

**Nidec
Global Appliance
Company Profile**



We are part of Nidec Corporation



Founded in
1973



HQ:
Kyoto, Japan



340+
Companies



40+
Countries



Over 70 M&A
(Mergers & Acquisitions)



110,000+
Employees
worldwide



\$16.2B
Net Sales (FY 23)



Information Technology



Vehicles



Robotics



Power Generation

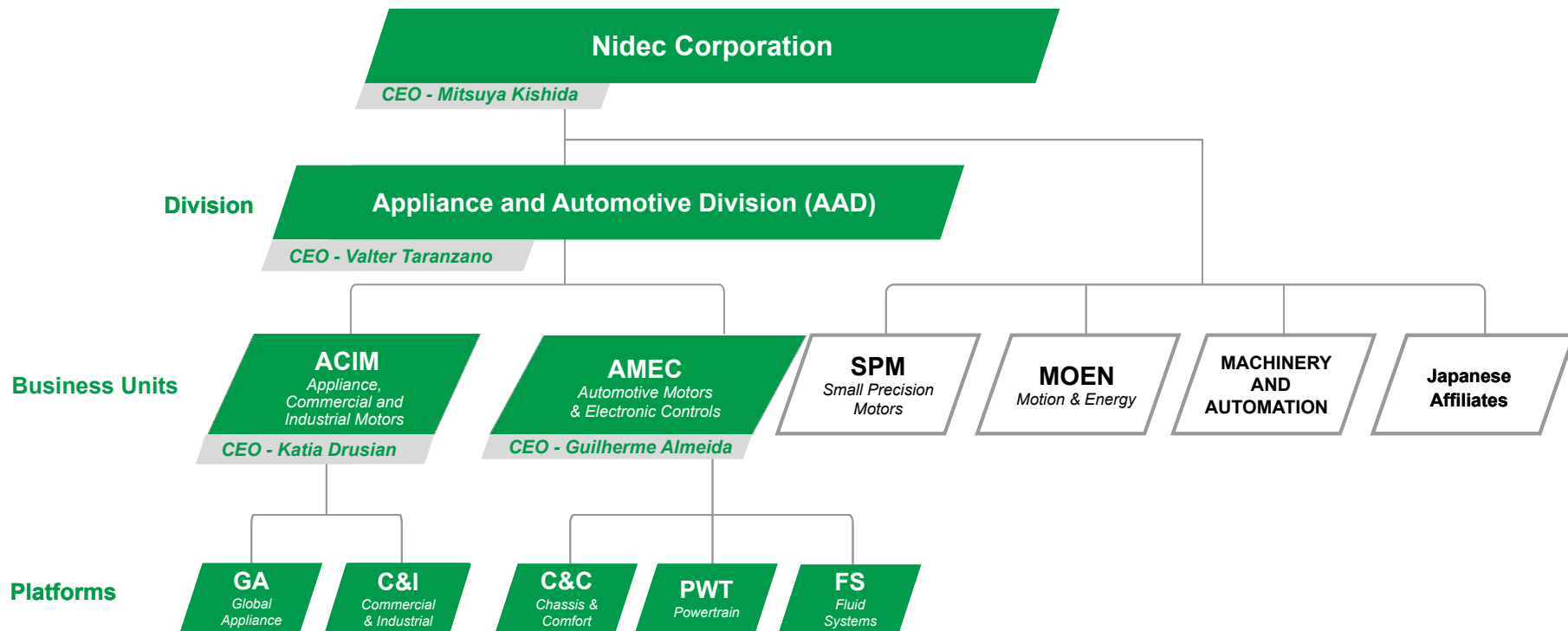


Appliances



Industry

Appliance and Automotive Division inside Nidec structure



ACIM AT A GLANCE

We develop highly-efficient solutions

that empower people and industries to move towards a more sustainable world.



37
manufacturing sites



~30
business offices



+25
countries



+18,000
people



Headquarters
in Pordenone
(Italy)



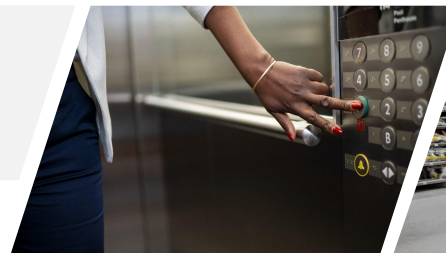
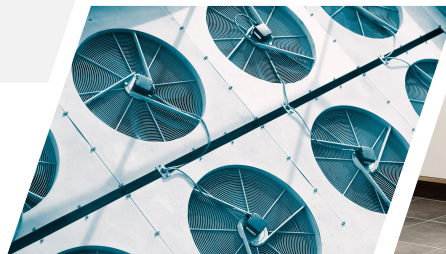
\$3B
Net Sales (FY 23)



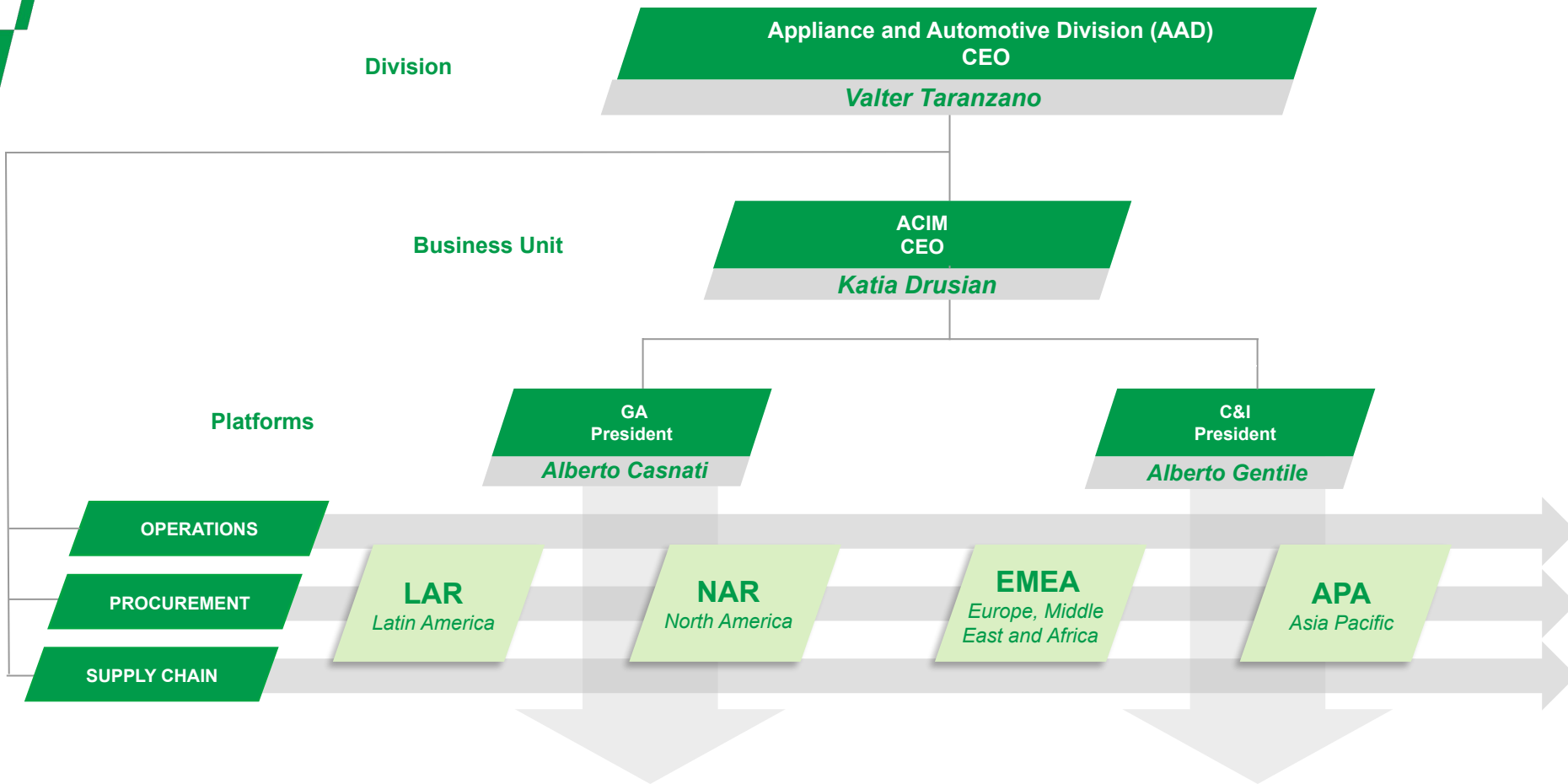
70,000,000
products sold/year



+4k
customers worldwide



ACIM STRUCTURE



ABOUT NIDEC GA

NIDEC GLOBAL APPLIANCE

ABOUT NIDEC GA

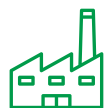
Nidec
Global Appliance



HQs: Joinville (Brazil)



13,000 employees



18 manufacturing plants and 5 business offices across **9** countries



Annual production capacity of **80 million** motors and compressors



8 R&D Centers worldwide and around **500 engineers**



90 countries served by our products



\$1.5B (FY23)
sales/year



GLOBAL APPLIANCE PLATFORM

We are a global partner for **home and commercial** appliances industries

Complete portfolio of **motors, compressors, condensing units and electronics** designed to deliver the best-in-class performance, differentiated by high energy efficiency, low noise and reliability.

HA



CA



HVAC



**OUR
BRANDS**

Nidec

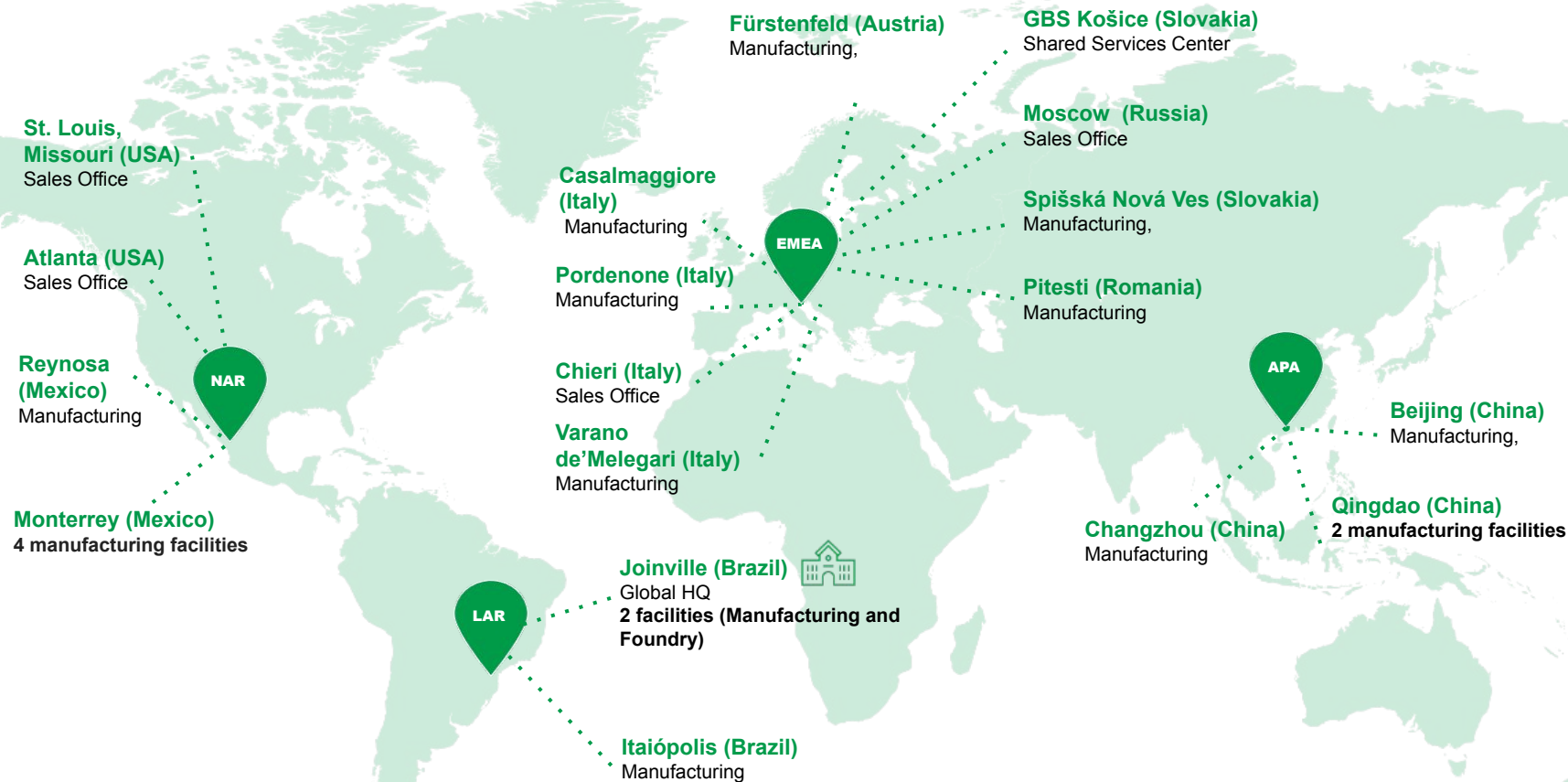
embraco
Nidec

FR

embraco
Nidec



GA GLOBAL PRESENCE



GA INNOVATION DRIVERS



Energy efficiency

Technology that enables **reduction of energy** consumption.



Low noise

Low noise in motors and compressors is key to **keep the consumer experience positive**.



Natural Refrigerants

Portfolio designed to deliver the **best in class performance**, under the safest conditions with natural refrigerants.



Electronics

Design and production of inverters, controllers and EC fans **for better performance and optimized total cost of ownership**.



Miniaturization

Size reduction combined with **embedded technology**.



Motors

Integrated Motors & Drives with Synchronous Technology

GA RESEARCH & DEVELOPMENT

We are differentiated by a **deep expertise in Research & Development**, capable of **delivering technology and innovation** that anticipates trends.



Robust structure for innovation

with 8 Research & Development Centers



Partnerships with Universities

in different regions in the world



Local engineering support teams

with labs and application engineers available worldwide



+570 valid patents and +4,500 in the history

Innovation is a continuous process

ABOUT GA

BUSINESS SEGMENTS AND BRANDS

GA Business Segments and Brands

Nidec
Global Appliance

Nidec
Global Appliance

Home Appliances

Compressors and motors for residential and professional appliances.

Nidec

embraco
Nidec

FR



Commercial Appliances

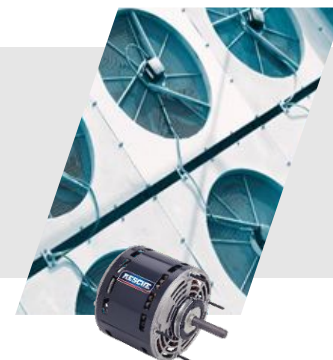
Compressors, condensing units, monoblocks and electronics for commercial refrigeration.

embraco
Nidec



HVAC

Solutions for heating, ventilation and air conditioning



GA BUSINESS SEGMENT

HOME APPLIANCES

HOME APPLIANCES SEGMENT



Two steps ahead of the trends to drive appliances to a more sustainable future



Motors for residential washing machines, dryers and dishwashers.



Motors and pumps for food service, professional appliances and medical applications.



Compressors for refrigerators and freezers.

HOME APPLIANCES BUSINESS SEGMENT

PORTFOLIO FOR RESIDENTIAL LAUNDRY AND KITCHEN

SOLUTIONS FOR RESIDENTIAL LAUNDRY AND KITCHEN APPLIANCES

Nidec

Nidec
Global Appliance

We offer innovation through a complete portfolio of **motors for washing machines, dryers and dishwashers**

Excelling in technologies for **low noise, compact and energy efficient** solutions



PORTFOLIO FOR WASHING MACHINES, DRYERS AND DISHWASHERS

- ✓ Experts in the **OEM process**
- ✓ Deep understanding of the **market regulations worldwide**
- ✓ Highly advanced R&D
- ✓ **Tailored solutions**

Washing Machines

Dryer

Dishwasher

Traditional Motors



BPM Motors



THE RIGHT SOLUTION FOR EACH CUSTOMER'S NEED

We are differentiated by our **co-development** methodology with customers, which means:

- **Cost savings and improvements** in the customer's production line.
- **Working closely with customers** in the product development process to **provide proposals** with high added value.
- Formulate the **best solution** for each of our customers' products.



PRODUCTS FOR WASHING MACHINES

Washing machine motors in all types of technologies

Our range of motors for washers covers the requirements for all regions and types of appliances.

Available also as IMAC (Integrated Motor and Control).



HAWM
Horizontal
axis washing
machine



VAWM
Vertical axis
washing
machine



Universal



CIM



CIM - IMAC



BPM



BPM -
IMAC



DD



DDM



DDM gear
drive



PS
C

PRODUCTS FOR DRYERS

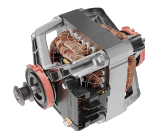
From classic solutions to second generation BPM models



DRY
Tumble
dryer



PSC



Split-Phase



BPM



BPM -
IMAC

PRODUCTS FOR DISHWASHERS

Complete portfolio of motors for dishwashers

Also available with
electronic board and
integrated heater

DW
Dishwashers



PSC
pump



PSC & integrated
heater



BPM
with integrated heater and
electronics

Deep expertise in **electronic drives**



WM drives



- Client dedicated communication HW/SW
- Proprietary unbalance control algorithm
- Integrated or modular



Dryer motor drives



- Modular version



Dishwasher drives



- Integrated on pump

HOME APPLIANCES BUSINESS SEGMENT

**PORTFOLIO FOR PROFESSIONAL APPLIANCES
AND MEDICAL APPLICATIONS**

SOLUTIONS FOR PROFESSIONAL APPLIANCES

Nidec
Global Appliance



Traditional brand of **motors and pumps** for professional appliances with worldwide presence.

Products marked by **energy-efficiency, reliability, high performance and customization.**



SOLUTIONS FOR PROFESSIONAL KITCHENS



Nidec
Global Appliance

Low noise,
customized and
thermally optimized
**motors for food
machines** (slicers,
coffee grinders etc).



PSC
pump



PSC
pump



PSC
pump



PSC
pump



PSC
pump

SOLUTIONS FOR PROFESSIONAL KITCHENS



Nidec
Global Appliance

Compact and energy efficient **pumps for professional dishwashers**, with optimized hydraulic performances.



Professional **Dishwashers**



SOLUTIONS FOR PROFESSIONAL KITCHENS



Nidec
Global Appliance

Energy efficient
**motors for
professional ovens**
developed for the best
ventilation
performance.



Professional **Ovens**



SOLUTIONS FOR MEDICAL APPLICATIONS



Nidec
Global Appliance

State of the art **motors**
for disinfection
machines used in
hospitals, dental
clinics and laboratories.

High **reliability** to
withstand aggressive
cleaning chemicals.

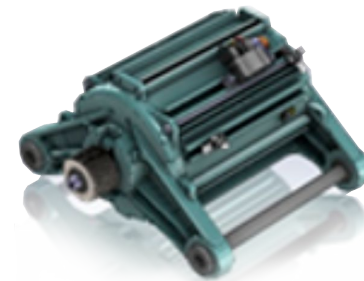


SOLUTIONS FOR PROFESSIONAL LAUNDRY



Nidec
Global Appliance

High efficiency and
low noise **motors for**
professional
washing machines:
high reliability.



HOME APPLIANCES BUSINESS SEGMENT

PORTFOLIO FOR RESIDENTIAL REFRIGERATION

SOLUTIONS FOR RESIDENTIAL REFRIGERATION

Nidec
Global Appliance



embraco
Nidec

- ★ **High-quality and high-performance**
- ⚡ **Efficiency through constant innovation**
- 🔊 **Low noise**
- 📏 **Small size solutions**
- 💰 **Cost Competitive**

PORTFOLIO FOR HOME APPLIANCES

embraco
Nidec

Nidec
Global Appliance

An innovative and efficient portfolio



FIXED-SPEED

Reliability: Extended product life



EL



ES



EM



EG

VARIABLE-SPEED

Highest efficiency standards and world class low noise



FMS



FMX



VES



VEM



VEG

FUTURE:

High performance with portfolio simplification

Standardization to cover all applications' range



FMS



FMX



VES

FIXED-SPEED PORTFOLIO

embraco
Nidec

Nidec
Global Appliance

Renowned fixed-speed

Portfolio differentiated by low noise, reliability and high efficiency levels

EM FAMILY



EM3: wide performance range

Best Seller

Years of expertise and non-stop evolution in more than

100M compressors sold
in natural refrigerants

ENERGY EFFICIENCY

30 – 40%* increase
over recent years

Size reduction journey with fixed-speed compressors

208mm



EG

180mm



EM3

<160mm



ES



>30%
of size
reduction



LOW GWP SOLUTIONS:
SINCE 1994, THE PIONEER
IN ANTICIPATING FUTURE
CHALLENGES

Extra efficiency and temperature stability for refrigeration



Lowest energy consumption:
up to 50%* reduction



Miniaturization: small on size, but
large on its application range



Fast Cooling: target
temperature reached faster,
ensuring better food
preservation



Low noise

Ready to meet the most
restrictive regulations on
energy consumption and noise

208mm



VEG

123mm



FMS

>40%
of size
reduction

Designed to deliver high cooling
capacity with small size



**in comparison to conventional compressor.
Efficiency indexes based on internal tests.*

MINIATURIZATION JOURNEY

embraco
Nidec

Nidec
Global Appliance

Discover the Versatility:
Comparing dimensions across our products

**50% smaller
and 60% lighter***

VES



**Weight
~6.8kg**

FMS



**Weight
~3.5kg**

FUTURE: ATOM



**Weight
~2.5kg**

*comparison to VES

GA BUSINESS SEGMENT

COMMERCIAL APPLIANCES

SOLUTIONS FOR COMMERCIAL APPLIANCES

embraco
Nidec

Nidec
Global Appliance



Naturally efficient: solutions with ultra low GWP



Energy efficiency: robust portfolio with low energy consumption



Innovation: tailor-made solutions for the system needs.



Reliability: extended product life



High-quality and high performance

WIDE APPLICATION RANGE FOR COMMERCIAL REFRIGERATION

embraco
Nidec

Nidec
Global Appliance



Naturally
Efficient



Energy
Efficiency



Reliability

ambico
franco

FIXED-SPEED

*Extended cooling
capacity*



EL



EM



EH



EG / F



NE



NT



NJ



SCROLL

VARIABLE-SPEED

*Excellence in
energy efficiency*



FMX



VES



FMS



VEM



FMF



VEH



VNE



VNEX

CONDENSING UNITS

*Optimized design
for better
performance*



Standard portfolio



Customized solutions



BIOMA



Monoblock

ELECTRONICS

*Controllers and EC
fans*



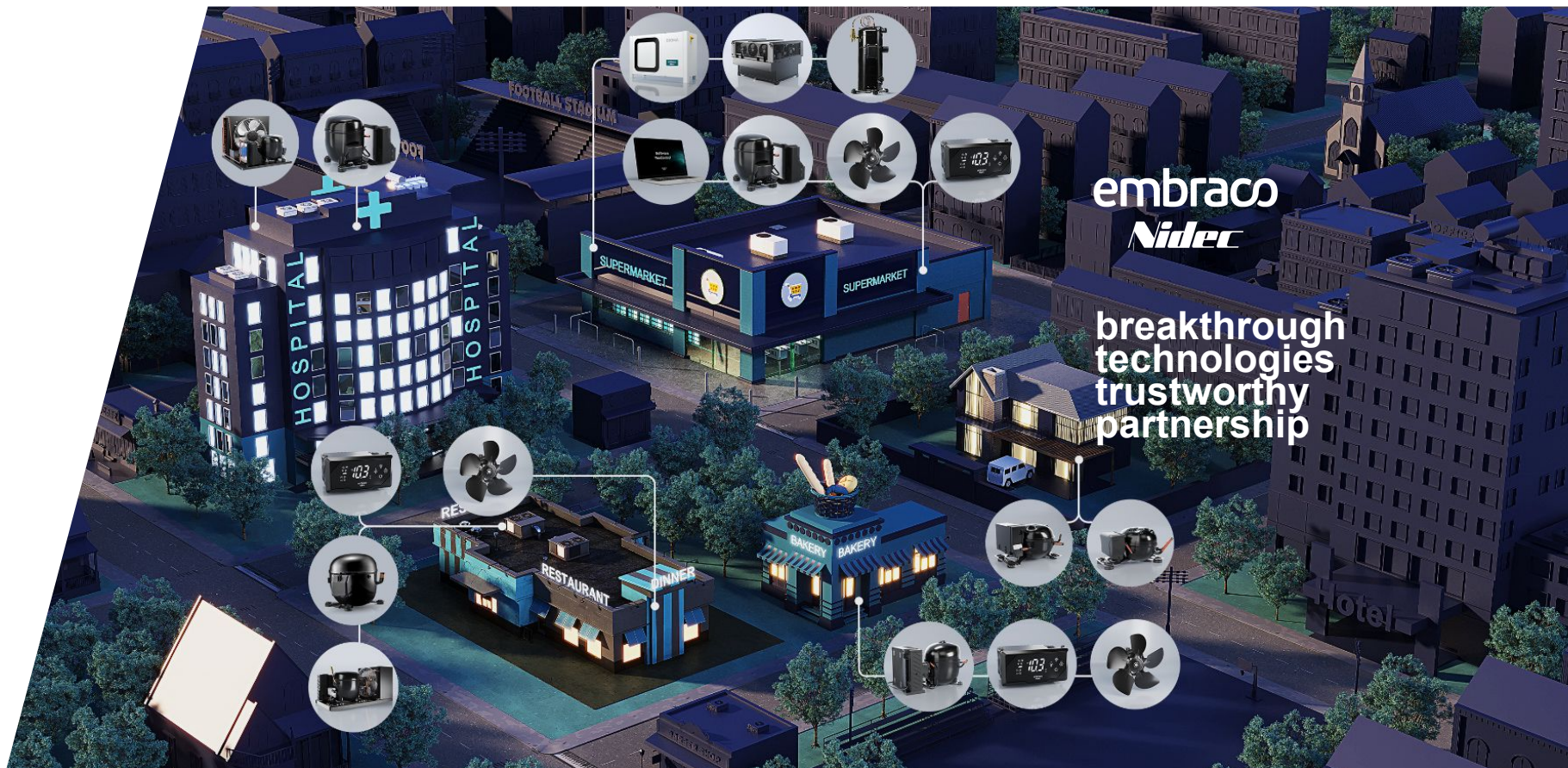
Controller



Fan motor

PROVIDING EVERYTHING TO BE EVERYWHERE

Nidec
Global Appliance



COMPRESSORS HIGHLIGHTS: EM SERIES

embraco
Nidec

Nidec
Global Appliance

The World's Best Selling Compressors



Ideal for several applications



High efficiency: The most efficient reciprocating compressor in the market

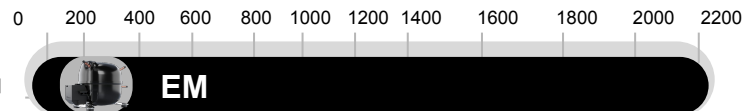


Wide envelope: L/MBP Working range ^{embraco} -35°C / +10°C



Smaller size: less use of raw materials & optimized space for transportation

COP [W/W]
1,2 a 1,9



Available in



R290



R134a



R404A



R600a

Made in
Brazil



Made in
China



COMPRESSORS HIGHLIGHTS: NEX SERIES

embraco
Nidec

Nidec
Global Appliance

Robustness in smaller design



Ideal for several applications



High efficiency: Up to 10% more efficient*



Smaller size: 10% less height and 30% less weight*

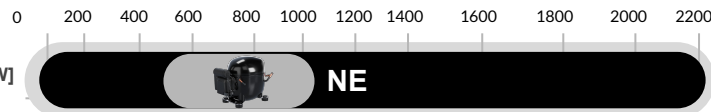


+ 24%* cooling capacity



Lower noise level

COP [W/W]
1,20 - 1,62
Ashrae LBP



Available in



R290



R134a



R404A

Made in Slovakia



Made in China



**Versus previous families*

COMPRESSORS HIGHLIGHTS: FMF SERIES

embraco
Nidec

Nidec
Global Appliance

The most efficient compressor for the commercial segment



Ideal for supermarkets and special applications



Reduces energy consumption by up to 40 % in comparison to fixed (on-off) compressors



Extended cooling capacity allows reducing the quantity of SKUs



SDI*, Dual Voltage and PFC** ready

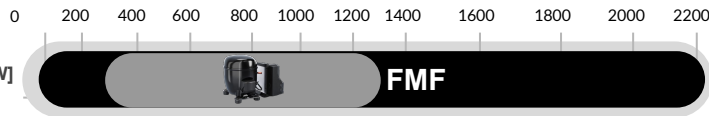


Low noise



High temperature stability

COP [W/W]
1,7.5 a 2,0



Available in

Made in Brazil



*Smart Drop In **Power Factor Correction

VNEX Series

The largest reciprocating variable speed compressor in the market



Ideal for supermarkets and special applications



embraco
Nidec

Nidec
Global Appliance



Enhanced cooling capacity covering up to 30cc fixed speed



Pioneers in the creation of large VCC reciprocating compressors



SDI, Dual Voltage, PFC and GFCI ready

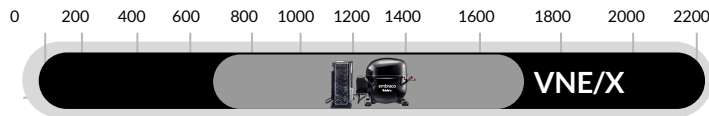


Low noise



High temperature stability

COP [W/W]
1,60 a 1,84
Ashrae LBP



Available in



R290

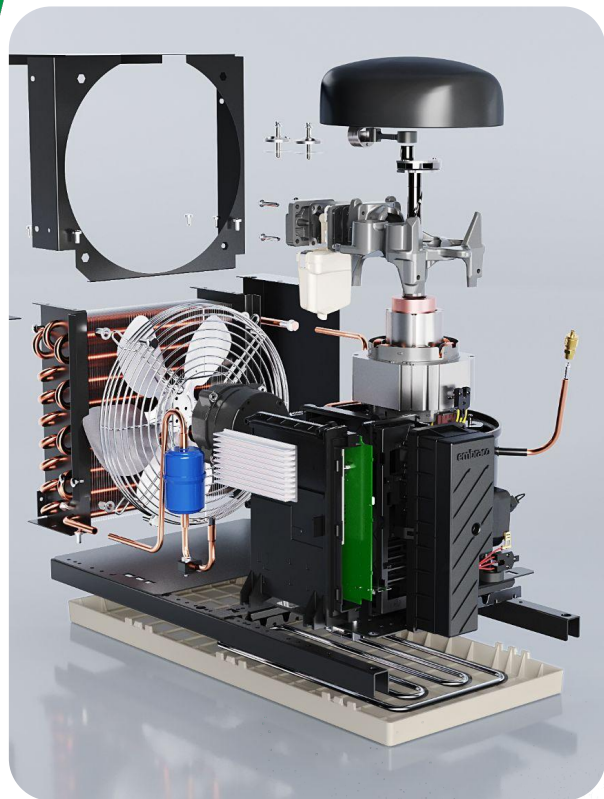
Made in Slovakia



EMBRACO ORIGINAL COOLING SOLUTIONS

embraco
Nidec

Nidec
Global Appliance



Complete portfolio for a diverse range of applications



Customization possibilities according to customer needs



Optimized condenser and compressor project for **improved performance and reliability**



With approved options for the use of **natural refrigerants**



All components feature Embraco quality

CONDENSING UNITS AND MONOBLOCKS

embraco
Nidec

Nidec
Global Appliance

Complete compressor range to meet every solutions need



Power (HP)

1/10 HP

2 HP

13 HP



Standard
portfolio



Customized
units



EDP Portfolio



Monoblock



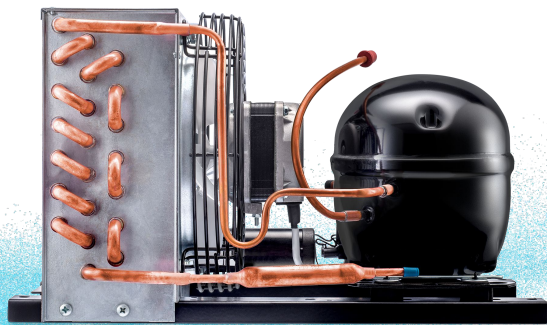
Bioma

CONDENSING UNITS: STANDARD PORTFOLIO

embraco
Nidec

Nidec
Global Appliance

Reliable portfolio of cooling solutions



Covering multiple applications



Cold room



Display cases

LESS COMPLEXITY: complete pre-assembled high pressure side solution simplifies production process and maintenance.



Customization capabilities: standard portfolio covering a wide range of applications.



Optimized condenser-compressor design leading to improved performance and reliability.



Approved for natural refrigerants use

CONDENSING UNITS: EDP PORTFOLIO

embraco
Nidec

Nidec
Global Appliance

EDP units: high efficiency in a compact and modular design



Main applications: Food Service



Removable evaporation tray with stainless steel hot-loop to speed up evaporation



Designed for easy replacement of components

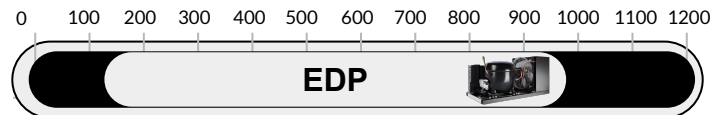


Easy mounting of the compressor using snap-on fasteners



Customizable: compact, inverter and plus versions

CAP. [W]
LBP



Available in



R290



R134a



R404A

Made in Brazil



CONDENSING UNITS: BIOMA

embraco
Nidec

Nidec
Global Appliance

The world's quietest condensing unit in its capacity range



Main applications



Silent: with a robust design that absorbs vibrations (models emit from 36 to only 28 dB)



Robust design: Stackability and longitudinal airflow

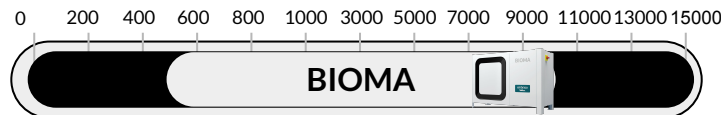


Easy access to all internal components



High-efficiency compressors with multiple refrigerant implementation

REF.
CAP. [W]



Available in

✓ R452A ✓ R449A ✓ R513A

Made in Slovakia



NEW: SYNC IT ALL PORTFOLIO

No one controls Embraco better than Embraco

Embraco Sync

It works **connected to You Control** and **manages the whole system** for an **optimized performance**.

Variable Speed

The compressor **saves energy by adapting** its rotation speed to the cooling demand

Optimized performance, less energy consumption and set up time reduction from weeks to days.



Embraco AIR

With an electronic motor, the fan is **energy efficient** and works with **single, multi or variable speed**.

The exclusive design allows **flexible assembly and fixation**.

YouControl

An easy interface that allows **you** to define the system's parameters, with an automatic tuning feature.



GA BUSINESS SEGMENT

HVAC | Heating, ventilation and air conditioning

The RESCUE® line of HVAC motors is part of the U.S. MOTORS® brand product family. Ask for RESCUE®, The Ultimate Truck Stock Motor™.



Premium brand

Different technologies:

ECM: 85% EFFICIENCY

higher cost / premium material inside

PSC: 60% EFFICIENCY

price fighting motors



One of the oldest and most trusted brands in the motor industry, recognized worldwide as **the mark of leadership and technological innovation**

U.S. MOTORS brand encompasses a complete line of general and special purpose residential, commercial and industrial motors from 1/30 horsepower through 4000 horsepower for a wide variety of applications.

Since 1908, the brand has stood out for exceptional product reliability and performance.



Residential



Commercial



Industrial



MAIN ATTRIBUTES

Heating, Ventilation and Air Conditioning (HVAC)

Get to know the main attributes of our portfolio of components for the HVAC industry:



Technology & Innovation



Reliability



Low lead time



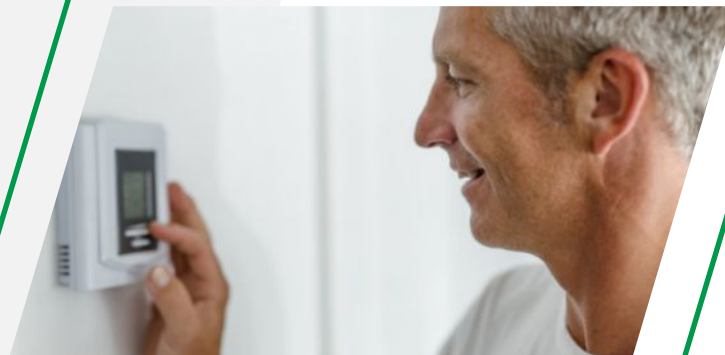
Rely on **US**



HVAC

Tradition and Experience

With roots dating back to 1908, our motor brands are leaders in the North American market, offering a full complement of induction or EC motors designed for single or three phase applications.



AIR MOVING AND VENTILATION PRODUCTS

**Multi-technology motors, gearmotors, brake motors,
electronic drives for a variety of industrial applications.**



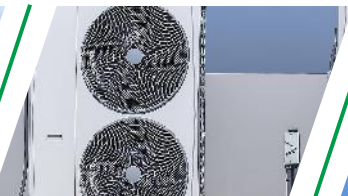
Power Roof Ventilators



Air Filtration



Air Curtains/
Air Doors



Commercial/
Industrial Blowers



Prop Fans



Condenser Fan /
Heat Pump



Energy Recovery
Ventilators



Air Handler



Furnace

PORTFOLIO TO SERVE ALL OEM MOTOR NEEDS

Nidec
Global Appliance

Commercial



140 Frame &
Larger | 3-PH



56 Frame
1-PH, 3-PH



5.5"
PSC



PEP High
Eff. PSC

Induction Motors

ECM



PerfectSpeed
Constant CFM



SelectTech
Constant
Torque



EcoApex
48



EcoApex
56 Frame

Heat Pump & Condensing Unit



4.8"
PSC



5.5"
PSC



PEP High Eff.
PSC



EcoApex 48

Furnace



Draft Inducer



PerfectSpeed
Constant CFM



SelectTech
Constant
Torque



Ecotech

Air Handler



PerfectSpeed
Constant CFM



SelectTech
Constant
Torque



RESCUE
Ecotech

**For an in-depth look about
our company and solutions,
follow our pages:**





Nidec

Global Appliance