

New cobot with easy handling

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Safe and precise support for humans in production

Mitsubishi Electric's new collaborative robot, the MELFA ASSISTA, has been developed to work alongside human operators without the need for guards or safety fences, while meeting new requirements for adequate distancing of workers in manufacturing sites. The cobot offers maximum safety and durability combined with ease of use and programming, while maintaining very high positional repeatability.

The cobot meets the needs of both standard industrial and environmentally sensitive applications – for example, it can be supplied with certified NSF H1 grease (National Sanitation Foundation guidelines) for applications such as the food and beverage sector. It can perform complex and delicate assembly tasks, precise work holding or repetitive pick and place operations with the highest levels of consistency and reliability while responding flexibly to rapidly changing business environments and social needs. Application examples include working alongside human operators in automotive assembly tasks or performing packaging operations on production lines.

Set-up of the cobot is simplified using direct teach functionality where the user holds the arm and moves it to each required position; the position is then saved by pressing a button on the keypad built into the cobot arm. The process is both time-saving and intuitive for operators. This complements the visual programming software used for more complex operations – the RT Visualbox package allows for both drag and drop motion functions and individual adjustments to each movement.

This means that costs for additional robot programming can be saved, as operators can alter set ups without specialised robot expertise.

The MELFA ASSISTA cobot has an exceptionally high repeat accuracy of $\pm 0.03\text{mm}^*$ by a rated payload of 5kg and reach radius of 910 mm. It enables increased product quality, which correspondingly reduces the time overhead required for quality control, ensuring higher overall quality standards. This extends the range of possible applications to include Life Sciences, precision assembly, high quality packaging or component transfer processes.

A further benefit of the MELFA ASSISTA is the ability to switch it between collaborative mode – where it operates at the slower speeds typical of a cobot – and a higher speed mode for use in a more industrial ‘cooperative production’ environment. This ensures maximum application flexibility, and delivers the best possible return on investment.

The new cobot meets all relevant safety requirements as defined under ISO 10218-1 and ISO / TS 15066. Fault diagnostics and operational state are also shown by a 6 colour LED ring mounted around the robot’s forearm which is always visible.

Note: *Commonly offered repeat accuracy by cobots of $\pm 0.1\text{mm}$.

Image captions:



Image 1: Humans collaborating with robots in manufacturing processes should be provided with maximum safety combined with ease of use, while meeting new requirements for adequate distancing of workers in manufacturing sites. [Source: Mitsubishi Electric Europe B.V.]



Image 2: Humans collaborating with robots in manufacturing processes should be provided with maximum safety combined with ease of use, while meeting new requirements for adequate distancing of workers in manufacturing sites. [Source: Mitsubishi Electric Europe B.V.]

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About Mitsubishi Electric

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The role of Industrial Automation – UK Branch is to manage sales, service and support across its network of local branches and distributors throughout the United Kingdom.

*U.S. dollar amounts are translated from yen at the rate of ¥221=U.S.\$1, the approximate rate on the Tokyo Foreign Exchange Market on March 31, 2022.

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