

2019-Ver.01

# LOGIFORM<sup>®</sup>

Wide range of Lean-Manufacturing product & services provider

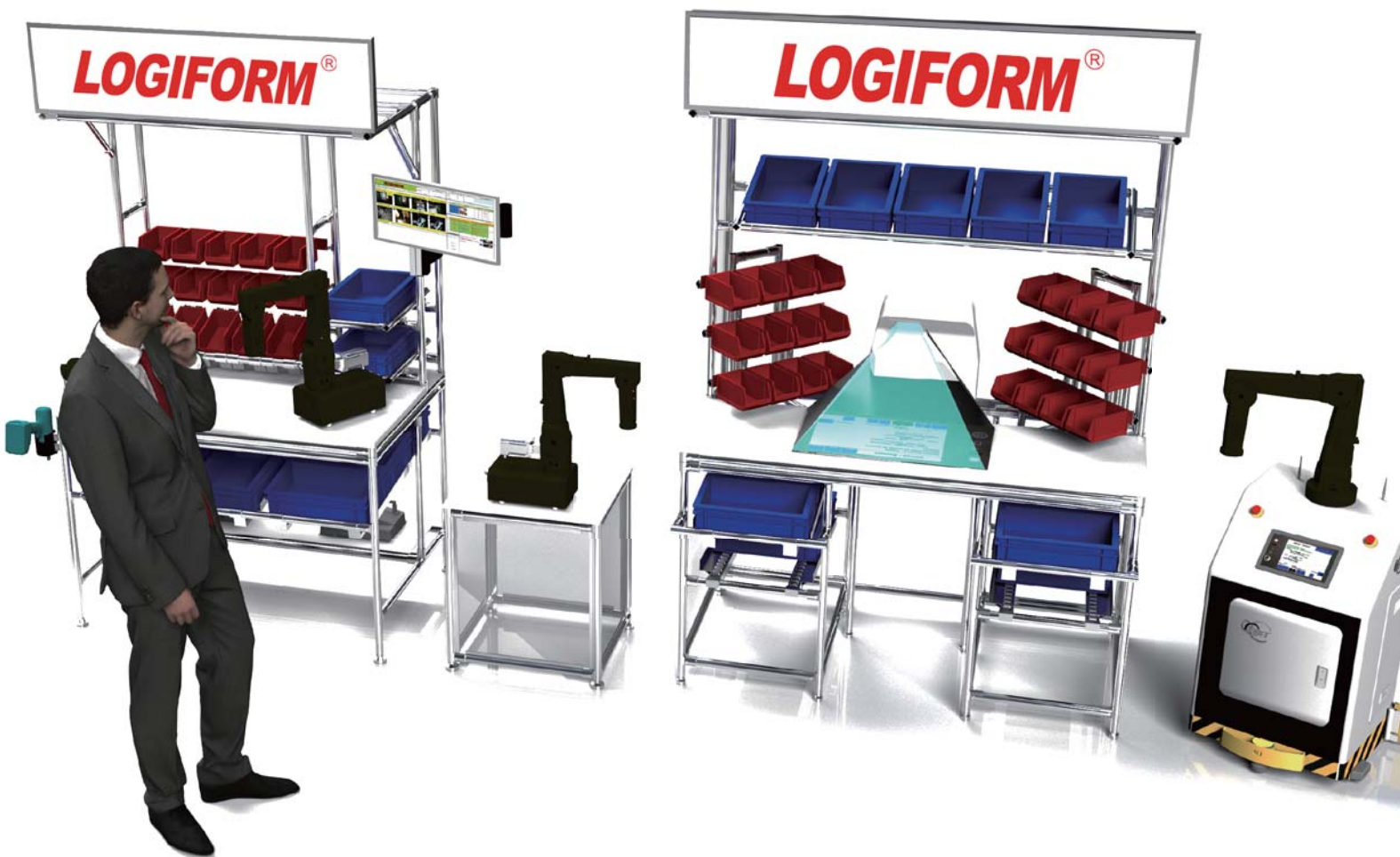
*Pipe Rack System*

*Aluminum Modular System*

*AGV System*

*Weight Rack*

*Safety Guide*



# PIPES

<p>LOGIFORM PIPE</p>  <p>COLOR OPTION          ○ WH ● BK ○ IV ● GR ● BL</p>	<p>CONDUCTIVE PIPE          ⚡ 도전성</p>  <p>Surface Resistance  <math>10^2 \sim 10^8 \Omega</math></p>	<p>ANTISTATIC PIPE          ⚡ 대전방지          Surface Resistance  <math>10^7 \Omega \sim 10^{10} \Omega</math></p>  <p>COLOR OPTION          ○ IV ● GR</p>	<p>SLIDE PIPE</p>  <p>COLOR OPTION          ⚡ ESD ○ WH ○ IV ● GR</p>
<p>STAINLESS PIPE ⚡</p> 	<p>ALUMINIUM PIPE</p> 	<p>ALUMINIUM PIPE</p>  <p>ASP-1120 ASP-1200 ASP-1280 ACP-1120</p>	

# PLASTIC JOINTS

<p>PJ-110S (IV, GR, BK)</p> 	<p>PJ-110C (IV, GR, BK)</p> 	<p>HG-0165A</p> 	<p>PG-2870A (U TYPE)</p> 	<p>PG-2870B (L TYPE)</p> 
<p>PJ-109 (IV, BK)</p> 	<p>PJ-104C (IV)</p> 	<p>PJ-104D (IV)</p> 	<p>PJ-105 (IV)</p> 	<p>PJ-118 (IV)</p> 
<p>PJ-159 (IV, BK)</p> 	<p>PJ-113 (IV, BK)</p> 	<p>PJ-146 (IV, GR, BK)</p> 	<p>PJ-138S (IV, GR, BK)</p> 	<p>PJ-149 (IV, GR, BK)</p> 
<p>PJ-138C (IV, GR, BK)</p> 	<p>PJ-138B (IV, GR, BK)</p>  <p>NAME PLATE 152X62</p>	<p>PJ-141 (IV, GR, BK)</p> 	<p>PJ-140A (WH, BK)</p> 	<p>PJ-140S (WH, BK)</p> 
<p>PJ-199 (IV, GR)</p> 	<p>PJ-202 (IV, BK)</p> 	<p>PJ-180 (WH)</p> 	<p>UG-0165</p> 	<p>PH-5001A</p> 
<p>PH-5001B</p> 				

# METAL JOINTS



BLACK (BK)



SILVER(SV)



NICKEL(NI)

H-1(MJ-2101BK)



240pcs/box, 73g/pc

H-1B(MJ-2201BK)



240pcs/box, 65g/pc

H-2(MJ-2102BK)



150pcs/box, 98g/pc

H-3(MJ-2103BK)



70pcs/box, 136g/pc

H-4(MJ-2104BK)



180pcs/box, 116g/pc

H-5(MJ-2105BK)



300pcs/box, 44g/pc

H-6(MJ-2106BK)



300pcs/box, 57g/pc

H-6B(MJ-2206BK)



300pcs/box, 39g/pc

H-7(MJ-2107BK)



180pcs/box, 52g/pc

H-7B(MJ-2207BK)



180pcs/box, 47g/pc

H-8(MJ-2108BK)



300pcs/box, 48g/pc

H-9(MJ-2109BK)



100pcs/box, 143g/pc

H-10(MJ-2110BK)



180pcs/box, 66g/pc

H-11(MJ-2111BK)



200pcs/box, 67g/pc

H-11B(MJ-2211BK)



200pcs/box, 67g/pc

H-12(MJ-2112BK)



200pcs/box, 63g/pc

H-13(MJ-2113BK)



140pcs/box, 97g/pc

H-14(MJ-2114BK)



150pcs/box, 81g/pc

H-15A(MJ-2115BK)



300pcs/box, 43g/pc

H-15B(MJ-2215BK)



300pcs/box, 38g/pc

H-16(MJ-2116BK)



300pcs/box, 54g/pc

H-16B(MJ-2216BK)



300pcs/box, 54g/pc

H-17(MJ-2117BK)



180pcs/box, 71g/pc

H-18(MJ-2118BK)



240pcs/box, 69g/pc

H-19(MJ-2119BK)



250pcs/box, 64g/pc

H-20(MJ-2120BK)



150pcs/box, 97g/pc

H-21(MJ-2121BK)



150pcs/box, 104g/pc

H-22(MJ-2122BK)



180pcs/box, 74.6g/pc

H-23(MJ-2123BK)



180pcs/box, 75.7g/pc

H-23(MJ-2123BK)



180pcs/box, 75.7g/pc

H-25A(MJ-2125BK)



300pcs/box, 48g/pc

H-25B(MJ-2225BK)



220pcs/box, 41g/pc

H-45A(MJ-2145BK)



140pcs/box, 64g/pc

H-45B(MJ-2245BK)



140pcs/box, 64g/pc

H-108(MJ-21108BK)



140pcs/box, 106g/pc

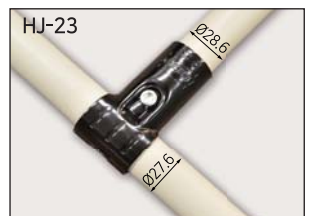
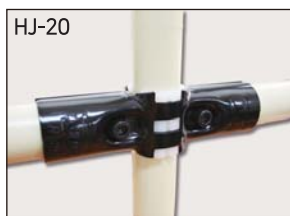
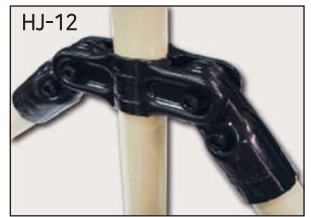
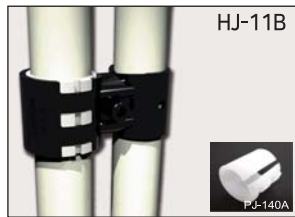
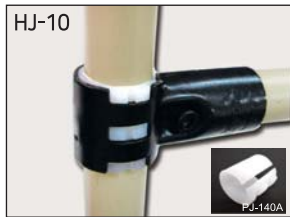
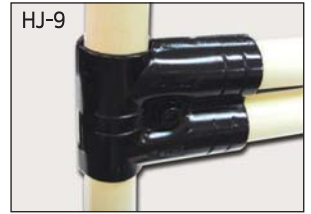
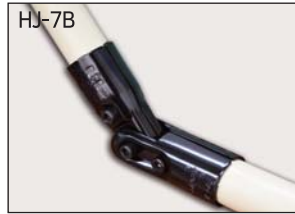
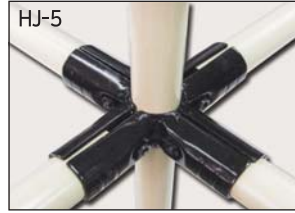
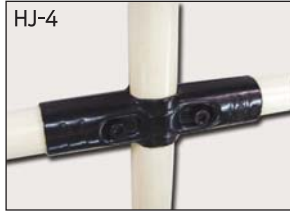
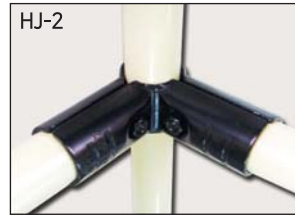
H-162(MJ-21162BK)



180pcs/box, 108g/pc

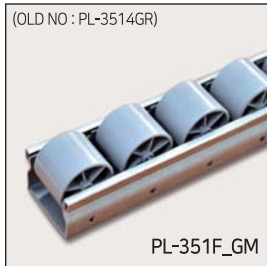
# METAL JOINT SET

 BLACK (BK)
  SILVER (SV)
  NICKEL (NI)

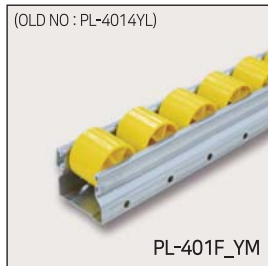


# ROLLER TRACKS(PLACONS)

## [35 SERIES]



## [40 SERIES]



## [60 SERIES]



## [73 SERIES]



## [80 SERIES]

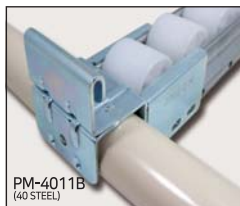
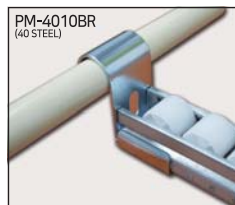


# ROLLER TRACK CONNECTORS(PLACON MOUNTS)

## [35 SERIES]



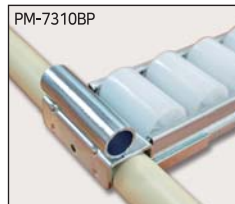
## [40 SERIES]



## [60 SERIES]



## [73 SERIES]



## [80 SERIES]



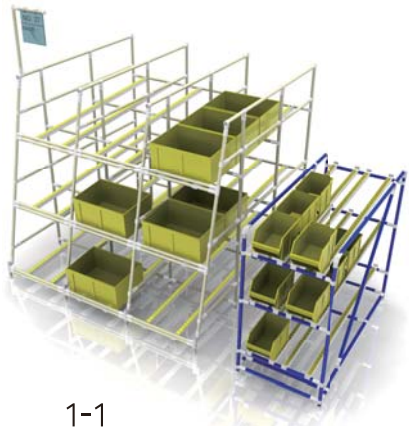
## [SLIDE PIPE MOUNTS]



# ACCESSORIES

<p>ADJUSTER(RUBBER TYPE)</p>  <p>Bottom Pad</p>	<p>ADJUSTER</p>  <p>Φ30</p>	<p>ADJUSTER</p>  <p>Φ50</p>	 <p>CN-3010MS</p>	 <p>CN-3010MP</p>
 <p>SC-3028SV</p>	 <p>PJ-1401BK</p>	<p>IN-1210LM</p> 	 <p>PA-405A</p>	 <p>PA-415B</p>
 <p>SC-0528A</p>	 <p>SC-0528B</p>	 <p>SC-0528C</p>	 <p>MT-5114</p>	<p>MT-5120</p> 
<p>MT-5123</p> 	<p>MT-5301</p> 	<p>MT-5302</p> 	<p>MT-5303</p> 	 <p>MT-5126</p>
 <p>MT-5128</p>	 <p>MT-5130B</p>	<p>MT-5109</p> 	<p>MT-5118</p> 	<p>MT-5109W</p> 
 <p>MT-5138L</p>	<p>MT-5311</p> 	<p>MT-5139L</p> 	<p>AJ-3143</p> 	<p>PC-0200</p> 
<p>UG-0125A(YL)</p> 	<p>UG-0125B(BL)</p> 	 <p>SC-0200</p>	<p>MT-5119S</p> 	<p>WG-0230</p> 
<p>CF-1110LP</p> <p>COATING PTFE Φ23.7×T1</p> 	<p>FS-0200/ 0250/ 0300/ 0350</p> <p>EX) WH-8(m) → FS-W 0200 CR-8(m) → FS-C 0200</p> 	<p>LOGIFORM</p>  <p>MT-5320</p>	<p>LOGIFORM</p>  <p>MT-5321</p>	 <p>AS-3040MP</p>

# FIXED STRUCTURE



1-1



1-2



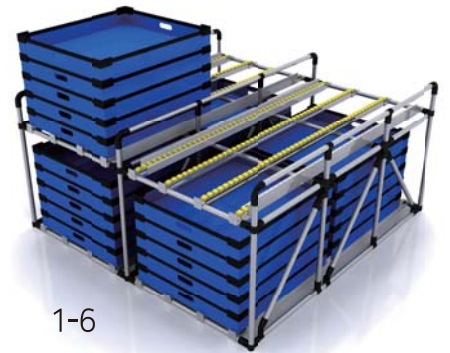
1-3



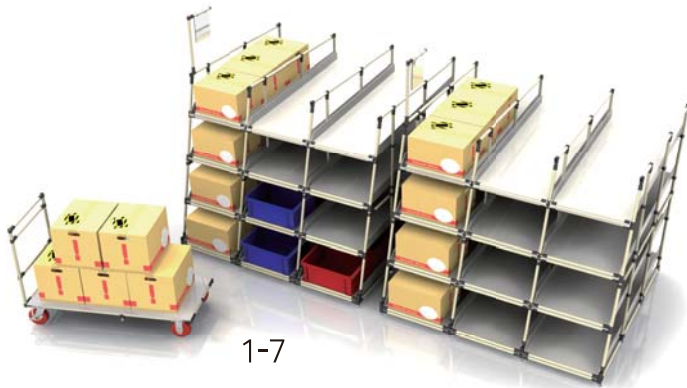
1-4



1-5



1-6



1-7



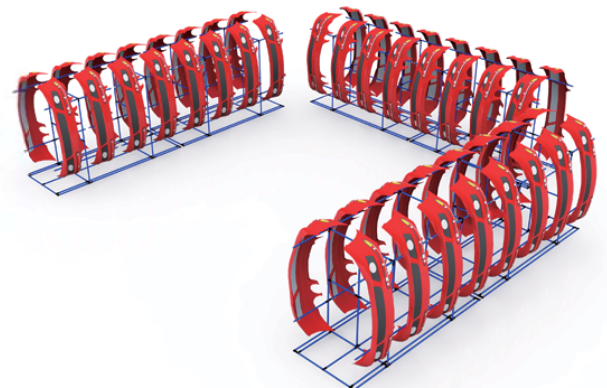
1-8



1-9



1-10



1-11



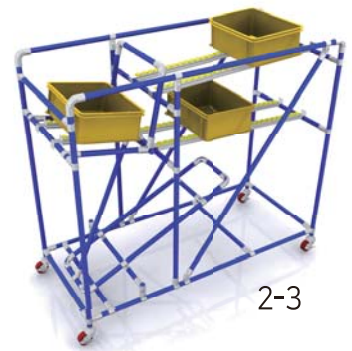
# MOBILE STRUCTURE



2-1



2-2



2-3



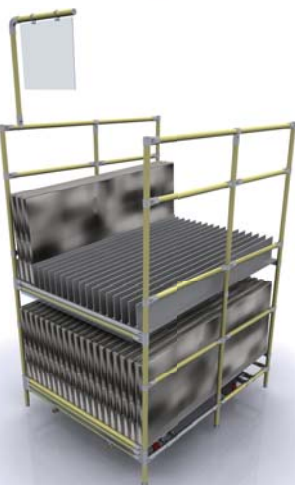
2-4



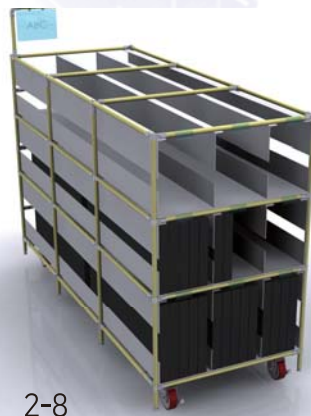
2-5



2-6



2-7



2-8



2-9



2-10



2-11



2-12

# MOBILE STRUCTURE



2-13



2-14



2-15



2-16



2-19



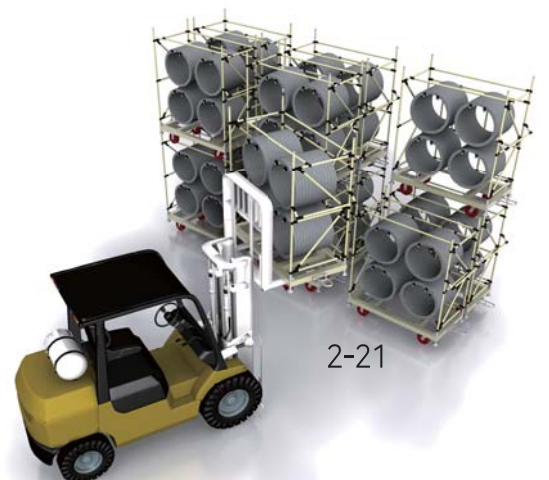
2-17



2-18

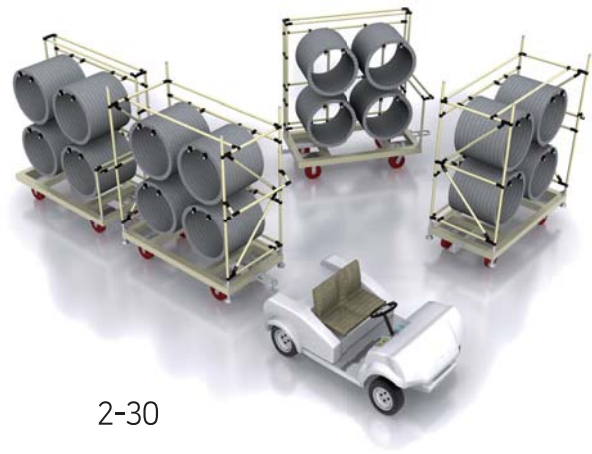
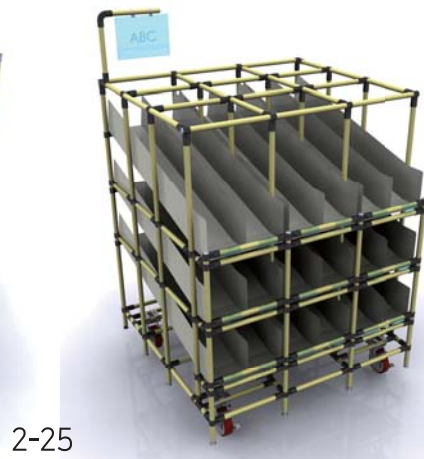
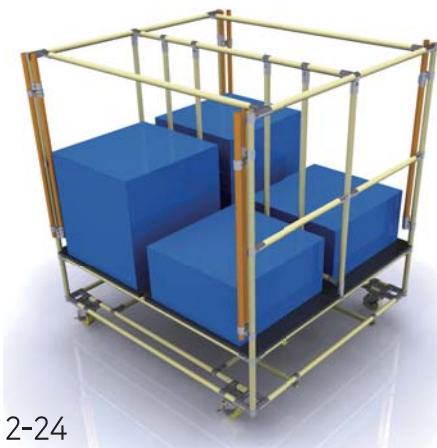
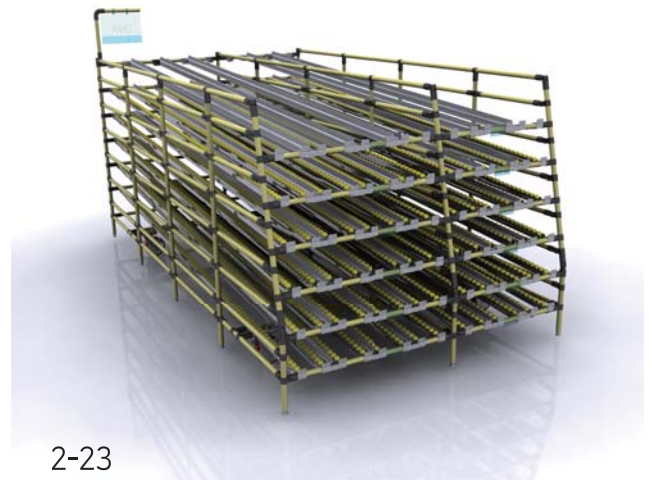


2-20



2-21

# MOBILE STRUCTURE

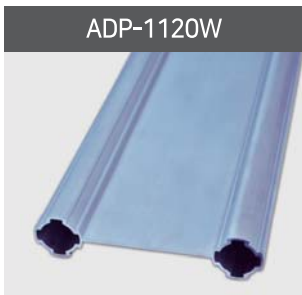




# Aluminum Modular System

: Another gateway to the world of Lean Manufacturing

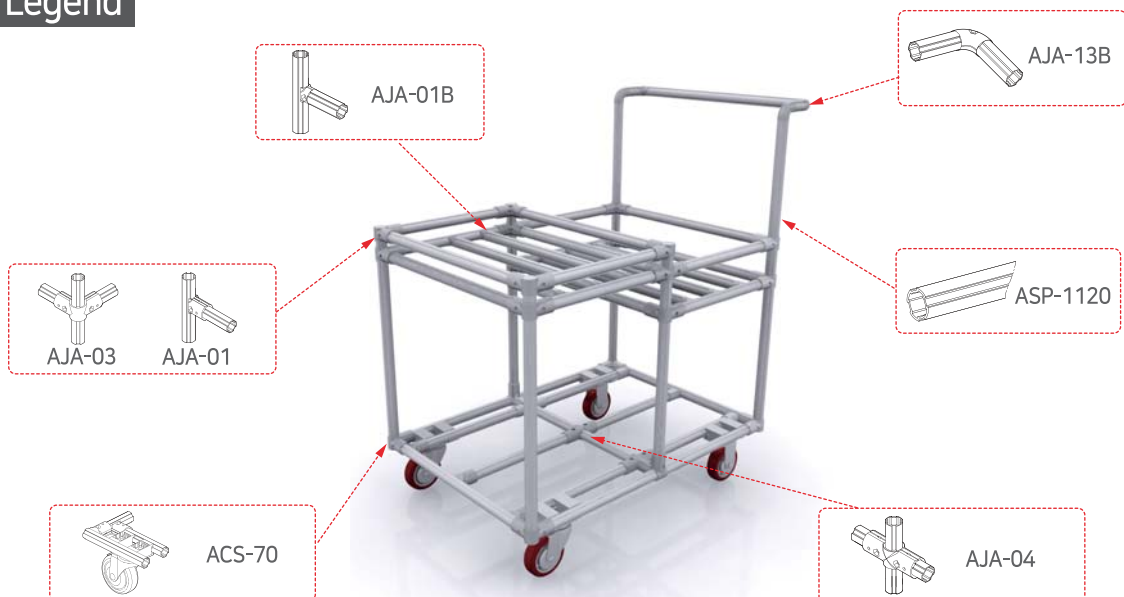
## ALUMINUM PIPES



# ALUMINUM JOINTS

<p>AJ-01</p>  <p>25.3gms/pc, 280pc/box</p>	<p>AJ-01B</p>  <p>16.9gms/pc, 360pc/box</p>	<p>AJ-01C</p>  <p>25.1gms/pc, 300pc/box</p>	<p>AJ-03</p>  <p>67.5gms/pc, 80pc/box</p>
<p>AJ-04</p>  <p>60gms/pc, 120pc/box</p>	<p>AJ-05</p>  <p>16.1gms/pc, 420pc/box</p>	<p>AJ-05A</p>  <p>26.9gms/pc, 720pc/box</p>	<p>AJ-06</p>  <p>31.5gms/pc, 210pc/box</p>
<p>AJ-06A</p>  <p>31.8gms/pc, 210pc/box</p>	<p>AJ-07</p>  <p>13.6gms/pc, 720pc/box</p>	<p>AJ-08</p>  <p>11.3gms/pc, 1080pc/box</p>	<p>AJ-08A</p>  <p>25.3gms/pc, 210pc/box</p>
<p>AJ-08W</p>  <p>28.9gms/pc, 270pc/box</p>	<p>AJ-09</p>  <p>47gms/pc, 130pc/box</p>	<p>AJ-13</p>  <p>47gms/pc, 100pc/box</p>	<p>AJ-13B</p>  <p>36.5gms/pc, 160pc/box</p>
<p>AJ-45R</p>  <p>23.4gms/pc, 250pc/box</p>	<p>AJ-45L</p>  <p>23.7gms/pc, 250pc/box</p>	<p>AJ-45W</p>  <p>47.8gms/pc, 120pc/box</p>	<p>ACS-70</p>  <p>52.4gms/pc, 140pc/box</p>

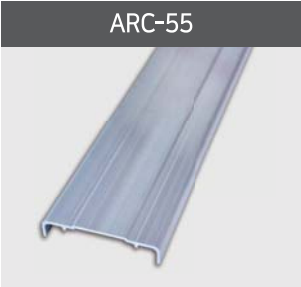
## Parts Legend



# ALUMINUM JOINTS - COMBO



# ALUMINUM JOINTS - ACCESSORYS



# Aluminum Modular System : APPLICATION



1.



2.



3.



4.



5.



6.



7.



8.



9.



# Aluminum Modular System : APPLICATION



10.



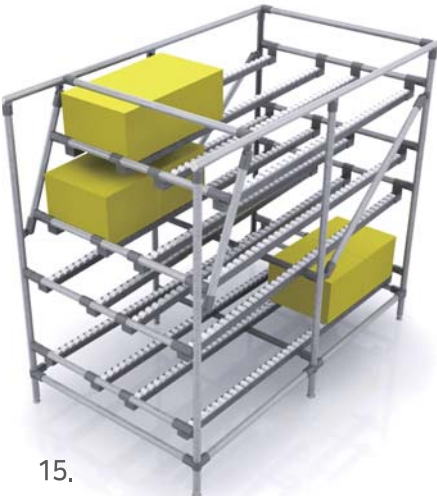
11.



12.



13.



15.



16.



17.



18.



INDUSTRIAL **AGV**

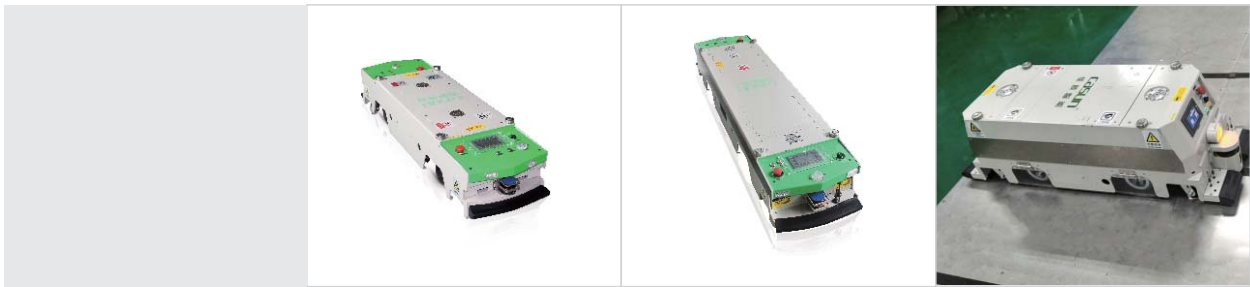
# INDUSTRIAL AGV (MAGNETIC GUIDED AGV/Uni-directional Tunnel AGV)



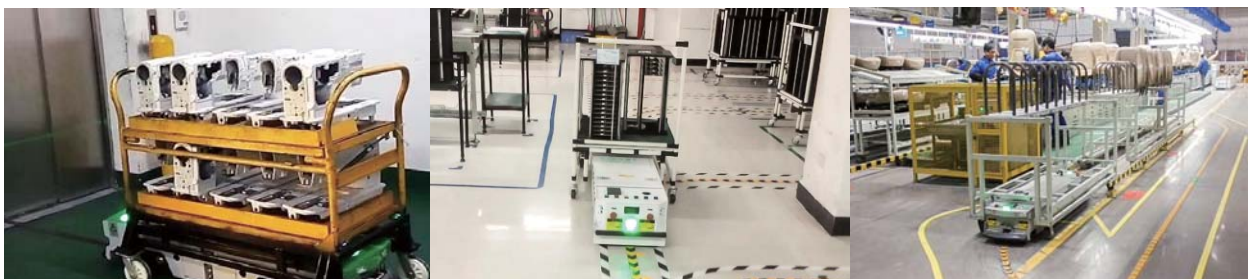
Product name	Uni-directional Tunnel AGV	
Model	QF1400V2	QF1100V2
Dimensions	L1400*W420*H290(mm)	L1100*W420*H330(mm)
Guidance	Magnetic guidance	
Load capacity	500kg/800kg	500kg
Lifting Height	/	
Travel Direction	Forward, left/right branch	
Travel speed	0~45m/min	
Minimum turning radius	Minimum 600mm	
Ramp capability	≤2°	
Guiding accuracy	±10mm	
Stopping accuracy	±10mm	
Driving mode	Differential	
Wireless network	RF / Wifi	
Charging method	Manual charging / automatic charging	
Battery	Lead acid battery / lithium battery	
Safety protection range	Detecting range ≤3m, adjustable;	
Safety features	Front obstacle sensor+mechanical bumper sensor	



# INDUSTRIAL AGV (MAGNETIC GUIDED AGV/Bi-directional Tunnel AGV)



Product name	Bi-directional Tunnel AGV		
Model	QFS1550V2	QFS1900V2	QFS1250V2
Dimensions	L1550*W420*H290(mm)	L1900*W420*H290(mm)	L1250*W450*H410(mm)
Guidance	Magnetic guidance		
Load capacity	500kg/800kg	500Kg/1200kg	500Kg
Lifting Height	/		
Travel Direction	Forward, left/right branch		
Travel speed	0~35m/min		
Minimum turning radius	Minimum 800mm	Minimum 1000mm	Minimum 600mm
Ramp capability	≤2°		
Guiding accuracy	±10mm		
Stopping accuracy	±10mm		
Driving mode	Differential		
Wireless network	RF / Wifi		
Charging method	Manual charging / automatic charging		
Battery	Lead acid battery / lithium battery		
Safety protection range	Detecting range ≤3m, adjustable		
Safety features	Front obstacle sensor+mechanical bumper sensor		



# INDUSTRIAL AGV (LASER GUIDING FORKLIFT AGV)



Product name	Laser Guiding Forklift AGV	Laser Guiding Forklift AGV	Laser roller conveyor AGV
Model	CJL14V1	CJCDD20V1	BFG1970V1
Dimensions	L2000*W800*H1980(mm)	L1995*W1470*H1980(mm)	L1970*W870*H700(mm)
Guidance	laser guidance		
Load capacity	1500kg	1500kg	500/1000kg
Lifting Height	2.9m	2.9m	/
Travel Direction	forward and backward, branch		
Travel speed		0~72m/min	
Minimum turning radius	Minimum 1400mm	Minimum 1400mm	Minimum 700mm
Ramp capability	$\leq 2^\circ$		
Guiding accuracy	$\pm 10\text{mm}$		
Stopping accuracy	$\pm 10\text{mm}$		
Driving mode	Steerable driving wheel		
Wireless network	WiFi		
Charging method	Manual charging / automatic charging		
Battery	Lead acid battery / lithium battery		
Safety protection range	Detecting range $\leq 3\text{m}$ , adjustable		
Safety features	Front obstacle sensor+mechanical bumper sensor		



# INDUSTRIAL AGV (QR CODE AGV)

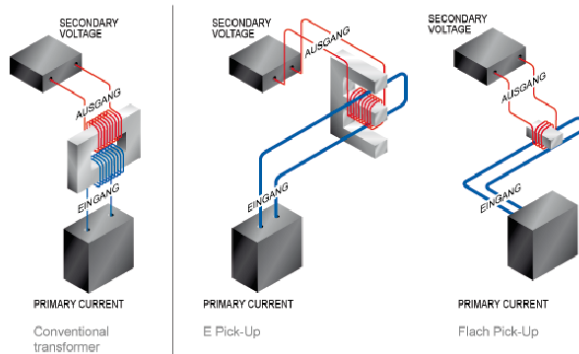
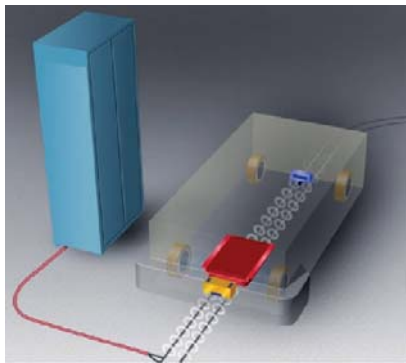


Product name	QR Code Inertial Navigation	QR code AGV with Roller Conveyor	QR code Omni-directional AGV with Roller Conveyor
Model	BFJQR940V1	BFGQR1620V1	BFGQR2200V1
Dimensions	L940*W600*H320(mm)	L1620*W1100*H1275(mm)	L2200*W1376*H660(mm)
Guidance	Inertial navigation and QR code correction		
Load capacity	500kg	1000kg	1000kg
Lifting Height	60mm	/	/
Travel Direction	forward and backward, rotate 360° in place		Omnidirectional walk
Travel speed	0~60m/min		0~45m/min
Minimum turning radius	0		
Ramp capability	≤2°		
Guiding accuracy	±10mm		
Stopping accuracy	±10mm		
Driving mode	Two-wheel differential		Steerable driving wheel
Wireless network	WiFi		
Charging method	Automatic charging		
Battery	lithium battery		
Safety protection range	Detecting range ≤3m, adjustable		
Safety features	Front obstacle sensor+mechanical bumper sensor		



# INDUSTRIAL AGV

## ■ Induction Charging



Induction Charging supplies AGV with electric current. Electric current is transferred inductively from a stationary [primary] conductor to Line AGV. Does not generate noise or contact brush residue as current transfer does not require mechanical contact. No deployment limitations in difficult environmental conditions such as dust, water, ice, strong winds etc.

## ■ Auto Charging



When its energy is lower than a preset value at working, the AGV will move to the charging station and communicate with this charging device. After the connection establishment, the charge electrodes will dock with the AGV automatically to achieve automatic charging. The electrodes will separate with the AGV automatically when it finishes the charging then the AGV moves back to the working area for material delivering.

## ■ Andon Charging

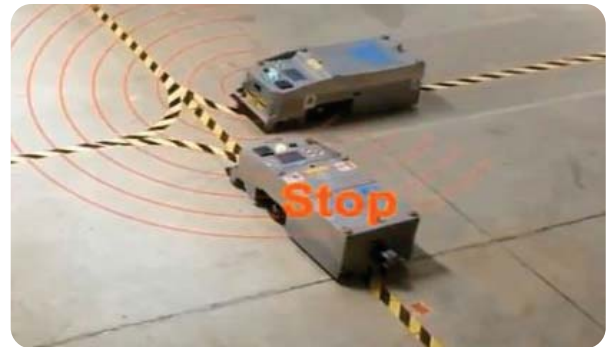
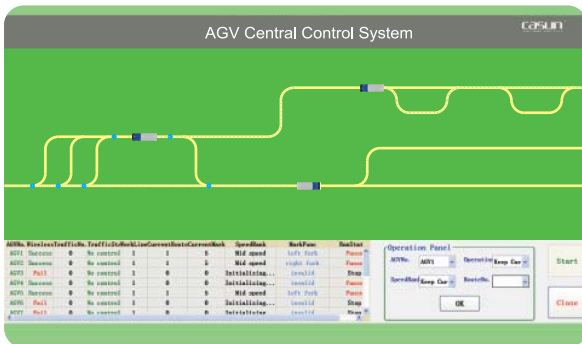


Andon Charging System will notify the user that the AGV battery needs to be charged. Using light and sound alarm triggered by the AGV, Andon Charging will inform the user to manually charge the battery.

# INDUSTRIAL AGV

## ■ Traffic Control System

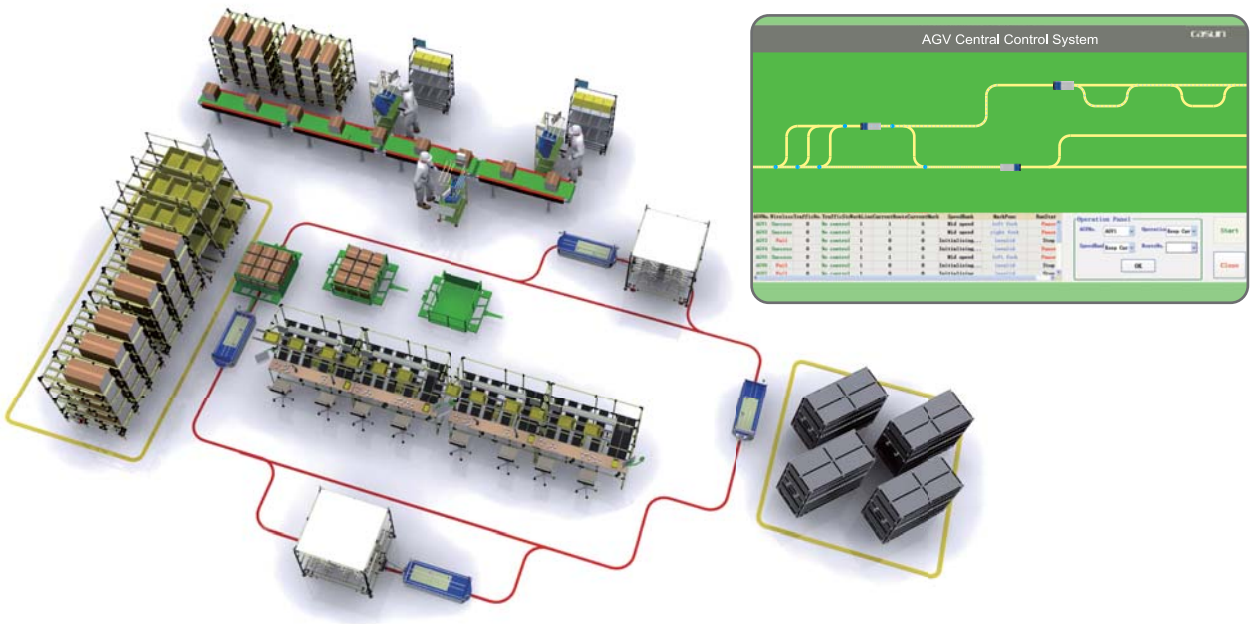
Traffic Control System is developed to avoid conflict between AVGs in a complex route such as a cross-section at the same time. The 1st AGV will control the others by sending a signal to other AGVs through Traffic Control. Thus, the 1st AGV will move first while the others wait till it leaves the controlled area. Then the 2nd AGV will take over the place of the 1st one, controlling the rest, moving and so on. This system works like traffic lights in everyday life, making complex production safer and easier.



## ■ Central Control System

Central Control System has multiple functions as follows:

1. Traffic Control Function, managing AGVS to avoid a collision at crosses and turning while working.
2. Real-Time and Dynamic display AGVs position, speed, station and battery status.
3. On-Line Remote control to call free AGV automatically, assign tasks and maximizing the utilization rate
4. Changing Route and station in real time, also available for ERP System





# INDUSTRIAL AGV (APPLICATION)

---



LASER GUIDING FORKLIFT AGV

# INDUSTRIAL AGV (APPLICATION)



QR CODE AGV

# INDUSTRIAL AGV (APPLICATION)

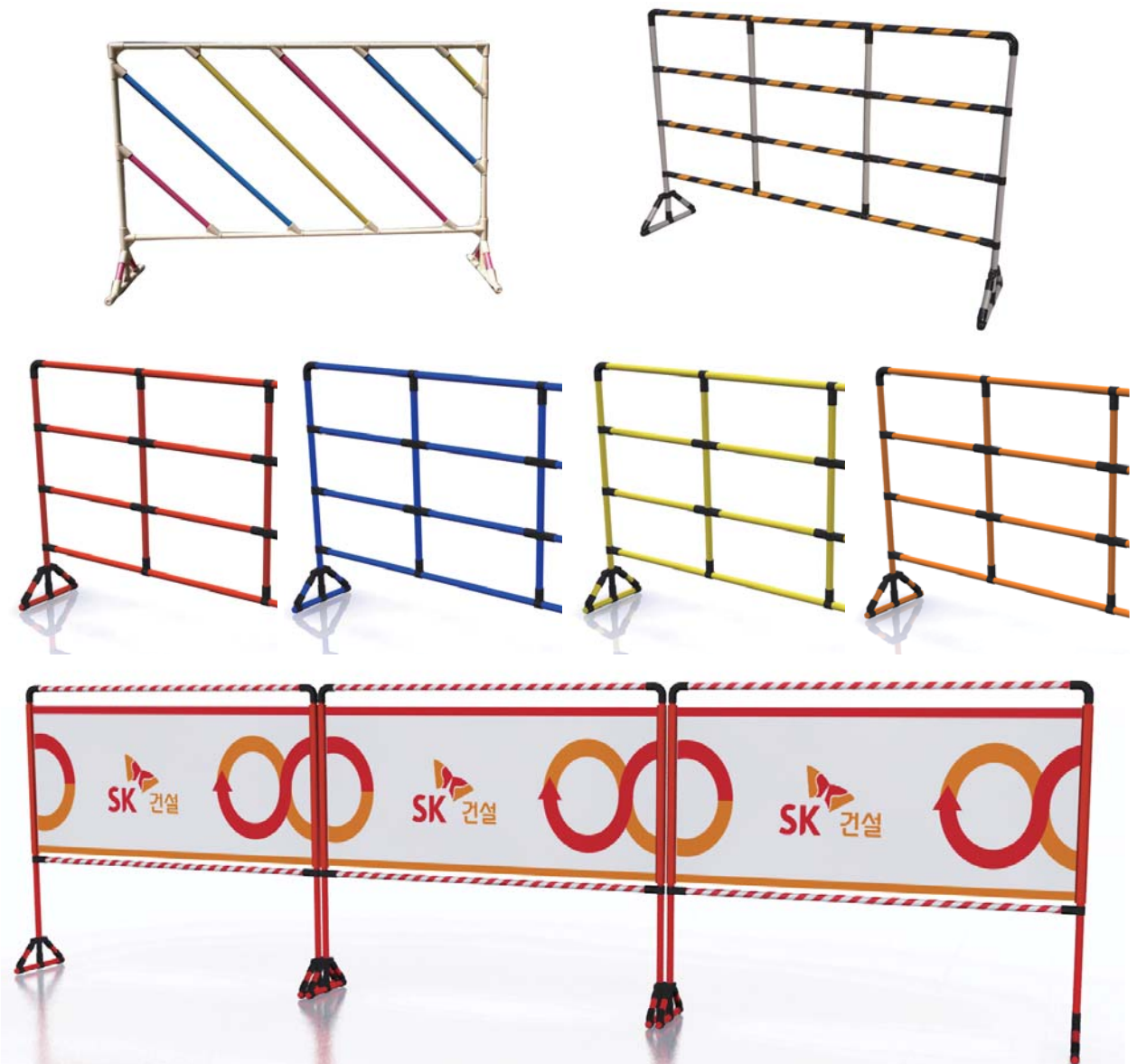


MAGNETIC GUIDED AGV

# OTHER INDUSTRY



Design Type / Color



# OTHER INDUSTRY



Medium duty shelf



# OTHER INDUSTRY

Selective Pallet Rack



Selective Pallet Rack



# OTHER INDUSTRY

---

Cantilever Rack



Automotive Parts Storage and Automotive Shelving



## LOGIFORM WORLDWIDE



### 한보일렉트(주) HBL INC.

경기도 화성시 양감면 초록로 706 / 우편번호 : 18628  
전화 : 031-8059-2510 / 팩스 : 031-8059-2512  
<http://www.hbjoint.com>

### LOGIFORM®

HBL Inc.  
#706, Chorok-ro, Yanggam-myeon, Hwasung-si, Gyeonggi-do,  
Republic of Korea  
Postal Code : 18628  
Office : +82-31-8059-2510  
Email : [hbl@hbjoint.com](mailto:hbl@hbjoint.com)  
Website : [www.leanlab.kr](http://www.leanlab.kr)

### LOGIFORM CO., LTD

LOT D-7K-CN, MY PHUOC IP3  
BEN CAT, BINH DUONG, VIETNAM  
TEL : +84-274-222-0421~3  
Website : [www.leanlab.kr](http://www.leanlab.kr)



HBL INC. 031-8059-2510 Printed in April 2019 Ver. 2019-01



ISO 9001:2008 / ISO 14001:2004

본 인쇄물은 저작권법에 의한 2차 제작물로서 디자인의 복제 및 무단 편집 사용시 관련 법규에 의거 처벌 받을 수 있습니다.  
제작권 소유자 정보  
한보일렉트(주) Tel. 031-8059-2510  
Copyright © 2017 HBL Inc. All rights reserved.