WHY ADDITIVE MANUFACTURING FOR MINING?

MINING - SUSTAINABILITY, INNOVATION, SAFETY
Additive manufacturing is on the increase within the mining industry. There are many drivers for this which include: increase in innovation, remain productive in challenging times, stay competitive & sustainable. The ability to print on demand gives the industry the flexibility to combat supply chain issues. The mining industry in Australia has become world-class in site safety. Modern technology enables procedures, monitoring systems and PPE to continuously improve to a state of zero lost time injuries, excellent job competency through training, and tools that are ergonomic and intuitive to use.

APPLICATION SPOTLIGHT
2nd generation Remote Operator Console
The console connects wirelessly to our W300RC and W400RC drill rigs and allows control and monitoring of all functions on the drill.

The 1st generation console weighed approximately 27kg and was constructed primarily from machined and fabricated aluminium components. When designing the 2nd generation console the aim was to reduce weight below 20kg without compromising functionality or ergonomics. In the end we managed to shave off over 10kg, with the console weighing in at 16.5kg. This was achieved by reworking the layout, some changes to electronic devices, but primarily through the use of 3d printed components.

Traditional method: The majority of these parts would be aluminium, sourced either as bar stock or via water-cutters (where possible to provide more economical starting shapes). Machining time would be a couple of weeks and cost for each of these parts would range from $100s to $1,000’s each. An additional finishing process (such as anodising) would also be required.

APPLICATIONS
Prototype (Test-fit)
Replacement end-use parts (Functional Strength)
Jig, fixtures, tooling
Semi-structural components (brackets, clips)
Enclosures, housings - heavy duty, electrical
Battery packs
Rugged enclosures
Mine site weather stations

BENEFITS
Save + Time Money with DfAM - No Assembly
Ready for Mine Site Deployment
Beneficial to the environment, components produced in the process are energy efficient
Reduce Assembly Time (3 parts to 1)
Digital Spare Part Inventory
Localised & on-demand manufacturing
Deployment ready 3D Printing
Spares Manufactured in Hours
Custom Parts
Driving down the cost of drones

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COSTS

WEIGHT
(1st Gen) : 27kg
(2nd Gen) : 16.5kg

BATTERY HOUSING
Ends 2h 7m / $7.13 USD
Handle 35m / $2.02 USD

BATTERY RECEPTACLE
Lower Housing 13h 36m / $71.79 USD
Upper Housing 21h 29m / $95.84 USD
Battery Retainer Clip 45m / $0.81 USD

PLUG HOUSING
3h 30m / $12.55 USD

PLUG SPACER
1h 10m / $1.98 USD

FEET
3h 43m / $15.19 USD (each, 2-required)

ANTENNA HOUSING/HMI MOUNT
12h 21m / $58.56 USD

WIRELESS TRANSMITTER HOUSING
Housing 13h 30m / $26.62 USD
Spacer 33m / $1.20 USD

HANDWHEEL
Handwheel 3h 9m / $7.47 USD
Cap 1h 20m / $3.66 USD
Spacer 32m / $1.04 USD (each, 2-required)

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