KRONES Contiform 3 stretch blow moulder
Energy conservation in a new dimension
It is the third generation of a successful series. And it is faster and more economical and flexible than any previous model. This is the result of a whole host of new developments and advances – from the high-quality aluminium guards and electromagnetically controlled stretch system to the perfected compressed air recycling system. For every single detail the motto was “less is more”: less compressed air – more output; less energy – more flexibility; less maintenance – more reliability.
Method of operation

The Contiform 3 operates according to the two-stage process in which PET preforms are blown to form bottles. To do so, the prefabricated preforms are first carried through the modular linear oven where they are heated up to their optimum processing temperature by infrared radiation. From here they are transferred to the blowing wheel, where they are placed in moulds to be moulded into containers by compressed air.

Applications

- Production of PET containers with a volume of 0.1 to 3.5 litres
- As a high-speed machine, the Contiform 3 is the ideal choice for both bottlers and bottle manufacturers

Model variants

- Contiform 3:
  - For containers up to 3.5 l
- Contiform 3 SC:
  - For small containers up to 0.7 l
- Contiform 3 H:
  - For hot-filled containers up to 2.0 l

1 Preform tipper
2 Preform hopper
3 Preform elevator
4 Preform roller orientor
5 Preform feed rail
6 Infeed starwheel
7 Control cabinet
8 Oven chain
9 Heaters
10 Preform transfer wheel
11 Blowing wheel
12 Air supply
13 Control cabinet
14 Water supply
15 Container transfer wheel
16 Air conveyor
17 Chiller
18 Tempering unit – for heatset processes
19 Step protector for pipe system/ media supply

Figures, data, facts
Contiform 3: produces containers for

- Water, soft drinks, energy drinks, teas, juices (with and without pulp) and spritzers
- Beer and wine
- Milk and dairy drinks
- Food oils
- Products in the non-beverage sector

Contiform 3: comprises different process types

- Standard
- Relax
- Hot relax
- Relax cooling
- Heatset

Output range

The output rates depend on the filled product, filling temperature, container volume, container weight and process type.

- Standard process
  6,000 to 81,000 containers per hour*

- Heatset process
  6,000 to 58,500 containers per hour*

- NitroHotfill process
  6,000 to 63,000 containers per hour*

* The data refers to the maximum possible output rates with regard to the mechanical components

*Preform transfer from oven to blowing wheel*
... the development of a completely new blowing station
With its completely new blowing module, the machine achieves an output of 2,250 containers per hour per blowing station. It therefore results in 12.5 percent more total output – for the same machine size.

... servomotor drive engineering
The Monotec drive engineering with servomotors runs absolutely in sync at all times, guarantees precise transfers and eliminates mechanical losses of efficiency.

... further optimised platform design
The service-proven platform design used for the Contiform series has been further improved in terms of reliability. To enable it to cope with the increased output of the machine, it is of particularly rugged and torsionally rigid design. It therefore offers unrestricted production reliability even with really high station outputs.

Achieves an output of 2,250 containers per hour: the completely new blowing station
... the electromagnetically controlled stretch system
The new stretch system has a marked and palpable impact on overall air consumption. This is because it is electromagnetic as opposed to pneumatic and requires absolutely no compressed air.

... minimised dead space volume
In the blowing station the so-called dead space volume – the proportion of compressed air which does not contribute to added value – has been reduced to a minimum by utilising every design possibility to the maximum.

... the Air Wizard Plus air recycling system
Further developments on the Air Wizard Plus ensure maximum compressed air savings for every process. The new valve circuit makes it possible to re-use up to 30 percent of the compressed air for the blowing process.
Contiform 3: your benefits
Save energy three times over thanks to …

... the improved infrared oven
Further reductions have been made in the radiant heat compartment in the heating tunnel. The infrared oven therefore requires 15 percent less energy than its predecessor, and that was already highly efficient as it was.

... integrated power recovery
No energy goes unused in the Contiform 3: Even the braking energy generated when the blowing module is shut down is returned to the mains supply via an energy storage unit.

... servomotor drive engineering
It already has a proven track record in KRONES filling systems, and now you can enjoy the benefits of Monotec drive engineering for container production too: The servomotors are so efficient that they require less energy together than a single asynchronous motor.

High-performance and economical at the same time: the servodrive for the blowing wheel

Also optimised in energy terms: the heater for the linear oven
Contiform 3: your benefits
Save working time three times over thanks to ...

... quick-change systems
The blowing module can be equipped with MouldXpress as an option. This quick-change system allows the change-over for a new mould set to be completed in less than a minute.

... increased station output
With a speed of 2,250 containers per hour per blowing station, the Contiform 3 achieves a 12.5 per cent higher level of output than its predecessor model. For an output of 36,000 containers per hour, for example, only 16 blowing stations are now required instead of the previous 18, thereby reducing the mould change-over time even further as well.

... sophisticated machine design
The machine has been designed from end to end to ensure that all work can be performed efficiently and ergonomically. Optimum viewability, short distances and optimum accessibility reduce set-up and maintenance times to a minimum.

Saves even more time: the optional quick-change system for moulds
... the new operator interface
Task-oriented menus and self-explanatory navigation for intuitive machine operation.

... the machine concept
The servomotors and the electromagnetic stretch system are extremely quiet in operation, and the machine guards made of aluminium sandwich-type plates provide additional noise insulation.

... the electromagnetically controlled stretch system
The new stretch system is also particularly user-friendly, since it is absolutely maintenance-free, easy to program on the central touchscreen, and it calibrates the stretch distance fully automatically and does not have any stretch stops which have to be changed along with the moulds. This means that operating errors that can occur during change-overs are eliminated at the outset.
... the new machine design
For the most part the machine guards are made of high-quality aluminium sandwich-type plates. Thanks to their smooth surfaces and minimisation of edges and gaps in the design, the machine can be cleaned really quickly and easily – both outside and inside.

... the reduction in the number of lubrication points
All areas with any hygiene relevance are of lubrication-free design: through the electromagnetic stretch system, for example, or the use of plastic rollers in the transfer star-wheels and the mould carrier locking device. Machine maintenance times are considerably reduced as a result.

... the active transfer grippers
The grippers on the transfer star-wheels are actively controlled. This means that there is hardly any PET abrasion during preform and container transfer, deposits of which could collect on the machine.
... the simple and extremely rugged platform concept
The Contiform has always had a particularly rugged platform. This has been optimised even further in the new model. It therefore remains absolutely torsionally rigid, quiet and reliable even with higher station outputs.

... automatic excursion and rejection
In order to prevent unnecessary downtimes and the need for manual intervention by operators, the Contiform has automatic excursion and rejection functions which permit long automatic production times.

... the minimum number of transfer points
Transfers can be a cause of malfunctions and emergency stops. In order to prevent such situations, the Contiform has just four internal transfer points.

Transfer section in the blowing module
The Contiform 3 cuts a good figure both on its own and in a block arrangement. In a Contiform Bloc at least two machines – in an ErgoBloc L three – are connected to each other directly, without any accumulation areas in between. This results in a harmonic structure that sets new standards with regard to efficiency and availability.

**Applications**

- For both carbonated and non-carbonated beverages
- For hot-filled beverages with the Hotfill or NitroHotfill process (Contiform Bloc only)
- Available in output ranges from 8,000 to 81,000 containers per hour

**The individual variants of the Contiform Bloc systems**

- Blow moulder and filler
- Blow moulder and labeller
- Blow moulder, filler, and labeller

**The ErgoBloc L wet section block**

- Blow moulder, labeller, and filler
- The new benchmark with regard to minimum space and media requirements and user-friendliness

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*One for all: stretch blow moulding, filling and labelling in the ErgoBloc L*
Method of operation

PET-View can be directly integrated in the Contiform. Using a CCD camera, the inspector checks the completely blown PET bottles even before they leave the stretch blow moulder. This way, faulty containers are immediately detected and rejected.

Design features

- Modular inspection unit
- Contact-free inspection with CCD camera
- Maintenance-free LED illumination
- Rejection of faulty bottles via the Contiform rejection unit
- Visualisation on the touch-screen of the stretch blow moulder
- Operation and adjustments at individual access levels with user-defined transponders
- Rejection trend analysis registers changes in the blow moulding process and the environmental conditions and warns the operator if the rejection rate is too high
- Parameter setting and remote maintenance possible by Remote Service

Applications

- Quality inspection of newly blown PET bottles

Output range

- Up to 81,000 containers per hour

Available modules

- Base inspection
- Base quality
- Sealing surface inspection
- Side-wall inspection
Contiform 3
Measurable added value with enviro

What is enviro?
enviro is part of the KRONES sustainability programme and stands for machines which
■ are innovative and high in performance
■ consume few resources
■ are eco-friendly in operation and
■ offer a safe working environment for operators and maintenance personnel.

TÜV SÜD, as an independent expert, has certified the enviro process and thereby confirmed that it leads to machinery and lines which are both eco-friendly and efficient in terms of media and energy.

Why is the Contiform 3 enviro?
The whole development of the Contiform 3 rigorously revolved around the three objectives of efficiency, ergonomics and conserving resources. This was achieved partly through:
■ Highly efficient Monotec servo-drive motors
■ The modular and energy-saving blowing module which can be individually tailored to each and every type of application
■ The patented Air Wizard Plus compressed air recovery system which minimises air consumption and reduces the amount of energy used by the high-pressure compressor
■ The electromagnetically controlled stretch system which uses absolutely no compressed air
■ The ergonomic design of the machine, self-explanatory visualisation on the touch-screen and the time-saving help tools for operation and maintenance
■ Lubrication-free plastic rollers which enable drastic reductions in the overall consumption of lubricant to be achieved

In addition, the Contiform 3 is also ideally suitable for use in a block arrangement with other machines. Moreover, it also offers other worthwhile opportunities for savings in the consumption of compressed air and energy.

enviro pass for demonstrable sustainability
Along with the Contiform 3 you will also receive an enviro pass documenting not just the technical data but the consumption ratings of the machine under specified conditions as well. On request, individual approval inspection measurements can also be carried by TÜV SÜD for every machine as well.

The enviro certificate – your verification certificate for eco-friendly and resource-sparing production
Your benefits

- **Individual adaptation**
The wide range of Contiform models provides the correct answer to every requirement: Standard or heat-set, individual or block arrangement, medium or high output range, small or normal cavities – the KRONES product specialists are only too glad to find the best possible solution for your production process.

- **Low operating costs**
The up to 30 per cent lower energy consumption of the Contiform 3 contributes to keeping production costs low. Extra savings can be achieved with optionally-available tools, such as the Air Wizard Pro upgrade.

- **Rugged design, long service life**
Characteristics such as the extremely torsionally rigid machine platform, the suspended preform conveyor and the oven chain supported completely on ball-bearings ensure that the Contiform 3 has an extremely long mechanical service life.

- **High efficiency**
The modular heating oven is individually adapted to suit your requirements. Due to the fact that the heating and blowing modules are perfectly tuned to suit one another, the machine operates at an optimum efficiency rate.

- **Short change-over times**
To ensure that change-over and maintenance work take up as little time as possible, numerous handling parts have a quick-change function. And quick-change systems which are optionally available for the base moulds and transfer clamps minimise the change-over times to “pit stop” level.

- **Efficient use of energy**
Systematic new developments, such as the energy-optimised heater for the linear oven and the highly efficient servodrives move the efficiency level up another gear. In addition, the air recycling system installed as standard drastically reduces the energy consumption of the compressor.

- **Safe transfer**
The preforms and bottles are conveyed through the entire Contiform at the same height and, in doing so, only pass through four transfer points within the system – a major advantage for production safety and machine availability!

- **Precise production**
Compliance with container specifications is naturally guaranteed with this KRONES machine as well. In addition to the reproducibility and consistency of the blown containers, unusual designs can also be achieved with this machine too thanks to the infrared lamps which can be positioned with flexibility and the optimised dimensions of the oven.
We do more.