power	Rated Current
YZB-10-4	10 kN	1,420 rpm	0.50 kW	1.30 A
YZB-20-4	20 kN	1,440 rpm	1.10 kW	2.65 A
YZB-38-4	38 kN	1,440 rpm	1.80 kW	4.15 A
YZB-20-6	20 kN	965 rpm	1.52 kW	3.99 A
YZB-60-6	60 kN	975 rpm	3.70 kW	9.02 A

Explosion-Protection Marking

Ex d IIB T4 Gb

Ex d	Protection concept: flameproof enclosure ("d" type).
IIB	Gas group: applicable to IIB gas atmospheres.
T4	Temperature classification: the maximum surface temperature is within the T4 group.
Gb	Equipment protection level (EPL): Gb, suitable for the specified hazardous area.



YZCB Series — Explosion-Proof Vibratory Motor



The YZCB series is also classified as an explosion-proof vibratory motor.

Its model-level technical ratings, installation dimensions and applicable certification details must be confirmed for thie selected configuration.

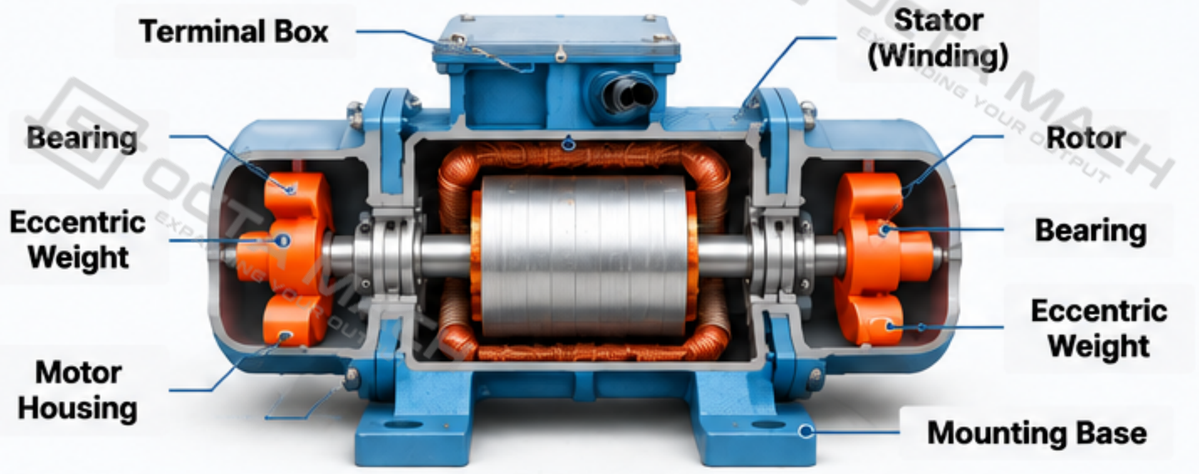
Safety Note

Explosion-proof suitability must be verified against the actual hazardous-area classification, gas or vapor characteristics, temperature requirements, equipment protection level and valid certification.

Industrial Vibration Motor

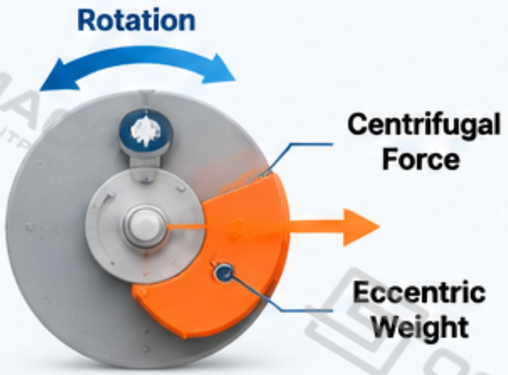
Working Principle and Excitation Force Adjustment





Working Principle

The motor drives a shaft with eccentric weights rotating at a rated speed. The rotating eccentric masses generate centrifugal force, which produces periodic vibration of the motor housing. The vibration is transmitted through the mounting structure to the driven equipment, such as vibrating screens, feeders and conveyors.



Eccentric Weight Adjustment

The excitation force can be adjusted by changing the relative angular position of the eccentric weights on both ends of the shaft. A larger effective eccentric mass generates a higher excitation force, while a smaller effective eccentric mass results in a lower excitation force.

Lower Excitation Force



Smaller effective eccentric mass

Medium Excitation Force



Medium effective eccentric mass

Higher Excitation Force



Larger effective eccentric mass

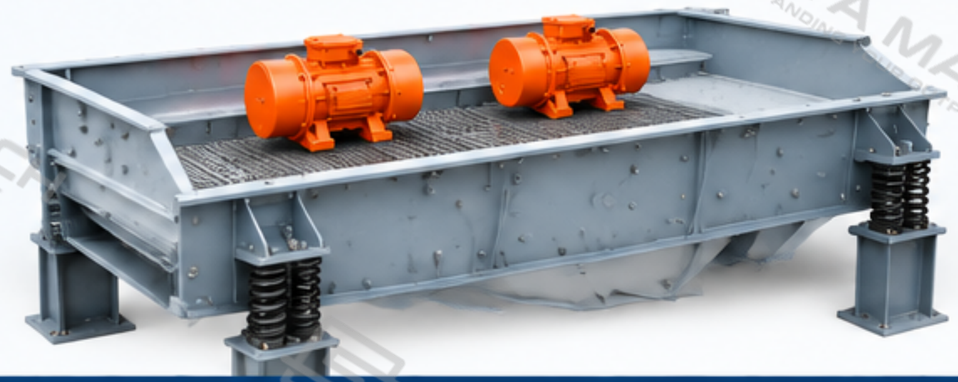
Motor Speed and Pole Configuration

Pole Configuration	Rated Speed (rpm)
2 Poles	2,600–2,880
4 Poles	1,400–1,460
6 Poles	950–986
8 Poles	725–735

These are model-specific rated speed ranges.

Multiple Motor Configurations

Vibrating equipment can be configured with one or more vibration motors. The installation positions and rotation directions of the motors determine the resulting vibration pattern (e.g., linear or circular) to meet different screening, feeding and conveying requirements.



Installation Notes

- Select the number and arrangement of motors according to the equipment design.
- The rotation direction must follow the equipment requirements.
- The exact installation configuration must follow the driven equipment's mechanical design.

Industrial Vibration Motor

Industrial Applications and Manufacturing Process



Industrial Applications

Widely used in material feeding, screening, conveying and separation in mining, quarrying and mineral processing.



Vibrating Screens

Material screening and particle separation.



Vibrating Feeders

Controlled feeding of coarse rock to crushing equipment.



Vibrating Conveyors

Bulk material transportation through a vibrating conveyor.



Mineral Processing

Screening, classification or dewatering in mineral processing plants.

Manufacturing Process

Key manufacturing steps for reliable performance and stable operation.



1 Mechanical Component Machining



2 Stator Winding



3 Vacuum Impregnation



4 Final Motor Assembly and Testing

Quality Control

Final testing focuses on the following key aspects to ensure reliable and stable performance:

- Electrical performance.
- Insulation integrity.
- Mechanical assembly.
- Operating condition.

Industrial Vibration Motor

Operating Conditions, Installation and Maintenance



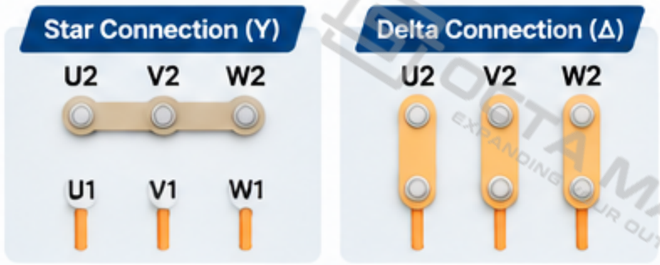
Standard Operating Conditions

Parameter	Specification
Rated Voltage	380 V
Rated Frequency	50 Hz
Ambient Temperature	-20°C to +40°C
Maximum Altitude	1,000 m
Insulation Class	Class F
Protection Rating	IP55
Duty Type	S1 – Continuous Duty
Electrical Connection	Star / Delta (Y/Δ)

These conditions apply to the listed standard configurations. Confirm the exact motor model.

Electrical Connection

- The voltage, frequency, rated current and connection arrangement must match the electrical supply of thie installation.



For explosion-proof models:
Use corresponding certified electrical accessories and installation practices.

Mounting Requirements



- Flat mounting surface to ensure full contact with the motor base.
- Correct mounting bolt arrangement according to the installation drawing.
- Adequate support rigidity to reliably transmit the excitation force.
- Model-specific installation dimensions (e.g., bolt size and spacing) must be confirmed with the selected motor model.

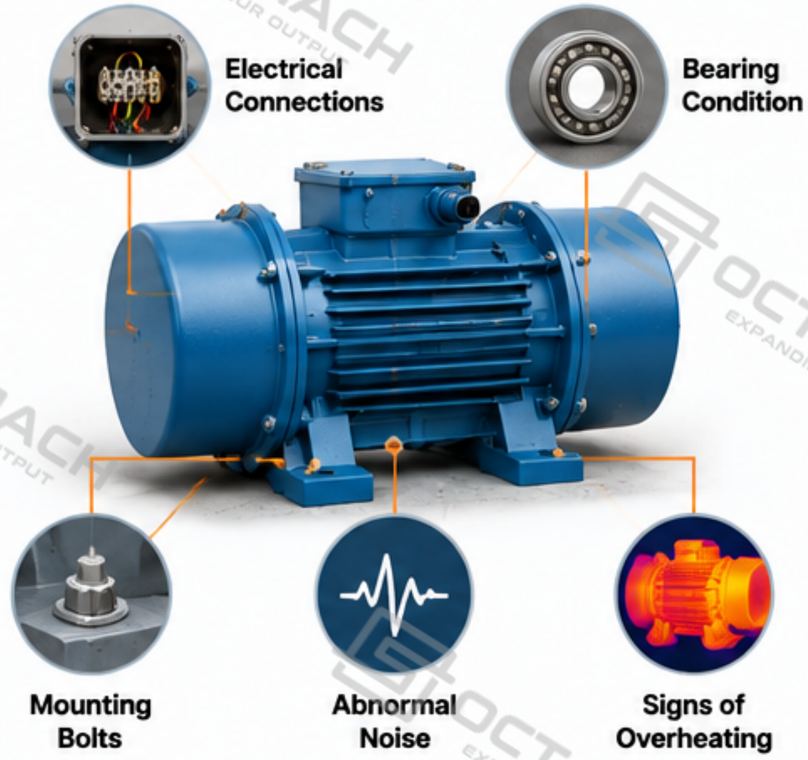
Bearing Service Life

Pole Configuration	Bearing Service Life
2 Poles	5,000 operating hours
4 Poles	10,000 operating hours
6 Poles	10,000 operating hours
8 Poles	10,000 operating hours

Note:

- These figures refer to bearing life, not guaranteed service life of the complete motor.
- Actual bearing life depends on operating load, mounting conditions, maintenance and other service factors.

Maintenance



Maintenance Checklist

- [x] Check the condition and tightness of mounting bolts.
- [x] Inspect electrical connections for secure and reliable contact.
- [x] Monitor the bearing condition during operation.
- [x] Pay attention to any abnormal noise during operation.
- [x] Check for signs of overheating and address the cause in time.

Industrial Vibration Motor

Motor Selection Guide and Frequently Asked Questions



Motor Selection Workflow

A practical selection process to determine a suitable vibration motor for your application.

Step 1
Identify the driven equipment.

Step 2
Determine vibrating mass and material load.

Step 3
Determine the required excitation force.

Step 4
Select suitable rotational speed and pole number.

Step 5
Verify rated power and electrical configuration.

Step 6
Check mounting dimensions and installation arrangement.

Step 7
Verify operating environment and explosion-proof requirements (where applicable).

Step 8
Confirm the final motor configuration.

Selection Considerations

Key factors to evaluate to ensure the vibration motor matches the equipment and operating conditions.



Excitation Force and Vibrating Mass

The excitation force must match the vibrating mass, material load and required acceleration.

Rotational Speed

Select the appropriate speed according to screening and conveying requirements.

Electrical Configuration

Verify voltage, frequency, current and power.

Mechanical Compatibility

Check mounting dimensions, bolt spacing, mounting orientation and motor weight.

Operating Environment

Check temperature, altitude, dust and moisture.

Hazardous Areas

Verify explosion-protection markings and certification for the exact motor configuration.

Frequently Asked Questions (FAQ)

Q1. What Is an Industrial Vibration Motor Used For?

It generates centrifugal excitation force to drive vibrating screens, feeders, conveyors and material classification equipment.



Q2. How Is the Excitation Force Adjusted?

By changing the relative angular position of the eccentric weights on the motor shaft.



Q3. What Is the Difference Between Standard and Explosion-Proof Motors?

Explosion-proof motors must have a protection classification and valid certification suitable for the actual hazradous installation environment.

Q4. How Do I Choose a Vibration Motor for a Vibrating Screen?

Consider vibrating mass, required excitation force, operating speed, screen structure, mounting dimensions and electrical supply.

