

DRAIN-VALVE MODEL 99

APPLICATION :

Drainage of initial foaming liquids from the mixing-head, thereby improving the quality of the starting block.

FEATURES :

- Suitable for Maxfoam/Varimax.
- Specifically designed for the foaming process.
- Trouble free operation with minimum cleaning.
- Durable materials; Stainless steel and chromium plated parts for ease of cleaning.
- Operated by air-cylinder.

INLET :

- Stainless steel inlet, standard 2" BSP thread and union for quick disassembly.
- other inlet sizes to specification.

CHOICE OF Y-PIECE-OUTLETS :

- standard 1¼ inch Y-piece with union; all stainless steel.
- optional outlets of 1½ and 2 inch.



DRAIN-VALVE

STARTING BLOCK

At the start of a foam production run the various streams enter the mixing head according to a fixed sequence. The chemicals enter the mixing chamber, which is filled with air only. This air will partly be pushed out of the mixing chamber, whilst another part will be mixed with the entering chemicals. However, this mixing will be incomplete, causing large air bubbles and splits in the start piece of a production run. Another reason for splits in the start piece can be the unbalanced chemicals entering the mixing chamber due to a pre-set sequence for the various streams.

Although the unbalance of the chemicals can be as short as 1 or 2 seconds, this will disturb the chemical balance in the trough for a much longer period of time. Depending on the trough design and volume it may take up to 20 seconds before these unbalanced chemicals have been flushed out of the trough by homogeneously mixed chemicals.

Clearly these two phenomena together will result in a start piece full of splits and air bubbles, that can be as long as 1.5 m (5 feet).

REMEDY

The length of this unbalanced start piece of a production run will be reduced by at least 60 percent to 0.6 m (2 feet) by using the FFS' so-called **Drain-Valve**.

This device enables the foaming operator to pour the initial two or three seconds of a run into a plastic bag, thereby avoiding the unbalanced froth to enter the trough and creating a long start block with the above mentioned defects.

ADVANTAGES

The use of the drain valve has the following advantages :

- Reduction of the length of the start block by at least 60 percent, saving up to 0.9 m (3 feet) of prime foam on each production run.
- Substantial improvement of the quality of the first production block, striation, air bubbles, splits and wet grooves in the first block are eliminated.
- Safer start pieces, less chance of auto-ignition.
- No build-up in the trough caused by an incorrect starting sequence of the chemicals.
- Can also be used at shut down to avoid the mixing-head flush from entering the trough. This can be useful when trough inserts are being used and trough cleaning is not a necessity.

POSITION OF VALVE

The drain valve's position on the foam machine is just underneath the squeeze valve. This position can be either vertically or horizontally, so the valve is suitable for all types



Maxfoam/Varimax machines.

DESCRIPTION

The valve consists of two circular disks with adapters on either side. One side will fit to the outlet of the squeeze valve underneath the mixing head; the other side has an outlet straight to a plastic bag or via an Y-piece to connect the flexible hoses to the trough. One of the circular disks can turn over approximately 60 degrees by means of an air cylinder, mounted on a bracket on the drain valve.

The changeover from dispense into the bag to the trough takes place without a pressure increase, that might switch off the foam machine due to over-pressure.

The drain valve is designed in such a way that it needs to be taken apart for cleaning only after about 100 start-ups.

ECONOMICS

The following table shows the potential savings when using the [Drain-Valve](#) on a low volume plant, based on only 1 start per day; 220 starts per annum.

The calculation gives the net saving when a block length of only 0.5 mtr of scrap foam is transferred into prime grade foam, by the use of the Drain-Valve.

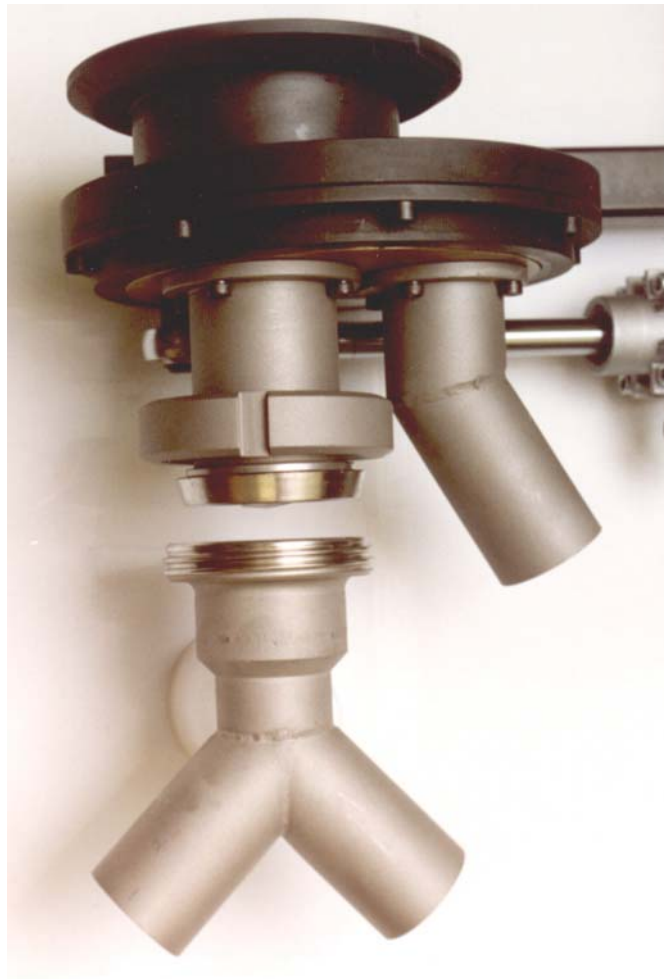
In reality this block length can be even up to 1.0 mtr. or more!

chemical cost	US \$/kg	1.70
foam scrap price	US \$/kg	0.70
block length improvement per start-up	m	0.50
block width	m	2.10
block height	m	1.10
increase of prime foam per start-up	m ³	1.16
average density	kg/m ³	20.0
increase of prime foam per start-up	kg	23.1
# of start/year		220
increase of prime foam per annum	kg	5082
chemical saving per annum	US\$	8639
foam scrap price	US\$	3557
Net savings per annum	US\$	5082

The conclusion is that already on a small-scale operation of about 2000 tonnes/annum, the payback time for the [Drain-Valve](#) will be less than half a year.

A yield improvement of about 0.25%.¹

¹ The documentation supplied with the Drain-Valve will also provide some hints, which will boost up the performance of the Drain-Valve significantly.



Outlet arrangement of the [Drain Valve](#)



For further information, please contact:

Johan Stoute

Flexible Foam Solutions

Molenlaan 77

2181 GS HILLEGOM

The Netherlands

Tel.: +31 252 532 192

Fax: +31 252 532 231

Email: johanstoute@compuserve.com

website: www.ffi-holland.com

The statements in this brochure are believed to be correct, but they do not form the basis of a contract nor do they imply a warranty.