WATER AND PUMPS ARE ESSENTIAL FOR LIFE!

Manufacturing Group
Established in Italy in 1976 Worldwide

Works, Pump and Motor Test Laboratory, Pumps and Electric Motors Research Centre.

Exclusive High Tech Pumps for Water and Other Fluids, Motors and Controls, in Standard or Custom Designs.

VALCO: THE MOST COMPLETE RANGE OF PUMPS FOR DOMESTIC, AGRICULTURAL, INDUSTRIAL AND CIVIL USE AND A RELIABLE SOURCE OF PUMP AND MOTOR SERVICE: A GLOBAL, INNOVATIVE AND COMPETITIVE PUMPING AND MOTORS SOLUTION.

VALCO® International Trademark

WATER AND PUMPS ARE ESSENTIAL FOR LIFE!

Made in Italy
The VALCO PROFILE

The company was founded by Valerio Costenaro in 1976 in Marostica in the high technology region of VENETO, (Venice Region, North-east Italy). The company has flourished by the design and manufacture of an expanding range of pumps, booster sets, motors and associated fittings for their installation, built-to-order and Custom made units with a worldwide distribution.

Main Features and Advantages:
- the most complete range of pumps and motors to cover most of your pumping and motors requirements: we study, design and manufacture the Solutions to your Pumping Problems
- our pumps are made in Italy
- prompt rapid deliveries
- high technology, innovation and constant research: over 36 years long-lasting experience with expertise over a century old
- process and production cycles to ISO standards with major International, Regional and National Certifications with Conformity to EU Directives, Regulations and Recommendations
- overdimensioned motors to handle voltage fluctuations; Single phase motors may be provided on request with overload motor protection, on 3 phase version the overload motor protection must be provided by the user and we can offer you our lines of control and protection panels (starters).
- special sealing arrangements with superior quality
- executions in cold pressed 304 or 316 stainless steel and cast iron, stainless steel and bronze castings for corrosion resistance and durability
- Low Voltage versions 42V AC following rules CENELEC HD 400.1 for use in installations with safety rules against electrocution.
- pumps, motors and associated fittings meeting world standards and regulations and designed and made for high efficiency and lower power consumption to save and optimize water and energy and with a full line of pumps suitable for waters for human consumption
- constant research by your PUMP & MOTOR RESEARCH CENTRE in the development of new and more advanced products. The research and development of pumping sets for customers individual requirements are carried out by our Special Pumps Division: specialty pumps built to customers' requirements.
- highly sophisticated electronic testing facilities – our Pump & Motor Test Laboratory – guarantee top quality: all units are tested before despatch – every process cycle and every finished product are tested against a number of performance parameters before being packed.
- high efficiency and consequently saving of energy due to low power consumption
- a global strategy for the promptest delivery of spare parts in a competitive manner
- service covering from enquiry to after-sale all throughout the pump life.

High Value Quality Pumps and Motors.
Our Quality is the result of more than 36 years Experience made of hard daily work, deep problem understanding with solutions implemented, thorough hard conformity tests for every production phase, strict field performance tests, hard durability tests, destructive tests, ISO conformity methods and full adherence to our strict tough Standards according to the innovative worldwide tested and fully reliable Valco Quality Method®.

Service Back up and Spare Parts Supply
Committed to the Customers since 1976 with Full Customer Service and Backup Support and rapid Supply of our Genuine Spares: organized in providing the Spare Parts even after 30 years operation and with a Worldwide Network of Service Centres with Specialists trained to Valco Standards. To help our Customers in handling with flexibility and fairness any maintenance and repair problems, Spare Parts are supplied to our Customers at special low prices.

Partnership and Co-operation
Our Company Growth from the very beginning into the future is based on building of Partnerships. We believe in Partnerships and Co-operation and this ensures us a stable sound constantly innovative Manufacturing and Distribution basis with highest degree of Reliability, utmost Flexibility and high and trustworthy Production Capacity with rapid Lead times to mutual Benefit. We control all phases of the Production Cycle: from Raw materials to finished products and after-sale Service with Maintenance, Repair and Supply of our genuine Spare Parts.
We want to help our Customers to be Successful, by providing the Best Products and the Highest Service at Competitive Market Prices.

Water and Energy Resources
We care for the Full Cycle of Water with the aim of Recovering the maximum amount possible through Renewable Energy Sources and VALCO is deeply involved to contribute to a better future and we are active with our following Innovative Units:
- Valco Pumping Water Packages, Watermovers, Clean Water Safety Kits, Field Portable and Movable Units for Water Potabilization and Plants with Emergency Solutions for Water Provision also with Reverse Osmosis Systems, Techniques for Searching Underground Waters, Water Well Drilling, Water Treatment for Spunlace or Hydroentanglement and Geothermal techniques to explore and exploit Geothermal Fluid Resources for Thermal Resorts (Spas) and for Civil, Industrial, Agricultural and Heating. We also provide consultancy, know-how, service and techniques to find water sources®.
- Valco Air Conditioning and Air Refrigeration Components and Technologies®.
- Valco pumps and motors training school®.

VALCO WATER and ENERGY DIVISION:
For the most efficient sustainable use of water and energy resources®.
Always at your Service with exclusive specialised distribution network supporting the customers requirements.

OUR MANUFACTURING RANGES
- SURFACE CENTRIFUGAL ELECTRIC PUMPS
- BOOSTER PRESSURIZATION SETS – PACKAGED PRESSURE UNITS and SYSTEMS
- DRAINAGE AND WASTEWATER SEWAGE NO-CLOG SUBMERSIBLE ELECTRIC PUMPS
- SUBMERSIBLE MULTISTAGE BOREHOLE ELECTRIC PUMPS FOR DEEP WELLS
- FITTINGS a complete line of Fittings for Pumps and Pumping Systems
- COMPONENTS and RAW MATERIALS for PUMPS and MOTORS
- ELECTRIC MOTORS

OUR CUSTOMERS
- Pumps specialized importers • Pumps distributors and Wholesalers
- Pumps dealers • Well Drillers • Pumps installers (plumbers)
- OEM Industrial Pumps End Users • Industrial Pumps Users • Pumps Users

We design and manufacture the most efficient, innovative and competitive pumping and motors solutions for you with flexibility and expertise, meeting your specific requirements with innovation and with trustworthy Care and Service from enquiry to installation all throughout the pump and motor life.
SURFACE CENTRIFUGAL ELECTRIC PUMPS

Pump construction
Horizontal and vertical, close-coupled, single and multistage, end suction, split case, in cast iron, stainless steel, brass, bronze and thermoplastics.

Applications
Drinking potable water supply, domestic, civil, community and district water boosters, irrigation, heating, air conditioning, firefighting, sprinklers, food processing, industry, chemical, water treatment, sea water pumping.

Innovations and Specialties
- with Variable Speed Control with Inverters, (frequency control with modulation), for control and protection of the system, for low power consumption and energy saving according to EU energy saving rating recommendations Energy Standards Classes (to meet Kyoto Protocol recommendations), and for durability.
- built with materials following EU Directive 98/83/CE referring to waters for human consumption.
- with pump assembly and motor made to customers' requirements.

Range of Performance:
- Capacity (flow rate) up to 240 m³/h
- Head up to 260 m
- Powers: 0.37 to 75 kW

EFFICIENCY LEVELS FOR THREE PHASE MOTORS to IEC 60034-30 when applicable or required:
IE1 = Standard Efficiency
IE2 = High Efficiency (comparable to USA EPACT 60Hz)
IE3 = Premium Efficiency (comparable to USA NEMA Premium 60Hz)

PUMP RANGES
- Conva™ - Deep Well Jet Self Priming suitable for wells with low capacity.
- Jetdom™ - Shallow Well Jet Self Priming.
- Irrigua™ - Centrifugal Single and Two-Stage and to DIN-EN 733-DIN 24255 flanged DIN2533 (of back pull-out design for quick and simple dismantling and reassembling for ease of Maintenance), also Bareshaft versions and Split Case.
- Casalinga™ - Peripheral Turbine with multivane impeller generating high lifts with a small power consumption.
- Casaself™ - Self Priming Turbine Peripheral Electric Pumps.
- Nordica™ & Buta™ - Multistage horizontal and vertical all stainless steel, high heads, silent operation.
- Valco-Lem™ - Self priming contractors trash pumps in cast iron, bronze and stainless steel castings.
- TLC™, UTC™ and LSC™ - Circulating Pumps also with Variable Speed Control compliant with EuP directive and meeting the provisions of Regulation No 641/2009 of European Commission requiring a drastic reduction of energy consumption of circulators as from January 1st, 2013. Savings up to 80% less than traditional circulating pumps.
Booster construction
Made of 1, 2 or more service electric pumps also version with Jockey Pump (centrifugal, jet, multistage horizontal and vertical), with controls either electric, electronic or with variable speed inverter (with frequency control with modulation: to make an "Intelligent Pump") with high efficiency and lower power consumption and energy saving to meet EU Classes recommendations and according to Kyoto Protocol, with a wide range of settings, protections also with remote control.

Applications
Drinking Potable water applications. Raising water for general use from varied sources: residential, civil, agricultural and industrial uses; providing sufficient water delivery to meet users’ demand and maintaining a sufficient minimum pressure in the system to ensure that the water reaches all points of demand: it enables the system to constantly adapt to your demands. Ideal to make up for insufficient pressure or shortages of water supply from the public water supplier or for water supply from varied sources (tanks, wells, etc.).

They are widely used also in agricultural and industrial applications where variable capacities at a constant pressure are required.

Innovations and Specialties
Special executions built with materials, (i.e. all stainless steel) following EU Directive 98/83/CE referring to waters for human consumption.

We build on demand Special Booster Sets for the most efficient and effective handling of Water Resources, for lower Power Consumption and Energy Saving according to Kyoto Protocol also through the use of Alternative Energy Sources. Water Turbines for the production of Green Energy.

Ranges of Performance:
• Capacity (flow rate) up to 400 m³/h
• Head up to 260 m
• Powers from 0.37 ÷ 22 kW

EFFICIENCY LEVELS FOR THREE PHASE MOTORS to IEC 60034-30 when applicable or required:
IE1 = Standard Efficiency
IE2 = High Efficiency (comparable to USA EPACT 60Hz).
IE3 = Premium Efficiency (comparable to USA “NEMA Premium 60Hz).

Sets Controlled by:
• Electric Panel Starter and Pressure Switch with Tank and 1 - 2 or more Pumps
• TC Drive Twin-Electronic Pump Controller for 1 or 2 Pumps
• Variable Speed Inverter V or T Drive with 1 - 2 or more Pumps
SUBMERSIBLE MULTISTAGE BOREHOLE ELECTRIC PUMPS FOR DEEP WELLS
from 3 to 14-inch wells, to NEMA standard and complete with electric motors.

The most complete range of submersible borehole electric pumps to meet all your borehole pumping applications. Suitable to replace standard surface pumps, carrying the advantages of lesser space needed, less maintenance and complete absence of noise.

Pump and Motor construction
From 3 to 14 inch sizes to Nema standard and complete with 2-pole and 4-pole electric motors, rewindable, 2-wire, 3-wire with control box, oil cooled (prefilled with food grade additives to protect against freeze and rust) and wet type water-cooled executions. Protection IP68.

Pump ends made of stainless steel, bronze, brass and cast iron. Impellers in stainless steel, cast iron, brass, bronze, noryl®, polycarbonate and technopolymers and thermoplastics, corrosion and abrasion resistant and non-toxic, radial and mixed-flow, brass multivane turbine. Heavy duty stainless steel or cast iron or bronze casting pump enclosure.

Applications
Suitable to replace standard surface pumps, carrying the advantages of lesser space needed, less maintenance and complete absence of noise. For domestic drinking potable water, industrial and agricultural and geothermal applications; to explore geothermal resources for fluids in spas, industry, agriculture and private, community and district heating and in all cases where it is requested to lift water out from below the ground from aquifers and to push it above with pressure: boreholes, bored waterbeds, sump drainage, artificial snow, solar power, etc.

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Energy Saving and Efficiency
We optimize efficiencies for lower power consumption to suit your specific pumping requirements.

Ranges of Performance:
- Capacity (flow rate) up to 1300 m³/h
- Head up to 800 m
- Powers: 0.37 ÷ 400 kW

© VALCO SUBMERSIBLE BOREHOLE PUMPS
Pump construction
Cast iron, Stainless steel, Bronze, no-clog, Portable, synthetic corrosion and abrasion-free material (thermoplastics), Automatic with float switch.
Impellers: Open, vortex, single-channel, double-channel and three-channel and grinder cutter plate made of cast iron, stainless steel, aluminium, abrasion-resistant nitrile rubber and technopolymers. Pump bodies made in cast iron, stainless steel, aluminium and technopolymers.

Applications
Suitable for domestic, residential, industrial, agricultural and civil drainage and wastewater sewage uses: dewatering; sump drainage, effluent and sewage; ponds, construction, mines, reclamation, swimming pools, basements and flooded areas, stormwaters, irrigation, stock breeding, food beverage, for waste, sewage and washwater for single and several households and public buildings, for building sites also partially dry, for continuous and heavy duties for most types of fluids also with bodies in suspension in water treatment plants, brackish waters, dirty waters, sludge, industrial processes, etc.

Innovations and Specialties
Low Voltage versions 42V AC following rules CENELEC HD 400.1 for use in installations with safety rules against electrocution.
Intelligent Control Systems Electric, Electronic Controls Panels also with Variable Speed Inverters, Sensors, Alarm Transmitters and Remote Monitoring. Executions for construction sites able to withstand limited dry running.

We also supply Sewage Pumping Lifting Stations for lifting household waster water.

Coupling Devices
Foot Pedestals and Adapters (outlet bends couplings, inlet bends intake suction curve), Gate Valves and Flange Ball Retaining Valves (Check Non return totally free passage with cover easily removable for plant inspection).

Energy Saving and Efficiency
We optimize efficiencies for lower power consumption to suit your specific pumping requirements.

We provide full Technical Service, Spare Parts, Assistance and Aftersale Service and Maintenance through our Valco Distributors’ Network and our Valco Service Centres.

Ranges of Performance:
• Capacity (flow rate) up to 850 m³/h
• Head up to 39 m
• Powers: 0.37 ÷ 33 kW
• Nominal Delivery Diametres up to DN200
• Solids in suspension (free passage) max diametre 108 mm. Non-Clog.

DRAINAGE AND WASTEWATER SEWAGE
NO-CLOG SUBMERSIBLE ELECTRIC PUMPS

Sewage Wastewater Submersible Pumps Single, Double and three-channel Impellers heavy duty cast iron, bronze and stainless steel castings, non-clogging.

- Single channel cast iron Impeller
- Double channel cast iron Impeller
- Three channel cast iron Impeller

Drainage Submersible heavy duty Dewatering Pumps, open nitrile coated bronze impeller for effluents with some abrasive substances.

- Open bronze Impeller with special antiabrasive nitrile-rubber protection

Cutter Sewage Wastewater Submersible Pumps with open cutting impeller with diffusor and blade device for liquids containing fibres.

- Cast iron Diffuser
- Stainless steel AISI 440 C Blade four-knives intake cutting system
- Open Cast iron Impeller

Heavy Duty Drainage Submersible Contractors’ Pumps, open cast iron impeller, stainless steel housing and 316 stainless steel motor cooling jacket for muddy and sandy waters, cooled by the liquid pumped, suitable to operate in hard conditions also not fully submerged. Delivery outlet up to 6”.

- Open 650 HB Chrome cast iron Impeller

Installation scheme

Pumping Lifting Stations, Coupling Devices and Ball Check Valves

- Sewage Pumping Lifting Stations for lifting wastewater
- Protections and control panels (starters) supplied on request
- Coupling Devices - Foot Pedestals for Sewage Submersible Pumps also interchangable to replace major brands
- Ball check valves, no clogging for wastewater up to DN600 (24”)
**Controls for Booster Sets and Pumps**

- **V-DRIVE**
  - Variable speed inverters

- **T-DRIVE**
  - Vertical multiple function level regulators for narrow spaces, for dirty waters and special fluids, for tanks and cisterns, for minimum and wide variations of levels also for deep wells

- **VALCONTROL-1**
  - Pump controller for constant pressure: it eliminates cycling

- **VALCONTROL-2**
  - Pump controller for constant pressure: it eliminates cycling

- **VALCOTANKCONTROL**

**Float switches and Level regulators**

- **VMSH-C**
  - Mercury-free to RoHS directive wastewater free suspension wastewater VMS20-P2CAL

- **VMS20-2HL**
  - Two-chamber wastewater drainage two-chamber

**Starters and panels electromechanical and electronic for protection of 1 or more Pumps, Direct, Star-Delta, Soft and Reactance Start, 1phase and 3phase**

- **PCMF**
  - with overload protection

- **VMS20-P2CAL**
  - Dry running check for borehole pumps for borehole and submersible pumps

- **VMS20-2H**
  - Dry running check (Cosφ) for boosters and drainage pumps

**Tanks with replaceable membrane**

- **C24-FS**
  - Stainless steel type with stainless steel flange corrosion-free

- **SC2**
  - 2-litre stainless steel water hammer arrester

- **C24-SS**
  - Stainless steel water hammer arrester

- **C8**
  - Stainless steel water hammer arrester

- **SC24**
  - Stainless steel water hammer arrester

- **V60**
  - Stainless steel water hammer arrester

- **C100**
  - Stainless steel water hammer arrester

- **V100**
  - Stainless steel water hammer arrester

- **VM**
  - Stainless steel water hammer arrester

- **VM60**
  - Stainless steel water hammer arrester

- **Spare Butyl Rubber Membranes**

**Tanks with fixed membrane**

- **C24-SS**
  - Corrosion-free and maintenance-free

- **C24-FS**
  - Stainless steel water hammer arrester

- **F2-SS**
  - Stainless steel water hammer arrester

- **CM60**
  - Stainless steel water hammer arrester

- **ARIES-F016-SS**
  - Stainless steel water hammer arrester
FITTINGS a complete line of Fittings for Pumps and Pumping Systems to ensure fast installation and complete success.


Pressure and Flow Control - Pressure Switches (Pressure, Temperature and Flow) to determine the pressure and flow of water or fluid in a circuit. Pressure Gauges (Manometers). Electric and Electronic Control - Starters, Control Panels and Variable Speed Inverters, (frequency control with modulation), to control, protect and modulate the pumpset for submersible borehole, drainage and sewage, surface and booster sets: to make an “Intelligent Pump”. Remote Control Devices.

Hoses and Connectors - Flexible Hoses also in stainless steel corrosion-proof. 3way and Sway brass connectors PVC Steel suction Casings and Pipes with screens, well and raising heads, adapters, closing caps for Borehole and Convava Deep Well Pumps. Fittings for Polyethylene Pipes.

Valves - Non return Check, Foot, Ball, Swing Check Valves, made of brass, bronze, stainless steel, cast iron, ecological, lead-free, multipurpose, free passage full flow to minimize friction losses and to maximize suction performance of pumps, no clog, best for drinking water also in acetal resin and polypropylene with available sizes from ½” to 4” Pressure Reducers and Pressure Stabilizers, Safety Valves, Surge and Pressure Diaphragm Relief Valves to reduce the excess pressure generated to avoid major damages to the equipment -designed to protect systems and persons from the dangers and damages of over pressure in water and heating pipe systems. Flanged Ball Retaining Valves for sewage wastewater pumps and systems. Special Valves for petrol and chemical Industry, offshore installations and pipelines. High Pressure Valves, Globe Valves for harsh services, check non return Valves to prevent flow reversal in severe applications to ASME, API, DIN, ISO and other Standards.

Fittings - In-Line Cartridge Water Filters with Cartridges. Impurity collecting Filters, Self-Cleaning Filters. Filtres with Cartridges - In-Line Cartridge Water Filters with Cartridges. Impurity collecting Filters, Self-Cleaning Filters. Filtres with Cartridges - In-Line Cartridge Water Filters with Cartridges. Impurity collecting Filters, Self-Cleaning Filters.


For all above products we supply executions suitable for waters for human consumption following EU Directive 98/83/CE.
Efficiency Levels for Three Phase Motors to IEC 60034-30

IE1 = Standard Efficiency
IE2 = High Efficiency (comparable to USA EPACT 60Hz)
IE3 = Premium Efficiency (comparable to USA "NEMA Premium 60Hz"


Motor construction


Standards: Powers and Frames to IEC, IEC 60072-1, IEC 60034-7, IEC 60034-1, IEC 60034-5, EN 50347. With frame sizes from S6 to 400 with construction forms footmounted or flangemounted B3, B5, B14, B3/B5, B3/B14 and special executions on demand. From 2 to 8 pole and with double polarity and also with Variable Speed Inverter control (frequency control with modulation), soft-starters and controls. Stator frames and shields made of die-cast aluminium or cast iron; ball bearings with double screen, silent; they do not require maintenance; steel or stainless steel shafts. Degree of protection IP44, other degrees available on request. Insulation Class F or B and other classes available on request, in an ambient temperature not exceeding 40 DEG.C., and at an altitude not exceeding 1000 metres.

Voltages

Single Phase: 230V
Three Phase: 3 kW and below 230/400V
4 kW and above 400/690 V

Other voltages available on request.

Cycles

50 Hz Standard
60 Hz available all throughout the range.

Innovations and Specialties

Windings in Class F with copper wiring in class H with impregnation in Class H.

Tropicalization on request. Flame-proof versions available – motors for hazardous areas - following Directive 94/9/EC ATEX for equipment intended for use in potentially explosive atmospheres Exed (motors compatible with explosive atmosphere that are mixed or inflammable: air, gases and dust). Low Voltage executions for use in installations with safety rules against electrocution.

DC motors and low voltage motors available on demand all throughout the ranges.

AC and DC Brake Motors also available. Asynchronous and Synchronous Generators suitable for Hydropower, Marine and Industrial Applications.

Mains and Inverter supply.

Custom Built Special Solutions

Special Executions available with special voltages, special shafts and special flanges.

Important: we also supply motors components like Wound Stators and Rotor Shafts made to custom designs for customers individual requirements.

- Frame Sizes from S6 to 500.
- Powers from 0.17 to 560 kW.
PUMPS and MOTORS COMPONENTS DIVISION

**Design** - Design and Manufacturing of Carbide Dies, Moulds and Tools with production of magnetic sheets for electric motors: ability to meet customers' requirements also following their own technical drawings up to the design of dies and the manufacturing of components. Robotics and Automation through Mechatronics with new materials for sustainable Innovation: a combination of Mechanics, Electronics and Computing which assures Products and Systems much more reliable, efficient, economical and versatile and with Nanotechnologies to design new products manufactured for new functions and better technologies and with Commonization to provide high quality at lower costs.

**Casting, Pressing, Stamping, Forming and Forging** - Cast iron, Bronze and Stainless Steel Castings. Aluminium Die-Castings, Metal cold Forging, Stamping, Blanking, Shearing and Pressing, Raw and Machined and made to order.

**Components for Electric Motors**

**Windings and Shafts** - Also wound Stators and Rotor Shafts made to custom designs for individual requirements.

**Components for Pumps**

**Turned Components to Custom's design** in Stainless Steel, Brass, Cast Iron, Bronze, Plastics, etc.

A complete range of components and spare parts for pumps and electric motors. We are able to identify and select the most suitable materials and technologies for the Customers’ individual requirements. Overhals and Genuine Spare Parts.

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PLASTIC RAW MATERIALS and COMPONENTS - DEVELOPMENT, DESIGN AND MANUFACTURING DIVISION

We provide a complete service from Raw Materials to Design and Production. We are able to identify and select the most suitable materials and technologies for the Customers’ individual requirements.

**Plastic Raw Materials** - We supply following First Choice (Premier) Plastic Polymers: ABS, EP, HDPE, LDPE, LLDPE, MF, PA, PBT, PC, PET, PE, PEI, POM, PP, PS, PSU, PTFE, PUR, PVDF, UF, UP, PE, HIPS, PES, PA, PVDC, PU, PEEK, PEI. We supply Plastic reprocessed Granules with same properties as virgin Polymers, Biopolymers, Natural Polymers, Biodegradable, Compounds, Composites, Elastomers (Rubbers): Healthcare, Non-Toxic, Recyclable plastic products thus contributing to the reduction of environmental pollution. All products can be delivered filled or unfilled.

**Innovative Materials for new products development with best application techniques**: Nanocomposite Compounds. Nonwovens made of natural and synthetic fibres, Nonwoven Textiles, Geotextiles, Geosynthetics, Spunbonded fabrics for soil stabilization, erosion control, drainage, environmental protection problems and to suit your particular applications.

For all above products we supply executions suitable for potable drinking waters for human consumption to conform with DM174 following EU Directive 98/83/CE.
EFFICIENCY LEVELS FOR THREE PHASE MOTORS to IEC 60034-30 when applicable or required:

IE1 = Standard Efficiency
IE2 = High Efficiency (comparable to USA EPACT 60Hz)
IE3 = Premium Efficiency (comparable to USA "NEMA Premium 60Hz)