

Efficiency of time and space in production

Linear Conveyor Module

LCMR200

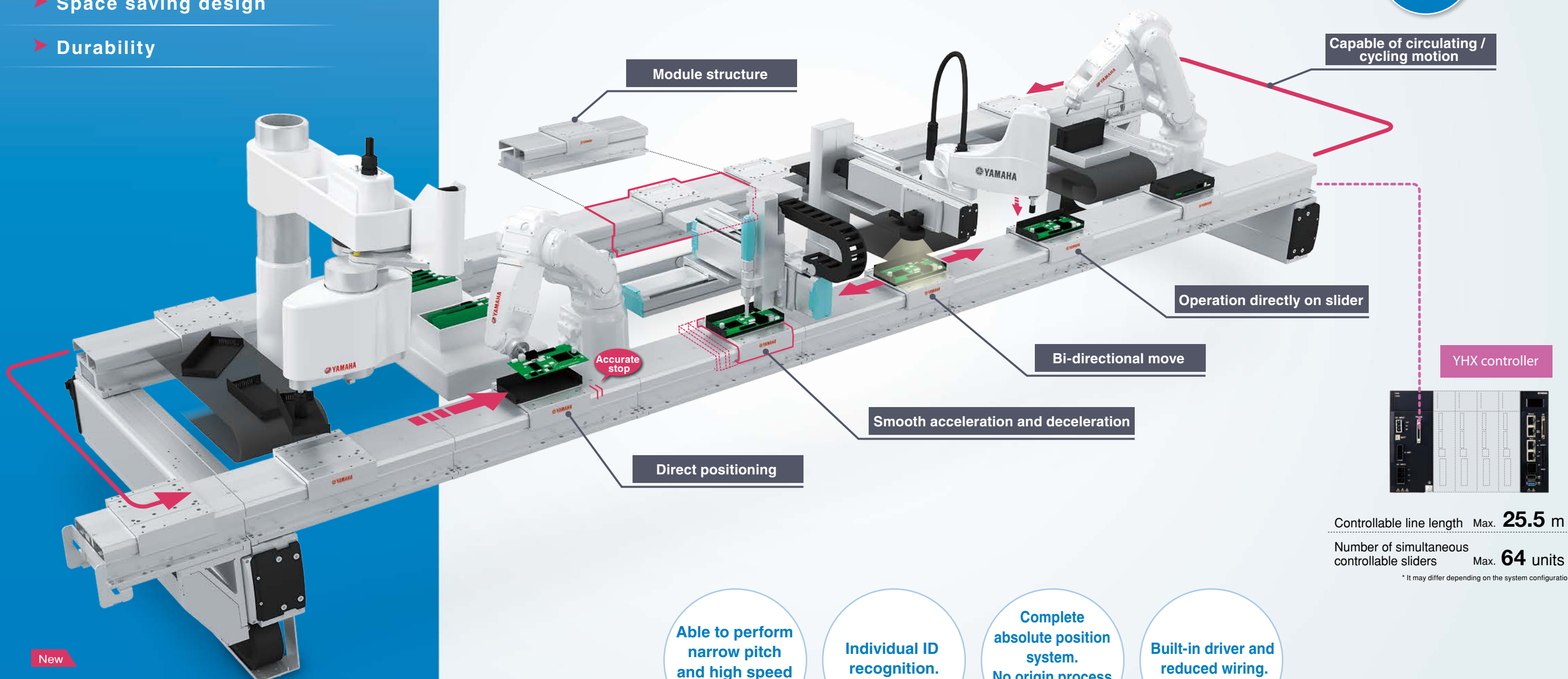


Yamaha's answer to Next Generation of
Production Line design

- Reduction of Tact Time in transportation
- Flexibility in line design
- Easy maintenance
- Low operation cost
- Improved Productivity
- Reduces line design time
- Space saving design
- Durability

Adding productivity to transportation process

Convert transfer process into “value-added” assembly process



New

LCMR200

Linear Conveyor Module

Able to perform narrow pitch and high speed transport.

Individual ID recognition.

Complete absolute position system. No origin process needed.

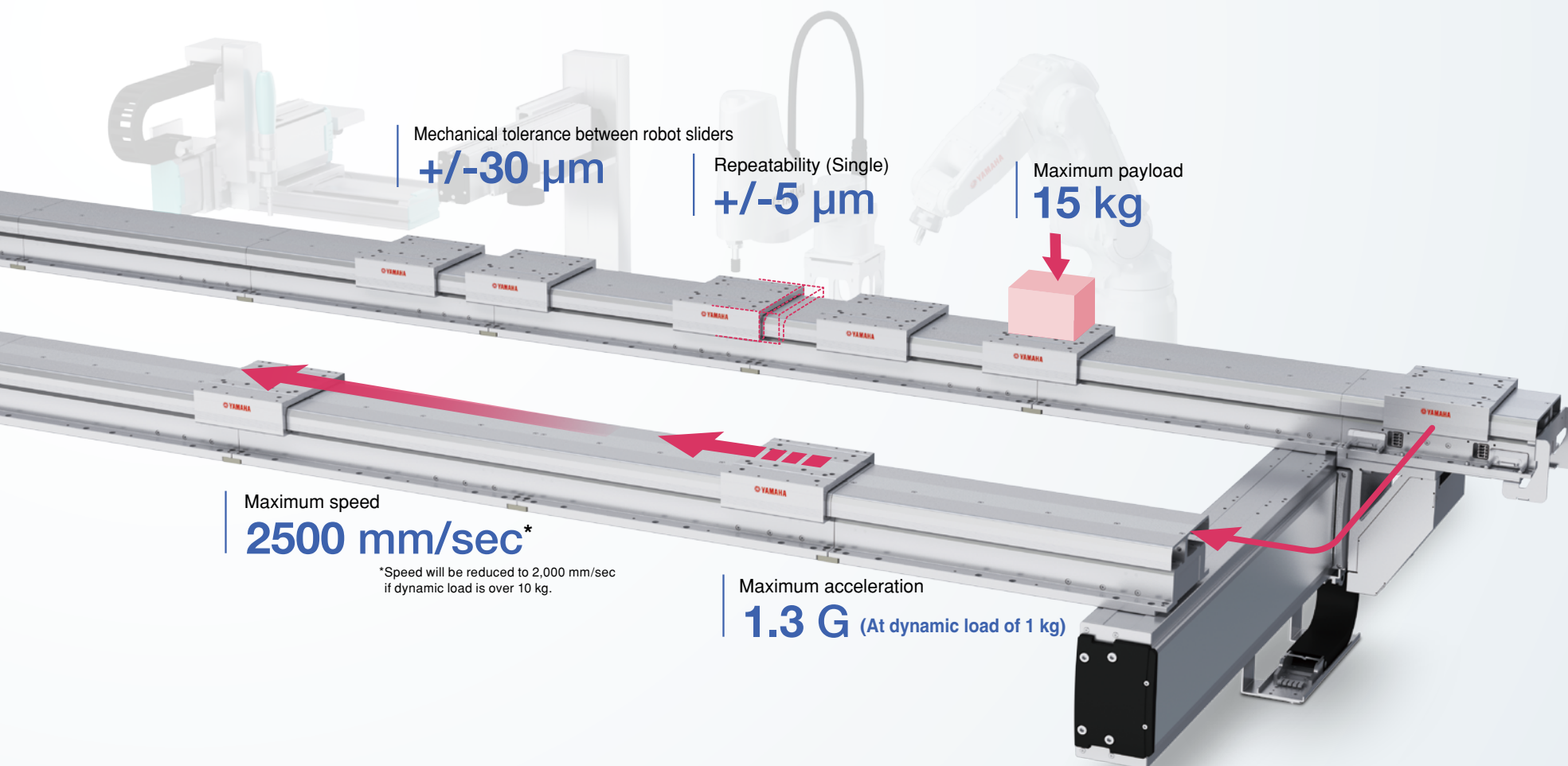
Built-in driver and reduced wiring.

Controllable line length Max. **25.5 m** *

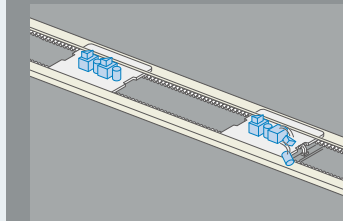
Number of simultaneous controllable sliders Max. **64 units** *

* It may differ depending on the system configuration.

Advanced linear conveyor module with high speed transport.

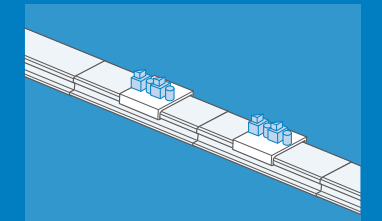


LCMR200 vs Conventional Conveyor System



Conventional type conveyors

- Mechanical stoppers or sensors are required at each stop position.
- Complicated control due to various conveyor components.
- Stopper adjustments are required each time the stop position is changed.
- Fixed productivity rate.
- Various adjustments required



New LCMR200

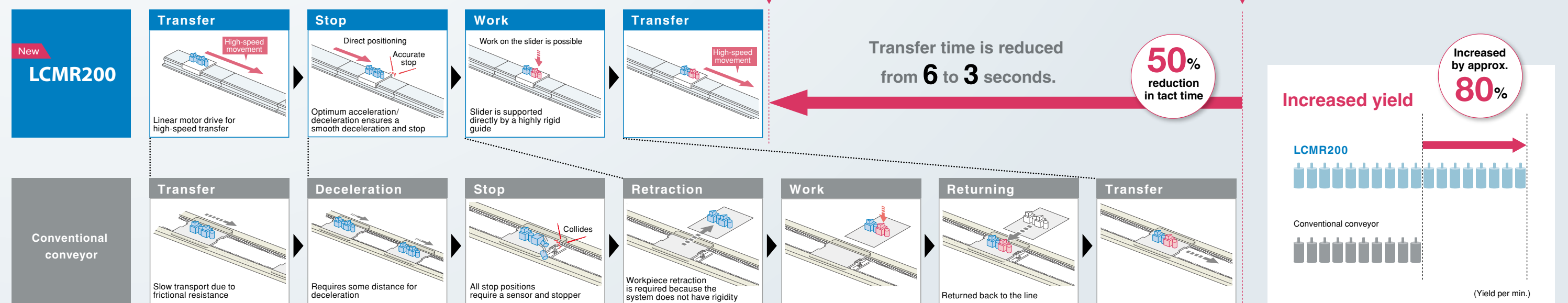
- Direct driving of the slider.
- Stop positions are controlled with position data in program.
- No mechanical stoppers or external sensors required.
- Maximum speed of 2.5 m/sec for better transfer time.
- Adjustable transfer speed for total line flow coordination.
- Actual task times can be easily monitored.

Speed control	△ Same speed required on entire conveyor	○ Able to specify the speed and acceleration speed individually.
Operation control	× One (fixed) direction	○ Bi-directional and distance can be set individually for each carriage
Travel / Stops	× Physical impact at mechanical stop	○ Smooth servo-controlled acceleration, deceleration, and incremental move
Number of system components	× Stopper or sensor required at each stop position	○ No mechanical components required for stop position
Accuracy	△ Additional support is required to increase accuracy	○ Mechanical tolerance between sliders (between total sliders) +/- 30 μm
Rigidity	△ Additional support is required to ensure rigidity	○ Assembly work can be performed directly on carriage supported by high-rigidity guides
Line flow changes	× Requires stopper adjustments at each line flow change	○ Simple modification of line layout by modular design. Stop position can be changed in program
Footprint	△ Certain space is required	○ Space saving design

From ordinary “passive flow” to “active position transport”.

By converting conveyor flow into active production process improves profitability.

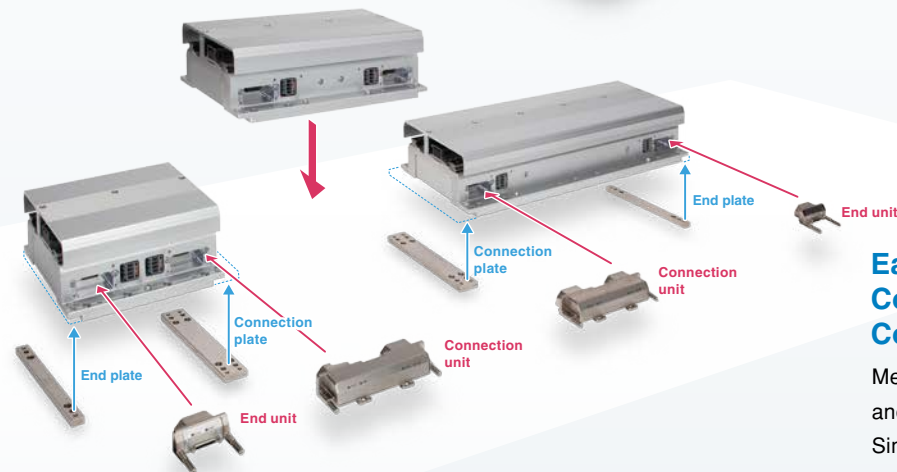
Reduce transport time. <Comparison between LCMR200 and a conventional conveyor>



Note. May vary depending on conditions

Subject to user's operation setup.

Superior performance that improves the transfer environment.



Easy modular connection with Connecting Plate and Connecting Unit

Mechanical connection by Connecting Plate and signal communicating by Connecting Unit. Simple yet, secured connecting method of modular system.

No origin process needed

Newly developed high-precision full-range absolute server eliminates the need for return-to-origin. The operation can be started and stopped easily, so there is no time loss even when starting or restarting.

High acceleration rate

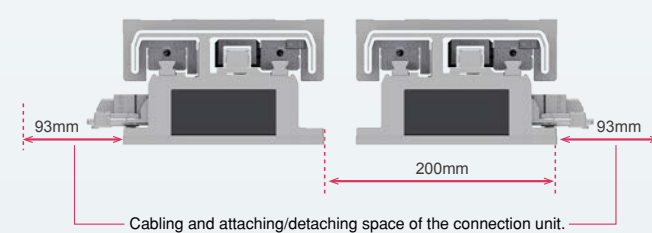
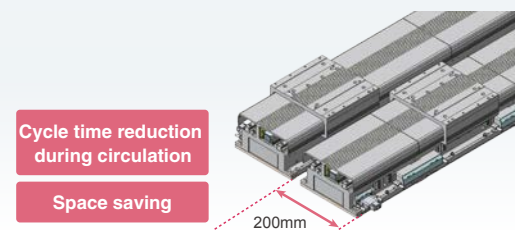
High speed motion between an extremely short distance is possible even in a high density process or pitch feed.

Recognize slider's individual IDs

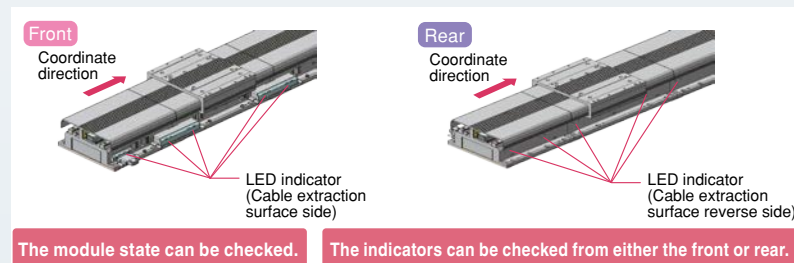
All sliders can be identified when the power is applied.

Saves space through proximity installation of forward and returning modules

<Cable extraction direction can be selected Front Rear >



Since the cable extraction direction of a module can be selected, the degree of freedom in electrical wiring is improved when installed on the equipment. In particular, when the cable extraction direction is reversed on the forward and returning modules in the horizontal circulation layout, the module pitch can be made close to the shortest level of 200 mm. This can shorten the cycle time and reduce the installation space during circulation. In addition, the LED indicators that show the module state can be visually checked from both the front and rear sides of the module.



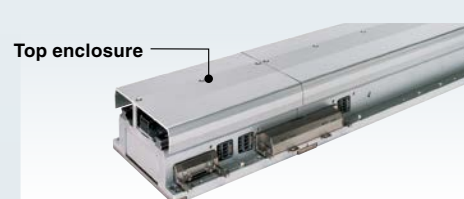
All the sliders can be operated / programmed independently.

Speed and acceleration can be programmed by each move. All carriages can be controller individually.



Top enclosure design for protection.

Top enclosure was designed to protect internal mechanism from any fallen object during line setup process.

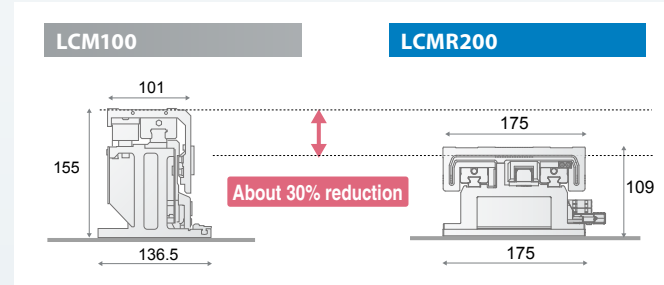


Mechanical tolerance between sliders +/-30 μm (Dowel hole standard)

Due to its machined accuracy, each carriage has own tolerance at one stopping point, however, LCMR200 can limit the slide machine difference to +/-30 μm, and is suitable for high precision process. As RFID, etc. is not necessary, cost reduction is possible.

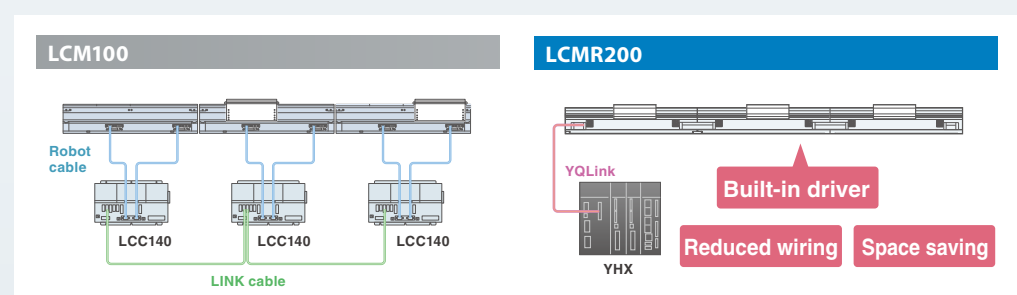
Low profile structure

By adopting a newly developed linear motor, the module height is approx. 30 % down compared to LCM100. The space under the frame can be effectively utilized.



Built-in driver saves electrical wiring

Motor driver is incorporated inside module and entire LCMR200 is controlled by YHX controller through YQLink cable. It also contributes to space saving inside the control panel.



Concentrated control by the YHX controller

Including the operation environment, all sliders and single-axis robots on the transfer process can be controlled.

Simple control with the standard profile

According to the commands from the host PLC, it adopts a simple control method that operates the sliders and single-axis robots as positioners <See Page 12 for detail>.



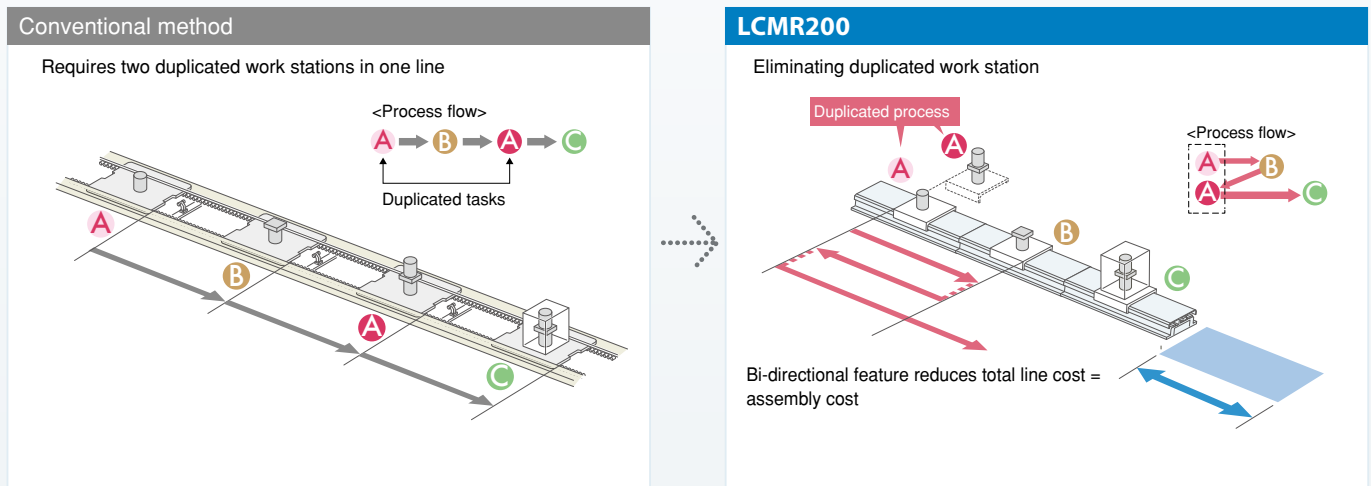
Versatile and value added transport between work process.

Improve cycle time and reduce line floor space.
Increase productivity and cost performance.

Process sharing

Direct drive Slider backward travel

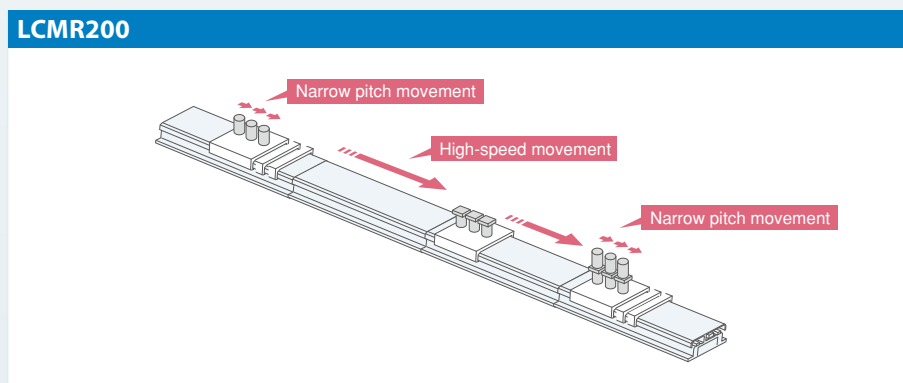
- Carriage is bi-directional and one work station can perform more than one task. Saving total line cost and floor space.
- High speed bi-directional move and simultaneous independent operation of multiple carriages.



Variable speed control between work stations.

Direct drive Narrow pitch operation

- Servo controlled direct drive eliminates mechanical stoppers and position sensors.
- Simple position setting by entering point data in a program.
- Flexibility in setup for production lot change
- Saving flow time by narrow pitch incremental move and high speed move.



Easily serviceability = Easy troubleshooting

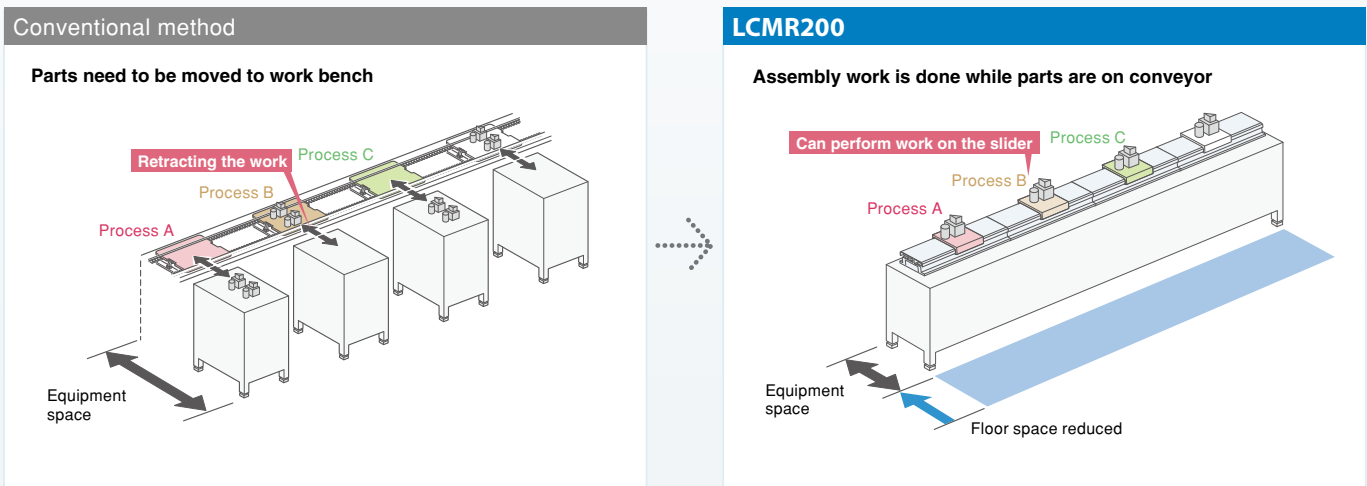
- Covered structure of module keeps internal mechanism free from foreign objects
- The environment-resistant magnetic sensor is resilient to contamination.
- Easy positioning with no precision setting.
- Non-contact motor and linear scale design eliminates mechanical wearing
- Low particle generation (only mechanical contact is guide rail)
- Standardized components reduce spare parts SKU.
- Parts can be replaced easily.
- Operation can be restored just by replacing the slider or linear module, and the manufacturing line down time can be kept to a minimum.



Assembly can be done while parts are on conveyor

Highly rigid guide

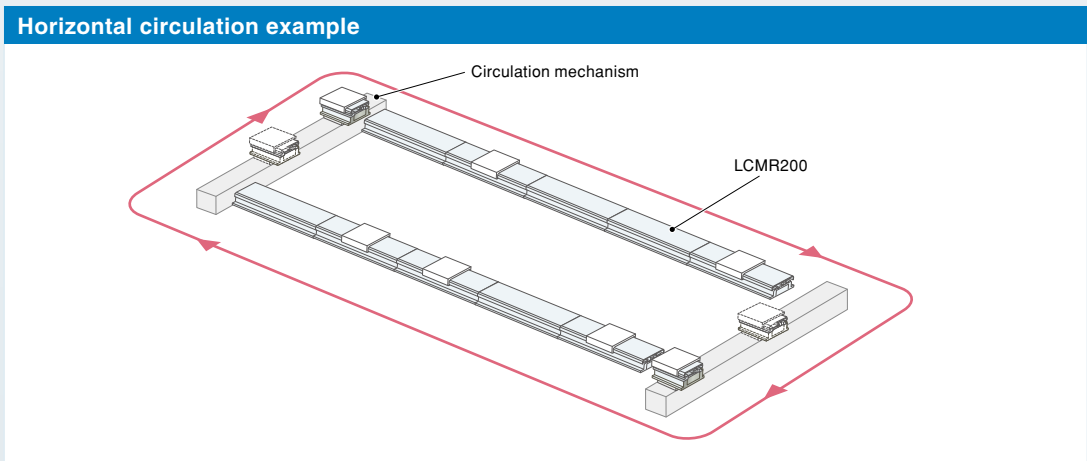
- The highly rigid guide enables assembly and processing on the transport line.
- No need to reposition parts to/from conveyor. Floor line space is reduced substantially.



Sleek and simple configuration.
Simplified line design process with flexibility and efficiency by modular concept.

All carriages and peripheral linear robots can be controlled by PLC through one YHX controller.

- Layout example with a combination of the module and circulation unit.





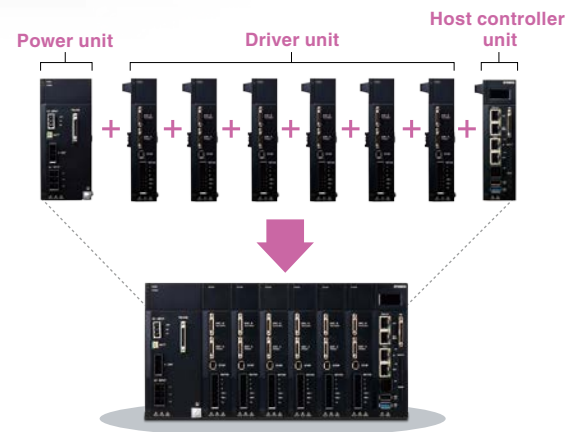
Linear conveyor module "LCMR200" can be controlled via YHX controller from the host PLC.

YHX controller

Reduces production line configuration time

Stacking modular structure

No wiring between modules needed.



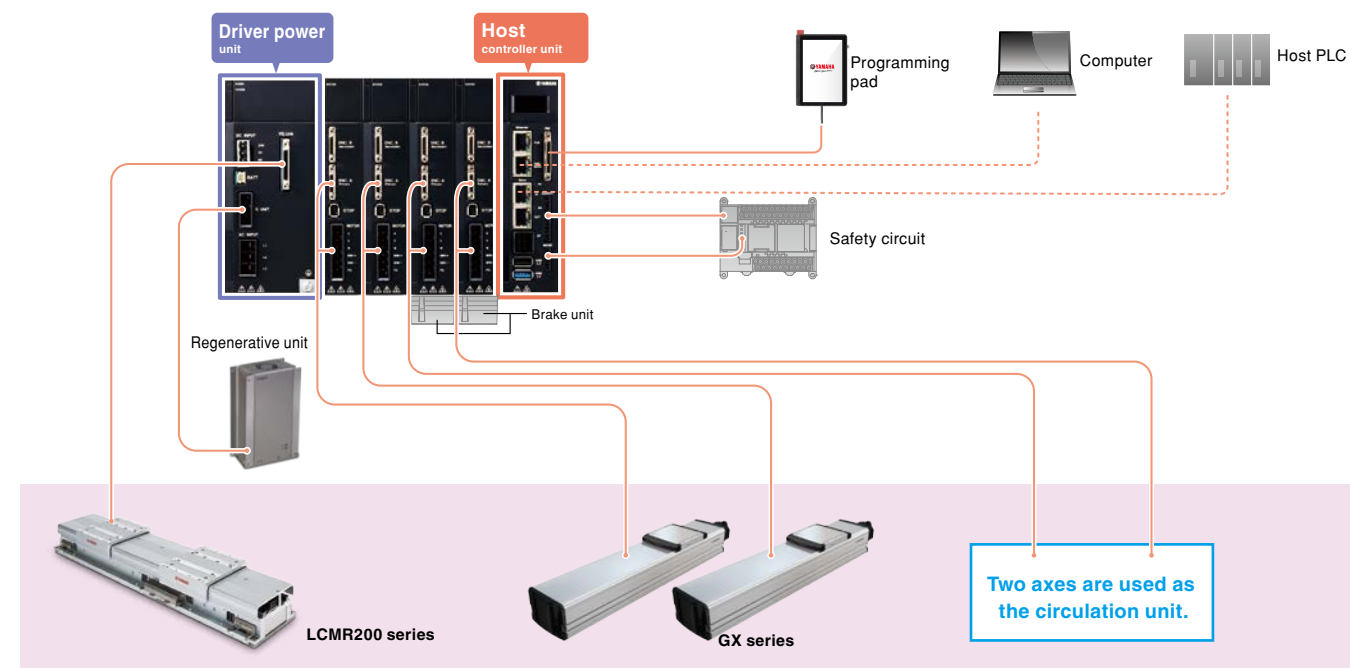
Incorporation a control power supply, motor drive power supply, high speed network communication, safety circuit into a stacking modular structure. Eliminates wiring between units, reducing conventional wiring cost and wiring man-hour to 30% to 50%. The stacking structure including host, power and driver is the very first in the industry.

Typical photo image of stacking structure



Driver unit
up to 16 units
Stackable

Configuration example

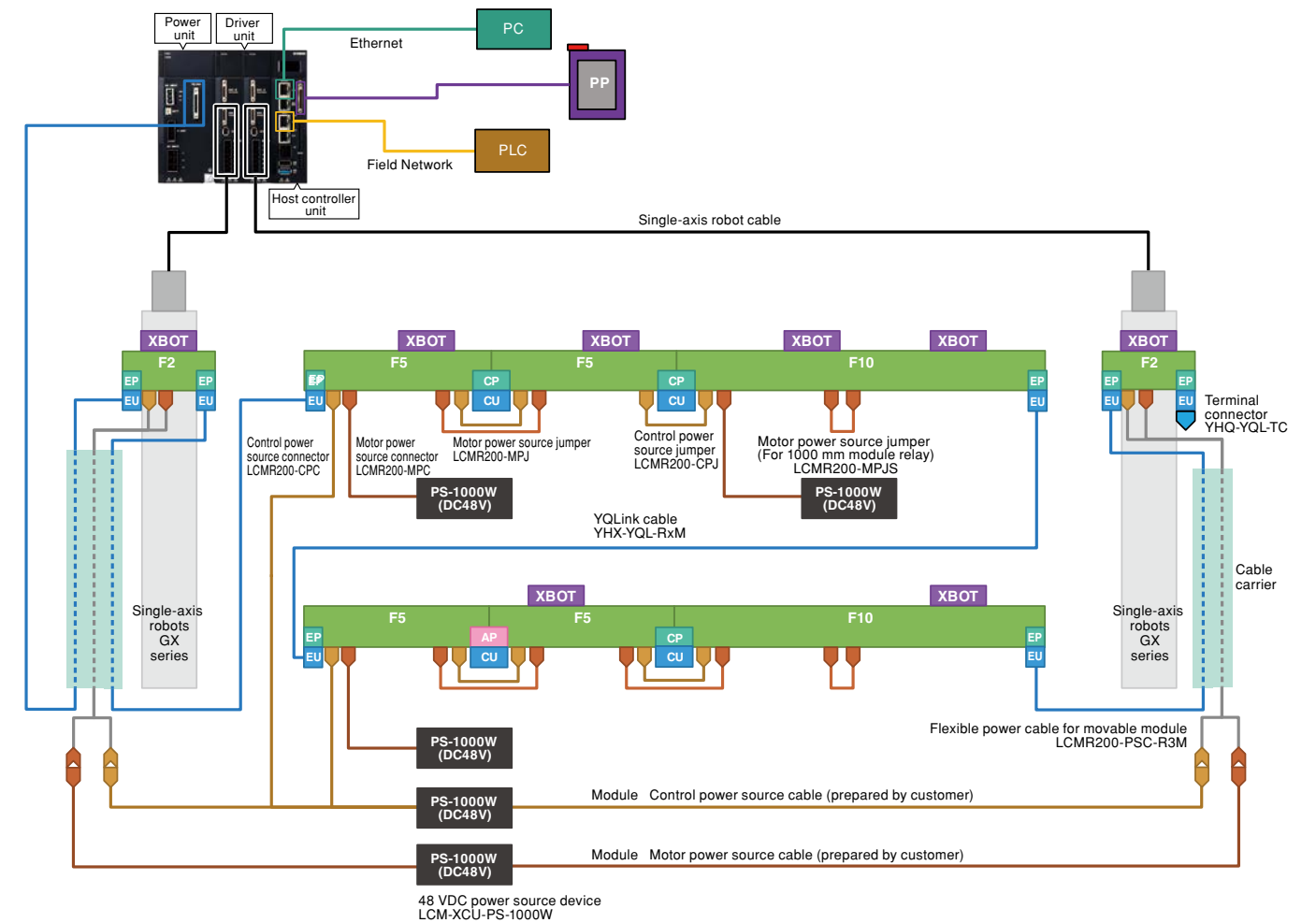


System configuration diagram

Configuration example

One way 2000 mm, vertical circulation transport line

* 200 mm linear model and single-axis robot are used for circulation section

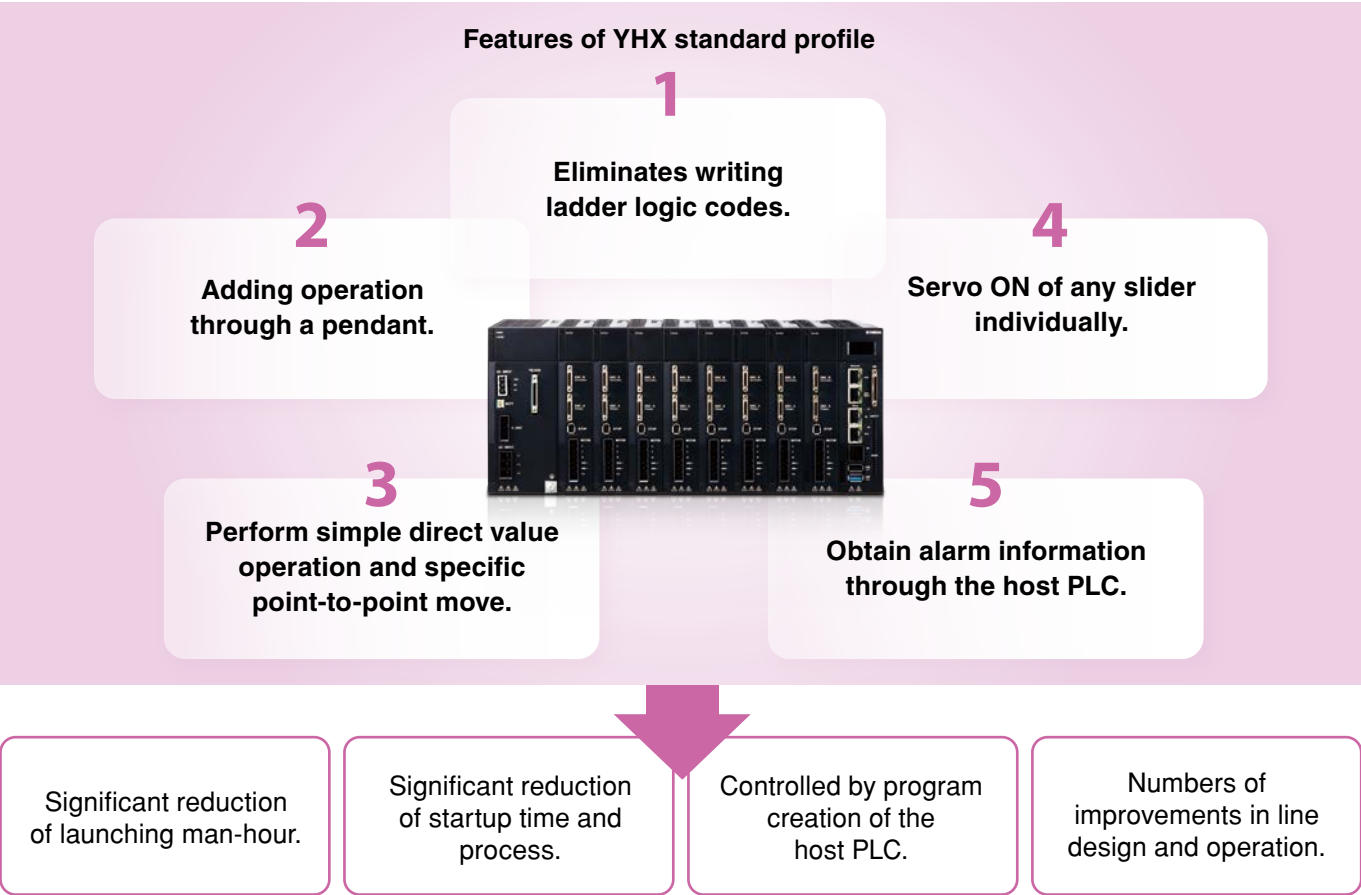


Icon	Name	Description
	Linear module	Size of modules selected here is for reference only. The cable extraction direction can be selected in units of cluster (multiple linear modules are connected to configure one line). A linear module used in the circulation part is also common.
	Robot slider	A slider that operates on the linear module.
	End plate	Position a linear module on both ends of a cluster.
	Connection plate	The adjacent modules are positioned and connected.
	Adjuster plate	This adjuster plate is used to adjust the return line length to match the reference line.
	End unit	Connect with the YQLink cable or YQLink terminal end unit on both ends of a cluster.
	Connection unit	Between module communication of adjacent modules is connected.
	Control power supply connector	A connector to supply control power source from 48 VDC power source to the linear module.
	Control power source jumper	A jumper cable to supply control power source to adjacent modules.
	Motor power source connector	A connector to supply motor power source from 48 VDC power source to the linear module.
	Motor power source jumper	A jumper cable to supply motor power source to adjacent modules.
	Motor power source jumper (for 1000 mm module relay)	A jumper cable to relay motor power source in 1000 mm module. When 3 to 4 robot sliders stop in 1000 mm module, remove this motor power source jumper, and connect the power source device for additional motor with the motor power source connector.
	YQ Link cable	A communication cable between each linear module cluster and the controller. As shown in the above figure, connect from left to right with one line. Connect the YQLink end connector to the terminal of the end cluster.
	48 VDC power supply	General-purpose 48 VDC power source device that can be applied to both control and motor operations. With one power source device, 10 m module control power source can be supplied. Also, one power source device can supply motor power source of two robot sliders. Prepare power source devices for each control power source and motor power source.
	Flexible power cable for movable module	Flexible cable to supply power source to the module that performs reciprocal operation mainly in the circulation part.

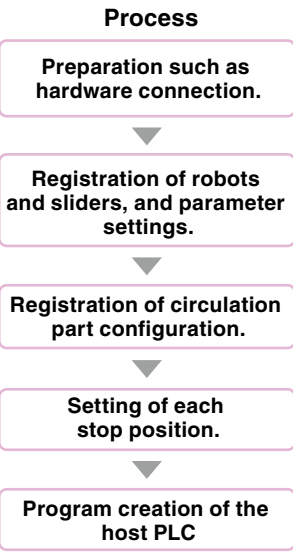
YHX Standard Profile

What is a standard profile

A project file for LCMR200 that moves a single-axis robot and LCMR200 as a positioner via field network from the host PLC.



Implementing a task is simple and easy



Standard profile specification

Applicable controller	YHX-HCU	
Operation method	Point trace point No. specified positioning and direct value coordinate specified positioning.	
Comparative robot	LCMR200, LCM-X and GX series (LCMR200 and LCM-X cannot be controlled together).	
Interface	YHX Studio, YHX-PP, and field network communication	
Operation type	Absolute position moving	
Maximum number of points that can be registered.	65535	
No. of control axes (Total of sliders and single-axis robots, however, up to 16 axes for single-axis robot)	EtherCAT	64
	EtherNet/IP™	64
	PROFINET	64
	CC-Link	22
Main input and output See the manual for other functions.	All axes target input	Servo ON/OFF switch/Interlock/Alarm reset
	All axes target output	Servo State/Interlock State/Alarm State/Heart beat/Emergency stop State
	Individual axis target input	Servo ON/OFF switch/Return to Origin/Positioning moving inside the control range (including LCM relay operation)/Slider insertion preparation from outside the control range/Slider discharge to outside the control range/Jog movement, inching movement/Movement Stop
	Individual axis target output	Servo State/Return to origin State/Output specified point No. for various execution state display/Current position/Axis alarm State
Main remote command See the manual for other remote commands.	Writing/reading of setting data	
	Alarm check	
	Writing and reading of integrated running distance and No of transits.	

Basic specifications of LCMR200

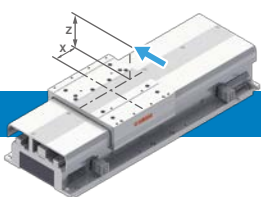
Drive method	Linear motor with moving magnet type core	
Position Search	Magnetic absolute position sensor	
Maximum payload	15 kg	
Maximum speed	2,500 mm/sec ^{*1}	
Repeatability	±5 μm	
Mechanical tolerance between robot sliders	±30 μm (Dowel hole standard)	
Total stroke limit	25.5 m ^{*2}	
Maximum number of robot sliders	64 units ^{*2}	
Minimum spacing between robot sliders	210 mm ^{*3}	
Main frame dimensions	Max. external size of frame cross-section	W175 × H109 mm (Including robot slider)
	Linear module length	200 mm / 300 mm / 500 mm / 1000 mm
	Robot slider length	198 mm
Weight	Linear module	Approx 20 kg [Per 1 m of linear module]
	Robot slider	2.4 kg
Power supply	Control power supply	48 VDC Required power [W] = 75 [W/m] × Overall length of module [m] ^{*4}
	Motor power supply	48 VDC Yamaha's designated model ^{*5}
Operating environment	Operating temperature	0 °C to 40 °C ^{*6}
	Storage temperature	-10 °C to 65 °C
	Operating humidity	35 % to 85 %RH [No condensation]
Controller	YHX controller ^{*7}	

*1. When the conveying weight exceeds 10 kg, it will drop to 2,000 mm/sec according to the weight.
*2. It may differ depending on the system configuration.
*3. When the jig palette to equip to the robot slider is longer, it shall be the jig palette length + 10 mm.
*4. Up to 13.3 m linear module can be supplied with the optional 1000 W power source.
*5. Up to 2 robot sliders can be supplied with the optional 1000 W power source.
*6. Operate LCMR200 in the temperature environment (±5 °C) that installation and adjustment were performed.
*7. The YHX controller requires a separate electrical power supply.

Allowable Load

Note. • When center of slider is center of gravity.
• Allowable load in the moving direction of slider is always 28 N regardless of the loading position.

Load: Horizontal Direction

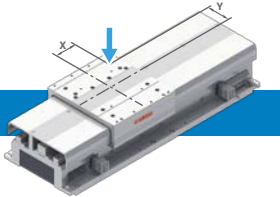


■ Payload: Common up to 15 kg.

Loading Position X [mm]	Loading Position Z [mm]					
	0	20	40	60	80	100
0	611	514	443	390	348	314
20	517	445	391	349	315	287
40	447	393	350	316	288	264
60	394	352	317	289	265	245
80	353	318	289	266	245	228
100	319	290	266	246	229	214

Unit: [N]

Load: Vertical Direction



■ Payload: 5 kg

Loading Position X [mm]	Loading Position Y [mm]					
	0	20	40	60	80	100
0	924	687	546	453	387	339
20	760	593	485	411	356	314
40	647	521	436	375	328	293
60	562	465	396	345	305	274
80	498	420	362	319	285	258
100	446	382	335	297	268	243

■ Payload: 10 kg

Loading Position X [mm]	Loading Position Y [mm]					
	0	20	40	60	80	100
0	874	650	517	429	367	320
20	721	561	459	389	337	297
40	613	493	413	355	311	277
60	533	440	375	327	289	260
80	471	397	343	303	270	244
100	423	362	317	282	254	231

■ Payload: 15 kg

Loading Position X [mm]	Loading Position Y [mm]					
	0	20	40	60	80	100
0	826	614	488	406	347	303
20	680	529	433	367	318	281
40	578	466	390	335	294	261
60	503	416	354	309	273	245
80	445	375	324	285	255	231
100	399	342	299	266	239	217

Unit: [N]

YHX controller

Controller

Order model: **YHX-HD**

Controller

Language

J (Japanese)

E (English)

Network

N : None

CC : CC-Link^{*1}

PT : PROFINET^{*2}

EP : EtherNet/IP^{*3}

ES : EtherCAT^{*4}

^{*1}. CC-Link is a registered trade mark of Mitsubishi Electric Corporation.

^{*2}. PROFINET is a registered trade mark of PROFIBUS Nutzerorganisation e.V. (PNO).

^{*3}. EtherNet/IP is a registered trade mark of ODVA, Inc.

^{*4}. EtherCAT is a patented technology and a registered trademark licensed by Beckhoff Automation GmbH (Germany).

The YHX-HD is a set model of the host controller unit, driver power unit, and related components shown below. Each unit should be assembled by the customer.

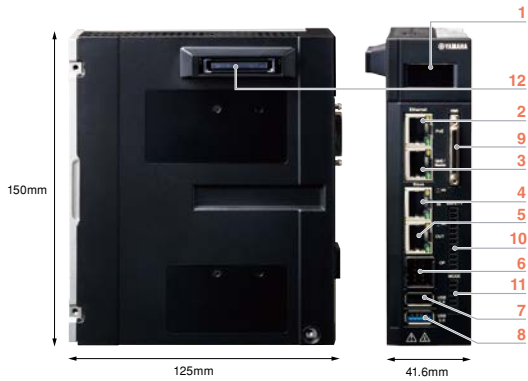


YHX-HD Configuration parts

►Control unit

Host controller unit

Host



1	LCD	Indicates the status of the controller.
2	PoE	PoE compatible giga bit Ethernet connector.
3	GbE	PoE non-compatible giga bit Ethernet connector.
4	IN	LAN connector for connecting with master devices of field network communications connector (EtherNet/IP, EtherCAT, PROFINET)
5	OUT	LAN connector for connecting with other slave devices of field network communications connector (EtherNet/IP, EtherCAT, PROFINET)
6	OP	Connector for field network communications adapters (CC-Link)
7	USB 2.0	Connector compatible with USB 2.0
8	USB 3.0	Connector compatible with USB 3.0
9	HMI	Connector for connecting with a programming pad, display and other devices
10	SAFETY	Connect with external PLC, safety devices and the like.
11	MODE	CPU OK output Programming pad AUTO/MANUAL select switch contact output
12	Connector for connection between units (control signal/Power)	

This unit can control multiple robots by combining with the linear conveyor. Although the unit is compact, it is multifunctional and has an enhanced interface.

Japanese	Model	YHX-HCU
	Parts No.	KEK-M4200-0A
English	Model	YHX-HCU-E
	Parts No.	KEK-M4200-1A



Safety connector

Host YQLink

Used for building up an external safety circuit while connecting with the safety dedicated port of a host controller.

Model	YHX-CN-SAFE
Parts No.	KEK-M4432-00



Mode connector

Host

Used for building up an external safety circuit while using the mode switch output port of a host controller unit.

Model	YHX-CN-MODE
Parts No.	KEK-M4432-10



HMI short circuit connector

Host

Used when a programming pad is not connected with a host controller. Note that if not connected, robots do not operate because the controller enters the state of emergency stop.

Model	YHX-CN-HMIS
Parts No.	KEK-M4429-00



►Power unit

Driver power unit

D. Power



1	POWER	Blue: 24 VDC control power supply is available.
2	CHARGE	Orange: 200 VAC main power supply is available and Charge*
3	DC INPUT	Control power supply connector (24 VDC)
4	BATT	ABS battery connector
5	R.UNIT	Connector for connecting regenerative unit
6	AC INPUT	Main power supply connector (Single phase / 3-phase 200 to 230 VAC)
7	YQLink	YQLink communications connector Connects with IO units and linear conveyor modules.
8	⏏	Grounding terminal
9	Connector for connection between units (control signal/Power)	
10	Connector for connection between units (high voltage power source for driving motors)	

* Even when the main power is turned off, the lamp is lit while any charge remains in the internal capacitor. Do not touch the main circuit and motor terminal while the lamp is lit. Doing so may cause electrical shock.

This unit supplies power to each unit. Be sure to use it together with the host controller unit or a YQLink expansion unit. Use the dedicated cables to connect with linear conveyor modules.

Model	YHX-DPU
Parts No.	KEK-M5880-0A



Control power supply connector

D. Power

Used when supplying the control power supply.

Model	YHX-CN-CP
Parts No.	KEK-M4512-00



Main power supply connector

D. Power

Used when supplying the main power supply.

Model	YHX-CN-DP
Parts No.	KEK-M5382-00



Regenerative unit short circuit connector

D. Power

Used when not connecting a regenerative unit. An error is generated if the short circuit connector of a regenerative unit is not connected.

Model	YHX-CN-RUS
Parts No.	KEK-M4431-00



Selection options

Field network

EtherCAT slave

Model	YHX-NWS-ECAT
Parts No.	KEK-M440A-A0

EtherNet/IP adapter (slave)

Model	YHX-NWS-ENIP
Parts No.	KEK-M440A-E0

PROFINET slave

Model	YHX-NWS-PFNET
Parts No.	KEK-M440A-N0

CC-Link slave (with adapter and connector)

Model	YHX-NWS-CCL
Parts No.	KEK-M440A-C0



Connector for CC-Link

CC-Link connector

Model	YHX-CN-CCL
Parts No.	KEK-M4872-C0



CC-Link branch-out connector

Model	YHX-CN-CCSP
Parts No.	KEK-M4873-00



<Cautionary notes on field networks>

The YHX controllers are not equipped with a field network board.

Entering the activation code, which is issued for each host controller, into the host controller unit enables field network functions.

The activation code certificate comes with a host controller unit.

* If purchasing a field network only later on, inform us of the serial number of the host controller unit because it is necessary to issue the activation code.

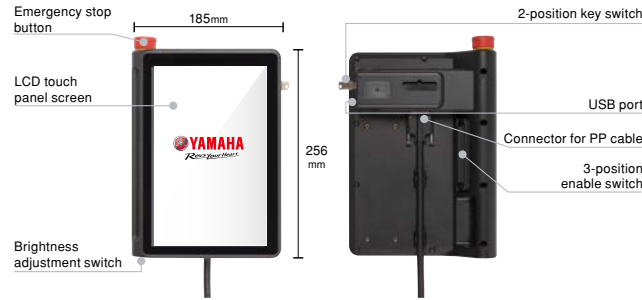
* When the CC-Link option is selected, the CC-Link adapter × 1, CC-Link connector × 2, and CC-Link branch connector × 1 are supplied with the product. When the CC-Link terminating connector is needed, order it separately.

The parts with the marks below are their respective constituent parts. Host ... Host controller unit D. Power ... Driver power unit Regenerative unit ... Regenerative unit YQLink ... YQLink expansion Drivers ... Driver unit

YHX controller

Programming pad (cable set)

Order model: **YHX-PP6L** (KEK-M5110-0B)



Use the touch panel screen for various operation. Equipped with safety functions (emergency stop button and enable switch) and a USB connector.

Programming pad

Model	YHX-PP
Parts No.	KEK-M5110-0A

Programming pad cable

Host

Used when connecting a programming pad.

6 m	Model	YHX-PP-6M
	Parts No.	KEK-M5362-61



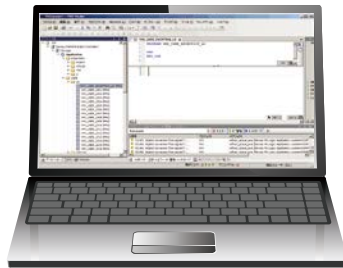
Software YHX Studio

Order model: **YHX-SW-STUDIO**

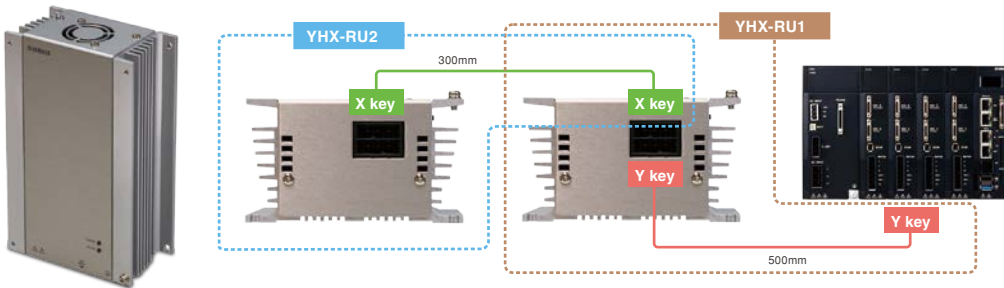
The YHX Studio is a software program for programming and adjusting a YHX controller.

PC operating environment	OS	Windows 7 SP1/8/8.1/10 (64-bit version only for all)
	CPU	Equivalent to Intel Core (TM) i5-6200U 2.30 GHz or better.
	Memory	8 GB or larger
	Hard disc drive capacity	2 GB or more of empty space for destination of installing the YHX Studio.
	Communications port	Ethernet
	Display	1920 x 1080 or higher resolution is recommended.
	Other	Ethernet cable (Category 5 or better) USB port: One port (for USB key)
Applicable controllers		YHX Host controller unit
Applicable robots		Robots connectable to YHX

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Regenerative unit set



Absorbs regenerative energy generated during decelerating a robot with a large motor. Connecting two increases the capacity to absorb regenerative energy to two times.

Absorbable electric power	100 W (Equivalent to RGU 3) * 200 W when 2 are connected
Momentary maximum power	1600W
Number of connected units	Maximum 2 units
Other	Forced cooling and exhaust by fan Overheat detection for protection

Regenerative unit

Order model: **YHX-RU1** (KEK-M4107-0A)

Regenerative unit

Model	YHX-RU
Parts No.	KEK-M5850-0A



Regenerative unit connection cable

D. Power Regenerative unit

Used when connecting a regenerative unit.

0.5 m	Model	YHX-RU-50C
	Parts No.	KEK-M5363-00



Regenerative unit (For expansion)

Order model: **YHX-RU2** (KEK-M4107-0B)

Regenerative unit

Model	YHX-RU
Parts No.	KEK-M5850-0A



Regenerative unit expansion cable

Regenerative unit

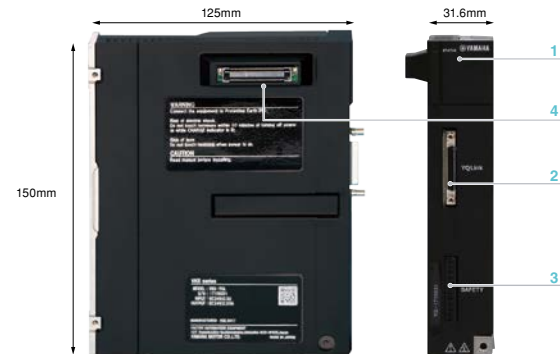
Used when adding a regenerative unit.

0.3 m	Model	YHX-RU-EX30C
	Parts No.	KEK-M5364-00



YQLink expansion unit set

Order model: **YHX-YQL-SET** (KEK-M4406-0B)



1	STATUS	Blue: 24 VDC power supply available Red: Error
2	YQLink	Connect with YQLink communications connector (input) driver power unit.
3	SAFETY	Connect with external PLC, safety devices and the like.
4	Connector for connection between units (control signal/Power)	

This unit cancels the physical restrictions of the universal controller for its expansion.

YQLink

YQLink expansion unit

Model	YHX-YQL
Parts No.	KEK-M4406-0A

Safety connector

Host YQLink

Used for building up an external safety circuit while connecting with the safety dedicated port of a host controller.

Model	YHX-CN-SAFE
Parts No.	KEK-M4432-00



Other options

Battery holder box

Order model: **YHX-BATT-HLD**

D Power

Used to store the ABS batteries. Up to eight batteries can be stored.

Model	YHX-BATT-HLD
Parts No.	KEK-M53G7-00



Battery holder connection cable

Order model: **YHX-BATT-15C**

D Power

Used when the battery holder box is connected.

Model	YHX-BATT-15C
Parts No.	KEK-M53G4-00



CC-Link terminating connector

Order model: **YHX-CN-CCTM**

Model	YHX-CN-CCTM
Parts No.	KEK-M4874-00



STOP connector

Order model: **YHX-CN-STOIN**

Drivers

Used to shut off the drive power of each driver unit.

Model	YHX-CN-STOIN
Parts No.	KEK-M5869-10



Connector for brake power

Order model: **YHX-CN-BU**

Drivers

Used when the brake power is supplied externally. The driver is not needed when the brake power unit is used.

1 m	Model	YHX-CN-BU
	Parts No.	KEK-M4427-00



The parts with the marks below are their respective constituent parts.

Host

... Host controller unit

D. Power

... Driver power unit

Regenerative unit

... Regenerative unit

YQLink

... YQLink expansion

Drivers

... Driver unit

YHX controller

Driver for single-axis robot

Order model:

Driver	Presence of driver brake unit *	Battery
A30	V	B
	N	N

*1: When the external brake power is input, the brake unit cannot be used.

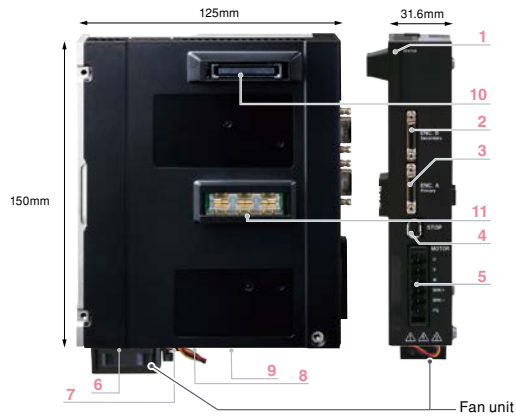
The customer assembles the necessary number of driver units between the host controller unit and driver power unit to use them.



► Driver units

Driver unit 30A

Drivers



This unit drives robots. Use cables to connect with robots. The unit is connected to the left of the control unit.

30A Specifications	Model	YHX-A30
	Parts No.	KEK-M5800-1A

Stop short circuit connector

Drivers

Used when it is not necessary to shut off the power supply to each driver unit separately.

Model	YHX-CN-STOEN
Parts No.	KEK-M5869-00

Fan unit

Drivers

Cools down a driver unit. Attached at the bottom of a driver unit to send wind to heat sinks. A driver unit made to the 30 A specification is shipped out with a fan unit.

Model	YHX-AMP-FU
Parts No.	KEK-M6195-00

Selection options

ABS battery

D. Power Drivers

Model	YHX-AMP-BATT
Parts No.	KEK-M53G0-00



Brake unit

Drivers

A unit for releasing braking effort of the robot* with a brake. Enables robot brake control without an external electrical wiring. Installed at the bottom of a driver unit.

Model	YHX-AMP-BU
Parts No.	KEK-M5317-00



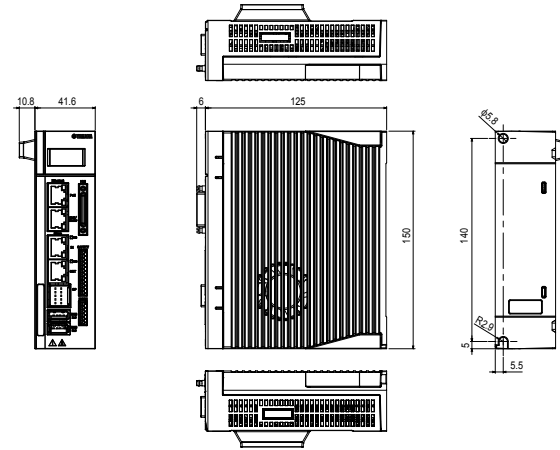
* Unable to release the braking effort of a robot with a brake if a brake unit is not available or if a 24 VDC power supply is not connected.

The parts with the marks below are their respective constituent parts. Host ... Host controller unit D. Power ... Driver power unit Regenerative unit ... Regenerative unit YQLink ... YQLink expansion Drivers ... Driver unit

External view of each unit

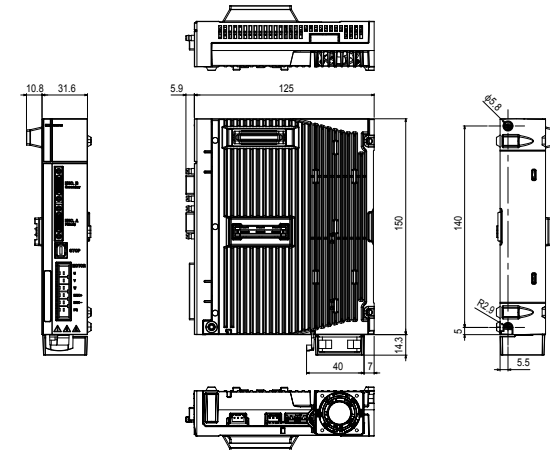
Host controller unit

YHX-HCU KEK-M4200-0A



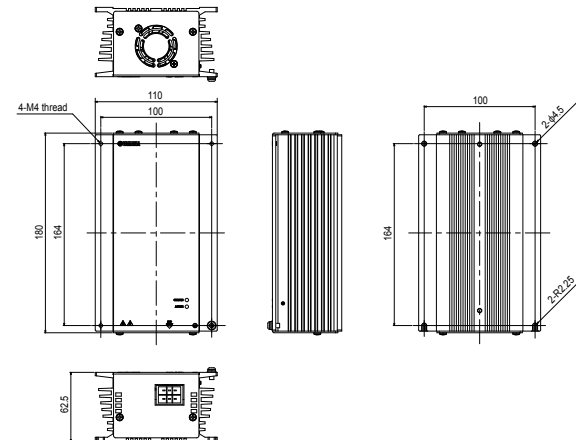
Driver unit 30A

YHX-A30 KEK-M5800-1A



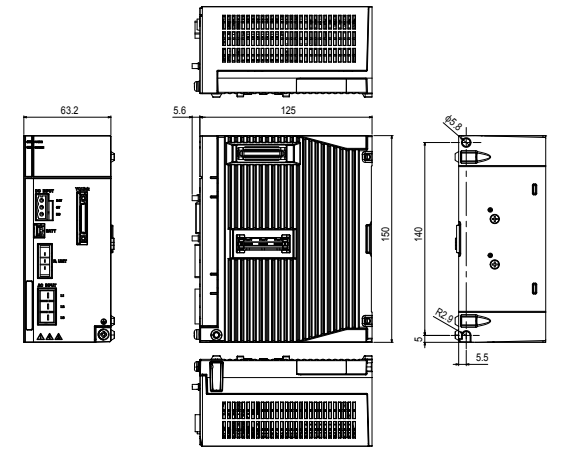
Regenerative unit

YHX-RU KEK-M5850-0A



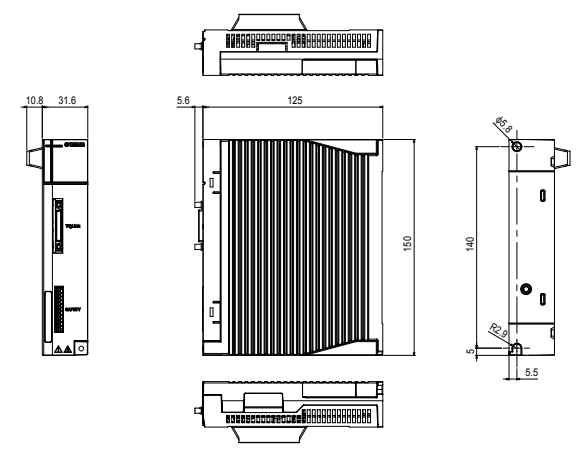
Driver power unit

YHX-DPU KEK-M5880-0A



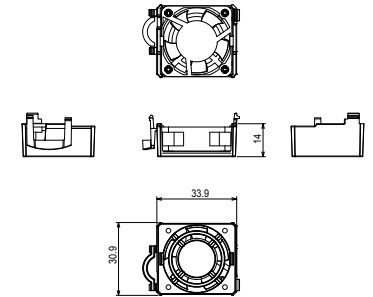
YQLink expansion unit

YHX-YQL KEK-M4406-0A



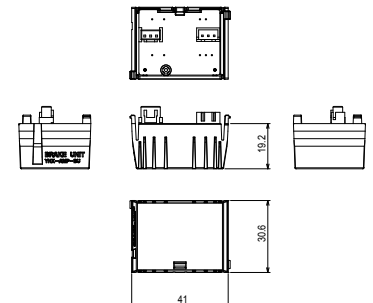
Fan unit

YHX-AMP-FU KEK-M6195-00



Brake unit

YHX-AMP-BU KEK-M5317-00



YHX controller

Basic specifications

Host

Host controller unit

Japanese	Model	YHX-HCU
	Parts No.	KEK-M4200-0A
English	Model	YHX-HCU- E
	Parts No.	KEK-M4200-1A

Item		Host controller unit
Power supply	Control power supply	Voltage: 21.6 to 26.4 VDC (24 V +/-10%)
		Current: 3.5 A (Including PoE)
Connector	External I/F	Giga bit Ethernet
		· Compatible with PoE yet 1 port (23 W)
		· Not compatible with PoE yet 1 port
		Field network (Slave) Select one from the following 4 kinds.
		· EtherCAT · CC-Link* · EtherNet/IP * A separate adaptor is necessary. · PROFINET
		USB
		· USB 2.0 1 Port (Bus power 0.5 A)
		· USB 3.0 1 port (Bus power 1.0 A)
	HMI	Connector for connecting programming pad
	SAFETY	Emergency stop contact output Enable switch contact output Emergency stop input
	MODE	CPU OK output Programming pad AUTO/MANUAL select key switch output
Indicator	LCD	128 x 64 dots, Yellow
Dimensions		41.6×150×125 (mm)
Weight		750g
Protection structure / Protection rating		IP20 / class 1

D. power

Driver power unit

Model	YHX-DPU
Parts No.	KEK-M5880-0A

Item		Driver power unit
Power supply	Control power supply	Voltage: 21.6 to 26.4 VDC (24 V +/-10%)
	Main power supply	Current: 0.5A
Connection motor capacity		Input: Single phase / 3-phase 180 to 253 VAC / (200 to 230 VAC +/-10%), 50/60 Hz
		Power supply capacity: Single phase 3.5 kVA 3-phase 6 kVA
		Single phase within 1.6 kW, 3-phase within 3.0kW / Driver unit within 16 units (16 axes)
Connector	Regenerative	Regenerative unit connector
	External I/F	YQLink
	ABS Battery	ABS Battery connector
Dimensions		63.2×150×125 (mm)
Weight		1050g
Protection structure / Protection rating		IP20 / class 1

Regenerative unit

Regenerative unit

Model	YHX-RU
Parts No.	KEK-M5850-0A

Item		Regenerative unit
Power supply	Input	254 to 357 VDC (Controller DCBUS connected)
	Connector	Regenerative connector (For connecting regenerative unit/ For adding regenerative unit)
Dimensions		62.5×180×110 (mm)
Weight		1450g
Protection structure / Protection rating		IP20 / class 1

YQLink

YQLink expansion unit

Model	YHX-YQL
Parts No.	KEK-M4406-0A

Item		YQLink expansion unit
Power supply	Control power supply	Voltage: 21.6 to 26.4 VDC (24 V +/-10%)
		Current: 0.3A
Connector	External I/F	YQLink
	SAFETY	Emergency stop input
Dimensions		31.6×150×125 (mm)
Weight		380g
Protection structure / Protection rating		IP20 / class 1

Driver

Driver unit

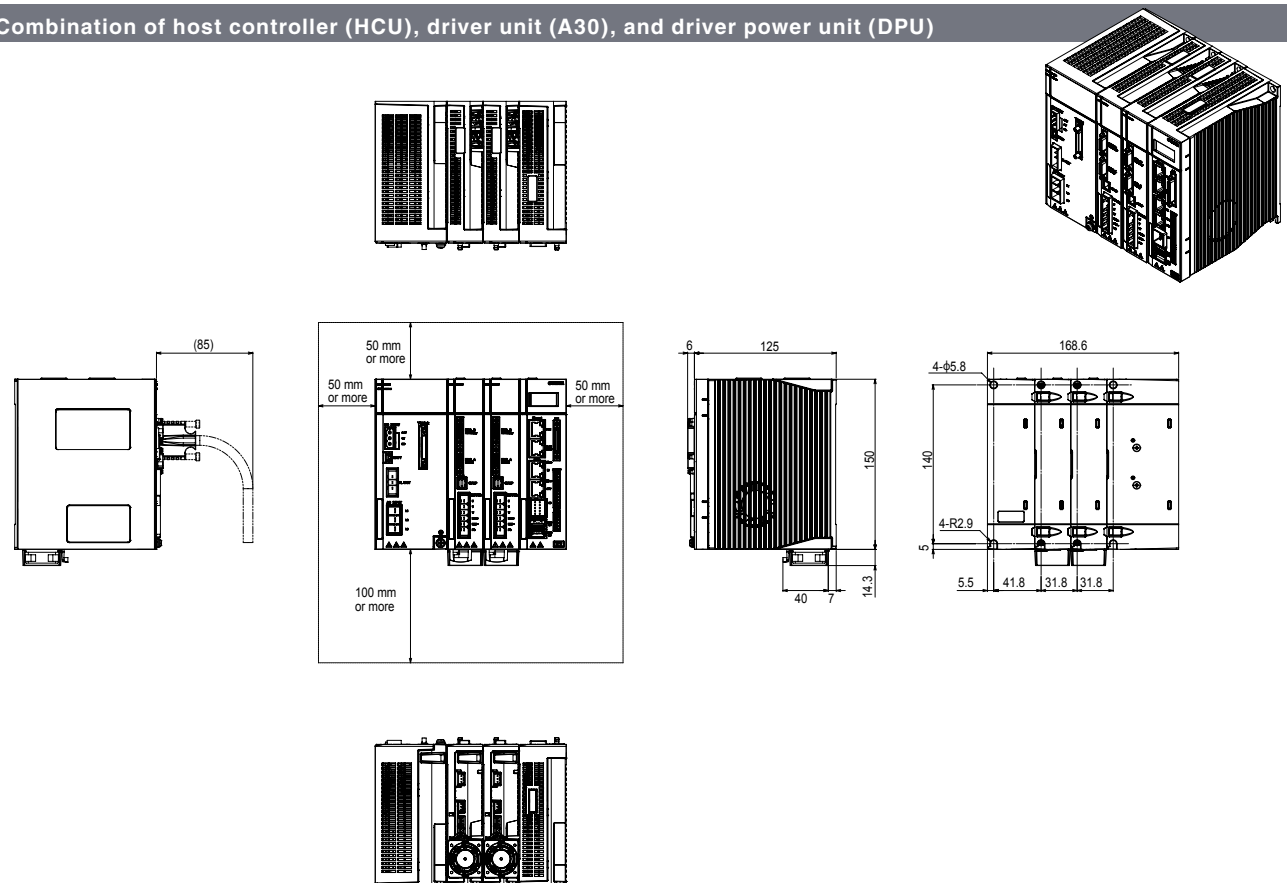
Servo motor specifications (30A)

Model	YHX-A30
Parts No.	KEK-M5800-1A

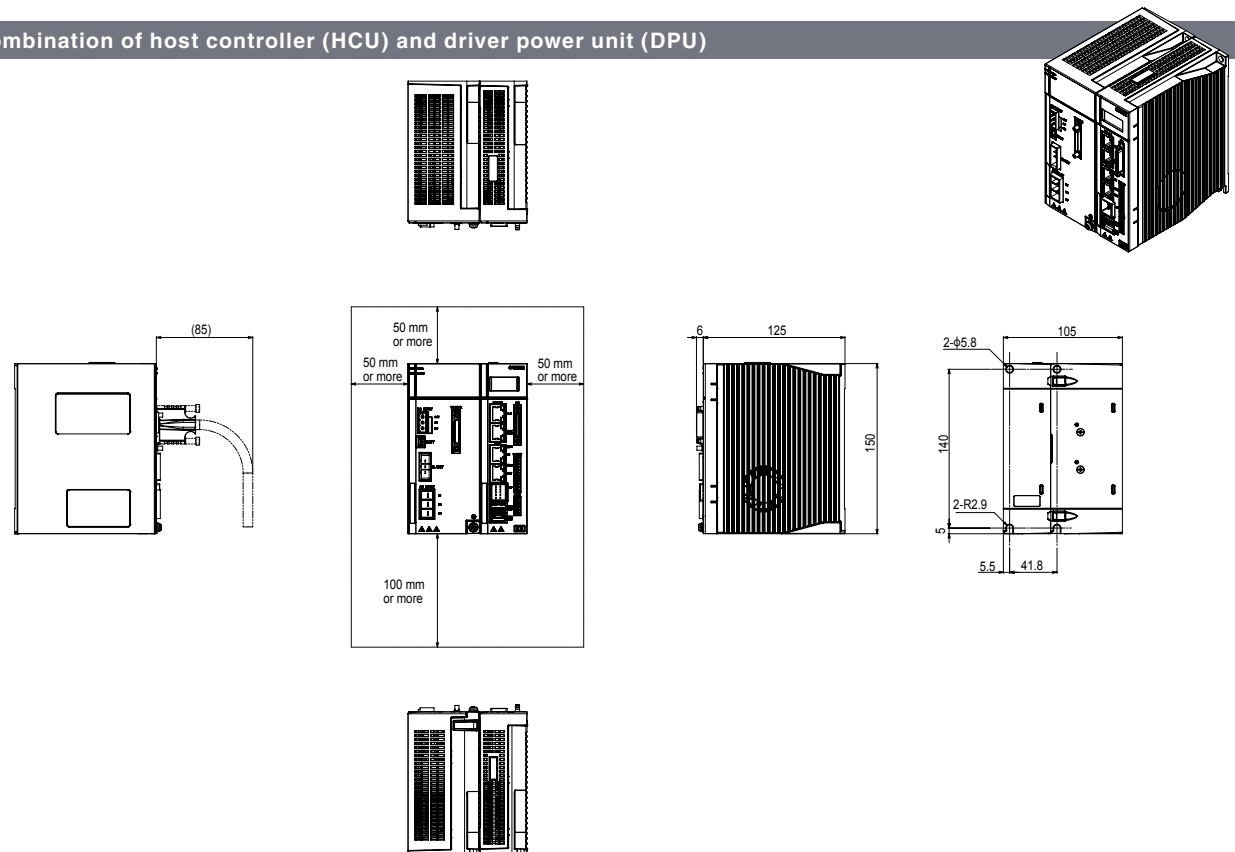
Item		Driver unit 30 A
Power supply	Control power supply	Voltage: 21.6 to 26.4 VDC (24 V +/-10%)
		Current: 0.8A (Including brake unit power supply)
Connector	ENC.A	Encoder input
	ENC.B	Encoder input (Dedicated use)
	STOP	Gate off input, 2 points Gate status output, 1 point
	MOTOR	Motor drive power supply output Brake power supply output
	ABS Battery	ABS Battery connector
	Fan unit connector	Accessory fan unit connection
	Brake unit connector	Brake unit is connectable.
Dimensions		31.6×150×125 (mm)
Weight		570 g
Protection structure / Protection rating		IP20 / class 1

External view of YHX unit combination

Combination of host controller (HCU), driver unit (A30), and driver power unit (DPU)



Combination of host controller (HCU) and driver power unit (DPU)





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