

# Locally designed and made food processing solutions

Inox Australia, experts in food processing equipment and system solutions, provide the Australian industry with a local avenue for bespoke and cost-effective equipment in processes. **Adam McCleery** writes.

**I**NOX Australia has spent the last 25 years developing and perfecting its solutions and equipment to provide the industry with continually improved mixing, cooking, and cooling solutions.

Robert Becher, managing director at Inox Australia, said every food processing manufacturer is always looking for improved methods of mixing, cooking, and cooling.

“Our equipment and process systems are built and are compliant to Australian standards,” said Becher.

Becher also said the multiple levels of the company’s approach meant they were more than just an equipment manufacturer.

“INOX Australia are food equipment manufacturers, focused primarily in the processing areas, and are a well experienced in process and system design, which is of great assistance to food processors,” he said.

“Our expertise is in both realms, that is, providing a single piece of equipment as well as having designed million-dollar systems as proof of that ability. INOX Australia are truly a one stop shop for the supply of food processing equipment as well as being a valuable partner in process design.

As a result, Inox’s equipment and technology is continually evolving.

“For mixing, we have our flagship Instantiser, highly flexible and built to high quality standards,” said Becher.

“In cooking we have our chef range of kettles, which covers all three conditions of cooking in the food industry, being atmospheric, pressure, and vacuum cooking processes. Many food products can be optimised with utilising the correct kettle design and cooking condition, and the chef range covers all those aspects.”

Meanwhile in the cooling side of

things, Inox Australia specialises in pasteuriser and cooling tunnels for post filled food products.

Inox Australia custom design all equipment and is 100 per cent Australian made.

“Our designs are bespoke, based on our core products and then modified to suit exactly as the customer requires,” he said.

“We design complete process solutions with our customers. Our goal is to provide a cost-effective edge for our customers that is so highly sought after in today’s world of rising production costs.

“Food production is bespoke for every manufacturer, therefore it is important to partner with an equipment supplier that can also adapt to these requirements.”

It’s important to Inox Australia to be flexible in its approach within the Australian food processing market.

“Being a local company, this gives us the ability to adapt and provide custom systems while working closely with customers to understand their needs,” said Becher.

“We continually improve functionality and over time as we have conducted many trials and installations which has created a lot of history and data with food products.

“This experience over the last 25 years in powder and liquid mixing, cooking and cooling, helps us provide the best solutions.”

In the product mixing phase of food production, Inox Australia’s Instantiser product range has been developed and improved over more than two decades as the company works closely with customers before obtaining feedback and data to evolve the range.

A key selling point of the Instantiser



**Inox Australia specialises in both processing equipment and system solutions.**

range is providing potential customers with a 300L Demo machine which allow customers firsthand experience to validate the ability of the equipment. As well as realising the potential cost savings of production methods.

“We have had a lot of success with particularly traditionally difficult products that are ever present in the food processing industry. One difficult ingredient to mix in the food industry is xanthan gum which is a common thickener in many products,” said Becher.

“The issue of coagulation is solved with our Instantiser high speed high shear mixing abilities. We have been successful in this area with the Instantiser.”

Inox Australia’s importance on collaborating with customers has meant 25 years of product data and feedback informs the company’s product and solutions evolution. With the Instantiser Scorpion being a key example of this.

“The Scorpion Instantiser is an advancement on the traditional Instantiser design. Adding cutting

blades and a scraped surface agitator, giving the equipment further ability and flexibility,” said Becher.

“The Scorpion Instantiser was originally, specifically designed for dip manufacturers, and has since been adopted and provided to customers manufacturing a range of products.”

Becher credits the company’s expertise and its decades of work within the food industry for the continued improvement of its product and solutions range.

“The evolution comes from customers coming to us knowing our expertise in design of food processing equipment, which firstly gives them the confidence to allow us to develop something unique and innovative with them,” said Becher.

“We have customers making starch pre-slurries or pesto one day and mayonnaise the next. Some customers invent new products and then use the Instantiser equipment to produce them. That is the flexibility of such equipment.

“Therefore, allowing customers to grow their business and product range.”

The Instantiser is available in a range

of sizes, beginning at 200 litres, up to 2,000L. Full process machines with heating or cooling jackets and multiple agitation options are available.

The next step in food manufacturing is cooking. The Inox Australia CHEF range of cooking kettles, which comes in four variations. The mini, maxi, contra, and the ultra-chef.

“Depending on the food product, the style of kettle should be carefully considered.”

For atmospheric cooking, the contra-chef kettle and the maxi-chef kettle are distinguished apart by the agitator design. The contra-chef is a vertical contra-rotating agitator that provides excellent mixing capabilities thus providing optimal heat transfer.

The maxi-chef agitator is a horizontal scraped surface agitator that has the ability to “lift” the product from the bottom. Typical applications would be sauteeing of onion and/or brazing

of mince prior to adding the complete amount of ingredients into a final product batch.

The Ultra-chef cooking system is an advancement on the Maxi-chef kettle, with the added ability to cook under pressure condition or vacuum conditions.”

Typical products include PRESERVES, JAMS, JELLIES, SAUCES, SOUPS, LIQUID STOCKS, COSMETICS, PHARMACEUTICALS and more.

Pressure cooking advantages include:

- Pressure cooking helps retain the quality of the foods, by reducing the cooking time, by increased temperature (higher boiling point) inside the vessel and pressure which retains the particles within the product.
- Cooking by pressure results in healthier and better tasting food, prepared in less time and with less energy.



**Inox Australia’s product offerings and solutions come from two decades of product data and customer feedback.**



**Inox Australia has a full suite of solutions for mixing, cooking, and cooling.**

- Food quality and flavour retention is achieved as the vessel is sealed and pressurised during cooking. The vessel does not permit air or liquids to escape below a pre-set pressure.
- Makes excellent sauces after sautéing by dissolving products of caramelisation and mallaird reaction.

- Works well with foods that require water infusion/braising methods
- Higher temperatures are more effective at killing bacteria.

Vacuum cooking advantages include:

- Short, low-temperature boil preserves colour, flavour and wholeness of fruit/vegetable pieces.
- Less inversion of sugar than when jam is boiled at atmospheric pressure and temperature.
- Overheating is avoided, since size of batch is not influenced by temperature and time it takes for steam bubbles to pass through the batch.
- Larger batches can be processed than with the open-kettle method.
- Sugar penetration to the centre of the fruit is more effective.

The COOLING step of food production, for post filled product is another area that INOX Australia has been extensively involved with throughout Australia and well as having exported equipment to Malaysia, Philippines and SE Asia.

Pasteurizing and cooling tunnels from INOX Australia have been successfully installed in major food processing companies with production

rates of 18,000 pieces per hour of production.

“That includes jars of marmalade, bottles or pouches of sauce, just to name a few. Basically, any hot filled food product filled into a container and then providing continuous cooling down right away, post hot fill, for labelling and packaging” said Becher.

“Cooling of food products directly after hot filling improves the quality of the product, by ensuring that the product does not ‘over-cook’ after it has been filled into its container. This process also improves and lengthens the products shelf life”.

Some advantages of water spray cooling tunnel technology include:

- Consistent cooling with maximum heat transfer (product pending)
- Controlled product handling/marshalling and minimised product and container damage
- Less water usage
- Easy access to retrieve product and clean in event of stoppage.
- Easy monitoring of product during cooling phase without stopping line
- Cooling rate can be controlled more easily due to zones
- Lower wet weight of machinery
- Inlet and outlet can be at opposite ends or at the same end
- Easier to seal from water leaks as no mechanical seals
- Buoyancy of product is not an issue
- Overall machine flexibility is higher than water bath system as unit can handle different container types, pouch, bags, bottles, tubs etc. **F**