

Brewery Solutions

Achieving Operational Excellence
to Ensure Quality Brewing

Operational Excellence

01

Performance & Compliance

02

Autonomous Operations

03

Sustainable Solutions

04

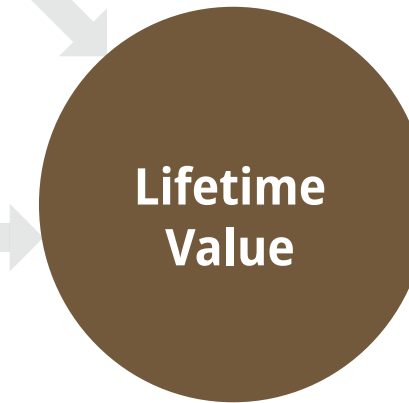
Highest Life Cycle Value

How can Yokogawa enable long-term business success?

From quality and compliance to maximizing production and increasing reliability, there is no shortage of challenges in the brewing industry. Yokogawa's innovative solutions across the many applications enable our customers to meet increasingly complex market demands.

In addition to improving optimal and efficient automatic processes based on demand forecasting, Yokogawa creates autonomous operations with high-efficiency automation and optimization that enable growth with minimal deployment of manpower. Autonomous operations can rapidly adapt to changing market conditions and demands for new product attributes qualities. Ultimately, the entire value chain, from agriculture through beverage production to delivery to the consumer, can be optimized.

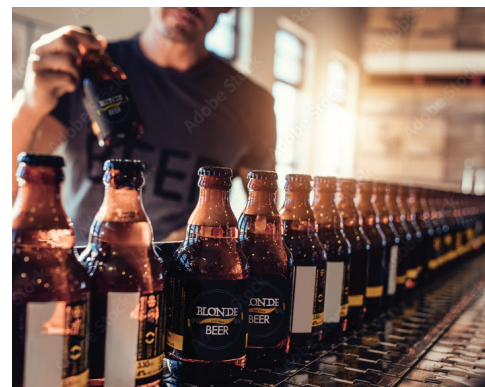
“They are reliable and repeatable. I've used the vortex meters and they're as reliable as anything. Some have been in service 13-20 years, and we haven't had a moments trouble out of them.”



01 Operational Excellence



One of the most fundamental and often overlooked factors for maximizing revenue is the reliability and maintainability of automation systems.



A long-term partnership with Yokogawa will provide the highest total value of ownership for measurement and control solutions.

04 Sustainable Solutions

Performance & Compliance 02



Yokogawa has co-innovated to develop high-performance hygienic and sanitary instruments for applications requiring compliance with industry regulations that exceed customer expectations.



Yokogawa has an extensive hands-on understanding of the value of information across the entire operation.

Autonomous Operations 03

YOKOGAWA
Co-innovating tomorrow™

Maximize Production and Increase Reliability

An ideal blend of availability, performance, and compliance

Implementing real-time process measurements can improve production quality, reduce manual sample time/errors, eliminate rejected batches, and put an end to expensive product recalls.

- Flavor quality issues
- Color and turbidity quality issues
- Variances in fermentation time
- Problems during filtration

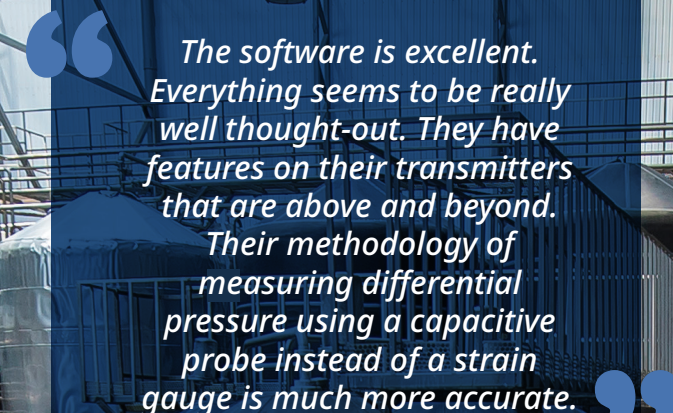
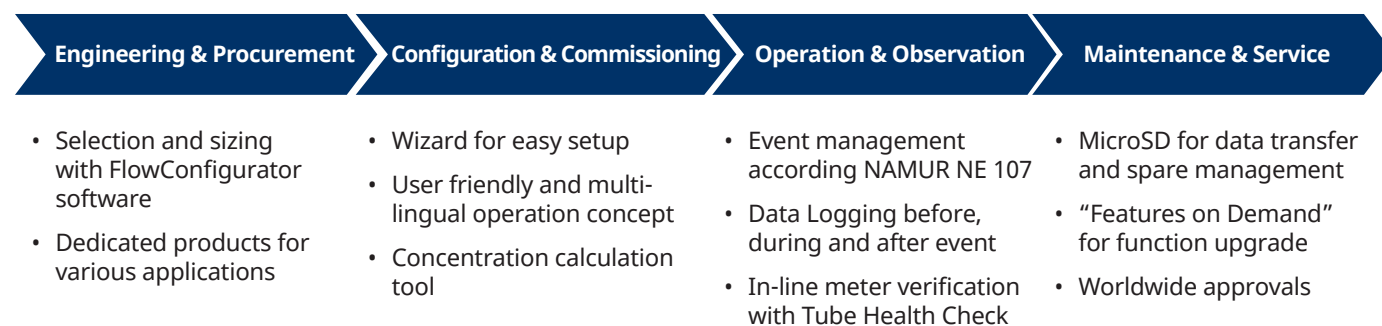


Process optimization

Yokogawa understands that tight, yet flexible integration with Advance Process Control (APC) and Distributed Control Systems (DCS) results in more profitable operations, and that regulatory control stabilization is important as a baseline for a control hierarchy. Often, brewers realize production increases as high as 20%.



Product and application lifecycle



The software is excellent. Everything seems to be really well thought-out. They have features on their transmitters that are above and beyond. Their methodology of measuring differential pressure using a capacitive probe instead of a strain gauge is much more accurate.

Yokogawa's measurements provide verified sensor performance and proactive maintenance.

From 'Sensing' to 'Sensemaking'

Combining reliable technology with superior field knowledge, Yokogawa's Total Insight optimizes operations and reduces maintenance costs through every phase of the product lifecycle.

One of the most fundamental and often overlooked factors for maximizing revenue is the reliability and maintainability of automation systems.



Expert Solution
Utility and Maintenance



Simplified Selection
Engineering and Procurement



Smart Assist
Installation and Commissioning



Process Guard
Operation and Observation



Predictive maintenance using digital technologies

The ability to predict when consumable parts will fail and, therefore, prevent unplanned downtime is essential in today's ever-evolving industry. Leveraging the Total Insight and SENCOM philosophies in Yokogawa's solution delivers enhanced insight into equipment and processes to reduce downtime. Yokogawa's advanced systems allow operators to exercise predictive maintenance and prioritization.

Utilities

Processing

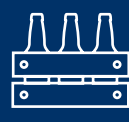
Packaging

Wastewater Treatment

Quality Assurance

Warehouse / Logistics

PLANTWIDE SOLUTIONS



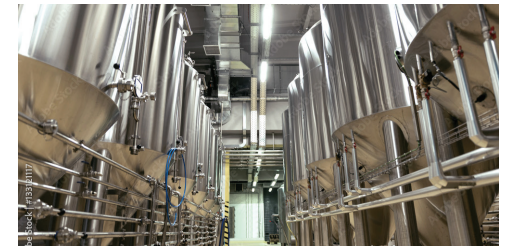
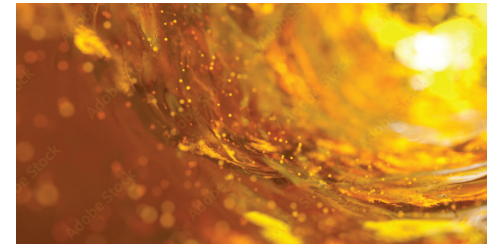
Agility to excel in today's dynamic market



Partner with commitment to quality

Trusted Hygienic and Sanitary Solutions

“The PLC is designed to shut down if hardware faults are detected and if any instrument fails, it is replaced—but this rarely occurs. As far as we are concerned, Yokogawa provides excellent long-term service and performance.”



Reduce Product Losses & Rework

■ Industry Control Systems

Distributed control systems provide the industry's highest field-proven system availability, enterprise-wide interoperability, extensive advanced solutions portfolio, and third-party certified defense-in-depth cybersecurity to increase productivity and improve plant operations.

■ Quality Control Management

Laboratory Information Management OpreX LIMS fully supports the analytical and quality management operations and allows you to establish test workflows to standardize and optimize quality management operations to reduce costs and improve the service level.

■ Analytical Solutions

Highly responsive analytical systems contribute to accurate measurement of product, boiler/furnace combustion, and water treatment helping brewers meet quality control and environmental regulations.

■ Sensing Solutions

Measurement technologies enable the realization of innovative solutions to achieve high quality and safety in production. These superior measurement technologies deliver enhanced value throughout the brewing lifecycle.

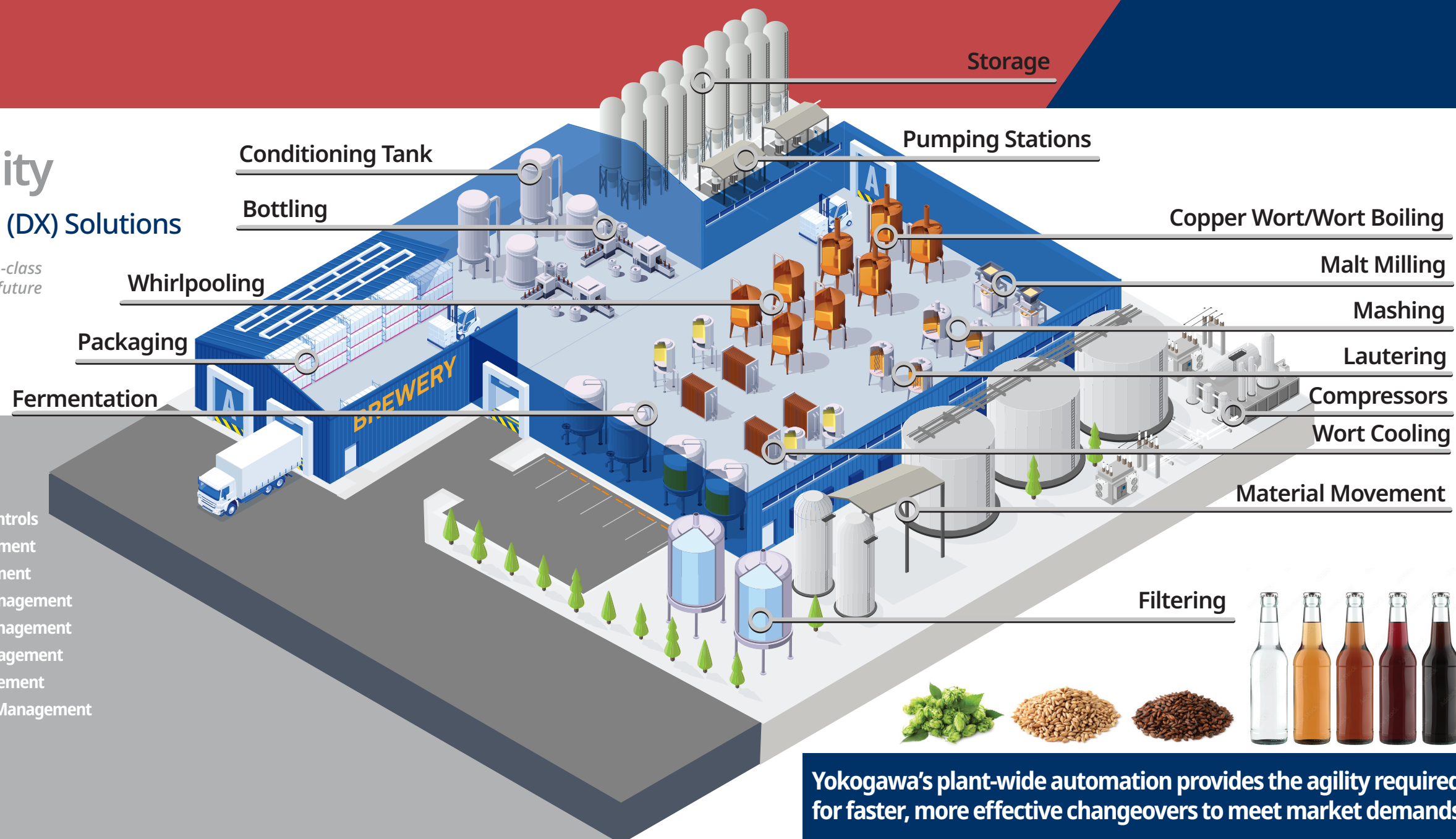


Agility and Adaptability

Yokogawa Digital Transformation (DX) Solutions

Yokogawa's intelligent field devices comprise a best-in-class and reliable digital solution that meets present and future needs in the food & beverage industry.

- | | |
|--|-----------------------------|
| 01 Flow | 16 DCS |
| 02 Pressure | 17 CI Server |
| 03 Temperature | 18 Historian |
| 04 Level | 19 State Based Controls |
| 05 pH | 20 Alarm Management |
| 06 Conductivity | 21 Asset Management |
| 07 Dissolved Oxygen | 22 Operations Management |
| 08 Humidity Measurement | 23 Production Management |
| 09 CO2/O2 Ingress | 24 Inventory Management |
| 10 Controllers | 25 Quality Management |
| 11 Data Acquisition | 26 Cybersecurity Management |
| 12 IIoT Asset Monitoring | |
| 13 Environmental Monitoring | |
| 14 Distribution/Supply Chain Logistics | |
| 15 Integrated Solutions | |



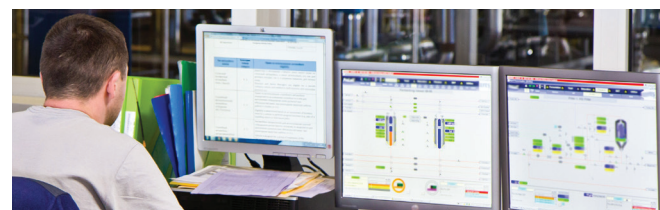
Yokogawa's plant-wide automation provides the agility required for faster, more effective changeovers to meet market demands.

AXON Brewing / Distilling Control System

Yokogawa's Brewing/Distilling Control System stemmed from our partnership with two startup microbreweries and the need for a system that reduced the hands-on monitoring and perfectly controlled all temperature and timing requirements.

Our systems are designed to accommodate all processes, providing the precise control needed to help grow your business and create a consistent and reliable brewing operation.

EtherNet/IP™



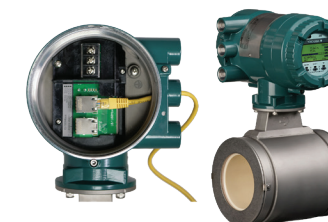
Key Advantages

- CFR21 Part 11 Compliant
- Ease of use for operators
- Data logging for all test readings
- Wireless networking
- Easy-to-load recipes for multiple runs
- Expandable
- Best-in-class temperature control

Efficient and Cost-Effective Flow Control

An upper Midwest historic brewery in the US, faced many challenges to expand production in a facility that was originally constructed in the 1800s. After analysis and discussion, the brewers recognized that correcting inefficiencies in out-of-date technology would help them achieve the increased and consistent throughput they needed.

From prior projects, the brewers were familiar with the accuracy, reliability, and robustness of Yokogawa's instrumentation. Thus, they selected Yokogawa's ADMAG Total Insight (TI) AXG®, an electromagnetic flowmeter with EtherNet/IP communication.



Key Advantages

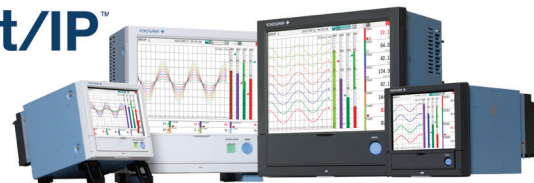
- Fast and consistent product throughput via patented dual-frequency excitation with stability, slurry noise immunity, fast response, lower power consumption, and accuracy.
- Cost savings on installation are gained through quick response and delivery from a local manufacturing facility in the USA.

Quality Performance

Plant Upgrade for Foster's at Yatala Brewery

Foster's Australia partnered with Yokogawa on a two-year expansion and upgrade project at Yatala, designed to more than double production capacity from 2.5 million hectolitres to 5.4 million hectolitres. For this project, Yokogawa supplied magnetic flowmeters, pressure transmitters, level switches, vortex flowmeters, conductivity analyzers and Coriolis flow meters—some 1,130 individual items in total. A formal product training program for the Foster's operational staff at Yatala was also part of Yokogawa's tender.

EtherNet/IP™

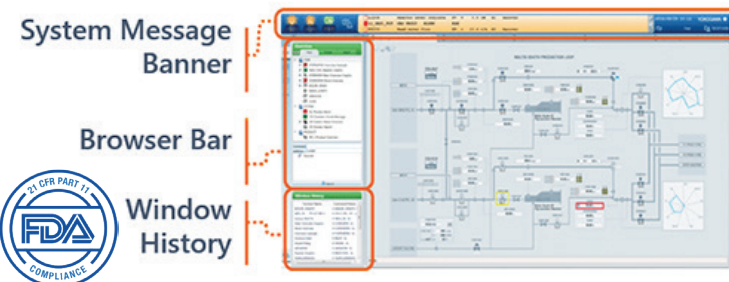


“It became an easy choice. Firstly, Yokogawa had proven their product quality in previous projects with Foster's and, secondly, they could supply all the instrumentation required for this job.”

Leveraging New CIP Technologies

CENTUM Cuts Clean-in-Place (CIP) Time 50% and Improves Productivity

In the beverage industry, clean-in-place (CIP) is a very important method for eliminating contamination. Although many different items must be cleaned at different times and with a variety of detergents, ADEKA was able to reduce CIP time by 50% using the Yokogawa CENTUM control system. Steam consumption was also drastically reduced and plant availability remained high.



Key Advantages

- Batch Management Package is compatible with the ISA-88 (IEC 61512) batch control standard and 21 CFR Part 11 regulations.
- Effectively manage a complex sequence of functions involving the execution of CIP between batch processes.
- Yokogawa's virtualization separates system software operations from physical hardware dependencies and allows software reusability to optimally commission system hardware.

“I tend to favor Yokogawa products. You get better performance from them. I am satisfied with their mag meters.”

Stable Level Measurement Improves Brewing

Optimal Whirlpooling

By its very nature, whirlpooling presents a unique set of challenges to brewing process control. Temperature swings of as much as 30 degrees are common. They can adversely impact the level measurement instrumentation used to control the amount of wort to be added at this stage. Fluctuations in the level measurement can lead to overfilling the vessel and creating safety issues for the facility and workforce as well as potential food safety issues.



Key Advantages

- Active temperature compensation reduces level measurement fluctuations allowing for increased vessel utilization and ultimately increased production.
- Reducing the risk of tank overflows reduces process downtime, environmental contamination incidents, and safety compliance issues.
- A comprehensive selection of sanitary connections and easy pushbutton display simplifies installation and configuration.

“We have Yokogawa recorders. It's all back up documentation. They are good. They are hardy and they stand up.”

Instrumentation Applied to the CIP Process

New Efficiencies in Five Measurement Areas

By leveraging new CIP technology that ensures cleaning efficiency, brewers can minimize waste, reduce costs, and improve production efficiency.

Applying digital transformation to production will help realize Smart Manufacturing.

Yokogawa achieves Smart Manufacturing through the novel application of digital technologies with domain knowledge to improve the performance of customers' supply chains and asset lifecycles.



EBOOK

This eBook explains how to how to best leverage the latest measurement instrumentation to avoid incidents and improve productivity. Find valuable information about overcoming common CIP challenges and stories of success.



Co-innovating Long Term Success

Long-term business success needs a long-term strategy

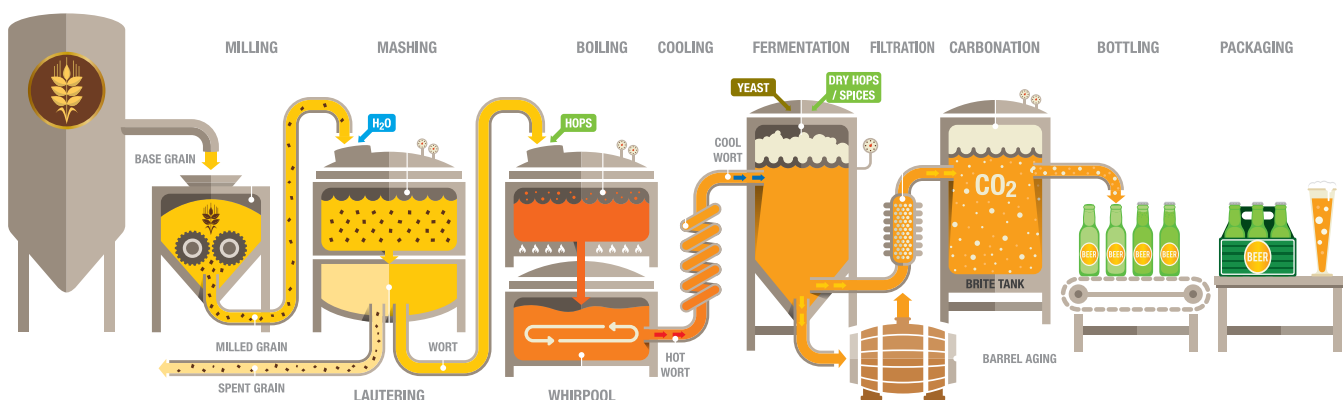
Yokogawa's leading-edge technology and extensive application know-how enable partnerships with customers in developing solutions to optimize processes and sustain value over the entire plant lifecycle. A long-term partnership with Yokogawa will help provide the highest total value of ownership for automation solutions.



Yokogawa is committed to developing sustainable solutions for the environment, for society, and for our customers. We co-innovate energy-efficient technology that improves automation processes and provides real-time data visibility to enable agile responses to business and market dynamics.

- Supply chain management
- Logistics
- Value chain optimization
- Change management
- Permit to work
- Procedural automation
- Sustainable safety
- Total Insight instrumentation
- Autonomous control

With you every step of the way...



From grinding and mashing to the filling station and supply chain distribution, process quality at every step; Yokogawa's solutions deliver assured product quality.

The confidence that each stage of the brewing process is progressing as it should can only be gained through reliable monitoring instrumentation. The continuous information and simplicity of operation that Yokogawa's in-line measurement solutions provide offers significant benefits to breweries.

Lifetime partnership provides lifetime value

Optimize assets and the total value of ownership throughout the lifecycle

Today's plant processing units now require increasingly longer-term operation without the need to shut down for maintenance. Proactive maintenance enables a high-availability environment for continuous, 24/7/365.



Lifecycle performance services comprise a sustainable plan

- 01 Asset Health Monitoring**
Utilizing IIoT technology, our asset management system for instrumentation and controls prevents failures by detecting problems very early as they develop. Closely monitoring system conditions allows development of a lifecycle maintenance plan that includes system health monitoring, network equipment and performance monitoring, and environmental monitoring.
- 02 Sustainable Lifecycle Planning**
Yokogawa's Lifecycle Agreement "Sustainable Plan" provides a wide range of maintenance services. Yokogawa not only designs an optimal lifecycle plan for the customer's measurement and control systems but also monitors, implements and redesigns the systems throughout the lifecycle.



“ This is a reliable control system. One of the most reliable ones I've ever seen in my life. The equipment has been here for 10 years and has never failed. And it is somewhat tolerant to the mistakes we make.”

- 03 Secure Remote Services**
Our resilient infrastructure provides secure remote services for operations and maintenance from a site office, head office, or from home. Remote operations reduce support lead times, eliminate travel expenses, and contribute to stable and continuous plant operation.



Agile measurement and control for lifetime operation

Other Publications



VARIETY OF BREWERY APPLICATION NOTES

Gain a comprehensive understanding of brewing process measurements, sensing elements, how to achieve reliable results, achieve efficient and cost effective control, successful process applications and more.

DOWNLOAD

pH MEASUREMENTS IN BREWERIES

Technicians are invited to review this real-world application note collection, describing various processes where pH measurements are commonly seen and difficulties that maybe encountered and the product selections that resolved it.

DOWNLOAD

BREWING/DISTILLING BROCHURE

Yokogawa's AXON Brewing/ Distilling Control System allows customers to order a control system that is designed and built for their specific needs, to help grow your business while helping to improve your products verity and quality.

DOWNLOAD

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