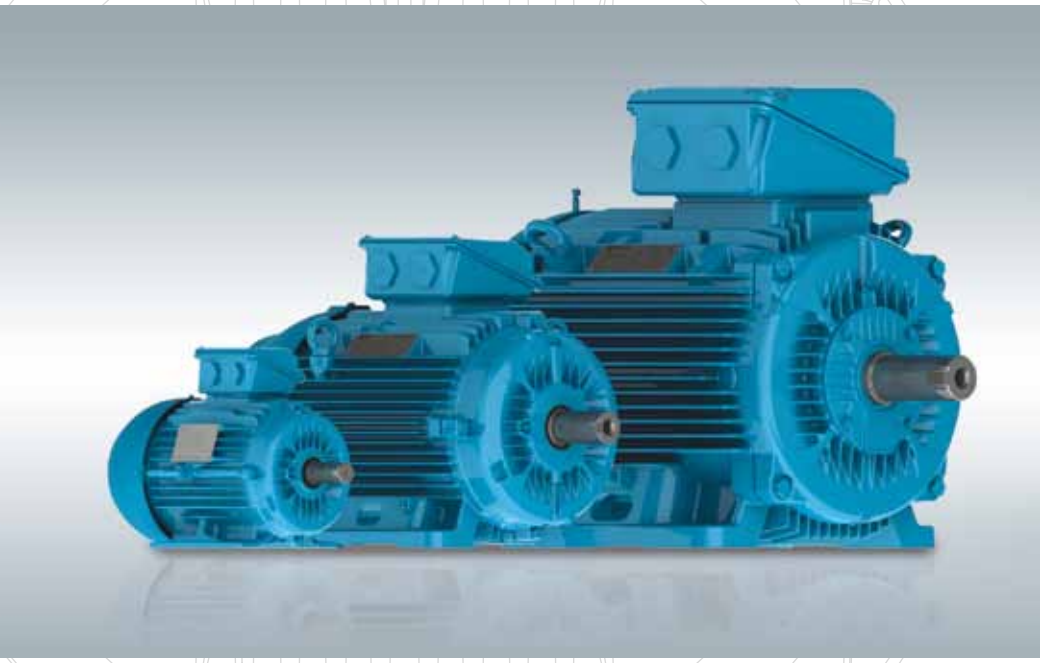
W22

Three Phase Motor

- Energy saving
- Increased productivity
- Extended lifetime
- Lower maintenance
- Available as IE2 and IE3
- Available to meet all global energy efficiency requirements



W22
Efficiency and reliability for industry

High performance with maximum energy efficiency, this is the objective of the new WEG electric motor. High efficiency and Low Cost of Ownership throughout the entire motor lifetime have been the basis for the W22 development.

Low cost of ownership

A motor that has been designed to operate efficiently and effectively giving maximum reliability to the user thus eliminating unplanned stops and delays in production and a longer lifetime - this is what is behind the W22 concept.

Energy saving

Energy consumption accounts for 90% of total operational costs throughout the lifetime of an electric motor, the remaining 10% is allocated to cost of acquisition, installation costs and maintenance costs, making energy efficiency a major objective of the design. The W22 range exceeds the required European efficiency levels of IE2 and IE3 and is available to meet all global efficiency requirements giving energy savings and reduced payback time.

Versatility

Frame sizes 225S/M to 355A/B have a terminal box design that allows for easy modification from top mounted to right / left mounting by use of an adapter device, this reduces stock requirements and modification time.

Built to last

W22 motors have been built using high quality iron, cast at WEG's own foundries, ensuring maximum durability and high performance in aggressive conditions. The new fan cover design provides greater resistance against impacts and allows for more efficient intake of air for the cooling of the motor. The design of the endshield has been improved allowing for greater dissipation of heat away from the bearing.

Inverter Duty applications

The exclusive WISE® insulation system used on the W22 range increases the winding dielectrical resistance, thus allowing VFD operation up to 575V without requiring further modification which results in flexibility and extended motor lifetime.

* *Voltages above 575V, please contact our nearest sales office.*

Future Range Development

The W22 is the basis for future motor developments which include Hazardous area motors, Smoke extraction motors and application specific designs, with the objective being energy efficiency and lower cost of ownership.

Product overview

Standard features

- Efficiency levels: Standard Efficiency (IE1), High Efficiency (IE2) and Premium Efficiency (IE3)
- Cooling method: TEFC (Totally enclosed fan cooled) – IC411
- Rated output: 0,12 to 500 kW
- Number of Poles: 2, 4, 6, 8, 10 and 12
- Frame sizes: 63 up to 355A/B
- Frequency: 50 Hz and 60 Hz
- Voltage: 50 Hz: 220-240/380-415 V (up to frame size 100L) / 380-415/660 V (112M to 355A/B)
  60 Hz: 220/380 V (up to frame size 100L)/ 380/660 V (112M to 355A/B)
- Painting plan: 207A for frames 63 up to 132M/L and 203A for frames 160M to 355A/B
- Color: RAL 5007 (Standard Efficiency – IE1)
  RAL 5009 (High Efficiency – IE2)
  RAL 6002 (Premium Effiicency – IE3)
- Design N
- Service factor: 1.00
- Ambient temperature: 40°C, at 1000 m.a.s.l.
- Class “F” insulation (ΔT=80 K)
- Degree of protection: IP55
- Mounting: B3T
- Terminal block
- Vibration level: Grade A
- Continuous duty: S1
- WISE® (WEG Insulation System Evolution) insulation system - Suitable for inverter duty applications*
- Thermistors (1 per phase) for frames 160M to 355A/B
- Squirrel cage rotor / Aluminium die cast
- V‘Ring seal for frames 63 to 200L and WSeal® for frames 225S/M to 355A/B
- Stainless steel nameplate AISI 316
- Fan Covers: steel made for frames 63 to 132M/L and cast iron made for frames 160M to 355A/B
- Regreasing nipple for frames 225S/M to 355A/B
- Metric threaded cable entries on the terminal box
- Special Insulation for voltage above 575 V

** For additional details about Inverter operation, please contact our technical support.*

Optional available

- Other mountings
- Other voltages
- Design H
- Class “H” insulation
- Flange FF, C, C-DIN
- Vibration level: Grade B
- Suitable to take vibration monitoring SPM
- Thermal protection: Thermostats or RTD (PT-100) on windings and bearings
- Degree of protection: IP56, IP65, IP66
- Bearing seals: Lip seal, Oil seal, Labyrinth taconite and W3 Seal®
- Additional terminal box for accessories
- Space heaters
- Fans: Aluminum, cast iron and bronze
- Drip cover for vertical applications
- Double shaft end
- Encoder
- Cable glands in plastic and brass
- Stainless steel shaft
- Cooling method: TEBC (Totally enclosed blower cooled)
- Roller bearing (160M to 355A/B)
- Insulated non-drive end bearing (up to frame size 225S/M)
- Options available to eliminate stray shaft currents

W22, a new concept

- Excellent cost benefit ratio
- Optimization of environmental resources
- Updated electrical features
- Noise level reduction
- Vibration level reduction
- Easier maintenance
- Improved efficiency levels

For electrical and mechanical data, see the Products & Services area on our website www.weg.net

Components Design

New Cooling System

Fan Cover
- Aerodynamic concept
- Reduced noise level
- Easier assembly
- Better air flow distribution over frame
- Increased mechanical strength
- Provisions for encoder and drip cover

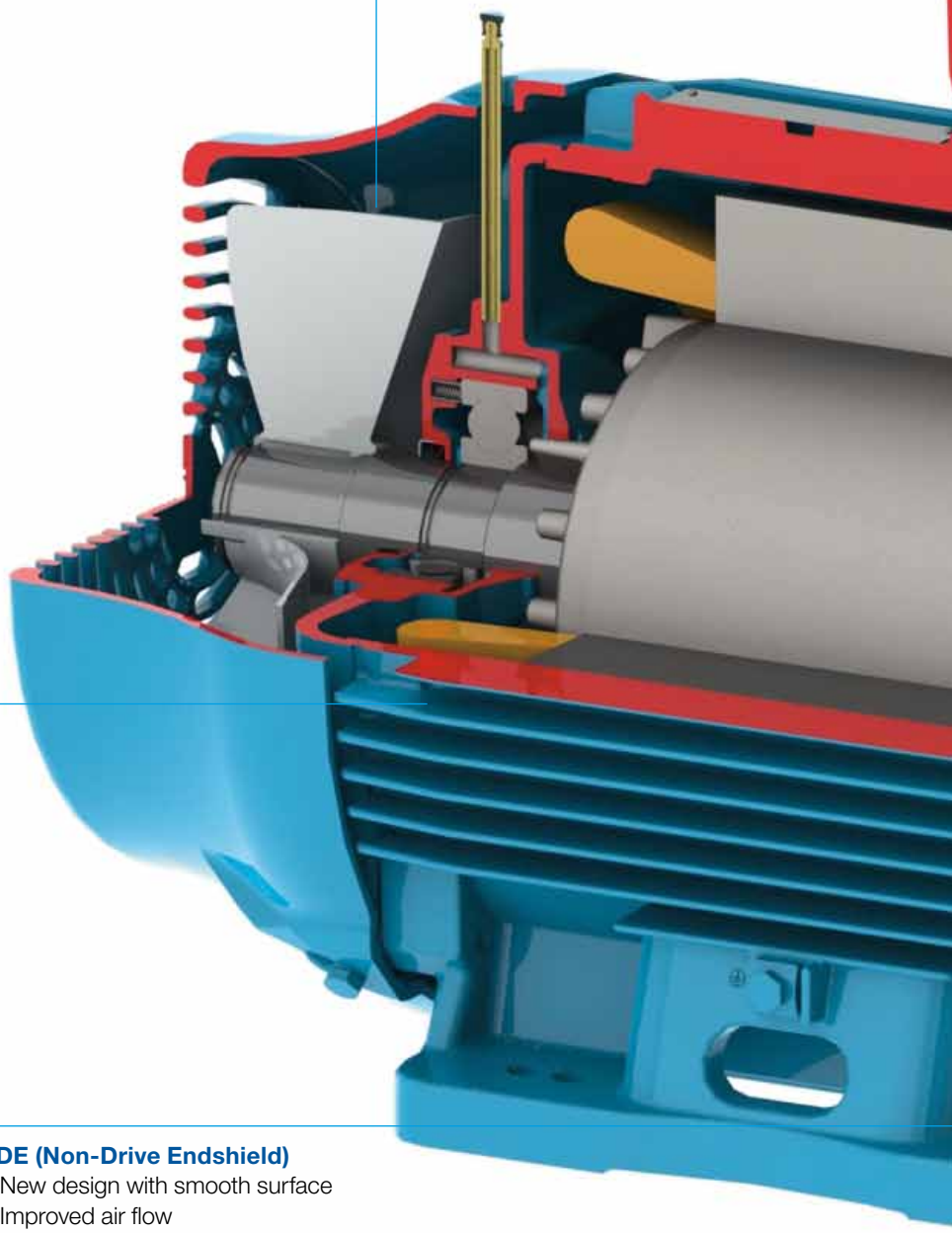
Fan
- Reduction of fan blades
- Reinforced fan hub structure
- Noise level reduction
- Increased air flow
- More rigid fan
- Parts reduction for easier replacement stock

Frame
- Terminal box position changed in order to improve temperature disspation (for frame sizes 225S/M to 355A/B)
- Reduced temperature on windings and bearings
- Noise level reduction

Place for monitoring devices
- Displaced 90^0 from each other

Two eyebolts
- Easier handling
- Higher mechanical resistance and better handling safety

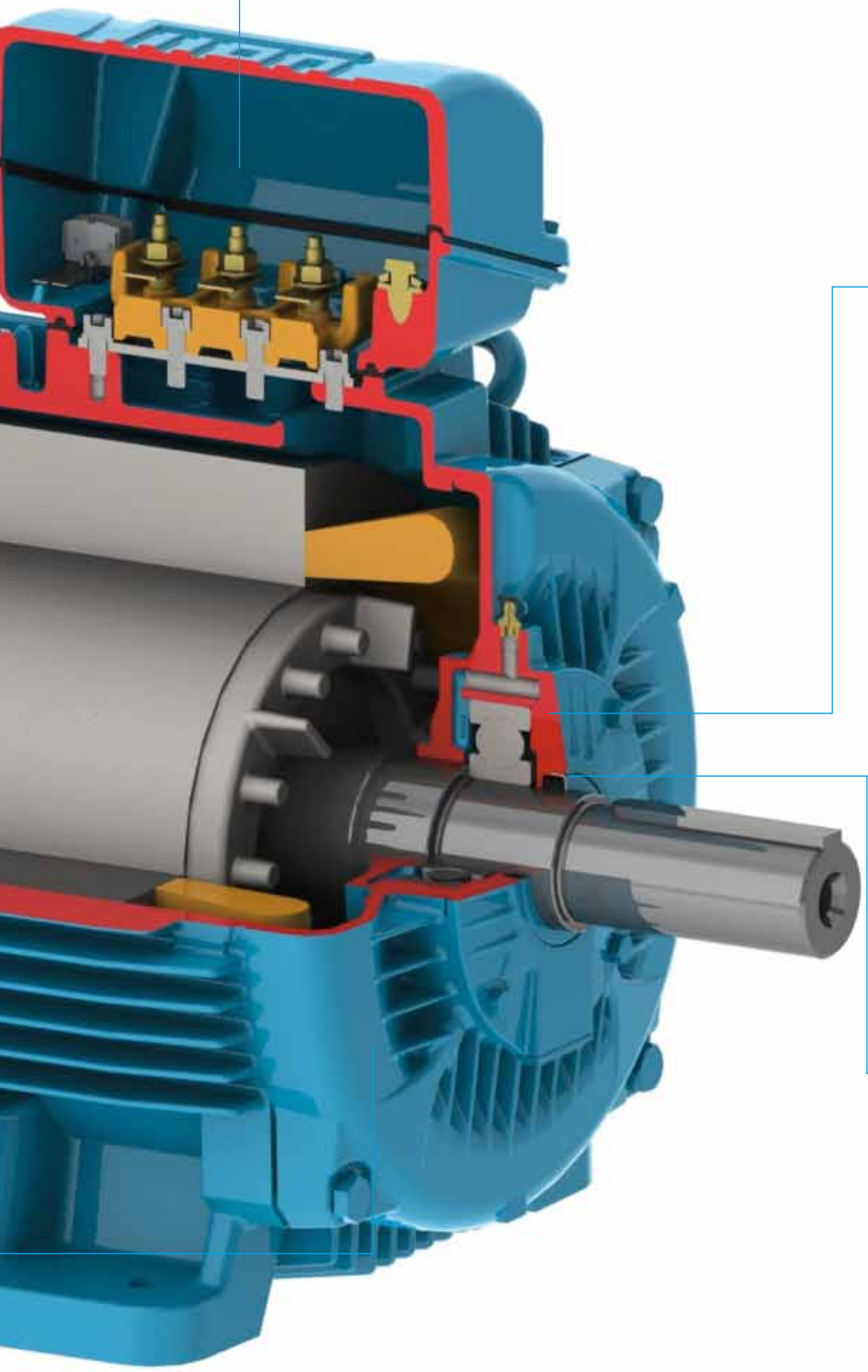
Solid feet
- More impact resistance
- Ideal for high vibration level applications
- Easier installation and alignment



Endshields

DE (Drive Endshield)
- New fin design
- Reducing operating temperature
- Reinforced endshield structure
- Bolt protection

NDE (Non-Drive Endshield)
- New design with smooth surface
- Improved air flow
- Noise level reduction
- Reinforced structure



Terminal Box

- Better connection quality
- Easier cable handling during installation
- More space available for installation of auxilliary devices
- Easier maintenance
- Top / Left / Right mounting configuration
- Rotation in 90º intervals
- Diagonally split design

Bearing Caps

External

- Ribbed surface for improvement of bearing heat dissipation

Internal

- Bearing lubrication quality improvement
- Reduced bearing temperature extending lubrication times

Sealing system

- The exclusive WSeal® for frame sizes 225S/M to 355A/B
- Increased dust and moisture protection
- Increased protection to high-pressure cleaning

Design Details

New cooling system

Redesigned to provide improved air flow over the motor frame keeping low operational temperatures and assuring reliability and extended lifetime. The aerodynamic concept of the fan cover increases effective airflow, minimizing losses due to the recirculation of air between the fan and fan cover. The fan was designed to provide a tough structure and a reduced noise level. Motor terminal box (for frame sizes 225S/M to 355A/B) and eyebolts were repositioned to enable better airflow.

This new cooling system also contributes to:

- Cooler bearing temperature thus extending relubrication intervals.
- Lower Noise Level meeting the most demanding Health & Safety regulations.
- Lower Overall Operational Temperature resulting in a more efficient material usage.

Terminal box

Increased internal space making the terminal block more accessible to the user ensuring easier and safe cable handling and cable connection. The dimensions are optimized to provide more space for the power supply cables and auxiliary connectors resulting in easier assembly.

For frame sizes 225S/M to 355A/B, the terminal box can be mounted on top, left or right side of the motor using the same frame, and was placed closer to the drive end resulting in bearing temperature and noise level reduction.

Frame

The motor feet are integrally cast providing increased mechanical rigidty. For frame sizes 160M to 355A/B, the frame design also has points that can be used as provisions for vibration sensors as a standard feature.
Benefits from the new frame design:

- Motor temperature reduction
- Eyebolts repositioned - easier handling for the application.
- Provision for vibration sensors - frame and endshields with provisions for reliable vibration analysis (frame sizes 160M to 355A/B).
- Solid feet - Enhanced resistance when operating at high vibration application and also provide easier alignment on installation.

Exclusive shaft sealing system WSeal®

Extends motor lifetime when operating in aggressive environments by protecting the motor against water and dust guaranteeing a proper degree of protection (available for frame sizes 225S/M to 355A/B).

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