



Advanced Welding & Robotic Systems



DAIHEN Corporation & DAIHEN Inc.



DAIHEN

Company Profile

Company Name: DAIHEN Corporation

Establishment: December 1st, 1919

Capital: JPY 10,596 million

(Approx. US\$ 96 million, JPY110/US\$)

Turnover: JPY 143,457 million (Consolidated)

(Approx. US\$ 1,435 billion, JPY110/US\$)

Employee: 3,861 (Consolidated)

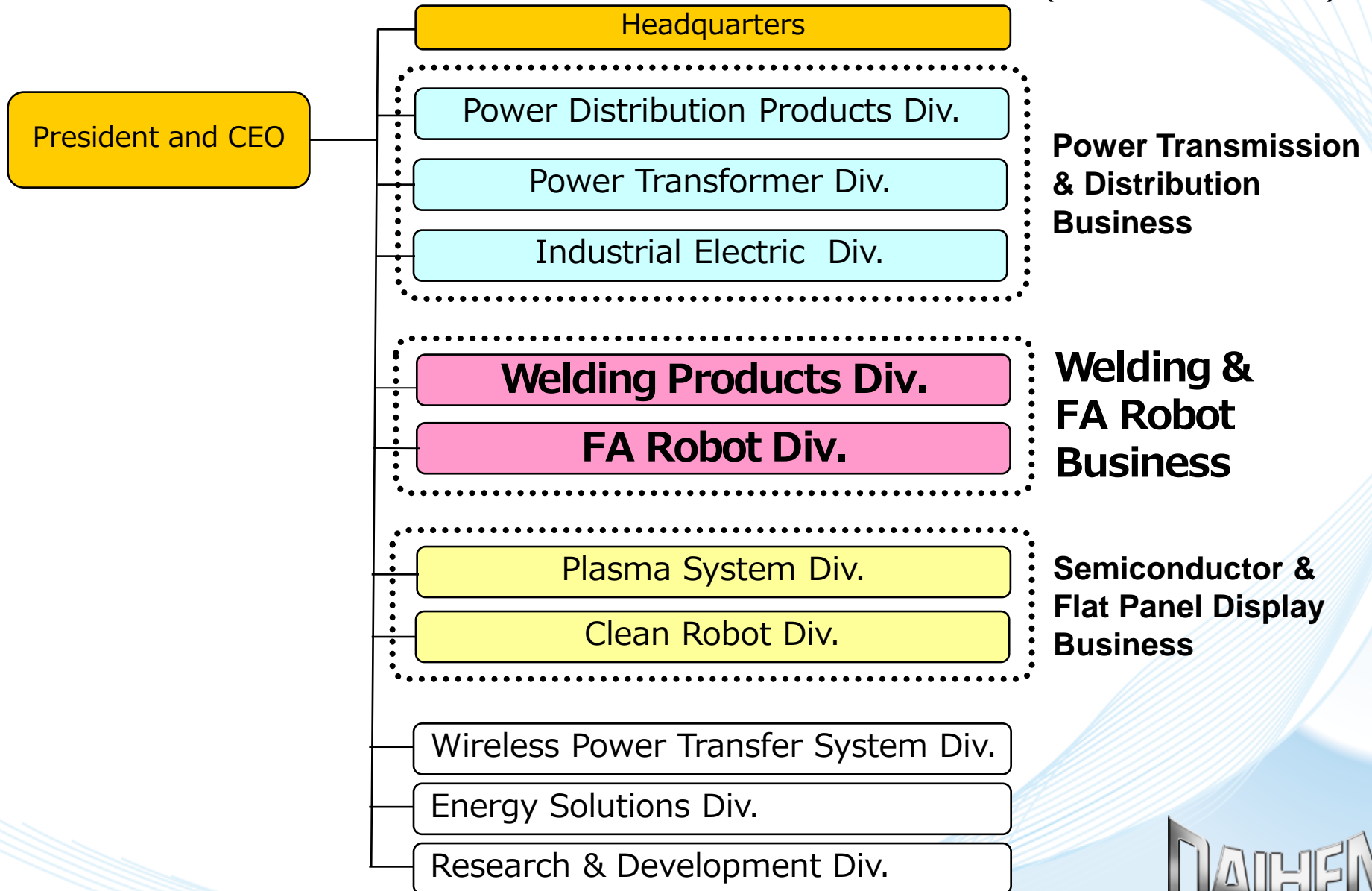
Stock Listed on: Tokyo, Fukuoka Stock Exchange

As of March, 2019

DAIHEN

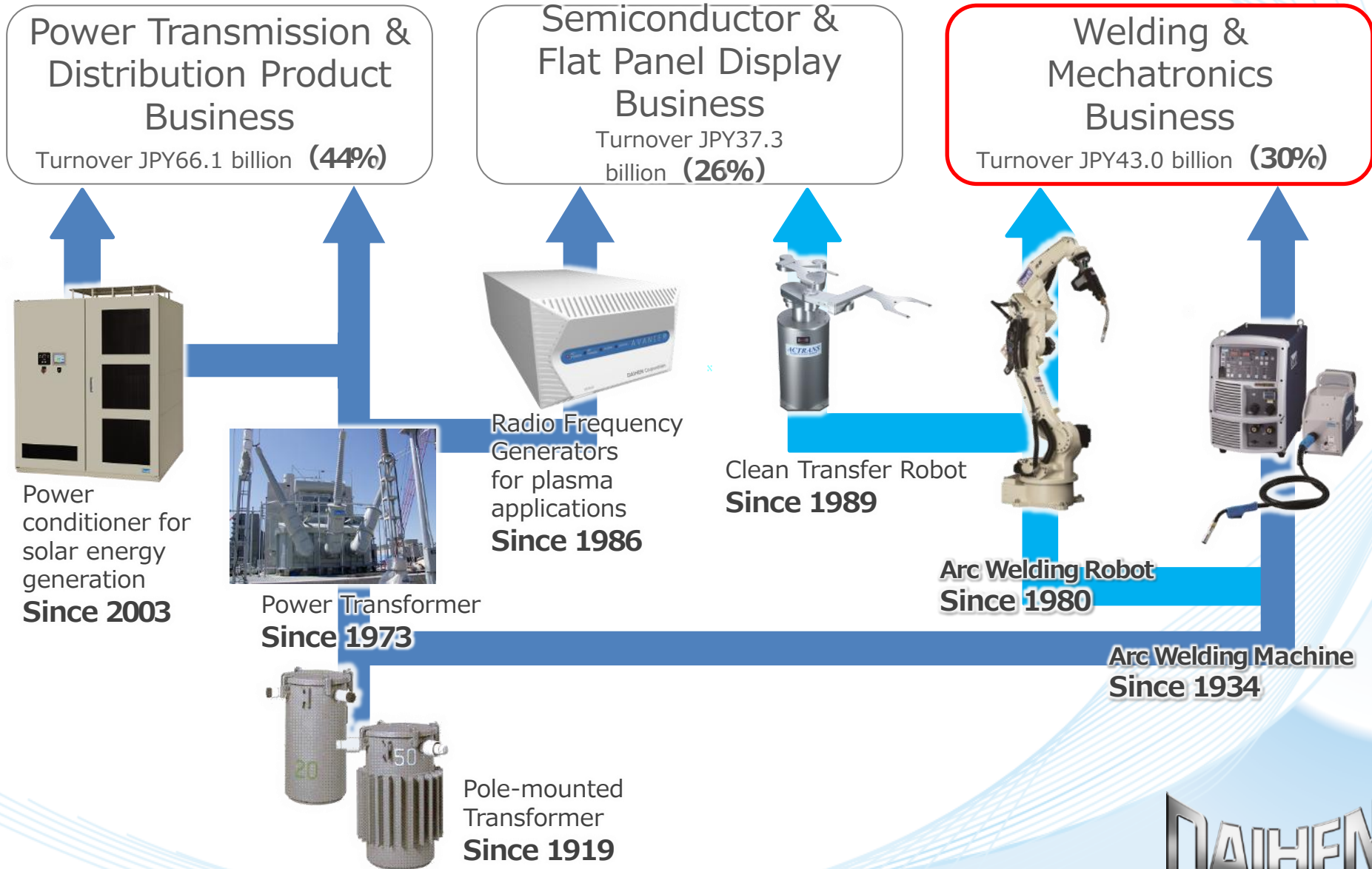
Company Profile

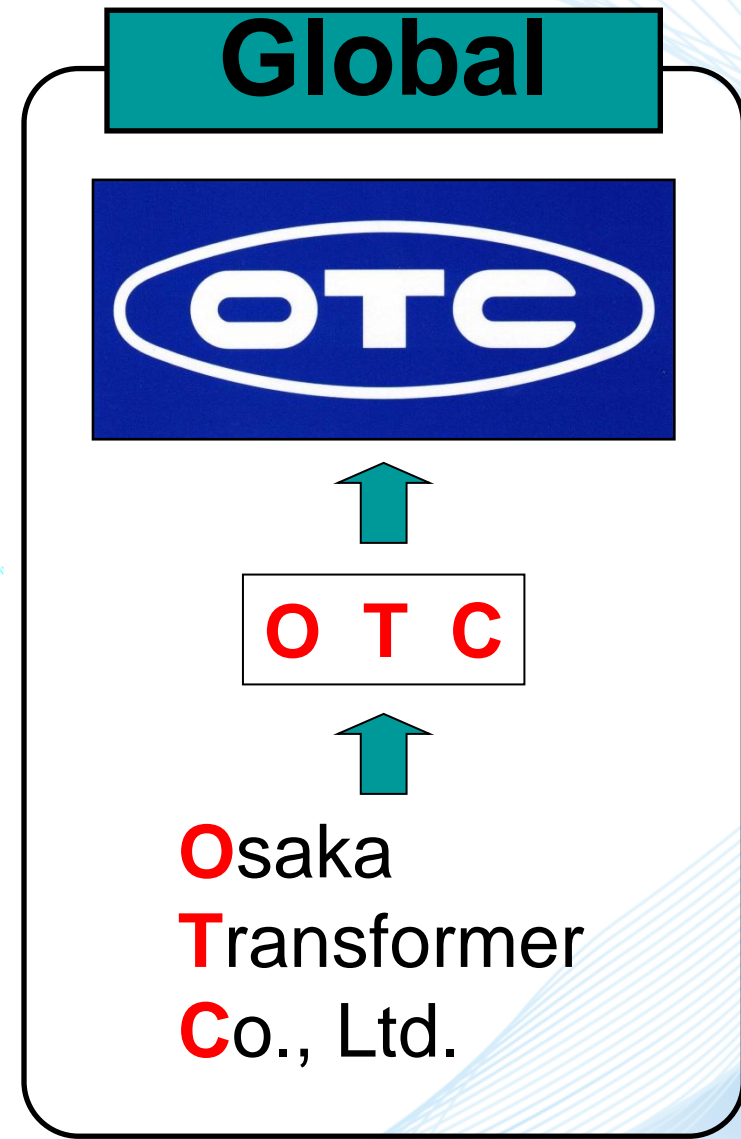
(as of March 2019)



History of Business











Turnover JPY143.5 billion (Fiscal year 2018 consolidated)














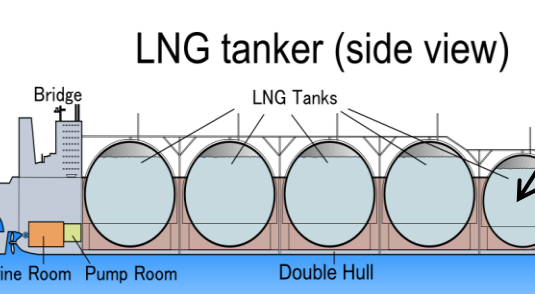


Welding & FA (Factory Automation) Robot Business

Industry-focused welding product examples

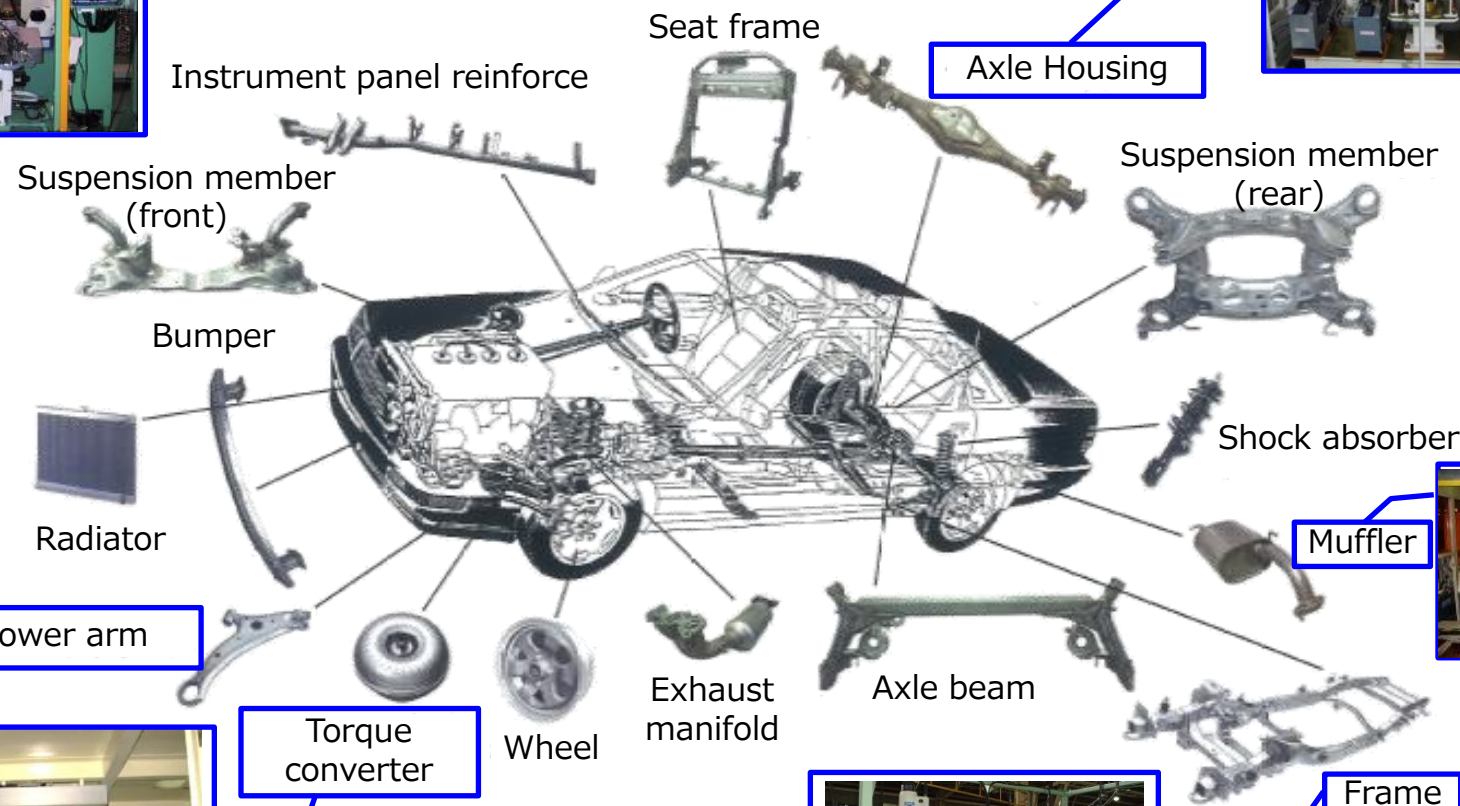
Application	Welding product			
Automobile/ Motorcycle/ Building material	Auto body 			
	 Suspension arm	 Motorcycle frame	Auto seat	Home unit material
Steel beam/ Bridge	 Building material	Steel beam column		 Bridge
		Bridge floor		

Outline – Welding & FA Robot Business

Industry-focused welding product examples

Application	Welding product	
Boiler/ Pressure vessel/ Train/ Industrial Machine		  Train platform
		 Train body  Pressure vessel 
Shipyard block		 Steel tube  LNG tanker (side view) Labels: Bridge, LNG Tanks, Engine Room, Pump Room, Double Hull
		 Marine structure  Pipeline

Application Example of Arc Welding Robot – Automotive Parts



Welding Products Business

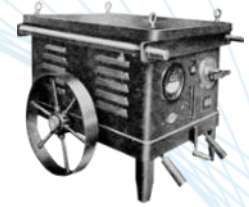
Since 1934



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Outline – Development History (Welding Machine)

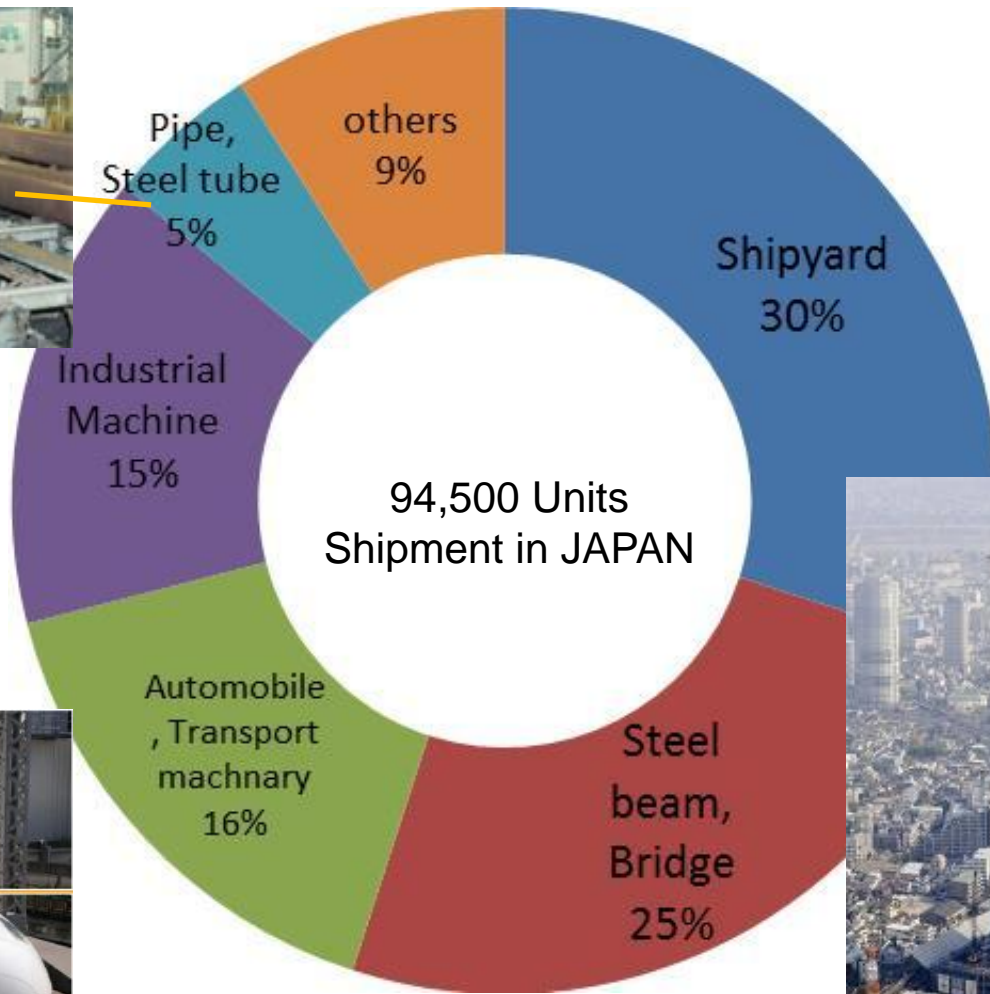
- 1934 - commenced the production of electric welding machines
- 1950 - released the Japan first sub-merged Arc welding machine under the license of Union Melt
- 1959 - invented the world first **pulse MAG** welding
- 1973 - developed the world first **mechanical controlled wire retract low spatter method CO₂ welding**
- 1984 - developed **inverter control CO₂/MAG** welding machine
- 1986 - developed the world first **double Inverter control AC/DC TIG** welding machine
- 1989 - developed the world first **low frequency pulse MAG/MIG** welding machine
- 1992 - developed **multi characteristic control CO₂/MAG** welding machine
- 1999 - developed **digital inverter control AC MIG** welding machine
- 2010 - developed **ASIC special micro processor Welbee chip**
- 2015 - developed **Synchro -feed** welding technology
- 2016 - developed **D-ARC** welding process technology and welding system
- developed **D-connect control** for welding machine



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Outline – Welding Products Business of DAIHEN

Market of business type for Arc Welding Machines



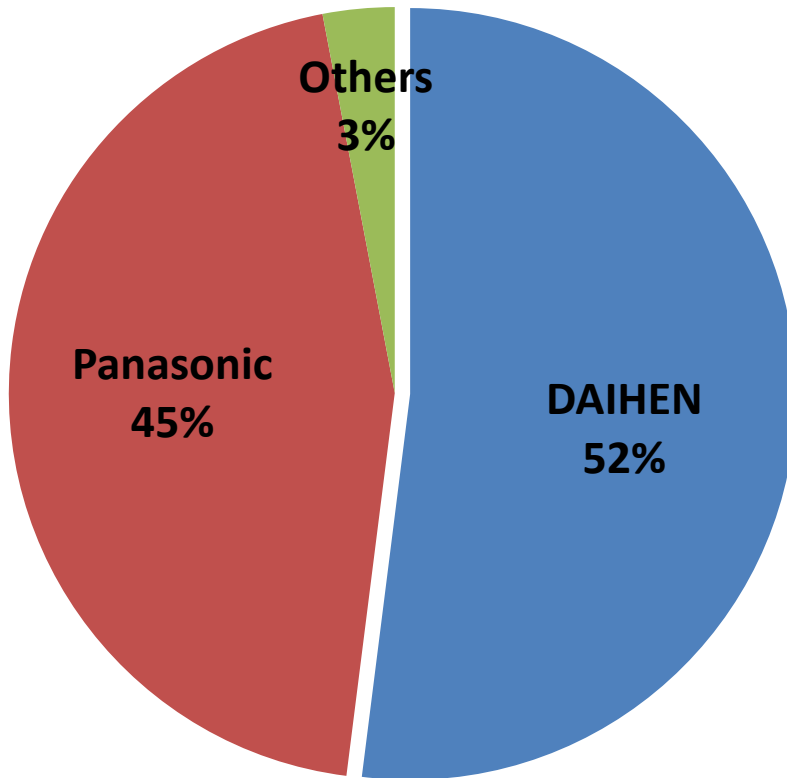
(Source: Welding MART)

(Excluding sales of engine-driven welder and plasma cutting system)

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Market Share of Arc Welding Machine

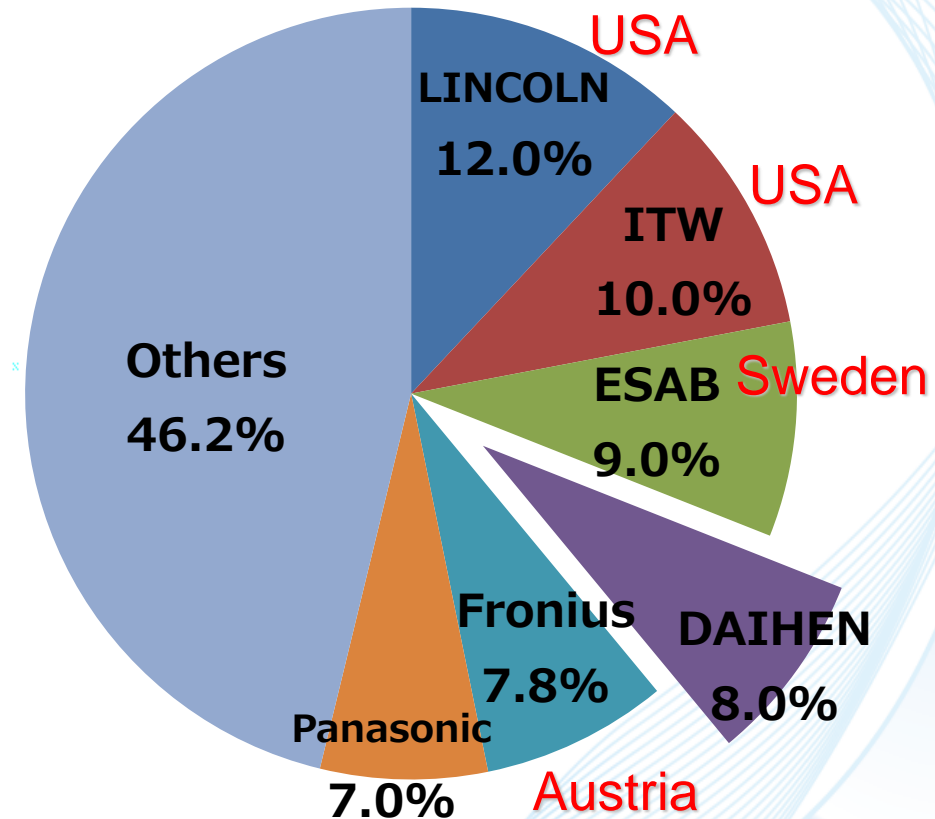
Japanese Market



Total Value of Shipment in Japan throughout
: USD 293 Million (2017)

(Source : Welding MART/2018, JPY113/USD)

Global Market



(Excluding sales of engine-driven welder and plasma cutting system)



Outline – Welding Products Business of DAIHEN

Main Products of Welding Products Division



CO2/MAG Welding Machine



TIG Welding Machine



Air Plasma Cutting Machine



AC Stick Welding Machine



Welding Torch & Equipment



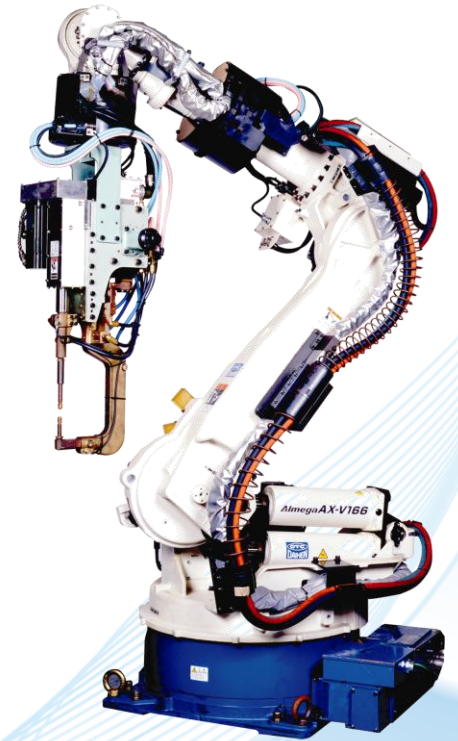
Spot Welding Machine



Dedicated Spot Welding Machine

FA Robot Business

Since 1980



DAIHEN

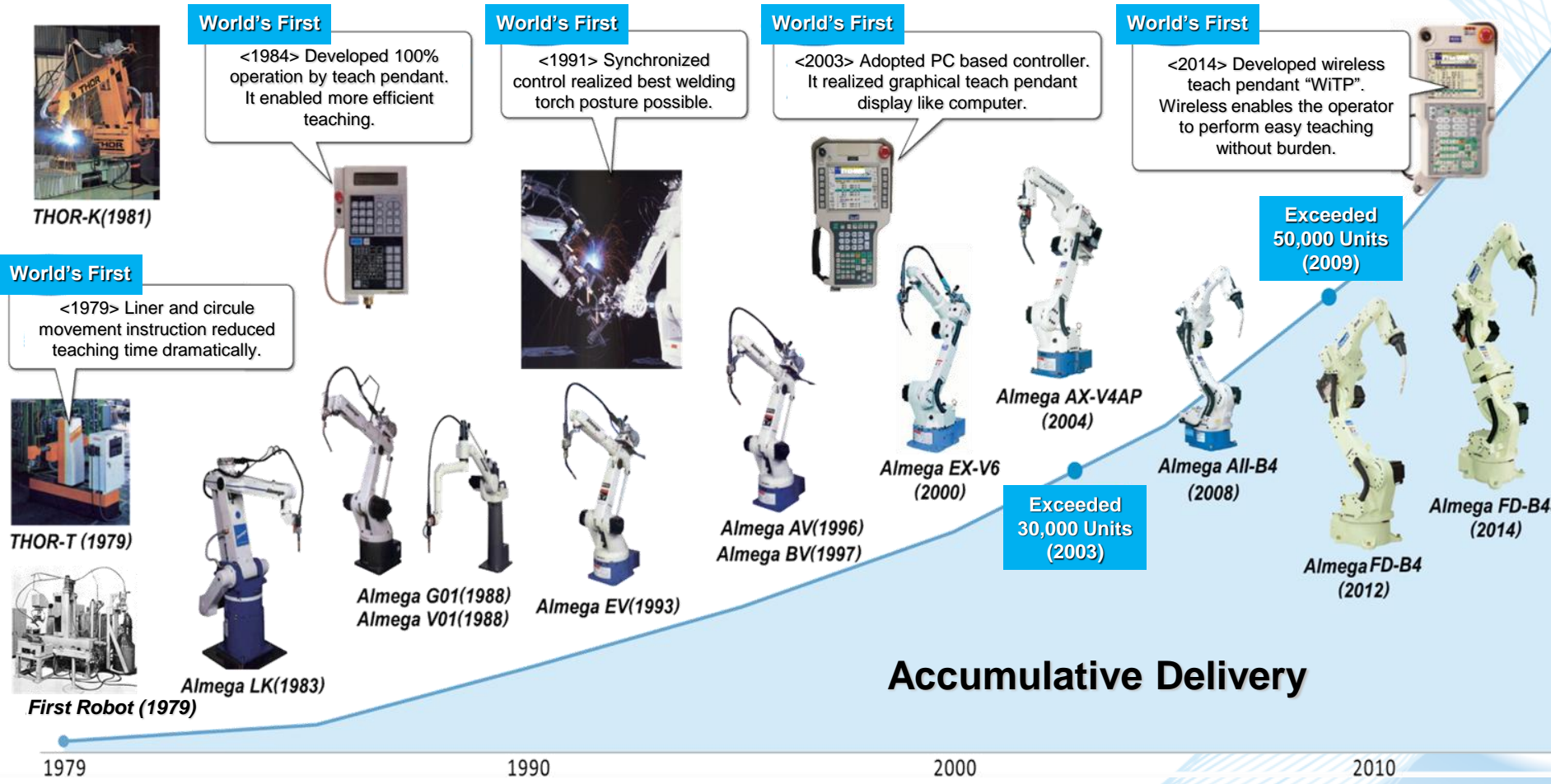
Outline – Development History (Robot)

- 1979 - developed DAIHEN first robot for Nissan motor
- 1981 developed **Articulated 5 axis robot**
- 1983 developed **ALMEGA series robot** and new controller
- 1988 - developed **Articulated 6 axis robot** and new controller
- 1990 - developed the world first **cooperative operation robot controller**
- 2003 - developed **PC controlled Almega AX series robot** with Nachi Fujikoshi
- 2004 - developed **robot motion retract control technology**
 - developed **cable built-in type arc welding robot Almega series**
- 2008 - developed **off line teaching software**
- 2010 - developed **vision assist robot teaching**
- 2014 - developed **7 axes welding robot**
 - developed the world first **wireless teaching pendant**
- 2015 - developed **Synchro feed welding robot system**
- 2016 - developed the world **highest accuracy robot FD-A20 (20kg payload)** and controller
 - developed **slim arm with payload (6kg) cable built-in type robot**



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Outline – Development History (Robot)

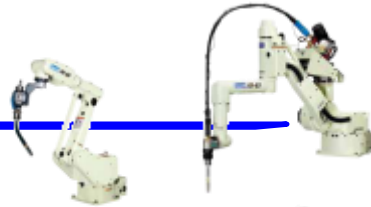


Main Products of FA Robot Division

A wide range of Manipulators (3kg~130kg payload robots) by DAIHEN

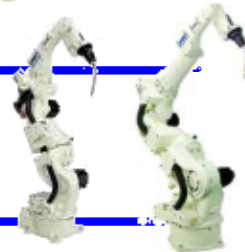
3kg

FD-S3 / FD-G3



4kg

FD-B4S / FD-B4LS



5kg

FD-H5



6kg

FD-B6 / FD-B6L / FD-V6S / FD-V6LS



8kg

FD-V8 / FD-V8L



15kg/20Kg

FD-V20S / FD-A20 / FD-B15



25kg

FD-V25

80kg/100kg/130kg

FD-V80 / FD-V100 / FD-V130



50kg

FD-V50



166kg/210kg

FD-V166 / FD-V210



280kg/350kg

FD-V280L / FD-V350



400kg

FD-V400L



600kg/700kg

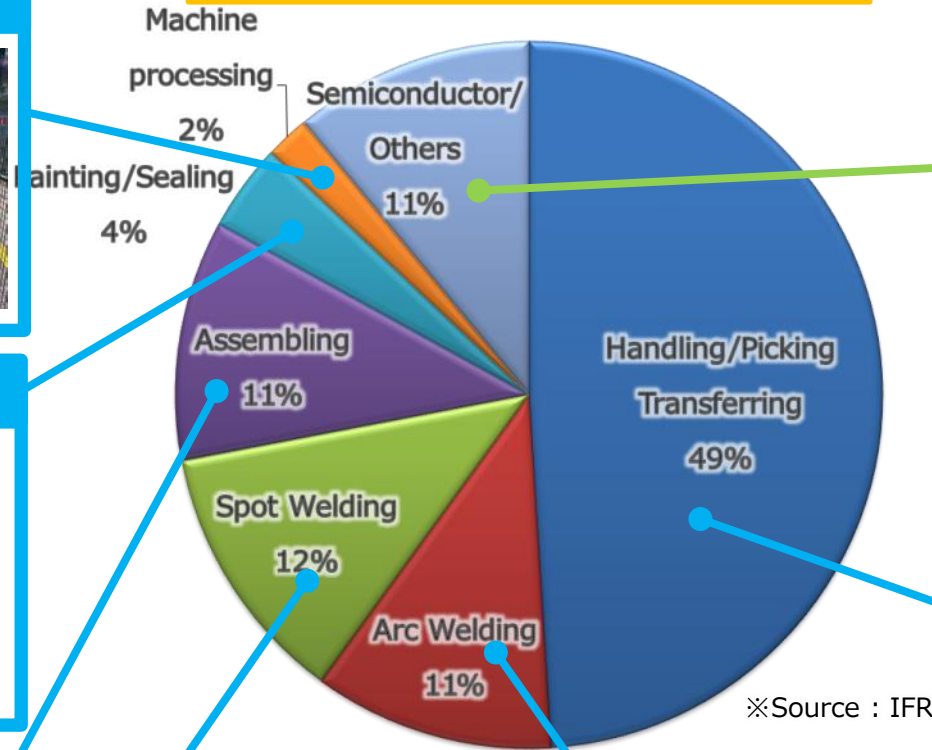
FD-V600 / FD-V700L



Outline – Robot Business of DAIHEN

DAIHEN Robot Business

Industrial Robot Application



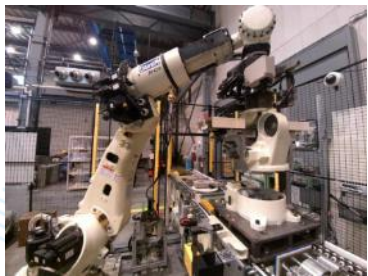
Machine processing



Sealing



Assembly



Spot Welding



Arc Welding



Clean Robot Division

Semiconductor Related



Handling/Transferring

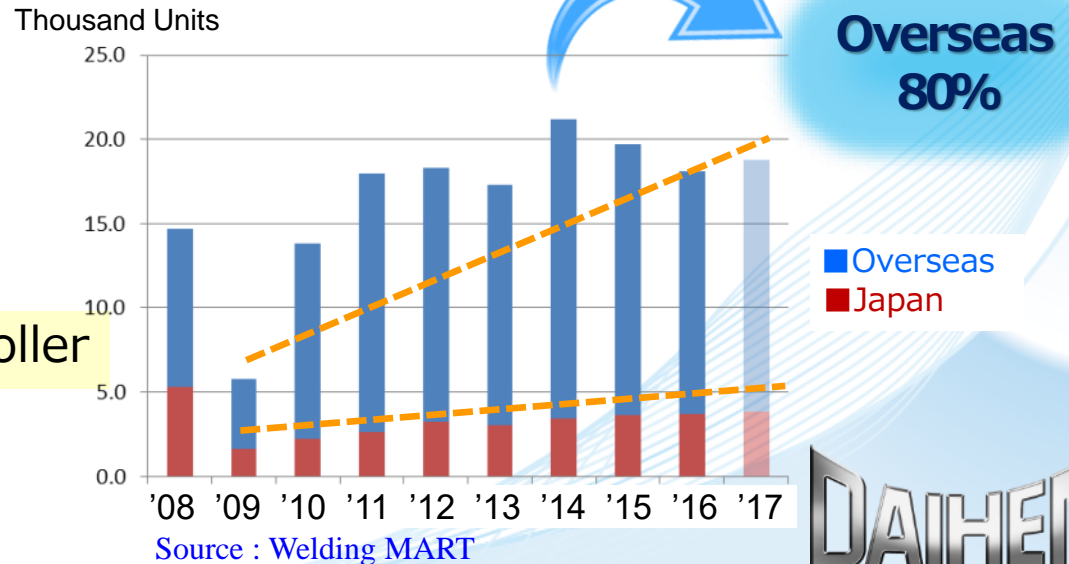
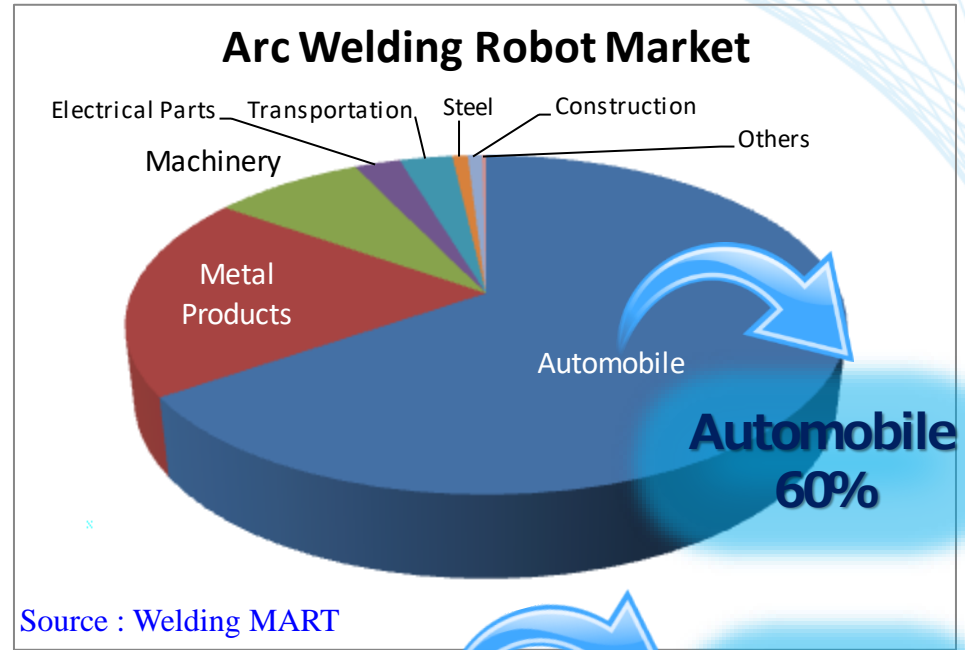
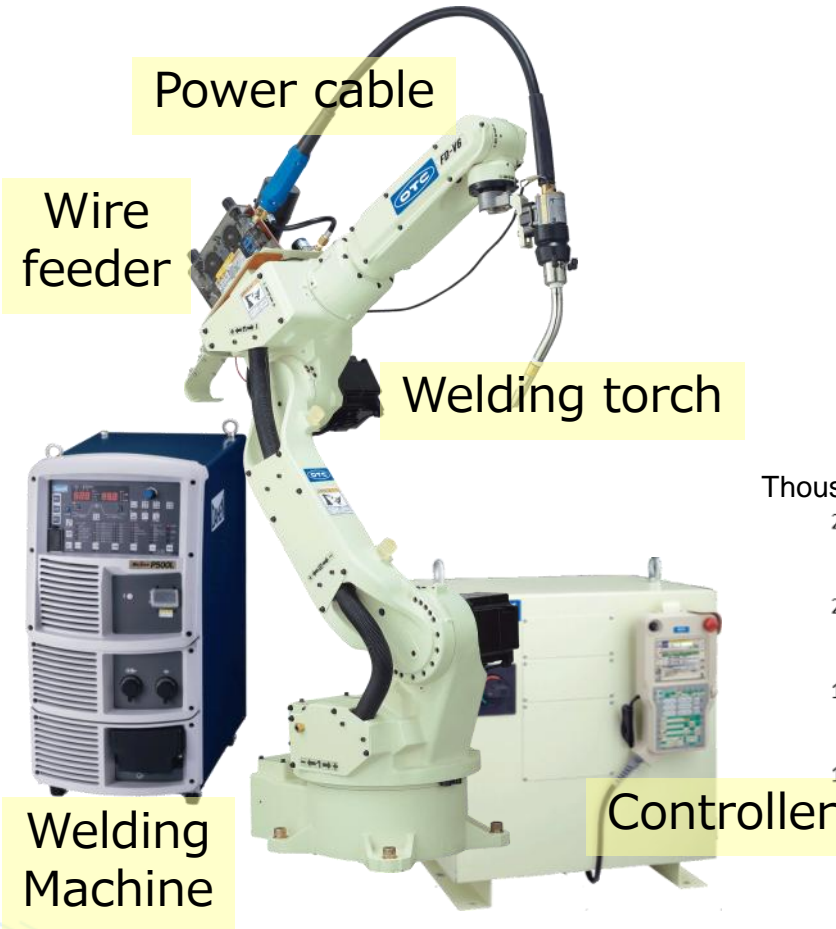


FA Robot Division

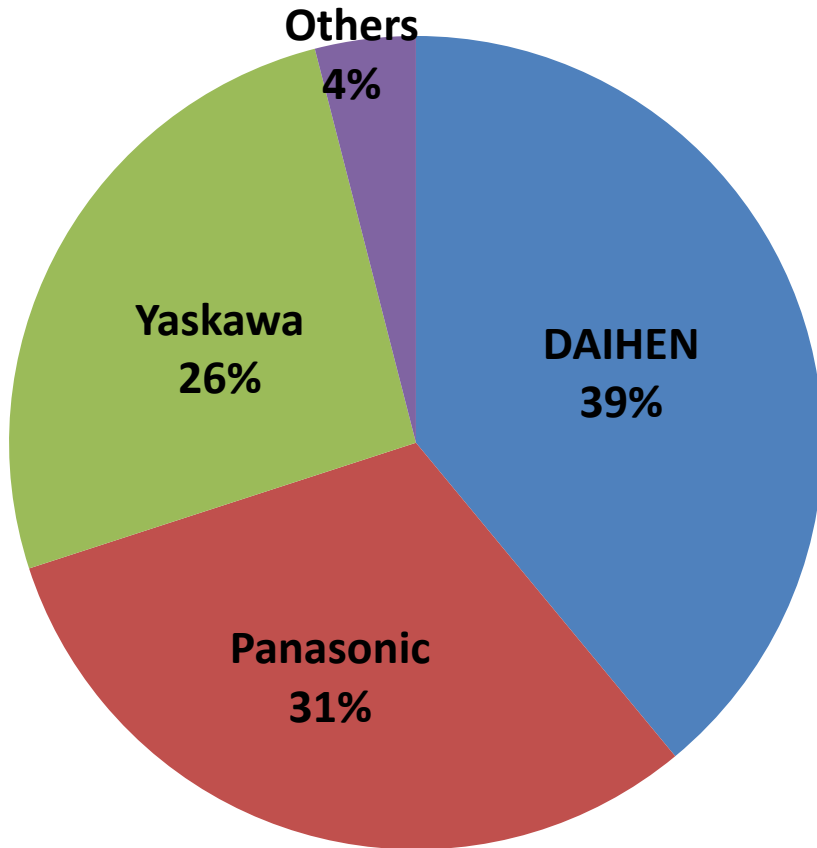


Arc Welding Robot Market – Domestic / Global Market

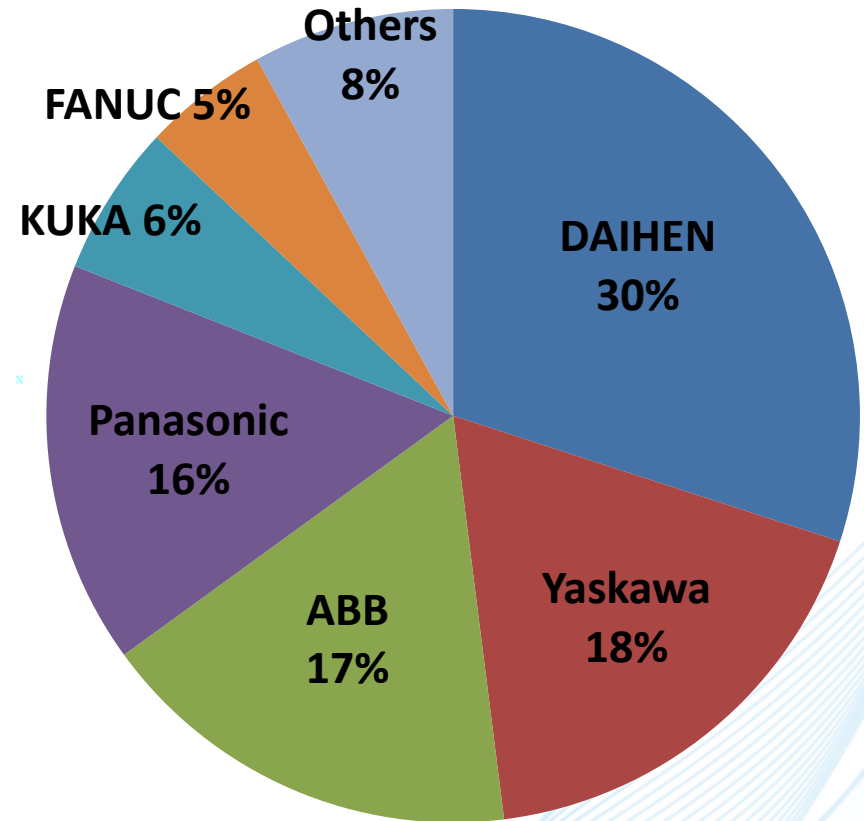
Total Package of DAIHEN Arc Welding Robot



Market share of Arc Welding Robot



Share in Japan
(Source : Welding MART)



Global Share
(Source : Latest and Future Estimation of Worldwide Robot Market)

Production Plants and Sales & Service Locations



DAIHEN

Global Network - Production Plants in Japan & Overseas



**DAIHEN VARSTROJ d.d.
(SLOVENIA)**



**Mudanjiang OTC Welding
Machines (CHINA)**



**DAIHEN Industrial Machinery
(Tottri, Japan)**



**OTC Industrial (Qingdao)
(CHINA)**





Rokko Plant (Kobe, JAPAN)



**OTC DAIHEN Asia
(THAILAND)**



**DAIHEN Advanced Machinery
(Changshu) (CHINA)**

-  Overseas 5 factories
-  Japan 2 factories

Global Network - Overseas Sales & Service Locations

Europe



OTC DAIHEN EUROPE GmbH
Munich & Dusseldorf
Germany



DAIHEN VARSTROJ d.d.
Slovenia

Asia



DAIHEN KOREA Co.,Ltd.
Pyeongtaek & Busan, Korea



OTC DAIHEN ASIA Co.,Ltd.
Thailand
Branch : Malaysia



OTC INDUSTRIAL (SHANGHAI) Co., Ltd.
Shanghai, China
Branch : Gwangzhou, Chongqing, Tianjin, Wuhan



OTC DAIHEN INDIA Pvt.Ltd.
India



PT.OTC DAIHEN INDONESIA
Indonesia



OTC (TAIWAN) Co., Ltd.
Taiwan

America



DAIHEN, Inc. (DAYTON OFFICE)
Ohio, U.S.A.



DAIHEN MEXICO S.A. de C.V.
Leon & Monterrey, Mexico

DAIHEN

Locations in North America



Dayton - HQ



Detroit 2006



Charlotte 1979



Atlanta 2003

**DAIHEN MEXICO
S.A. de C.V.**



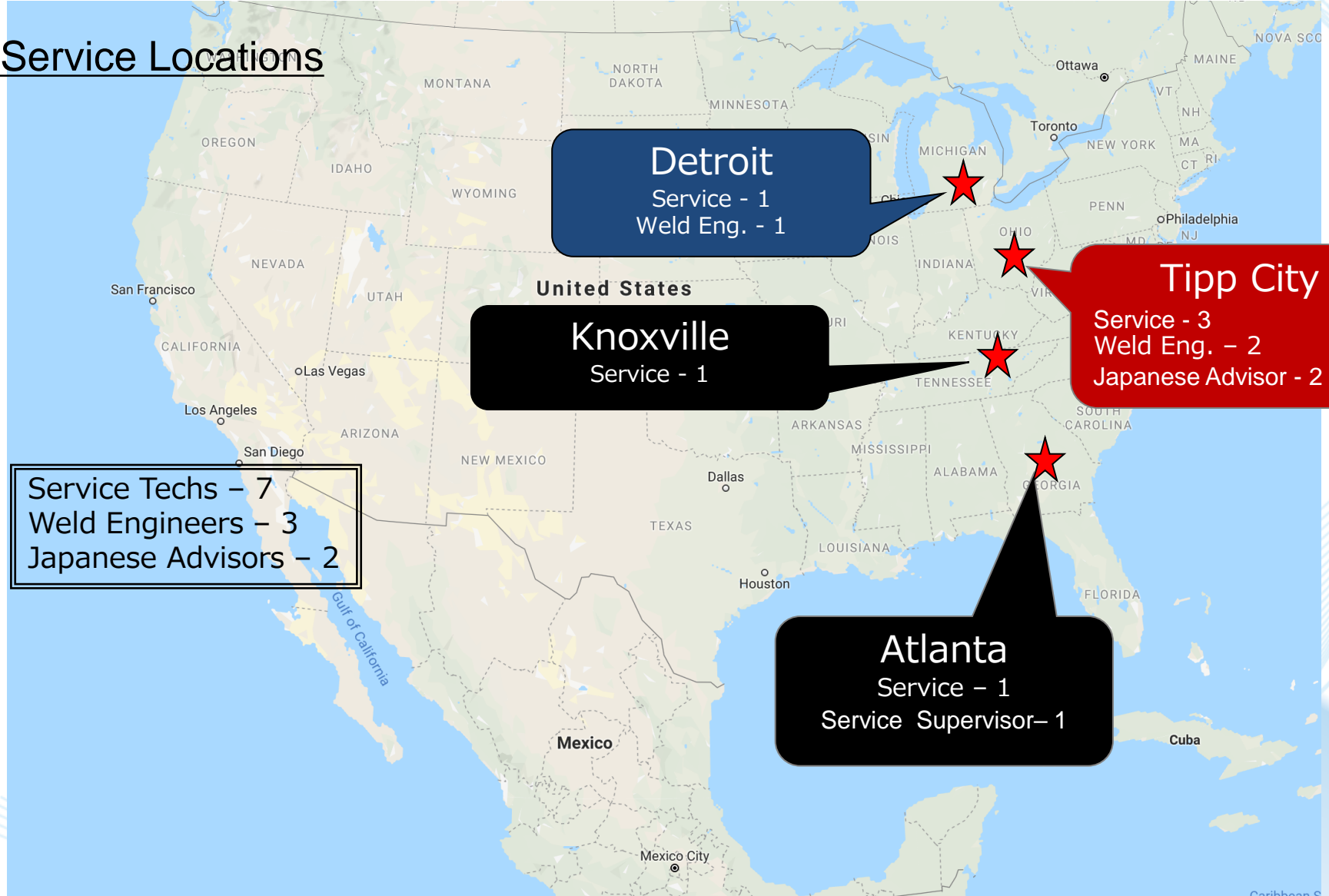
Monterrey (2013)



Leon (2015)

(▲ - Home Office)

Service Locations



Robotic Systems Manufacturing

- Full Line of Standard / Plug-&-Play Robotic Cells
- Custom Designed Systems to Specific Needs
- RIA Compliant



Training for Welding Equipment & Robot

< In-House & On-Site Training Classes >

- Variety of training classes that focus on learning, growth & development, and safety.
- All instructors are active service and application engineers, and are very knowledgeable of our products & industry.



Welding Application Support & Demonstration

- **Application Engineers & Technicians are available to support you**
- **Visit one of our demo facilities to evaluate OTC Products**
- **3 locations in the U.S.**
- **2 locations in Mexico**





Advanced Welding & Robotic Systems



DAIHEN



**COMPLETE
METALWORKING
SOLUTIONS**

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