



SUPER STEAM VAC[®]
SSV

PAPERMAKING REINVENTED



Maintenance advantage

IBS has moved its design forward by introducing its advanced retraction system. Other systems just lift the steam box vertically which does not permit the machine operator to clean fully the bottom of the steam box. Our standard supply is a steam box that can rotate above the wire up to 60 degrees, exposing the bottom surface fully for cleaning. Machine operators love this design feature as it makes for a cleaner operation.

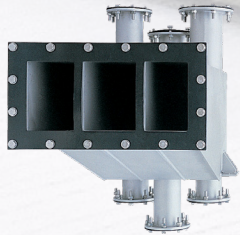
Control Valves

IBS EPB+ and EVA+
Vacuum control valves



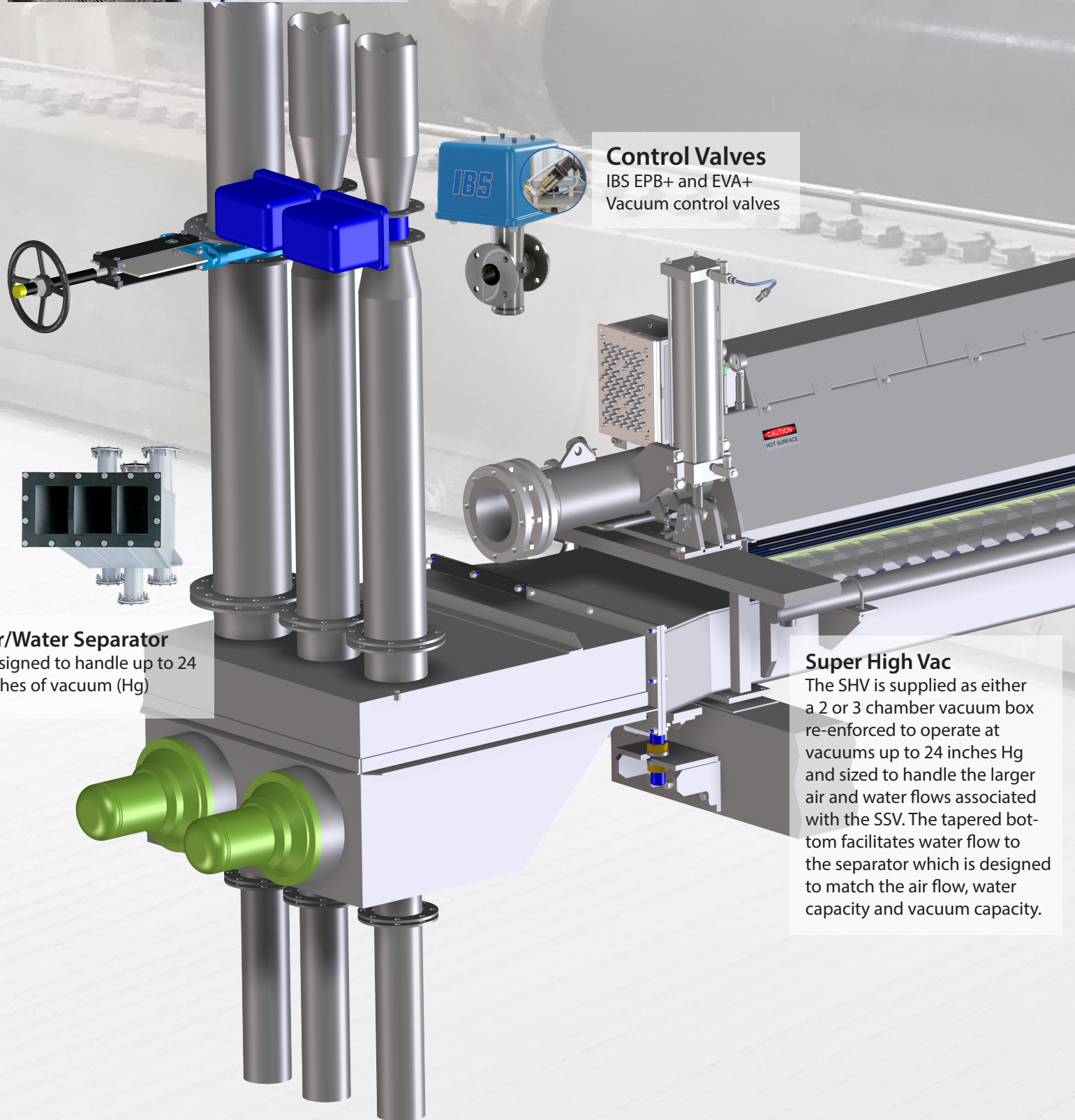
Air/Water Separator

Designed to handle up to 24 inches of vacuum (Hg)



Super High Vac

The SHV is supplied as either a 2 or 3 chamber vacuum box re-enforced to operate at vacuums up to 24 inches Hg and sized to handle the larger air and water flows associated with the SSV. The tapered bottom facilitates water flow to the separator which is designed to match the air flow, water capacity and vacuum capacity.



Hotter Sheet

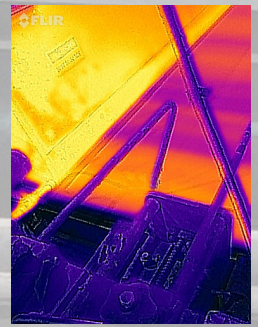
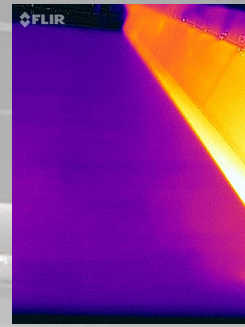
SSV significantly increases sheet temperature compared to competitor solutions. IR images capture the hotter sheet in the image far right.



Competitor

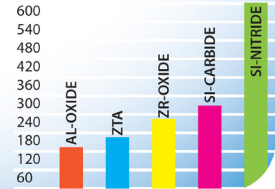


SSV



CR-2 Actuators
Sealed Inconel bellows

SI-NITRIDE (silicon nitride)



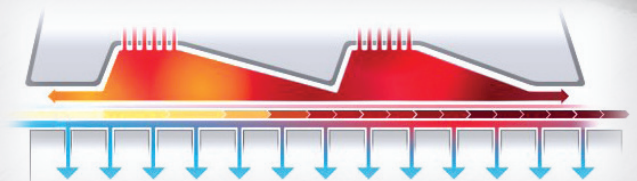
Thermal Shock Resistance (°C)

High quality ceramic covers designed for the application

Super Steam Vac[®]

The IBS Super Steam Vac is a system solution for improving the performance of fourdrinier high vacuum sections in general, and steam boxes in particular. Modern steam boxes were first introduced to the fourdrinier in the late 70's and produced good results for machine dryness, but they suffered from stock build up on the bottom surface that resulted machine breaks. The boxes were not energy efficient and this combination of steam spillage and sheet breaks lead many customers to remove the fourdrinier steam boxes and replace them in the press.

This all changed in 2014, IBS Paper Performance Group in partnership with Transphase Technology introduced a new concept combining super high vacuums (up to 24 inches Hg) with low velocity steam shower technology. The patented Transphase steam diffuser technology has revolutionized the application of steam onto a fourdrinier sheet. In combination with the IBS Super High Vac technology, the SSV has proven to run without the sheet breaks and the steam spillage of competitor steam boxes.



Interface Cabinets

IBS uses the latest technology from Festo systems for their interface cabinets. The Festo CPX blocks allow measurement of signal air to each actuator and detects air leaks in the system. The actuator control module is powered by software from VremSoft. The communications module can communicate to the host QCS/DCS through various protocols to accept set points from the host system. Additionally, if desired, IBS can supply CD moisture control through the VremSoft software.



Steam Conditioning

Complete steam preparation systems are available from IBS.



Results

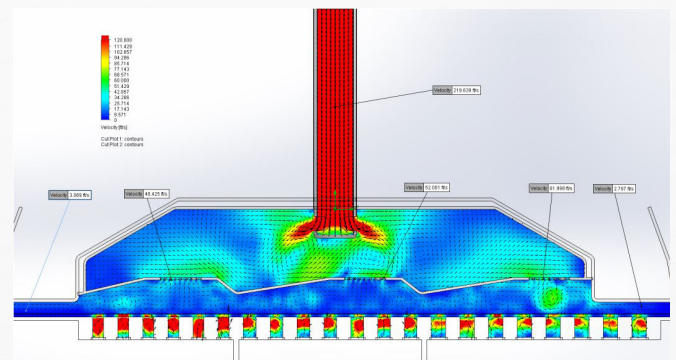
This combination has seen:

- dryness gains of 4-7.5 % off the fourdrinier
- sheet temperatures in the 190° F range, well above temperatures reached by conventional steam boxes
- Process bump response of greater than 2.5 % with a width of response as narrow as 2 x actuator width
- Reduction in couch vacuum which increases sheet temperature into the press section, leading to a solids increase into the dryer
- Increased fiber bonding for improved tests
- Improved dewatering in the high vacuum area. SSV allows a lower headbox consistency resulting in improved formation

Fourdrinier Analysis: SSV Engineering Study

IBS can perform an analysis of the fourdrinier performance that includes review of drainage studies, drainage element design, vacuum PID's, machine wet end temperatures, and analysis of CD moisture variation. This study captures the significant improvements in machine operation to be used for ROI calculations and performance warranties.

As part of the SSV engineering study, the SSV module is modelled for flow and velocity though the steam box cover and vacuum box to ensure that all parameters are determined in advance, eliminating surprises later in the process.



Trim squirts should be located after the SSV for the following benefits:

- significant reduction of web breaks caused by poor edge cutting
- maintenance free, highest operating safety and ease of use
- All nozzle parameters adjustable and reproducible

