



Masters of Robotics and Motion Control



YASKAWA Electric No. 1 in Automation

YASKAWA Electric is the leading global manufacturer of inverter drives, servo drives, machine controller, medium voltage inverters, and MOTOMAN industrial robots. Founded in 1915, YASKAWA has been a pioneer in motion control and drive technology, launching product innovations, which optimise the productivity and efficiency of both machines and systems.

In almost 100 years of company history, YASKAWA products and solutions have helped to drive automation processes in many different industries such as mining, steel, machine tools, automotive, packaging, woodworking, textiles and semiconductors.

- Founded in 1915
- 8,200 employees worldwide
- Installed units:
 - 16 mio inverter drives
 - 9 mio servo drives
 - 230,000 industrial robots
- Over 1.8 mio produced inverters per year
- Over 800,000 produced servo motors per year
- 20,000 produced robots per year
- Over 60 subsidiaries worldwide

(FY 2010/2011)

A Total Solution Partner with 3 Core Businesses

Drives & Motion

With its wide range of general purpose and customised inverter drives & motion control products, YASKAWA provides automation solutions for all kinds of industrial applications.

Robotics

Factories all over the world are using MOTOMAN industrial robots. With a wide range of robot types, YASKAWA provides industrial robots for any application or market as well as turnkey solutions.

System Engineering

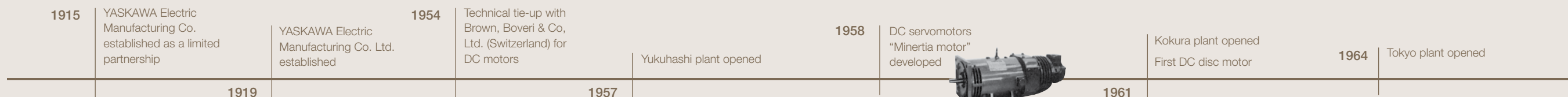
Offering a wide range of solutions, advanced YASKAWA system engineering technology meets the needs of modern society from large industrial plants to public facilities.

YASKAWA Europe A European Partner

From its headquarters in Eschborn, Germany, YASKAWA provides professional mechatronic and robotic solutions to companies throughout Europe, the Middle East, Africa and countries of the former Soviet Union. Offices in these regions and production facilities in 4 countries ensure that YASKAWA is always close to its customers, taking care of urgent requests within 24 hours.

- Over 1,000 employees in Europe
- 30 offices
- 5 production sites
- European product development with global resources

Mechatronics® (registered trademark since 1972)
YASKAWA Electric created the term "Mechatronics". The term is well known among engineers in all industries. It enhances machinery performance by electronics and information technology to control machines.





YASKAWA Drives & Motion

YASKAWA's mechatronic technology and products are used in a wide range of industrial applications from electronic component manufacturing systems to mining, from general machinery to customer-specific machine systems. YASKAWA advanced mechatronic equipment and rich expertise is making a real contribution to productivity improvement and efficiency in industries worldwide.

Inverter Drive Series A1000, V1000, J1000

1/3~ 200 – 400 V, 0.1 – 630 kW

Medium Voltage:

3 kV up to 3.7 MVA, 6 kV up to 7.5 MVA,
11 kV up to 12.0 MVA

- Standard and customised inverter drives
- Special application drives for lift and textile industries
- Energy saving functions
- Functional safety



Machine Controller Series

- Standard MP2000 series and high performance MP2000iec series
- Board-type, drive-based and all-in-one machine controller
- Position control, synchronized phase control, speed control, torque control, CAM/Shaft



Sigma-5 AC Servo Drive Series

Standard rotary motors: 0.05 – 75 kW

Linear motors: 40 – 7,500 N

Rotary direct drive: 6.0 – 600 Nm

- Space saving overall package size
- 1.6 kHz speed loop bandwidth
- High encoder resolution
- Advanced antivibration control
- Advanced safety and tuning functions
- Linear sliders and systems



YASKAWA Robotics



MOTOMAN industrial robots from YASKAWA are well known for high performance and excellent quality. MOTOMAN provides an effective human-machine interface and offers the optimal solution for a wide range of needs.



Systems

- Standard arc welding systems
- Special arc welding systems
- Specialised arc welding systems for automotive production
- Bonding systems
- Pallet repair systems
- Press brake systems
- Handling systems
- PPP systems (picking, packing, palletizing)

Industrial Robots

- First 15 axes dual arm robots
- Standard 4 – 6 axes articulated robots
- Special 7 axes robots
- Delta kinematics robots
- SCARA kinematics robots
- ATEX certificated painting robots
- Safety controlled robots (ISO 13849-1)
- High accuracy robots
- Dual arm robots

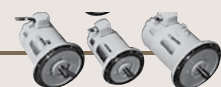
Applications

- Arc welding
- Assembly
- Cutting, dispensing
- Machine tending, removal, handling
- Painting
- Picking, packing, palletizing
- Press brake tending
- Spotwelding



1966

Cup-Motor – first DC servo drive with large capacity



1968

Hard-wired NCs developed

1969

SF6 gas rotary-arc load breakers developed
Nakama plant opened

1972

"Mechatronics" trademark registration

1974

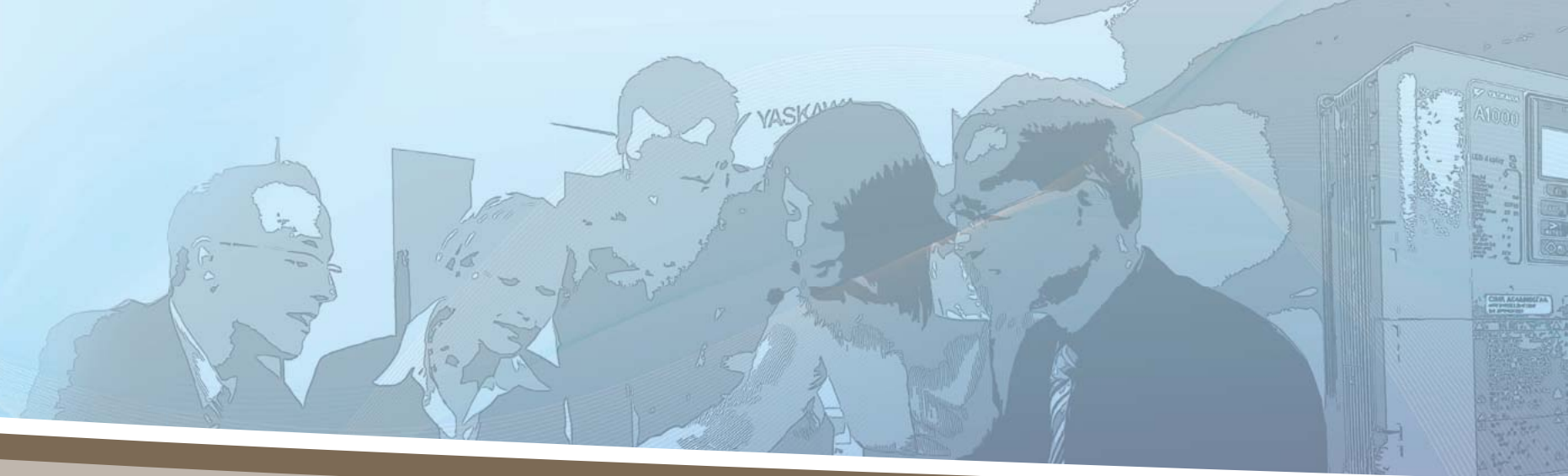
Domestic production of floppy disk drives started
NC "YASNAC", incorporating a microcomputer, developed

1977

The MOTOMAN-L10 vertically jointed, articulated type robot introduced

1979

First company to develop vector control inverter



YASKAWA Local Development

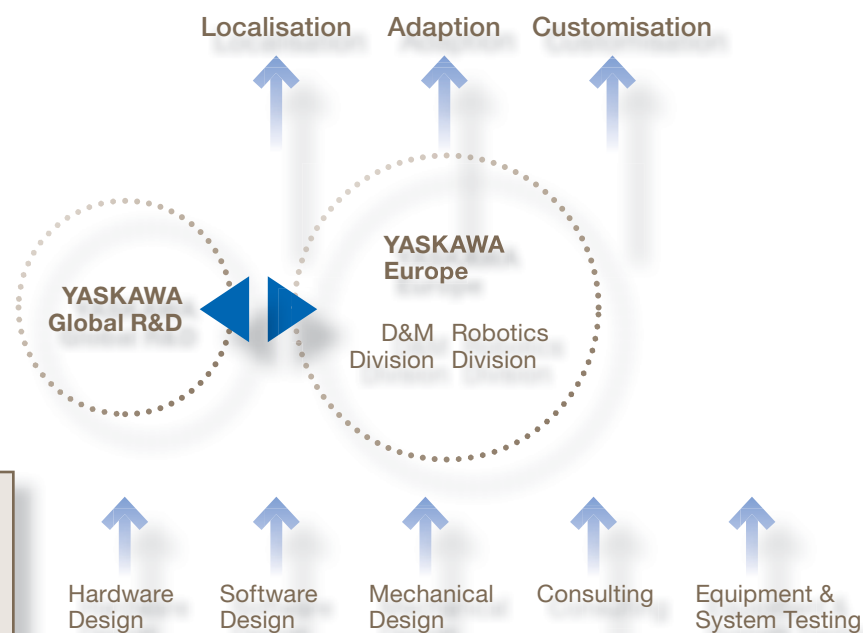
Highest quality, market driven products and customised solutions are the basis of the YASKAWA success. Especially in European markets this claim requires highest levels of competence and flexibility of the YASKAWA R&D engineers. Technical expertise, working in international networks and detailed knowledge of markets and customer specific applications are the key factors in which YASKAWA excels. Over 50 specialists at 6 European locations enable YASKAWA to provide components and solutions to satisfy local market needs and specific customer demands.

Main fields of action:

- Adaptation of systems and technologies for European markets
- Feasibility studies
- Simulation and analysis including testing
- Provision of customised solutions
- Customer consultancy
- Project management
- Technology exchange with other R&D departments worldwide
- Internal training
- Customer specific developments

Focus:

- Localisation of products
- Adaptations/Enhancements for European markets
- Customisation for European OEMs
- Customer specific developments
- Turnkey solutions



YASKAWA European Production Network

YASKAWA belongs to the top drives and robotics manufacturers in Europe. With this in mind, YASKAWA has set up a European production network in order to supply tailored devices according to local market needs. YASKAWA facilities are the most modern of their kind with state-of-the-art production and dedicated testing facilities.

Torsås, Sweden

- No. of employees: 200
- 20,000 m² production area
- Production of standard systems and controllers, customising of robots and controllers for European markets



Allershausen, Germany

- No. of employees: 200
- 15,000 m² production area
- Production of special systems, customising of robots and controllers for European markets



Niedernberg, Germany

- No. of employees: 20
- Production of standard and customized linear motor sliders and systems

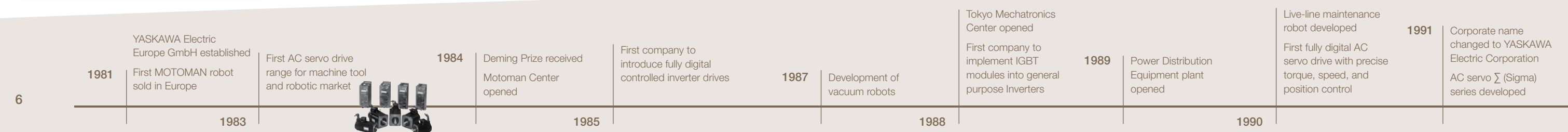
Cumbernauld, Scotland

- No. of employees: 150
- Production facility for AC inverters and servo drives
- Capacity 30,000 units per month
- Automated and lean manufacturing
- Flexible capacity adjustments to customer demands
- Customer specific assembly



Ribnica, Slovenia

- No. of employees: 100
- 10,000 m² production area
- Production of standard components and systems



YASKAWA Sales & Application Support

Sales Network

- Direct sales channels
- Distributors
- System integrators
- OEM sales channel
- End customers
- Automotive, Tier 1 channel

Pre Sales Activities & Application Support

- Software programming
- Sizing & Selection
- Integration
- Commissioning

Dedicated experienced Engineering Teams

- Drives product line
- Servo & controller product line
- Robot product line

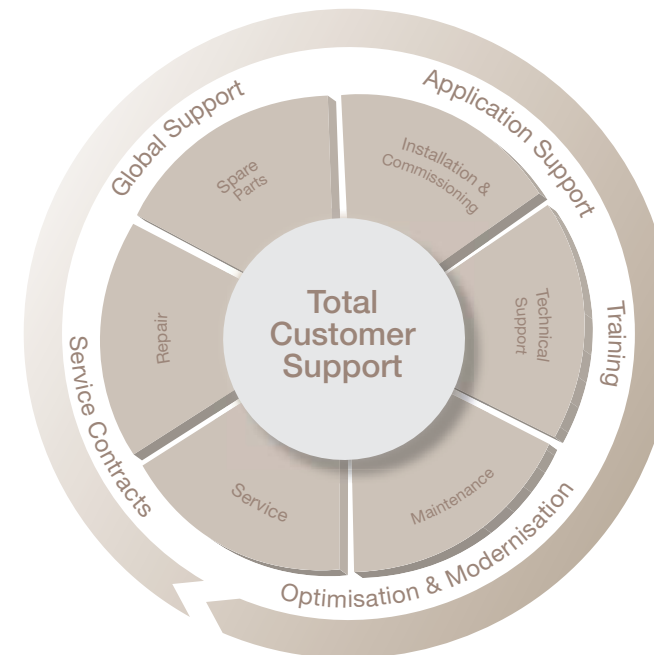


Focus:

- Product line specific technical support
- Application specific support
- Customer trainings
- Customer/application specific SW development
- Field application support

YASKAWA Total Customer Support

YASKAWA Europe provides dedicated service and support for machines and systems in a number of industries. They are geared to support customers, enabling them to operate cost-effectively and achieve the best results for their own customers. YASKAWA service and support technicians, engineers and specialists are highly skilled and assure extensive expertise across the entire product life cycle. Developing made-to-measure solutions for our customers company is included as well as installations, assemblies and commissioning support.



The extensive YASKAWA support network of service offices and local partners all over Europe and the world ensures high-quality after-sales services and engineering support. Backed by more than 25 years of experience, this global network supports your initial start-up, offers comprehensive service packages and facilitates modernisation.

YASKAWA Service & Support includes:

- Product application support
- Process optimisation and product modernisation
- Installation and commissioning
- Service, warranty and maintenance contracts
- Preventive maintenance
- Product, application and maintenance training
- In-house and on-site repairs
- Extensive failure reports
- Spare parts
- Inventory and logistic program
- Failure analysis and elimination

1992

Σ-I Series – very compact amplifiers and motors



1993

YASKAWA Electric UK Ltd. established for local production of AC drives

AC Servomotor shipments reach 1 million units

1994

Shanghai Office and Beijing service centers established

1995

Local production of robots was first started in the USA and Sweden

First company to develop vector control inverters for general applications

1996

General purpose AC drive manufacturing joint venture companies established in Shanghai and Malaysia

1997

Development for commercializing super-energy-saving variable speed drive "VS-686SS5"



Development for commercializing robot for high-clean class "MOTOMAN CR series"

1998

MOTOMAN production reached 50,000 mark
AC servo production reached 2 million mark

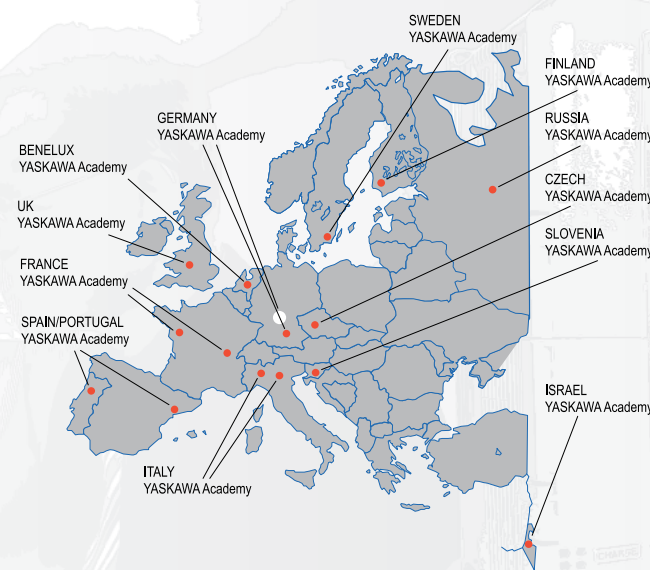
1999

In Japan established joint venture for industrial drive systems with Siemens AG (Germany)

YASKAWA Academy European Training Centers

Optimise your production processes and increase your efficiency by training your staff at the YASKAWA Academy. Our qualified instructors and teachers are constantly trained to provide technical know-how and experience in training facilities all over Europe.

- With 1,700 m² of conditioned training in the HQ Germany premises one of the largest training centers for Motion Control and Robotics in all Europe
- „AZWV“ certified training concepts
- Hands-on Trainings
- State-of-the-art demonstration units
- Advanced presentation technologies
- Multilingual trainings
- 16 Training Centers in Europe



Registriernummer: A91003



2000

First company to develop motor-friendly 3-level control general purpose inverter

Joint venture of CNC systems with Siemens AG

2002

The YASKAWA Solution Center established
AC servo production reached 3 million mark

2003

MOTOMAN production reached 100,000 mark
Yahata-higashi plant opened

2004

AC servo production reached 4 million mark
Motoman Robotec Czech s.r.o. Founded
First special robot for shielded arc-welding application

2005

Commercialized the new-generation industrial robots (dual-arm robot & arm robot)

2006

MOTOMAN STATION opened
AC servo production reached 5 million units.
Cumulative shipments of MOTOMAN reached 150,000 units.



First Matrix Converter Drive

2007

Cumulative shipments of AC drives reached 10 million units
YASKAWA Drive Center opened

2015

100 years YASKAWA

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