

ITOH DENKI CO., LTD

<CORPORATE PROFILE>

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| Head office | 1146-2, Asazuma-Cho, Kasai, Hyogo, Japan 679-0105 |
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| Website | http://www.itohdenki.co.jp/english/e_news.html |
| Number of employees | 260 |
| Capital: | ¥ 90,000,000.- |
| Incorporated on: | October 1, 1965 (founded on February 1, 1946) |
| President | Kazuo Itoh |

<BUSINESS>

Design, manufacture and sales of motorized conveyor rollers, control devices, module units related to material handling, motorized pulleys, and conveyor components. Production and sales of various small motors. Design and manufacture of various labor-saving machinery. Research on plant factory as well as their design, production, and sales.

<TECHNOLOGY>

The Master cells of the material handling: Power Moller® (MDR – Motor Driven Roller) Power Moller® is an motorized conveyor rollers incorporating state-of-the-art 24VDC brushless motor. Because its range of application is so vast and unlimited, the MDR is often called as the Master cells in material handling systems. What makes the MDR based conveyor different and outstanding from the conventional ones is that the MDR has a brain of its own, making local decisions, whilst the conventional one simply operates based on command signals from the host computer. The MDR can make its decisions locally on its own through its decentralized autonomous control system which enables product conveyance without receiving command from the host computer. In addition, the conveyance data is sent back to the host computer over Ethernet achieving product tracking . MDR is the product that supports material handling in the age of Industry 4.0.



Lineup of epoch-making products employing the MDR technology

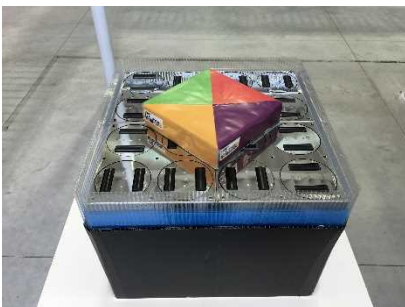
- “id-PAC” Choose and combine modules making scalable flexible configuration.



“id-PAC” flexible, scalable configuration.

The id-PAC is an innovative MDR-based conveyor system making design, installation, and modifications easy and user friendly. Individual functions of material handling are modularized, and an ideal layout meeting particular layout can be achieved by combining these modules. The id-PAC realizes the ideal operations in smart factories and expeditious logistics.

- “Magic Carpet System (MCS)” –Back and forth, diagonal and side to side conveyance



By having swarm intelligence technology (Swarm intelligence is the phenomenon/ability to demonstrate the brilliant collective movement often seen in flocks of birds and schools of fish.), the MCS realizes a dream handling system in light of automated conveyance and product sorting for any directions – back and forth, diagonal and side to side directions.

Having brain on its own, the MCS conveys and sorts a wide range of goods freely without requiring time consuming programming.

【Behind the scenes of development】

From the late 1960s through the beginning of 1970s, industrial robots were the thing of the times. Just when Itoh Denki had taken on the business of factory automation machinery designs meeting the requests from customers who desired to automate their production, the oil crisis broke out bringing about serious economical recession. As a consequence, orders for machinery and the motor production volume dropped dramatically, forcing the company to develop its own unique and independent brand products. Capitalizing its strengths and expertise in design and manufacturing small motors, Itoh Denki invented an internally motorized conveyor roller in 1975 as a fruit of painstaking product development efforts.

【Unique features】

MDR based handling system has five distinctive features. (1) Over 60% energy saving by run-on-demand operation where motors run only when products arrive, (2) minimized electric shock and injury through low 24VDC operation, (3) prevention of products collapse and collision by gentle transfer achieved through zero pressure accumulation, (4) noise reduction is achieved with a complete airless mechanism, and (5) affordable cost of ownership by the minimized the overall costs in operation and maintenance. MDR is a brilliant component having all functions required for intelligent control.

【Future development】

With the advent of Industry 4.0 era, we see increasing demand for solutions in expediting logistics, making factory smart and achieving mass-customization. Itoh Denki is committed to providing epoch-making MDR products and solutions to the market. One is id-PAC enables flexible, scalable configuration, and the other is MCS, the omni-directional conveyance system. Itoh Denki continues to promote the MDR based material handling system extensively around the globe providing innovative and sustainable solutions to the manufacturing and logistics industries.

<TOPICS>

Promoting the Itoh Denki brand globally.



Automation Fair 2016 (Atlanta, U.S.A.)

Itoh Denki actively presents its products at international tradeshows held around the world, taking part in 30 to 40 annually. In 2016, Itoh Denki presented MDR material handling at LogisTech Tokyo 2016, Japan's largest tradeshow for material handling & logistics, whereby id-PAC, designed to meet the times for labor shortage, and MCS (magic carpet system), featuring Itoh Denki's unique swarm intelligence technology, were exhibited. They are a lineup of epoch-making products meeting the requirements in the Industry 4.0 era. Itoh Denki also organized its private show in Tokyo, Osaka, Nagoya and Okayama. Those private shows helped encouraging more business meetings to provide further insights into the Itoh Denki product portfolio and to enhance the understanding in the Itoh Denki brand.

Production facilities expanded both at home and overseas



Higashiyama second plant and Maruyama third plant inaugurated their operation near the headquarters' plant from 2015 through 2016. These plants are dedicated to producing MDR modules and to mounting modules into conveyor systems. At the Higashiyama second plant, the plant factory research center is pursuing Plant Factory Automation (PFA) projects as well. Outside Japan, too, the company has doubled the production capacity of its ITOH DENKI EUROPE (France) plant, built a new plant for ITOH DENKI USA (Pennsylvania), and relocated and expanded its assembly plant in

Shanghai, China to greatly boost the overall production capacity of the company.

<HISTORY>

- 1946 Ichiro Itoh founded the company “Itoh Electric Industries” at 102 Kurita, Hojo-Cho, Kasai-Gun, Hyogo Prefecture.
- 1965 Incorporated ITOH DENKI CO., LTD with Ichiro Itoh as president.
- 1980 Kazuo Itoh promoted to president.
- 1987 Founded ITOH DENKI EUROPE S.A. in France as a joint venture.
- 1994 Founded IDECH CORPORATION (affiliated company)
- 1996 Founded ITOH DENKI USA, INC in Wilkes-Barre, PA in the U.S.
- 2001 Founded ITOH DENKI ASIA LIMITED in Hong Kong
- 2002 Received “Kusunoki Award” from Hyogo Prefecture
- 2007 Founded ITOH DENKI SHANGHAI COMPANY LIMITED in Shanghai China.
- 2010 Founded ID TECHNO CORPORATION (affiliated company)
- 2012 Started Plant Factory Automation (PFA) projects.
- 2016 Celebrated the 70th anniversary of the company