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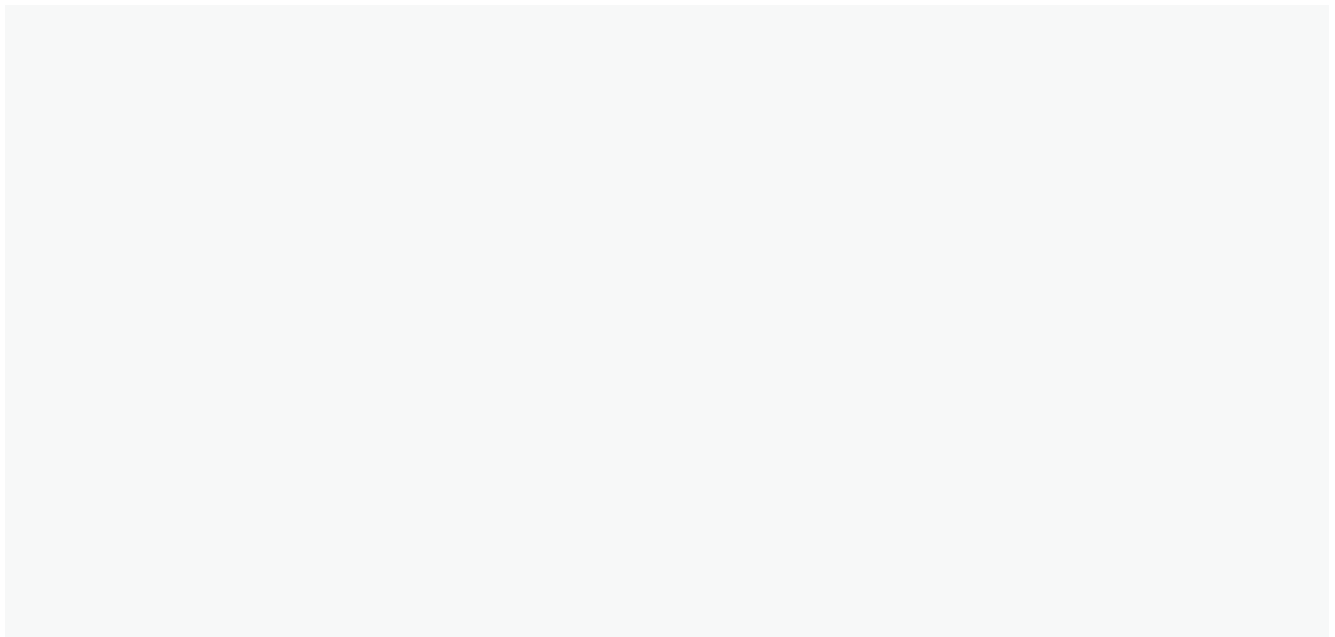
300

**A Warrior in the Battle against
COVID-19**



SV300 Ventilator

Compact yet powerful



The Need for A Life-Saver in the ICU

COVID-19 is highly infectious with approximately 15-30% of the infected patients developing acute respiratory distress syndrome (ARDS) ^[3]. Clinical experts are now providing the standard respiratory therapy management for the patients with ARDS, which mainly include high-flow oxygen therapy (HFOT), non-invasive ventilation (NIV) and invasive ventilation with lower tidal volume ^[4].

1. Multi-functional, highly compact, readily portable

The SV300 ventilator integrates high-flow oxygen therapy, non-invasive ventilation and invasive ventilation into one device, making it perfectly reliable for satisfying the changing needs of patients in different acuity levels. This also helps hospitals save vital medical resources which are already in extreme shortage due to the large number of COVID-19 patients.

If the patient's health continues to deteriorate, the SV300 allows a gradual transition from HFOT to non-invasive ventilation and, finally, to invasive ventilation. Respectively, when the patient is recovering, the SV300 takes patients through weaning invasive ventilation, non-invasive support to HFOT in a seamless way. The patient does not require to change the ventilator or the breathing circuits: this helps reduce consumables and the workload of caregivers. The SV300 plays an important part in ensuring the maximum use of medical resources, especially key medical supplies, and the minimized risks of cross-infections between caregivers and patients, or among patients themselves.

The SV300 is ready-to-move and easy-to-install. Weighing less than 10 kg as an intensive care ventilator, this compact device can be carried around with just one hand or transport together with the patient between different wards, ensuring seamless respiratory support at all times.

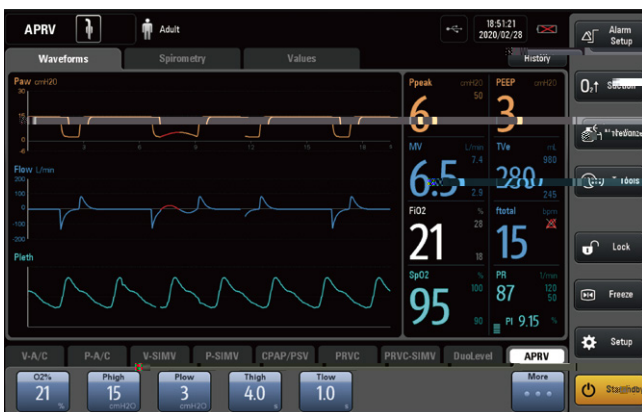


On the way of transporting a patient, doctors in Zhongnan Hospital of Wuhan University are carrying an SV300 ventilator with a single hand.
Source: Chutian City Journal 楚天都市报

2. Optimal ventilation support for ARDS patients

When a COVID-19 patient displays severe ARDS, the patient often requires advanced ventilation modes and comprehensive monitoring. The SV300 has all the modes of mechanical ventilation required by high-acute patients, particularly the patients with ARDS, such as Duolevel and APRV, as well as the low-flow P-V Tool and other tools which can be used to guide the PEEP titration.

The SV300 can also measure P0.1, NIF and other key indicators to reflect the patient's respiratory conditions. With a wide range of respiratory mechanics measurement, the ventilator provides comprehensive respiratory monitoring of patients – this is utterly important because it makes clinicians more confident in clinical diagnosis and decision making.



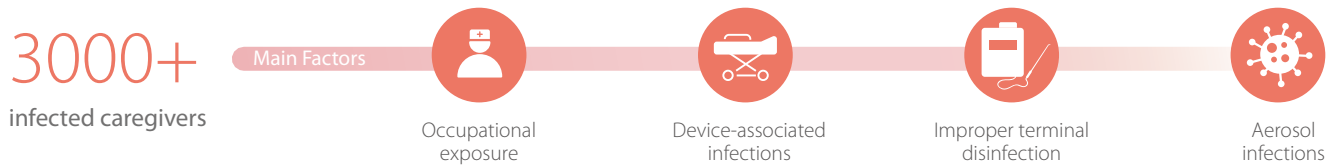
APRV mode



P-V Tool

The Need for A Safeguard for Medical Personnel

According to statistics from the China Centers for Disease Control and Prevention (China CDC), as of February 11, more than 3,000 medical staff from over 400 medical institutions who work with COVID-19 patients were infected. The four main contributors to medical staff infections are: occupational exposure, device-associated infections, improper terminal disinfection, and aerosol infections.



1. Detachable and autoclavable ins-/expiratory valves

The SV300 ventilators have both inspiratory and expiratory valves detachable and autoclavable. They can go through the autoclave at a temperature of up to 134 °C. This makes it easier for serialization and thus prevent the risk of cross-infections.

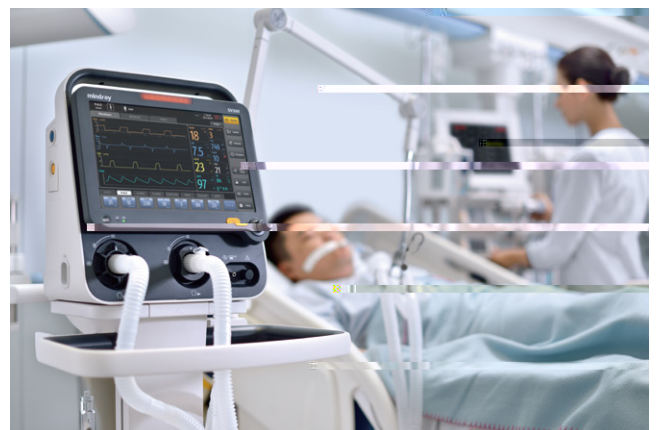
The inspiratory/expiratory flow sensors on SV300 are water-resistant, therefore, it removes the concern about condensation and continues to be reliable while the patient receives nebulization therapy. Compared with some other products that stop working in a high-moisture environment, the SV300 is more stable and reliable. In addition, it also reduces the risk of infections for medical staff, because they no longer need to constantly change or replace the sensor.



2. Dual-limb breathing circuits for non-invasive ventilation

Traditionally, non-invasive ventilators mostly adopt the single-circuit design, which means the exhaled air by the patient will be directly discharged to the atmosphere through the outlet on the mask. For the highly infectious COVID-19, however, the use of these kind of non-invasive ventilators may cause leak in the ward and put medical staff at risk of exposure to the virus. WHO believes that non-invasive positive pressure ventilation (NPPV) is one of the main sources for aerosol transmission in the hospital.

The non-invasive ventilation mode provided by the SV300 can achieve the same clinical efficacy that those conventional single-limb non-invasive ventilators do. The design of dual-limb circuits makes the SV300 ventilator stand out in this epidemic. By using a closed and airtight mask, the air exhaled by the patient must go through the expiratory hose and can be processed by an additional filter placed at the end of the hose before venting to the atmosphere. In addition, the turbine's inspiratory gas must pass through a level-H14 HEPA filter prior to ventilating the patient, which can eliminate up to 99.995% of bacteria and viruses. This makes the SV300 a "reliable guardian" for both patients and medical personnel.



The Need for “Comrade-in-Arms” & “Clear-cut” Strategy against COVID-19

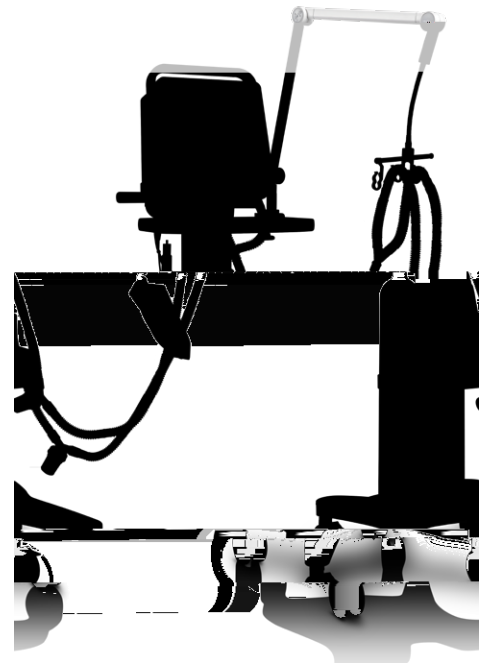
In order to provide extensive treatment for all patients diagnosed with COVID-19, China has mobilized a large number of medical staff nationwide to the worst-hit area. Since the treatment include a wide range of medical disciplines, many of the personnel are not from respiratory departments (for example, treating some other life-threatening complications). This group of doctors and nurses may find it difficult to use ventilators.



2. Strong adaptability for demanding environments

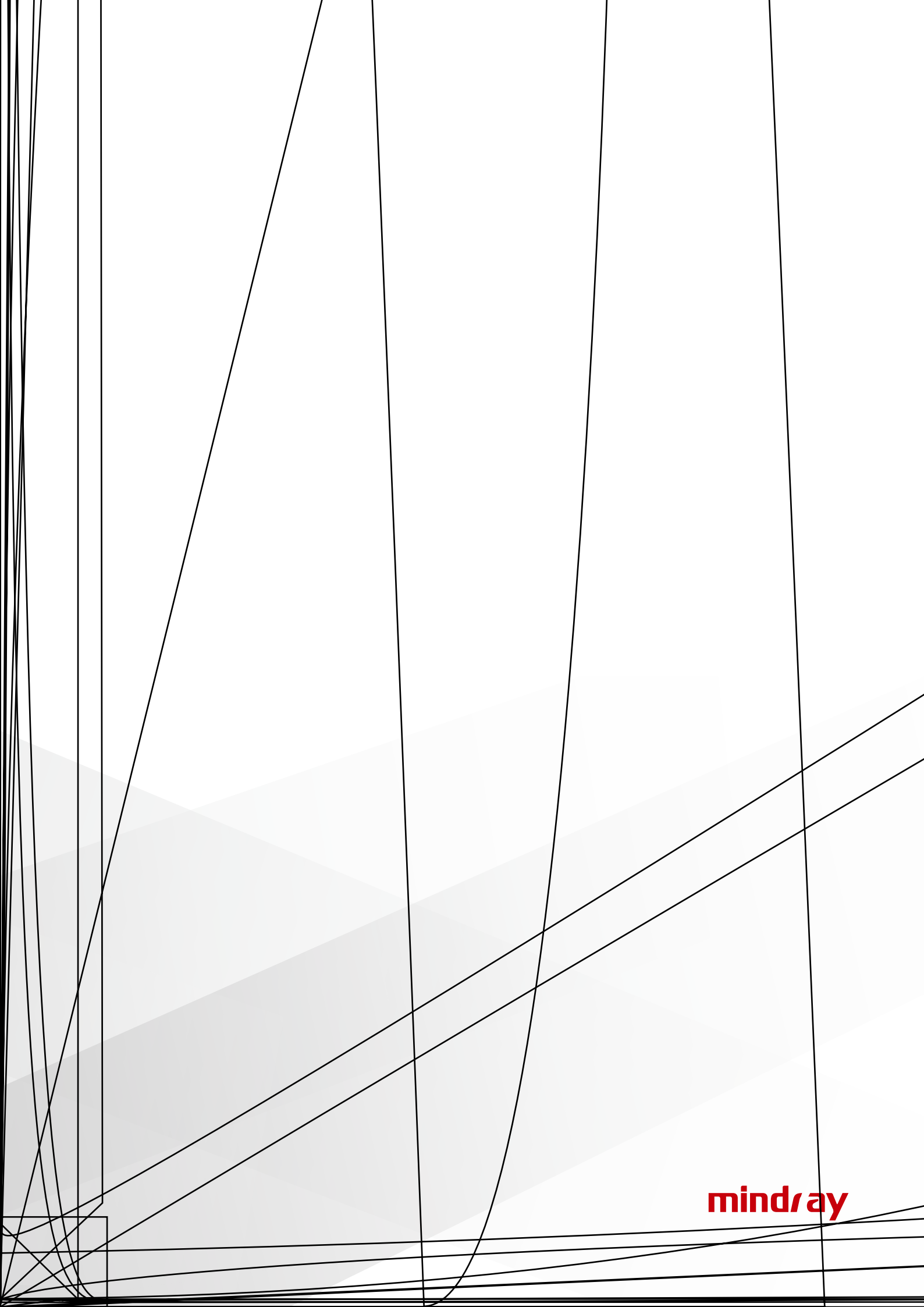
In this battle against COVID-19, most of the quarantine and treatment facilities have been built within a short period of time. The infrastructure were built urgently, however, it was still not adequate to fulfill consistent demands of patient care, resulting in challenges such as insufficient medical gas supply, shortage of oxygen, low pressure for air supply etc. These factors have largely impaired the performance of traditional ventilators, which put ARDS patients in danger.

The SV300 adopts the turbine design for air supply and can work without external source of air.e15.40o.25



Reference:

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