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# Customer Reference

## Revolutionising dairy production: Mitsubishi Electric Automation transforms Tine's processing facilities

How advanced servo technology and flexible automation solutions enhanced precision, hygiene, and efficiency at Norway's leading dairy company

### Key points

- **Exceptional precision:** MELSERVO servo technology delivers consistent accuracy for high-quality dairy production
- **Hygiene compliant:** Equipment designed to withstand rigorous cleaning protocols required in dairy processing
- **Flexible integration:** Multiple communication protocols enable compatibility with diverse control systems

Tine, Norway's leading dairy company, required automation solutions that could meet the dairy industry's demanding standards for precision, hygiene, and space efficiency. Since 2001, Advanced Machine Company (AMC) has delivered cutting-edge automation solutions for the dairy sector, and through collaboration with Mitsubishi Electric, has integrated advanced servo drives and frequency converters into modern dairy processing. The implementation of Mitsubishi Electric's automation solutions at Tine's facilities has enhanced performance across multiple production sites, delivering unmatched precision, efficiency, and hygiene compliance whilst setting new benchmarks for the industry.

**The Challenge:** The dairy industry demands exceptionally high levels of accuracy, hygiene, and space efficiency to meet stringent quality standards. Tine's production facilities faced several challenges common to traditional dairy processing equipment. Limited precision led to inconsistent product quality, whilst space constraints made it difficult to integrate advanced automation into existing facilities. Stringent hygiene requirements necessitated equipment capable of withstanding rigorous cleaning protocols without degradation. Additionally, lack of flexibility in traditional systems made integration with modern control systems challenging, limiting opportunities for optimisation and modernisation across Tine's production network.


**The Solution:** AMC partnered with Mitsubishi Electric to deploy state-of-the-art automation solutions across Tine's factories through a comprehensive modernisation approach. The implementation features MELSEC PLCs providing high-speed control and flexibility, combined with MELSERVO servo drives and motors delivering exceptional accuracy for dairy production applications. The compact design of components enables easy installation in space-restricted environments, whilst all equipment

complies with industry hygiene standards to withstand rigorous sanitation protocols. Flexible integration capabilities support multiple communication protocols, ensuring compatibility with diverse control systems including those from other vendors, allowing servo drives and frequency converters to be integrated even when the main control system is supplied by another manufacturer.

**The Results:** The implementation has delivered significant benefits across Tine's production facilities. Enhanced precision has improved product consistency and quality, ensuring reliable output that meets exacting dairy industry standards. Optimised space usage allows compact solutions to fit seamlessly into existing facilities without requiring extensive structural modifications. Superior hygiene compliance ensures equipment withstands rigorous cleaning protocols whilst maintaining performance. Seamless system integration through flexible connectivity options enables compatibility with existing automation setups, simplifying modernisation. The solutions have been successfully deployed across Tine's production network, improving operations in Norway and beyond, demonstrating the global applicability of the automation approach developed through this partnership.

**Technical Excellence:** Mitsubishi Electric's MELSERVO servo drives and motors form the precision core of Tine's modernised dairy processing lines. These systems deliver exceptional positioning accuracy essential for consistent product quality in applications such as filling, portioning, and packaging. MELSEC PLCs provide high-speed control and programming flexibility, orchestrating complex production sequences whilst maintaining the deterministic performance required for food processing. The compact physical design of drives and motors enables installation in the confined spaces typical of dairy facilities, where production equipment must fit within existing building constraints and hygiene zones.

**Integration Flexibility:** A key advantage of Mitsubishi Electric's automation solutions is their exceptional integration flexibility, as highlighted by Anders Svendby, Sales Engineer at Mitsubishi Electric: "Almost all Mitsubishi Electric equipment is designed to be flexible, allowing you to integrate the equipment into other control systems, as there are many communication options in the equipment." This capability enabled AMC to integrate servo drives and frequency converters into Tine's facilities even where the main control system was supplied by another vendor, avoiding the need for complete system replacement and protecting existing automation investments whilst still gaining the precision benefits of advanced servo technology.

**Industry Impact:** The collaboration between AMC, Mitsubishi Electric, and Tine showcases how precision engineering and advanced automation can drive efficiency in dairy manufacturing. By successfully addressing the industry's key challenges of precision, hygiene, space constraints, and integration flexibility, this partnership has helped Tine set new benchmarks for quality and operational excellence. The solutions developed through this collaboration have global applicability, with successful deployment across Tine's production network demonstrating scalability. AMC and Mitsubishi Electric's ongoing commitment to innovation ensures that dairy producers worldwide can benefit from advanced, reliable, and future-ready automation solutions that meet the evolving demands of modern food processing.



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