KRONES filling systems for CSD
Sparkling specialists for PET and glass containers and cans
Soft drinks – gentle, precise, reliable filling is a requirement

The world of soft drinks is sparkling, colourful and constantly in motion. New trends, types and packages are on the agenda - and it's no easy task for filling technology to keep pace here. But regardless of which products you create and which markets you want to capture: At KRONES you will find the technology that will enable you to achieve your goals.

At a glance
KRONES filling systems for CSD ...
- process PET and glass containers and cans.
- fill both hot and cold products.
- offer additional hygiene and filling stability.
- feature a consistent hygienic design.
For PET containers
Modulfill VFS

The multi-talent for hotfill and standard processes
– Precise determination of fill quantity via inductive flow meter
– Perfect flow characteristics through two filling speeds
– Low-foam and low-turbulence filling thanks to swirl insert in the valve
– Hygienic design
– Electropneumatically controlled filling valve functions

Optional
– Additional channel for hot filling
– Automatic CIP cups

Output
Up to 72,000 containers per hour
For PET containers
Modulfill VFS

Method of operation
First the PET container is pressed on and pressurised. The filling process will start as soon as the same pressure prevails in the tubular ring bowl and in the PET bottle. Two different filling speeds guarantee optimum flow. An inductive flow meter checks the quality of inflowing liquid. The valve closes once the exact filling volume has been reached. After a settling phase, the pressure in the head space of the PET container is reduced via a snifting valve and the filled product exits the machine.

Clever: two gas channels for double the hygiene
The containers are pressurised and snifted via two separate gas channels. This separation prevents liquid from escaping from the filled container into the pressurisation channel, providing considerable advantages with regard to filling stability and hygiene.

VFS = Volumetric filling system, Flow meter, Short tube
For PET containers
Modulfill VFS for combined hot and cold filling

Applications
This variant of the Modulfill VFS was designed especially for cold filling of CSD beverages in combination with hot filling of juice in PET containers.

A separate channel for the product return is integrated in the filling valve for this purpose.

1. Control cylinder for liquid valve
2. Pressurisation and return gas valve
3. Snifiting valve for return gas channel
4. Hot-product return valve
5. Valve for quick filling

A Hot return and CIP return channel
B Snifiting and CIP return channel
C Pressurisation and CIP return channel

In the same system: Cold filling of carbonated beverages and hot filling of juices
For PET containers
Modulfill VFS – benefits for you

Flexible processing
– Proficient in both standard and hot filling

High-quality filling process
– Foam-free, gentle filling with swirl insert in the valve
– Guarantees precise fill quantities thanks to inductive flow meter or mass flow meter

Best hygiene conditions
– Offers additional hygiene and filling stability with its two gas channels
For glass containers
Modulfill HES

The intelligent probe system
- Precise determination of fill quantity with a probe
- Perfect flow characteristics through two filling speeds
- Turbulence-free switching between speeds thanks to diaphragm valve technology
- Low-foam filling via swirl insert in the valve
- Closed CIP circuit
- Hygienic design
- Electropneumatically controlled filling valve functions

Output
Up to 78,000 containers per hour

HES = Height filling system, Electronic fill height measuring, Short tube
For glass containers
Modulfill HES

Method of operation
First the glass container is pressed on and pressurised. The filling process will start as soon as the same pressure prevails in the tubular ring bowl and in the glass bottle. Two different filling speeds guarantee optimum flow. If the liquid flowing in touches the probe integrated in the filling tube, the valve closes. After a settling phase, the pressure in the head space of the glass container is reduced via a snifting valve and the filled product exits the machine.

Clever: two gas channels for double the hygiene
The containers are pressurised and snifted via two separate gas channels. This separation prevents liquid from escaping from the filled container into the pressurisation channel, providing considerable advantages with regard to filling stability and hygiene.
For glass containers
Modulfill HES – benefits for you

Foamless filling
– Use of swirl inserts at the filling valve outlet

Maximum filling accuracy
– KRONES probe technology
– Turbulence-free change between two filling speeds through the use of membrane technology

Perfect harmony between the pneumatic components and the electronic components
– All processes can be reproduced to one-hundred percent: no additional fittings required (such as pressure sensor with the respective electronic components)

High filling stability
– Separation of the pressurisation channel and the snifting channel
– Absolutely dry pressurisation without any aerosol carry-over

Precision and long service life
– Use of special pneumatic components with a significantly higher life cycle than the one of conventional switching valves

Hygienic design
– No installed parts in the tubular ring bowl
– Self-draining surfaces
– Clean pneumatic components hosing and electrical wiring
For glass containers
Modulfill HES – optionally available with automatic probe adjustment and automatic CIP cup system

Optional: automatic probe adjustment
- No manual probe adjustment necessary per filling valve
- Automatic probe adjustment via the operator panel (for each bottle type)

Optional: automatic CIP cup system
- Automatic swing-in CIP cups
- Pneumatic pressing-on of CIP cups
For glass containers
Modulfill HES – optionally available with automatic probe adjustment and automatic CIP cup system

Time saving during change-over:

<table>
<thead>
<tr>
<th></th>
<th>Manual CIP cups</th>
<th>Automatic probe</th>
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</thead>
<tbody>
<tr>
<td>Manual probe</td>
<td>8 min.</td>
<td>1 min.</td>
</tr>
<tr>
<td>Automatic CIP cups</td>
<td>24 minutes</td>
<td>10 min.</td>
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-87%                  

-59%
For cans
Modulfill VFS-C

Volumetric can filler
- For both small and large output range
- 28 to 182 filling valves integrated
- Can heights between 80 and 200 millimetres**

Output
18,000 to 135,000 cans/hour*

* Depending on the current can format
** Other can heights are possible on request

VFS-C = Volumetric filling, Flow meter, Short tube, Can
For cans
Modulfill VFS-C

The method of operation of the new filling valve
The can is fed into the filler and positioned underneath the filling valve. The valve is pneumatically lowered onto the can for pressing-on. Thanks to a differential pressure chamber, the cans are also centred and pressed onto the valve with extreme care.

The filling process begins immediately after rinsing. An inductive flow meter checks the quantity of inflowing liquid. The valve closes once the specified filling volume has been reached.

Optional
- Cleaning in a closed system using automatically positioned CIP cups

1 Product stem
2 Rinsing valve
3 Snifting valve, rinsing
4 Pressurisation and return gas valve
5 Snifting valve, can headroom Centring bell

A Snifting channel
B Pressurisation channel
For cans
Modulfill VFS-C – benefits to you

Best hygiene conditions
– Hygienic filling valve
– Machine concept without a front table but with a consistent use of Krones Monotec starwheel columns
– Grease-free main bearing with automatic oil-circulating lubrication system

Reliable filling procedure
– Separated gas channels for pressurisation and snifing
– Pneumatic pressing-on and centring
– Gas flushing is performed when pressed on

Operator convenience
– Format-flexible pressing-on unit: several can formats can be handled without handling parts
– Quick-change handling parts

Promoting energy efficiency
– Use of servo drive technology
Everything from a single source

Training sessions at the KRONES Academy – trained personnel increases your line efficiency
The versatile training offer ranges from operation, servicing and maintenance to management training. We will gladly also establish your individual training programme.

KIC KRONES cleaning agents make your machine shine
Only if the production environment is immaculate, can your product be brilliant. KIC KRONES provides you with the optimum cleaning agents and disinfectants for each individual production step.

Lubricants from KIC KRONES for every production step
Whether for gears, chains or central lubrication systems – our greases and oils are true all-round talents. They can reach every lubrication point, protect your line and ensure gentle treatment for your products thanks to their food-grade quality.

KRONES Lifecycle Service – partner for performance
Also after having purchased a new machine, KRONES will take care of your line; the LCS experts are always ready to consult you and translate your goals and wishes into optimal LCS solutions.

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

EVOGUARD – pumps for absolute process safety
In addition to the separation and locking of a line, one thing is particularly important - and that is the reliable conveyance of your product. This is why EVOGUARD also offers innovative centrifugal pumps in addition to high-quality valves.
We do more.