

# Hitachi's Response to the Coronavirus Pandemic

## 300,000 Employees Working as One, Drawing on Strengths from across Hitachi's Diverse Business Portfolio

Amid the ongoing COVID-19 coronavirus pandemic, Hitachi has made the health and safety of all stakeholders a top priority, including customers and other partners as well as its employees and their families around the world, taking actions to help prevent the spread of infection and to minimize the impacts of the pandemic.

### 1. Support for Manufacture and Supply of Face Shields, Masks, and Artificial Ventilators

Hitachi manufactured face shields from May to September of 2020 to support healthcare facilities in their efforts to diagnose and treat COVID-19 and to prevent the spread of infection. These face shields were supplied free of charge mainly to government-approved medical institutions for treating infectious disease around Japan. The face shields were designed primarily by the Research & Development Group with input from practitioners at Hitachi General Hospital (part of the Hitachi Group, located in Hitachi City, Ibaraki) among others. They are designed for light weight and ventilation without compromising strength, and feature detachable (replaceable) shields.

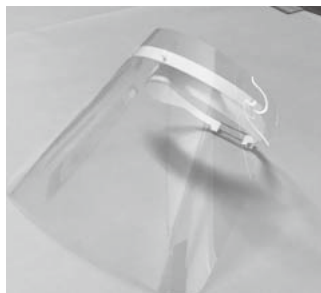
Similarly, to facilitate production of the artificial ventilators required for the treatment of COVID-19, Hitachi has also made 3D procedure manual delivered by means of its assembly navigation system available free of charge as a cloud service. The system automatically transforms the 3D computer-aided design (CAD) data of a finished product produced as part of the design process into 3D operating procedures that provide assembly workers with simple and

intuitive instructions. It represents an application of the technology and expertise of the “high-efficiency production model” established by Hitachi’s Omika Works (in Hitachi City, Ibaraki) and is deployed commercially to reduce staff workloads and boost productivity at a wide variety of manufacturing sites. 3D CAD data for an artificial ventilator supplied free of charge by Medtronic PLC., a global medical device manufacturer headquartered in Ireland, was loaded into the system and used to automatically generate operating procedures for each assembly step, which were then made publicly available.

Overseas, Hitachi Group companies JR Automation and Esys Automation teamed up with General Motors Company (GM), a major US auto manufacturer, to build a production line for face masks. By pooling their respective resources, the three-company team had its initial production line up and running at unprecedented speed, taking only six days. By combining GM’s various forms of specialist expertise, JR Automation’s extensive knowledge of industry and materials, and Esys Automation’s know-how of converting production machinery designs for different purposes, within a few weeks, they were able to establish the capacity to manufacture masks at rates of up to 100,000 masks a day that complied with US safety requirements. All masks produced were donated to healthcare facilities in the USA.



Face Shields for Use in Healthcare



Mask Production Line Set up in Just Six Days



Non-touch Operation of Button Displayed by Compact Mid-air Input Device

## 2. Provision of Non-touch Solutions

Among measures aimed at preventing the spread of coronavirus, Hitachi is working on the development of a number of non-touch solutions that are now being progressively rolled out.

Hitachi supplies total solutions that enable hands-free movement inside office and residential buildings. By utilizing an image analysis service that uses security cameras and other sensors for facial recognition and hands-free tags (tags that users need only carry on their person to gain physical access to areas), these solutions provide contact-less means for passing through the automatic doors or security gates at building entrances, hailing an elevator and specifying the destination floor, and unlocking an access management system. When used in tandem with Hitachi's elevator management system that features human flow prediction [using the "human flow" (foot traffic) analysis function of the image analysis service to assess how many people are arriving at the elevator hall and the extent of crowding], these solutions can also shorten elevator waiting times and ease congestion during busy periods such as when people arrive for work in the morning.

Meanwhile, as an alternative to buttons and touch panels, Hitachi is developing a mid-air input device that projects a floating image that people can use to perform simple operations without touching the equipment concerned. This solution is intended to provide a clean, non-touch way of operating equipment without the need for physical contact at a wide variety of sites, including at healthcare, finance, public sector, transportation, and industrial facilities. By using a liquid-crystal display (LCD) to project the image of a large button in mid-air that can be pushed or turned over, the device provides a way of performing operations that feels simple and natural. In the future, the device's functionality will be enhanced with a view to deployment in automated teller machines (ATMs) and other such products, the intention being to provide an easy way switch device user interface screens or the control panels of production or other machinery to non-touch operation.

## 3. Donations Made through NPO and Support for Research into Infectious Disease by The Hitachi Global Foundation

Hitachi Group provided financial support to business owners impacted by the coronavirus pandemic through Kiva Microfunds, a US non-profit organization that uses crowdfunding to expand financial access to help underserved communities thrive (entrepreneurs, farmers, etc.). This involved Hitachi employees identifying such people who are in need of loan due to the pandemic and making a loan to them of USD25 per person funded by Hitachi. Similarly, to enable not only employees but also people outside Hitachi to participate, the scheme also provides the same amount from Hitachi funds when a general lender that is a Kiva Microfunds user makes a loan to borrowers eligible for this campaign. Through these efforts, Hitachi has delivered a total of USD1,000,000 in financial support to numerous small business people around the world whose livelihoods have been affected by the coronavirus pandemic. As repayments from these loans return to Hitachi's account, Hitachi will fund new loans over a 4-year period, after which the balance will be donated to Kiva Microfunds.

Hitachi, Ltd. has also donated JPY100 million to The Hitachi Global Foundation to support research into infectious diseases such as COVID-19, with work also underway on establishing The Hitachi Global Foundation Fund for Research Support of Infectious Diseases (provisional name) at The Hitachi Global Foundation. Donations from Hitachi's executive officers, corporate officers, and employees will also be solicited for this fund. Targeted at international collaborative research teams representing researchers from major universities and research institutions in Japan, the fund is intended to support the development of advanced and practical medical technologies for the prevention, diagnosis, and treatment of infectious diseases such as COVID-19, and research that will help with the establishment of new social systems equipped to deal with pandemics. Once the eligibility criteria and other terms are finalized by The Hitachi Global Foundation, the fund will be launched subject to the relevant procedures and approvals, with the aim being to open applications for funding from FY2021.

**In addition to the activities described above, Hitachi Group is taking a wide variety of other actions aimed at preventing the spread of COVID-19 and minimizing the impact of the pandemic. More information about these can be found on the Hitachi website (<http://www.hitachi.com/information/ImportantNotices/activities.html>). We urge you to visit and see for yourself.**