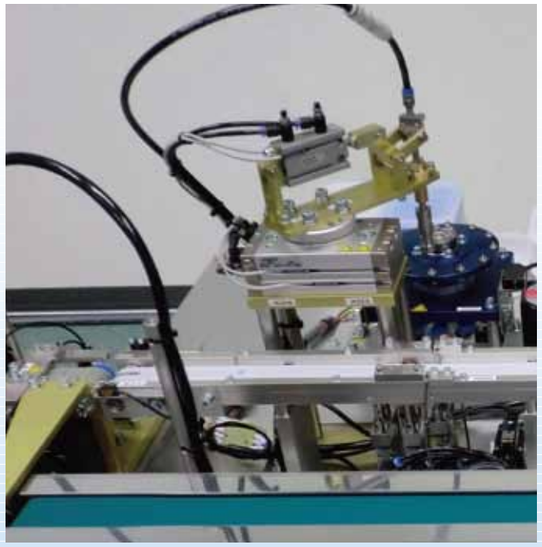
Outline of Each Station

1st station

■ Rotary index type parts supply unit



2nd station

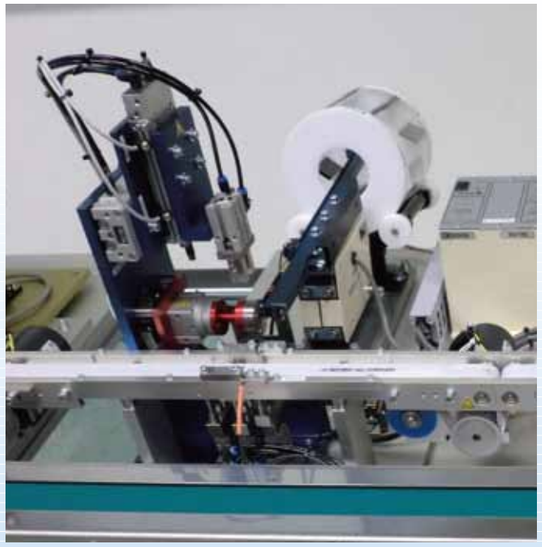
■ Vibrating feeder type parts supply unit

4th station

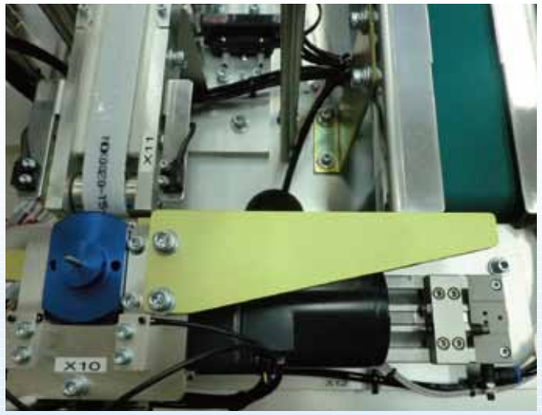
■ Linear feeder type parts supply unit (straight line only)

3rd station

■ Drum feeder type parts supply unit



Pallet return unit



Small-sized FA line training equipment enables users to experience full-scale practical training of mechatronics equipment and automated production line. The mechanisms of the equipment are those that are actually used in factories. Each mechanism has rigidity and reliability enough to understand the properties such as movement of mechanism or behavior of a workpiece.

*The specifications and design are subject to change without notice.

Agency

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Enjoy the customization through
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Small-sized FA Line Training Equipment

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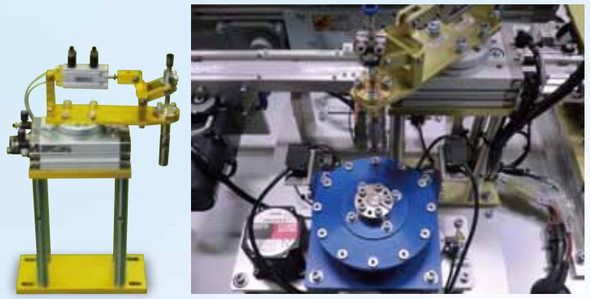
Enjoy the fun and experience of making things.

Practical training equipment using the same devices used in industry.



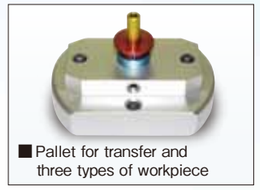
1 The first station Rotary index type parts supply unit

The pallets circulating on the conveyor are detected by a transmission type photoelectric sensor, and convex type workpieces are supplied one by one by using an index mechanism.
The index type parts supply unit aligns the workpieces on the rotating table with a constant pitch, and through rotary index motion of the table with a constant pitch, supplies the workpiece to the line using a pick-and-place unit. This type of supply unit is used mainly to automatically supply workpieces that are easily damaged or have special shapes and are hard to be lined up.

2 The second station Vibrating feeder type parts supply unit

The pallets circulating on the conveyor are detected by a transmission type photoelectric sensor, and by using the vibrating type parts feeder, direction of a concave type workpiece is checked, which is then supplied on top of the convex type workpiece provided in the 1st station by rotating. The vibrating feeder type parts supply unit is a method which vibrates workpieces within the bowl in a rectangular movement, moves them along the track on the wall, drop those that have different orientation into the drum by using baffles, etc., and align gradually the workpieces that have the same orientation. It is the most widely used method to align workpieces that are in a random condition.

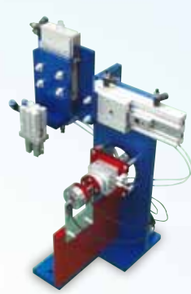
■ Pallet for transfer



■ Pallet for transfer and three types of workpiece

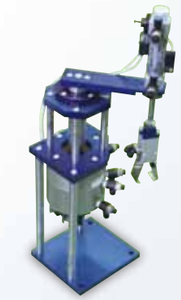
F Free flow circulating type pallet transfer conveyor

It is a transfer line in which pallets with workpieces on circulates on a belt conveyor. The pallets are detected by a transmission type photoelectric sensor and positioned at each station. After the workpieces assembled on a pallet are moved outside the line, an empty pallet will return to the top position by a return conveyor.



3 The third station Drum feeder type parts supply unit

The pallets circulating on the conveyor are detected by a transmission type photoelectric sensor, and by using the drum feeder, cylindrical workpieces are put on top (or in the middle) of workpieces provided by the 1st and 2nd stations. The drum feeder type parts supply unit has flaps attached to the drum wall which rotates in longitudinal direction, and as the drum rotates, workpieces are picked up by a small amount and dropped when the drum comes toward the top position. The workpieces dropped will be on the straight line feeder in the center of the rotating drum, and the straight line feeder aligns and transfers the workpieces. Since workpieces are provided by rotation without using vibration, this unit is very quiet. The longitudinal rotating drum requires less space compare to the horizontal type drum, usually workpieces must have cylindrical shapes.



4 The fourth station Linear feeder type parts supply unit

The linear feeder type parts supply unit,(first, workpieces aligned in the linear type supply part) moves workpieces forward by vibration and discharge at the front. Normally, it is used with a vibration type parts feeder. After that, it detects the pallets circulating on the conveyor by a transmission type photoelectric sensor, and discharges workpieces on the pallets. There is the pallet return unit, also.

Training contents

1. Basic technique for building a production line

(1) Basic technique required for production line/W・T・MACS
(2) Selecting components of a work unit
(3) Analyzing details of a process
(4) Design method of workpiece holders/tools

2. Automatic supply, division of process, element selection

(1) Concept of automatic supply system
(2) Selection and practical training of automatic supply mechanism
(3) Concept of process division
(4) Selection and practical training of transfer mechanism

3. Positioning and flexibility to meet the work contents

(1) Details of each work and positioning precision
(2) Calculation of positioning precision and auxiliary system
(3) Flexibility of work unit
(4) Outline of support method for production of different products

4. Structure of automated line and the basic of control

(1) Structure of automated line and the basic of its control
(2) Relay control, computer control, hardware logic, overall integrated control
(3) Basic and application of PLC control
(4) Sensor input interface and drive output interface

5. Theory and practical training of sequence control

(1) Signal processing from mechanism actuator and drive training
(2) Drive control training of a pick-and-place unit.
(3) Sequence control training of a drum type supply system
(4) Sequence control training of a parts feeder type supply system

6. Theory and practical training of robot control

(1) Concept of computer control and robot controller
(2) Uniaxial robot control training of a feeding unit
(3) Multi-axial robot control training of an outlet unit
(4) Practical training on combination of a uniaxial robot control and computer control

7. Construction and control training of an automated line

Practical training on planning of a line construction and control system on your own theme.
System planning, construction and control training of a free flow line per block.

Features

Using the same equipment used in industry

Various mechanisms used in the training equipment are actually used in factories. Each mechanism has rigidity and reliability enough to understand the movement of mechanism and properties of a workpiece correctly.

Enable users to learn the components and structure of a production system

The training equipment is structured so that users can understand the supply method of various parts, pickup methods, and pallet transfer and circulation methods, actually used in production systems at a single glance. Elements used in an automated production line and mechatronics equipment are simulated, offering practical training on a real machine.

Supporting various training

Since all control load units are modularized and each module by default is equipped with input/output parts necessary for control, users are able to learn simply a control method, or experience the entire automated production system applying handling, through which they are able to construct a unique system freely.

Study guide to support various controls

This equipment supports various controls including PLC control, computer control, and communication control between PLC and a computer, and provides wide application range. For computer control, the latest control language such as Visual Basics.NET can be used for machine control training.