

Eagle™ RMI3/B

Amadori



Case Study



Founded more than 50 years ago in San Vittore di Cesena, Amadori is one of the top companies in the Italian agro-food sector. Supplying the highest quality chicken products to a worldwide fast food chain, Amadori trusted Eagle Product Inspection's advanced technology and Parmacontrol's expertise to integrate x-ray systems into their existing production line.

Amadori Guarantees Safe Products to Italian Customers with Unparalleled Technology

Amadori is a specialist in the poultry sector and in 2019 earned more than 1.3 billion euros in yearly revenue. The roots of Amadori's success lie in the integration of their own supply chain and the efficient management and control of their production cycle. This strategic choice ensures an unmatched level of quality throughout the entire production process.

Across the Italian market, Amadori's supply chain includes 6 hatcheries, 5 feed mills, 6 food processing plants, over 800 farms (both company-owned and under contract), 3 primary logistics platforms and 19 distribution centers. The company relies on the collaboration of over 8,300 workers to serve several thousand customers every day.

The beautiful town of Mosciano Sant'Angelo, in the Teramo province of the Abruzzo region, is home to

two of the most important meat processing divisions at Amadori—the Innovative Products division that focuses on breaded and roasted poultry products and the Traditional Products division that produces fresh and raw poultry.

Amadori not only exports to Europe, but it is also the only poultry supplier in Italy for one of the largest fast food chains in the world. As a supplier, Amadori has to provide detailed information about every single product that runs through their plants, including weight and quality control measures.

"We used to have a standalone machine to inspect incoming product from suppliers," explains Davide Di Giammarco, General Manager at the Innovative Products division. "The cost of the labor for having people manually process all the incoming poultry was extremely high, so we went looking for an integrated automated solution that could help us save costs and ensure compliance with our customer's requirements."



In the company's search to streamline their processes, they found Eagle Product Inspection, a worldwide product inspection technology company with a long history of designing and supporting reliable x-ray systems for the food industry. Eagle's exclusive partner company in Italy, Parmacontrols S.R.L., worked closely with Amadori to not only find the right x-ray machine for their application but to design an integrated solution based on their needs.

"The combination of [Eagle's superior x-ray technology](#) and Parmacontrols' in-depth knowledge and flexibility to adapt to our requirements made them the right choice," says Davide Di Giammarco at Amadori. "The Eagle machine was the only one amongst its competitors that was able to meet the highest quality standards for contaminant detection in chicken. Parmacontrols understood that the solution went beyond just installing the x-ray machine on our production line. They helped design a new infeed, outfeed, rejectors and much more specifically for our line. They made the complex simple."

The Eagle™ RMI3/B Provides Unrivalled Bone Detection

In 2018, two Eagle™ RMI3/B x-ray machines were installed in Mosciano. They each have a Hi-Ray 9

with a 0.8 mm single energy detector and an IP69 rating for harsh washdown environments. The machines are built to have unobstructed sightlines and contoured surfaces to minimize potential material harborage areas while ensuring fast and convenient visual inspection. The entire machine can be disassembled by a single person in a matter of minutes for thorough sanitation and quickly reassembled to maximize production uptime.

Both RMI3/B x-rays were installed after the forming machine but prior to the breading process, placed at critical control points as part of their HACCP plan. Iain Langridge, Global Technical Service Manager for Eagle explains, "The RMI3/B provides the industry's highest level of contaminant and bone detection while simultaneously performing product quality and integrity checks." An Eagle system has the versatility to handle any poultry application reliably and efficiently without sacrificing uptime and line speed."

Matteo Mingarelli, Industrial Engineer at Amadori added, "The detection of contaminants with the Eagle x-ray is higher than manual and standalone inspection. We can now detect 'micro' bones in our product." In addition to detecting the tiniest bones, the Eagle x-ray machine rejects poultry that lacks product, like holes in breast fillets.

Eagle's Best-in-Class Local Partner Provides an Integrated and Customized Solution Beyond the X-ray Machine

One of Eagle's competitive advantages lies in going to market with the best-in-class local partners in the world. Parmacontrols and Eagle have been working together closely for many years to supply the finest x-ray solutions to the Italian market, and when Amadori reached out for a solution, Parmacontrols worked diligently to create a seamless integration of the x-ray machines into their production line. Parmacontrols raised the level of conveyors to have a wider beam belt coverage of 600 mm rather than the standard 446 mm. Retractable rejector and further transfer conveyor were designed with an angle of 45 degrees so that Amadori could fill the width of downstream transports with the two units. Additionally, belt rollers that had a very small diameter of 22 mm were added, a special retractable nose rejector was implemented, and a longer outlet conveyor was created in order to have a perfect passage of product from the x-ray to the outlet belt.

"Quality is Amadori's top priority," explains Emilio Chiesi, owner of Parmacontrols. "Therefore, it was vital to find a contaminant detection system that would ensure Amadori provided the best product on the market while keeping their employees safe." Parmacontrols designed stretch steel tunnels to reduce the level of radiation emissions from the x-rays. Additionally, they designed a retractable belt that expelled waste and made modifications to allow for a better post-production sanitization process.

"Parmacontrols is a star company with a client facing orientation," said Mr. Di Gianmarco of Amadori. "They worked hard and took deep dives into the problems we had on our production line. We continue to receive excellent service from their team and we're extremely pleased."

"With our Eagle x-ray system, we are the only supplier amongst the competition who can satisfy the industry demand for high quality standards by detecting contaminants in poultry products that are intended for the largest fast food chains in the world."

Davide Di Giammarco, General Manager of Innovative Product Lines

Real-Time Data Reduces Foreign Body Complaints

Mr. Mingarelli of Amadori said, "The machine is very intuitive and very easy to operate." Every morning validation routines are performed on the x-ray machine to make sure it's calibrated and working properly. Amadori has specific parameters for each product in order to optimize the use of the machine. The data is blocked together in what Amadori calls "recipes", and periodically with Parmacontrols assistance, they review these "recipes" together to see what is functioning well and what's not. "We love all the statistics that we can extract and being able to monitor the status of the x-ray in real-time is a money saver because we can make adjustments while the production line is running."

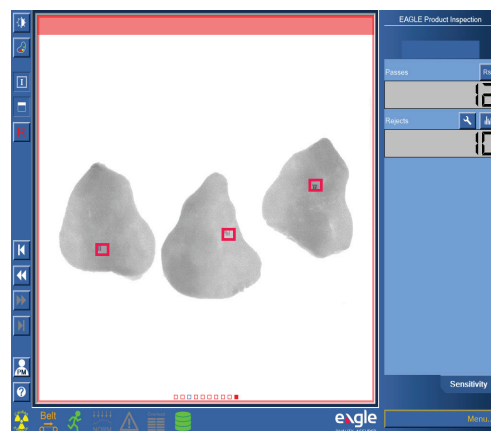


Figure 1: The optimal combination of detector, x-ray generator tube power, inspection geometry, as well as the fact that the product has a very thin layer that is being inspected after the molding machine, i.e. before breading and frying, allows the system to detect very small bone fragments.

Eagle™ RMI3/B

Amadori

The Eagle™ RMI3/B operates easily with Eagle [SimulTask™ PRO](#) imaging software, which is available in 19 languages. The software allows companies to detect multiple types of contaminants in various types of packaging thanks to advanced algorithms, as well as detect and reject products with package defects all while simultaneously checkweighing the product. Additionally, [TraceServer™](#) is the centralized database software program for the x-ray that allows for the storing of valuable production data from multiple machines that can be accessed from one central location. This information assists in meeting internal quality standards, compliance with local and global food safety regulations and tracks production through every stage in order to enhance product traceability.

Amadori has seen a real impact on how x-ray can positively affect their business. When they compare their numeric complaint index before and after the Eagle installation, their complaints about bones, metal and hard plastic contaminants reduced by half. This has led to an increase in order volume and has helped them earn their reputation as the premier poultry supplier in Italy.

Because of the great success Amadori has had with the first two Eagle x-rays, an additional RMI3/B was installed in 2020 in the Mosciano plant and another purchase is planned for the plant in Santa Sofia. Amadori has learned firsthand that with an Eagle inspection system installed on their production line, they can expect fewer false rejects and look forward to improved efficiencies and superior bone detection performance.



Figure 2: One of the most difficult problems to solve was ensuring that the transfer from the upstream machine (forming machine) towards the downstream belt was done without affecting the shape and thickness of each figure. It had to leave the product intact, in this particularly delicate phase. The designed solution had very small rollers (22 mm) enabling the internal transport of product, allowing a smooth and gradual passage in all conditions, even at high speeds.



Figure 3: The Eagle RMI3/B unit has been engineered and built with American NAMI and European EHEDG standards with IP69 ingress protection. The machine's louvers open fully making washdown operations—even under intense, high pressure and temperatures—simple, fast and can be completed by one person in a few minutes.

Eagle Product Inspection

1571 Northpointe Parkway,
Lutz, FL 33558, USA
Tel: +1-877-379-1670
Fax: +1-813-543-2049

eaglesales@eaglepi.com
www.eaglepi.com

Parmacontrols S.R.L.

Via Mantova, 79/A,
43122, Parma, Italy
Tel: +39 0521 775064

sales@parmacontrols.it
www.parmacontrols.it

