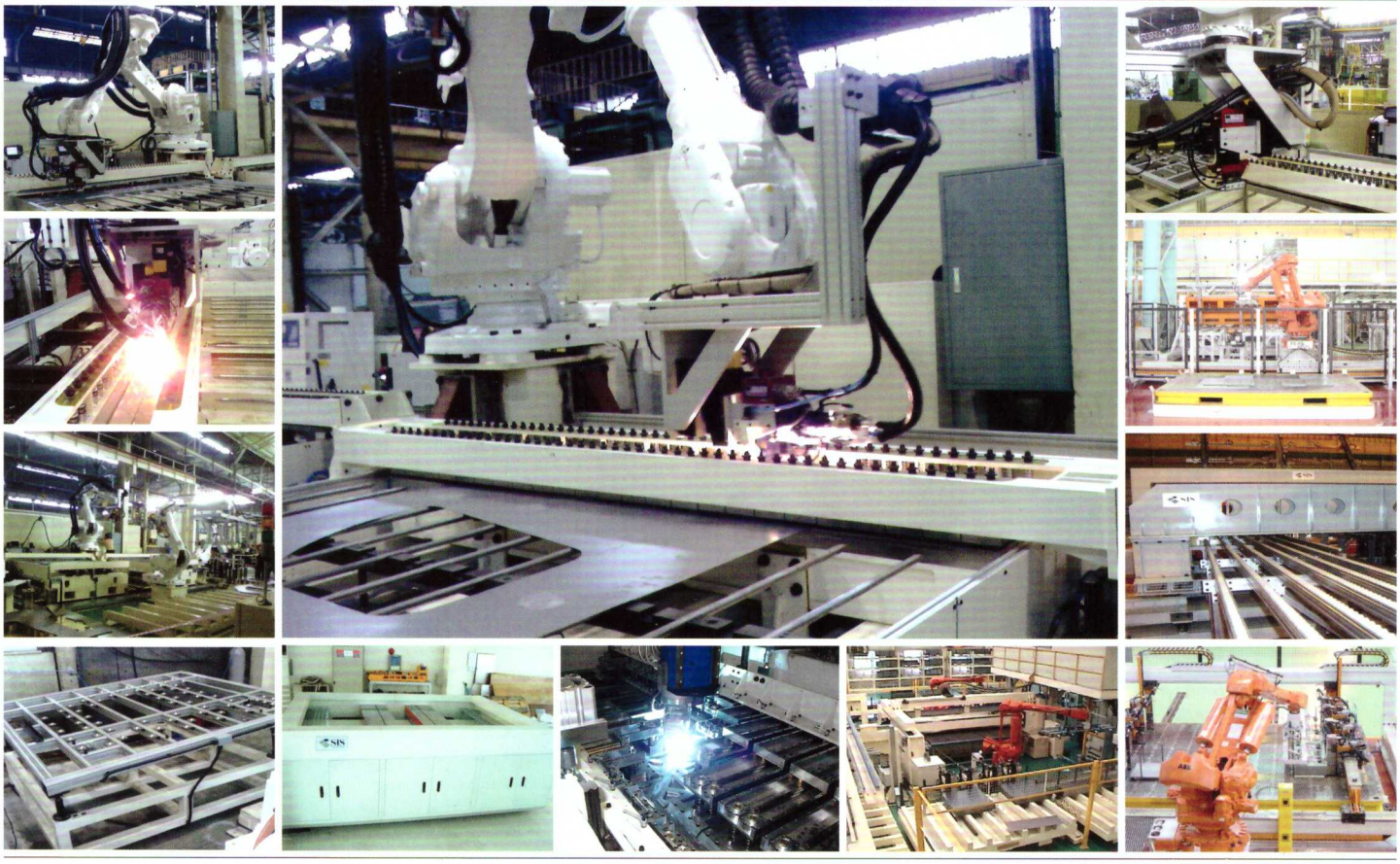
SIS CORPORATION

Laser Welding System

for

Tailor Welded Blanks



SIS CORPORATION

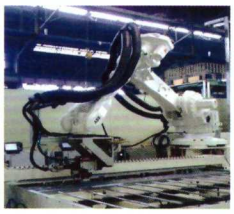
General Information

The world best technology for automation system

SIS Corporation is an engineering company with technical background beginning in automated handling system for automotive, steel and railroad industry customers. Our engineering service are based on utilizing multi axis robot , various gantry with over 3 axes, 3D laser vision, and our understanding of various welding method including laser. We performed successfully the mechanical and control interfacing of our automated handling with world leading companies. This includes TWB welding , automatic palletizing, hydro-forming, all first in Korea. We engineered and supplied various stacker, de-stacker, panel centering unit, handling tool gripper, press tending system, panel transfer, customized welding systems, special handling system for different work environment, pipe edge and seam treating, dimpling tool, centering tool for welding, laser vision inspection system, aluminum fastening, weld seam tracking and inspection. We are confident to be the partner for successful turn key based project. With our various understanding and experience in design, fabricating and commissioning in the selected systems above, we are capable of making a flexible partnership with your company.

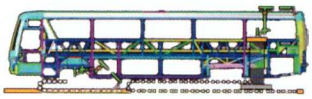
Laser Welding System

Laser welding technology is available to reduce the weight of car body without weakness of the structure, and it has a characteristic required for each area on one part which is welded by laser and formed with two or several sheets, that each sheet has different strength, thickness and surface treatment (bare and galvanized). Accordingly, the car body structured with TWB steel sheet can achieve the improvement of car appearance, reduction of water leaks and wind noise during driving, a proper fabrication of body by the strong structure, long life, and productivity with accurate dimension. SIS Corporation had developed exclusive laser welding system through our own technology of laser application. The specification of our laser welding system will satisfy you with high quality and reduce to the cost of investment. We also offer various kinds of laser welding system satisfying with TWB welding, Hybrid, Remote welding etc.



Arc Welding Automation

Arc welding automation system which can be applied on automotive, railroad, shipbuilding industries are our major business field. There are many benefits like reduce of cycle time, improve of welding quality, offering of optimum working area, safety guarantee of operator. Basic system consists of over 3 axis gantry or articulated robot, laser vision sensor, welding machine, controller. We meet the need of our customer with our technology.

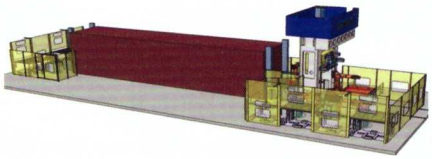


Steel Works Automation

The technology of SIS Corporation offers an aid for operating the steel work parts. Due to original system is manually operated, problems such as wasting working time, operator's danger and delay of product line are existed all the time. We provide the automation of steel work automation system, resolving the existing problems of steel work area. Our customer is satisfied with the system. Offering the world best system like laser welder, permanent domain re-finding system by inventing cutting edge technology.

Press Forming Automation

Hydro-forming technology is a process of forming complex tubular parts utilizing water-based fluid under pressure. This process forms a part while distribuiting metal in areas required for strength while maintaining consistent wall thickness. this technology provide a lot of benefits such as improved quality, reduced processing time, increased strength, Reduced cost etc. Various holes can be pierced within the forming process. The innovative use of Body Structural Parts made from High Strength Hot Formed Steel in the tomorrow's vehicles appears to be relentless ,thanks to the high mechanical properties and excellent workability of this material. Hydro forming and



Hot press forming technologies are the state of the art technology that is satisfying with both light weight and stiffness we created these system for the first time in Korea we are very sure of offering these technology to the user steadily.

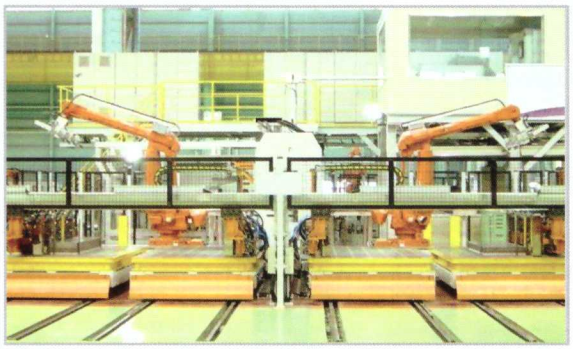
Transfer & stacking automation

It is the system to transfer the material automatically to press and also transfer to inter-process of the press, and it is normally used to increase productivity and safety can be affected from the press inter-process. We possess many products relating transfer and loading automation system using Cartesian robot and articulated robot. Cartesian robot is especially systemized for operating user-friendly. We also solve the problem before satisfying the upgraded.

Your parner for automation

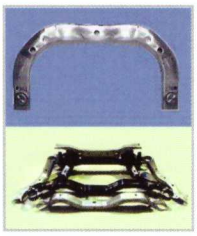
References

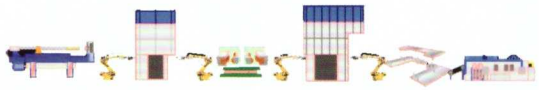
TWB Automation



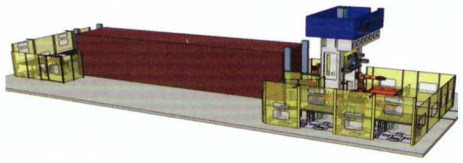
Laser Cutting System

Hydro Forming Automation

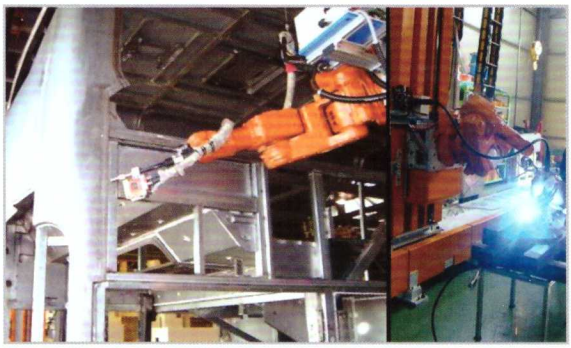




Hot Press Forming Automation

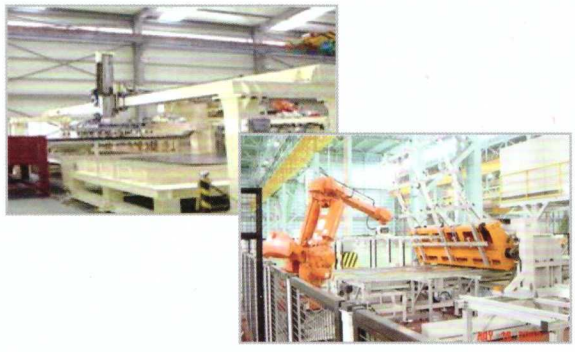


Arc Welding Automation



Roll Shop Automation

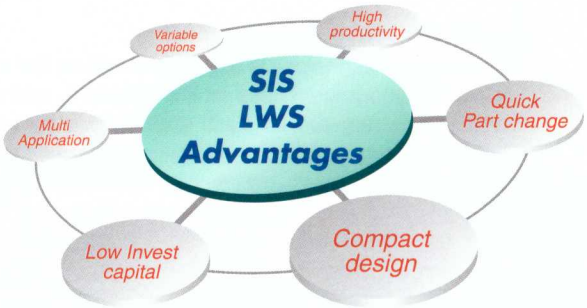
Transfer Automation



Laser Welding System

TWB is...

TWB is available to reduce the weight of car body without weakness of the structure, and it has a characteristic required for each area on one part which is welded by laser and formed with two or several sheets, that each sheet has different strength thickness and surface treatment (bare and galvanized). Accordingly, the car body structured with TWB steel sheet can achieve the improvement of car appearance, reduction of water leaks and wind noise during driving, a proper fabrication of body by the strong structure, long life, and productivity with accurate dimension. SIS provides strong system which can be applied both systems such as linear and non-linear with low invested capital.

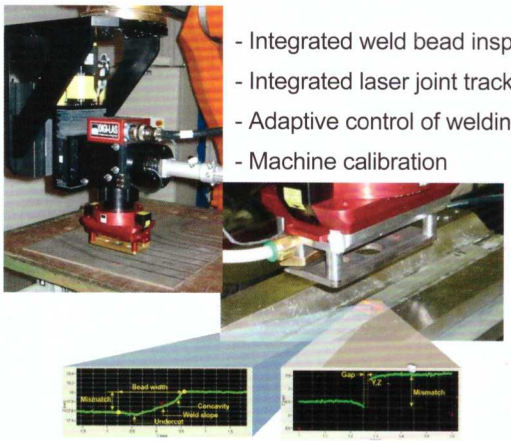


To satisfy the growing and demanding needs in the LWS and automotive industries

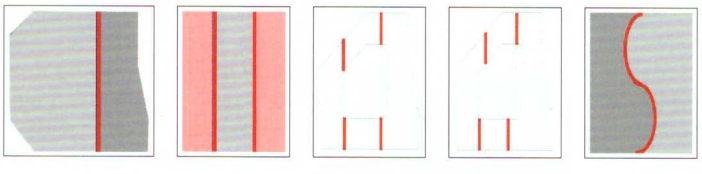
- Compact intelligent process automation tool
- Innovative solutions to reduce cycle time
- Increasing welding speeds
- Reduced tooling precision required
- Capability of welding curvilinear seams and complex 3D components

Reduced Production Cost

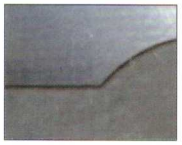
Intelligent laser joining head

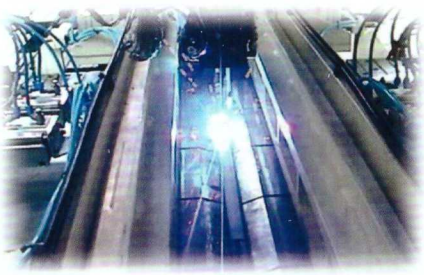


- Integrated weld bead inspection
- Integrated laser joint tracking
- Adaptive control of welding parameters
- Machine calibration



Linear 2 blanks | Linear 3 blanks | Linear 4 blanks | Non linear blanks





SIS CORPORATION

De-stacking station

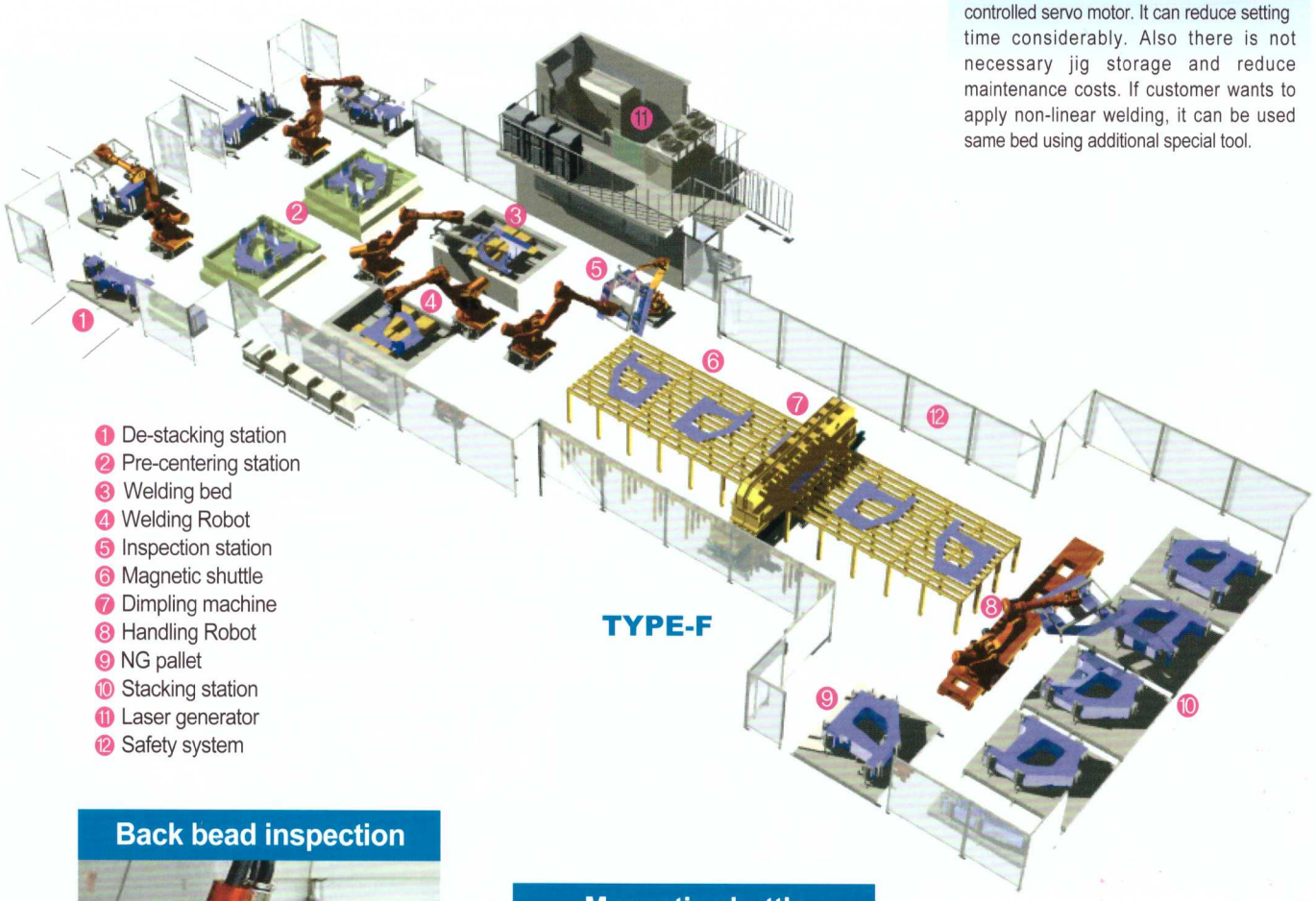
Operator can loading blanks using fork lift or crane easily due to moving car can be applied. It can be reduced a labor power and increase productivity by saving loading time. Handling robot can transfer blank independent of blank position within fixed range using Robo-PAL vision sensor. Moving car is standard specification and also fixed type is available (optional).

Pre-centering station

When de-stacking handling robot transfers blanks to regular position, blanks can be positioning automatically. It can help apply to various shape of blanks with same station. Operator can change new item quickly by changing simple works.

Welding bed(Multi type)

Linear 2blanks, 3 blanks and multi 4 blanks are can be produced with same machine. Operator can change new part easily by pushing button due to Welding position is controlled servo motor. It can reduce setting time considerably. Also there is not necessary jig storage and reduce maintenance costs. If customer wants to apply non-linear welding, it can be used same bed using additional special tool.



TYPE-F

1. De-stacking station
2. Pre-centering station
3. Welding bed
4. Welding Robot
5. Inspection station
6. Magnetic shuttle
7. Dimpling machine
8. Handling Robot
9. NG pallet
10. Stacking station
11. Laser generator
12. Safety system

Back bead inspection

SIS provides the latest and most complete laser-based optical inspection system. This family of sensors is specially designed for robotic inspection of small welds and adhesive heads. This greatly reduces robot programming time and holding fixtures costs. The system compensates automatically for position variation of the part inspected with the AutoGuide built in function.

Magnetic shuttle

This shuttle can help transfer welded blanks with high speed using magnetic bar and free rollers and be fixed it during dimpling works. Distance between rails are controlled automatically just pushing one button due to use servo motor therefore it is independent size of blanks.

Dimpling machine

Numerous hydraulic cylinders arranged in two rows are controlled by servo motor therefore operator can change dimpling position and distance pushing one button depends on blanks. It greatly reduce cycle time so increase productivity.

Welding bed(Linear type)

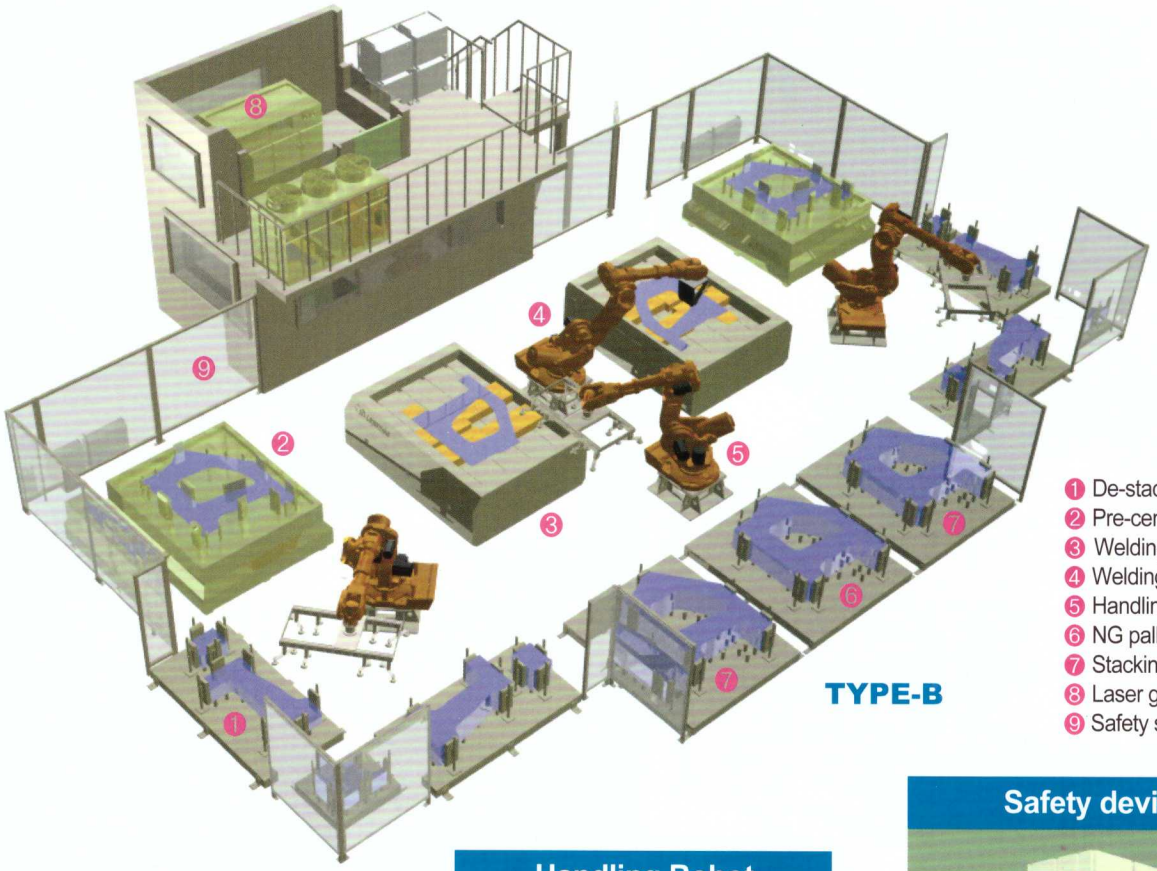
This is beneficial for simple profile applying linear 2 blanks lied horizontally. It can be controlled by pushing only one button for changing items due to using servo motor for control therefore spending small cost of investment and maintenance.

Welding machine

SIS Welding head is unique in the current market due to the integration of laser vision sensors into one compact integrated package for real time seam tracking and weld inspection.Its intelligent laser joining head with 2D, 3D coaxial vision is especially designed for laser welded blanks and general automotive industrial laser welding applications. There is additional filler wire system for option if welding quality is not good due to gap between blanks.

Laser generator

Nd;YAG or Fiber laser can be applied with our laser welding system and Selection depends on the user' s requirement. 4KW of laser power generally is needed for TWB. As laser beam is transmitted by optical fiber, the system can be designed flexibly.



TYPE-B

1. De-stacking station
2. Pre-centering station
3. Welding bed
4. Welding Robot
5. Handling Robot
6. NG pallet
7. Stacking station
8. Laser generator
9. Safety system

Safety device

All of dangerous things must be excluded previously providing safety devices such as Safety fence, Door, Light cotton, Emergency switch etc.

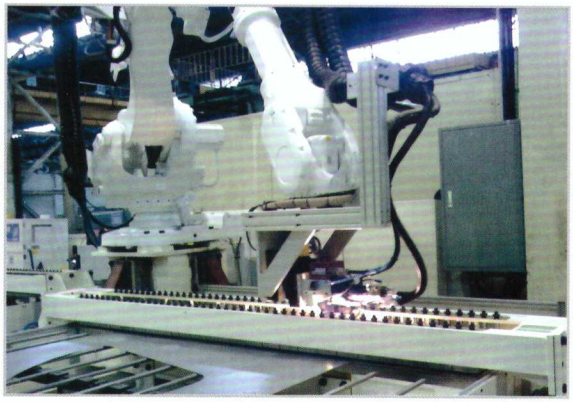
Handling Robot

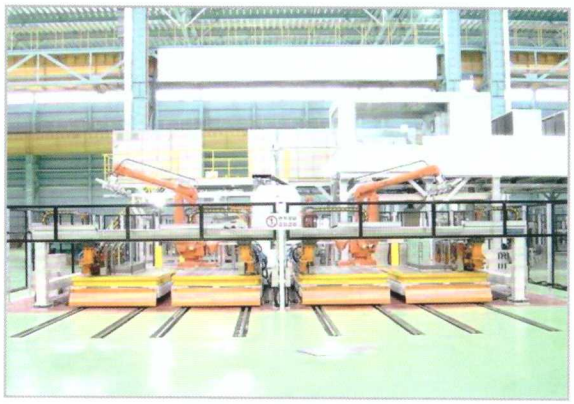
All kinds of Robot can be applied to our system due to available interfaces to all world class robots. Technical engineers form SIS have lot of reference for various handling robots.

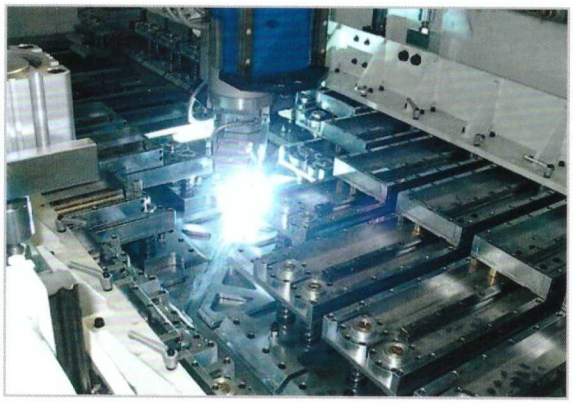
Stacking station

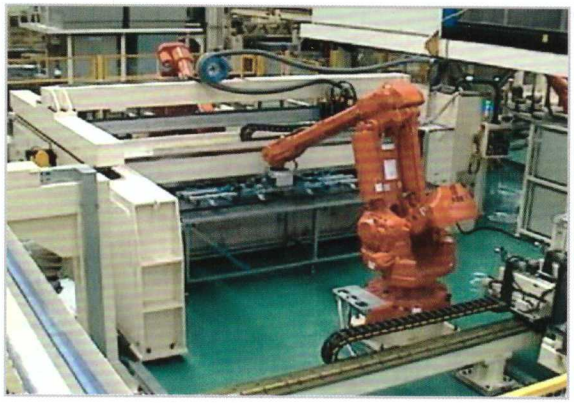
Operator can transfer final products easily using fork lift or over head crane without interrupting process therefore it can increase productivity.

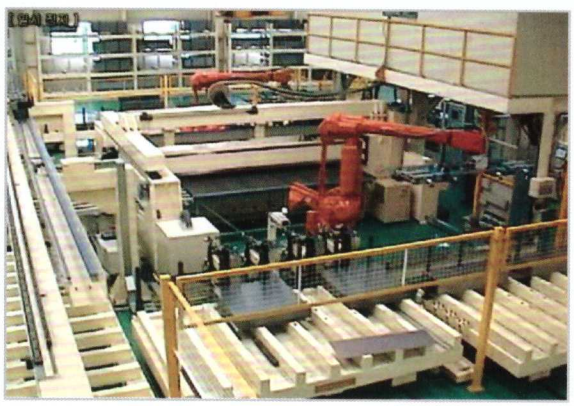
References in TWB











Your parner for automation

AUTOMATION SOLUTION

01 Ulsan

02 Daegu

03 Gwangyang

SIS CORPORATION

Homepage
www.sisinc.co.kr

Contact us
sales@sisinc.co.kr

Plant No.1 and Headquartes
208-6, Dalcheon-Dong, Buk-Gu, Ulsan, Korea 44201
Tel : +82-52-245-5390, Fax : +82-70-4126-5392
Plant No.2 and Branch of Daegu
644-1 Naksan-Ri, Waekwan-Eb, Chilgok-Koon, Kyungsangbuk-Do, Korea
Tel : +82-54-971-2470, Fax : +82-54-971-6370
Plant No.3 and Branch of Kwangyang
1507-70 Singeumri, Okgok-myeon, Kwangyang-Si, Jeonranam-Do, Korea
Tel : +82-61-793-2367, Fax : +82-61-795-2367