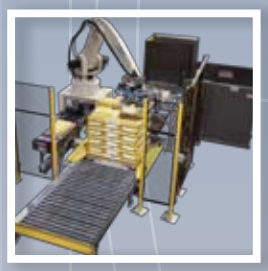
ROBOTIC PALLETIZING EXPERTS

Columbia okura LLC



A SERIES
ROBOTIC PALLETIZERS

A700

A1600

A1800

we can handle it.

ANYTHING • BAGS • CASES • TRAYS • BUNDLES • PAILS • BALES • TOTES • SHEETS ...

OPERATIONAL SPECIFICATIONS

	A700	A1600	A1800
Motion- Multi-articulated, polar coordinate system	X	X	X
Load Capacity - 310 lbs./140 kg. (including end effector)	X	X	X
- 440 lbs./200 kg. (optional)		X	
Degree of Freedom- 4 axis	X	X	X
Operating Range-			
R axis (rotation)	360°	360°	360°
D axis (up/down)	91"/2300mm	91"/2300mm	91"/2300mm
O axis (forward/back)	69"/1750mm	60"/1518mm	60"/1518mm
T axis (wrist)	440°	440°	440°
Maximum Speed/Minute- for a 'single pick'	9cases/11bags	18cases/24bags	20cases/28bags
Note: 'Multi-picking' product will increase palletizing rates. Product size and pattern may affect palletizing rates.			
Accuracy- Repeated stop position accuracy ± 1mm	X	X	X

ROBOTIC ARM MECHANICAL & ELECTRICAL SPECIFICATIONS

	A700	A1600	A1800
Electrical-			
200/220V ± 10%, 60Hz, 3Ph, 7 Amps	X		
200/220V ± 10%, 60Hz, 3Ph, 18 Amps		X	X
460V ± 10%, 60Hz, 3Ph, 3.5 Amps (optional)	X		
460V ± 10%, 60Hz, 3Ph, 9 Amps (optional)		X	X
Note: Peripheral system components will require additional power consumption			
Pneumatic Consumption-			
6.36 SCFM/180 liter/min (ANR)	X	X	X
Note: Pneumatic consumption may vary with system options			
Robot Weight- Without end effector & control panel	2756lbs/1250kg	2560lbs/1160kg	2645lbs/1200kg

Catagory 3 Circuit
Includes 2 channel e-stop, redundant 3-phase contactors, trapped key door interlock system and light curtains, all monitored by safety relay

Certified to UL1740 Standards by a NRTL (Nationally Recognized Test Laboratory)
UL1740 is the standard for Safety for Robots and Robotic Equipment
UL 1740 encompasses applicable requirements of the following standards:

ANSI RIA 15.06- 1999 Industrial Robots and Robot Systems- Safety Requirements

CSA Z434-03 Industrial Robots and Robot Systems- General Safety Requirements

NFPA 79 2008 National Fire Protection Association Electrical Standards for Industrial Machinery

NEC 2008 (NFPA 70) National Electrical Code

UL508A Standard for Safety for Industrial Contol Panels

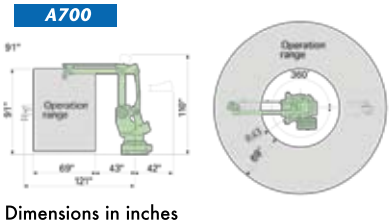
In addition, Columbia/Okura is a UL508A controls manufacturing facility

UL508A: UL File #E216389 (U.S.- NITW.E216389, Canada- NITW.E216389)

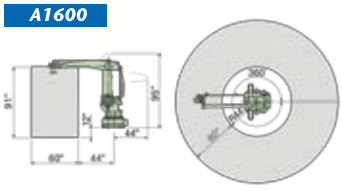
Standard for Safety for Industrial Control Panels (U.S. & Canada)

Specifications are subject to change without notice

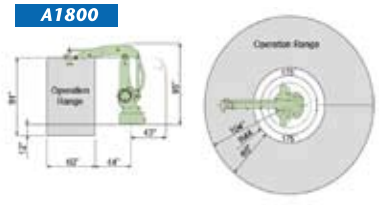
A700



A1600



A1800



Dimensions in inches

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Robotic Industries Association Member

Material Handling Industry of America Member Company

MEMBER PMMI USA

INSIST ON PALLETIZERS THAT FIT

Whether you're buying your 1st or your 51st palletizer, don't waste your time on inflexible equipment. Insist on a palletizer that fits into your floor layout, your work flow, your products and your future production plans.

Columbia/Okura, LLC headquarters, Vancouver, WA USA

Roboshield Collision Detect Function

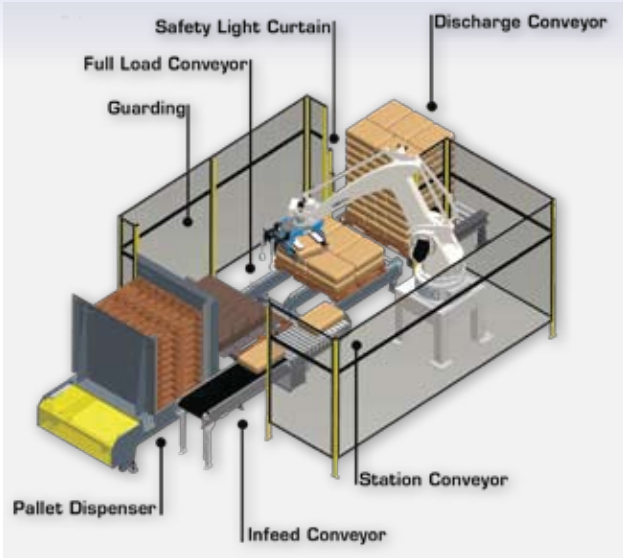
Columbia/Okura's Roboshield feature reduces the risk of damage to the robot in the event of a collision. State-of-the-art software automatically triggers an emergency stop if the end effector or arm collides with peripheral equipment or stacked load.

ROBOSHIELD®

EXPERIENCE YOU CAN COUNT ON

Columbia/Okura is a manufacturer and technical integrator of robotic palletizing systems to handle cases, bags, pails, bundles, bales, trays, pallets and sheets, reducing overall labor costs and increasing profitability to manufacturers throughout the world. Columbia/Okura is jointly owned by Columbia Machine, an industry leader in conventional palletizing and Okura Yusoki, Japan's leading supplier of robotic palletizing systems. We put over 100 years of combined material handling experience and over 40 years of combined robotic palletizing expertise into every machine produced.

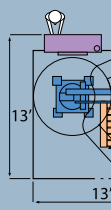
Common System Components



Note: System safety guarding has been removed for image clarity.

A Series

Columbia/Okura robotic palletizers are compact and cost effective. With the ability to manage one to four production lines concurrently, and stack onto one to six pallets, the possible system layouts are practically endless. Designed to use minimal floor space and with flexibility in mind, it is easy to find the automated solution that meets your palletizing and depalletizing needs.



END EFFECTORS

Columbia/Okura has designe
sheets. Our parts warehouse

PAIL STYLE

Pails

CLAMP STYLE

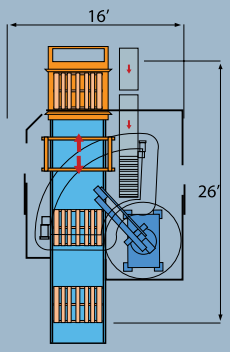
Cases, trays, bundles, etc.

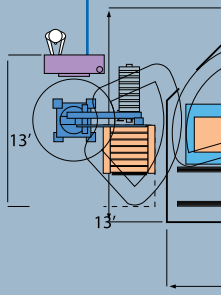
Bag Style
End Effector

Model **A700**

Economical Layout

Single Line Layout





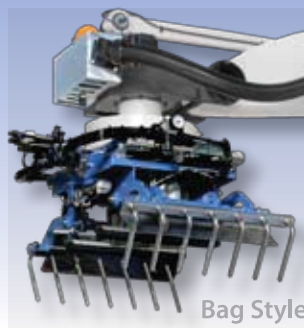
ed a wide range of standard end effectors to handle virtually any product, including cases, bags, trays, totes, bales, bundles, crates, pails, pa
carries service parts for immediate support on all these standard designs. The end effectors shown here are some of the most common typ

FORK STYLE
Cases, trays, bundles, etc.

CASE/BAG STYLE
Bags and cases

VACUUM STYLE
Cases

Clamp Style
End Effector

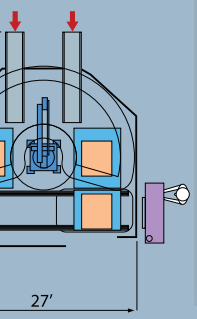


Bag Style
End Effector

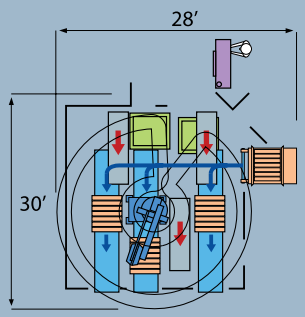
Model **A1600**

Model **A18**

Two Line Layout



Multiple Line Layout



allets and
oes utilized.

CONTROLS SOFTWARE AND PROGRAMMING

The Columbia/Okura robotic palletizing system utilizes highly advanced software to create pattern programs. The operating screen, complete with detailed graphics and easy navigation tools, provides quick access to the 50 standard product patterns already built into the program. OXPA-DIY "Do-it-Yourself" software is designed to make adding patterns to your robot a simple process. Custom patterns are created off-line on your personal computer or laptops, and then downloaded to the robot controller. Patterns can also be added at the control panel using the operator interface. No need to interrupt your production schedule; custom patterns can be created offline while your system is running, and downloaded between production runs.

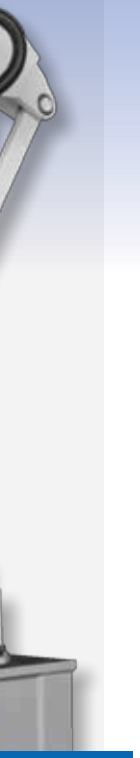
OXPA-DIY

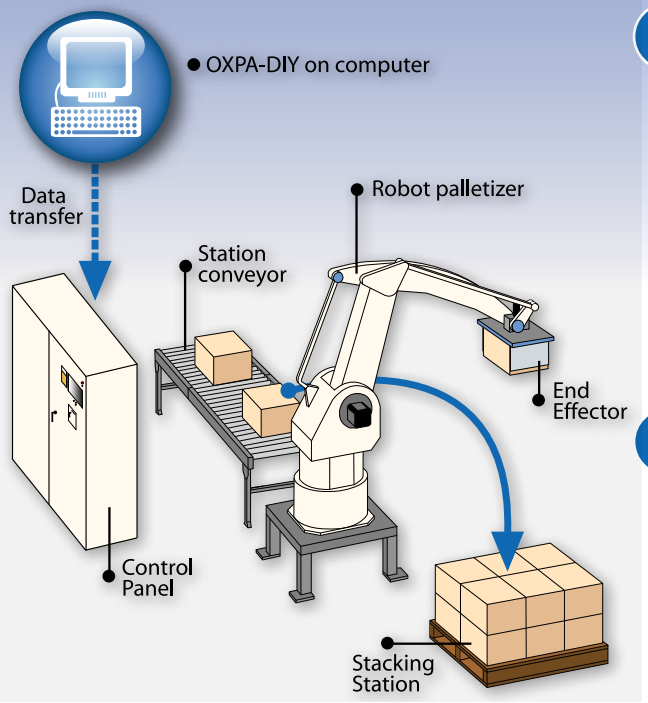
"Do-it-Yourself" programming is Windows based and can be run from your laptop computer.

Here's how it works...

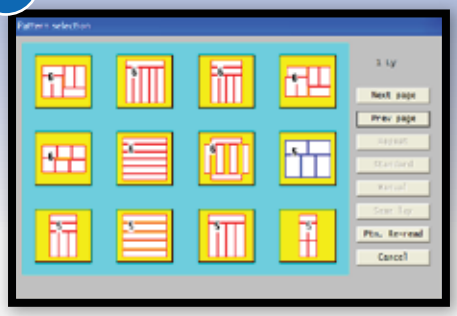
1 ENTER PRODUCT INFO.

Launch DIY from your personal computer and enter the product weight, dimensions and the desired number of layers.



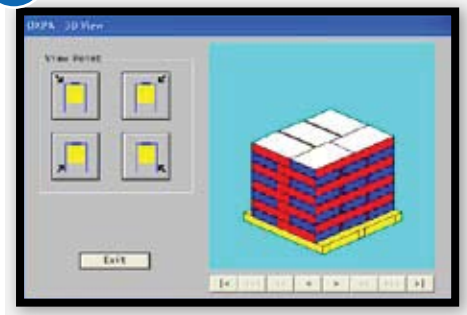


2 SELECT PATTERN.



DIY displays possible stacking configurations based on your input. Just click on the one you want and the software automatically calculates the stacking coordinates for you.

3 DOWNLOAD. PALLETIZE.



Use the 3-D image of the pattern you have created to evaluate the complete pallet load from four different viewpoints.

Then download the pattern to the control panel and you're ready to palletize your product.