



HIGH CONCENTRATOR WITH INTEGRATED FEED AND RECOVERY SYSTEMS

TEC SQUARE HIGH CONCENTRATOR

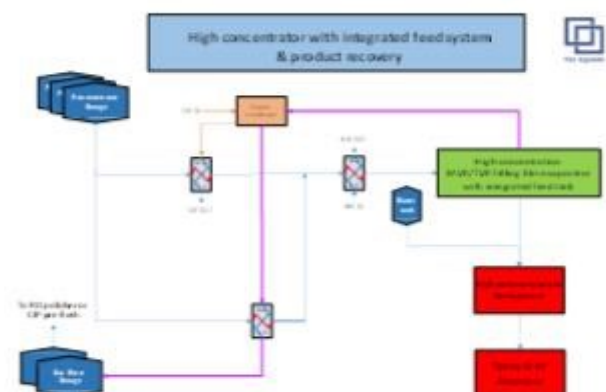
TEC Square designs high concentrators for dairy lines with an integrated feed and recovery system. This principle of design assures high energy recuperation and minimal production losses.

The principle of operation:

- ◆ Pre-concentrate is heated by “cow” water and other available sources of energy.
- ◆ Pre-concentrate is further heated by hot water to evaporation temperature.
- ◆ The condensed vapors or “cow” water is cooled by incoming pre-concentrate.
- ◆ High concentrate is directly fed to the high pressure pump that is linked to the spray drying operation.

HIGH CONCENTRATOR — KEY POINTS

The design requires less building foot print, less energy and fewer CIP circuits. The short holding time at thermophile temperatures.



High Concentrator simplicity.

SPECIFICATIONS AND ADVANTAGES

| | TEC Square High Concentrator with integrated feed | Advantages |
|-----------------------------------|--|---|
| High Concentrator Type | TEC Square is flexible. We define MVR or TVR evaporators based on customer request. We adapt the design to suit our process needs. | We mainly use established brand names. |
| Higher Concentrator Outlet System | TEC Square designs the outlet of the concentrated liquid as a buffer tank. This will allow forwarding the concentrate straight to a spray dryer without a spray dryer feed tank system. | The system has several advantages: <ul style="list-style-type: none"> ◆ No investment in (normally 2) feed tanks and associated spray dryer feed systems. ◆ Less building cost, less building foot-print ◆ Less operational cost. ◆ Less product loss. ◆ Fewer CIP circuits. |
| Energy Recovery | We design the system such that we create maximum heat recovery: <ul style="list-style-type: none"> ◆ We use the pre-concentrate as cooling medium for "cow" water. This allows "cow" water to be stored for a long time, before it needs to be used or treated. ◆ The remainder of the energy in the pre-concentrate will be used for other recuperation purposes. | We use available sources of heat to pre-heat the feed to the high concentrator. <ul style="list-style-type: none"> ◆ This saves on steam usage compared to other systems. ◆ And as such will create less load on cooling water. |
| Straight Through Process | TEC Square designs the process without the need for buffer tanks. The product goes straight from the high concentrator outlet to the spray dryer. We have a small water buffer tank for starting and stopping the process. | The system has several advantages: <ul style="list-style-type: none"> ◆ Short holding time at thermophile temperatures. ◆ Fewer energy requirements. ◆ Minimal product losses. |

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