

# CASE STUDY

## Lion's Malt Shovel Brewery

→ Integrated Filling Line



Lion was looking for speed, flexibility and improved product quality in a small space.

The Malt Shovel Brewery, known for its James Squire range, is located in an old factory in Camperdown in inner Sydney. Originally started by brewing legend Chuck Hahn in 1988, it was acquired by Lion in 1993.

The site has become the development centre for new beers that are produced in small batches and then tested in the market. Some stay small and continue to be brewed at Malt Shovel, others—such as One Fifty Lashes—move to Lion's larger breweries to become 20M+ case per year brands.

As with most craft breweries, the site is tiny and was already jammed with equipment. The existing glass filler was built in 1987 and was second-hand when it moved to the site many years ago. There was no space for a second can filler, so when Malt Shovel Brewery wanted to run product in cans, they had to use a mobile canning service. These are both slow and expensive and could only be used for special occasions.

Foodmach had some innovative ideas about what could be done to maximise the site's potential.

### The Challenge

With the growth in popularity of craft beer in cans, the need for a can filler at Malt Shovel was pressing. But there was no space. Expanding into the factory next door was problematic, and replacing the existing glass bottle filler with a can filler would mean no bottling capability.

Shipping the beer in bulk off-site and canning it elsewhere was an option, but it would not have been true to the Malt Shovel Brewery heritage.

Foodmach's role at Malt Shovel included:

- supply and installation of a new filling solution and ancillary equipment
- design and manufacture of a depalletiser and conveyors
- supply of inspection equipment and refurbishment of a case packer
- development of a line control system to link all Foodmach and OEM equipment.
- safety upgrades.



# LION

Lion Beer is the largest brewer in Australia, bringing together four large and four small breweries across the country—from the iconic XXXX Brewery in Queensland and Boag's Brewery in Tasmania to craft breweries such as Malt Shovel Brewery in Sydney and Little Creatures in Fremantle and Geelong.

Lion is focused on long-term, sustainable growth and has a clear ten-year strategy to extend its leadership in the alcohol businesses and reinvigorate its beer markets.

# FOODMACH

Automation | Robotics | Integration | Turnkey Projects



# THE SOLUTION

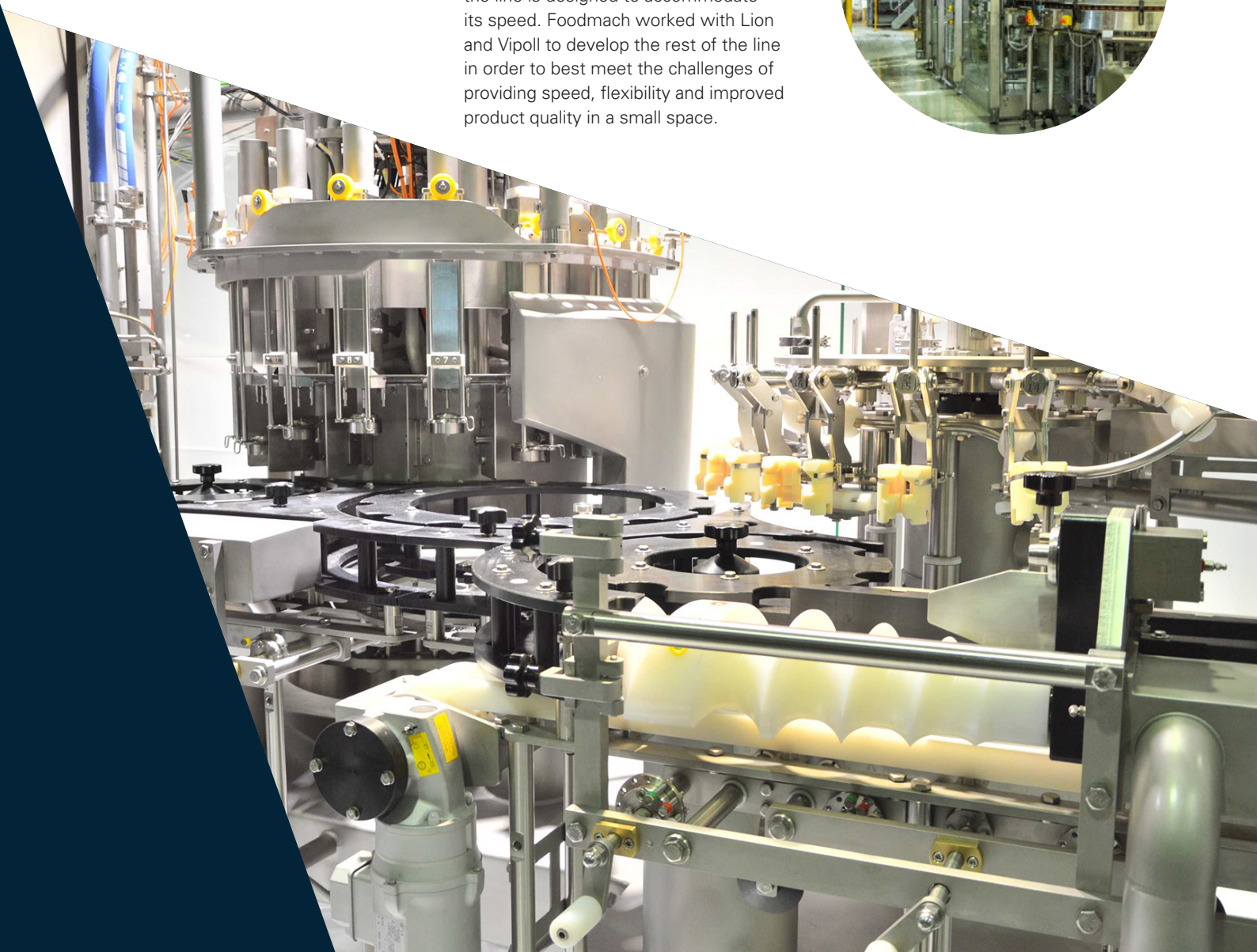
An integrated line with a filler that runs *both* bottles and cans using 50% less floor space.

Installed and commissioned in under a month, Foodmach delivered a turnkey filling line solution that offered space savings combined with speed and optimal product quality.

The existing glass filler was replaced with an ALL IN ONE filler from Vipoll in Slovenia—new-to-world technology able to run glass bottles and beverage cans (and PET bottles) through one machine in a compact layout. The ALL IN ONE is a combined rinser/filler/capper/seamer in a single monoblock with a footprint comparable to a dedicated glass (or can) filler of similar speed.

Filling speed is dependent on the product and packaging, with Vipoll offering ALL IN ONE fillers at up to 24,000 bottles or cans per hour. During Lion's acceptance testing, the filler was changed from glass to cans and was operating at full line speed in under 26 minutes.

The filler is primary packaging equipment, and in many ways shapes the rest of the packaging line—equipment up and down the line is designed to accommodate its speed. Foodmach worked with Lion and Vipoll to develop the rest of the line in order to best meet the challenges of providing speed, flexibility and improved product quality in a small space.







# DETAILS

The ALL IN ONE Beverage Filler was delivered to Lion on a turnkey basis and features:

- Rinser-Filler-Capper (Seamer) in a monoblock
- Height adjustment – automatic throughout
- Two-channel rinser – rinse water can be recycled. No change parts required
- Filler has electro-pneumatic controlled counter pressure filling valves
- Capper can be supplied to run: crown seals, caps, ROPP, ring pull, swing arm and can lids

Ancillary equipment:

- Clean Room
- Cap Elevator
- Lid server
- Automatic Lubrication System
- CIP System

Some parts of the existing line at Malt Shovel Brewery were able to be retained, whilst others such as the depalletiser and inspection equipment were replaced by Foodmach to accommodate both bottles and cans.

Foodmach also supplied and integrated the following equipment:

- New depalletiser (Foodmach)
- New bottle/can conveyors (Foodmach)
- New bottle/can inspection system (Heuft)
- Refurbished case packer (Foodmach overhaul)
- New multipack conveyors (Foodmach)
- Line control system (Foodmach)

*'Lion has a company-wide focus on delivering our customers a wide variety of choice, and nowhere is this more evident than our craft beer range. Much of this range is produced in small, bespoke breweries, which are both historic and space-constrained.'*

*'We had been looking for a solution to give customers a choice of our small-batch brews in both bottles and cans. Foodmach's introduction to Vipoll was perfectly timed and provided a solution that exactly matched our needs.'*

**Paul Woods**  
**Capital Projects Director, Lion**

(*'Lion gets world-first can and bottle filler'*  
PKN Packaging News)

The ALL IN ONE offers manufacturers cost savings through reduced changeover times, better product quality control, reduced water and power consumption and minimised product loss during filling.

The cost of canning in-house versus via a mobile service is a significant saving and allows Malt Shovel to produce in commercial volumes rather than just for special occasions. The cost of the ALL IN ONE filler is less than the cost of separate glass and can fillers; even more so when the extra conveying, manifolds, space savings etc. are taken into account.

As only the fifth machine of its type to be built, the Malt Shovel installation puts Lion at the leading edge of filling technology and provides it with competitive advantages in terms of speed, product quality and product cost.

# RETURN ON INVESTMENT







# BENEFITS

Reduced changeover times, better product quality, reduced water and power consumption and minimised product loss.

## Speed

The ALL IN ONE can switch between different products and container formats within minutes. This is made possible by its multifunctional elements: the rinser is equipped with universal grippers; the filler uses an electro-pneumatic filling valve and a single capping turret is able to accommodate different closure types.

A filling line is only as fast as its conveyors. Foodmach designed a customised conveyor solution for Malt Shovel Brewery to maximise the benefits of the filler.

## Flexibility

Earle Roberts, CCO, Foodmach: *'Designed for the burgeoning craft beer market, the ALL IN ONE's multifunctional system is unique because it allows for an unprecedented level of flexibility. It can be used to fill glass, cans and PET containers; handle different formats and seal them with diverse cap types;*

*it fills carbonated or still drinks, in either hot or cold fill method. It can integrate different cappers, e.g. combined capping turrets with capping heads for crown corks and can lids, or for aluminium and plastic screw caps—even ring pull lids are available as an option.'*

## Better Quality, Less Waste

The ALL IN ONE capper includes cap sterilisation for bottles and is the first can filling machine to offer lid sterilisation for cans. In the case of the Malt Shovel machine, the filler is supplied in a clean room with positive air flow and HEPA filters. As a result of the raised hygiene levels, no pasteuriser is used after filling and the product retains an excellent shelf life and superior flavour. The capper also includes an innovative, patented lid delivery system for the cans. This greatly reduces oxygen pick-up compared to traditional canning, again improving the quality and flavour of the beer and reducing product loss.

## Less Water and Power

The ALL IN ONE is compact and replaces two separate pieces of equipment on a high-speed beverage line, reducing power consumption accordingly. The hygienic filling valve design, foaming CIP system, capping system with sterilisation and clean room reduces the need for post filling pasteurisation, reducing energy and water use. A further option is to warm fill at 15°C, as opposed to traditional cold filling at 3°C, so the product does not need to be cooled down as much, nor do the filled containers need to be warmed to above dew point to prevent condensation.

## Gentler Glass Handling

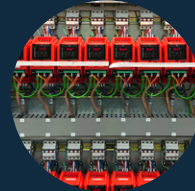
Foodmach conveying and depalletising systems are designed to handle glass accurately and quietly. Foodmach depalletisers carefully handle a wide variety of local and imported glass on a range of pallet sizes and offer fast changeovers with automatic destapping.

# LINE CONTROL

Foodmach specialises in systems integration, and has nurtured deep in-house expertise in information-driven manufacturing, be it IoT, IIoT, M2M or Industry 4.0, using industry standards such as OMAC PackML.

This enables the delivery of turnkey installations to uniformly high standards with optimal efficiency.

Gavin Alder, Control Systems Manager, Foodmach: *'Our aim is to put operators and managers in the driver's seat with a full suite of controls. Packaging Machine Language v3.0 (PackML) has been developed by the Organization for Machine Automation and Control (OMAC) in order to provide a common "look and feel" across a plant floor and to enable a common interface between machinery across a plant. We used PackML to interface the machines on the Malt Shovel filling line with a Siemens line control solution of the client's choice.'*



## FUTURE PROOFING

### KEY PERFORMANCE INDICATORS

*'Foodmach have worked with us to deliver an incredibly compact and flexible full packaging line. We've had many years of successful projects, both large and small with Foodmach, and it's great to see an Australian company understanding our needs and actively looking for solutions.'*

**Paul Woods, Capital Projects Director, Lion**

(*'Lion gets world-first can and bottle filler'* PKN Packaging News)

**Earle Roberts, CCO, Foodmach:** *'A filler that runs bottles and cans—but that takes a long time to changeover—is no use for a craft brewery that changes beers many times a day. Aside from the flexibility between bottles and cans, the ALL IN ONE also delivers benefits within one container type. For example, traditional can fillers take 4 to 6 hours to changeover if the customer wants to run different lid body diameters, for example, a slimline to a standard can. The ALL IN ONE can perform this changeover in 20 minutes, meaning the amount of time available for filling is significantly increased. This opens up all kinds of opportunities for new packaging formats.'*

*'As manufacturers—especially brewers—attempt to lower their CO2 emissions, highly efficient manufacturing and responsible packaging methods will be critical. The ALL IN ONE future proofs beverage producers against a carbon-constrained world.'*

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**CALL 1800 FOODMACH**

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