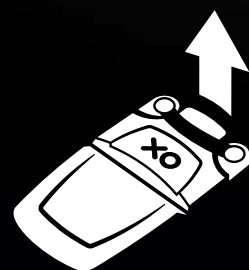


xo®



Lift like a regular can

Place the index finger below the Pull Tab and firmly lift it. This step serves three purposes: breaking the Tamper-Proof Band, venting the content by opening the XO Flow Valve, and unlocking the XO Slider.



Slide to open

To open the can, push the XO Slider forward until you hear a gentle "click". This step opens the Internal Relock Disc and opens the mouthpiece.

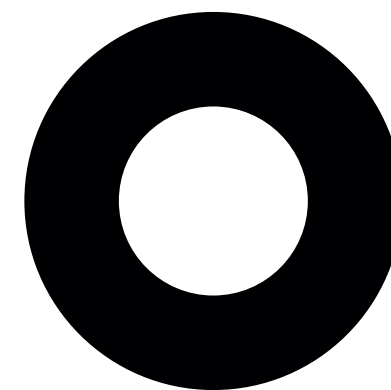
The Relock Revolution

XO OPENING

Revolutionary, yet familiar

XO is the new, innovative relock system for beverage cans. While new and revolutionary, the XO opening will still feel familiar to everybody: the XO resealable can opens like a traditional SOT (Stay-On-Tab) can, yet it includes what the SOT is

missing: the ability to be relocked. Opening the XO-equipped can is an easy, intuitive and one-handed procedure. It's the Relock Revolution for all canned beverages.

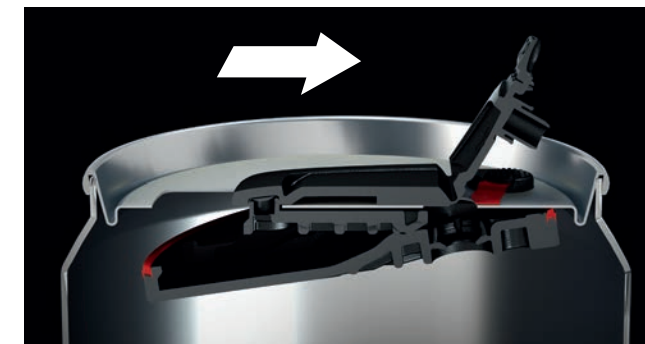


Seal breaking & Venting



Lift the XO Pull Tab to unlock the XO System. You'll hear the familiar venting sound of a can – even after re-opening.

Opening – Slide to open



Slide to open the mouthpiece and drink.

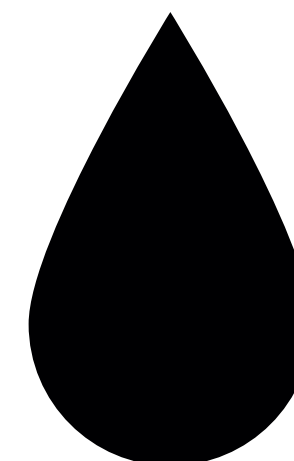
Convenient and pure

XO DRINKING

Smooth laminar liquid flow

The XO System is not only the Relock Revolution for beverage cans, but it also improves the entire drinking experience. While opening the XO System, the self-sealing XO Internal Relock Disc is pushed down diagonally towards the liquid. When the can is brought to the mouth and tilted, the liquid flows around the disc in a wavelike movement – the so-called “laminar flow.” The hole under the XO Pull Tab, used for venting during the opening process, operates as an

air inlet. This results in a greater and smoother flow rate and pouring speed. As the XO Slider is made of plastic material, the drinking sensation is entirely different from traditional aluminum cans: The can doesn’t feel steel-cold against the lips, and there are no sharp edges. The clean surface and the smooth laminar pour provide an unprecedented experience.



Air stream



While drinking, air is forced inside and supports the flow.

Laminar flow



The special XO construction leads to an outstanding laminar flow rate of min. 42g/sec. (1,42 OZ/sec)



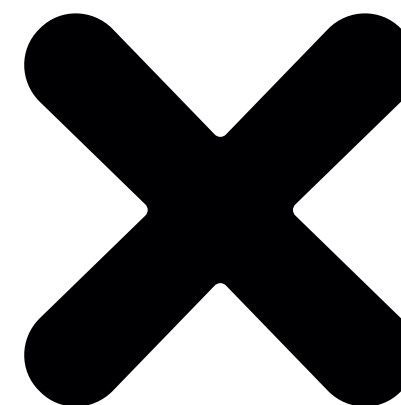
Pure locking control

XO CLOSING

The on-the-go solution

By pushing the XO Slider back over the mouthpiece and pushing the XO Pull Tab back down, the can is relocked: The reason why we invented the system and call it the Relock Revolution. The XO System safely contains and preserves the beverage and its carbonation for freshness at a later time. It also protects it from insects, dirt, and spillage.

The XO System passes through several processes invisible to the user to achieve this: the XO Slider inside the can releases the XO Internal Relock Disc into its "closed" position. In addition, the exterior XO Slider covers the mouthpiece and seals the freshness inside. The instantly relocked can is leak-proof and the perfect portable solution.



Slide to close



Relocking the can: first, move the XO Slider back over the mouthpiece.

Push to lock



Push the XO Pull Tab back down to relock the slider for a 100% leakproof beverage can.

Consumer safety

XO TAMPER-PROOF BAND

• **TAMPER-PROOF BAND**

If the can has not been opened before, the tamper-proof band remains unbroken on top of the XO Pull Tab.



• **BREAKING THE SEAL**

During the initial opening, the Tamper-Proof Band is broken by lifting the XO Pull Tab.



• **RELOCKED**

After relocking the can, the XO Tamper-Proof Band disappears behind the XO Pull Tab.



Visible safety

The XO System fully meets the beverage industry’s shelf life standards. To ensure the freshness of the product, it is necessary to indicate to brands, retailers and consumers alike that the beverage can is in its original, untampered delivery condition and has not been previously opened. XO has integrated a smart solution with the well visible

XO Tamper-Proof Band – a biaxially-oriented PP band welded to the XO Pins. When initially opening the can, the XO Tamper-Proof Band breaks. When relocking the XO System, the band disappears behind the XO Pull Tab. There’s no littering because the band will always remain connected to the can.



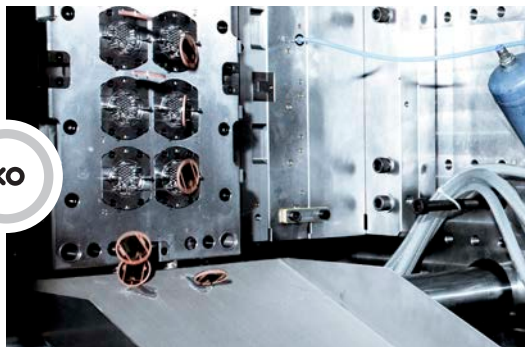
Fully automatic German-engineered high-tech production

PRODUCTION

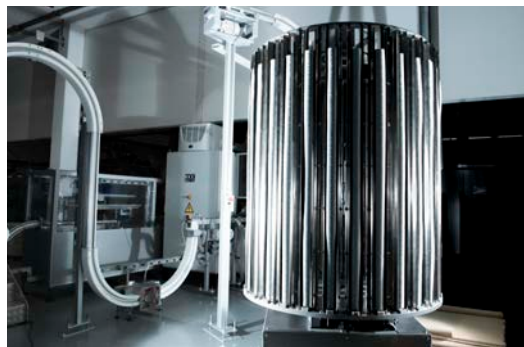
XO production facilities

During the development of the XO System, an efficient and adaptable production process was the only objective. XOLUTION, in collaboration with experienced partners, installed in 2013 the first production line in Austria. It was all in one place: injection molding of the plastic parts, debagging and stamping of the shells, assembling and finishing of the final XO End, extensive testing and quality control and packaging of our end product.

In May 2017 the second production line for the next generation of XO ends started in Czech Republic with an annual capacity of 200 mio. XO Ends. Additional assembly lines are being installed to meet market demands, with an annual capacity of 600 mio. XO Ends. These lines utilize a fully automated and standardized process, offering adaptability to larger capacities and various diameters in specified regions.



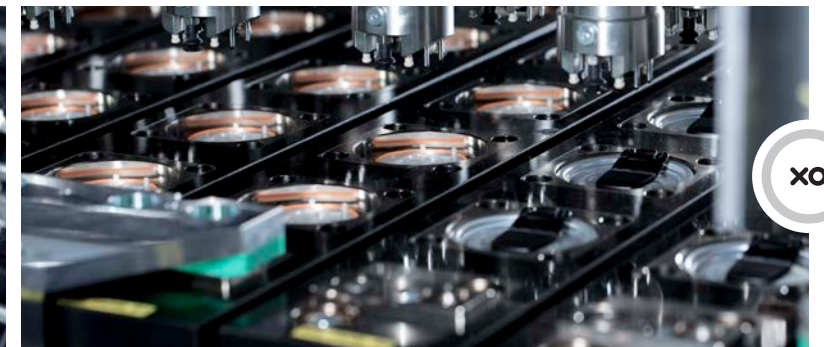
Injection molding plastic parts



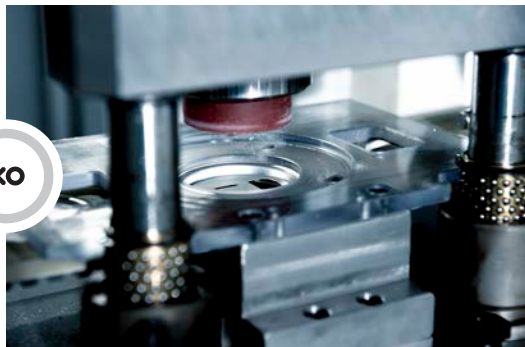
Debagging plain shells



Plastic component feeding



Component assembly XO Slider



Stamping and positioning shells



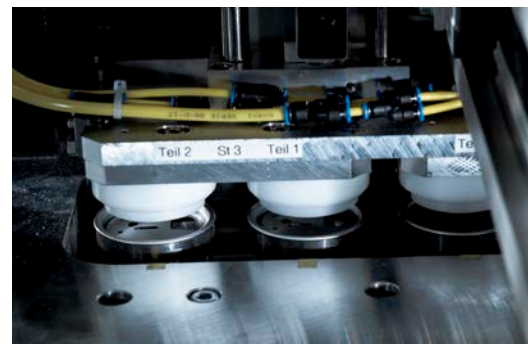
Feeding shells to assembly line



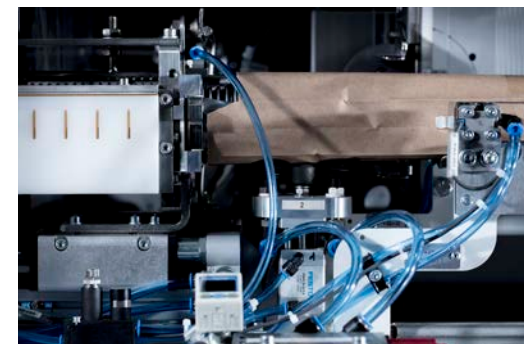
Visual inspection of finished ends



Visual inspection of shell



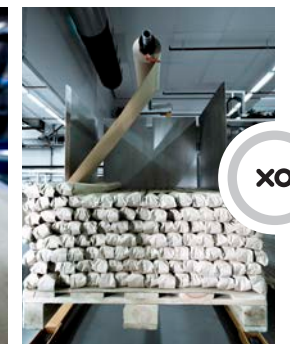
Positioning shell



Feeding XO Ends



Packaging of final XO Ends into paper sleeves



Palletizing of XO Ends

Failure rate does not exceed customary beverage can packaging

QUALITY STANDARDS

Cans demand quality

Cans are successful because they are resistant to various temperatures, pressure and other influence. This is the challenge we had to meet. We developed a broad test program to meet all the requirements.

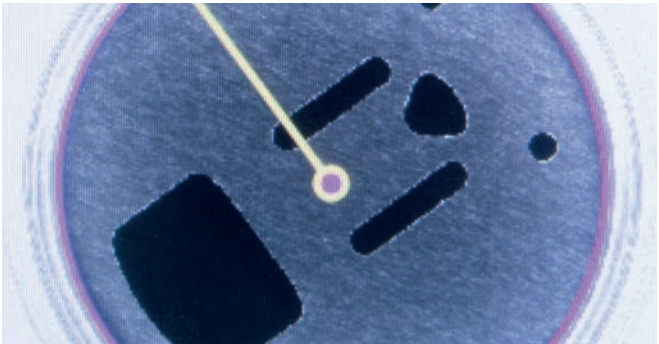
Within the production process we constantly perform online and offline tests for all steps of the injection and assembly processes.



100% leak test



100% visual inspection of shells



Partners

ALPLA

ELCIS Group
HEKUMA

ILSEMANN

HACK
QUALITÄT IN BESTER FORM

z-moulds®

Converter

ALPLA
Founded: 1955
Employees: 23,300
Plants: 196 plants
HQ: Hard, Austria

Assembly

HEKUMA
Founded: 1974
Employees: 240
Plants: 2
HQ: Eching, Germany

Assembly

Ilsemann Automation
Founded: 1965
Employees: 205
Plants: 1
HQ: Bremen, Germany

Tools

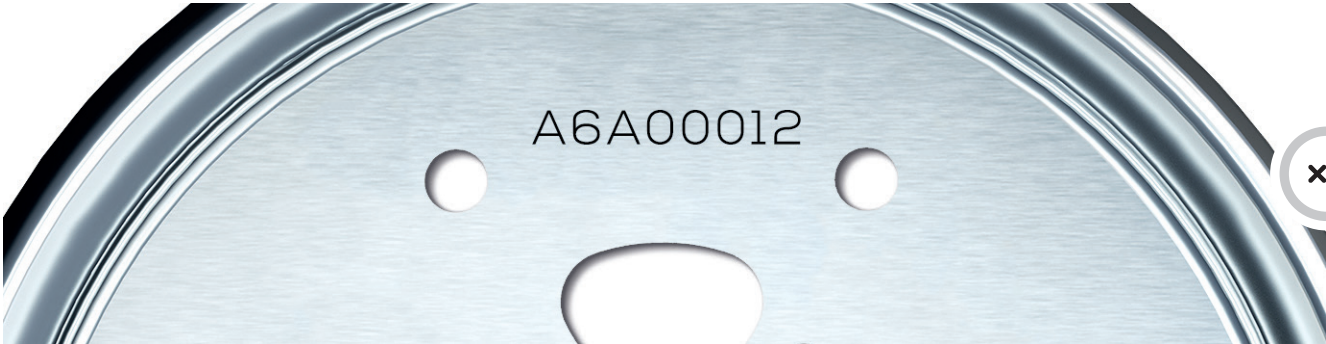
Hack
Founded: 1956
Employees: 150
Plants: 1
HQ: Kirchheim, Germany

Tools

Zmolds
Founded: 2005
Employees: 150
Plants: 1
HQ: Dornbirn, Austria



100% visual inspection of XO System



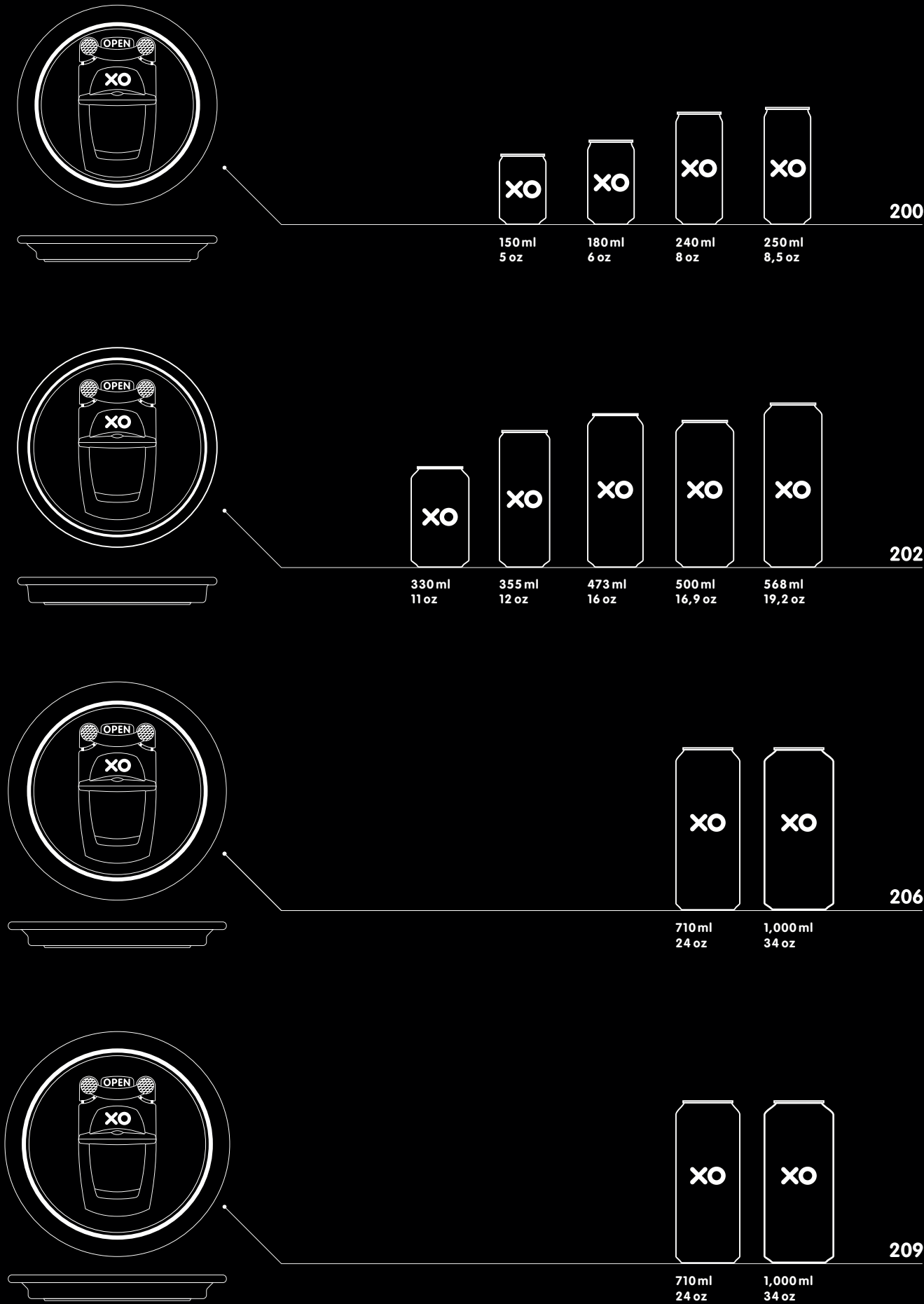
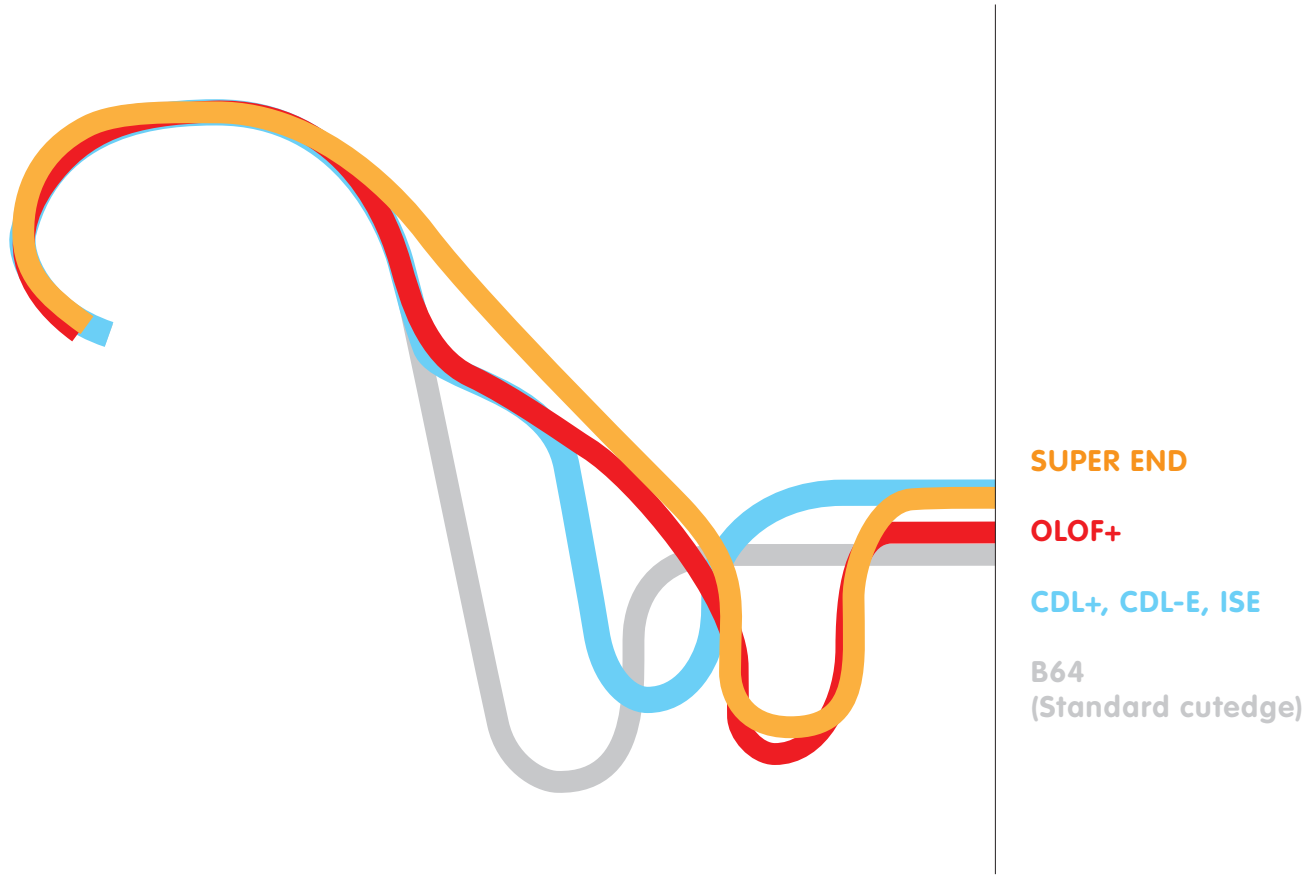
Traceability

XO Ends align with shell standards

SHELL STANDARD DIMENSIONS

XO Ends are based on industry standard shell platforms. Xolution works with all major Global Can Makers and the customer has the choice of which shell base he wants to use.

There is no limitation in Shell profile or Shell diameter. Therefore there is no need to adjust chucks or rolls in the seamer for similar styles (B64, CDL+/E, ISE, OLOF, Super End)



Drop-in concept at filler/co-packer

FILLING LINE IMPLEMENTATION

Capabilities of the XO System

One of the most important demands in the multi-year development process was the compatibility with existing processes. Once tested with the XO System, existing lines can be used for both SOT and XO interchangeably: SOT → XO → SOT.

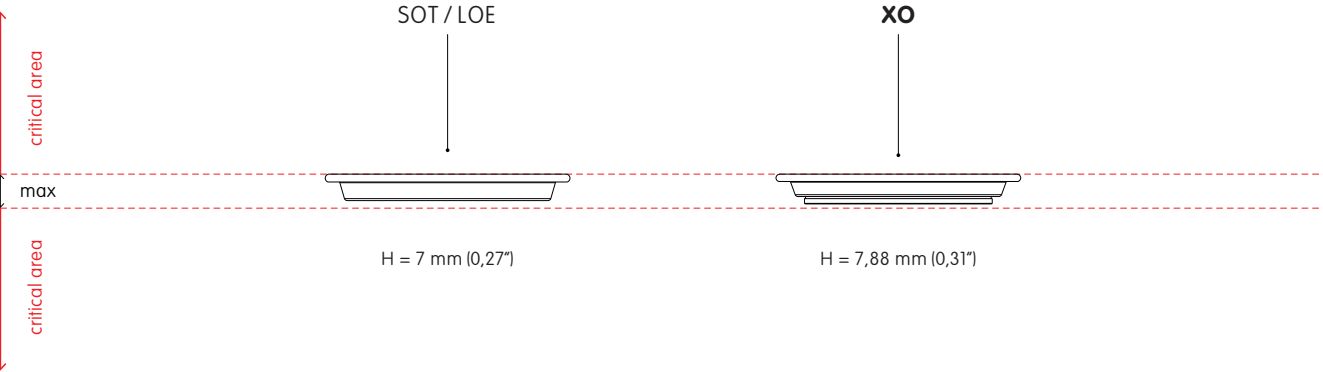
XO End dimensions

Generally speaking, the XO Ends are symmetrically stackable solutions, which cause no problems at feeding and seaming. This avoids major investment to run the system. The basis of the XO End are all standard shell profiles such as B64, CDL/E, CDL/+, ISE, SE, OLOF. We integrated the system within this shell. The opening mechanism on top corresponds to standard requirements of the seaming heads. Most of the technology is hidden under the shell. The XO Ends are also symmetrically stackable and arrive – just as SOT shells - in paper sleeves.

Top benefits

- Compatible with manual, semi and automatic debaggers
- Drop-in concept suitable for all industry-standard seamers
- Diameter 202 platform in B64, CDL+-E, SE, ISE
- No efficiency loss from SOT → XO → SOT
- CAPEX: no or minor investment at filling and seaming equipment required
- No speed reduction at filling
- Standard filling without process impact

End depth solution



Options to XO System handling in existing filling lines

XO END – DEBAGGING

Compatibilities of XO Ends

In today's beverage industry, there are two different technologies of debagging:

TECHNOLOGY 1: MANUAL DEBAGGING

Definition: the machine operator opens each sleeve manually, and either puts it in a V-chute, or into a vertical pocket holder and then pulls off the sleeve by hand. The feeding of the ends to the seamer works by gravity (simple V-chute) or via a lid pusher.

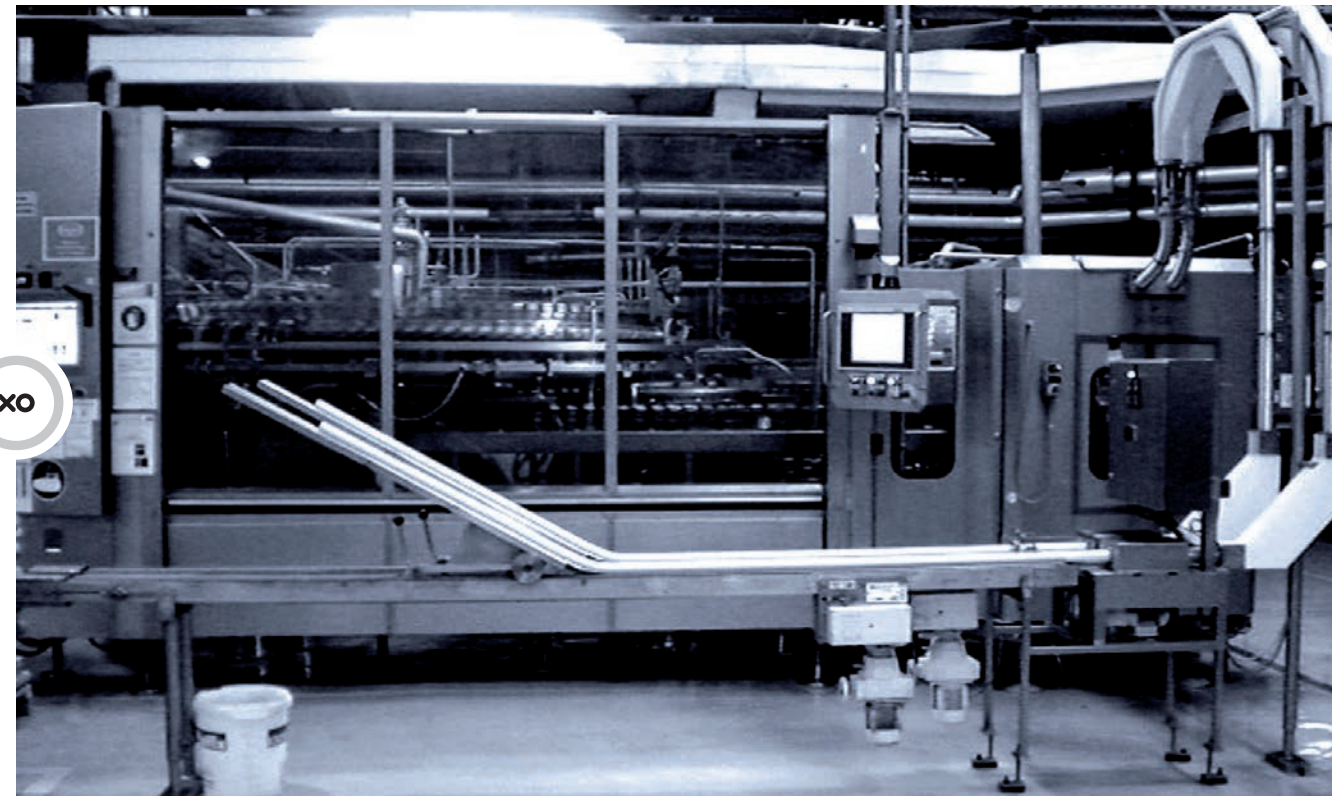
TECHNOLOGY 2: AUTOMATIC DEBAGGING

Definition: the machine operator puts the sleeves on a storage table and the debagger automatically cuts and removes the sleeves, then feeds the ends to the feeding line, ready for the seamer.

XO Ends are compatible with manual and automatic debagger technologies.

XO Ends run on most of the installed equipment of the main suppliers, but usually minor upgrades are necessary. Upgrade kits for the most common debaggers are

available from stock and free of charge to XO customers. Please contact Xolution for further information.



Manual debagging: Extension

Speed Challenge

An XO sleeve will come with roughly 200 XO Ends instead of the more common 600 SOT/LOT shells. Therefore, the operator or the automatic debagger must load 3 times the number of sleeves in the same time frame to maintain the filling speed. On the next page there is an outline of

different debagging equipment and the possible filling line speeds when running XO ends. All Information is based on more than 10 years experience collected from production runs all over the world.



Automatic debagging

Options to XO System handling in existing filling lines

OUTLINE DEBAGGING EQUIPMENT

Manual Systems

XO Ends run on all standard manual debagger systems. Together with the Suppliers, Xolution has developed modified equipment which allows a higher Manual Debagging speed.

MANUAL SYSTEMS	OPERATOR/SEC	SLEEVES/MIN	CANS/HOUR
Standard	1	up to 3	up to 35.000
Modified	1 or 2	3 – 6	35.000 – 70.000

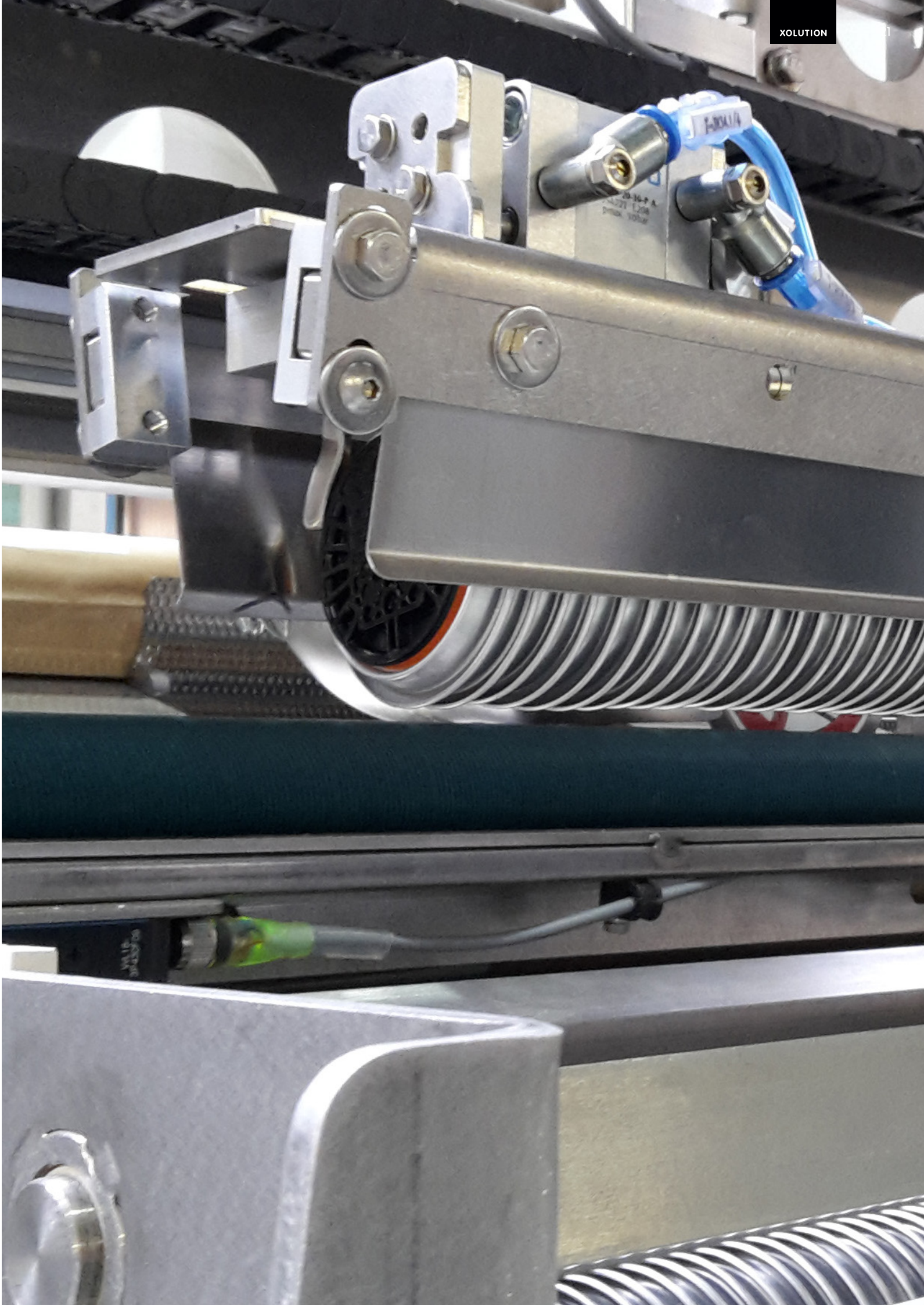
The maximum debagging speed for all manual systems depends on operator skills and production environment. Mentioned numbers are based on data collected thus far.

Automatic Systems

XO Ends run on most sophisticated automatic debagger systems Max. speed depending on debagger model. Together with the suppliers of automatic debaggers, Xolution developed the modified equipment which allow a higher Automatic Debagging speed.

AUTOMATIC SYSTEMS	OPERATOR/SEC	SLEEVES/MIN	CANS/HOUR
Standard	0,5	2 – 6	23.000 – 70.000
Modified	0,5	8 – 10	93.000

All automatic debagger equipment is also available with buffer systems and fully automatic depalletizers which are suitable for XO Ends.



Using existing filling and seaming equipment at filling lines

XO ENDS AS DROP-IN CONCEPT

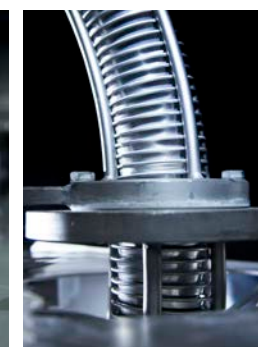
It's all about debagging and filling, seaming at current speed

Tests have shown filling speeds of up to 1,600 cans/min in existing filling lines. Once the machinery is set up, there will be no changes necessary for the switch from SOT to XO and back. Therefore the XO System can be used without process and

volume impact for a wide range of beverages from energy drinks, functional drinks and carbonated soft drinks, iced teas, coffees and beer.



Filling (cold, pasteur, hot)



Feeding



Seaming process can body/XO System



Seaming



Completed cans



Packaging

XO meets beverage can industry standards

XO SYSTEM PERFORMANCE

It's all about testing

In order to meet the international beverage can industry standards, a test program comprising at least 17 different procedures has been developed by XO together with XO's industry partners (e. g. can makers, institutes, brands). The purpose is to insure the consumer's health by continuously

testing the XO System under existing SOT/LOE shell test parameters while further developing test procedures for resealable ends. Therefore XO has installed a 500m² area within its headquarters.

TEST	DESCRIPTION
Pressure	Pressure resistance
Peaking	Secure sealing
Opening force	Easy opening
Under cover gassing	Residual O ₂ volume
Seaming	High speed seaming
Gushing	Determine gushing
Drop	Determine failures
Flow rate	Pouring quality
Bacteria	Avoidance of microbiological defects
Sponginess	Feeding capacity
Transportation	Truck vibration simulation
Storage	XO System unaffected by longer storage times
Cycle	Avoidance of defaults in field
Top Force	Top load force
Beverage	Taste impact of XO Ends
Corrosion	Evaluation of can corrosivity
CO ₂ retention	Retention definition
O ₂ migration	Migration definition
Filling	Determine different filling performances



Cycle test



Hot room cycle test



Pressure test



Opening force



Force test



Drop test can



Beverage test



Transportation test



Flowrate test



Cycle test

Costumized design and ingredient branding support

XO BRAND SUPPORT

The fully recyclable XO Can adds a highly functional additional value to any premium product. By offering adaptable designs and ingredient branding, the XO Can is also capable of creating a personalized look and a high recall value for the individual product. All customizations highly scalable without any delay in the delivery of consignments.

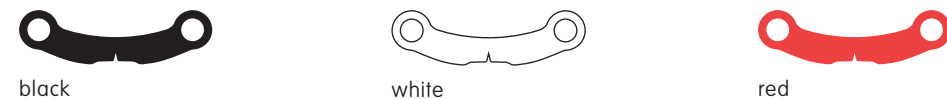
XO Slider colors

The XO Slider is not just black. We can customize the colors to meet the needs and wishes of the brands. A minimum order quantity per color and additional lead time may apply. Please contact us for an individual solution.



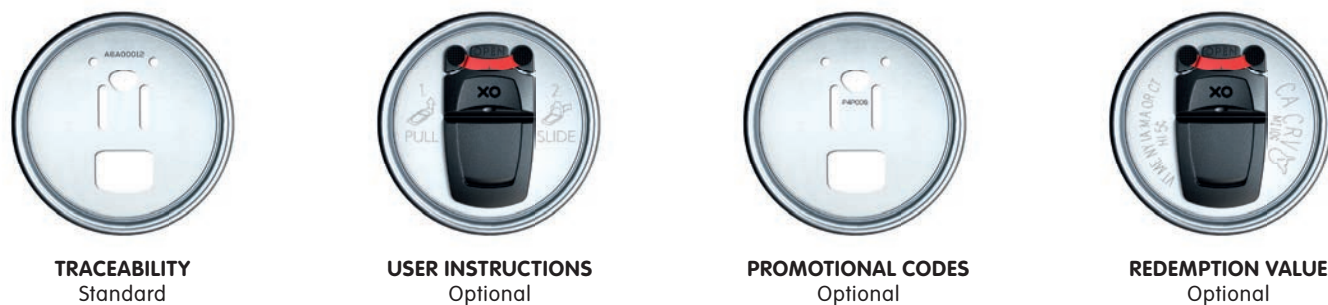
XO Tamper Proof Band Colors

The XO Tamper-Proof Band is made of biaxially oriented PET, which is available in various colors. Please contact us to inquire about the availability of specific colors. A minimum order quantity per color and additional lead time may apply.



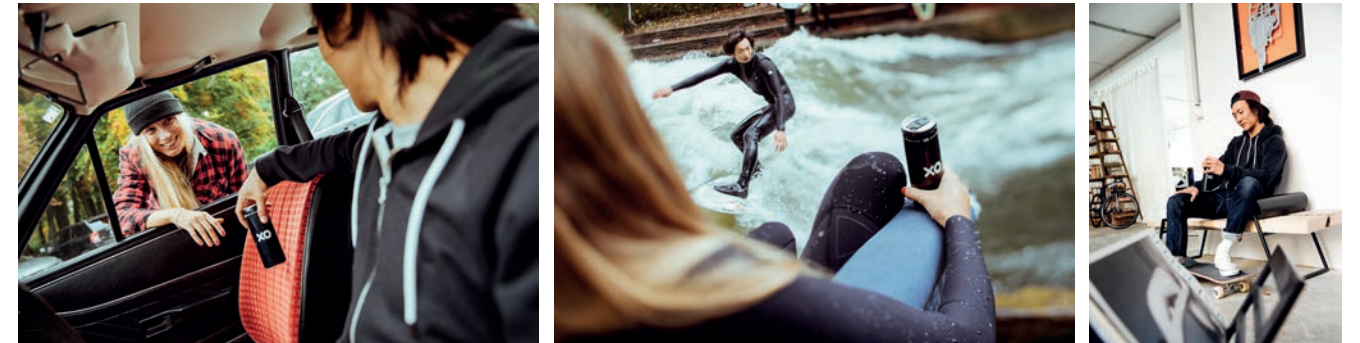
XO Laser Engraving Options

On every single XO end we engrave with a laser our traceability code. In addition, the customer has several options to add either an opening instruction, a refund code or logo on the shell. It is also possible to engrave a promotional code below the outer slider which is not visible to the consumer before opening the can.



Consumer insights

We carried out extensive market research in various countries, including consumer tests and focus groups. Our partners and customers fully benefit from this know-how. We also organize individual specific research for our partners.



Tools for brands

We see ourselves as an ingredient brand and support our communication efforts with effective tools and marketing. The materials include information and illustrations regarding the opening process and functionality of the system. We also provide more detailed information like photos, 3D renderings and animation, as well as descriptions.



Communication tools

We have developed a range of Point of Sales promotional tools to highlight the resealable XO System. These are just a few examples of how to explain the functionality of the product itself, and to attract the attention of potential customers and thus drive sales. We are happy to develop specific POS promotional tools in cooperation with you for your brand.



Creating awareness, creating needs

CONSUMER MARKETING

XO is the Relock Revolution. It is ideal for the Generation On-the-go, a demographic that is extremely active (travel, adventure, activities), health-conscious and comfortable with Social Media. To reach consumers worldwide with the XO story, we concentrate on social media to spread the message. We create unique content, which shows the benefits of the XO Can in real and sometimes extreme situations. One

of our storytelling projects is "A day in Tao's life," with Tao representing a typical member of this generation: Successful in his career as a designer, entrepreneur, and two-time double European Champion in Stationary Wave Surfing, he is always on the go. We should probably mention that Tao is also responsible for the design of the XO Slide.



07:30
AM



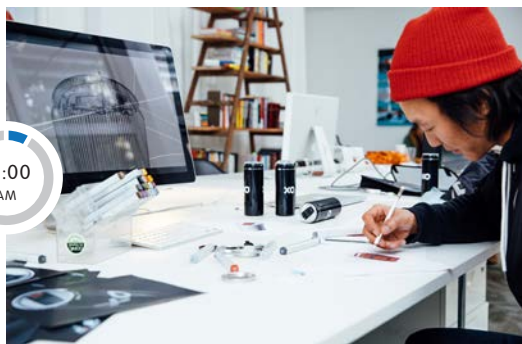
Starting his day, Tao fuels up his energy on the way to his favorite surf spot, Munich's Eisbach, and gets ready to rip the standing wave.



09:30
AM



After a great session with his friends, Tao soaks up the sun and rehydrates, watching the other surfers doing their thing.



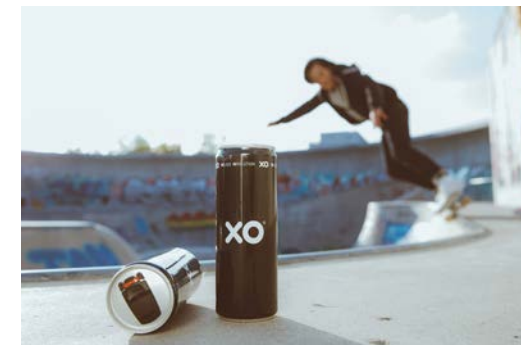
10:00
AM



Time to get to work. To prevent accidents that jeopardize his expensive electronics and priceless sketches, Tao relies on resealable XO Cans to hydrate and stay cool and focused.

The key consumer benefits of the XO Can:

- Unique user experience
- Intuitive handling
- Beverage always stays fresh
- Leakproof on-the-go solution



04:00
PM

Work's done and Tao needs more action. Waves in the morning, concrete in the afternoon. Tao always plays hard, and quick and easy hydration is essential.



06:00
PM



08:00
PM

Tao meets with friends and indulges in a few of his favorite drinks. Another perfect day with XO comes to an end.

Your partner for resealable beverage can solutions

ABOUT XOLUTION

XOLUTION Germany GmbH is a Munich, Germany-based company. We develop, produce, and supply resealable solutions for the beverage can industry. XO has a fully integrated organization with responsibilities in the areas of R&D, production, laboratory, business development, sales, marketing, and finance. We aim to bridge the gap between traditional drinking cans and the demands of the "generation on-the-go". We present drinking products that are tailored to meet the requirements of increasingly mobile lifestyles. The revolutionary XO Resealable Can System makes your drink available at any time — always fresh, always safe! It's the Relock Revolution and will change the way you drink!

XO HEADQUARTERS

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