

THE STORY

NASA/JPL developed, built and tested two prototype ventilator designs on a patient simulator at Mt. Sinai Hospital.

The ventilators received Emergency Use Authorization (EUA) from the FDA.

Their strategy for the ventilators was licensed for commercialization to Evo Design and resulted in the JEEVAN ventilators. The pneumatic design relies on externally pressurized air and oxygen, while the compressor requires only compressed oxygen.



SVAS PNEUMATIC



SVAS COMPRESSOR

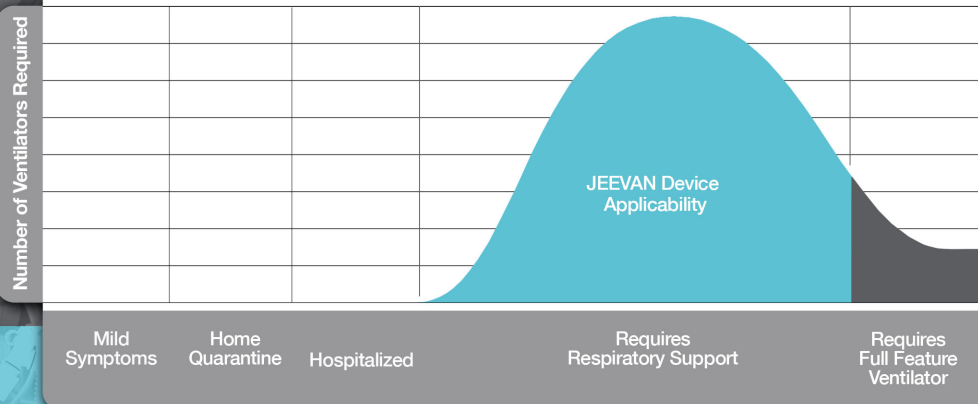
INTENDED PATIENT DESCRIPTION

Both JEEVAN ventilators (SVAS Pneumatic and SVAS Compressor) are designed specifically for patients suffering from Acute Respiratory Distress Syndrome (ARDS) caused by COVID-19. The intended patient is generally characterized by needing low to moderate tidal volume at a high breathing rate and a wide range of positive end-expiratory pressure (PEEP). JEEVAN ventilators will meet the demands of those who require aggressive ventilatory support in a variety of clinical states, which may include low-compliance, high-resistance, hypoxia and hypercapnia. The intended patient is unable to maintain adequate/safe oxygen level with a nasal cannula or mask oxygen.

PATIENT ATTRIBUTES:

- Over 18 years old
- Has a body weight over 50 kg
- Is sedated and intubated
- Relatively stable vital signs
- Predicted to be on a single therapeutic regimen for the majority of a shift
- May or may not be exhibiting spontaneous breathing efforts

TARGET MARKET



DEVICE DESIGN

JEEVAN Ventilators are designed as low-complexity, low-cost devices intended for emergency use. The number of mechanical and electronic components were minimized to keep cost and time to delivery as short as possible. The design avoids using components that are critical to the production of full-featured, commercial ventilators that may be in short supply. JEEVAN is able to avoid sterilization between patients by excluding patient exhalation gases from the circuit.

KEY FEATURES

- Built-in air/oxygen blender
- Alarm Monitored
- Assist-control
- Plateau (pause) pressure on demand
- Interfaces with standard patient circuits
- Low/nominal tidal volume
- Supports high PEEP
- B/V filter on exhalation path (no return to device)
- Parts exposed to exhalation are disposable
- Minimal part count
- Supply-chain sensitive design

SPECIFICATIONS

Operating mode: Volume-targeted, pressure limited, time-limited ventilation (Timed PLVT)

Oxygen FiO2	21 - 100%
Positive End-Expiratory Pressure (PEEP)	5 - 30 cm H2O
Peak Inspiratory Pressure (PIP)	5 - 60 cm H2O
Back-Up Rate	4 - 40 bpm
Tidal Volume	150 - 800 mL
Size/ Weight	12.5" x 11.25" x 11" ~ 23 lbs