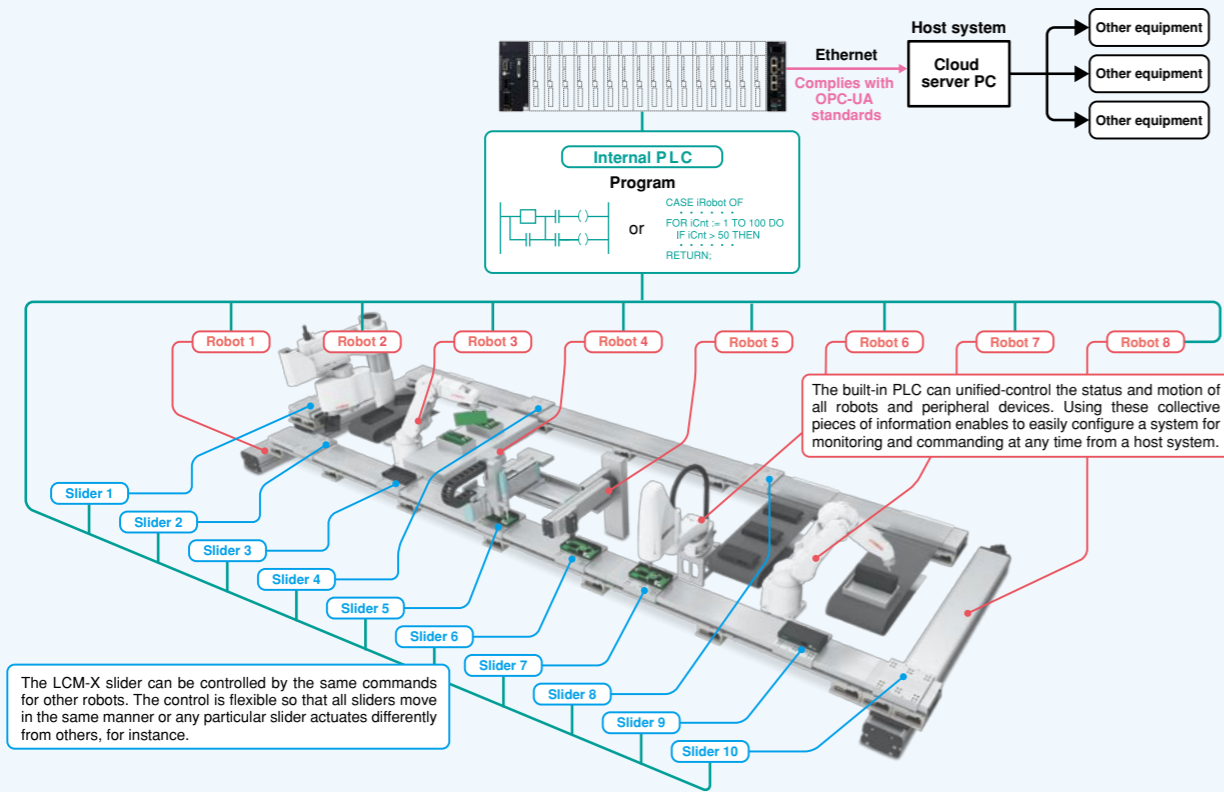
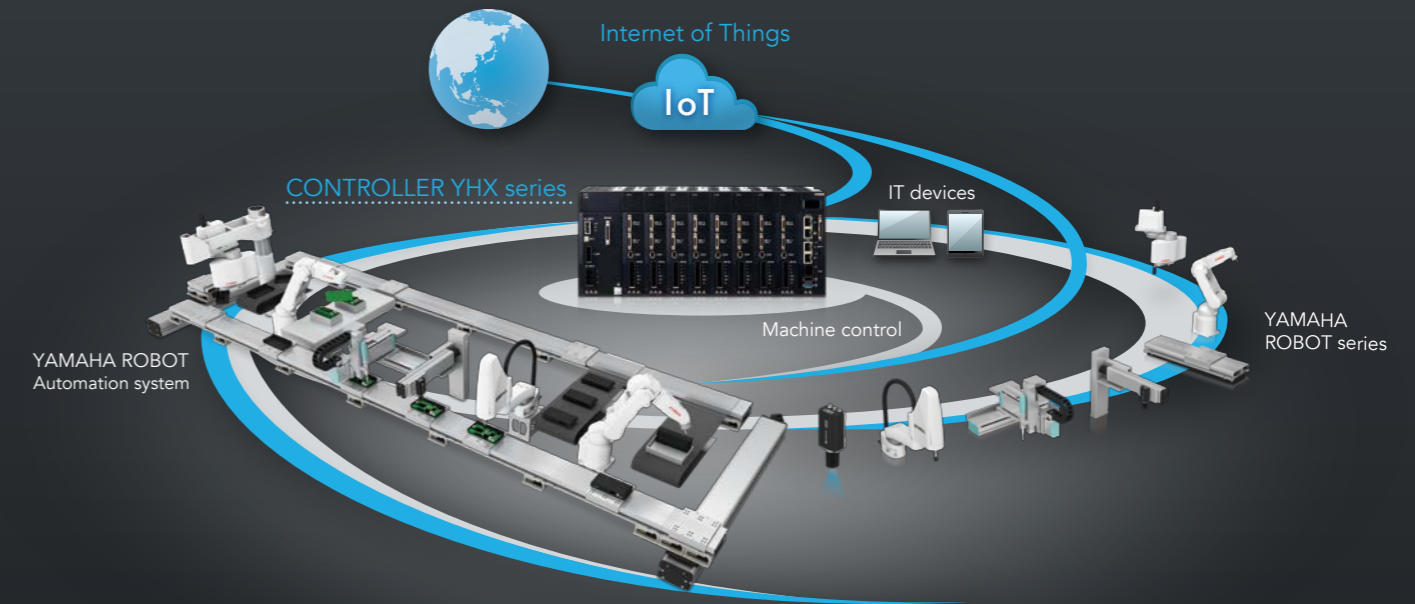
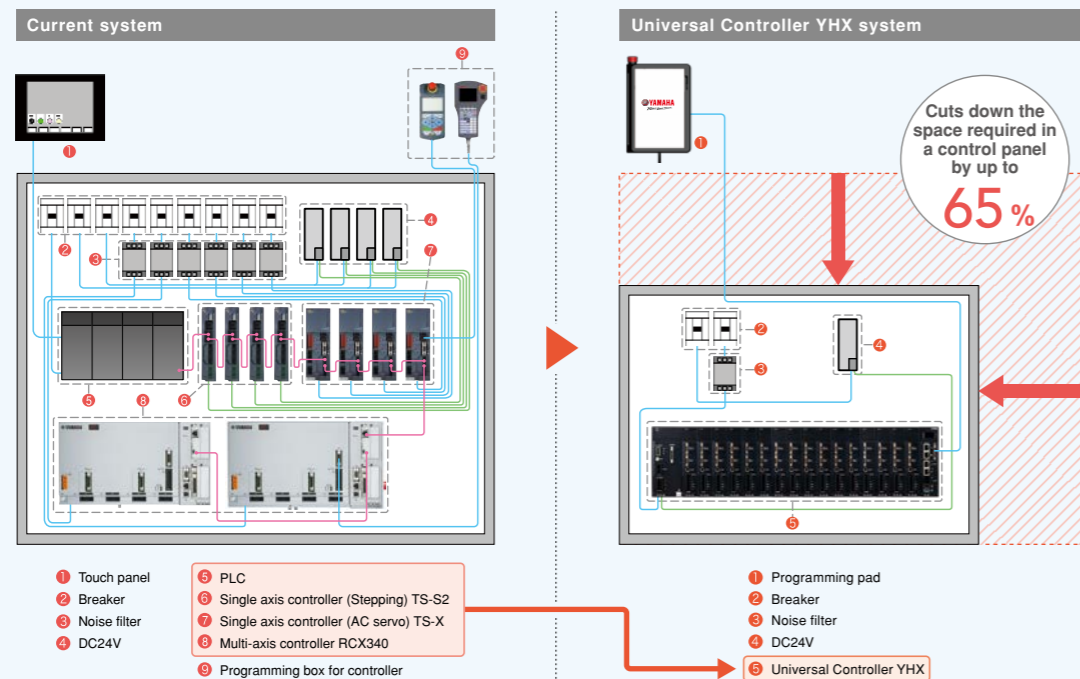
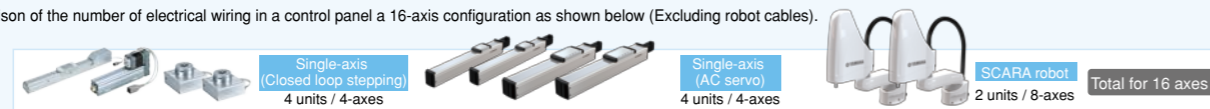


YHX Controller Control operation concept



Space saving inside control panel by YHX controller

Comparison of the number of electrical wiring in a control panel a 16-axis configuration as shown below (Excluding robot cables).



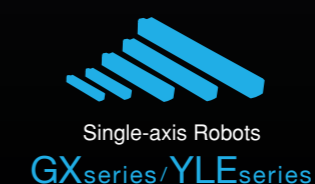
Advanced Robotics Automation Platform

Yamaha's new universal robot control system offers speedy, efficient, and low cost construction of fully automated manufacturing lines.

YAMAHA MOTOR CO., LTD.

IM Operations FA Section
127 Toyooka, Kita-ku, Hamamatsu, Shizuoka 433-8103, Japan
Tel. +81-53-525-8350 Fax. +81-53-525-8378

URL <https://global.yamaha-motor.com/business/robot/>
E-mail robotn@yamaha-motor.co.jp



PRODUCTS A

Universal Controller YHX series



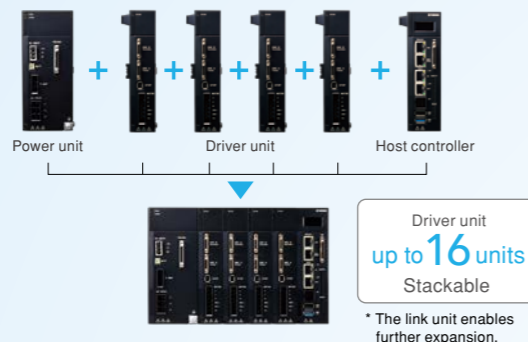
- Cutting down space required in a control panel:
65%
Refer to the back cover for details.
- Decreasing wiring man-hours:
50%
- Total number of controllable robots:
64 units

Superd expandability, compact design, and reduction in component and setup time.

YAMAHA's Advanced Robotics Automation Platform offers coordinated motions and synchronized control of all robots, and peripheral devices in the system.

Industry first stacking modular unit

The stacking module structure including motor driver and a motor drive power supply dramatically reduces the number of electrical wiring. Stacking all control power supply, motor drive power supply, high speed network communications, and safety circuits eliminates electrical wiring between units while reducing the costs and man-hours for electrical installation to 30% to 50% of those for previous models.



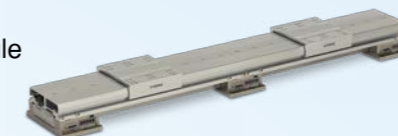
Integrating PLC complying with international standards, All set for IoT compatibility

Integrating a high performance, high speed general purpose PLC and capable of handling 5 languages that comply with IEC61131-3, the Universal Controller can control entire automated units and devices including robots and peripheral devices. Besides, it has a flexibility and expandability to further become compatible with IoT and Industrie4.0.

Complies with **OPC-UA** standards

PRODUCT B

Linear conveyor module LCM-X



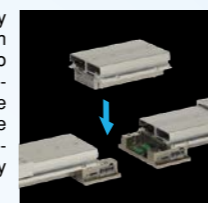
- Acceleration: **5G**
- Stop position repeatability: **±5 μm**
- Span between sliders: **210mm**
- Low profile: **H85mm**

Transition from "passive flow" to "active movement". Increasing competitive edge in manufacturing from optimum performance.

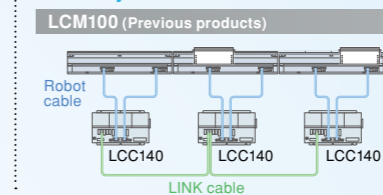
High speed and high accuracy transport capability of the linear conveyor module LCM-X significantly improves the productivity. Tasks directly on the slider and bi-directional motion of the slider are few of LCM-X's features that boost the work efficiency.

The bridge pier structure enables speedy setup.

The connection units allow highly accurate mechanical connection of the modules. All you have to do is tighten the bolts. The mechanical connection also completes the electrical connection at the same time without additional connection cables. Considerably easy setup saves you a lot of time.



Integral structure with a motor driver built in the main body



Thanks to the unified structure with a motor driver built in the module main body, all you have to do is connect to the Universal Controller with a single YQ Link cable to control the entire LCM-X.

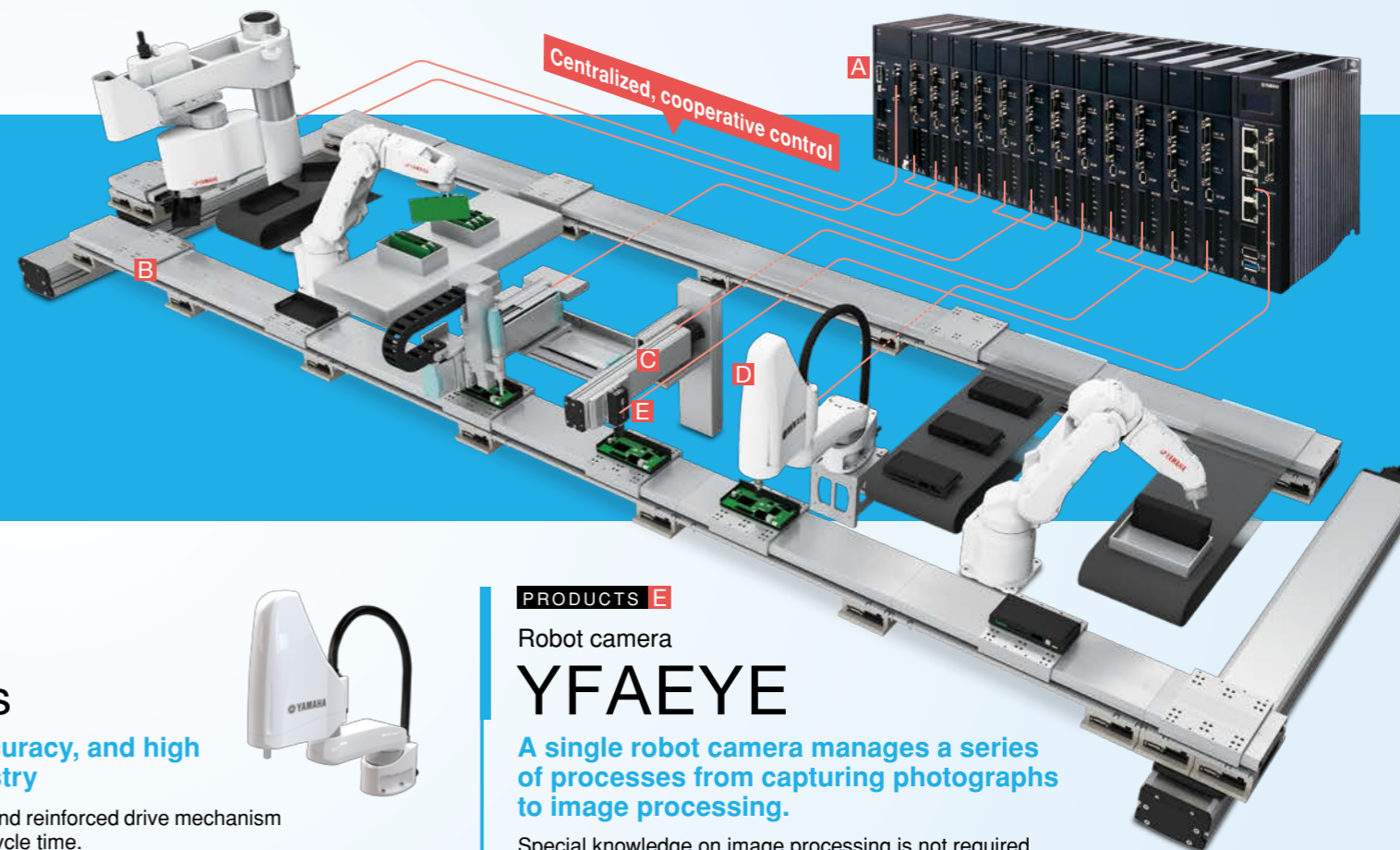
Complete absolute positioning system
No need to return to origin
Individual ID identification function

Built-in driver
Reduced wiring **Save space.**

Yamaha's own unique universal robot control concept offers Total Optimization in your production line.

Integrating robots, integrating peripheral devices and integrating operations

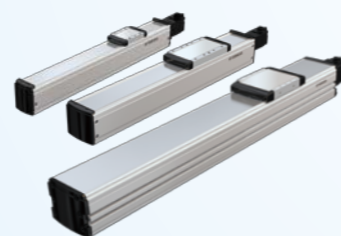
Helps building automated production line efficiently at lower cost in a short period of time. YAMAHA's Advanced Robotics Automation Platform in the product lineup is a good match with IoT. Fully renewed Yamaha robot line up for automated processes such as transport, handling, assembly, and image recognition. Yamaha is proud to offer this new product lineup providing solutions to the challenges in today's manufacturing scenes, and dramatically accelerate automated production to maximize your return of investment.



PRODUCTS C

Single-axis robot

GX series/YLE series



Find the full lineup of products you need to build an automated assembly line here.

All product models employ highly efficient, highly accurate ground ball screws as the standard features. The high precision models proudly with high reliability and durability. Available in 180 variations, the YLE series are single-axis robots using stepping motors.

GX series

All models equipped with ground ball screws

All product models employ highly efficient, highly accurate ground ball screws as the standard features. The lead accuracy complies with JIS accuracy class C5 that brings about the positioning accuracy repeatability of ±5 μm. The accuracy is about two times better than the previous. This highly accurate positioning accuracy repeatability improves yield, too. In addition, the unit is quieter with a longer service life.

- Accuracy to JIS **C5**
- Made to the **clean specification** as a standard feature
- Positioning accuracy repeatability **±5 μm**

YLE series

Rich lineup

Type	Model	Variation
6	69	180



PRODUCTS D

SCARA robot

YKX series



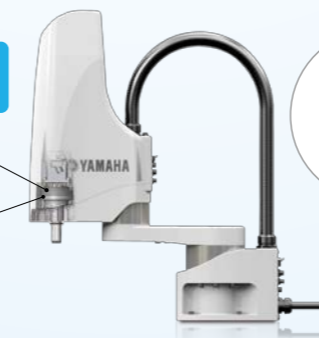
High speed, high accuracy, and high rigidity leading industry

Direct drive (no belt) design and reinforced drive mechanism enabled industry's shortest cycle time.

Hollow structure motor coupled directly with reduction gears

Hollow structure motor

Reduction gears (harmonic drive)



Standard cycle time : **0.28s**

User friendly design

Standard feature **Wiring & piping**

Products with wiring and piping running inside are optionally available.

Standard feature **Utility taps**

Maintenance free

Completely eliminating belts

PRODUCTS E

Robot camera

YFAEYE

A single robot camera manages a series of processes from capturing photographs to image processing.

Special knowledge on image processing is not required. Camera automatically sets up appropriate parameters that would require skilled personnel. Extremely user friendly camera makes image processing far easier than anyone could imagine.



- High performance**
5 million pixels
Equipped with CMOS sensor
Monochrome / color
- Achieves high speed processing at high frame rate**
Photographing speed **70 fps** (12bit)
- Photographing speed **105 fps** (8bit)

Compatible with a variety of image processing tasks

- Inspection for presence/absence
- Position detection
- Character code identification
- Measurement
- Color identification