



DIGITAL STEAM PUMPS FOR SINGLE FACERS. SPPSF

When dealing with light weight papers and especially with small flutes, it is convenient (sometimes essential) to regulate the pressure in the Single Facers.

The digital electro pneumatic steam pumps used for condensate recovery in Single Facers make closed-loop condensate recovery at pressure compatible with free pressure regulation in Single Facers.

Operations in an electro-pneumatic steam pump are simple:

The electro-pneumatic steam pump consists of two tanks (buffer and injection tank) with level control, and four check valves: two in the entrance and two in the exit, as shown in the drawing below.

When the level control detects maximum level of condensate in the injection tank, injection valve (VI) automatically opens and pushes condensate with life steam to the high pressure condensate recovery.

Right after the injection cycle, the injection tank empties and the decompression valve (VD) opens for 5 seconds in order to decompress the tank and restart the filling cycle of the injection tank with the condensates coming from the buffer tank.

Furthermore, there is a degasification spiral in each tank that continuously allows the air and rest of incondensable gases deaeration.

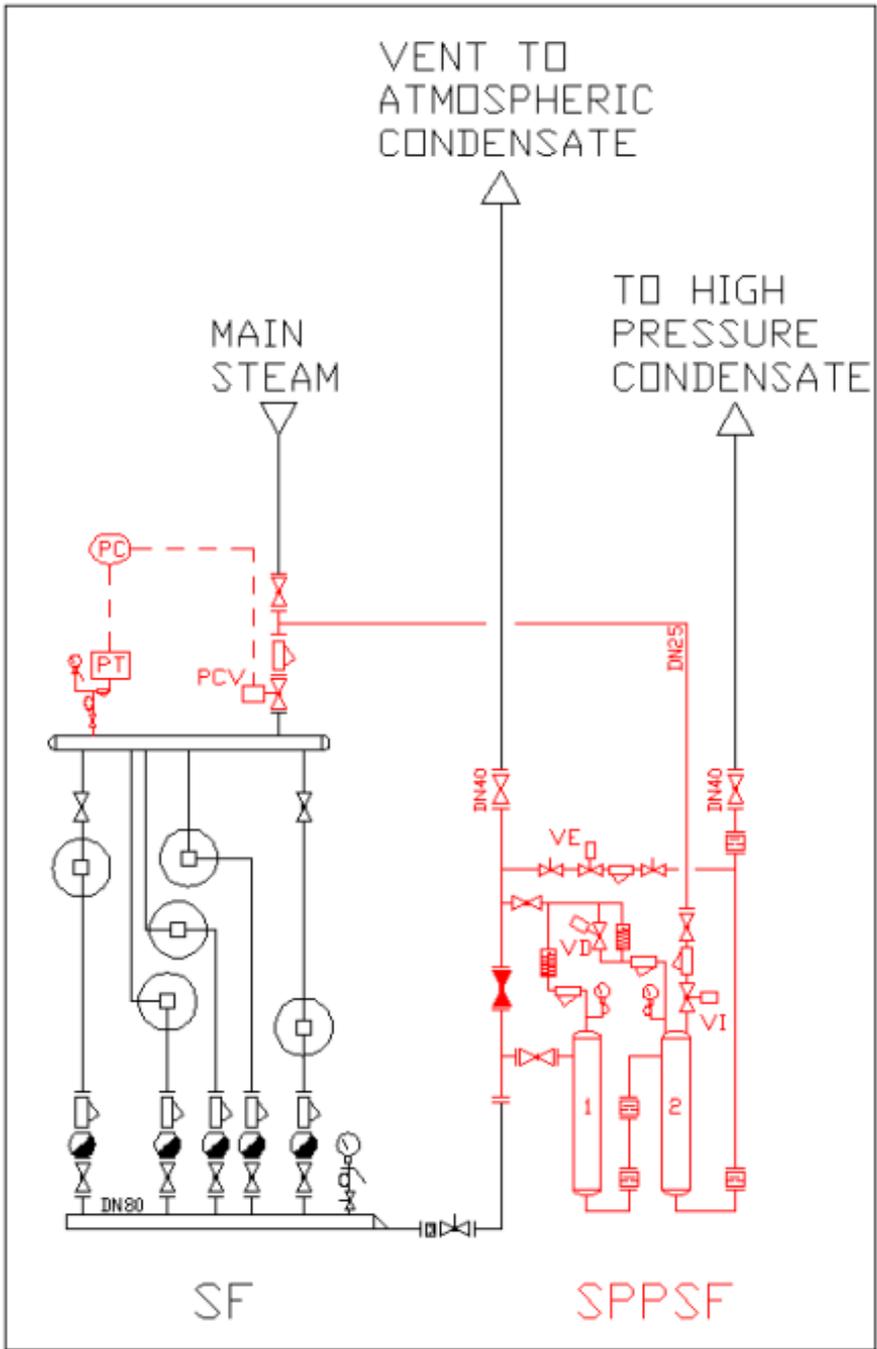
The condensate recovery system with electro-pneumatic steam pump works as follows (times may vary depending on plant):

- Filling cycle: 2 to 7 minutes.
- Injection cycle: 5 to 10 seconds.
- Decompression cycle: 3 to 5 seconds.
- Filling cycle restarts.

This equipment includes a VE valve whose function is the deviation of the condensates coming from the single facer towards the atmospheric condensate recovery. This is done at night, when the steam supply to the corrugator is closed, or early morning during start ups, when minimum pressure in the steam supply has not been met.

The single facer steam pump has an active control of the differential pressure between the single facer and the buffer tank. If pressure falls below set point, the differential pressure control will take over the VD valve.

The whole process is digitally controlled through a PLC. Components (check valves, VI, VD, pressure differential transmitter, spirals, etc.) are high quality - low maintenance requirements.





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