

# Corporate Profile

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[www.nidec-asi.com](http://www.nidec-asi.com)

## Nidec ASI

### CORPORATE

Viale Sarca, 336  
I - 20126 Milano  
Phone +39 02 6445 1  
Fax +39 02 6445 4401

### CUSTOMER SERVICE AND SUPPORT

Viale Sarca, 336  
I - 20126 Milano  
Phone +39 02 6445 4254  
Fax +39 02 6445 4274  
[service@nidec-asi.com](mailto:service@nidec-asi.com)

For information on the sales office  
or sales representative nearest you  
contact us at: [info@nidec-asi.com](mailto:info@nidec-asi.com)

***Nidec***  
All for dreams

## Our heritage

## Nidec ASI: destined to be number one in industrial drive solutions

Nidec ASI, a destiny with roots that go back more than 160 years. Nidec ASI was formed in December 2012 as a result of the acquisition of Ansaldo Sistemi Industriali S.p.A. (ASI) by Nidec Corporation. The company can trace its origins back to the founding of Ansaldo's stabilimento elettromeccanico (electro-mechanical workshop) in 1899. From its inception, ASI has specialized in providing innovative power control and system solutions that have satisfied hundreds of customers worldwide. Over the past century and a half, ASI has established itself as one of the pioneers of Italian manufacturing, engineering and industry.



As part of the Nidec Group, Nidec ASI is now able to offer a wider range of customers solutions and services as a leading player in the supply of industrial automation systems, power electronics, electric motors and generators in various applications and industries such as Metals, Energy, Marine, Oil & Gas and General Industry.

### About Nidec Corporation

From its origins, in 1973, the goal of the Nidec Group has been to become number 1 in electric drive solutions, with a strong focus on electric motors.

Through the combined strength of these two significant experiences, a new era in industrial drive solutions has dawned: today Nidec ASI is ready to serve its customers for another 160 years.



## Our mission



## Nidec ASI is driven by dreams

Nidec's corporate slogan is "All for Dream" because "Dreams challenge and the Nidec Group will continue to meet the challenge."  
At Nidec ASI we listen to our Customer's dreams and desires and turn them into results.

### Nidec Corporate Statement

We begin with dreams.  
Dreams drive our motivation.  
Dreams are our future.  
The world's dreams, people's dreams, our dreams. Our passion creates ideas that make dreams come alive.  
Technology and products that were only dreams become reality.

### All for dreams

Dreams challenge and the Nidec Group will continue to meet the challenge.  
For the world's and people's tomorrows, the world's first, the world's best technologies and products,  
We will continue our part in creating a better society.



## Our philosophy



## Excellence is driven by Passion, Intellect and Performance

Nidec is defined by its quest to be number one and Nidec ASI is no different.

### Passion

Passion has always been one of the fundamental drivers in our day-to-day business activities. Nidec ASI expresses this passion through a strong commitment to its products and solutions. At Nidec ASI, we put our heart and souls into providing our customers with solutions that minimize Life Cycle Costs and contribute to reduced energy consumption.

### Intellect

For more than 160 years ASI has been providing customers with state-of-the-art solutions for their industrial drive needs. Nidec ASI offers customers know-how from power supply to industrial automation and control. Our experienced engineers, project managers and after-sales assistance teams work side-by-side to help our customers achieve the results they need.

### Performance

Nidec Corporate Philosophy defines performance as "Do it now, Do it without fail, Do it until completed". Getting the job done is an important aspect in obtaining and maintaining Customer loyalty and respect. At Nidec ASI we also base our reputation on our integrity so we have a strong commitment to ethical business practices and social responsibility.



## Our expertise

**Nidec ASI's strength  
is the ability to provide  
tailored solutions  
to improve efficiency  
and reduce energy  
consumption**

Our know-how in electricity from power generation to factory automation, allow us to design, manufacture and install equipment that will perform for the entire life of your plant.

1. Power Supply & Power Quality
2. Power Electronics
3. Electric Motors & Generators
4. Industrial Automation & Control Systems

Nidec ASI is the ideal partner for Greenfield projects, plant upgrades and revampings. Our strength in Project Management and expertise in application domains, allow us to provide solutions that assure your plant is operating at optimum

efficiency and quality levels. We pride ourselves on providing customers with complete life cycle service from our first contact (initial concept/preliminary study) to the end of the plant's life cycle.





# Our core products



## POWER SUPPLY & POWER QUALITY

Nidec ASI manufactures a complete line of Power Quality components including Static VAR Compensation systems, High Current Rectifiers and D-Stacoms. We also have a dedicated Power Supply engineering team able to supply turn-key substations based on our own design. Our engineering know-how and vast experience in Power Quality make us the ideal partner for your upgrade and revamping needs.

Nidec ASI can also help customers incorporate renewable energy sources into their existing supply. Using our in-house Power Management System, ARTICS Smart Energy, we are able to design and install smart micro grids. Our in-depth knowledge of electrical Balance of Plant allows us to optimize energy consumption and help ensure stable energy supply.



## POWER ELECTRONICS

Power electronics is one of our core businesses. For years we have developed and supplied electric drive and power control systems able to serve a wide range of industrial markets. Our on-going research and development activities allow us to supply you with state-of-the-art technology. Our drive packages offer optimum performance in terms of overall efficiency, maximum power factor and minimum harmonic content to the network in compliance with all applicable norms and standards.

Our flexible, modular design allows us to configure compact solutions granting you greater freedom in terms of plant layout. Our scope of supply includes AC/DC LV drives, MV drives, excitation systems, LV and MV soft starters as well as industrial power rectifiers, Static VAR compensators and turn key substations, the ideal solutions for power quality issues. Hundreds of installations and field-proven experience demonstrate our products' reliability and high performance all over the world.



## ELECTRIC MOTORS & GENERATORS

Nidec ASI offers a wide range of electric motors and generators from 150 kW up to 75 MW for a wide variety of applications. Known for their robust design, these machines offer one of the highest levels of reliability on the market today, making them the machine of choice for critical process applications. Our product lines cover: **Induction Machines** – known as the work horse of industrial applications. Built with an aluminium squirrel cage rotor and insulated with our MICASYSTEM® VPI process, our electric motors and generators guarantee maximum uptime and performance.

**Synchronous Machines** – designed to meet application needs on a job-by-job basis, our synchronous motors provide outstanding performance and reliability. These machines are the preferred choice on large compressor and vertical pump applications. They are also widely used for large industrial fans with high torque requirements. Nidec ASI has consolidated experience in generators coupled to diesel engines and turbines of all types. **DC Machines** – come in 22 different shaft heights and nearly 100 different frame sizes. Our DC series offers outstanding performance features like high dynamic response, wide speed range and high efficiency.



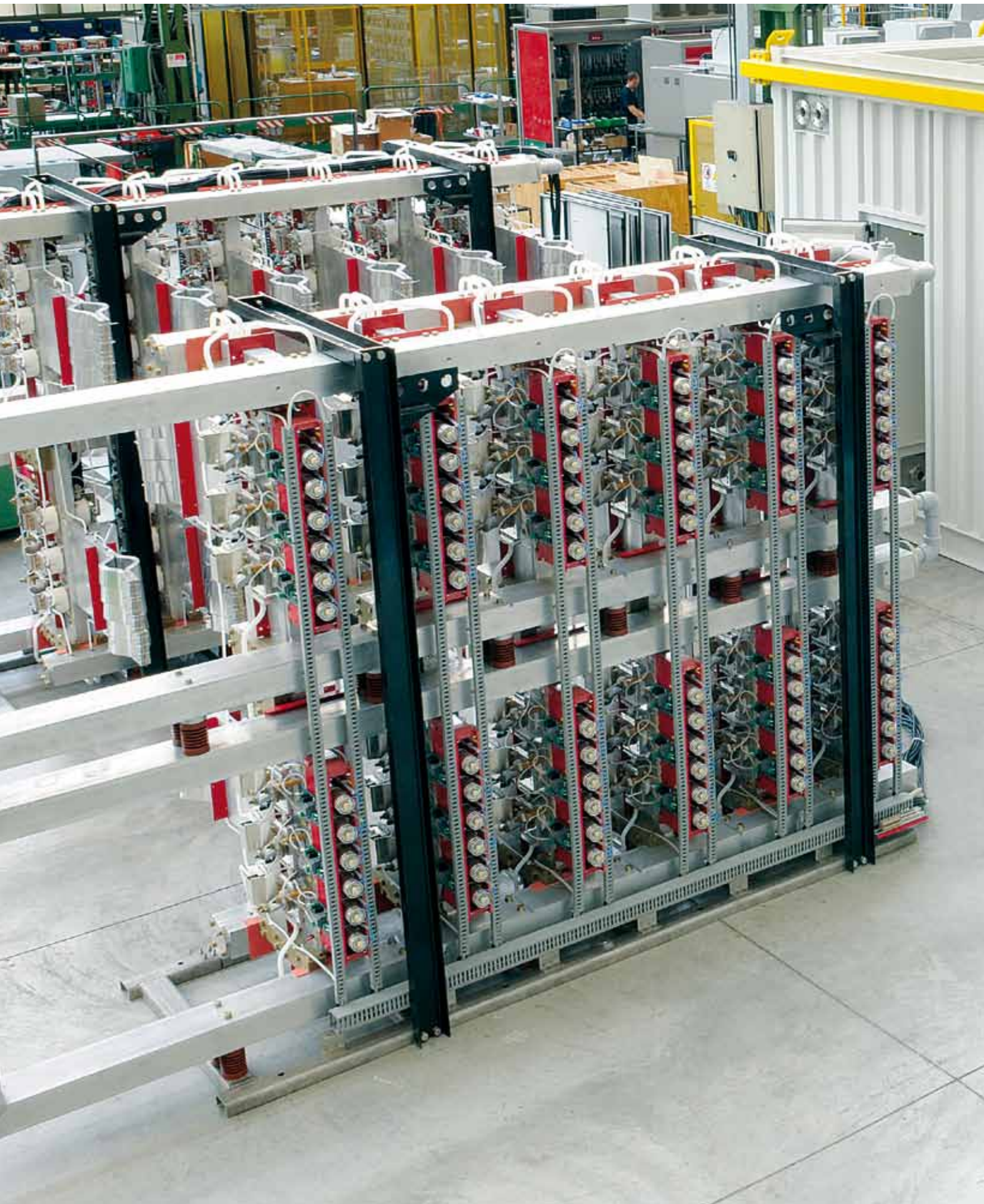
## INDUSTRIAL AUTOMATION & CONTROL

Improving efficiency in today's competitive environment is a constant challenge. Nidec ASI is the right partner to help tackle this task, offering our vast experience in engineering solutions to optimize production. ARTICS is particularly suitable for online upgrades and revamping, which can be implemented during a normal shutdown period. ARTICS "monitor mode" allows a new system to be tested before retesting the old one.

Additionally, solutions can be tailored around existing input/output devices to keep wiring changes to a minimum. Thanks to the flexibility of our platform, we guarantee seamless integration with existing plant hardware and software. ARTICS Industrial Automation is used on a variety of applications in the following markets: Metals, Cement, Rubber and Plastic, Paper, Industrial Plant Auxiliaries and Ropeway.



# Our core products



# Power Supply & Power Quality

What sets us apart is our ability to assist customers in designing and improving their power supply systems, providing engineering support to evaluate phenomenon such as Current and Voltage Distortion and flicker. We custom engineer and install solutions to improve power quality. We can also provide turnkey substation design and installation to help ensure reliable power supply.

## PRODUCT HIGHLIGHTS

### Silcomax

#### Industrial Power Rectifier

Typically used in DC arc furnaces, smelters (aluminum, magnesium, zinc, copper), electrochemical processes (chlorine, caustic soda, PVC, fluorine...). And research facilities for nuclear energy.

Current ratings:  
Silcomax Light 8 – 50 kA  
Silcomax Large 40 – 120 kA

#### Voltage:

Silcomax Light up to 1000 V  
Silcomax Large up to 1600 V



### Silcovar

#### Reactive Power Compensation

Typically used for reactive power compensation for arc furnaces and the stabilization of transmission line voltages

Power Range: 2 – 250 MVAR  
Voltage: 1 – 35 kV



### Nidec ASI VEI

Nidec ASI VEI, our Russian JV company, is specialized in designing and manufacturing Static VAR systems for Transmission and Distribution. Core products include:

- Static VAR compensators from 10 to 35 kV and capacity up to 200 MVA;
  - High Voltage thyristor valves for HVDC transmission lines and back-to-back links;
  - Frequency-controlled synchronous drive and softstarters for electric motors from 1 to 20 kV up to 50 MW.
- Our Russian facility boasts a unique testing facility with the following testing capability:
- Voltage up to 50 kV, current up to 2500 A for thyristor module testing;
  - Voltage up to 250 kV for pulse insulation tests;
  - Voltage up to 10 kV, active power up to 4 MW for converter load tests.



# Our core products

# Power Electronics



Nidec ASI is one of the leading suppliers of Active Front End (AFE) solutions. Our ability to provide customized solutions and our expertise in power conversion make us the right partner for your inverter needs.

## PRODUCT HIGHLIGHTS

### Answer Drives LV inverters

The LV Answer Drives family includes AC and DC solutions. The AC drives are the ideal solution for demanding industrial applications: from simple to high performance, from a single motor control to the multi-motor version. The DC drives family offers compact, high performance three-phase AC/DC thyristor converters for DC motors. The tried and proven control strategy and the consolidated thyristor technology make them the ideal solution for any type of industrial DC application, from the simplest to the most complex



### Silcovert H Series

The Silcovert H Series is the ideal variable speed drive solution for retrofitting to improve efficiency and reduce the environmental impact related to energy consumption. Our Silcovert H Series is a multi-level variable speed drive with a efficient and precise control for induction and synchronous motors. Our H-series variable speed drives (TH/NH) are compatible with your existing motor systems, regardless of brand or age. With our customized retrofit you can achieve increased levels of safety, reliability and efficiency.



### Silcovert N Series

The Silcovert N Series is the ideal solution for regenerative operation and high-demanding performance. Using proven IGBT/IGCT technology our variable frequency drives are custom engineered to provide outstanding static and dynamic performance with a high level of efficiency across the driven equipment's entire operating range. Fully regenerative operation (with AFE - Active Front End - option) provides bi-directional power flow at near unity power factor from zero to full speed eliminating the need for costly VAR compensation systems. This is particularly useful when the drive is used for continuous power generation.



### Silcovert S

is an LCI Thyristor based drive which is ideal for high speed synchronous machine applications and for any load requiring high starting torque or a wide constant torque operation range. This drive may also be used as a soft starter or in special applications that require the connection of two networks operating at different frequencies.





# Our core products

# Electric Motors & Generators

What sets us apart is our engineering-to-design capability which allows us to work with customers to identify solutions that fit their particular needs

## PRODUCT HIGHLIGHTS

### Hazardous Area machines

Nidec ASI is a leading specialist in hazardous area machines. Our standard Ex d machines (certified for Group IIB + H2 classified area) are ideal for installation in hazardous areas where Ex d IIB T3/T4 (IEC standards) protection is required. We also offer a wide range of protections including Ex n, Ex p and Ex e. These machines play a fundamental role in plant safety in industries across the globe. All of our machines meet ATEX standards.

### High Speed machines

Nidec ASI has over 20 years of experience in the manufacture of high-speed motors. Reaching over 20,000 r/min these hi-tech machines are the epitome of our superb engineering capabilities. Generally used in pump and compressor applications, these machines offer energy efficiency and low maintenance advantages over traditional motors with gear box.

### Permanent Magnet Technology

Nidec ASI has a new series of permanent magnet machines covering a wide speed range from very low speed up to very high speed in a power range from 100 kW up to 5 MW. PM generators are ideal for renewable energy power plants like wind power plants, biomass, hydro-electric. High speed PM motors are ideal for high speed compressors such as those found in air treatment plants.



### Full System Testing

Our test room is one of the best equipped in Europe. We have recently upgraded our testing capacity and can perform full system testing in back-to-back configuration up to 45 MW at nominal operating speed. With 5 test stands covering 2.200 m<sup>2</sup> plus an additional 1.500 m<sup>2</sup> of external area for drives and transformers, we are now able to perform our rigorous testing procedures on high-power machines - an additional guarantee there will be no surprises when the equipment goes out to the field.



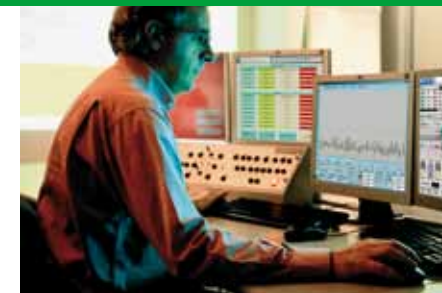


## Our core products



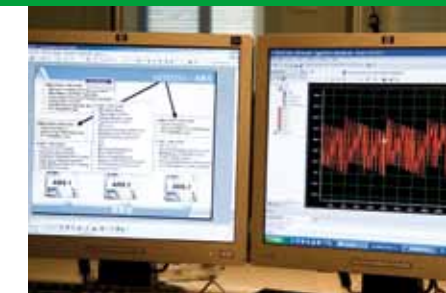
## Industrial Automation & Control

What sets us apart is our expertise in System Integration and process design. We are able to work with our customers to develop algorithms to meet their specific needs. Our automation platform is ideal for revampings and expansion projects as it seamlessly integrates with existing software.



### ARTICS

Artics Industrial Automation is used on a variety of applications in the following markets: Metals, Cement, Rubber and Plastic, Paper, Industrial Plant Auxiliaries and Ropeway.



### ARTICS Smart Energy.

ARTICS Smart Energy is the newest addition to our Industrial Automation Suite. ARTICS Smart Energy is a Power Management System that allows users to measure and optimize loads to reduce energy consumption. ARTICS Smart Energy can also be used to manage smart micro-grids, making it the ideal choice for industries wishing to integrate renewable energy sources, such as roof-top photovoltaic power plants, into their energy mix.



### ARTICS Industrial Suite

The ARTICS Industrial Automation platform comprises a suite of control solutions covering a wide set of applications and functions from level 0 to level 3.



# Our core markets

## What sets us apart

- Revamping and Plant Modernization capabilities
- Cost effective upgrade solutions
- Flexibility



## What sets us apart

- Experience
- Energy Efficiency
- Single Source Vendor



## What sets us apart

- Experience
- Reliability
- Robust design



## What sets us apart

- Very Low Noise solutions
- Performance
- Integration



## What sets us apart

- Energy efficiency
- State-of-the-art components
- Performance



## ENERGY

Nidec ASI provides variable speed drive systems, electric generators, static excitation systems and soft starters for auxiliary equipment in all types of power stations, including nuclear and renewable energies. Our product basket includes turn-key substations for Transmission and Distribution and power quality solutions to ensure grid stability. We are also able to act as Main Contractors for the installation of small Power Gen solutions. Highly customized engineering, advanced,

robust designs that integrate seamlessly with the existing energy network and a rigorous quality assurance system result in equipment and solutions which ensure maximum performance, high efficiency and long term reliability for a wide range of applications which help guarantee plant availability. Our experience and in-house technology in VFD solutions allow us to provide flexible and efficient motion and flow control with important benefits in terms of cost savings and environmental sustainability.

## METALS

Today's market leaders are changing the way the Metals industry does business by actively participating in their Customer's Design Process to produce innovative new products that are taking raw materials to new edges of the technological spectrum. Since the day it was founded, Nidec ASI has always used this approach with its customers. It is a fundamental part of our corporate DNA. Not only can we help you design the process to manufacture these new products, we can also provide valuable assistance to you in working with your customers. Know-how and experience play an important

role in determining success. Nidec ASI has designed, installed and re-fitted over 900 plants worldwide. As a Single Source Vendor, we have grown thanks to our reputation for quality, reliability and durability through our customized product and plant automation solutions for ironmaking, rolling mills for seamless pipes, flat, long and non-ferrous products as well as all types of processing lines. Whether assisting you with a Greenfield turn-key project or revamping your existing plant, Nidec ASI provides tangible value you can measure.

## OIL & GAS

Getting oil and gas out of the ground and transforming it into usable products is a challenging business that requires a high level of reliability and safety. Nidec ASI is able to go the distance. With proven experience in providing electric drive solutions at extreme temperatures from -50° C up to 40° C, Nidec ASI is one of the most respected brands on the market.

Our engineering expertise has put us at the forefront in the development of electric drive solutions for LNG extraction and pipeline applications. We have also assisted customers in important revamping and upgrade projects including FPSOs and pipelayers. These activities have allowed customers to achieve new performance levels from their existing facilities.

## MARINE

NIDEC ASI is one of the world's leading suppliers of custom solutions for marine propulsion and on-board generation. With a wide range of solutions for electric propulsion, auxiliary thrusters, drive system for hoists and winches, shaft generators, on-board generation and ship-to-shore power (50 / 60 Hz conversion) we are the right partner for your on-board electrical package. Our engineering capabilities allow us to design electric power generation and propulsion systems to

meet ship designers' targets regarding space, noise levels and performance, with an end-to-end project solution that covers the entire process, providing the complete electrical package or supporting as a system integrator. Our proven experience and our solutions are found in passenger vessels (cruise ships & ferries), offshore vessels, navy vessels, special vessels for research and merchant ships.

## GENERAL INDUSTRY

Nidec ASI provides a wide range of electric power and control systems, including motors, drives, instrumentation and supervisory systems, auxiliary factory services, predictive maintenance and after sales services for many industrial markets including: cement, rubber & plastic, material handling, ropeway and paper. Our state-of-the-art components guarantee robust design and heavy duty performance in terms of torque, their reliability help guarantee maximum process availability. Our ability to work alongside our

customers throughout the plant's entire life cycle is our genuine strength. We can work on plants at any stage, from design to the end of their useful lifespan: covering greenfield, expansions, revampings and long-term maintenance. We have a dedicated project management team that can scale the project to meet customers' requirements and budgets in terms of infrastructure and resource planning, including long term planning in phases where necessary for specific solutions or individual products.



# Service

**At Nidec ASI Service is more  
than mere assistance.  
It is a fundamental part  
of our business.**

We build machinery at the heart of the manufacturing process of our customers' plants. We know too well that correct operation and reliability are essential in guaranteeing optimum plant performance. Our vast experience in engineering, installing and servicing products has lead us to develop state-of-the-art methods for diagnostics and analysis. These tools take into consideration the characteristics of a plant, operating conditions, environment and design specifications as well as test and start-up data.

As your Maintenance partner we believe we can make a significant difference in plant operation. Nidec ASI's service and support network is never more than a phone call away. Our call centers provide 24 hour 7 day a week support and, if further assistance is needed, our technician can be on site within 24 hours in Europe, the U.S., Canada and Mexico, and 72 hours anywhere else in the world. We're rapidly expanding our network of authorized service centers locally to serve you better. Nidec ASI also offers original manufacturer parts, preventive maintenance and training programs for site technicians.



## HIGHLIGHTS

### Long Term Service Agreements

Nidec ASI has been active in the field of Predictive and Preventive Maintenance for many years now. With more than 60 active Long Term Service Agreements in place, Nidec ASI is becoming the service provider of choice for Customers who want to maximize plant uptime. Long Term Service Agreements are personalized to each customer's particular needs and can vary from Customer to Customer. Nidec ASI offers customers the flexibility to schedule maintenance interventions around the production process, keeping downtime to a minimum.

### Revampings

Nidec ASI has significant experience in revamping, particularly in the Power Gen and Metals industries. Our skills in system integration permit us to identify solutions that seamlessly fit in the existing facility. Revamping allows customers to prolong the life of their facility and increase productivity.

### Engineered solutions

One of our key strengths is our engineering know-how. Nidec ASI can help customers identify solutions to upgrade and replace obsolete products, modify existing equipment and integrate new solutions into current production processes.

### Energy Audits

In 2012 Nidec ASI launched its EFG Program to promote energy efficiency. The program permits customers to reduce Energy consumption through three simple steps **E**valuate, **F**ormulate a plan, **G**et Results. Together with our specialists, customers can evaluate the state of their electrical system from sub station to factory automation. Based on the results of the audit, our specialists can assist in formulating an improvement plan to reduce energy consumption and improve efficiency. All the customer needs to do is reap the results. The improvement plans can be tailored around the customer's production cycles and budget. We can also assist customers interested in integrating renewable energy sources, such as rooftop solar arrays, into their energy supply.



# Global presence



## Nidec believes in tailoring its businesses to the precise needs of its customers and markets

At Nidec Customer Proximity isn't just about being close to our Customers. It's about anticipating Customer needs with new products and solutions that help improve their competitive position.

Customer Proximity is an integral part of the way Nidec measures its operation performance through Q.C.D.S.S.S.

Simply put, Nidec's goal is to provide the highest quality at the lowest cost with the shortest delivery terms offering Customers the best possible Service as rapidly as possible focusing on ways to help Customers specialize their solutions in order to differentiate them from their competitors.

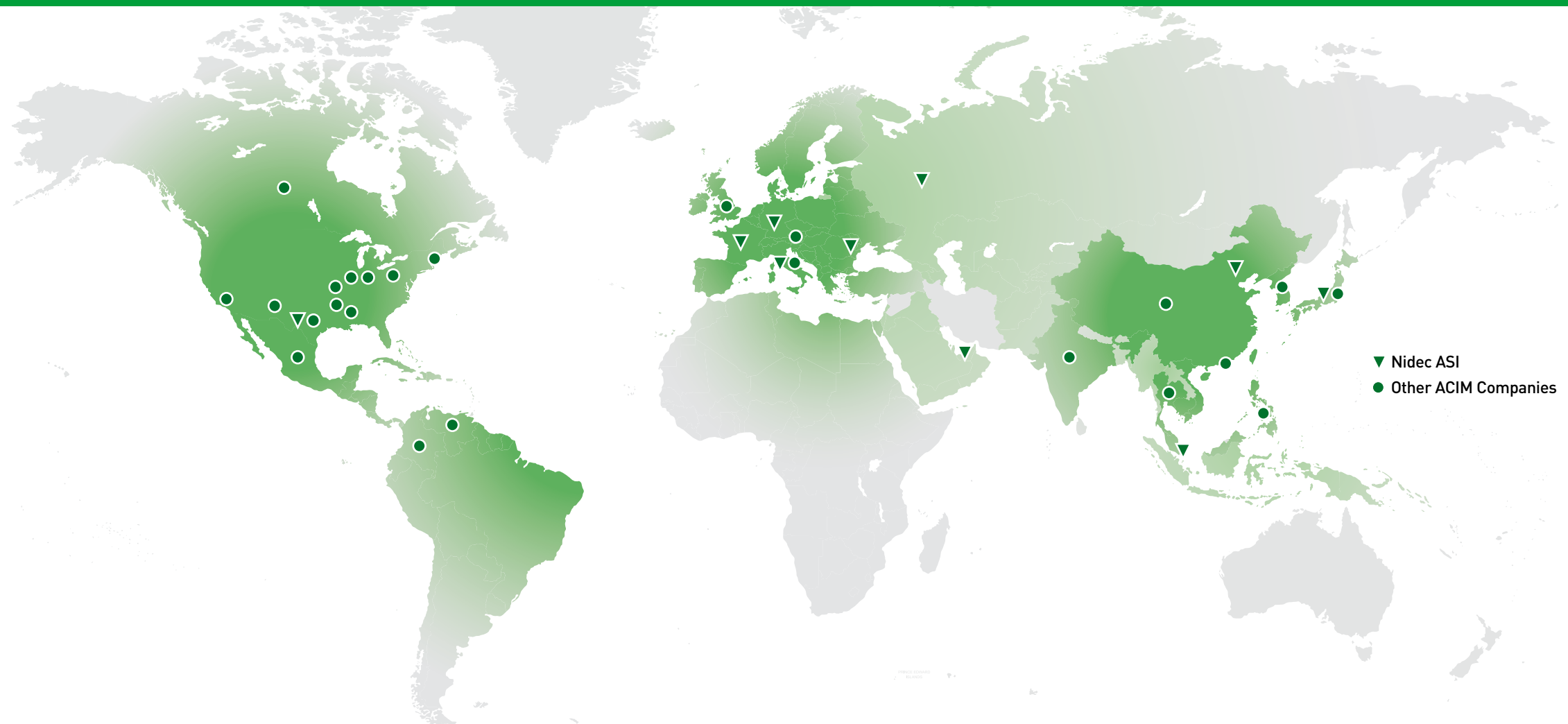
### What is Q.C.D.S.S.S.?

- Quality
- Cost
- Delivery
- Service
- Speed
- Specialization/differentiation

**Customer Proximity** remains one of our strongest commitments. Nidec has over 180 subsidiaries and affiliates across the globe, providing manufacturing, sales and service support to Nidec's extensive customer base. As part of the Nidec group, Nidec ASI is now able to offer its customers more support than ever.

Nidec currently employs more than 100,000 people worldwide.

Nidec ASI is part of Nidec's Appliance, Commercial & Industrial Motor **(ACIM)** Business Unit. Other companies within the ACIM BU include: Avtron, Kinetek, Nidec Motor Corporation and Nidec Technomotors.





# Our vision for the future

**To be the number one  
in energy efficiency  
and sustainability**

**Our long term commitment to reduce industry's impact on the environment remains unchanged.**

**Taking care of the environment goes hand-in-hand with providing solutions which optimize energy consumption, It is not only a question of helping you keep your OPEX as low as possible, it is about guaranteeing a better future for everyone.**

**Our R&D activities will focus on the precise needs of our customers and the community at large, bringing to the market products with the very highest performance in terms of energy efficiency and quality. We will continue to investigate technologies that meet the needs of the times.**

## **ZEUS**

Launched in 2008, project ZEUS or Zero Emissions Urban Solutions, is a program that focuses on the way we produce, deliver and consume electricity.

## **ZEUS HIGHLIGHTS**

### **Energy Efficiency**

For Nidec ASI, Energy efficiency is all about modernizing systems and optimizing energy consumption through the installation of power electronics designed to control motor speed and improve power quality to minimize losses during transmission and distribution. The solutions we offer clients are designed to increase energy efficiency in order to produce concrete savings. For revamping projects, our work begins with a thorough survey of the customer's existing plant in order to identify the best solutions. To this end, our R & D division dedicates itself to the study of innovative products to facilitate Energy conservation and improve production processes.

### **Renewable Resources**

Introducing new sources of renewable Energy into local grids to reduce energy dependance and costs sustainably with respect for the environment. The use of Energy from renewable sources like the sun, wind, water and biomass is a fundamental component of today's new Energy plans, but we have to be realistic about their implementation and remember that these resources can be unreliable. Nidec ASI has developed a series of products to meet the rising use of alternative energy, focusing its research and development activities on the issues of maximizing yields and optimizing power quality to enhance reliability.

### **Electric Transportation**

Our world will never be 100% electric but hybrid solutions and the intelligent use of Electric Vehicles can make a significant contribution towards reducing harmful emissions of CO<sub>2</sub> and NO<sub>x</sub>.



**Max Voltage**, a character in our public awareness program for students

### **Energy Conservation**

Developing a sustainable economy requires the involvement of everyone. The fourth pillar of project ZEUS is, broadly speaking, an initiative of public education. For over five years, Nidec ASI has been carrying out activities to raise public awareness at all levels. This commitment has led us to visit schools, speak in National and International spheres and perform increasingly important roles in European committees to define regulations and standards related to energy efficiency, Smart Grids and electric cars.