"Short breakdown times occur frequently and workers need to stay with the equipment."

Before

User:

Operating ratio decreases as short breakdown times occur.

Background of target

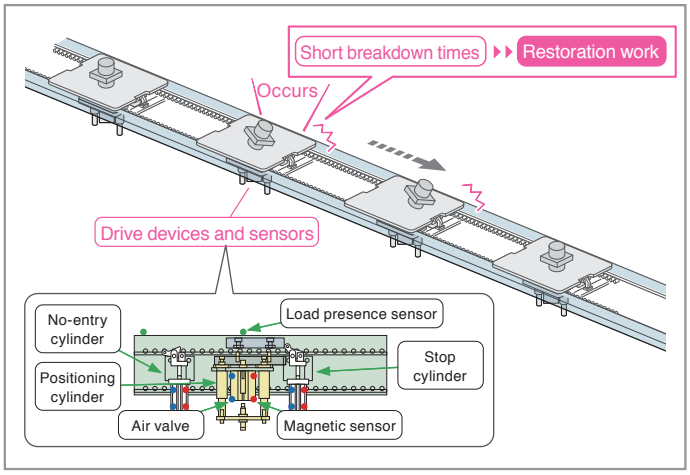
Adverse effects of short breakdown times.

1. Delivery delay
2. Waste of support man-hour
3. Quality decrease
4. Cost increase due to overtime work

With conventional system...

There are many drive devices and associated sensors, making it easy to stop the equipment.

- Multiple drive devices are required to stop.
- Sensors for controlling drive devices are required.
- If any of drive devices and sensors malfunctions, a short breakdown time occurs.

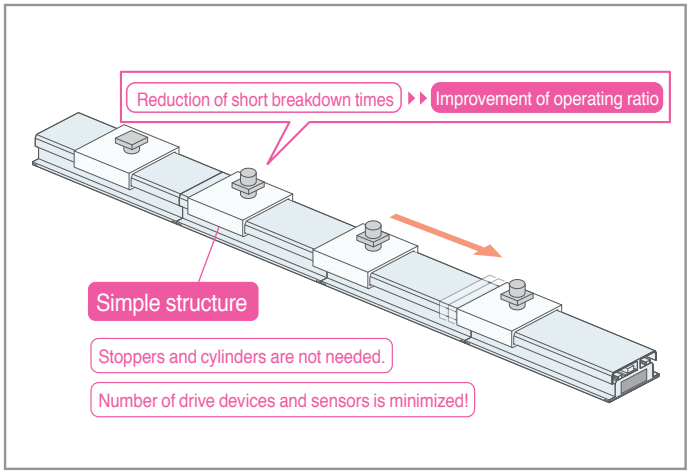


After

Yamaha's answer to the user's needs:

The number of drive devices and sensors that caused short breakdown times is minimized.
The simple structure makes it possible to prevent short breakdown times.

- The number of drive devices necessary to stop the equipment is minimized.
- Sensors for controlling drive devices are not required.
- The number of load presence sensors and others is minimized.



Results:

Production efficiency is improved by reducing short breakdown times and setup work!

Operation time/day … 8 hours
Working days/month … 20 days

Non-production time

	Before installation		After installation	
	Per time	Times/day	Per day	Times/day	Per day
Short breakdown time	3 min.	15 times	45 min.	0 time	0 min.

Improvement effect

	Operation time	Non-production time (Loss)	Actual operation time	Production volume per day	Production volume per month
Before installation	480 min.	45 min.	435 min.	2,610 pcs.	52,200 pcs.
After installation	480 min.	0 min.	480 min.	2,880 pcs.	57,600 pcs.

Production volume **+10.3%!**

Production increase **+5,400 pcs./month**

User testimonial

Automotive parts manufacturer
People in charge of production engineering

The number of short breakdown times caused by transfer has been drastically reduced, and we are now able to manufacture products with stable production volume and quality.

Our company is a manufacturer of electronic components built-into automobiles and operates 24 hours a day.
The source of our company's problems was “short breakdown time”. When a short breakdown times occurs, it is necessary to restore it immediately. Sometimes, after resetting the equipment, the short breakdown times might be restored, but it was not a good thing that the short breakdown times was easily restored. Where to recover from the equipment stop was a source of concern at the end of each month.
Particularly in recent years, it has been difficult to manage night shift staffs, and even a minor problem could take a long time to be restored or frequent short breakdown times could cause a small number of workers have to stay with the equipment.

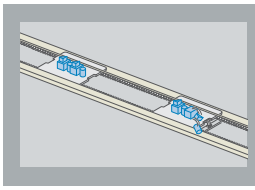
For this reason, we made stable operation one of the themes when considering new equipment. First, as a result of analyzing the causes of short breakdown times, we found that the overwhelming majority of short breakdown times were caused by transfer, so we decided to review the transfer section.
After collecting information from various websites and exhibitions, we became interested in linear conveyor modules.
When we visited the actual machine, we found that the number of driving devices and sensors around the conveyor had been minimized, and we heard that “customers who have installed the equipment are satisfied with the reduced number of short breakdown times!”.

YAMAHA introduced the equipment within the company, and as a result, the equipment received a high evaluation within the company. We were also introduced to a SIer and the equipment was successfully installed.
Currently, as planned, the number of short breakdown times caused by transfer has been drastically reduced and we are now able to manufacture products with stable production volume and quality. The maintenance time also becomes less than half of the conventional time, which is very helpful for the production site. We will continue to manufacture high quality products with stable production.

Functional description and merit of LCM

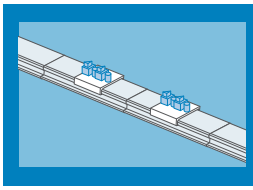
Thorough comparison of LCMR200 and conventional conveyor

From “flow” to “move”. Profitability is improved by eliminating waste in the transfer process.



Conventional conveyor

- Mechanical stoppers and sensors are required at each stop position.
- There are many parts and the control is also complicated.
- Stopper adjustment is required each time the stop position is changed.
- Production efficiency is difficult to improve.
- There tends to be a lot of work in process to improve production efficiency.



LCMR200

- Slider is driven directly.
- Stop position is controlled numerically.
- Stoppers and sensors are not required.
- Transfer time is reduced at a maximum speed of 2.5 m/sec.
- Time difference due to transfer distance is reduced.
- Actual working time can be secured.

	Conventional conveyor	LCMR200
Speed control	△ Constant speed on the same conveyor.	◎ Speed and acceleration can be specified individually for each movement.
Operation control	× Constant direction.	◎ Movement direction (back and forth) and distance can be specified individually for each slider.
Move/stop	× There is a shock because the conveyor is stopped by the stopper.	◎ Servo control allows for smooth movement and short distance pitch feed.
Number of parts	× Stoppers and sensors are required at each stop position.	◎ No additional parts are required for each stop position.
Accuracy	△ A separate mechanism is needed to increase accuracy.	◎ Machine difference between sliders (between all sliders) ±30 μm
Rigidity	△ A separate mechanism is needed to ensure rigidity.	○ Highly rigid guides make it possible to work even on sliders.
Line change	× Stoppers need to be adjusted each time the line is changed.	◎ Line length can be changed by increasing or decreasing modules and stoppable positions can be changed by correcting points.
Installation area	△ Installation area tends to be large.	◎ Equipment can be made compact.

Linear Conveyor Module
LCMR200

Scan the QR code for details.

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