

# CASE STUDY



**BAELZ-PRODUCT:** vapor ejector baelz 590 in compression  
**INDUSTRY:** Food & Beverage  
**COMPANY:** leading company in F&B  
**COUNTRY:** Spain (Sugein)

## INITIAL SITUATION

- steam ejector DN 150 PN 40 nozzle 320mm (n°18634)
- pneumatic actuator with electropositioner.
- complainings about the safety valve installed on the 03 side of the steam ejector
- valve is constantly open à the system does not run correctly
- a large part of the steam is sent to the atmosphere (loss of energy)
- At first the valve was installed with an electric actuator E40-20-S21 220 V 50 Hz but was lateron replaced by a pneumatic actuator P21. The model P21 has only a stroke of 22 mm but the valve needs 44 mm.
- in general the actuator could be replaced by the model P31 with stroke 44 mm.  
But for this it could be possible that the neck of the valve has to be modified.
- concerning the fact that the changes will cause that the valve will no longer match its previous internal structure overthinking/calculating the whole system new.

## Initial parameters (n°18634)

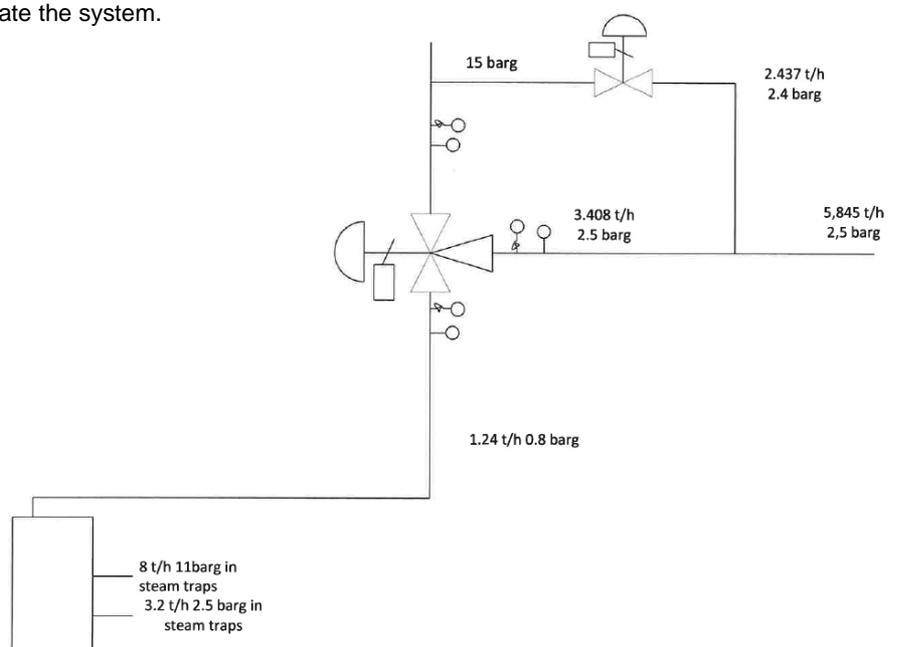
01: pressure 16 bara, mass flow: 5.500 kg steam/h  
03: pressure 1,1 bara, mass flow: 1.400 kg steam/h  
04: pressure 3,5 bara, mass flow: 6.900 kg steam/h

## TECHNICAL MODIFICATIONS

Catching new parameters and finally re-calculate the system.

## Current parameters

- 3,2 t/h 2,5 barg
- 8 t/h 11 barg
- not recovered 2,64 t/h
- pressure revaporation 0,8 barg
- mass flow: 1.240 kg steam/h
- The new calculation recommends a steam ejector in size DN 100 (two sizes smaller than the original)



CS\_vaporejector\_0001\_en\_VD\_1706

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## CUSTOMER BENEFIT AND ROI

The new system was installed on the 09th of January in 2017 onsite.



*installation on side, Sugein-Spain*

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steam flow		1.240 kg	steam costs per ton	25,00 €
hours per day	24 h	29.760 kg		
hours per year	300 h	8.928 t		
Invest costs		25.000,00 €		
savings per month		14.880,00 €		
period of amortization		1,68 months		

### About the technology: steam ejector in compression

- be able to rely on systems running smoothly
- guarantee production reliability, energy costs and maintenance requirements
- Steam ejectors from Baelz as a solution in heat-transfer media
- Installations with steam ejectors in compression are applicable for pure energy saving, being able to be in direct steam saving values between 10 to 30% and even higher.