

VEDEX PRODUCT CATALOG

Every product of KUMKANG Autotec is the outcome of our passion and dedication. We guarantee high values with unwavering precision and quality.



About Us

!! All products under production **must have top quality**, and
All members working in here **must have passion**.
That's how we **achieve high-value**, unmatched excellence in our products. !!

Since the establishment in 1986, KUMKANG Autotec has been a dedicated member of automobile industry, manufacturing and supplying top quality-customized products and service to the market to meet customers' needs. We specialize in logistics automation system, electric monorail system, AGV (Automated Guided Vehicle) and AMR(Autonomous Mobile Robot) that are essential to automatic manufacturing process. In addition, we make special efforts to research and development endeavor to ensure we have essential technology and knowhow through Industry-Academy Cooperation projects with colleges and patented technology transfer with major research centers that are funded by the government. Forward looking, we are committed to all our customers', both existing and prospective, individual and future-oriented needs in the 4th Industrial Revolution, with conversion of ICT value creation.

Our focus products include OHConv, Slat Conv System, and automation transport system (EMS and CPS_EMS), and automated vehicle (AGV and AMR), as well as logistics automation system and robots (3Shop) that are essential in automobile manufacture factories, and various manufacturing and food processing industries.

Recently, manufacturing processes increasingly require unmanned automation technology. In this fast-changing industrial and market environments, We, KUMKANG Autotec, will continue our best effort and care to satisfy specific needs of each customer.

CEO Greetings

Since the establishment in 1986, KUMKANG Autotec has been dedicated to the localization of automation system facilities and autonomous vehicles. Especially since 2000, we export our products to many manufacturing companies in the world, in particular automobile factories, including China, Russia, India, Iran and several East-Asian countries, as we strive to advance into global market and globalize our products.

Since 2015, matching the trend, we supply AGV and AMR as well as key parts and equipment for logistics automation system to numerous logistics bases, both domestic and global, and carry out technology exchange and transfer with renowned research centers and academic institutions to explore innovative technologies and turn them into products.

Always focusing on customers' needs, we will continue our efforts to realize our slogan, 3BEST (Best Technology, Best Quality and best Service)

History

<u>1986</u>	· Established Kumkang Machinery (Dohwa-dong 786, Nam-gu, Incheon)	<u>2002</u>	· Certified as Prospective Small and Medium-sized Enterprise (Incheon, No. 70) · Certified as Excellent Technology Enterprise (No.2039)
<u>1989</u>	· Expanded the business area to general logistics facility manufacturing		
<u>1996</u>	· Manufactured and supplied automobile factory production facilities · Manufactured and supplied automated monorail and conveyor systems (localized)	<u>2005</u>	· Certified as Inno-Biz enterprise (4071-0434) · Certified as Professional Parts /Materials enterprise (No.1837)
<u>2001</u>	· Incorporated the company (Reg. No. 131-81-60790) · Registered as a venture enterprise (Reg. No. 2001172431-827) · Acquired ISO9001 certification	<u>2012</u>	· Acquired Vision-Enterprise certification
		<u>2018</u>	· Registered in and acquired construction business certificate · Acquired Small and Medium-Sized Intellectual Property Business Entrepreneur certification
		<u>2020</u>	· Appointed new CEO

Elementary Technology per Product

Product	Key Elementary Technology
MONO RAIL SYSTEM (KA-RUN)	<ul style="list-style-type: none"> · AIR Device, Control Device, Drive, UP/DN Unit S/W, Carrier Supplementary Installation Design Tech · Structure strength, Low noise, Operation Design Tech · Parallel Broadband Modem Control Tech
OVERHEAD P&F C/V SYSTEM	<ul style="list-style-type: none"> · In-house production of P&F RAIL, Carrier, Drive Part, Tail Part, Lifter, Unloading Device, and Accessories, etc. · Structure strength
FLOOR C/V SYSTEM	<ul style="list-style-type: none"> · C/V Frame Design Tech · Structure Analysis · Safety, Low Noise, Applied-Operation Tech · Unloading Device Tech
AGV/AMR	<ul style="list-style-type: none"> · Automated-Driving Tech by using Slam Navi · Customized production to meet individual needs of users · Smooth link with existing automobile facilities based on Slam Navi and PLC Dual-Zero Tech

Certificates



- ① certificate of inno-biz
- ② Intellectual Property Management Certificate
- ③ ISO 9001
- ④ Tech Innovation Small and Medium Business Certificate
- ⑤ Management Innovation Small and Medium Business Certificate
- ⑥ Venture Company Confirmation
- ⑦ Corporate Research Institute
- ⑧ Small Business Confirmation

AGV (AUTOMATED GUIDED VEHICLE)

Description

AGV (Automated Guided Vehicle) is an alternative technology that replaces the existing conveyor system-based logistics transportation method. It is used to load and transport heavy materials around a large industrial building.

Depending on the field condition where it is to be operated, some application is available using a proper location awareness device.

Advantages

Omni Wheel Drive

- ① It is a Modular AGV with 200kg capacity per module. This modular AGV technology is developed by us for the first time in the country, to be used with the conveyor in automobile production line. When the load exceeds 200kg, users can link as many AGV depending on their cargo weight (e.g. 800kg/4 vehicles connected).
- ② All direction-automated driving is available, including moving diagonally and sideways
- ③ In case of uneven surfaces, the wheel has springs built-inside and increases stability in driving.
- ④ Compared to other AGV driving methods, which include photoelectric magnetic induction type, image-guided induction, and laser induction, etc. our AGV introduces a new method that gauges the minimum distance to destination, moves, and senses and avoids obstruction, all by itself.



Lightweight AGV



Heavyweight AGV

Quad Driv

- ① Photoelectric magnetic induction type - A method that puts the reflective tape on the floor and follows the tape
- ② Image-guided induction - A method that attaches on the ceiling tags with different patterns for identification, and drive by using infrared rays
- ③ Laser induction type - Laser scanner uses infrared rays and determines the coordinate by trigonometry to travel
- ④ Automated driving through ROS based-application and installation
- ⑤ Can attach multi-modular robot for increased efficiency in logistics, depending on the needs and work.



EMS (ELECTRIC MONORAIL SYSTEM)

Description

Up to 90m/min's high speed transport vehicle. With built-in micro-processor, speed controller and various sensors, accumulator's accurate stop positions and speed control are available. Especially, by way of wire/wireless communication on the ground through either optical transport device for general purposes, or sectional communication control system which we have developed in-house, this cutting-edge logistics transport system provides vertical movement and driving, going up and down freely and smoothly.

Advantages

- ① Unmanned automated system that transports heavy materials from different production lines to specific locations designated by the operators, fast and accurately.
- ② Fast transportation capacity with max. 120m/min increases productivity, radically. Accurate stop position made at any stop points mechanically, by sensor.
- ③ Clean and lightweight rail made of high strength aluminum alloy, along with quiet Urethane drive wheel of excellent wear resistance, our EMS creates excellent working environment without creating dusts.
- ④ Without extra assistance, it can self-drive and move up and down saving the operation time greatly.
- ⑤ As it works overhead on the ceiling, users can maximize efficiency of space use. Extra loading to communicate with each train is also available.
- ⑥ No noise, No vibration.



OH EMS



FLR EMS



FDS (FRICTION DRIVE SYSTEM)

Description

- Urethane wheel drives a load bar from the side with rotatory power.
- Trolley proceeds following the rail
- Overhead type and Floor type

Advantages

- ① Flexible layout and quiet, with no chain method.
- ② High speed driving, and efficient power saving as the motor is powered only when used.
- ③ In the oven line, etc., it can be interlocked with chain conveyor.
- ④ No need to lubricate chain as chainless
- ⑤ Much quieter than chain conveyor .

- Quiet. Reduced noise (50 Db)
- No shock impact, as it has no stopper installed
- Simple mechanism
 - Simple and compact parts
 - Unified rail and single-dimensional drive
 - Uncomplicated wiring and arrangeable wiring detector
 - Reduced installation time with simple parts
- Cleanness. No oil or wear-fragment caused pollutant and dusts
- Reduced maintenance and repair cost. Lubricant not required. Lightweight and simple parts allow easy maintenance and repair work
- When fixing any fault or malfunction, dolly is used temporarily for sectional suspension



FLR FDS



OH FDS

PF (POWER & FREE C/V)

Description

- ① This conveyor system allows dissecting, combining and storage to be done in the painting and assembly process. Work speed can be adjusted depending on the individual processing condition. High flexibility and efficient loads handling.



FREE FLOW SYSTEM

Description

- ① Placing loads on the pallet and proceeding with assembly and inspection while transporting them.
- ② Pallet is mounted on the upper side of the conveyor chain, making movement and stop more freely.
- ③ High interchangeability between the lines as the speed is adjustable depending on the work
- ④ Various materials used, such as aluminum and steel frames, depending on the type and use of the product
- ⑤ Applied mostly to sub-parts transporting and loading lines in design factories
- ⑥ Various works can be performed on the line, such as temporary holding of the loads and matching them with the container, etc. Easy and flexible switching of the transporting direction



SLAT CONVEYOR

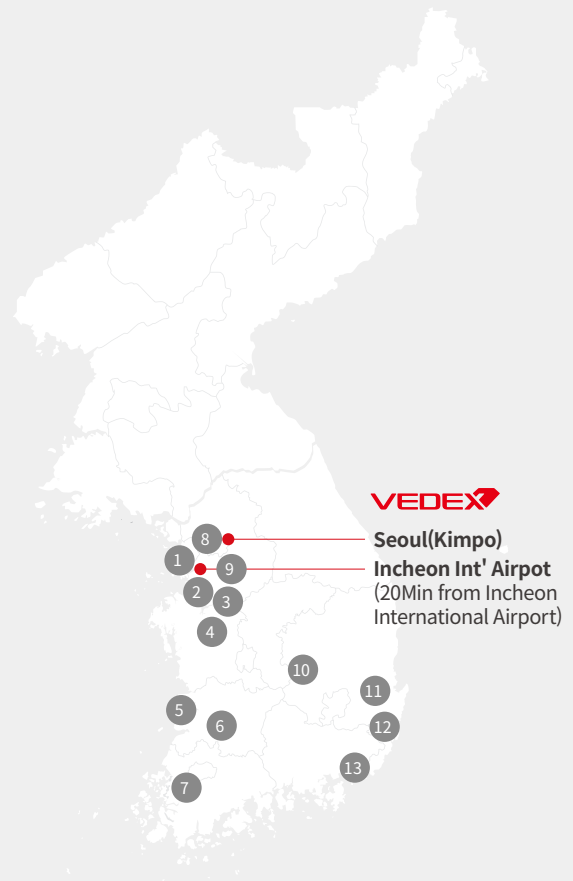
Description

- ① Conveyor system suitable for heavy loads. Operators can work on the C/V, which is greater convenience in processing. Loads' height is adjustable by using the separate attachment on the Slat.



Domestic Project

- | | |
|---------------------------------|---------------------------------|
| 1 Doosan Infracore
Incheon | 8 GM Korea
Bupyeong |
| 1 Fuji Xerox
Juran | 9 KIA Motor
Sohari |
| 2 KIA Motor
Hwaseong | 10 Nongshim
Gumi |
| 3 Ssangyong Motor
Pyeongtaek | 11 POSCO
Pohang |
| 4 Hyundai Motor
Asan | 12 Hyundai Motor
Ulsan |
| 5 Myungsin
Gunsan | 13 GM Korea
Changwon |
| 6 Hyundai Motor
Jeonju | 13 Doosan Infracore
Changwon |
| 7 KIA Motor
Gwangju | |



Overseas Project

- | | | |
|--|--|--|
| 1 DONINVEST
Taganlog, Russia 1999 | 6 AMM
2003 | |
| 2 ALGERIA
Hyundai CKD 2019 | 6 PERUDUA
2004 | |
| 3 KERMEN
Teheran, Iran 2000 | 6 NAZA
2005, 2010~11 Qwantum, Malaysia | |
| 3 SAIPA
Teheran, Iran 2004
Jam yard, Iran 2008, 2012 | 7 CHANGFUNG MOTORS
Hunan, China 2006
Changsha, China 2008~2009, 2016
Yongzhou, China 2007 | |
| 3 KASHAN
Kashan, Iran 2008, 2012 | 8 SHANGHAI Motors
Yijung, China 2007, 2009 | |
| 3 PARS KHODRO
Pars khodro Iran 2009~2012 | 9 UZBEKISTAN
Andizan, Russia 1999 | |
| 4 CHENNAI
Chennia India 2010~2012 | 10 RUSSIA
Nizhny Novgorod 2015 | |
| 5 HYUNDAI INDIA
2010, 201 | 11 NAVECO
Nanjing, China 2003 | |
| 5 FORD INDIA
2011 | 11 DYKMCO
Yancheng, Changsha, China | |
| | 12 DYKMCO
Yancheng, China 2004, 2005, 2006,
2008, 2010~2016, 2021 | |



KUMKANG AUTOTEC CO.,LTD

(Namdong Industrial Complex 161BL 13LT) 616, Aenggogae-ro, Namdong-gu, Incheon, Korea

Tel +82-32-813-4001~3 Email business@katec.co.kr Homepage www.katec.co.kr