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World first - 3D printing of equipment parts for Aussie red meat processors

The Australian Meat Processor Corporation (AMPC) together with Markforged and Konica Minolta are working together to establish a world-first, industry-owned additive manufacturing (3D printing) service model to help red meat processors across Australia to print equipment parts, revolutionising equipment maintenance to help ensure continuous supply of meat products.

Additive manufacturing, also known as 3D printing, has been around for about a decade; however, new uses for the technology are constantly being discovered. This led AMPC to investigate its potential in meat processing facilities.

In a high-volume environment like a processing plant, parts such as bolts and rollers can wear or break. As in any industry, time is money, and if a part fails the result is lost productivity and expensive down-time until the part is sourced and replaced. With 3D printing, the industry can benefit from part replacement, creation, and refinement.

Chris Taylor, CEO, Australian Meat Processor Corporation, said, "Meat processors rely on a multitude of equipment, with multiple components. Even a small component failure can be a costly exercise. The ability to simply print a replacement part could drastically reduce downtime and minimise the need to wait for parts, reducing the chance of supply being at risk."

Matthew Hunter, Innovation Product Marketing Manager, Konica Minolta, said, "The need for sovereign capability for the Australian supply chain coupled with Australian government support for local food and beverage manufacturing has resulted organisations looking to adopt innovative practices. Konica Minolta Australia is proud to partner with AMPC in getting this world-first capability off the ground."

Richard Elving, Director of Sales Asia-Pacific, Markforged, said, "We are very excited about bringing Markforged's Digital Forge to AMPC and AMPC's members to support maintenance, repair and operation needs. Supply chain issues can be costly and time-sensitive, and with these tools in place, AMPC will provide a competitive advantage to its members that enables processing facilities to react quickly to solve problems right on the manufacturing floor."

The collaboration between the Australian Meat Processor Corporation, Konica Minolta and MarkForged involves a three-year, multifaceted program so that these benefits can be realised at meat processing plants across Australia. The program will see two mobile non-metal industrial 3D printers (Markforged X7 carbon fiber 3D printers) shipped to Australian processing plants. Processing staff will be trained to use them so they can assess whether buying a permanent unit would be a good investment. The units will remain on site for four to eight weeks before rotating to another plant. These units can

create pre-metal prototypes for assessment as well as producing non-metal parts. Konica Minolta will provide on-site support to help meat processors understand and leverage the technology.

As part of the program, a metal printing 3D industrial unit (metal X system) will be set-up at Konica Minolta's Sydney location dedicated for red meat processing part manufacturing. Plastic prototypes made at each processing location can be sent to this hub to be made out of stainless steel and other metals in as few as 24 hours. A red meat 3D parts database library will ensure all parts are quality controlled.

Matthew Hunter said, "When it comes to meat processing, there are a number of challenges for equipment maintenance. This includes the use of old equipment with limited spare part availability and the need to produce custom parts. 3D printing helps address these challenges. Through the database, AMPC's member organisations will have access to intellectual property to expediate and streamline their repairs processes."

With the ability to rapid prototype with 3D printing and produce one-off 3D parts, meat processors will also be able to modify equipment and/or equipment components to suit their own specific needs by making changes to tooling, fixtures, brackets, and actuators. Currently many of these modifications, customisations, and consolidations simply cannot be done.

Chris Taylor said, "The processing sector is part of an ecosystem that performs best when all parts are optimised. Although established and dedicated for Australian red meat processors, AMPC will make the 3D printing hub available for other Australian food, agriculture, and manufacturing sectors to evaluate their needs and opportunities for 3D printing within their supply chains."

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For more information

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About the Australian Meat Processor Corporation

The Australian Meat Processor Corporation (AMPC) is the research and development corporation for the red meat processing industry in Australia. As the research, development and marketing service provider for Australian processors, AMPC runs programs of activity that are funded by processor levy payers, private contributions and the Australian Government. AMPC's mission is to drive world-class innovation, adoption and strategic policy development through genuine partnerships built on trust.