

COVID-19 Crisis:

3D Printing to Fill Shortages, Accelerate Conventional Manufacturing, and De-risk Production

March 20, 2020



Solution: PPE Mask Shortages

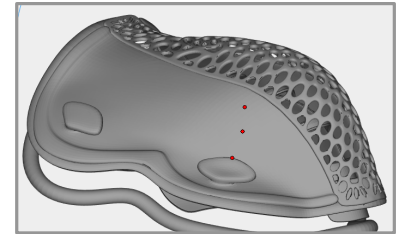


Prevent the Problems of Tomorrow

- ✓ Clinician customized, reusable, better fitting (leak-proof) n95 masks.
- ✓ Distributed manufacturing in secured supply chains.

Solve the Problems of Covid19 Today

- ✓ Bring production online today for existing plastic designs and designs created by others.
- ✓ Bring design and manufacturing guidelines to others who will be 3D printing masks.



Solution: Ventilators

Prevent the Problems of Tomorrow

- ✓ Help companies implement additive enabled supply chains.
- ✓ Secured, flexible supply chains will be more robust in a crisis.
- ✓ Design and guidelines for developing equipment to work both in additive (emergency need) and traditional (low cost long term supply).

Solve the Problems of Covid19 Today

- ✓ Conventional manufacturing takes too long, employ additive to save lives today.
- ✓ 3D printing of molds and tools to shorten ramp up of manufacturing lines





What does the additive industry need?

Prevent the Problems of the Future

- ✓ Fund and require parallel path manufacturing of medical supply components (traditional and additively).
- ✓ Fund and enable development of additive manufacturing for secure, flexible, and stable supply chains of the future.

Solve the Problems of Covid19 Today

- ✓ Fast track FDA clearance of additively made components.
- ✓ Enable and encourage large manufacturing companies under the DPA to work with additive supply chains.



Implement and Deploy

EOS is a world leader in industrial 3D Printing solutions.

- ✓ 30 year technical heritage and know how in this industry
- ✓ Essential FDA and manufacturing alliances
- ✓ End to end understanding of design, materials, and quality advanced manufacturing

EOS can create “Digital Kits” that can easily be distributed to its 800+ customers with 1,000’s of industrial-scale 3D printers



We've done this before ... and done it fast



Two days –
now a
sustained
process



Custom fit – scan to print
scaled with partners

Complex
assemblies
reduced -
centrifuge



We work with many medical manufacturers

Where do we go from here?

1. **Face the Facts** – Supply chain disruptions are a trend
2. **Don't Stop Initiatives** – Lessons learned will enable future stability
3. **Digital Value Chain** – Knowing how and when to use AM is key

