

IF Series

HFAC-1

(Heated Fluid Application Chamber)

SPI Developments Ltd



Fluid Control
Experts

 a Tembo company



At SPI Developments, we take pride in being the one of the world's leading manufacturer of Glue and Flavour Systems tailored specifically for the Tobacco Industry.

All of our Intelligent Flavour Systems are expertly designed, assembled, and tested at our state-of-the-art manufacturing facility in Rotherham, United Kingdom.

HFAC-1 Overview:

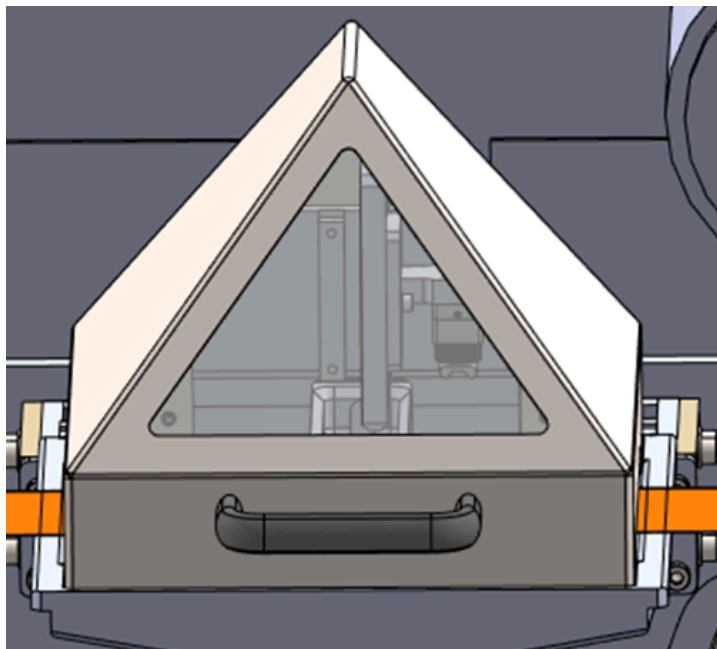
The HFAC-1 Heated Fluid Application Chamber is designed to specifically apply bands of cold or heated liquids onto a wide moving web of substrates. The whole system has the facility to be heated via the IFH-3 flavour application system. There are currently two methods of application- Atomised & Extruded. Extrusion can only be used if the substrate is flat and free of wrinkles or holes.

Atomisation of the liquid is produced via special atomising valves that if heated use heated air (generated within the HFAC-1 unit) as the atomising media, the liquid exits the valve atomised and encased in hot air and is deposited onto the moving substrate.

Any fluid that either passes through the substrate holes or does not attach itself to the substrate will be collected and stored in a recovery container.

In the case of the atomised application, the width of liquid application pattern is governed by the height of the atomising valve from the substrate, the exit angle from the atomising valve is 90 degrees so to give an application band width of 100mm the valve height will be 50mm.

All control aspects including Heating; air switching etc, of the HFAC-1 are taken care of by the flavour system IFH-3-HFAC, this system delivers hot or cold liquid to the Application Chamber.



Specification-

Many types of fluid can be used, check with SPI for compatibility.

- Viscosity range: 100-2000 cps
- Fluid Application Rate Range: Up to 400g/min/Valve (depending upon IFH-3)
- Maximum width of substrate: 200mm
- Substrate speed: Max 600Mtrs/min

Contact SPI Developments if your requirement fall outside of above specification.

Key Features of the HFAC-1

The application of cold or heated fluids proportional to moving wide webs of substrate.

This unique unit is designed to apply & distribute liquids cold or heated proportionally onto wide (> 40mm) moving webs of substrates. Typical application where this unit is intended to be used:

- Conventional filter making where flavours are added to the Tow
- Applying liquids to crimped paper for making mono paper filters
- Applying Glycol or glycerol / flavours to crimped reconstituted tobacco web for HnB segment
- Applying Glycol or glycerol / flavours to strip cut reconstituted paper – HnB segment
- Applying Glycol or glycerol / Flavours to crimped paper HnB segment

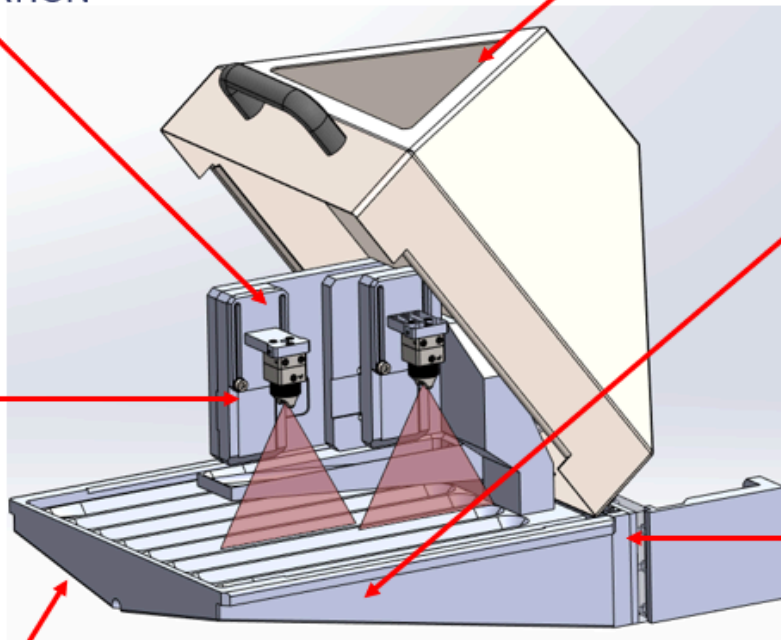
APPLICATOR HEIGHT
ADJUSTMENT X & Y TO
CHANGE APPLICATION
WIDTH TO WEB

NON-DRIP HINGED LID
FOR EASY ACCESS

SINGLE OR
DOUBLE
APPLICATORS
FOR WIDER
WEBS, ALSO
EXTRUSION
VERSIONS, ALL
FED FROM IFH-3
FLAVOUR
MODULE

HEATED or COLD
COLLECTION GRID
FOR RECOVERY OF
UNUSED FLUID

INCORPORATING
A TWO CHANNEL
HEAT EXCHANGER
FOR HOT AIR
APPLICATION

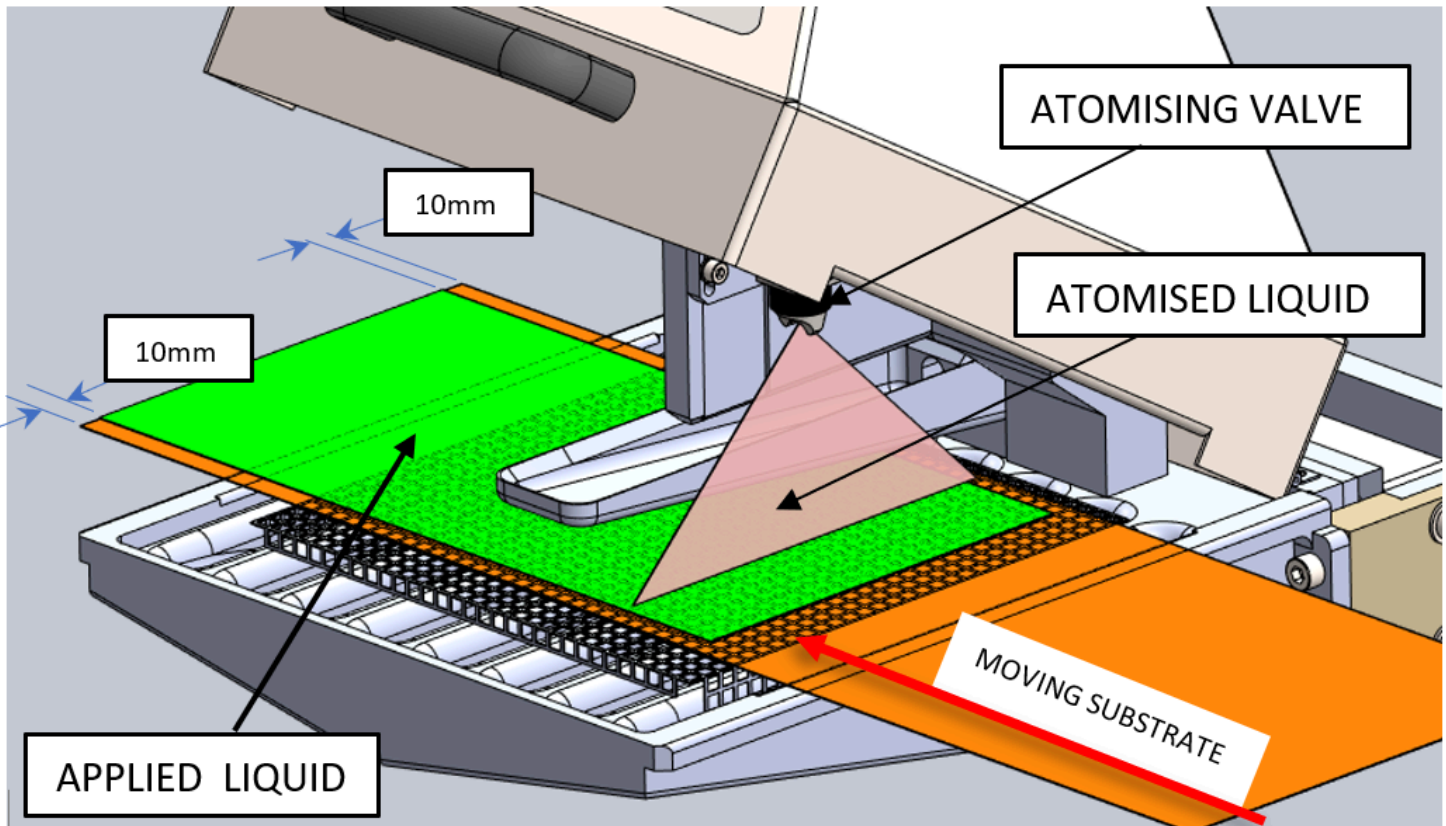
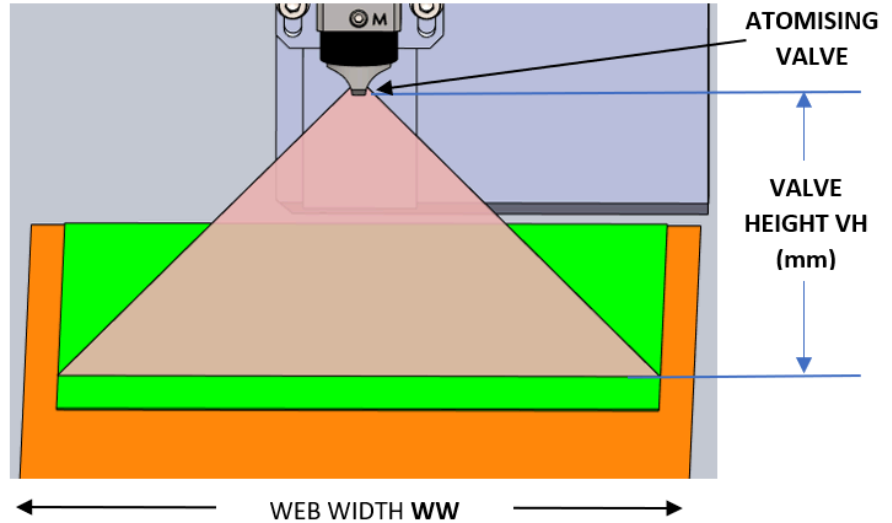


ONLY 300mm WIDE

Fluid Application - Atomising Valve Setup:

The height setting of the atomising valve depends on the required liquid coverage area on the substrate. We recommend to leave a 10 mm dry margin on both edges of the substrate, as shown. Calculate the valve height using:

$$\text{Valve Height (VH)} = (\text{Web Width} - 20) / 2$$

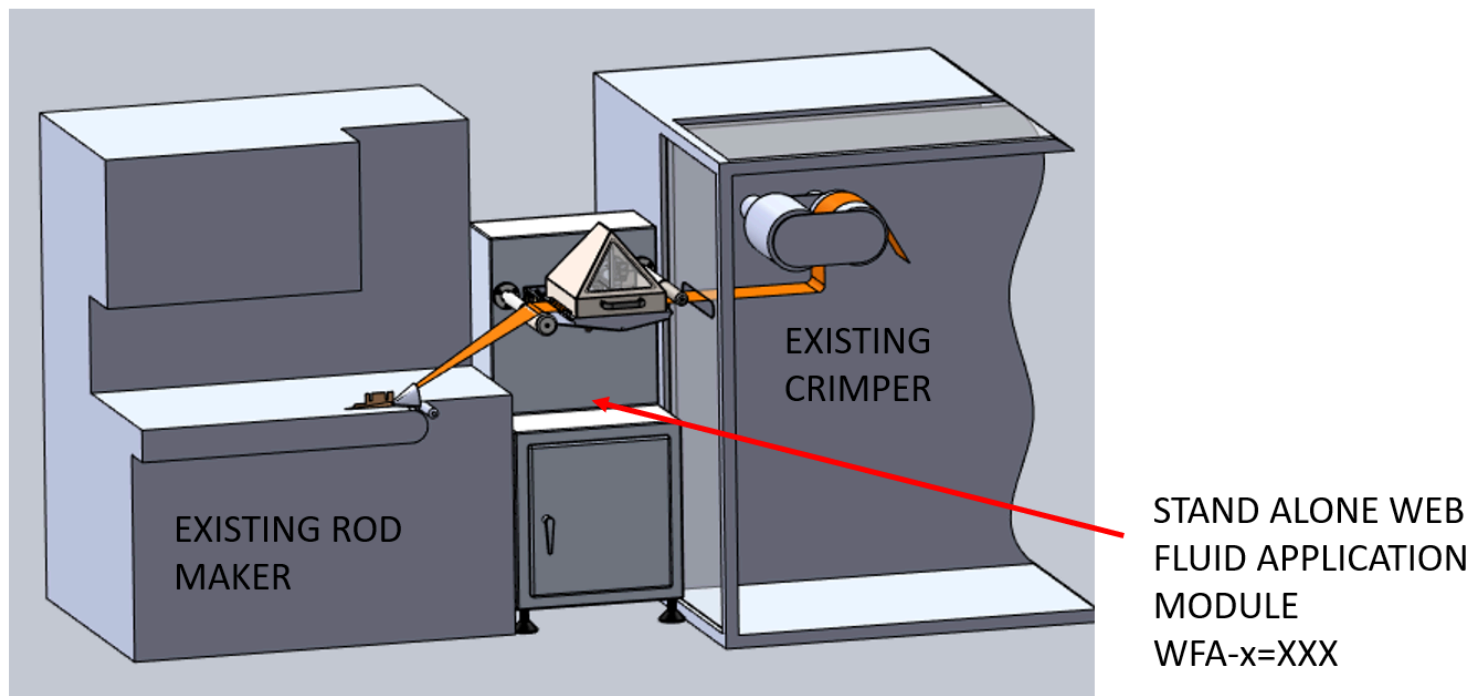


Location on Host Machine:

Where should the HFAC-1 be fitted?

- For Conventional filter making where flavours are added to the Tow it should be mounted between the Tow processing machine & the Rod making machine
- For applying liquids to crimped paper for making mono paper filters it should be mounted on or after the crimper and before the Rod making machine
- For applying liquids/ flavours to crimped reconstituted tobacco web it should be mounted on or after the crimper and before the Rod making machine
- For applying Liquids/ flavours to strip cut reconstituted paper it should be mounted on or after the strip cutter and before the Rod making machine
- For applying Glycol or glycerol / Flavours to crimped paper for HnB segment it should be mounted on or after the crimper and before the Rod making machine

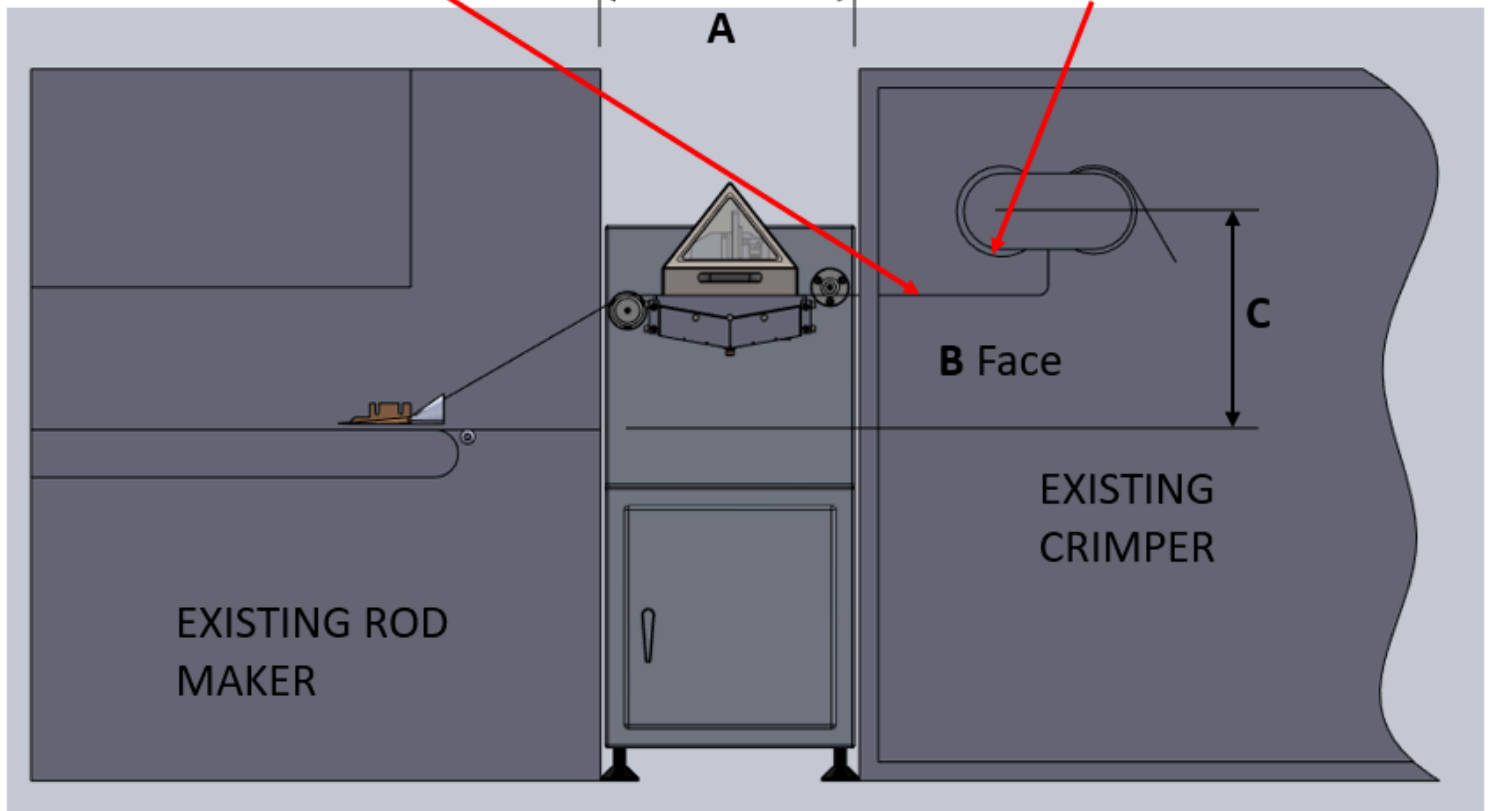
Applicator Mounted Between Crimper & Rod Maker (Stand Alone Version):



HFAC-1 Mounted Between Crimper & Rod Maker:

Web width **E** after crimping

D Diameter

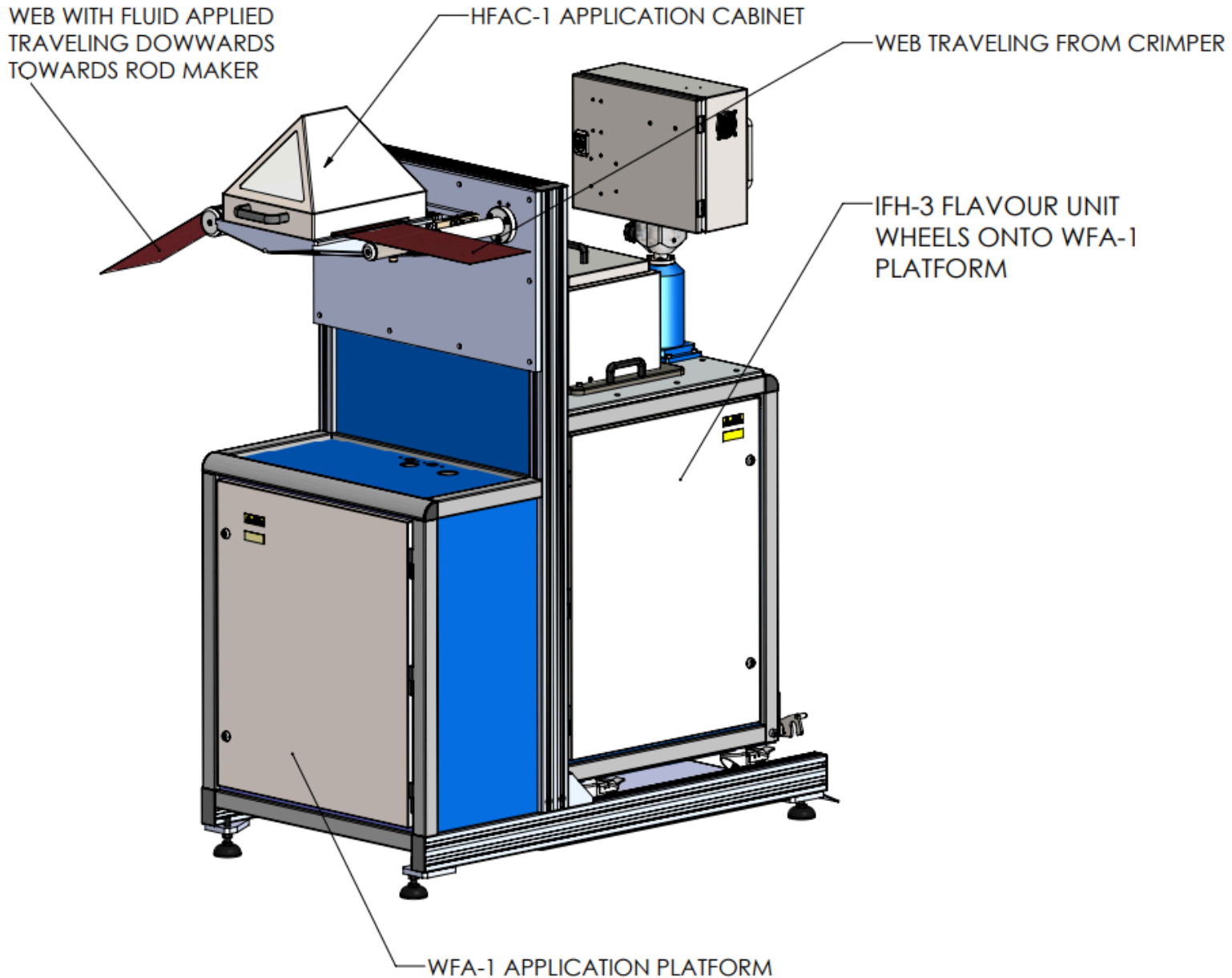


Information required:

- 1 – Gap “A” distance between rod maker & crimper must be > than 700mm Minimum
- 2 - Distance from “B” Machine face to centre of web
- 3 – Height “C” from rod maker garniture to centre of crimp roller
- 4 – “D” Diameter of crimp roller
- 5 – “E” Web width after crimping

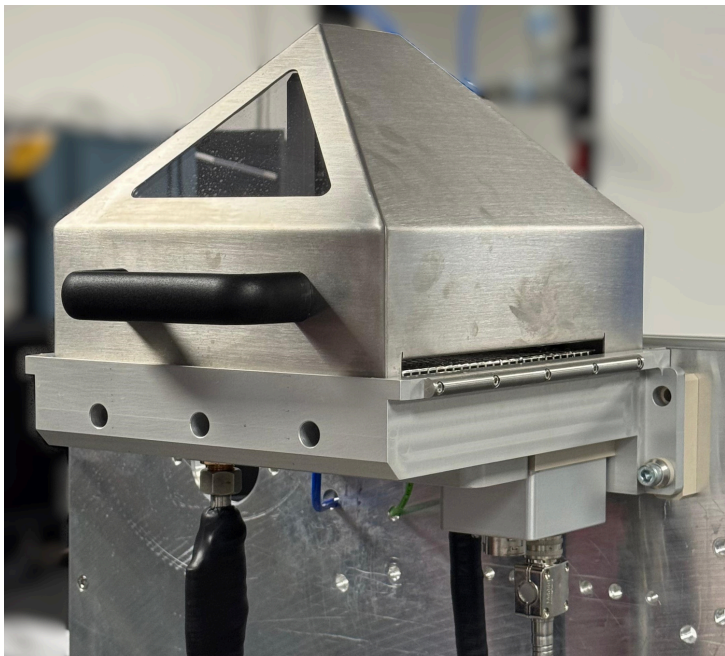
HFAC-1 with IFH-3:

The below drawing shows a typical set up of a SPI Web Fluid Application System including the HFAC-1, WFA-1 Application Platform and IFH-3.

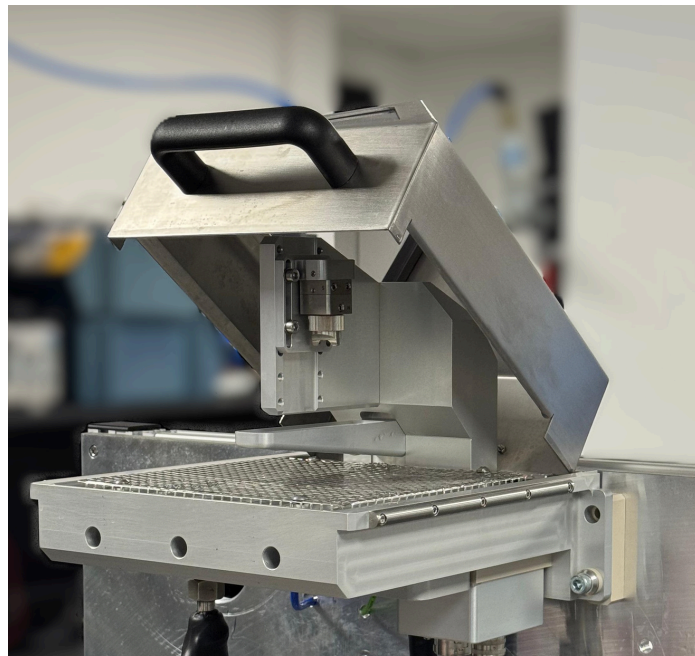


Photos of HFAC-1-

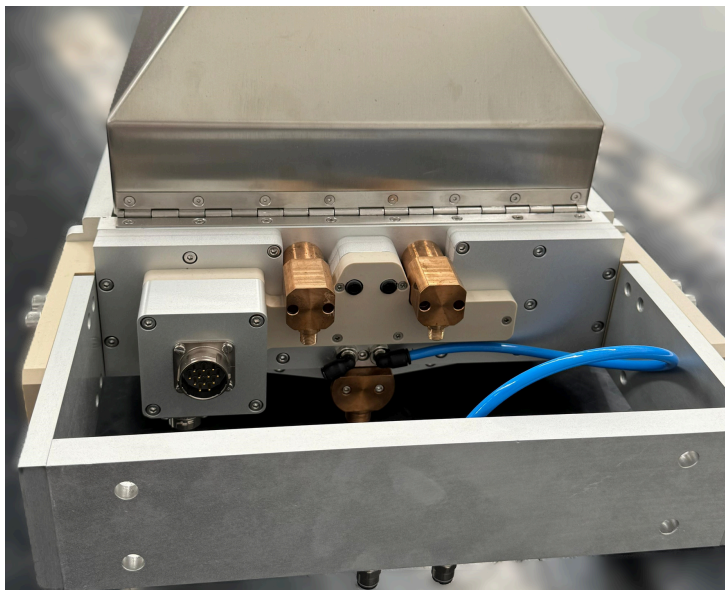
HFAC-1 Mounted with Lid Down:



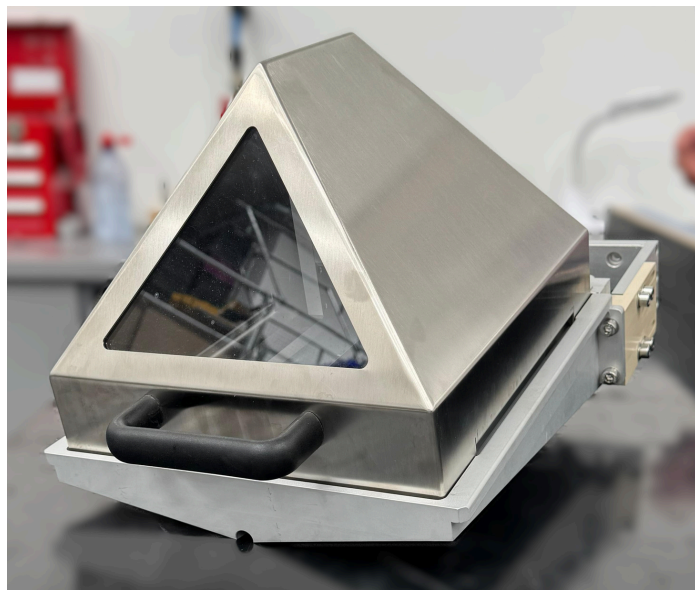
HFAC-1 Mounted with Lid Up:



Rear of HFAC Showing Connectors:



HFAC-1 Unmounted:



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