

IMPROVING PROCESS ECONOMICS TO THE MAX

IN SOFT DRINKS MANUFACTURING



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FIRST CLASS SERVICE
WORLD CLASS FILTERS

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PRODUCT SupaPore XPG	APPLICATION Syrup Filtration	OPPORTUNITY Lower Production Costs	CLIENT Contract Bottler	LOCATION Eastern Europe	SECTOR Soft Drinks
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MORE THAN JUST A FILTER: APPLICATION KNOWLEDGE IS KEY

Margins can be tight in Soft Drinks production with manufacturers always looking to improve process economics. From the aspect of filtration, these improvements can typically be made through one or more of the following:

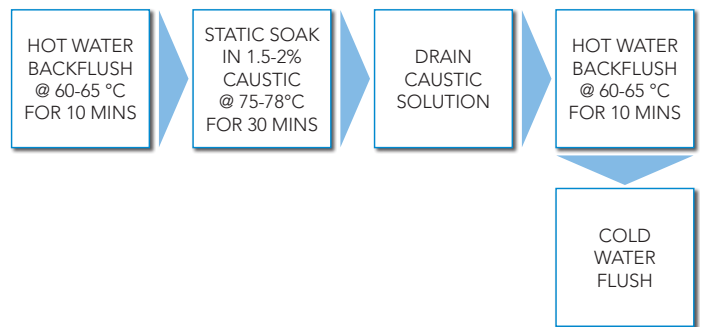
1. Reduction in the unit cost of the consumable filters themselves.
2. Introduction of better performing filters that extend capacity.
3. Better equipment utilisation by improving flowrates thereby increasing the number of batches processed per shift.
4. Improvement to the process itself in terms of flowrate optimisation, cartridge regeneration, etc.

Often the first port of call for saving money is to try and get a price reduction on individual filters. This is a short-term view that can prevent focus being placed on longer term process improvement and imbed poor process design.

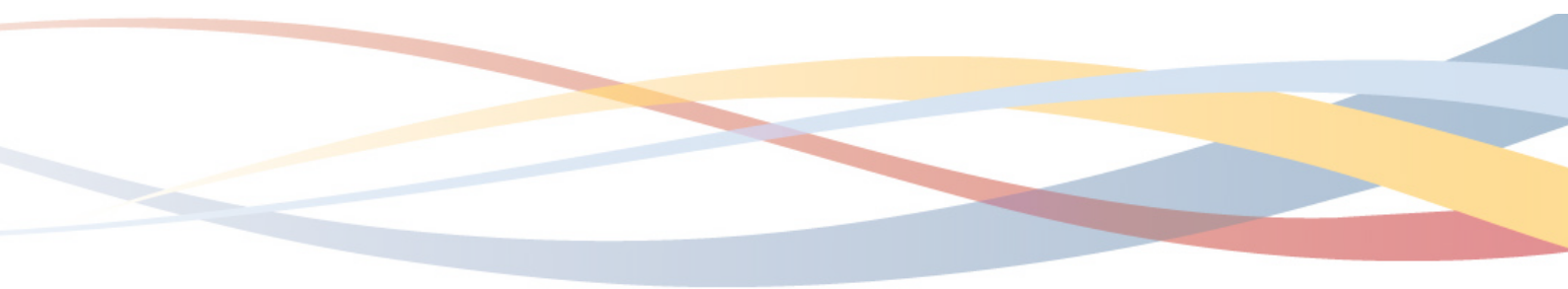
In this case study we show how application knowledge has helped to double the lifetime of a syrup filtration system for a contract soft drink manufacturer.

ORIGINAL PROCESS & PERFORMANCE

Refined sugar was mixed with hot water at 85°C to approximately 52°Bx and then filtered through 3 x 30" 20µm Pall Star Profile cartridges in batches of 5m³ at a flowrate of approximately 8-10m³/hr. During production, cold water backflushing was conducted after each 5m³ batch filtered. The filters were regenerated when blockage occurred which was after approximately 30m³, using the procedure below:



The volume throughput of the filters gradually decreased after each regeneration procedure with a maximum of lifetime of 36 batches being achieved.



NEW PROCESS & PERFORMANCE

To try and improve overall lifetime of the filtration system, the complete management of the filtration from start up and (including production breaks) was investigated. At the same time in addition to a change to Amazon **SupaPore XPG** high dirt holding capacity filters using the same 3 round 30" housing. The modified operating procedures are outlined below:

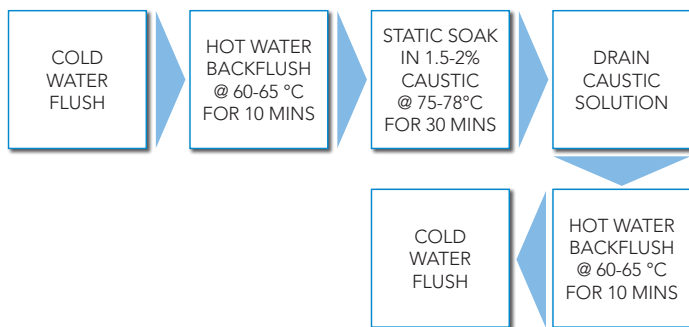
Before start-up or after interruptions of more than 8 hours:



During production:



End of production week: Regeneration Procedure



CONCLUSION

After implementing the revised procedure along with installation of the Amazon **SupaPore XPG** filters, the customer realised a doubling in filter lifetime from 36 batches to 72 with a corresponding halving of consumable costs.

This highlights the importance of analysing the complete filtration process rather than just focusing on obtaining major improvements by retrofitting different filter types or specifications. The performance of the filter is of course extremely important and can result in process improvements but taking a holistic approach and including operational procedures can bring the greatest rewards.

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