

Process plant, South Korea

Rs 3.8 crore a year from flash steam that used to vent

A motorised Jetomat® (Baelz 590) DN 150 draws the flash steam off a condensate drum at 0.2 bar g and, driven by 12.5 bar g steam, delivers it at 1.56 bar g into the plant's LP steam header. The white plume over the drum is gone.

1,500 kg/h

flash steam was vented
from one condensate drum

1.1 t/h

steam recovered
the basis of the saving

Rs 3.8 crore

saving a year
as calculated by the plant

No plume

over the drum
flash steam now recovered

01 The plant and the duty

PLANT	Process plant, South Korea
STEAM SOURCE	Condensate (flash) drum, 0.2 bar g
MOTIVE	Steam main, 12.5 bar g
DELIVERED TO	LP steam header, 1.56 bar g
EQUIPMENT	Jetomat® (Baelz 590) DN 150, variable nozzle, motorised, under discharge- pressure control

JETOMAT DUTY, AS REPORTED

	Motive	Suction	Discharge
bar g	12.5	0.2	1.56
kg/h	4,700	1,100	6,000

02 Before

Condensate collected in a drum flashes as its pressure falls. The re-evaporated steam, 1,500 kg/h, went up the drum vent to atmosphere as a white plume.

03 What changed

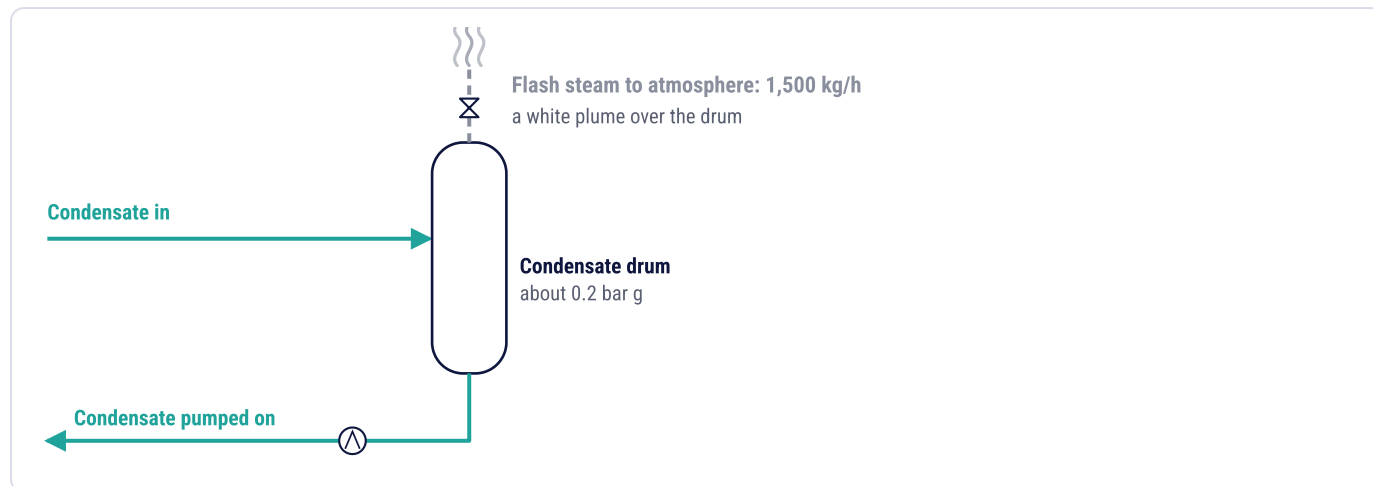
- A Jetomat® (Baelz 590) DN 150 takes the drum's flash steam as its suction.
- Steam from the 12.5 bar g main drives it as motive steam.
- The mixed steam, 6,000 kg/h at 1.56 bar g, goes into the LP steam header.
- A pressure controller on the discharge sets the Jetomat's motorised actuator.

04 Results

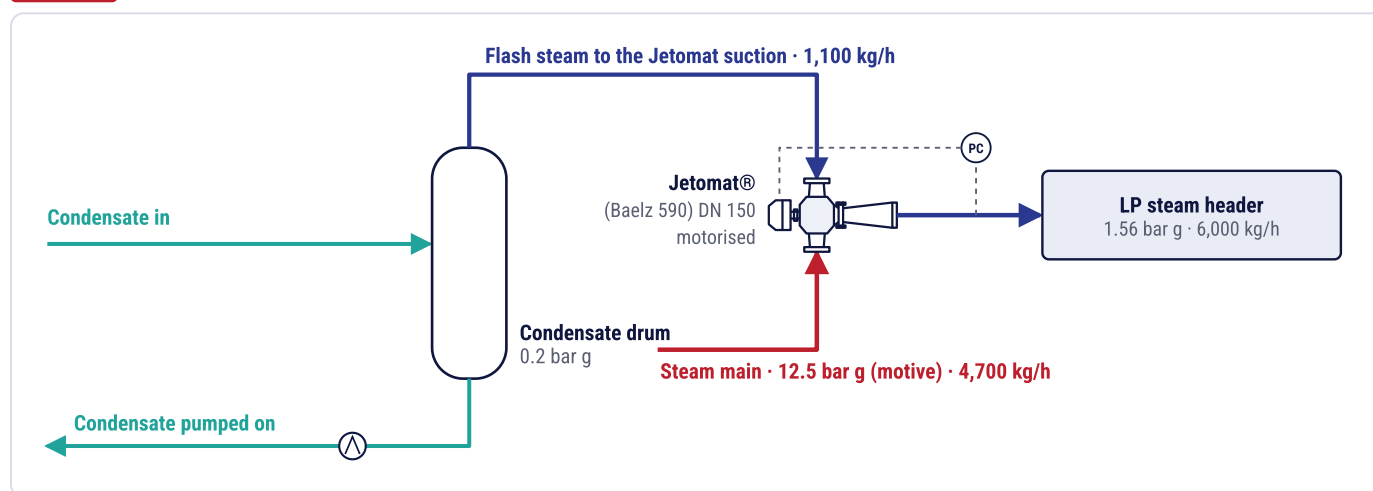
- The plume over the drum is gone: its flash steam now goes to the LP header instead of the atmosphere.
- Of the 6,000 kg/h the Jetomat delivers to the LP header, 1,100 kg/h is recovered flash steam.
- Saving calculated by the plant on 1.1 t/h of recovered steam at ~Rs 3,900 a tonne, 24 hours a day, 365 days a year: about Rs 3.8 crore a year.

05 The steam system, before and after

BEFORE



AFTER



06 Why it works

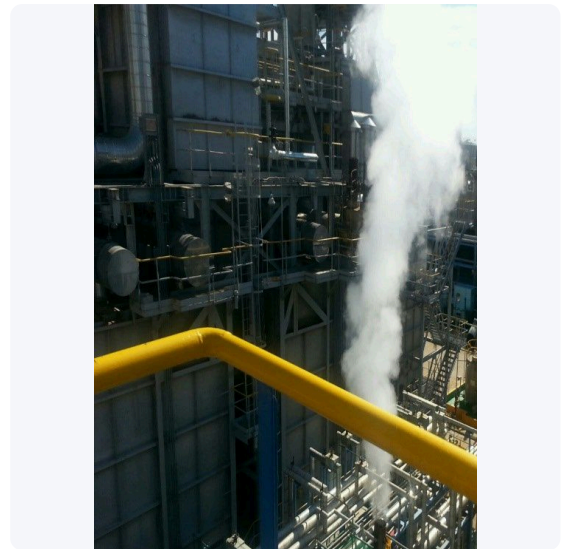
Flash steam at 0.2 bar g is too low in pressure for any steam user. In the Jetomat, the 12.5 bar g motive steam expands through the nozzle and leaves it at high velocity, entrains the drum's flash steam, and the diffuser turns that velocity back into pressure: the mix leaves at 1.56 bar g, a pressure the LP header takes. The variable nozzle, set by the discharge-pressure controller, matches the motive flow to the flash steam the drum produces.

SOURCE Figures as reported by the plant: vent rate and Jetomat duty from its control-system readings; annual saving calculated by the plant on 1.1 t/h recovered at ~Rs 3,900 per tonne of steam, 8,760 hours a year.

BEFORE



Before: flash steam venting above the condensate drum.

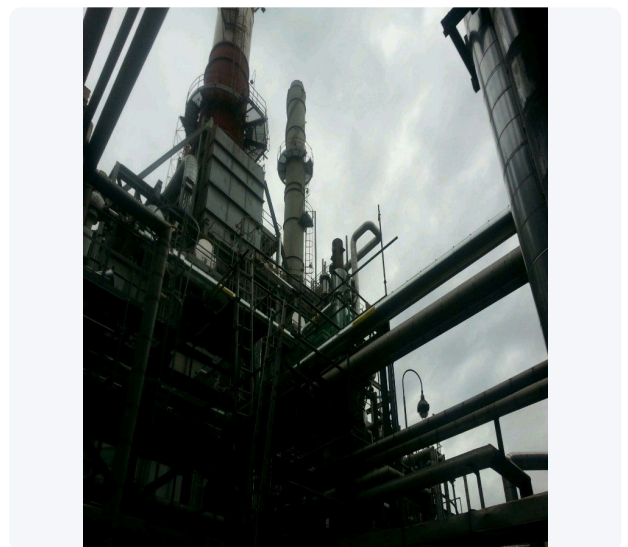


Before: the vent plume seen from a platform.

AFTER



After: the Jetomat in its insulated housing, with its actuator, during installation.



After: no vent plume over the plant.

PHOTOS Installation photos: Baelz installation partner.