Intro to brewery cold block design

– Brewery Systems

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What we'll talk about today

– Agenda

- Brewery industry transformation
- Holistic cold block design for quality, safety and sustainability
- Customer journey
- Creating more value through a holistic approach to designing the entire cold block

Industry transformation

– From manual operation to automated operation

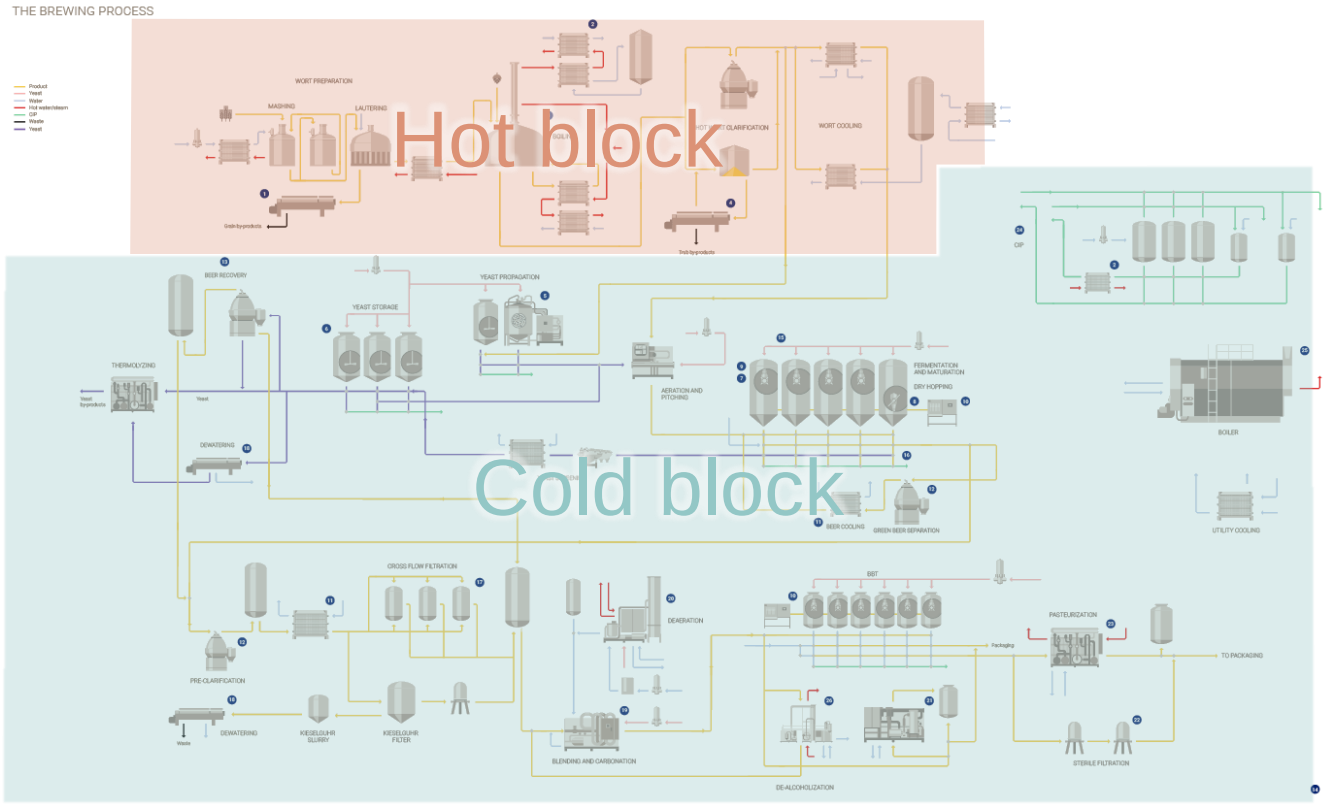
- Stable quality
- Food safety and hygiene
- Sustainability

Custom turnkey solutions for the cold block

– From wort cooling to packaging

Optimizing process design for new or existing facilities

- Biological contamination
- Oxygen pick up
- Product losses
- Yeast management
- Fermentation efficiency
- Product stabilization
- Cleaning-in-Place (CIP) efficiency
- Water and energy consumption
- Waste stream management
- Other areas



Comprehensive brewery solutions provider

– Standard components and pre-engineered systems

Full range of
hygienic valves

Full range of
hygienic pumps

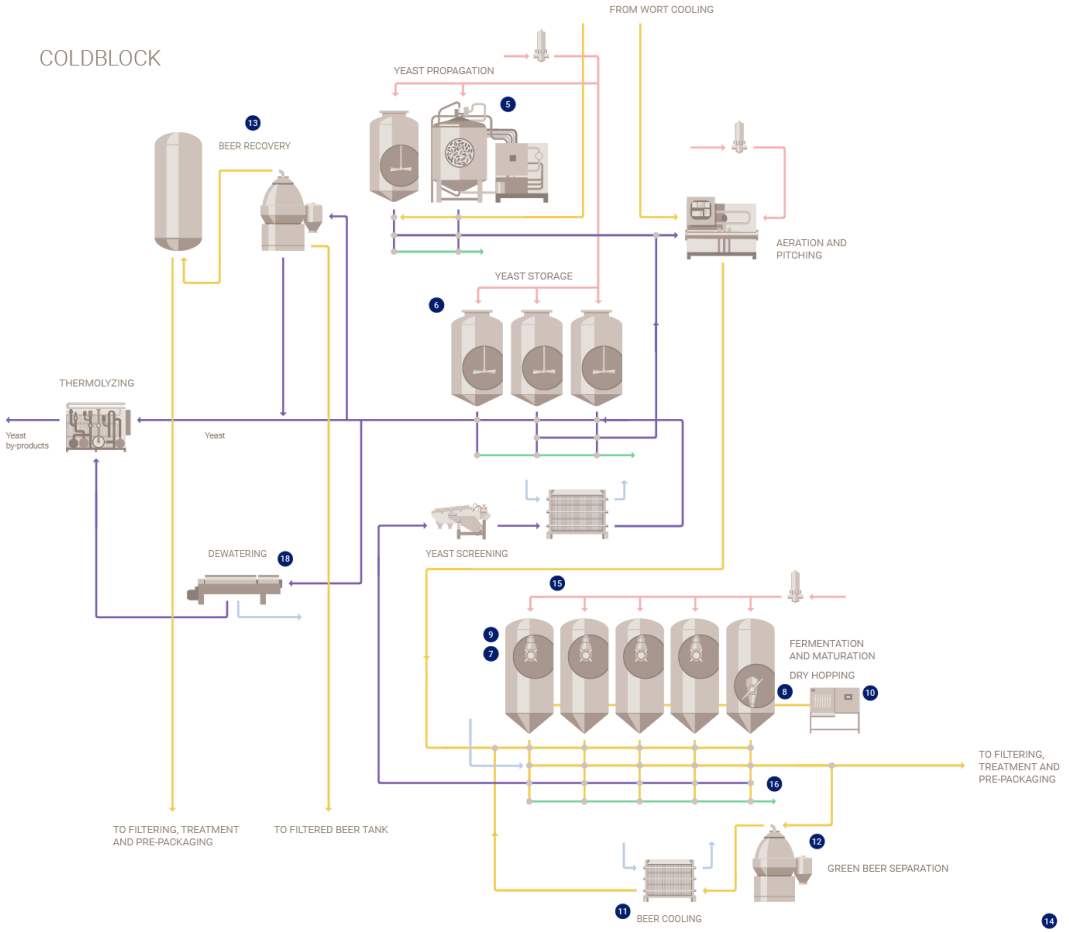
Separation, filtration,
heat transfer, tank equipment

Process modules, top plates,
sampling systems

Custom cold block solutions

– From engineered components to engineered systems

Value



Creating value through the design

A

Value measured in:

- Less O_2 pickup
- Reduced macro extract loss
- Greater energy and water savings

B

Customer + Alfa Laval

Holistic approach to cold block processing design

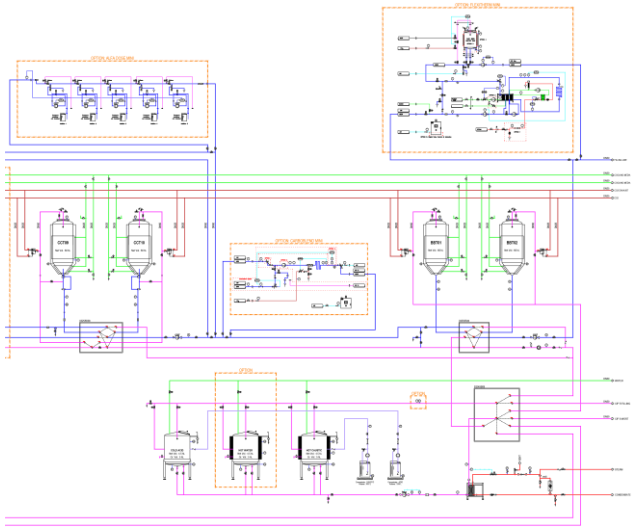
– Early engagement to meet or exceed customer requirements

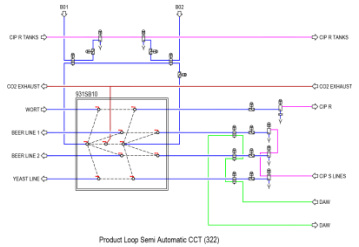
Customer

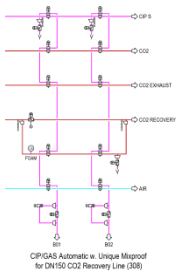
Discuss initial process design

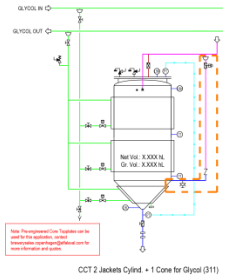
Understanding the task

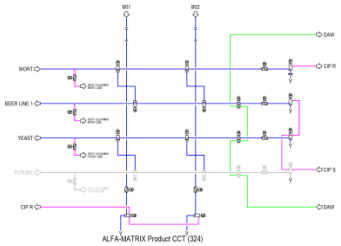
Selecting suitable design blocks





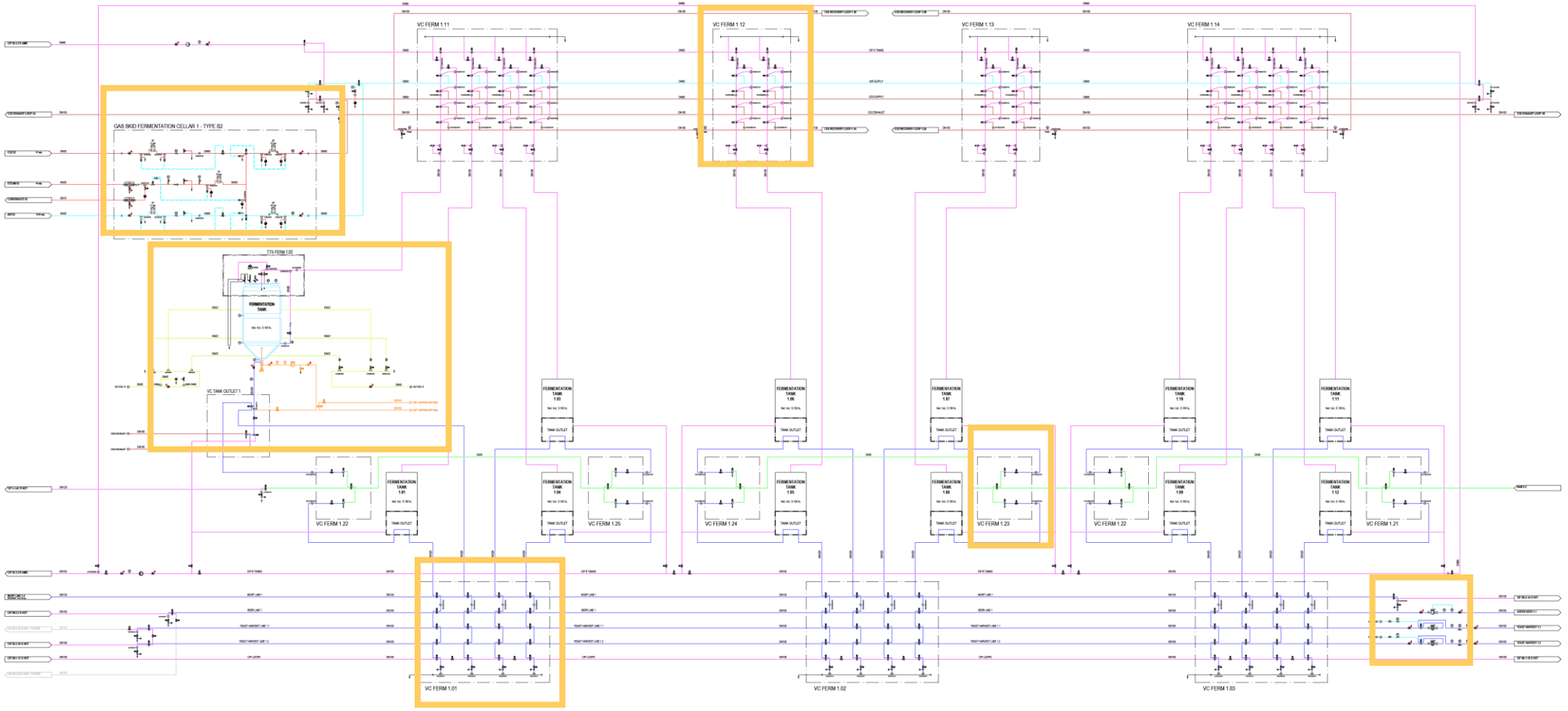






Construction sets

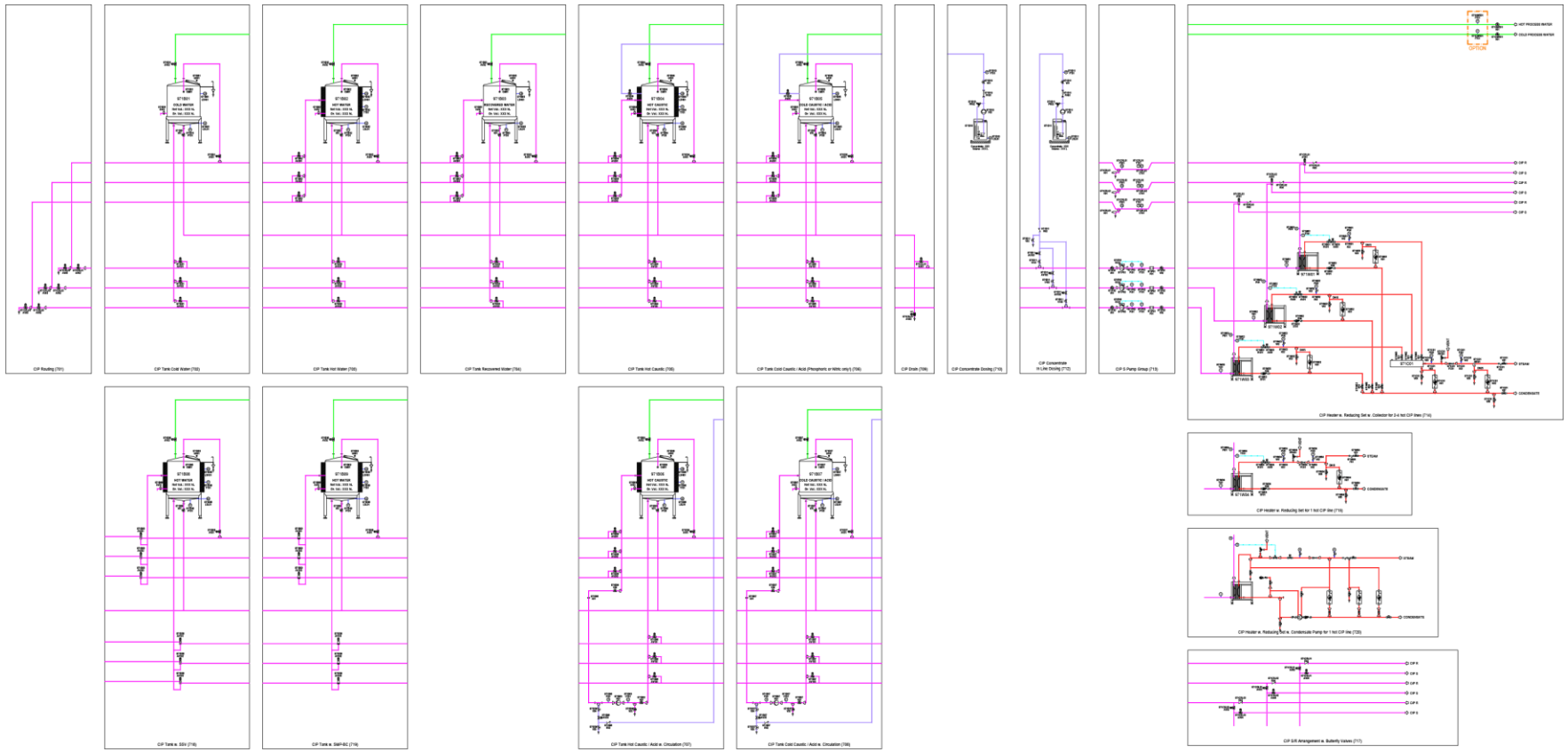
– Importance of the process and instrumentation diagram



Construction sets

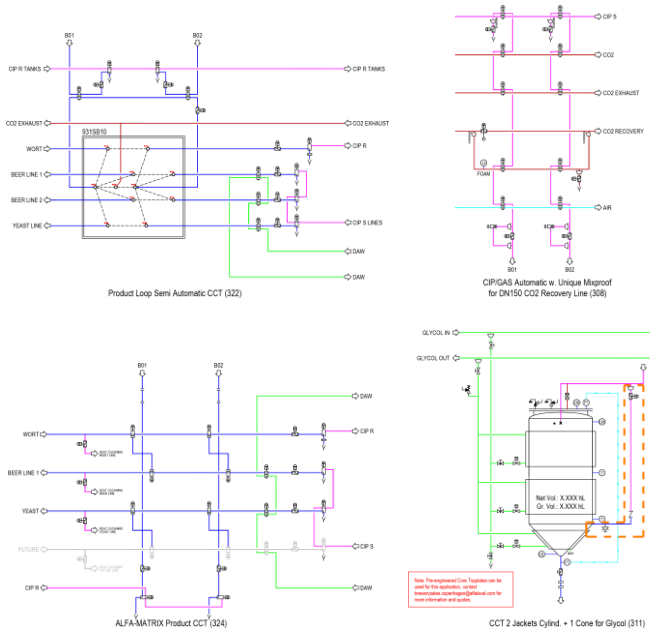
– Basis for active discussion with brewers

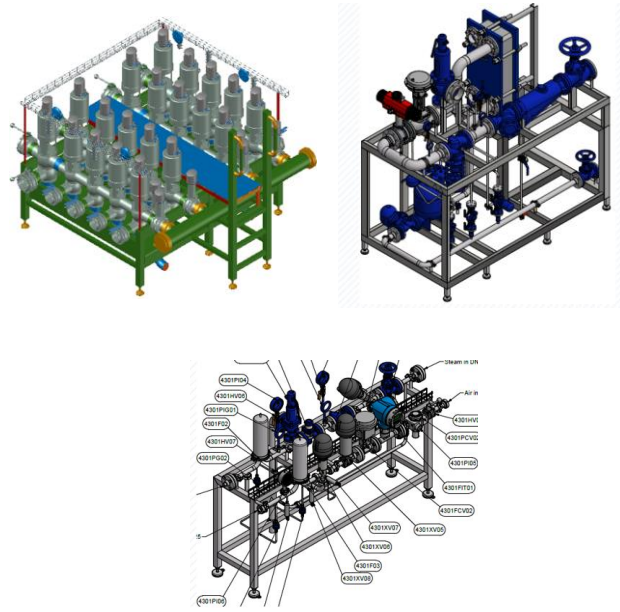
- Variety of design options
- Best practices implemented
- Engineering details considered



Cold block processing solutions

– From construction sets to building blocks





From components

Through construction sets

To building blocks

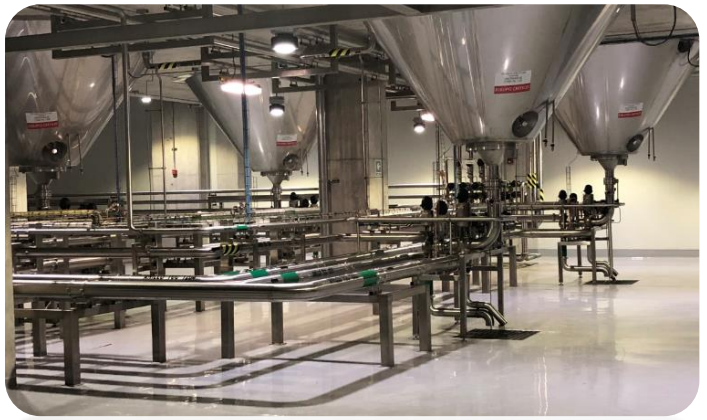
Cold block development or expansion

− Options for development or expansion of your cold block

1

2

3



A customer journey

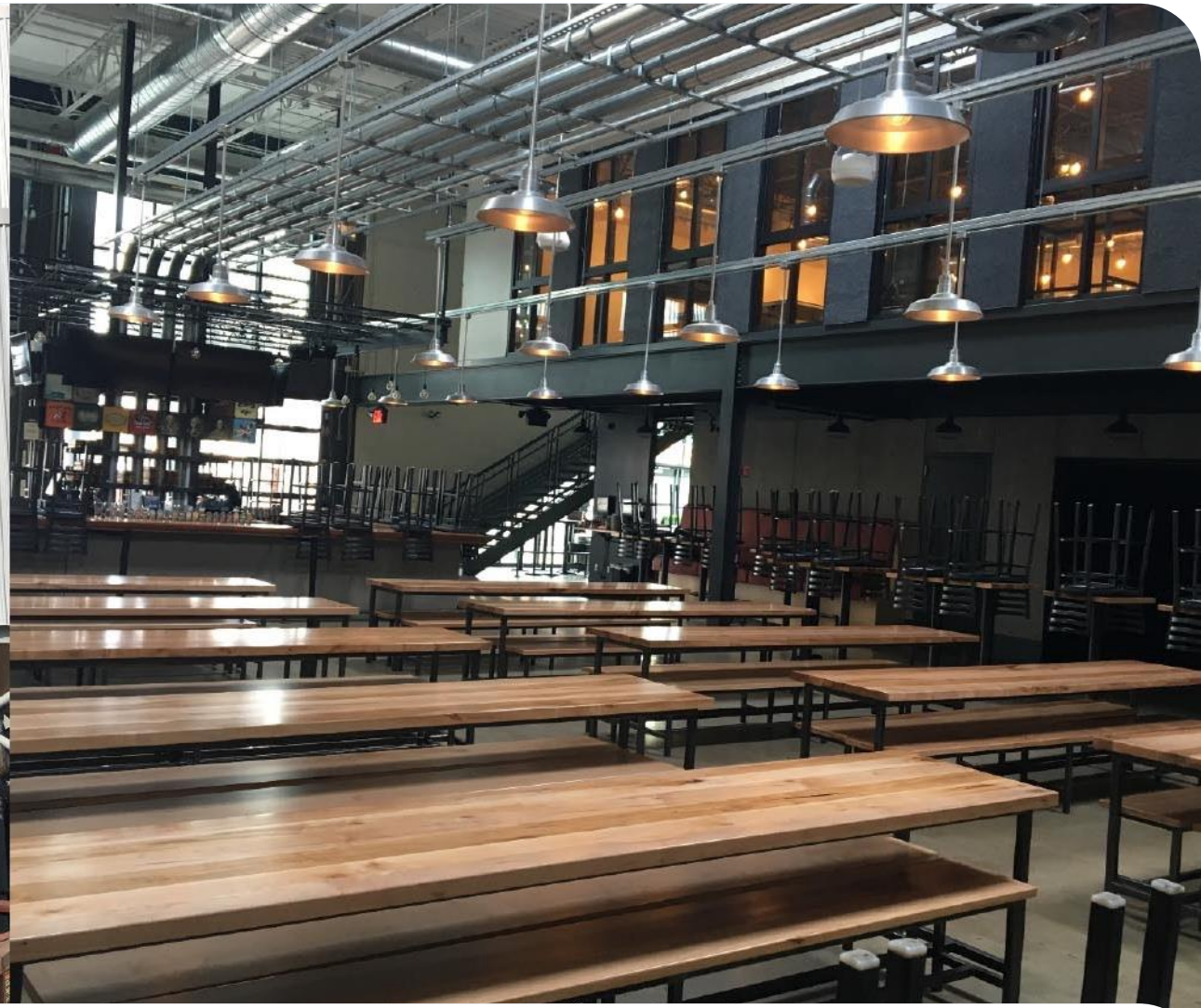
Yards Brewing Company

− Cold block expansion by a craft brewer in Philadelphia

Challenges of doubling production

- Limited budget
- Extract loss
- Many existing small tanks
- Extra thick yeast
- Many yeast strains
- Specific dry hopping requirements

Yards new building and the tap room



Meeting the challenges

– Innovative Yards cold block expansion

Cost- and space-saving solutions

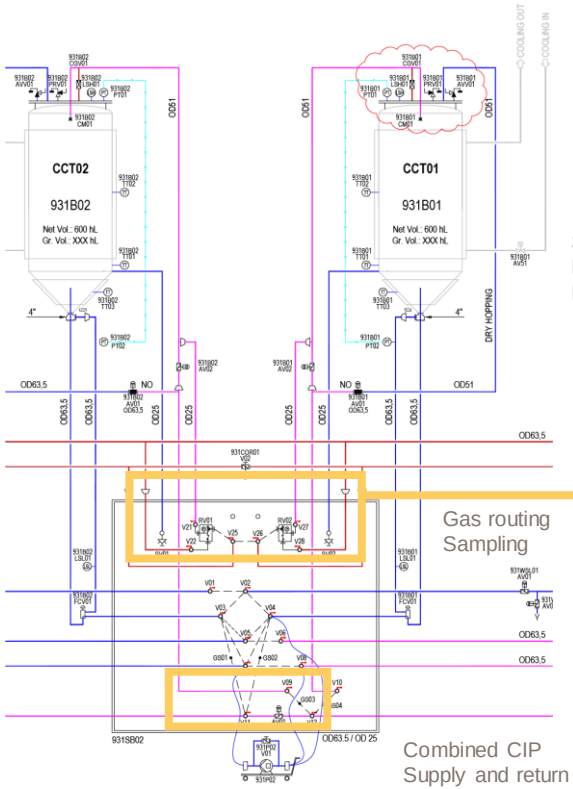
- Reduced piping that reduced installation hours
- Minimized beer losses, maximized beer recovery from yeast and hops
- Maximized yeast harvest, storage and propagation
- Raised efficiency of tank utilization
- Introduced automation
  - Dry hopping using existing tanks
  - Valves for bright beer tanks

Reduced piping and reduced installation hours

– Combining product and gas management + Cleaning-in-Place supply and return line

Addressing space and budget constraints

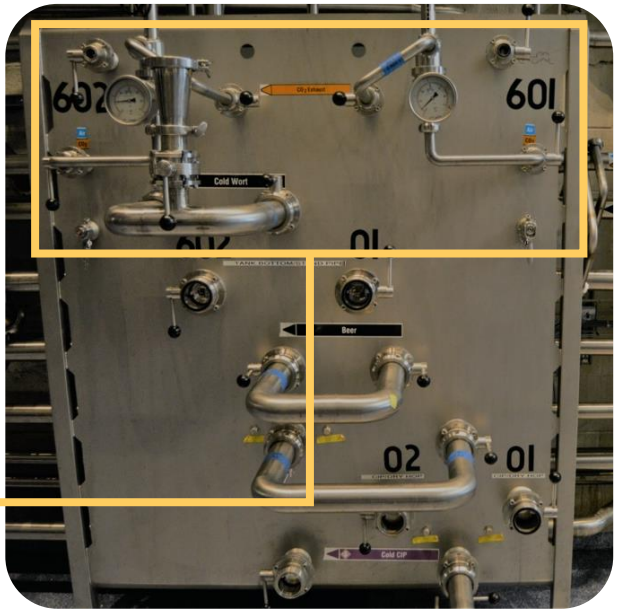
- Combined swing bend panel design
- Combined CIP supply and return line



Standpipe
Blending feature
Mixing feature

Gas routing
Sampling

Combined CIP
Supply and return

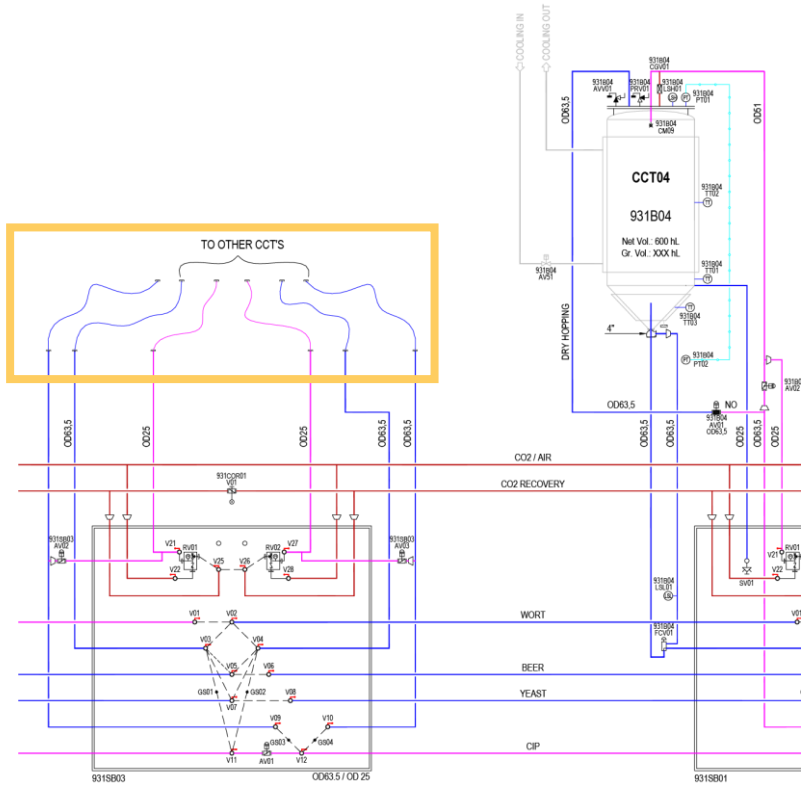


Many small tanks, large craft beer variety

– Swing bend panel connected to several small tanks

Cost-effective swing bend panel

- Connects tanks and valves using both hard piping and hoses
- Serves several existing small tanks instead of just one
- Keeps expansion costs down by re-using existing small tanks

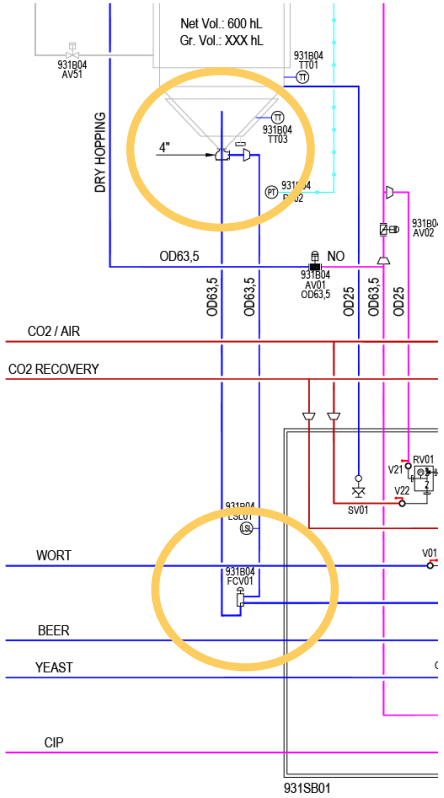


Minimum beer losses, maximum beer recovery

– Two-outlet standpipe that re-doses yeast bottoms into the beer stream

Hygienic standpipe instead of racking arm

- No shadows in the tank during CIP
- Re-doses yeast bottoms into the beer stream
- Prevents losses of extract with surplus yeast
- Improves tank cleaning
- Maximum beer recovery from the yeast and hops

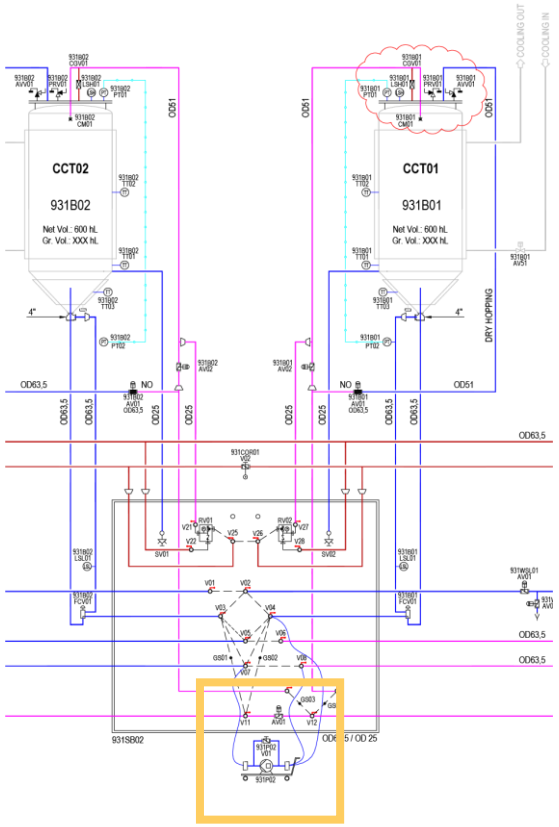


Maximizing yeast harvest

– A single pump to harvest thick yeast from two tanks – safely, easily and efficiently

Mobile membrane DEPA pump

- Self-priming, air-operated pump for 1 bar of suction capacity
- Connects directly to fermentation tanks
- Easy to clean together with the yeast harvest line

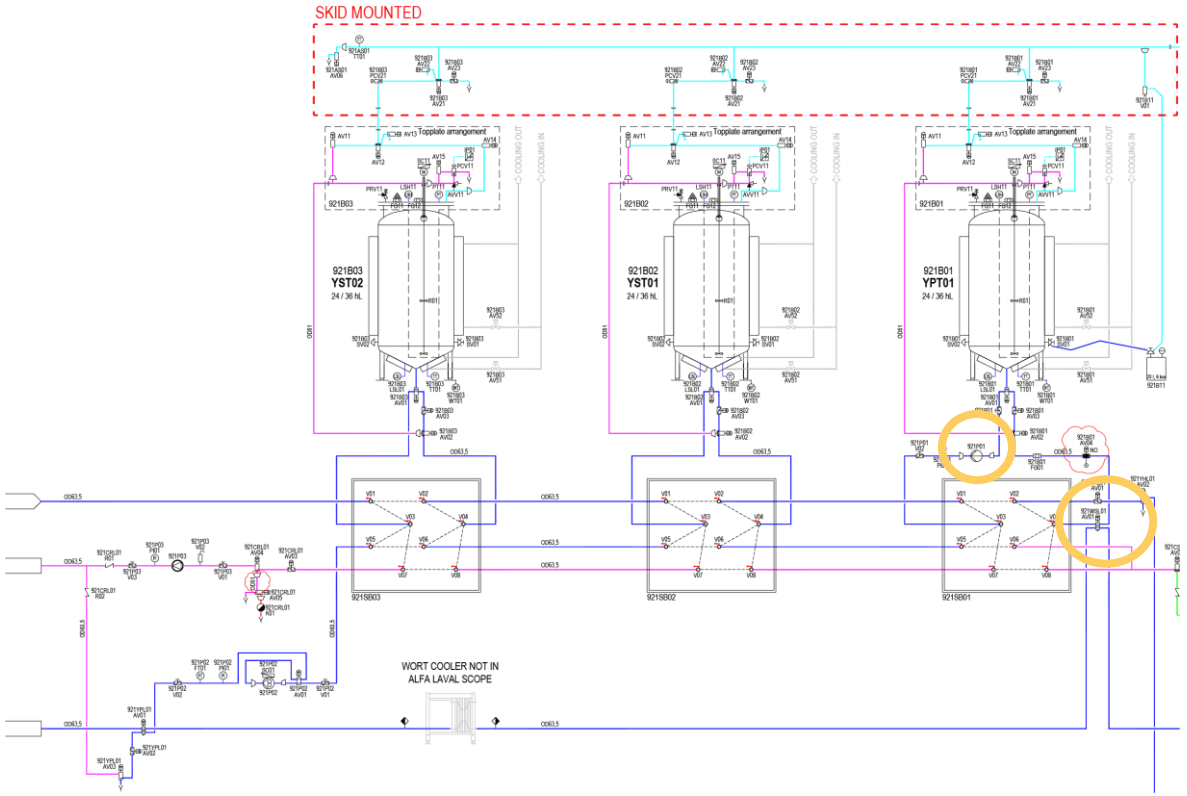


More efficient tank utilization

– Yeast management system: One tank, two uses

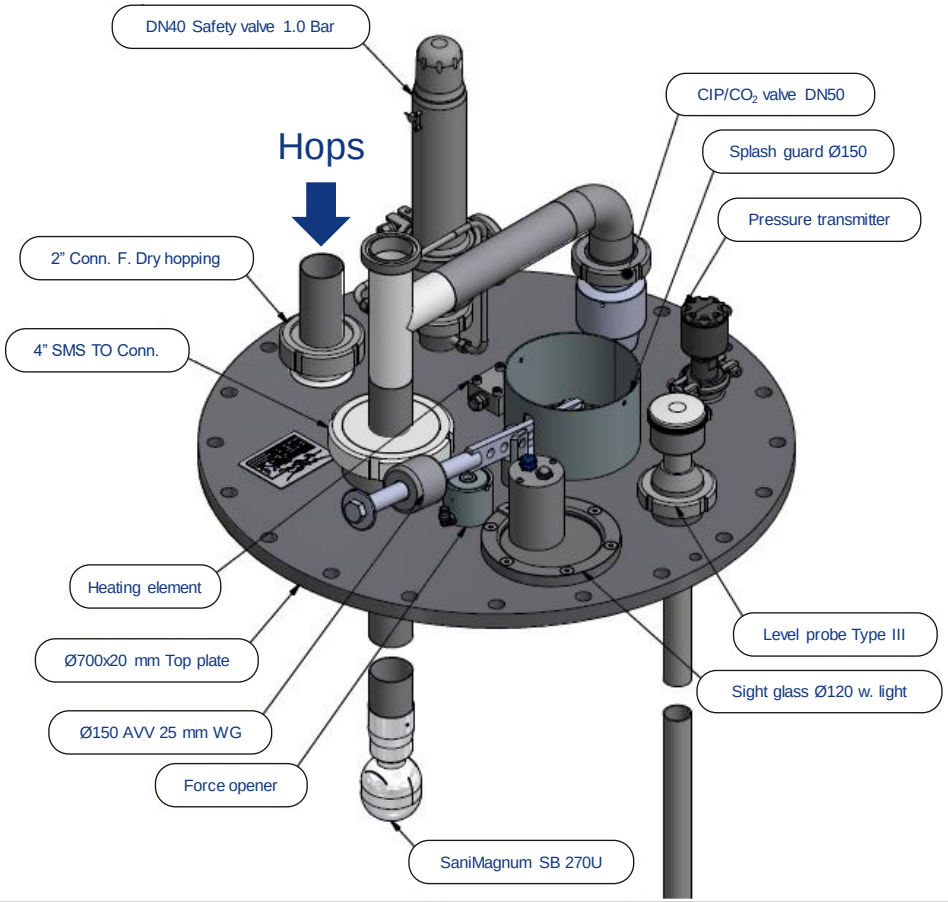
Yeast storage plant with a propagation option

- Same tanks used for propagation and storage
- Tanks with hot wort connection, agitator and aeration functions, dosing pump
- Highly hygienic and semi-automated design
  - Adds greater flexibility
  - Affordable solution



Automating the dry hopping process

– Increased beer production capacity requires increased levels of automation



Fully automated dry hopping

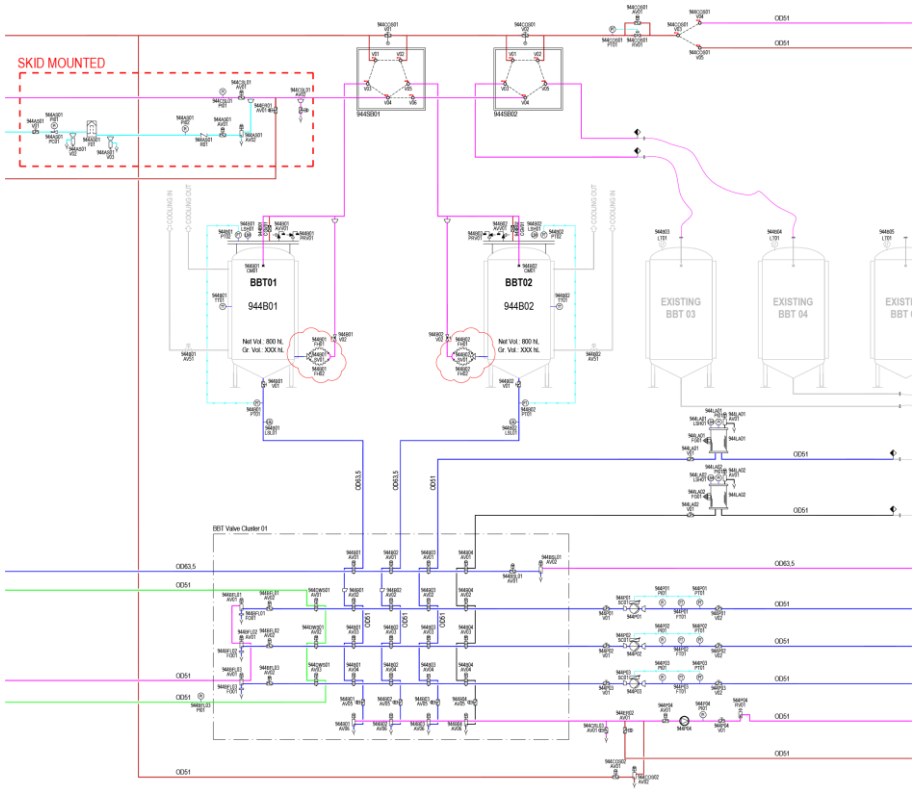
- Yards' requirement for hops transfer into tank tops
- Tank top plates adapted for dry hopping with Alfa Laval Scandi Brew
- Pellets conveyed pneumatically into tank
- Ensures faster, safer and more controlled dry hopping process
- Raises efficiency and lowers costs
- Easy to clean in place

Fast changeover, high hygiene standards, reduced risks

– Automated solutions for bright beer tanks

Automated change-over from BBTs to filling lines

- Faster changeovers at high frequency
- Highest levels of hygiene
- Reduce the risk of human error, oxygen pickup and spoilage



Meeting the challenges

– Yards cold block expansion

Realizing Yards goals

- Expansion within budget and space constraints
- Minimize extract loss
- Re-use of existing small tanks
- Hygienic handling extra thick yeast and many yeast strains
- Automate tank-top dry hopping
- Automate the BBT area

Brew more beer – and brew it better

– Yards cold block expansion

Meeting the challenges with added value

- Strong, decade-long relationship with Alfa Laval
- Expanding capacity and improving quality
- Ensuring an overall hygienic brewing process
- Guaranteeing the most cost-effective design
- Sustainability
  - Energy and water savings
  - Reduced emissions and/or waste

Time to unlock the full potential of your cold block brewery process line

A quick recap

– Alfa Laval: Your partner for cold block optimization

Comprehensive portfolio of technologies for the cold process area in your brewery

- Yeast management
- Fermentation and maturation
- Dry hopping
- Beer sampling
- Cleaning
- and other

For more information about Alfa Laval cold block

Read the case story about Dixie Brewing Company, US

Upcoming webinar on cold block

Brewery Cold Block design: Fermentation area

Click here to visit our webinar web page

Alfa Laval cold blocks around the world

Engineered solutions

Tank top systems

>3,200
since 2011

Aldox

>900
since 1990

Flexitherm

>500
since 1990

Iso-Mix
Fermentation

>500
since 2010

HSS

>390
since 2012

Carboblend,
Carboset and Alex

>300
since 1990

BSF

>120
since 1990

IMXD
Dry hopping

>50
since 2017

Decanter
Intelligent Whirlpool
Systems

>25
since 2012

Any further questions

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Q&A


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