Modulfill VFS-M with PFR valves and an integrated mixer

Filling made easy: faster, safer and without foaming
Faster filling – without foaming

Time is money – that is the motto for the new Modulfill VFS-M with PFR valves. Not only the duration of the filling process, but also the air consumption and space requirement have been reduced – which is also easy on your budget. And thanks to its new, infinitely adjustable PFR valve, the filler scores brownie points with regard to product quality. The flow speed can be exactly adjusted to suit the various products: Foaming due to excessively fast filling or wasted time due to excessively slow filling are a thing of the past.

At a glance
− Fast filling of CSD, juice and water
− Infinitely adjustable PFR filling valves for optimum flow speeds
− Reduced number of components due to the optimised interface with the mixer
− The carbonation tank of the integrated mixer is also the feed tank to the filler
The design

- New development of the Contiflow mixer
- Separate product tank ensures minimum product loss
- Compact design due to the integrated valve manifold
- Volumetric filling valve with PFR component
- Direct connection between mixer and filler
- Carrousel without ring bowl: Product distribution via ring channel
- Decentralised control of the filling valve operation by means of PFR component: no large electronics cabinet is required
- Automatically positioned CIP cups with magnetic locking mechanism
- Filler design without PET lifting unit
- Centralised control of filler and mixer by means of one main operator station
- Automatically positioned CIP cups with magnetic locking mechanism
The PFR valve

Fast or slow – there are only two filling speeds in conventional valves. The PFR valve is infinitely adjustable, which has a positive effect on the filling quality: This enables optimum adjustment of the flow rate to suit the particular product properties. Foaming beverages due to excessively fast filling or loss of time due to excessively slow filling are a thing of the past.

New: electronic controller integrated in valve
For the first time, the PFR valve provides an innovation which pays off, especially with regard to space requirements. To decentralise the power supply to the electronics, the complete control block is now directly integrated in the valve. The conventional electronics cabinet is now no longer required.

**Basic position**
1 Product stem
2 Pressurisation and return gas valve
3 Snifting valve (CIP return valve)
4 PFR control valve

A Product channel
B Pressurising and return gas channel
C Snifting channel (CIP return channel)
Modulfill VFS with PFR valves – benefits to you

**Enhanced product quality**
The new PFR valve enables optimum adjustment of the filling speed to suit the particular product properties. Products which tend to foam excessively can also be processed.

**Increased output**
The filler operates without lifting cam, which increases the filling angle: This, in turn, increases the output for the same line size. Filling carbonated soft drink products with a PFR valve, for instance, will increase the annual output by up to 25 per cent, that is 72 million bottles (based on 0.5 litre bottles and a pitch diameter of 4,320 mm).

**Improved cleaning**
The CIP cups automatically swing into place using a magnet. This contact-free process without pneumatic components optimises the hygienic conditions and enables the installation of more filling valves on a pitch diameter.

**Saved energy and raw materials**
The PFR valve operates electronically. This saves 30 per cent compressed air as compared to electropneumatic filling.
Integrated mixer

In Modulfill VFS-M, the "M" stands for "Mixer" – which is directly connected to the filler. The product is directly fed via the raised carbonation tank into the manifold. The conventional filler bowl is no longer required.

Benefits to you

**Highly precise dosing of syrup and CO₂**
The high-precision dosing process reduces the syrup consumption in the Contiflow by up to 0.4 per cent (as compared to conventional systems). This reduces the operating costs and your new investment will pay off within a short time.

**Faster filling speeds**
The direct connection between the Modulfill VFS-M and the Contiflow mixer positively affects the filling duration. The integration together with the higher level in the tank enables filling of up to 250 ml per second. The block also reduces the loss of product.
Contiflow – benefits to you

**Accelerated change-over**
You are well equipped for type and handling parts change-over: The optimised interface between filler and mixer and the integration of LineXpress minimise the product change-over to less than ten minutes.

**Ease of operation, reduced space requirement**
As the mixer and the filler are directly connected to each other, they can share a central main operator station. In addition, the valve manifold has been reduced and integrated in the mixer. The complete process control sensor system is installed in-line.

### Your benefits in figures

<table>
<thead>
<tr>
<th>Benefit</th>
<th>Savings* / duration</th>
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<tbody>
<tr>
<td>Reduced loss during emptying and change-over thanks to the raised position of the buffer tank</td>
<td>Up to 30 per cent</td>
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<tr>
<td>Fast change-over times during product change-over with LineXpress</td>
<td>&lt; 10 minutes</td>
</tr>
<tr>
<td>Saving of space thanks to compact design and optimised interfaces</td>
<td>10 to 15 per cent</td>
</tr>
<tr>
<td>Smaller dimensioning of clean room possible as the product tank is mounted on the mixer</td>
<td>600 mm in height</td>
</tr>
<tr>
<td>Less cleaning agent required for CIP</td>
<td>Up to 15 per cent</td>
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* as compared to line arrangement with separate filler and mixer
Certified ecological efficiency: machines with enviro label

At KRONES, the blue enviro label stands for excellent ecological efficiency. Products that bear the enviro label have proven in an objective test procedure that they use energy and media efficiently, and that they produce in an environmentally-friendly way. The requirements are defined by the EME standard that has been developed by the TÜV SÜD (technical inspection authority) for assessing production plants. The enviro test procedure has also been certified by TÜV SÜD as an independent expert. Therefore, you can be sure that an enviro label stands for ecological efficiency.

The Modulfill VFS-M enviro stands for the following:

Energy efficiency
- No air dryer required
- 30 per cent less consumption of operating air with the PFR valve
- Use of the latest PM drives and pumps
Everything from a single source

**Training sessions at the KRONES Academy – trained personnel for an increased efficiency of your line**

The multifaceted training offered by the KRONES Academy ranges from operation, maintenance and servicing to management training. We will gladly also create your individual training programme.

**Lubricants from KIC KRONES for every production step**

Whether for gears, chains or central lubrication systems – our greases and oils are veritable all-rounders. You can reach every lubrication point, protect your line and ensure gentle treatment for your product thanks to our food-grade products.

**KRONES Lifecycle Service – your partner for performance**

It goes without saying that also after the purchase of new machines, KRONES takes care of your lines: The KRONES LCS experts are always there to help you reach your goals and turn your wishes into optimal LCS solutions.

**EVOGUARD – excellent valve technology all along the line**

The EVOGUARD valve series comprises a modular system with hygienic and aseptic components which contributes to an increased performance at every point of the production line and has the perfect solution for every process step.

**EVOGUARD – pumps for absolute process safety**

In addition to separation and shut-off, one thing is particularly important in a line - and that is the reliable delivery of your product. This is why EVOGUARD also offers innovative centrifugal pumps in addition to high-quality valves.