



# Leveraging the Strength of Kawasaki Against the Novel Coronavirus

## Development of Test Systems Using Robots

In response to the spread of novel coronavirus infections, Kawasaki has been developing a polymerase chain reaction (PCR) testing system using the duAro collaborative dual-arm SCARA robot and producing medical face shields in our factories to reduce infections among medical personnel and support the enhancement of testing systems.



## Producing Medical Face Shields and Gowns and Donating Them to Medical Institutions

Starting April 20, Kawasaki's Kobe Works and Harima Works began producing medical face shields (pictured right) and gowns to reduce transmission of the coronavirus, donating them to medical facilities. A total of 6,430 face shields were produced using a transparent pattern film used for steel processing, and 15,880 gowns were produced in accordance with the method announced by Osaka University Hospital. We donated them to Kawasaki Hospital and prefectural hospitals in Hyogo Prefecture.



## Introducing a Temperature Measurement System Using a Robot at Kawasaki Good Times World, Collaborating with Kobe City in PCR Testing, etc.



The automatic temperature measurement system installed at Kobe Maritime Museum/Kawasaki Good Times World.

Kawasaki has developed an automatic temperature measurement system using duAro2 and installed it at the Kobe Maritime Museum and at Kawasaki Good Times World — Kawasaki Heavy Industries Group's corporate museum — which is located in the same building. Since the museum reopened in June, all visitors have been temperature-checked to ensure the safety of visitors and staff.

The system has a no-contact temperature sensor attached to the right hand of duAro. Visitors place their hands above a

height adjustment sensor to raise/lower duAro's right hand to the visitor's forehead level, which causes the temperature detection sensor to begin measurements. If the visitor's temperature is at or below the preset acceptable maximum temperature, the robot indicates that the visitor may enter by removing the bar-type barrier held in its left hand. However, if the visitor's temperature exceeds the acceptable maximum, the bar remains in place and a staff member is called to the entrance.



The temperature detection sensor.

Kazunori Hirata, Senior Staff Officer of the Precision Machinery & Robot Company, who was in charge of development, says, "We will continue to add improvements, such as having the thermometer position change automatically according to the height of the visitor, so that it can also be used as a fun attraction."

In addition, in June 2020, Kobe City and Mediaroid Corporation (a medical robot development joint venture of Kawasaki and Sysmex Corporation) agreed to cooperate in the further development and social implementation of (1) a remote sample collection robot system, (2) a PCR testing robot system, (3) and a monitoring/care network system for temperature measurement and meal delivery in hospitals, all using duAro.

Regarding sample collection, regulatory approval will be obtained so that doctors will be able to remotely collect nasal samples. Regarding saliva sample collection, pre-sample analysis work and transport and storage work will be automated. In addition, each process of the PCR test is automated, utilizing a robot. The number of tests processed can be increased by three to four times that of human labor. The design, production, and evaluation of these systems are planned for completion by September 2020, and operations are scheduled to begin at a facility in Kobe Biomedical Innovation Cluster beginning in October.

Yoshiyuki Tamura, Manager of the Corporate Planning Department of Mediaroid says, "By using robots to automate various tasks, we reduce the risk of infections as well as the burden of work on medical personnel, and support the expansion of PCR testing systems."



Building a system to reduce infection and increase the number of tests by automating the PCR test procedure.



## Creating a Kawasaki Products Coloring Book for Enjoying Time at Home

As more children spend time at home to reduce the spread of coronavirus, Kawasaki has published on its website a "Home Time Series" coloring book of its products. Ten products are depicted, including the Shinkansen, a motorcycle, an LNG carrier, and a BK117 helicopter. Please click on this link to view them:

[https://www.khi.co.jp/stayhome\\_nurie/stayhome\\_nurie.html](https://www.khi.co.jp/stayhome_nurie/stayhome_nurie.html)



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