



To the Press and Whom it May Concern

October 23rd, 2019
ZMP Inc.

Started the sales of unmanned forklift CarriRo® Fork

- Easy operation and reasonable unmanned pallet transportation. Shipment starts in December—
— First collaboration demonstration in Shinagawa Briefing Session on November 5th & 6th —

We, ZMP Inc. in Bunkyo-ku, Tokyo (CEO, Hisashi Taniguchi) have been selling the logistics support robot CarriRo® series since 2016. So far, we have promoted automation and efficiency while introducing it to a wide range of sites such as logistics warehouses, logistics centers, factories, hotels and home centers.

As a new product lineup of CarriRo®, a logistics support robot, the unmanned forklift CarriRo® Fork,



Unmanned forklift CarriRo® Fork

which utilizes Autonomous driving technology is added.

In logistics warehouses and factories, the labor shortage of cargo handling is a pressing issue. Especially, work for loading and unloading luggage and parts with a forklift and transporting them requires skill training and sufficient practical experience. Therefore, it is getting difficult to secure the staff.

In addition, forklifts often collaborate in areas where people work directly, and there is a problem that even experienced people have many accidents.

Therefore, ZMP will start to provide the unmanned forklift CarriRo® Fork that can operate the forklift easily, safely and efficiently, even if there is no worker with special skills, by realizing the cargo handling work by forklift automatically. CarriRo® Fork is characterized by a simple setup that can be realized in a few days from pre-work area mapping to operation. While monitoring obstacles in the vicinity, it stops in response to obstacles in the direction of travel, and automatically restarts when obstacles are removed.

CarriRo® Fork can be introduced in the following flow.

- ① Confirmation of how to apply to the area environment and business that is being considered for use
- ② Preparation of infrastructure facilities required for operation
- ③ Mapping work and business scenario setup
- ④ Operation Lecture

By collaborating with CarriRo® AD + (pallet loading type) capable of carrying pallets of up to 600 kg and



CarriRo® Fork, in contrast to the introduction of multiple unmanned forklifts, the introduction cost can be greatly reduced and the pallet transportation can be unmanned.



Linkage between CarriRo® AD + and CarriRo® Fork

CarriRo® Fork will begin shipping in 2019.

ZMP will continue to expand the functions and product lineup of CarriRo® Fork based on the development of autonomous movement technology such as autonomous taxis and buses and the development of the logistics support robot CarriRo® series.

CarriRo® Fork will be exhibited at the CarriRo® nationwide briefing sessions to be held in Shinagawa on November 5th and 6th.

In addition, an unmanned solution for pallet transport will be exhibited through a demonstration of cooperation with CarriRo® AD + (pallet loading type).

[Overview of nationwide briefing session (Tokyo area)]

Date: November 5th (Tue) to 6th (Wed), 2019

* Time: ①from 9: 30 ②from 11: 30 ③from 14: 00 ④from 16: 00

Venue: Near Shinagawa Seaside Station

Details shall be informed soon.

【CarriRo® Fork Product Page】

<https://www.zmp.co.jp/carriro/carriro-fork>

[CarriRo® Fork Specifications]

Body dimensions	Length1950×Width 800×Height 1915 (mm)
Forklift type	Walkie Type
Payload	1000kg~1600kg
Maximum speed	5.4km / h without load, 3.6km / h with load
Movement/Stop Accuracy	± 10mm / ± 10mm
Vehicle weight	1000kg
Safety Function	Laser detection, infrared sensor detection, bumper sensor, etc.

【CarriRo® Fork Price】

5-year lease (main unit price): Over 282,000 JPY per month (excluding tax)

* We opt to offer the purchase option. Prices may change without prior notice.

【Logistics Support robot CarriRo®】

The logistics support robot CarriRo® is a product developed by applying ZMP’s Autonomous driving technology represented by the service demonstration of the automatic taxi® that ZMP is working on.



In the logistics industry, where there is a rapid labor shortage due to the declining birthrate and aging population, CarriRo® sales are being carried out for the purpose of saving labor and increasing efficiency in the logistics industry.

Since the start of sales, it has been installed for more than 140 users, and with new added value through autonomous movement, it has been introduced in various fields, including logistics bases and factories, and the service industry such as hotels.

【Contacts】 <For press related inquiries>

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Robocar® Walk



RoboCar®
Mini EV Bus



RoboCar® SUV



RoboCar® MV2



CarriRo®



CarriRo® Deli

Driven by its mission “Robot of Everything: to create and empower new lifestyles by enabling free movement of people and goods”, ZMP focuses mainly on:①ADAS (Advanced Driver-Assistance Systems), Autonomous Driving Development Platform “RoboCar®” series, and Sensor systems②Highly specialized engineering services applied to autonomous driving solutions and “RoboTest” on-road testing service, for automotive, commercial vehicles, construction machinery, agricultural machinery, logistics equipment, outdoor machinery, etc. ③Development and sales of the logistic support robot “CarriRo®”

ZMP is pioneering self-driving car services with Auto Taxi®, which aims at being fully operational by 2020, and is conducting various technology and service demonstrations on public roads.ZMP is also aiming at being the first Japanese company to provide a sidewalk delivery robot, “CarriRo® Deli”, and is actively looking for partners to realize mass production.ZMP will continue to push the limits of possible, by developing products and services that “move” people, in every sense of the term.