

## **BECODISC Notes on Application:**

### **Housings and Compressing:**

- Check filter sheets of stacked discs for damages!
- Check seals for damages!
- Check perfect fit if seal
- Check compatibility of seal with process parameters (pH; temperature etc)
- **Take care of right direction when inserting the BECODISC Module into the housing!** Make sure that the tips of support burls on the edge support ring are faced down.
- To prevent bypass effects the stacked disc package has to be sufficiently pressed. This does not apply to pre-pressed modules with double 'o' ring gasket.
- Using 16" modules it is recommended to use stainless steel plates in between the modules to avoid mechanical stress caused by the high weight of the wet modules.

### **Filter preparation and sterilisation:**

1. Rinse the modules in the direction of forward flow for about 10 – 15 min, flow rate approx. 600 l/m<sup>2</sup>/h.
2. Empty the housing and make sure that there is no water remaining in the housing. Remaining water causes damages on the modules and perhaps to the housing during steam sterilisation
3. After sterilisation: in the beverage industry BECODISC- Modules can be sterilised with hot water 85 °C – 95 °C or low pressure steam up to 110 °C at a maximum pressure of 0,5 bar.  
Housing has to be cooled down afterwards with compressed air (make sure that the compressed air is free of oil) to avoid damages caused by vacuum

### **Daily preparation (in the morning):**

1. Rinse with hot water in the direction of forward flow for 5 - 8 min. with a flow rate of 600 – 1000 l/m<sup>2</sup>/h
2. Rinse with cold water in the direction of forward flow for 5 min. with a flow rate of 600 – 1000 l/m<sup>2</sup>/h

### **Regeneration**

1. Rinse with cold water in the direction of forward flow for 5 min. with a flow rate of 600 – 1000 l/m<sup>2</sup>/h
2. Rinse with hot water in the direction of forward flow for 5 - 8 min. with a flow rate of 600 – 1000 l/m<sup>2</sup>/h

### Notes:

- Empty the housing: only work with 0,20 – 0,30 bar compressed air, to make sure that the housing can be emptied completely. (work below bubble point of the filter material)
- Cooling down is very important after sterilisation to avoid damages caused by vacuum.
- Avoid back pressure and pressure shocks. Always open and close all valves (especially the outlet valve) slowly. Do avoid back pressure it is recommended to install back pressure valves on the inlet side of the housing.
- Steam sterilisation only in the direction of flow (0,5 bar @ 105 °C),
- Sterilisation with steam: from 3 up to 10 cycles (depending on the product and the filtration temperature)
- Sterilisation with hot water: from 10 up to 15 cycles (depending on the product and the filtration temperature)

### **Module handling during longer filtration stops**

#### Filtration Stop during the weekend:

- Empty the housing after the end of filtration (Sterile air, 0,2 bar)
- Rinse with cold water for 5 Min. at a flow rate of 600 – 1000 l/m<sup>2</sup>/h
- Rinse with warm water at 75-85°C for 5-10 Min. at a flow rate of 600 – 1000 l/m<sup>2</sup>/h
- Sterilisation with low pressure steam (105 °C) 20-25 min
- Empty the housing after the end of filtration (Sterile air, 0,2 bar), then adjust pressure at 1,5 to 2,0 bar and keep this pressure on the housing during the weekend

#### Filtration stop for several weeks:

- Empty the housing after the end of filtration (Sterile air, 0,2 bar)
- Rinse with cold water for 5 Min. at a flow rate of 600 – 1000 l/m<sup>2</sup>/h
- Rinse with warm water at 75-85°C for 5-10 Min. at a flow rate of 600 – 1000 l/m<sup>2</sup>/h
- Sterilisation with low pressure steam (105 °C) 20-25 min
- Empty the housing after the end of filtration (Sterile air, 0,2 bar), then adjust pressure at 1,5 to 2,0 bar with CO<sub>2</sub> and leave the housing with this pressure
- Check the pressure regularly. The housing must be under pressure for the whole time of now use
- If there is no sterile air available, empty the housing with compressed air (no oil!) afterwards fill the housing with 0,5% citric acid (short conservation effect) or use 0,1% H<sub>2</sub>SO<sub>3</sub> solution to fill the housing
- When filtration has to be restarted, rinse the housing with water to flush out the citric acid / H<sub>2</sub>SO<sub>3</sub> solution.