

FLASH PASTEURIZATION

Automatic Unit

- Gentle and precise heat treatment
- Consistent Pasteurization
- Heat recovery up to 96%



Pasteurization is a heat treatment with the purpose of improving the microbiological stability of the beverage in order to prolong its shelf life. While reducing the number of harmful microorganisms, uniform and gentle treatments are required to maintain the original taste and appearance of the beverage.

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Principle

The cold beer enters the regenerative zone of the plate heat exchanger and is gently pre-heated by the already pasteurized product. In the heating zone, the beer is then heated up to the request pasteurization temperature and held in the holding tube during the requested pasteurization time. The pasteurized beer is then cooled down in the regenerative zone and if required, cooled in the cooling zone to the requested filling temperature. The regenerative zone counts up to 96% of the heating and cooling demand and makes the system run at the most economical costs.

A frequency controlled pump at the inlet of the heat exchanger regulates the flow, while a second pump between the regenerative and the heating zone raises the pressure up to 14 bar in order to keep the CO₂ in the liquid. A back pressure valve at the outlet of the heat exchanger and a pressurized buffer tank make sure that constant pressure is maintained in the system and no CO₂ is lost.

Flash Pasteurization is typically installed in front of the filler and the filler speed often varies considerably. To keep the required pasteurization units (PU) within tight limits, DENWEL uses intelligent control in combination with a buffer tank, capable to match variations in filler demand. If the filling capacity decreases, the flow has to be reduced, too. Lower flow means longer holding time and therefore the pasteurization temperature has to be decreased to keep the same PU. The system reduces the flow according to the heat exchanger temperature characteristics and increases the level in the buffer tank. When the filling capacity increases again, the level in the buffer tank will be lowered and the nominal pasteurization values will be re-established. This way any over- and under-pasteurization can be avoided and gentle and consistent treatment is guaranteed.

$$PU = \frac{t}{60} * 1,393^{(T - 60)}$$

Pasteurization Units PU

t: Holding time [seconds]

T: Temperature [°C]

Technical specifications

PU range: 10 – 150 PU

Control accuracy: ± 1 PU

Models:

DFP010A	DN 25	1"	5 to 10 hl/h	2 to 4 gpm	4 to 8 bbls/h
DFP015A	DN 25	1"	8 to 15 hl/h	3 to 6 gpm	6 to 12 bbls/h
DFP025A	DN 25	1"	13 to 25 hl/h	6 to 11 gpm	11 to 21 bbls/h
DFP040A	DN 40	1½"	20 to 40 hl/h	9 to 17 gpm	17 to 34 bbls/h
DFP050A	DN 40	1½"	25 to 50 hl/h	11 to 22 gpm	21 to 42 bbls/h
DFP075A	DN 40	1½"	38 to 75 hl/h	17 to 33 gpm	32 to 63 bbls/h
DFP100A	DN 50	2"	50 to 100 hl/h	22 to 44 gpm	43 to 85 bbls/h
DFP150A	DN 65	2½"	75 to 150 hl/h	33 to 66 gpm	64 to 127 bbls/h
DFP200A	DN 65	2½"	100 to 200 hl/h	44 to 88 gpm	85 to 170 bbls/h
DFP250A	DN 80	3"	125 to 250 hl/h	55 to 110 gpm	107 to 213 bbls/h