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MicroEBS/ MicroEBS PRO technical description

1. GENERAL

MicroEBS is an all-in-one beer production system with capacity of 50 or 75 liters. The system supports all stages of beer production:

- mashing and wort boiling,
- fermentation and
- maturation.

2. SYSTEM COMPONENTS

2.1 BOILING VESSEL / LAUTER TUN / SETTLING TANK

A multi-purpose vessel of capacity of 50 or 75 liters is used for mashing, wort boiling, lautering and removal of the coarse break. It is heated by 4kW heaters that are mounted on the outer side of the vessel and have no direct contact with the wort. The wort is mixed with an agitator driven by an electric motor with a reduction gear mounted on the carrier. That enables an effective multi-rest infusion method of mashing. A perforated bin inserted in the vessel is used for mash separation and is removed at the end of lautering stage. The removal of the coarse break is achieved by settling.

The agitator can be lifted from the vessel and rotated ninety degrees to the left, which makes it easier to clean. In order to ensure safety agitator cannot be started in this position.

2.2 FERMENTATION VESSELS

Insulated fermentation vessels of capacity 2 x 50 or 2 x 75 liters are positioned on the top of the set-up. Temperature in fermentation tanks is regulated by computer controlled cooling system.

The system can be equipped with two types of fermentation vessel, classic open type or cylindroconical type. Both have a lid on the top and a fermentation bung.

The type of fermentation vessel included depends on the model type of the system.

2.3 LAGER TANKS

Insulated lager tanks of capacity 100 liters or 150 liters are positioned at the bottom of the set-up. Computer controlled cooling system is used to regulate the temperature inside lager tanks. Tanks are also equipped with pressure manometer and connecting valve for carbon dioxide.

MicroEBS can be easily upgraded with 2 or 4 additional lager tanks of capacity 100 or 150 liters placed next to the machine.

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14.10.2014

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The number of lager tanks included depends on a model type of the system.

2.4 PUMP

Integrated pump allows pumping of the wort / beer among brewing vessel, fermentation tanks and lager tanks. Pump is mounted on the front side of the machine and directly controlled from the computer.

2.5 COOLING SYSTEM

Cooling system consists of a condensing unit with cooling capacity of 2kW, refrigerant container and connecting pipes and valves. Refrigerant is a mixture of water and monopropylene glycol, the non-toxic agent suitable for use in the food industry.

2.6 HOT WATER PREPARATION

Hot water that is necessary for the process of mash sparging (washing out) is prepared in an insulated 50 liters tank positioned at the bottom of the set-up. The tank is equipped with a 3kW electric heater.

2.7 PROCESS CONTROL UNIT

MicroEBS provides computer controlled mashing / boiling, fermentation and maturation of beer which assures precise achievement of required temperature and time parameters. The intuitive user interface design allows easy system operation and short term user introduction.



14.10.2014

MicroEBS/ MicroEBS PRO technical description

3. MODELS

All models include boiling vessel / lauter tun / settling tank, pump, hot water preparation and process control unit. Other components differ according to the model type.

Model type	Fermentation vessel type	Number of lager tank	Cooling system	Capacity per brew [liters]
MicroEBS 50	classic	2 + optional 2	yes	50
MicroEBS 50 PRO	classic	4	yes	50
MicroEBS 50 Lite	classic	optional 2 or 4	yes	50
MicroEBS 50 CCV	cylindroconical	optional 2 or 4	yes	50
MicroEBS 50 CCV PRO	cylindroconical	4	yes	50
MicroEBS 50 Bare	classic	0	no	50
MicroEBS 75	classic	2 + optional 2	yes	75
MicroEBS 75 PRO	classic	4	yes	75
MicroEBS 75 Lite	classic	optional 2 or 4	yes	75
MicroEBS 75 CCV	cylindroconical	optional 2 or 4	yes	75
MicroEBS 75 CCV PRO	cylindroconical	4	yes	75
MicroEBS 75 Bare	classic	0	no	75

MicroEBS 50, MicroEBS 75 models include 2 lager tanks positioned at the bottom of the set-up. Both can be optionally upgraded with 2 additional lager tanks placed next to the machine.

MicroEBS 50 PRO, MicroEBS 75 PRO models include 2 lager tanks positioned at the bottom of the set-up and 2 lager tanks placed next to the machine.

MicroEBS 50 Lite, MicroEBS 75 Lite models have no lager tanks. Optionally they can be equipped with 2 lager tanks positioned at the bottom of the set-up and 2 additional lager tanks placed next to the machine.

MicroEBS 50 CCV, MicroEBS 75 CCV models have no lager tanks. Optionally they can be equipped with 2 or 4 lager tanks placed next to the machine.

MicroEBS 50 CCV PRO, MicroEBS 75 CCV PRO models include 4 lager tanks placed next to the machine.

MicroEBS 50 Bare, MicroEBS 75 Bare models have no cooling system. Fermentation tanks can be connected to the external cooling system. There is no possibility to connect lager tanks.



14.10.2014

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4. WORKING CONDITIONS

Complete technological process to produce one batch of wort takes approximately 5 - 10 hours (depends on beer recipe). This is followed by fermentation that takes minimum 3 days (depends on beer recipe). The produced beer has to mature at least 2 weeks (depends on beer recipe).

Maximal production capacity per month in liters:

Model type	Basic configuration	Extended configuration
MicroEBS 50	200	400
MicroEBS 50 PRO	400	400
MicroEBS 50 Lite	NA	200 or 400
MicroEBS 50 CCV	NA	200 or 400
MicroEBS 50 CCV PRO	400	400
MicroEBS 50 Bare	NA	NA
MicroEBS 75	300	600
MicroEBS 75 PRO	600	600
MicroEBS 75 Lite	NA	300 or 600
MicroEBS 75 CCV	NA	300 or 600
MicroEBS 75 CCV PRO	600	600
MicroEBS 75 Bare	NA	NA

Model types that do not include lager tanks are usually used for beer production using bottle conditioning. Maximal production therefore depends on number of bottles, but it cannot exceed 1000 liters (all MicroEBS 50 models) or 1500 liters (all MicroEBS 75 models).

System requires approximately 5 - 8 m² of space.

5. TECHNICAL SPECIFICATION

3.1. Size and mass

The mass of the system refers to the empty system.

3.1.1. MicroEBS 50

Size (length/width/height): 220 x 90 x 160 cm

Mass: 370 kg



14.10.2014

MicroEBS/ MicroEBS PRO technical description

3.1.2. MicroEBS 50 PRO

Size (length/width/height): 220 x 90 x 160 cm

Mass: 370 kg

Size of additional 2 lager tanks (length/width/height): 80 x 90 x 170 cm

Mass of additional 2 lager tanks: 200 kg

3.1.3. MicroEBS 50 Lite, MicroEBS 50 CCV

Size (length/width/height): 220 x 90 x 160 cm

Mass: 230 kg

3.1.4. MicroEBS 50 CCV PRO

Size (length/width/height): 220 x 90 x 160 cm

Mass: 230 kg

Size of additional 2 lager tanks (length/width/height): 80 x 90 x 170 cm

Mass of additional 2 lager tanks: 200 kg

Size of additional 4 lager tanks (length/width/height): 150 x 90 x 170 cm

Mass of additional 4 lager tanks: 340 kg

3.1.5. MicroEBS 50 Bare

Size (length/width/height): 220 x 90 x 160 cm

Mass: 180 kg

3.1.6. MicroEBS 75

Size (length/width/height): 250 x 120 x 170 cm

Mass: 500 kg

3.1.7. MicroEBS 75 PRO

Size (length/width/height): 250 x 120 x 170 cm

Mass: 500 kg

Size of additional 2 lager tanks (length/width/height): 100 x 120 x 180 cm

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Mass of additional 2 lager tanks: 250 kg

3.1.8. MicroEBS 75 Lite, MicroEBS 75 CCV

Size (length/width/height): 250 x 120 x 170 cm

Mass: 320 kg

3.1.9. MicroEBS 75 CCV PRO

Size (length/width/height): 250 x 120 x 170 cm

Mass: 500 kg

Size of additional 2 lager tanks (length/width/height): 100 x 120 x 180 cm

Mass of additional 2 lager tanks: 250 kg

Size of additional 4 lager tanks (length/width/height): 170 x 120 x 180 cm

Mass of additional 4 lager tanks: 430 kg

3.1.10. MicroEBS 75 Bare

Size (length/width/height): 250 x 120 x 170 cm

Mass: 270 kg



14.10.2014

MicroEBS/ MicroEBS PRO technical description

3.2. Equipment

3.2.1. All MicroEBS 50 models

Heating power: 4 kW (electric heaters)

Cooling power: 2 kW

Agitator motor: 0.2 kW, three-phase

Boiling vessel capacity: 50 liters

Fermentation vessel capacity: 2 x 50 liters

Lager tank capacity: 100 liters

Additional lager tank capacity: 100 liters

Max lager tank pressure: 1.5 bar

Pump: 0.1kW, single-phase

Refrigerant: monopropylene glycol

Hot water vessel capacity: 50 liters

Hot water vessel heating power: 3kW



14.10.2014

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3.2.2. All MicroEBS 75 models

Heating power: 4 kW (electric heaters)

Cooling power: 2 kW

Agitator motor: 0.2kW, three-phase

Boiling vessel capacity: 75 liters

Fermentation vessel capacity: 2 x 75 liters

Lager tank capacity: 150 liters

Additional lager tank capacity: 150 liters

Max lager tank pressure: 1.5 bar

Pump: 0.1kW, single-phase

Refrigerant: monopropylene glycol

Hot water vessel capacity: 50 liters

Hot water vessel heating power: 3kW

3.3. Water connection

All model types require a cold water connection of a minimal size NPT ½ or DN 15.

3.4. Electric connection 400V, 50 Hz

Electric connection is the same for all model types.

Voltage: 400 V, 50 Hz (EU), three-phase

Max current: 16A