

Pias-Pak
WA PTY LTD



“ We used to produce between 600 and 700 thousand of bottles per month. Now we produce more than a million during the same period ”



The Customer

Plas Pak - Plastic Packaging

Mark Odgen, General Manager at Plas Pak, a plastic bottles and associated parts manufacturer in Perth, saw the opportunity to help millions of people almost slip through his fingers. His company was approached by the Australian Government and asked to scale up the production of hand sanitizer bottles during the COVID-19 crisis, but they had serious operational limitations preventing them from achieving targets.

The World Health Organisation recommended that the population must use alcohol hand sanitizer on a regular basis to prevent the spread of the deadly Coronavirus. This request had a domino effect and in a few hours all stores were out of stock, pushing suppliers and manufacturers to their limits and causing hand sanitizer bottle production to skyrocket.

Plas Pak produce a variety of plastic receptacles to industries such as mining, agri-chemical, personal care, food and beverage, oil & gas and many others. However, despite of having 21 machines on site to produce different sized bottles and parts, they could only operate an average of six machines at the same time as the existing process chiller plant lacked the duty to support their operation at full capacity. Turning all the 21 machines at the same time would cause overheating of the moulds and breakdown the equipment, causing costly downtime and risking operational effectiveness.





FOOD & BEVERAGE



OILS AND FUELS



AGRI-CHEMICAL



INDUSTRIAL CHEMICAL



HOUSEHOLD



PHARMACEUTICAL



COSMETIC & PERSONAL
CARE



MINING &
CONSTRUCTION



The Challenge

The COVID-19 crisis presented a huge, if not challenging opportunity for Plas Pak and their staff.

“We have a total of 21 machines on site, 11 of those being used only to produce bottles. We produce 24/7 for three weeks and stop for 8 days to service the machinery and make sure everything is going well. The problem was that we could only operate six at the same time to avoid breakdown, so our average production would range from 600 to 700 thousand of bottles per month. We simply couldn’t attend to the increasing demand during the crisis” explains, Mark.

To be able to use all 11 machines and increase capacity to attend to the urgent demand for new hand sanitizer bottles, they needed to have their chiller plant redesigned and upgraded to provide efficient and effective process cooling without disrupting their current operation.

“They had an old water cooled condenser type chiller which was inefficient. It was an undersized system that could not cope with the load from the factory” clarifies, Gareth Halliday, Engixo General Manager.



The Solution

At Engixo, we tailor and design technical solutions to fit our customer needs and it was no different with Plas Pak. The client needed a solution to increase capacity and output, without disrupting his current production in a very short timeframe. Improving energy efficiency and helping him save costs in a long run was a welcomed bonus.

“We designed and installed a new process cooling plant using 2 x 45kW cooling capacity water chillers. For this project, we chose air cooled industrial Frigo water chillers designed to chill process water for plastic injection moulding machines, which were purchased by the client under our guidance due to their build quality. [...] We had to install the new systems side by side with the existing system to ensure that we didn’t disrupt production and minimise downtime” explains, Gareth.

Apart from not being able to use all machines available, Mark explains that they could not even use their current working machines at full capacity as they would overheat, so they were limited to produce only 150 bottles/hour. “Our team made sure both hydraulic and mould cooling systems were always in good working condition, but we would still have overheating issues if we tried to push production”.

The new chiller plant enables them to easily increase their production to full capacity with 200 bottles/hour without risks.



The new design and equipment has increased production capacity by 70%, allowing the Plas Pak team to use all 11 machines at the same time at full capacity, producing 200 bottles/h, 24/7. The result is a total of 369,600 bottles produced per week!



The Results

To attend to the client's requirements, the whole project was completed within a week, from start to finish, with some improvements along the way.

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On top of that, the pipework system was designed using lightweight polyethylene pipework over heavy copper or steel making it much easier to install and slashing material costs.

"We always struggled to find a good refrigeration service provider but the Engixo team are by far the most helpful and the more knowledgeable people we have worked with. Another credit I need to make is regarding their behaviour. [...] The team conducted themselves with upmost professionalism when on our site with support, guidance and assistance. It is so pleasing to see this level of work being conducted after having poor experiences with others in the past" exclaims, Mark.

After the successful first partnership, our team is now working with Plas Pak to help them improve energy efficiency of their existing cooling tower plant and reduce water usage site wide.



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Imagery from Plas Pak website 2020