

ZIPTECH

OUR PRODUCTS



1000 TURNKEY BREWERIES
LITER / BREW SYSTEMS



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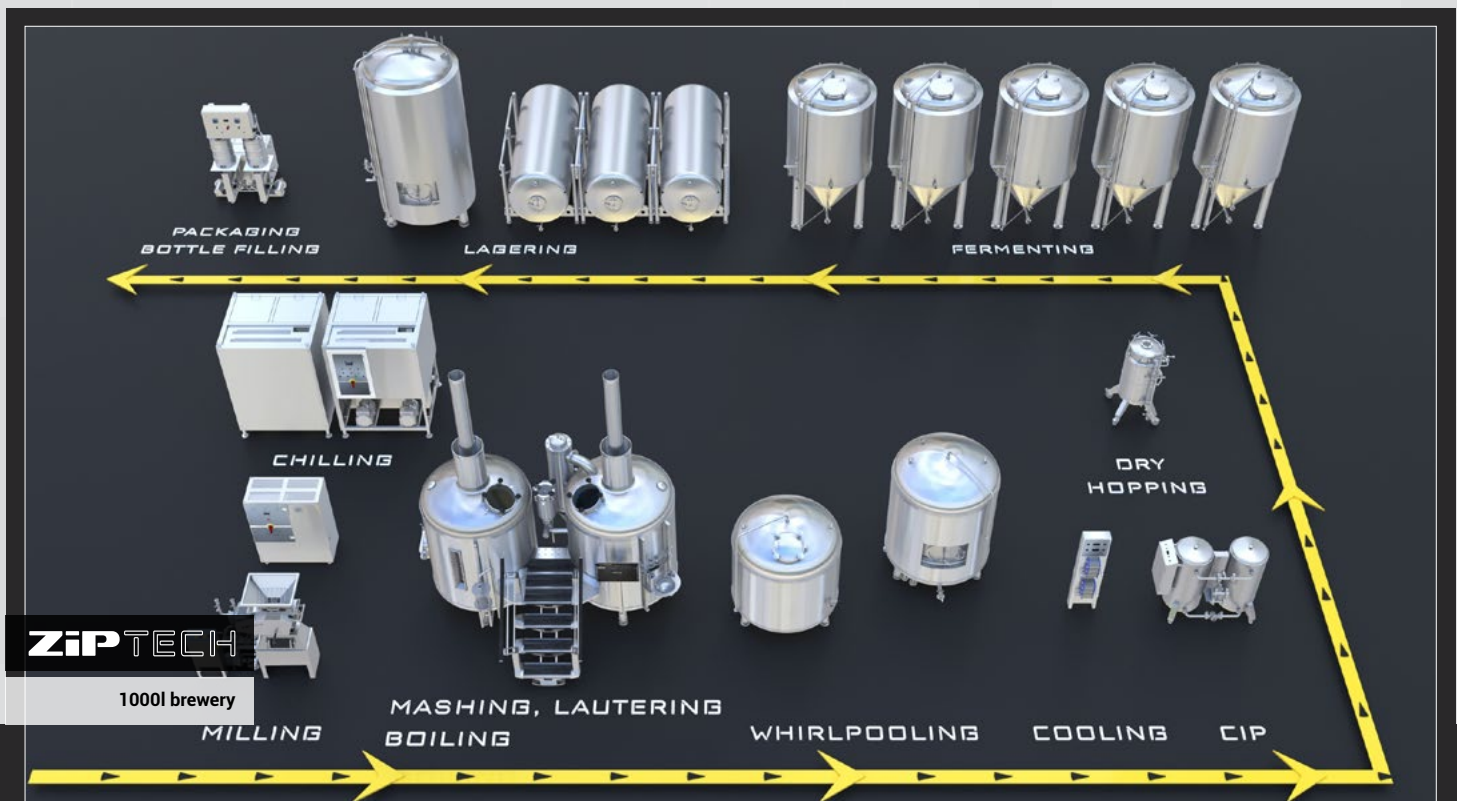
COMPLETE BREWHOUSE 1000 LITER / BREW SYSTEM

This mid-size brewhouse is available in several configurations and it can be mounted on a frame. It's a perfect choice for brewing the required beer for bigger restaurants or for industrial production.

The equipment is available in semi- and full automatic versions with flexible design options tailored to your specific requirements. ZIP breweries are equipped with our self developed ZIPMATIC software that allows high gravity brewing, optimal yields and low operational and staff costs thanks to the automated, trackable processes. Most of the brewing steps are measured, saved and displayed on a user-friendly, spectacular interface.



FULL SYSTEM OVERVIEW



CONFIGURATION POSSIBILITIES

	4 vessel	5 vessel	6 vessel
Number of brews per day*	up to 4	up to 6	up to 8
Mash Kettle		X	X
Mash and Wort Kettle	X		
Lauter Tun	X	X	X
Prerun Tank			X
Wort kettle		X	X
Whirlpool**	X	X	X
Hot Liquor Tank**	X	X	X

*depending on the recipe and the beer type

** available in combi tank version (Whirlpool and Hot Water Tank)

CONFIGURATION POSSIBILITIES

4 vessel



5 vessel



6 vessel frame design

BREWERY DETAILS

Space requirements

from 100 m² + depending on the specification

4 vessel brewhouse (with steam generator, to the heat exchanger)	35 m ²
6 vessel brewhouse (with steam generator, to the heat exchanger)	45 m ²
room for malt grinder, cooling equipment, air compressor	20 m ²
fermentation area + CIP	35 m ² - according to specification
(8 pcs of 2000 liter CCT)	45 m ² - according to specification
serving tanks (4 pcs of 1000 liter horizontal BBT)	9 m ²
KEG cleaner and filler	12 m ²
bottling machine (manual, 6 head)	10 m ²
storage for raw material, empties, finished goods	according to specification

Ceiling height

from 3,2 meter + depending on the specification

brewhouse on ground	3,2 m
brewhouse mounted on frame	4,2 m
CCT 1000 l with top manhole	2,8 m
CCT 1000 l with side manhole	2,5 m
CCT 2000 l with top manhole	3,5 m
CCT 2000 l with side manhole	3 m
CCT 3000 l with side manhole	3,2 m
CCT 4000 l with side manhole	4,2 m
CCT 6000 l with side manhole	4,6 m

Recommended room temperature

- brewing area 20-25 °C
- fermentation area 15-20 °C

Electrical consumption of the brewhouse (Europe)

	with electric steam generator	with gas steam generator
4 vessels brewhouse	approx. 85 kW maximum	approx. 16 kW maximum
5-6 vessel brewhouse	approx. 130 kW maximum	approx. 18 kW maximum

BREWERY UNITS

1.1 MALT HANDLING

ZIPMILL (600 KG/H)

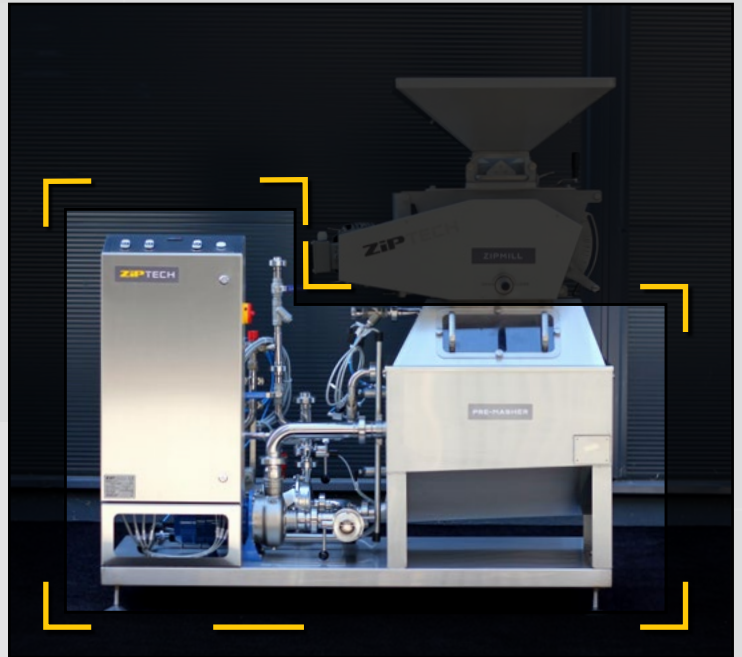
- 2 roller malt grinder with 600 kg/ hour capacity
- Roller gap adjustment 0,5-6 mm
- Dimensions 1495 x 1047 x 582 mm
- Weight ~110kg
- Motor speed 1435 1/perc
- Supply voltage 230/400 [V], 3 phase, 50[Hz]
- Noise emission 96,3 dB(A)
- Material: stainless steel AISI 304



1.2. PRE-MASHER (OPTION)

Frame mounted stainless steel tank with a mixing pump and a mash pressure pump. With the equipment the crushed malt is mixed with water and transferred into the Mash Kettle. This pre-masher is recommended for up to 2000 liter / brew systems.

- Main sizes 1600 x 660 x 1290 mm
- Performance max. 4000 liter/hour
- Material 1.4301 (EN 10088)
- The mill can be mounted by an adapter
- CIP compatible



1.3 GRAVITY PRE-MASHER (OPTION)

During gravity pre-mashing the grist is fed from above crashing with a traffic cone. The mash water is added from several points in thin rays. The direction of the water leaving the primary nozzles is set to touch the surface of the cone only tangentially. As a result, when the grist meets the water it hurls into the pre-masher's wall, ensuring a vigorous mixing. Secondary nozzles lead the water to the pre-masher's wall to wash the mass into the mash kettle.

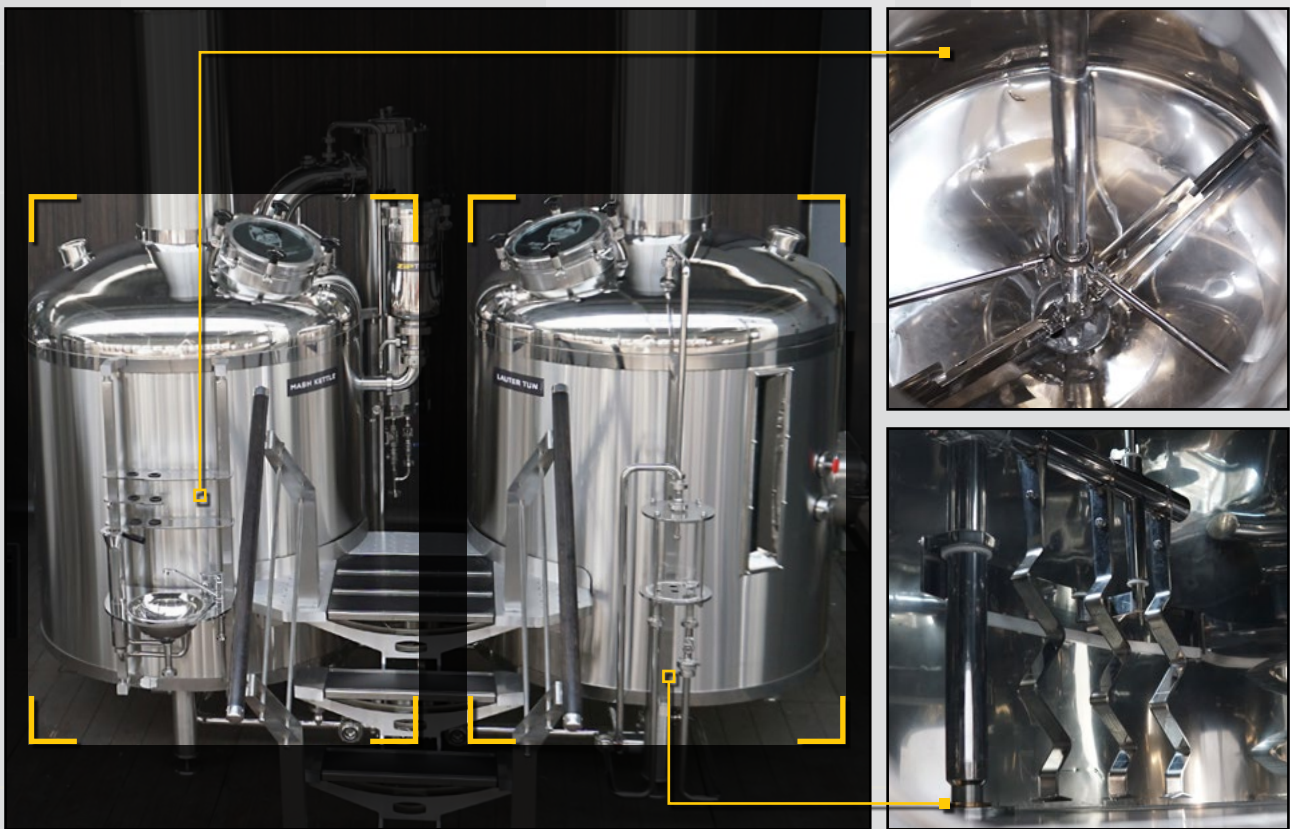
- installed above the Mash Kettle
- CIP compatible
- the process of pre-mashing can be tracked through the sight glass



2. MASH AND WORT KETTLE

Cylindrical kettle with curved hood and conical bottom, stands on 3 support points, equipped with an agitator. In order to avoid oxygen pickup, all product transfer piping is constructed from the bottom.

- 100 mm mineral wool insulation on the top, bottom and sidewall
- stainless steel 1.4301 / AISI 304 material
- energy supply: steam, max 2 bar
- heating rate for mash: 0,8-1 C per 1 minute
- special shaped agitator with frequency controller for an efficient heat transfer and intensive, gentle mixing
- motor drive: variable speed motor with variable frequency controller, speed control
- easily cleaned with the built in CIP spray balls
- hop dosing vessel with glass manhole
- equipped with thermometer and hygienic pressure transmitter at the bottom of the vessel (real time monitoring of the level on main control computer)



3. LAUTER TUN

Cylindrical kettle with a flat bottom, standing on 3 support points, equipped with top mounted aggregate, raking arms and spent grain removal shovel. The kettle has an entirely stainless steel, welded construction, complying with all food industry standards.

- 100 mm mineral wool insulation on the top, bottom and sidewall
- stainless steel 1.4301 / AISI 304 material
- special widget wire filter plate (V-shape) with 20 % of free area for a faster lautering process
- in case of a brewpub system the whole lautering process can be done in less than 180 minutes
- 4 segments of special false bottom with 0,8 mm gap size
- manway sensor, safety drive startup and emergency stop
- 3 pcs of CIP spray ball on the top and 6 pcs under the filter plate
- sight glass equipped with a pressure transmitter and flow control valve
- variable speed motor with frequency controller
- 5 bend knives with lifting shoes, 1 knife with shovel for the spent grain removal

4. PRE-COOLER 4000 liter/hour

The pre-cooler unit is installed between the wort kettle and the whirlpool unit, resulting the wort leaving the kettle at 100°C can be cooled to 75°C. Below 75°C the isomerization of alfa acids is reduced, and the added hops will not contribute further to the bitterness of the wort. On the other hand, this higher temperature also contributes to highly efficient extraction of essential oil without the problem of evaporation.



5. WHIRLPOOL

Cylindrical tank with cone top, plain base and 3 legs. Its function is to separate hop pellets and trub from wort after the wort boil.

- 100 mm mineral wool insulation on the top, bottom and sidewall
- material: AISI 304 X5CrNi1810
- round manhole on the top
- 1 pc of CIP spray ball



6. HOT LIQUOR TANK

Cylinder conic tank with arched ends, stands on 3 legs. The role of the hot water tank is to receive, store and maintain hot water at the required temperature for technological processes.

- 100 mm mineral wool insulation on the top, bottom and sidewall
- material: AISI 304 X5CrNi1810
- oval manway door
- 1 pc of CIP spray ball
- heated by steam



7. VAPOR CONDENSER SYSTEM

Condenser unit connected to the wort kettle for energy recovery and for the control of the outlet temperature of the hot water. Fully automatic control.

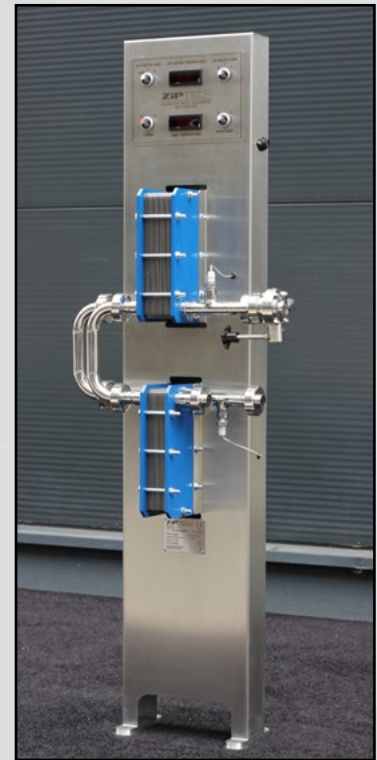
- main dimensions 343x1490 mm
- working pressure steam space: 0 bar
- water space: 6 bar
- cold water inlet temperature: approx. 15 °C
- hot water outlet temperature: >80 °C
- condensate temperature: <50 °C
- exterior surface: Brushed stainless steel
- material WNr. 1.4301
- mineral wool insulation



8. AERATION, WORT COOLING

Complete, pre-assembled unit that helps efficiently enrich the beer with dissolved oxygen and can be perfectly cleaned in a CIP cycle and sterilized by steam.

- Plate heat exchanger with 2000 liter/h capacity
- Oil-free air compressor with cooling dryer and air tank
- Three-part air filtering + sterile filtering system



9. ELECTRIC STEAM GENERATOR

ZIP steam generator is a robust, long-life system with a highly efficient water evaporation system with built-in condensate tank, electrical control cabinet and stainless-steel cladding. Automatic control with ZIPMATIC 2. The maximum output for steam is 100 kg/h and for heat it's 72 kW.

Main elements:

- Steam tank (72 liter)
- Condensate tank (max 60 liter)
- Electrical control cabinet
- Frame for machine and frame cover



10. CHILLING

Compact, integrated chilling system contains all the necessary elements to provide stable cooling throughout the brewing processes, minimizing energy costs and microbiological concerns. Our chillers are made in an environmentally friendly design, and they fully comply with the latest Ecodesign regulations. The size and capacity of the chiller is calculated based on the special production needs of our customers.

Main components:

- Cooling unit 15 kW (2 Danfoss compressors)
- 1 glycol tank (1000 liter), insulated, piped with cooling pump
- 1 ice water tank (1500 liter), insulated, piped with cooling pump(s)
- Automation (PLC control, remote monitoring in case of internet access)

Options:

- semi-hermetic duplicated compressor (Danfoss) or hermetic compressor
- isolated ice water tank with pump
- frequency-controlled glycol pump



11. FERMENTATION VESSELS (CCT)

Cylindroconical tanks with an arched head for fermentation and post-fermentation of beer. At the end of the fermentation process the yeast settles in the cone and can be easily separated from the beer. We design and manufacture our stainless-steel fermentation tanks with a volume of 100 liter to 100 000 liter in accordance with our partners' specific requirements.

- upper or side manhole
- uninsulated tank head
- tube leg
- 100 mm PU-foam insulation
- 2 or 3 bar working pressure
- PED certificate
- optionally with rotating spray ball
- optionally digital temperature controller



12.1. CIP SYSTEM - 2 VESSELS

This system includes a heated alkali vessel and an acid vessel. Features temperature setting, pumps, and complete piping. The 13 manual valves and complete piping make all types of cleaning functions possible. Cold water and waste fluid pipelines are also connected directly to the system. Available in mobile version.

Elements:

- acid vessel 165 liter
- insulated and heated alkali vessel 165 liter
- 75 mm mineral wool insulation



12.2. CIP SYSTEM - 3 VESSELS

The CIP is fully integrated with the piping of the fermentation system. Features a heated alkali vessel, acid vessel, and sanitation liquid vessel. With this option, the air actuated piston valves are part of the system. The piping is complete with pumps and a conductivity sensor, which separates chemicals during the CIP process based on measured values. Cold water and waste fluid pipelines are connected directly to the system.

Elements:

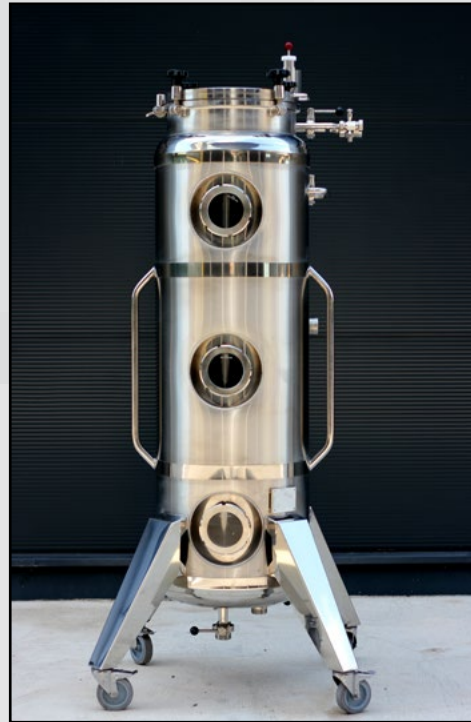
- acid vessel 350 liter
- insulated and heated alkali vessel 350 liter
- disinfectant vessel 350 liter
- 75 mm mineral wool insulation



13. HOPTOWER

Dry hopping machine used in the fermentation cellar. It can be connected to the fermentation vessels after the primary fermentation or to the BBT's after the beer is filtered. Hop pellets can be used with this equipment, and it is designed to maximize the contact area between the hops and the beer.

- load capacity is up to 20 kg for pellets
- raw materials: hop pellets, fruits and other flavorings
- 50 mm PU foam insulation



14. BRIGHT BEER TANK (BBT)

Cylindrical vessels with an arched head and “dish” bottom. They are designed for the storage of finished beer under pressure until it is ready to be packaged or served. Available in vertical and horizontal (with inliners) versions.

- AISI 304 stainless steel (or AISI 316L upon request)
- Etched and passivated inner surface
- Polished surface finish (mirror polished, 2B etched, lightly polished of different roughness, brushed or scale treated also available)
- Torispherical top and bottom
- 100 mm PU foam insulation
- Easy cleaning with CIP system



15. FLASH PASTEURIZER

ZIP's flash pasteurizer ensures the sterilization and preservation of the finished beer by destroying any deteriorating yeast and bacterial cells present in the beer with the help of heat treatment. In the pasteurization process, the beer is heated through a heat exchanger, held, and then cooled. Based on the customers' request and the size, the equipment can be heated electrically or by steam.

Equipment main elements:

- feed, booster and hot water pump
- multi-section heat exchanger
- holding pipe section
- hot water tank (with electric or steam heating)
- control and electrical cabinet

Optional elements:

- CIP system
- Cooling equipment
- Buffer tank (continuous level and pressure measurement, automatic pressure control, protection against vacuum and overpressure)



16.1. AUTOMATIC KEG WASHING AND FILLING MACHINE - 1 HEAD

Automatic, programmable KEG cleaning and filling machine with one head. With this equipment, a brewer can handle up to 12 pcs of 50-liter KEG per hour. This machine is capable of handling all fitting types, upon request one-way KEGs also. Optionally, this system can be upgraded with a steam generator for the sanitation of the KEGs by steam.

- size of equipment: 1500 x 1000 x 1700 mm
- cleaning and filling performance: 10-12 KEG/hour
- cleaning performance: 18-20 KEG/hour
- +/- 1 % filling accuracy
- automatic control



16.2. AUTOMATIC KEG WASHING AND FILLING MACHINE - 2 HEAD

With this automatic and programmable equipment, a brewer can handle up to 24 pcs of 50-liter KEG per hour. The machine is made of stainless steel and can handle all fitting types. It works with a very low oxygen consumption, and it is easy to operate thanks to the manual KEG placement and the automatic cleaning and filling process.

- size of equipment: 1400 x 1200 x 1800 mm
- cleaning and filling performance: 22-24 KEG/hour (50 liter)
- cleaning performance: 40-44 KEG/hour (50 liter)
- +/- 1 % filling accuracy
- automatic control



17. PIPING

ZIP breweries have precisely engineered stainless steel piping between the brewhouse vessels and pumps fitted with pneumatic valves and fittings positioned according to technological requirements. Intermediate pipelines are welded by the ZIP professional installation team at the brewery's premises with a design that meets technological requirements and food industry standards, all with an aesthetic finish. All built-in pumps are equipped with "dry running" protection.



BREWHOUSE AUTOMATION

ZIP breweries are equipped with our self developed ZIPMATIC software that allows high gravity brewing, optimal yields and low operational and staff costs thanks to the automated, trackable processes. Most of the brewing steps are measured, saved and displayed on a user-friendly, spectacular interface.

ZIPMATIC ELEMENTS	SIMPLE	SMART
Mashing steps	X	X
Wort boiling	X	X
Automated valves	-	X
Automatic hop dosing	-	X
Remote control	-	X
Automated CIP process	-	X
Process step archivation	-	X
Process control backup	-	X
Recipe steps editor	-	X
Touch screen operation by graphic surface 10" with ZipMatic Lite	x	-
Touch screen operation by graphic surface 22" with ZipMatic Pro	-	X
pH measurement in Mash Kettle, registered traceability	-	option
Inline gravity measurement (Anton Paar)	-	option
Lautering automation by turbidity control	-	x
Automatic temperature control for plate heat exchanger	-	option



ZIPMATIC FEATURES



Spectacular and modern desktop

This system bands together the components of the entire brewing, fermentation and serving processes into a handy, user-friendly interface through an industrial EtherCAT network.



Multi-platform operation

All key elements of the system are connected to a BeckHoff or Siemens PLC automation tool, which runs on a cross-platform. (Apple OSX, Windows, Linux, IOS, Android).



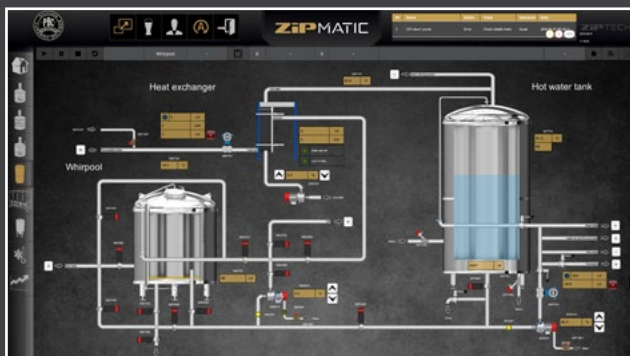
Recipe editor with raw material handling, adaptable to ERP system

The base of the program control is the recipe file. The structure of the program to be executed can be described step by step and each step can be individually parameterized.



Graphs allowing to see the sensors visually

The visualization program is self-developed by ZIP, easy to configure and the embedded graphics spectacularly and realistically reflect the system's units. Each module of the brewhouse is connected to the control cabinet via an industrial EtherCAT network. The master station consists of a 22" Full HD monitor and a control computer. The user management of the system allows us to set individual user rights.



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www.zipbier.com