



# FUJI YUSOKI KOGYO Co.,Ltd.

The Worlds leading Robotic Palletizer



DEVELOPED BY THE PALLETIZER MAKER

# ROBOTIC PALLETIZER FUJI-ACE

A varied lineup with 8 types of products

Responding to all kinds of needs for palletizers

From small-lot production to multi-product  
or large-lot production!!

According to concepts  
narrowed down to palletizer applications

## 1 HIGH-SPEED AND ENERGY SAVINGS ACHIEVED SIMULTANEOUSLY

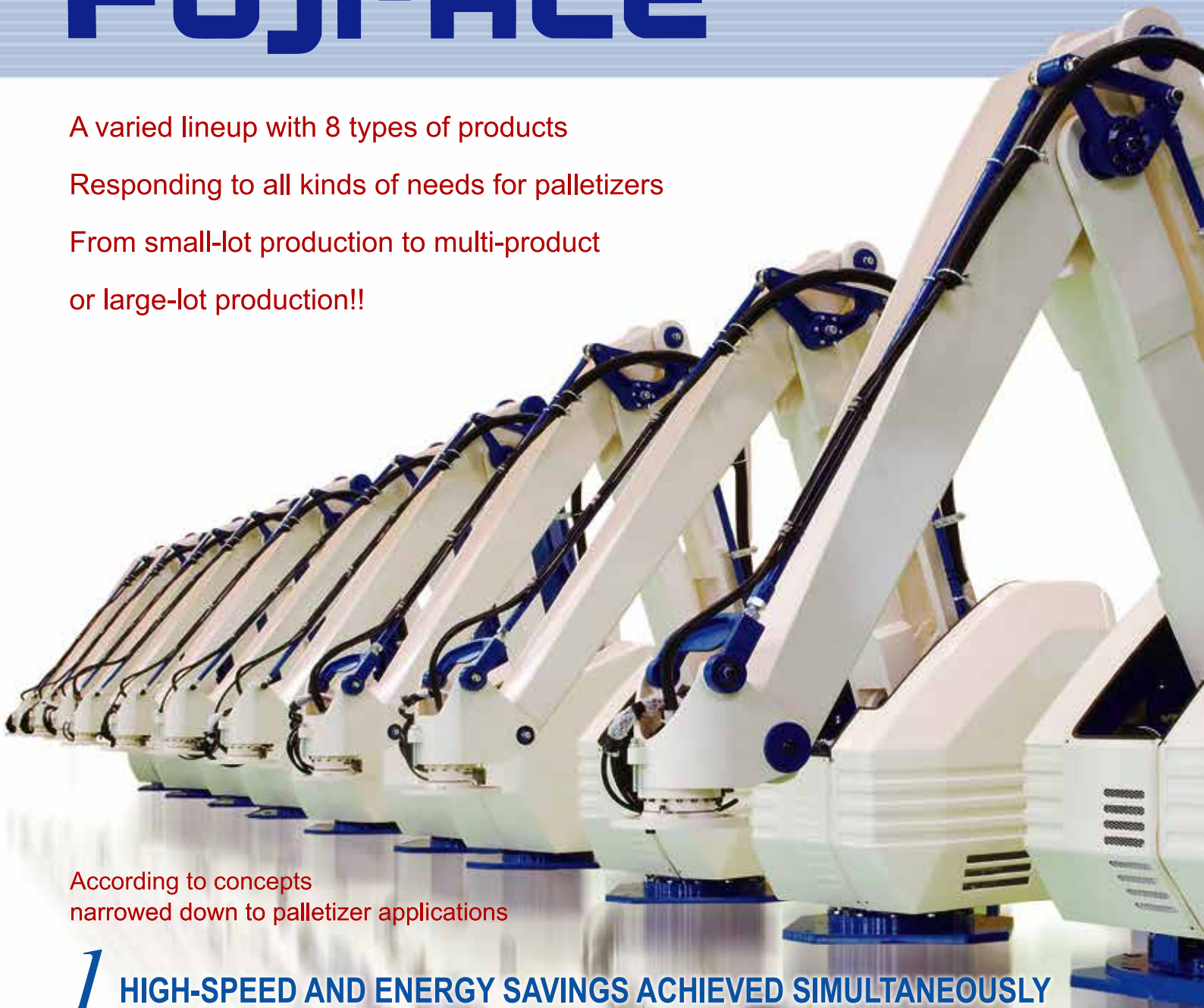
As a robotic palletizer, FUJI-ACE enables the world's fastest 1800 cycles and a maximum load capacity of 320 kg with the world's smallest power consumption of 3.5kW.

## 2 SIMPLE HMI EASILY OPERATED BY ANYONE

Simple and compact teaching pendant focusing on manual operation of robots.  
The touch panel and its software design operate as easily as a bank ATM.

## 3 TEACHINGLESS SYSTEM STANDARD EQUIPPED

The System containing know-how as a palletizer manufacturer including automatic calculation of optimum orbits.







## ECO & TECHNOLOGY

Now more than ever, industrial products need to be compatible with the global environment. Compared to other general multi-purpose industrial robots the FUJI-ACE Robotic Palletizer's weight has been slimmed down to one-half while power consumption has been cut to one-fourth.

Approximately 13,000 FUJI-ACE units are operated around the world contributing to CO<sub>2</sub> reduction equivalent to 0.4 million tons per year. Without question, FUJI-ACE is an energy saving type of industrial product.



ROBOT OPERATION SETTING				
LINE	PRODUCT	LAYER	STEP	SPEED
1		0	0	0
2		0	0	0
3		0	0	0
4		0	0	0

PRODUCTION  
CONTROL

PALLETISED  
SITUATION

MENU

LAST ERROR: 00/00/00 00:00 ERROR CODE: 0

User friendly touch screen (HMI) with software that is specific for Palletizing.

<<BACK
EDIT BLOCK DATA
HELP

BLOCK 0 PRODUCT CODE  
 PROD. INFORMATION  
 W 0 mm  
 L 0 mm  
 H 0 mm  
 WEIGHT 0 kg

PALL. DIMENSION  
 W 0 mm  
 L 0 mm  
 H 0 mm

STEPS/LAYER 0  
 LINE 0

TOTAL LAYERS 0  
 SPEED 0%

PATTERN 0

FIXED DATA


COPY
DELETE
P. GAL
ADJUST
CY. COPY

On-Screen simplified Pattern adjustment


<<BACK
PATTARN SETTINGS
NEXT>>

STACKING PATTERNS 1 0000

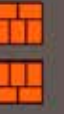
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MANUAL TEACHING
9999

Use one of the pre-loaded product patterns or simply make your own. All without the use of a Laptop/PC.

With over **13,000** Robotic Palletizers installed worldwide, **FUJI YUSOKI KOGYO** is unmatched in "Palletizing" technology.

Experience, sharp focus, and dedication to the palletizing industry have enabled **FUJI YUSOKI KOGYO** to provide the best possible solution to your palletizing needs.

## Exclusive Features

- EC Series (Energy Conservation)
- Eight (8) different models to choose from:
  - HS-High Speed
  - HD-Heavy Duty
  - W-Super Weight
- Fuji adds a level of flexibility that no other Robotic Palletizer can.

## Cutting Edge Control Package

Every Fuji Robot is equipped with touch screen control complete with:

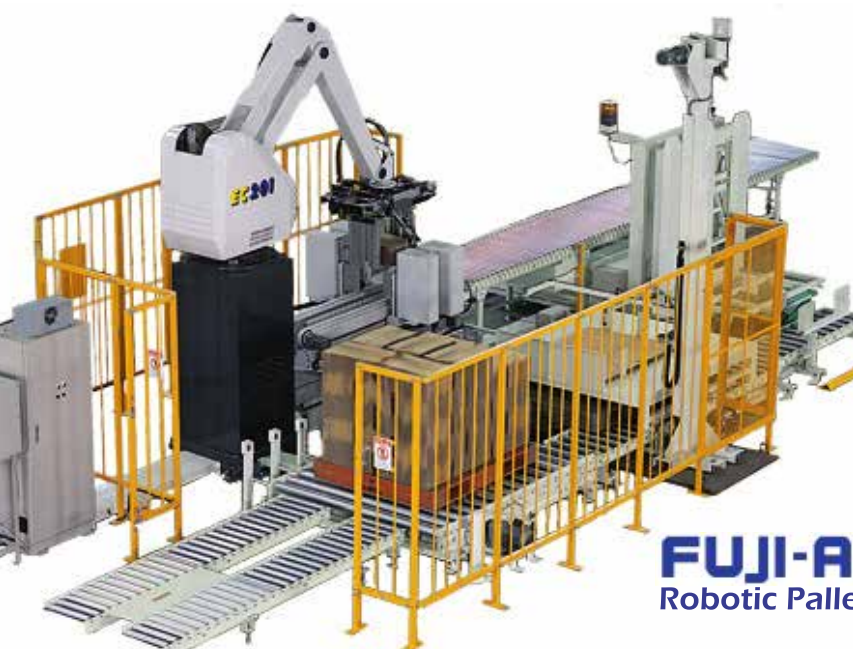
- High level programming software offering complete onboard control and pattern editing without the need of a Laptop or PC
- Pre-Programmed pallet patterns embedded in the HMI to meet your exact specifications
- Inventory monitoring that corresponds with specific patterns
- Diagnostics designed to identify errors instantaneously
- Onboard automatic lubrication schedule system
- Real time I/O monitoring
- Error history log

## PLC/Ethernet Communication

- Auto pattern change
- Product count sent externally
- Alarm codes to external PLC
- Product count from external PLC to Robot
- Height adjustment for product placement from external PLC to Robot

## Teaching Pendant

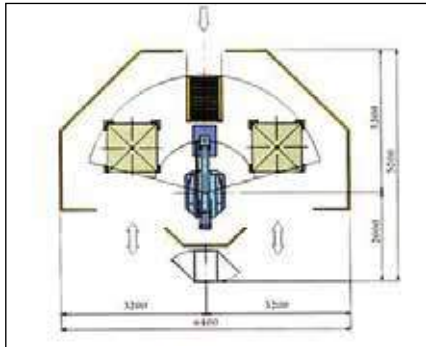
Every Fuji Robot comes with a "user friendly" teaching pendant.



**FUJI-ACE**  
Robotic Palletizers

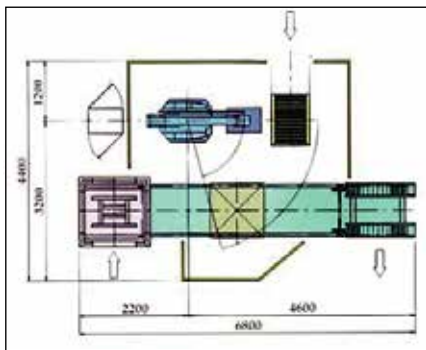
## SENSIBLE LAYOUT SOLUTIONS

Fuji knows every layout may not fit an exact mold. Because of this we understand the need for total flexibility and innovative thinking to meet our customer needs. We have provided a few standard layouts that may assist in the beginning phase of your layout design.



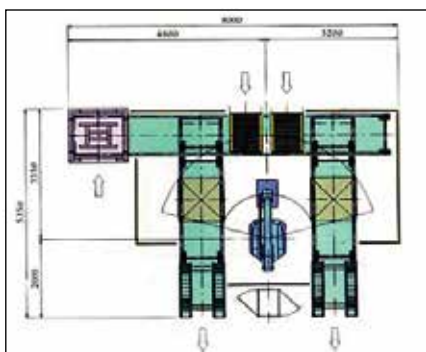
### 2-2 Layout

Product is palletized on two pallet locations. This design allows three pallets to be placed on the floor on each side. This will minimize changeover time.



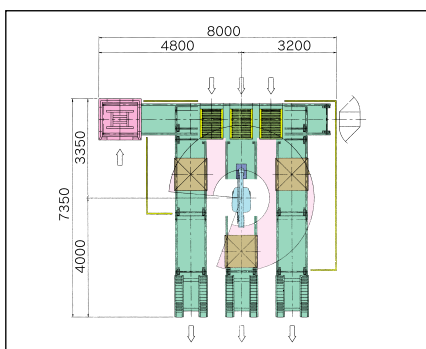
### 3-I Layout

For high speed applications, we decrease the pallet transfer time by using a pallet conveyor to automatically transfer pallets while maintaining nonstop productions.



### 3-LW Layout

One pallet magazine delivers empty pallets automatically onto two individual stacking lines simultaneously.



### 3-S Layout

3 In-Feed & 3 Stacking locations allow for a higher palletizing capacity while Maintaining a smaller overall footprint. Also included in this design is a Pallet Dispenser & Powered Stacking Conveyors for uninterrupted production.

## EXPERIENCE COUNTS

We understand how End Effectors play an intricate role in successful robotic palletizing applications. Given this critical point, we have spent years developing and refining high quality and cost effective End Effectors. Below is a small sample of our End Effector designs:

### End Effectors To Suit Your Requirements



Box End Effector



Can End Effector



Bag Depalletize



Case Depalletize



Bag End Effector



Case End Effector



Book End Effector



Bag End Effector



Fuji-Ace can be used for various types of products in different forms, shapes and packaging textures. We combine the knowledge and experience established from our long company history to our hardware and software design to enable and optimize the palletizing work in a variety of industries. Let us introduce some examples of our installations as below.

## ACTUAL INSTALLATIONS



### BAGS

Fuji-Ace is the most capable robot in handling bags with a maximum speed of 1,600 cycles/ hour. We have actual installations in every industry producing bag product, such as rice, sugar, flour, fertilizer, chemical powder, animal feeds, cement and so on.

### CASES

Fuji-Ace is able to handle different size of cases simultaneously. Here each robot is palletizing 3 different products. Multiple cases can be picked up at a time for efficiency. Switching to different products can easily be done on the HMI and start production immediately.



### OTHERS

Fuji-Ace can also handle diverse products including food, beverage, pharmaceutical, chemical, fertilizer, animal feeds, houseware, corrugated, etc, in the form of cases, sacks, shrink wrapped bottles, barrels, tin cans, paper bundles, bottle crates, etc, with an integration of slipsheet, plywood or pallet pick-up functions to suit various needs of the customer.

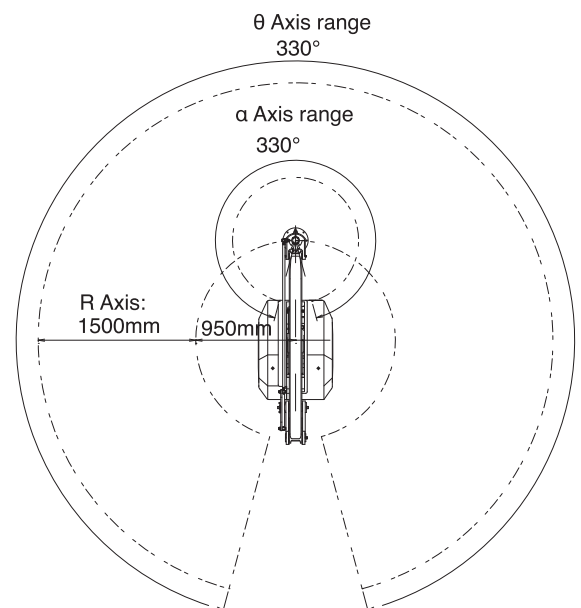
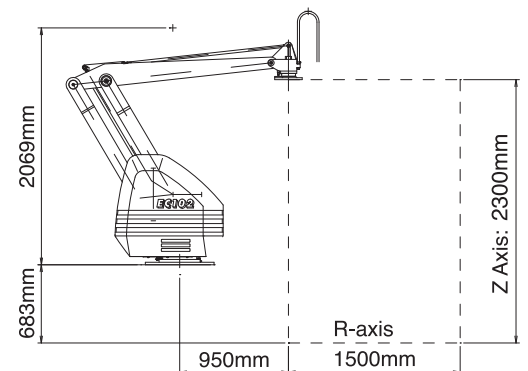
# EC-102

## ROBOTIC PALLETIZER

**EC-102** was released as next generation model and designed to meet both high speed and heavy duty applications. It will be able to cover wide range of production requirement most economically.



### EC-102 Operating Range



### EC-102 Series Technical Specifications

Fuji ACE Model		EC-102
Type of Motion		Multi-Articulated
Action Mode		Cylindrical
Load Capacity (Including End Effector)		160kg(340lbs)
Palletizing Capacity (cycles / hour)		1200
Degree of freedom		4 axis
Operating Area	Z axis (vertical)	2300mm (90.5")
	R axis (longitudinal)	1500mm (59")
	Theta axis (rotation)	330°
	Alpha axis (wrist)	330°
Repeatability		±1.0m/m
Memory		120-400programming locations available
Teaching method		Teaching playback / Teaching Support
Power Requirements		(200/220V, 3phase, 50/60 Hz)
Power Consumption (Without Peripheral Equipment Load)		3.5KVA / 9.2amps
Robot Weight(Without End Effector)		700kg (1544lbs)
Pneumatic Consumption (*Using Standard Fuji Case or Bag End Effector)		*5.7SCFM @ 70psi(0.5MPa)

**Note:** Capacity rates can be significantly affected by layouts, product types, and can be confirmed after a detailed analysis of an application.

# EC-171

## ROBOTIC PALLETIZER



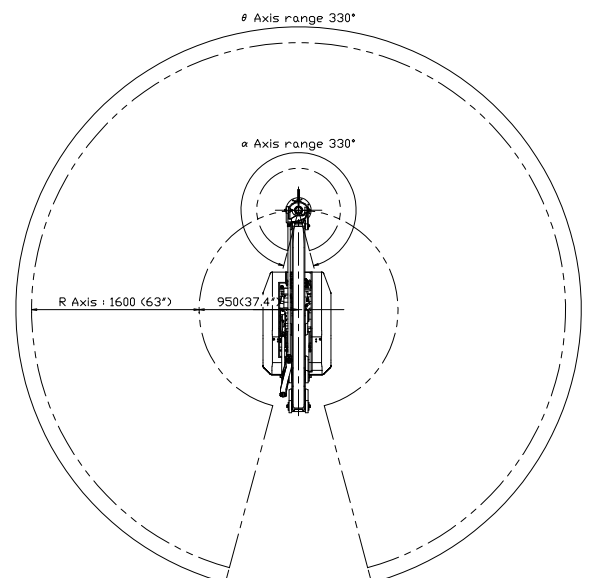
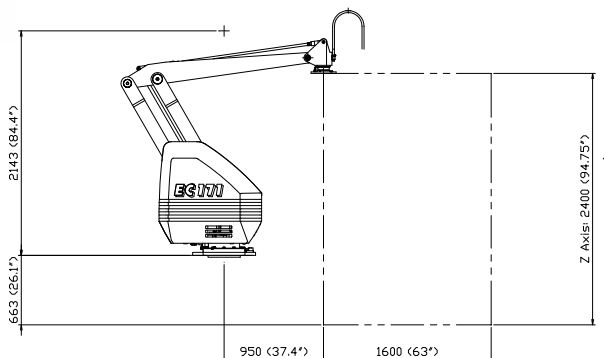
The **EC-171** robot has the largest working envelope of all Fuji Robots while maintaining the smallest rotation radius. The **EC-171** is energy efficient using only 4 kva while still allowing the robot to work in tight space conditions and accomplishing a very high palletizing rate. With two **EC-171** models Fuji can offer a solution for High Speed (HS) and/or Heavy Weight (HD) applications. This is truly a fantastic addition to our product line.

### EC-171 Operating Range

#### EC-171 Series Technical Specifications

Fuji ACE Model		EC-171HS	EC-171HD
Type of Motion		Multi-Articulated	
Action Mode		Cylindrical	
Load Capacity (Including End Effector)		80kg(170lbs)	160kg(340lbs)
Palletizing Capacity (cycles / hour)		1500	1000
Degree of freedom		4 axis	
Operating Area	Z axis (vertical)	2400mm (94.75")	
	R axis (longitudinal)	1600mm (63.125")	
	Theta axis (rotation)	330°	
	Alpha axis (wrist)	330°	
Repeatability		±0.5mm	
Memory		120-400programming locations available	
Teaching method		Teaching playback / Teaching Support	
Power Requirements		(200/220V, 3phase, 50/60 Hz)	
Power Consumption (Without Peripheral Equipment Load)		4KVA / 10.5amps	
Robot Weight(Without End Effector)		750kg (1654lbs)	
Pneumatic Consumption (*Using Standard Fuji Case or Bag End Effector)		*5.7SCFM @ 70psi(0.5MPa)	

**Note:** Capacity rates can be significantly affected by layouts, product types, and can be confirmed after a detailed analysis of an application.





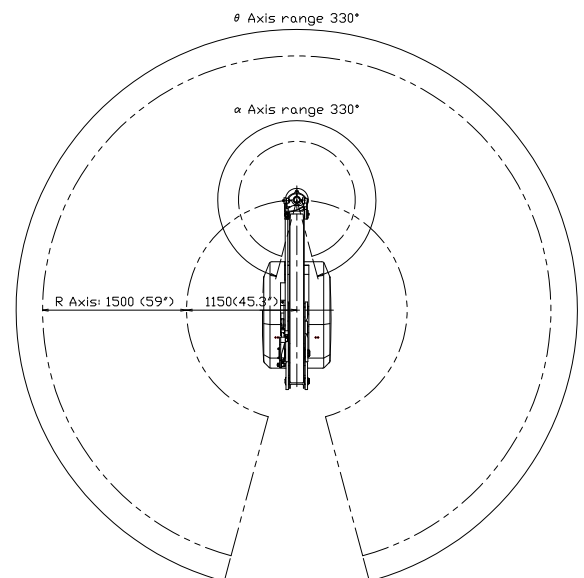
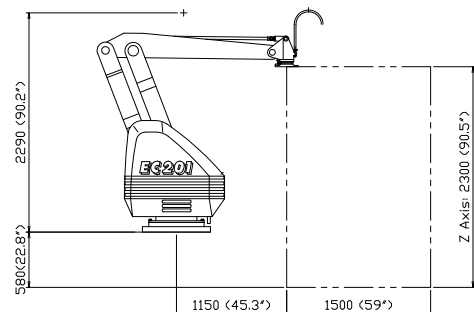
# EC-201

## ROBOTIC PALLETIZER



Through many years of research and development the **EC-201** robot is one of the most technologically advanced robotic palletizers on the market today. With three **EC-201** models to choose from, Fuji offers a solution for High Speed (HS) , Heavy Weight (HD) and/or Super Heavy Weight (W) applications.

### EC-201 Operating Range



### EC-201 Series Technical Specifications

Fuji ACE Model		EC-201HS	EC-201HD	EC-201W
Type of Motion		Multi-Articulated		
Action Mode		Cylindrical		
Load Capacity (Including End Effector)		70kg(150lbs)	200kg(440lbs)	320kg(700lbs)
Palletizing Capacity (cycles / hour)		1800	1600	600
Degree of freedom		4 axis		
Operating Area	Z axis (vertical)	2300mm (90.5")		
	R axis (longitudinal)	1500mm (59")		
	Theta axis (rotation)	330°		
	Alpha axis (wrist)	330°		
Repeatability		±0.5mm		
Memory		120-400programming locations available		
Teaching method		Teaching playback / Teaching Support		
Power Requirements		(200/220V, 3phase, 50/60 Hz)		
Power Consumption (Without Peripheral Equipment Load)		6.5KVA / 17amps		7KVA / 18.4 amps
Robot Weight(Without End Effector)		1150kg (2536lbs)		
Pneumatic Consumption (*Using Standard Fuji Case or Bag End Effector)		*5.7SCFM @ 70psi(0.5MPa)		
Note: Capacity rates can be significantly affected by layouts, product types, and can be confirmed after a detailed analysis of an application.				



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## Fuji Ace Technical Specifications

Fuji ACE Model		EC-102	EC-171HS/HD	EC-201HS/HD	EC-201W
Type of Motion		Multi-Articulated			
Action Mode		Cylindrical			
Load Capacity (Including End Effector)		160kg(340lbs)	80kg(170lbs)/ 160kg(340lbs)	70kg(150lbs)/ 200kg(400lbs)	320kg(700lbs)
Palletizing Capacity (cycles / hour)		1200	1500/1000	1800/1600	600
Degree of freedom		4 axis			
Operating Area	Z axis (vertical)	2300mm (90.5")	2400mm (94.75")	2300mm (90.5")	
	R axis (longitudinal)	1500mm (59")	1600mm (63.12")	1500mm (59")	
	Theta axis (rotation)	330°			
	Alpha axis (wrist)	330°			
Repeatability		±1.0m/m	±0.5mm		
Memory		120-400programming locations available			
Teaching method		Teaching playback / Teaching Support			
Power Requirements		(200/220V, 3phase, 50/60 Hz)			
Power Consumption (Without Peripheral Equipment Load)		3.5Kva / 9.2 amps	4Kva / 10.5 amps	6.5Kva / 17 amps	7Kva / 18.4 amps
Robot Weight(Without End Effector)		700kg (1544lbs)	750kg (1654lbs)	1150kg (2536lbs)	
Pneumatic Consumption (*Using Standard Fuji Case or Bag End Effector		*5.7SCFM @ 70psi(0.5MPa)			

**Note:** Specifications are subject to change without notice. Capacities as stated above are the maximum that may be achieved by the robot under ideal conditions. Capacity rates can be significantly affected by layouts, product types, and can be confirmed after a detailed analysis of an application. \*Pneumatic consumption may vary with use of a third party End Effector.



Concerns about the natural state of our planet have never been higher. Some manufacturers have not yet recognized the role that robotics can play in energy conservation. Robots make the palletizing process more efficient and we think smart players in the industry will adapt this reality sooner than later. With all this in mind **FUJI** offers energy conscious robots-(EC-Series).

**THINK GREEN**



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