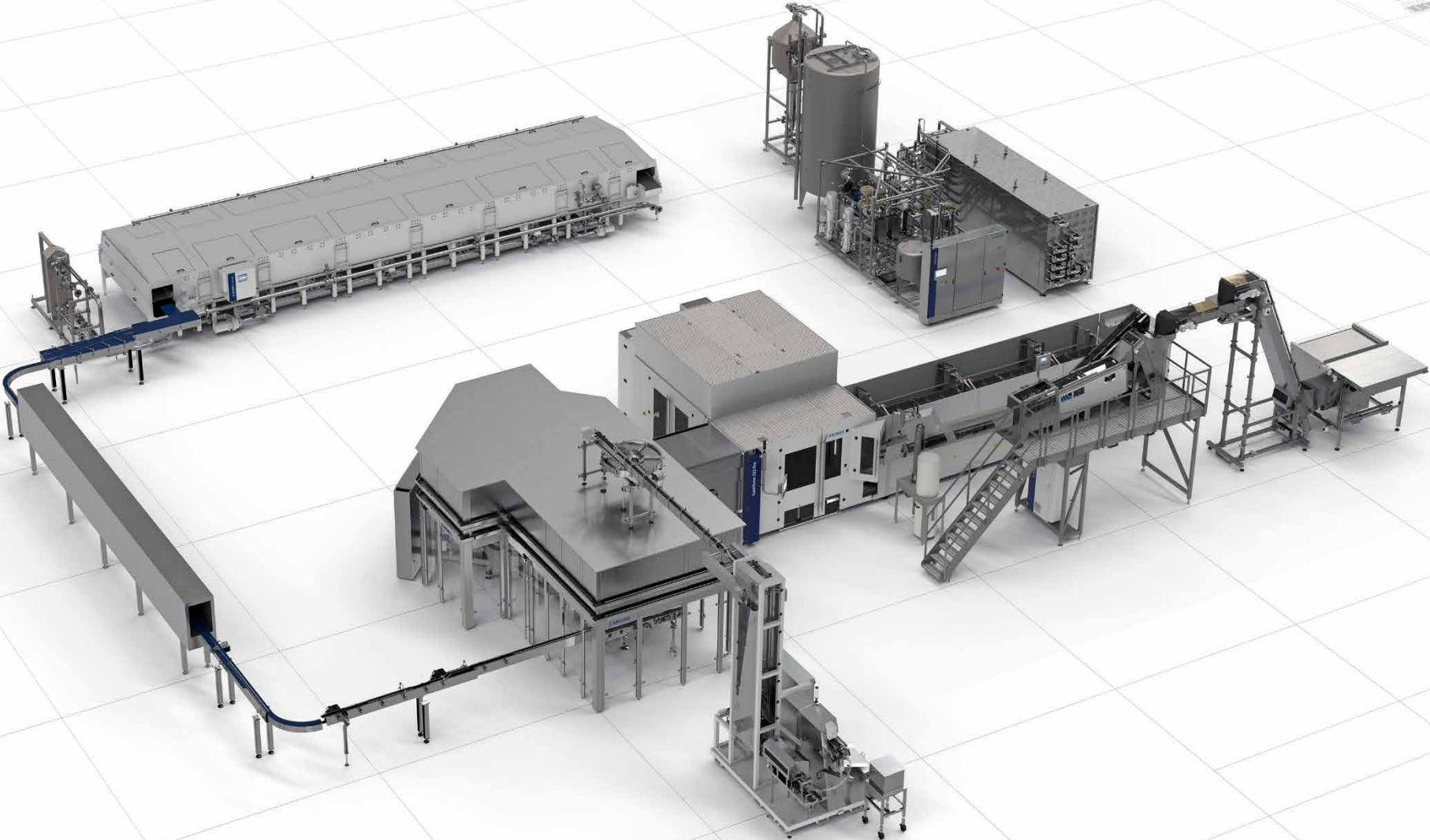




NitroHotfill

More freedom during hot filling





Be free!

Who says hotfill bottles absolutely need compensating panels? We definitely don't! With the NitroHotfill process, just a little bit of nitrogen is added to the bottle after filling. This increases the interior pressure and balances the shrinking behaviour – even when it comes to light-weight containers. A clever design for all who do not want to be restricted in their packaging design any longer.

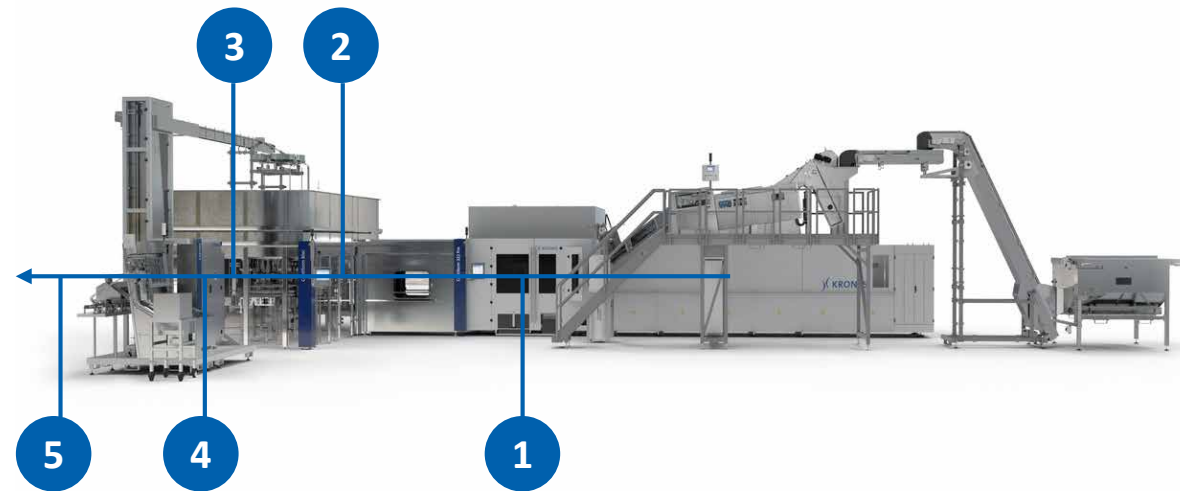
At a glance

- Bottling of hot products of up to 90 °C into PET containers
- No more restrictions to the bottle design through panels
- Blowing and filling with outputs of up to 70,000 containers per hour
- Suitable for:
 - Bottle volumes of up to 2.0 litres
 - Up to 38 mm neck finish diameter
 - Standard and lightweight containers





Operating principle of the NitroHotfill process



Relax-Cooling process in the stretch blow moulder

During the stretch blow moulding process, the PET bottles are already cooled down inside by means of the stretching rod.

- Reduced flushing air and reduced flushing times

Nitrogen dosing after filling

After filling, liquid nitrogen (N_2) is added to the bottle's head space. During the vaporisation of the nitrogen, the interior pressure first increases to between 1.5 and 2 bar. After chilling, about 0.3 bar still remain in the bottle.

- Stable bottles even without a panel design

Stretch blow moulding



Hot filling



N_2 dosing



Capping



Cooling





NitroHotfill in the entire line

Contiform 3 Pro stretch blow moulder

- Light-weight aluminium moulds
- Output per blowing station: up to 2,500 bottles per hour

Modulfill filler

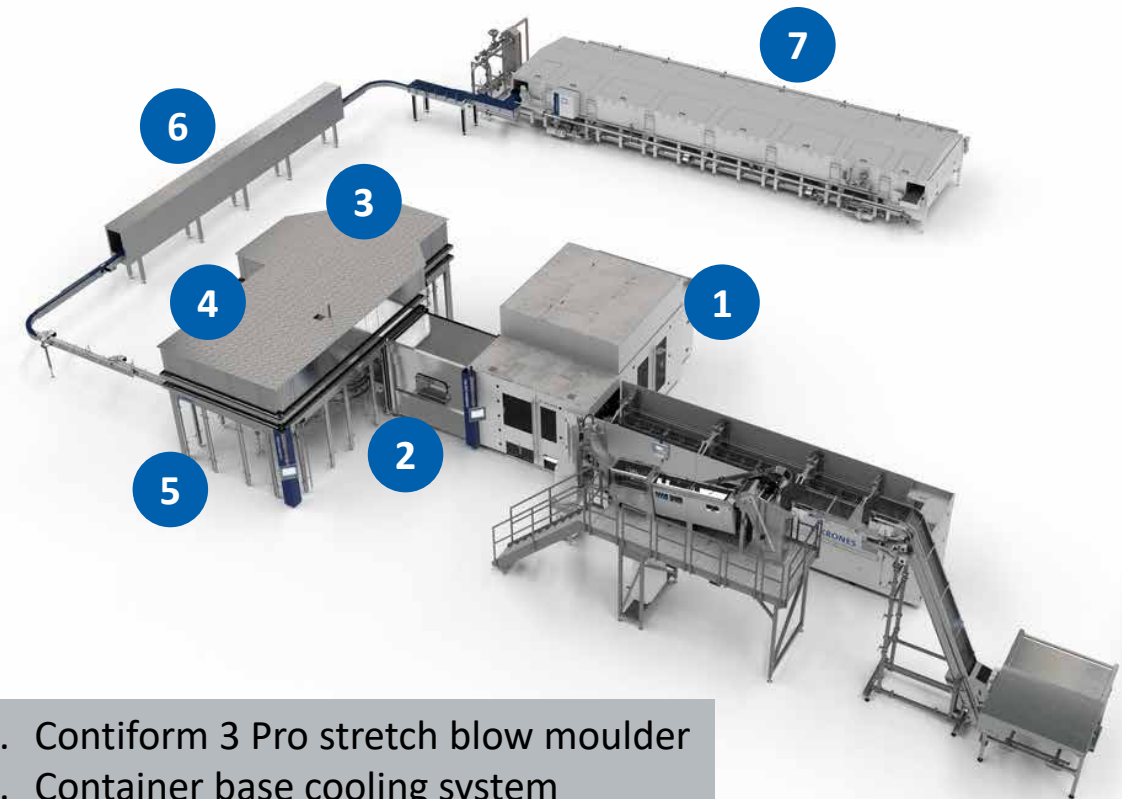
- Filling hot products of up to 90 °C
- Determination of the fill quantity with flow meter or load cells
- Block synchronisation with a stretch blow moulder is recommended

Bottle inverter

- Sterilisation of the bottle's head space

LinaCool chiller

- Step-by-step cooling of the bottles to ambient temperature
- Reduction of the interior bottle pressure down to 0.3 bar



1. Contiform 3 Pro stretch blow moulder
2. Container base cooling system
3. Modulfill filler
4. Nitrogen dosing system
5. Capper
6. Bottle inverter
7. LinaCool chiller



Benefits to you

NitroHotfill is an especially economic and flexible alternative to the conventional hot filling process.

This process...

- enables material savings of up to 30 percent.
- no longer requires the panel design for compensating the vacuum pressure.
- reduces both, the rinsing air consumption and the rinsing times during the stretching process.
- enables station outputs of 2,500 containers per hour during stretch blow moulding.
- reduces the change-over times for moulds via quick-change systems.
- increases the stability of light-weight PET bottles and the transport properties.





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 adhesives – the all-rounder for a strong grip

Regardless if PET or glass, plastic or paper, labels or packagings – at KIC KRONES, you will find your ideal adhesives for a high-quality product presentation.

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

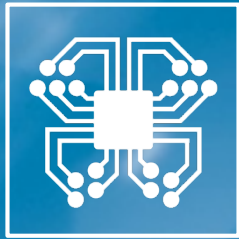
Whether for gears, chains or central lubrication systems – our greases and oils are true all-round talents. They can reach every lubrication point, protect your line and ensure gentle treatment for your products thanks to their food-grade quality.

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.



Digitalisation



Process
technology



Bottling and
packaging equipment



Intralogistics



Lifecycle
Service

We do more.

 **KRONES**