



PRESS RELEASE

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HAGE and HAGE3D develop a pressure-controlled ventilator

In the fight against the Coronavirus pandemic, HAGE and HAGE3D are developing a pressure-controlled ventilator in close collaboration with the Medical University of Graz.

In Austria, intensive research is currently concentrating on solution approaches to contain the COVID-19 pandemic. As there are regular supply shortages across the world, especially for medical products, the aim of the Austrian initiative is to develop a quickly available, pressure-controlled ventilator for crises or emergency situations.

HAGE and HAGE3D have therefore been working intensively on the development of two prototypes in the last two weeks. HAGE intends to use the innovative spirit and precision of the family company to fight the consequences of the coronavirus. HAGE is already well-known for 5-axis processing centres and friction stir-welding solutions for aerospace and rail technology. The sister company HAGE3D, which, like HAGE, is owned by the Hampel family, has already gathered its first experiences in medical technology through the prototype development of a 3D implant printer.

Initial versions based on a bag valve mask and a pneumatic cylinder have been developed, printed and tested by the director DI Peter Freigassner. With the help of the HAGE3D team, a functional, supervised machine was finally created. The requirements and construction were refined across several iterations in close collaboration with experts from the Medical University of Graz. The latest test results – with Prof. Dr. Horst Olschweski, manager of the pulmonology department in Graz – are very promising.

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The pressure of the oxygen supply is thereby regulated by a valve system close to the patient in the ventilation tube and controlled by sensors. The transmitted values are displayed graphically on the touch display. A visual and acoustic warning system gives an alert if there is a deviation from the defined ideal values. In order to observe hygiene requirements, many components are made of medical disposable materials and are exchanged or cleaned before each patient. Components that do not come into contact with the patient are cleaned via hygienic surface disinfecting. Functional test series have already been performed.

IV-GF Gernot Pagger recognised the potential importance of the development, and HAGE has been appointed the leader for the development of emergency ventilators within the COVID19 Crisis Task Force of Prof. Ramsauer (TU Graz). The COVID19 Crisis Task Force is in close discussion with Minister Schramböck.

PICTURES:



Additively manufactured components for the ventilator with the HAGE3D 3D printer.



A 3D-printed valve controls the pressure supply of the oxygen.



DI Stefan Hampel and DI Peter Freigassner with the ventilator developed by HAGE and HAGE3D



f.l.t.r.: HAGE General Manager DI Peter Freigassner, owner DI Stefan Hampel and Mag. Florian Hampel, HAGE3D General Manager Mag. Thomas Janics, MBA

ABOUT HAGE

Since 1982, the HAGE automation specialists have been using their know-how and experience to make innovative machines. According to the requirements of the client, individual special purpose machines are created in observance of the latest technological norms. Alongside precise 5-axis processing centres, friction stir-welding systems in particular are highly demanded. The company clients include renowned industrial companies from the rail industry, automobile and construction sectors, but also the aerospace sector. HAGE currently employs almost 120 workers in Obdach, of which 14 trainees.

HAGE3D is a spin-off of HAGE Special Purpose Machines, founded in 2019, and part of the HAGE Holding. It develops and sells additive manufacturing solutions worldwide.

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