

# Fitments for Flexible Packaging



Scholle IPN

Simply **Flexible**<sup>™</sup>

---

# Simply Flexible.

---

## Our Mission

### The Scholle IPN Difference

Scholle IPN's mission is simple; to help the world's leading brands deliver their products in the best way possible using a diverse range of total flexible packaging solutions. We are tenacious innovators with a long history of applying technology in film, fitments, and equipment to solve difficult packaging problems.

Our products are manufactured everywhere so we can serve anywhere with a flexible, "can-do" attitude.

We believe we are a critical partner to creating and maintaining a sustainable future and do things differently to meet these important goals.

Scholle IPN is many things. But above all, we are Simply Flexible.





# Table of Contents

Total Packaging Solution	6
Flexible Efficiency	8
Brands We Serve	10
Our Approach	12
Innovative Design for the Circular Future	18
Tethered Caps	20
Diamond Seals	22



<b>Retail Fitments</b>	
Retail Bag-in-Box	26
Retail Pouch	28
Toynorm Compliance	35



<b>Institutional Fitments</b>	
Institutional Bag-in-Box	36
Institutional Pouch	48



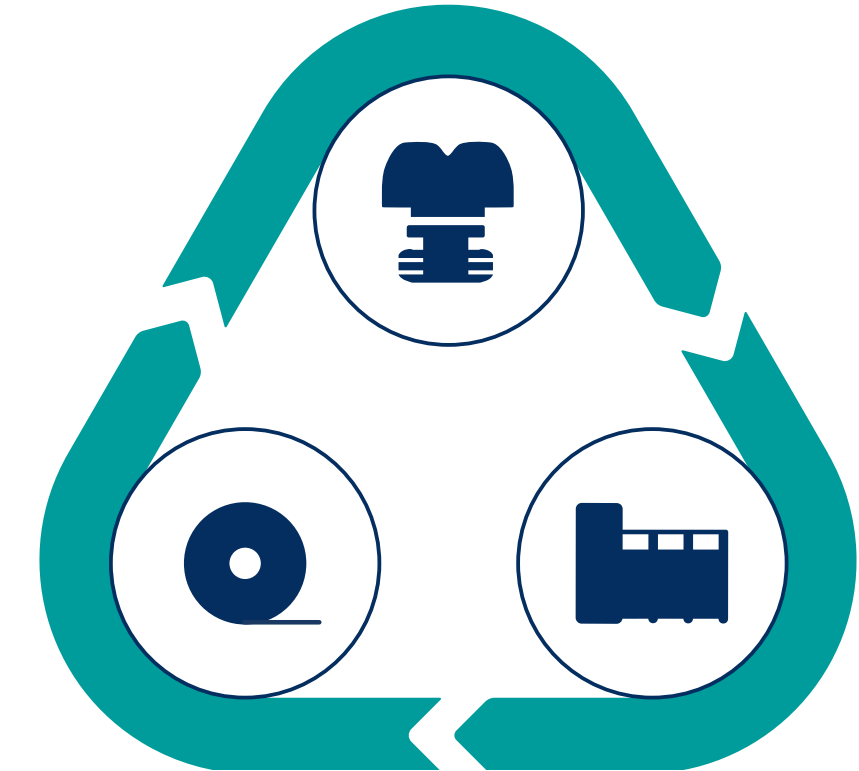
<b>Industrial Fitments</b>	
Industrial Bag-in-Box	50

Film Overview	54
Equipment Overview	56
Locations and Contact	58

# Film. **Fitment.** Equipment.

## A Total Packaging Solution

Our mission is simple; to help the world's leading brands deliver their products in the best way possible. We do this by combining films, fitments, and equipment to help you go-to-market simply and quickly with a total flexible packaging solution tailored to your specific needs.



### Film

- We extrude, laminate, and print flexible, barrier films designed to meet your rigorous product specifications.
- We have one-to nine-layer films, as well as recyclable, mono-material structures.

### Fitment

- We injection mold and assemble fitments designed to provide an ergonomic interaction with your product for all ages and abilities.
- Our taps, connectors, caps, and spouts are designed to suit your needs –whether that's on a retail shelf, a fast-paced restaurant operation, or industrial use.

### Equipment

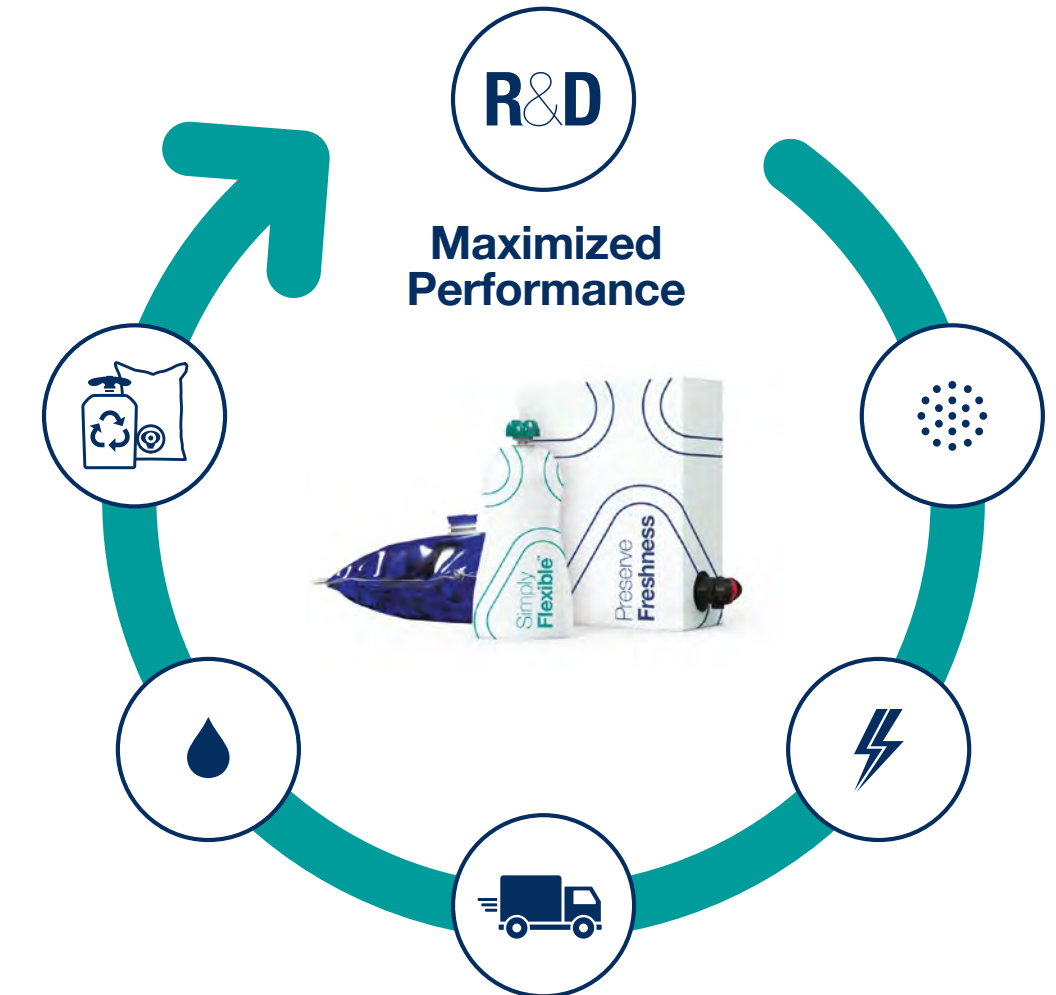
- We design and manufacture equipment for both pre-made and form-fill-seal style bag-in-box and pouch filling. Whether you operate a startup, or a full-scale, automated operation, we have a solution for you.
- Our filling equipment offers great flexibility in process compatibility from ambient, to ultra-clean, to aseptic.



# Flexible Efficiency.

## Why Choose Flexible Packaging? Effective Use of Resources

- R&D** **Maximized performance**  
due to unrivalled quality design  
and engineering.
- Less raw material**  
and natural resources used  
during production.
- Less energy**  
required during production  
and transportation.
- Less transportation**  
required with more efficient logistics.
- Less product waste**  
with excellent shelf life capabilities to  
keep product fresher, longer.
- Less package waste**  
with optimized product-to-pack ratio  
and recyclable options.



## The Brands We Serve





Assembly for our Amerigo pouch fitment.

## Our Approach to Fitments

### Injection Molding and Assembly

Scholle IPN injection molds and assembles fitments designed to provide an ergonomic interaction with your product for all ages and abilities.

- Our fitments are designed with a focus on optimized functionality and fit for sealing to various types of film.
- Our taps, connectors, and caps are designed to suit your needs – whether that's on a retail shelf, a fast-paced restaurant operation, or industrial use.

Our vertical integration and global footprint ensures competitive pricing and supply contingencies. Our Industry 4.0 approach to manufacturing uses data, automation, and robotization. Together with clean room manufacturing and in-line inspection systems, we maintain high quality from design to production.

#### Caps and Taps:

Ergonomic, easy-to-use solutions designed for people of all ages and abilities.

#### Connection Systems:

Facilitate safe, precise dosing and mixing of liquid products from dispensers.

#### Environmentally-Conscious:

Designs engineered to be lightweight and with the Earth's limited resources in mind.





## Industry-Leading Injection Molding

We strive to be the best total flexible packaging solutions supplier, from development to production to service – and that includes our fitments. Our injection molding presses are engineered to provide you with an optimal fitment solution. From pilot molds to test new, custom designs to full production, we're here to support you.

Our fitments are manufactured using:

- Clean room manufacturing to meet stringent food compliance standards.
- State-of-the-art hybrid and electric Husky molds to reduce energy consumption.
- Automated assembly machines to increase speed and efficiency.
- In-line inspection systems for closed-loop quality control throughout the manufacturing process.
- Industry 4.0 automations to reduce direct human interactions with the products.



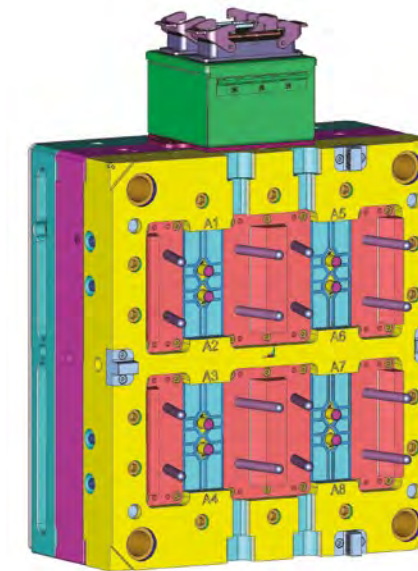
Clean room manufacturing of Versi™.



Global injection molding capabilities from pilot-sized presses to high-cavity production.

## Mold Making Technology

We're equipped to take your fitment concepts from idea to execution. Our fitments engineers work with you to tailor-make your optimal fitment solution. We work with our injection molding experts to design, produce, and test fitment molds starting with rapid prototyping and single-cavity pilot molds all the way to high-cavitation molds for commercial production.



Design phase of injection mold press.



We injection mold each part of our fitments.



## Production Capabilities

We injection mold and assemble billions of fitments every year. Our clean room fitment manufacturing environments are built for quality and product safety.

### Scale and Precision:

- Molding capabilities from small trial presses to high-cavitation cells to fit your production needs.
- Leading-edge polymer use to maximize quality and recyclability.
- Fitment assembly capabilities feature “pop-on” and tethered cap innovations for environmental efficiencies.
- “No-touch,” robotic production lines with automated in-line quality inspection systems ensure the fitments are manufactured with highest reproducibility.



Our taps, connectors, caps are designed to suit your needs –whether that’s on a retail shelf, a fast-paced restaurant operation, or industrial use. And in all we do to design and manufacture fitments, the environment is a priority with solutions that are engineered to empower your own journey in the circular economy.

### Ergonomics and Environment:

- Taps built to extend opened shelf life.
- Fitments with automatic shut-off to eliminate chance of spills and waste.
- Single-piece fitments to eliminate loose plastic in the environment.
- Lightweight fitments to maximize functionality with minimal source material use.



Coca-Cola Freestyle® cartridge features Fluid Connector FC78.



## Innovative Design for the Circular Future

Our products and processes are built to realize a significant reduction in the use of fossil materials and related CO<sub>2</sub> footprint while providing a positive consumer experience. To that end, we strive to engineer products that meet one or more of the below tenets to ensure we are all moving forward in our sustainability journey.



### Reduce

We take a tenacious approach to removing waste and excessive source material in our fitments. One example is our patented approach that eliminates screw threads. Doing more with less is core to who we are.



### CleanSeal™

Leading-edge sealing technology using induction which enables the use of recyclable PP and PE film structures. Faster cycle times, lower energy requirements, and compact equipment footprint aid in reducing reliance on natural resources.



### Tethered Caps

Single-piece fitment designs eliminate loose components that might not be placed into recycling streams and improve end-user ergonomics.



### Recyclability

Whenever possible, our fitment designs use simple, mono-material construction to aid in recyclability of finished packaging.



You'll see this icon throughout this booklet. This means that the product you are looking at was engineered for the circular economy, and meets one or more of the metrics listed above.



# Tethered Fitments

## Ensuring Closure Components are Recycled, Not Just Recyclable

Scholle IPN has developed a line of tethered caps that comply with European regulations pushing towards single-piece fitment designs. Our tethered cap solutions eliminate loose components that might not be placed into the recycling stream, while offering child-safe designs and improved ergonomics. With these easy-to-reseal fitment solutions, spills and other opportunities to waste products are less likely.



### Snap-On

- Patented design offers a reduction in energy required for manufacturing, assembly, and sealing
- Offers easy, twist-off use for consumers of all ages
- Toynorm compliant
- Dual-purpose tamper evidence also offers tether for cap

### Flip-Top

- Ideal for HFFS applications
- Single-piece spout and cap offers integrated tamper evidence
- Flip-top functionality allows single-handed use



### Screw-On

- Diamond seal boat offers improved interaction between film and spout
- Tethered hinge keeps cap from blocking product flow
- Lightweight design reduces reliance on raw materials



### Benefits: Snap-On Fitments

Fully compatible with industry standards, these fitments have been engineered with the following tenets in mind:

#### Intuitive and Ergonomic

We design our fitments to be accessible for people of all ages and abilities.

#### Lightweight

Engineered to use less material, creating less strain on Earth's resources.

#### Molded-In Bridge

Ready for sealing without needing additional step for tamper evidence.

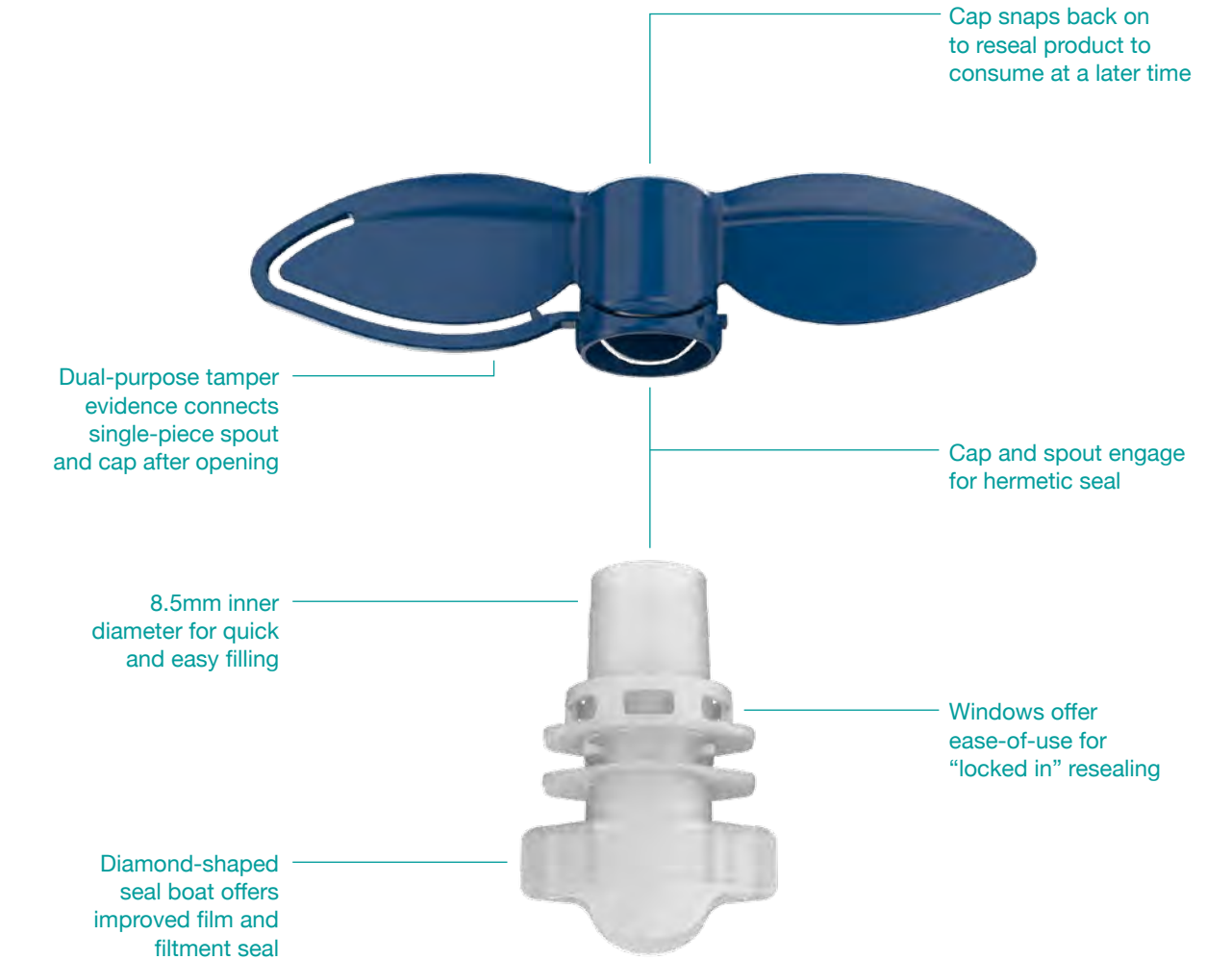
#### Compliance

European regulations around single-piece fitments as well as Toynorm compliance.

#### Performance

Comparable benefits to non-tethered options.

### Key Features: Snap-On Fitments



# Diamond Seals vs. Ribbed Seals

How do we create a better seal between the spout and the film for a stronger total package?

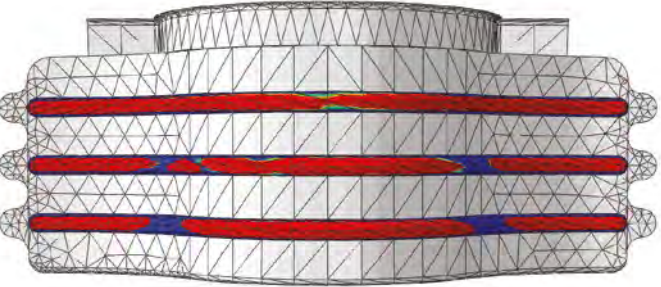
## Product Simulation

### CAE - FEA

During the product development of our seal boats, we use the Computer Aided Engineering (CAE) tool, Abaqus, to model and analyze the seal performance. This allows us to simulate and optimize the performance at an earlier product stage.

### Injection Mold Flow Analysis

We use mold flow analysis (MFA) to analyze and modify injection molding parts, optimize cooling layout, and evaluate defects. This technology allows us to improve part performance in the design phase and creates optimal product designs for manufacturability.



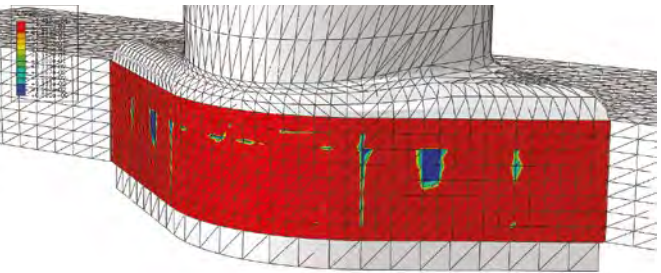
## Seal Step Simulation

### Situation

Compare the traditional seal boat with the new diamond-shaped seal boat to generate information about the contact pressure during the seal step to determine if the overall performance of the parts during sealing has been improved.

### Model

Implicit model: static compression 3D stress



# Aseptic Expertise



## Our History

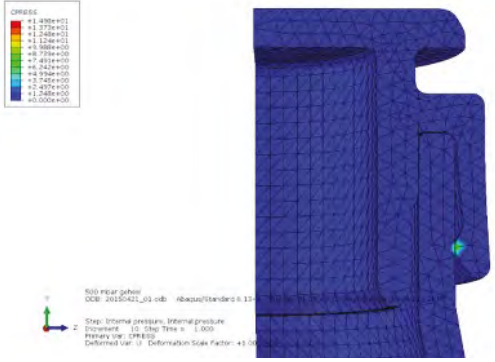
We pioneered aseptic packaging technology for both bag-in-box and spouted pouches, helping you offer the best-quality product while expanding the potential channels and locations available to you.

- Shelf-stable, no refrigeration or preservatives required
- Extended freshness and longer shelf life.
- Optimal flavor, texture, and nutrient retention.
- Eliminates costs, logistics, and energy used in cold chain.
- Opens up potential for food products in ecommerce.



## Expand Your Potential with Aseptic Packaging Technology

Aseptic technology allows you to offer preservative-free, shelf-stable products that stay fresh up to 12 months on the shelf with no refrigeration needed. Aseptic opens your potential for ecommerce, while extended shelf life helps drive higher consumption and use in expanded locations.



## Hermetic Seals: the Key to Aseptic-Capable Fitments

The first part of aseptic package technology is a hermetically sealed package. To ensure the package is hermetically sealed, we use a “bubble” pressure test to verify that nothing comes into or out of the package. We follow the FDA Bacteriological Analytical Manual, specifically chapter 22C. To ensure that our package is hermetically sealed and capable of commercial sterility, we perform a microbiological challenge test with *Geobacillus stearothermophilus* spores (GS1).



# Materials Science and Development

We strive to be the best total flexible packaging solutions supplier, from development to production to service. We apply a scientific approach to all our R&D processes to offer innovative packaging solutions that fit your unique requirements.

Our extensive experience developing unique film blends and fitment designs provides protection and performance for a diverse range of products from dairy to battery acid. And, with globally-placed production capabilities and localized expertise, we can ensure your packaging solution is made with leading technology and quality.

The key to this expertise lies in our Materials Science Laboratory and partnerships with leading universities and innovation firms.



Differential scanning calorimetry analysis for polymers.



## Purdue University

For decades, we have partnered with Purdue University, known for their expertise in aseptic food and beverage production and packaging technology. Together, we educate food technologists from around the world and help innovative brands explore the value of aseptic.

Our fully-equipped materials science lab is staffed by expert scientists and technicians with chemistry and engineering backgrounds who develop testing methods, supporting all of our locations across the globe. The team helps verify and ensure that our products meet goals and regulations and protect customers' products from filling through final dispensing.

All work done in the lab can be broken down into four types of projects:



## Research and Development

Our labs work closely with product development engineers to confirm production and functional specifications for new fitment and film innovations through extensive testing protocols.



## Commercial Support

Ensuring product and package compatibility is critical to success. The labs perform sensory, shelf-life, and ship testing for all new innovations or any application change our customers explore.



## Manufacturing Support

We are constantly working to find a simpler way to make products. The lab determines if new film and fitment upgrades meet specifications and confirms quality at every step of the production process.



## Quality Support

Our labs use a number of mechanical, chemical, and application tests to determine the root cause of any quality issues and to guide R&D teams toward designing the best flexible packaging possible.

# Materials Science Lab Capabilities

Our labs use a wide range of state-of-the-art testing equipment and analysis processes which cover polymers and applications testing.



## Analytical Testing

- Material Identification**  
Allows us to determine source materials.
- Differential Scanning Calorimetry
  - Polymer Degradation Analysis
  - ATR-FTIR and FTIR Microscopy
  - Gas Chromatography

- Additive Analysis and Extractions**  
Tests different film combinations.
- Slip
  - Antioxidant
  - Anitblock

- Barrier Testing**  
Measurements of barrier properties of film.
- Oxygen Transmission Rate (OTR)
  - Moisture Vapor Transmission Rate (MVTR)
  - Optical Density

- Microscope Analysis**  
Allows for analysis of film and fitment defects.
- Film cross-section (Microtome)

## Applications Testing

- Bag Tests**  
Simulation of events bags could experience in real-life situations.
- Drop Test
  - Shelf Life
  - Seal Strength
  - Burst and Maintain

- Shaker Table**  
Simulation of extreme road and rail conditions.
- Checks for main failure analysis
  - Bag durability
  - Corrugate containers and drums

- Dispensing**  
Testing aimed to minimize product waste.
- Product evacuation rates
  - Analysis for ideal dispensing conditions and specifications

## Mechanical Testing - Film

- Strength**  
Measures how much force is required to break or deform the bag.
- Tensile
  - Elongation
  - Tear
  - Puncture

- Physical Properties**  
Measures general properties of the film for adherence to Scholle IPN standards.
- Modulus
  - Peel Force
  - Gauge

- Gelbo Flex Testing**  
Measures how much the film can be flexed before degradation.
- Flex Durability

- Coefficient of Friction (COF)**  
Measures COF for efficiency in filling.
- Slip content in film
  - Statistics and dynamics of film movement on surfaces.

## Mechanical Testing - Fitments

- Instron (Force Testing)**  
Measures the force needed to seat—and unseat—the spout from the cap.
- Compression
  - Removal
  - Peel
  - Actuation

- Functionality**  
Tests for leaks between the spout and cap to ensure hermeticity.
- Pressure methods:
    - PSI (submerged)
    - ATEQ

- Torque**  
Measures force needed to twist fitments into place.
- Manual test

- Leak Testing**  
Tests for end-use functionality.
- Drip- and Flow-Rate
  - Spring Rebound Testing
  - Environmental Stress Crack Resistance (ESCR)





# What We Offer

## Fitment Solutions

Scholle IPN is known for our unique and market-shaping fitment solutions, including taps, caps, connectors, and hoses. We combine over 70 years experience with deep industry understanding to bring exceptional value to our global customers, delivering their products to market in exactly the way they were intended.

Our creative engineers work with customers to successfully design unique and valuable fitment solutions for any market. We strive to delight demanding end-users through innovative design and consistent delivery of user-friendly fitments you can rely on.



If you see this symbol, it means this fitment was engineered for the circular economy. For more information on what this means, please see page 19.

### Trusted By:



# Retail Fitments for Bag-in-Box



Scholle IPN is known for our unique and market-shaping fitment solutions, including taps, caps, connectors, and hoses. We combine over 70 years experience with deep industry understanding to bring exceptional value to our global customers, delivering their products to market in exactly the way they were intended.



CellarTap™

Familiar retail tap with simple gravity dispensing featuring automatic shutoff.

- Ideal for on-tap beverage dispensing
- Tamper evident

Process Compatibility

- Ambient

Filling Method

- Through Spout



FlexTap®

Push-button gravity dispensing with automatic shutoff and flow rate control.

- Ideal for on-tap beverage dispensing
- Ergonomic, push-button tap
- High-flow dispensing

Process Compatibility

- Ambient
- Ultra-Clean (ESL)
- High-Acid Aseptic

Filling Method

- Through Spout



1100

A self closing thumb toggle valve for gravity dispensing of non-particulate products..

- Gravity-dispense
- Self-closing tap

Process Compatibility

- Ambient

Filling Method

- Through Spout



2300

Provide a consistent, simple experience to your customers with this self-closing thumb toggle valve.

- Gravity-dispense
- Self-closing tap
- Ideal for water dispensing

Process Compatibility

- Ambient

Filling Method

- Through Spout



Opti-Serve®

Provide a consistent, simple experience to your customers with this self-closing toggle valve.

- Self-closing toggle valve
- Ideal for gravity dispensing

Process Compatibility

- Ambient

Filling Method

- Through Spout

## Retail Fitments for Bag-in-Box



Retail Fitments for Pouch



Our creative engineers work with customers to successfully design unique and valuable fitment solutions for any market. We strive to delight demanding end-users through innovative design and consistent delivery of user-friendly fitments you can rely on.



CloverCap™ CS85RXLR + CC85RCS

Designed for all ages as a choke-proof, easy-to-open cap for retail applications.

- Easy-to-open for all ages and abilities
- Choke-proof
- Tamper evident
- 8.5mm inner diameter

Process Compatibility

- Ambient
- Hot-Fill

Filling Method

- Through Spout
- Horizontal Form-Fill-Seal



CloverCap™ CS85RO + CC85RCS

Designed for all ages as a choke-proof, easy-to-open cap for retail applications.

- Easy-to-open for all ages and abilities
- Choke-proof
- Tamper evident
- 8.5mm inner diameter

Process Compatibility

- Ambient
- Hot-Fill
- Retort

Filling Method

- Through Spout



Lightweight CloverCap® CS85 RL + CC85LRCS

Designed for all ages as a choke-proof, easy-to-open cap for retail applications. Overall weight reduced ~20% compared to traditional CloverCap.

- Compatible with a range of existing spouts
- Hermetic seal for shelf life protection
- Integrated tamper evidence
- Choke-proof
- Lightweight: <2.1 grams

Process Compatibility

- Ambient
- Hot-Fill

Filling Method

- Through Spout
- Horizontal Form-Fill-Seal



CloverCap™ TN85RO + TN85CC

Toynorm compliant cap designed for all ages as an easy-to-open, tamper evident retail cap.

- Easy-to-open for all ages and abilities
- Choke-proof
- Tamper evident ring stays connected to spout when opened
- 8.5mm inner diameter

Process Compatibility

- Ambient
- Hot-Fill

Filling Method

- Through Spout



ArrowCap™ CS85 RL + CC85AR

Ergonomic, lightweight, and easy-to-open option for retail products.

- Compatible with a range of existing spouts
- Hermetic seal for shelf life protection
- Integrated tamper evidence
- Choke-proof
- Lightweight: <1.4 grams

Process Compatibility

- Ambient
- Hot-Fill

Filling Method

- Through Spout
- Horizontal Form-Fill-Seal



CS55XLR + CC55MT Cap

- Simple, pour-out functionality for small-dose, retail applications. Tamper evident ring stays connected to spout when opened.
- Works well for small-volume pouches
  - Excellent option for product sample sachets
  - 5.5mm inner diameter

Process Compatibility	Filling Method
<ul style="list-style-type: none"><li>• Ambient</li></ul>	<ul style="list-style-type: none"><li>• Through Spout</li><li>• Horizontal Form-Fill-Seal</li></ul>



CS85 XLR Spout + CC85 XLR Cap

- Preserves the freshness of your products while extending their shelf life.
- Tamper evident
  - 8.5mm inner diameter

Process Compatibility	Filling Method
<ul style="list-style-type: none"><li>• Ambient</li><li>• Hot-Fill</li></ul>	<ul style="list-style-type: none"><li>• Horizontal Form-Fill-Seal</li></ul>



TN85RO + CC85MT Cap

- Designed for all ages and abilities as a Toynorm compliant, easy-to-open cap for retail applications. Tamper evident ring stays connected to spout upon opening.
- Easy-to-open for all ages and abilities
  - Choke-resistant
  - Tamper evident
  - 8.5mm inner diameter

Process Compatibility	Filling Method
<ul style="list-style-type: none"><li>• Ambient</li><li>• Hot-Fill</li></ul>	<ul style="list-style-type: none"><li>• Through Spout</li></ul>



CS85RO + CC85R Spline Cap

- Provide tamper evidence while preserving the freshness of your products and extending their shelf life.
- Only available as individual components
  - Simple functionality
  - 8.5mm inner diameter

Process Compatibility	Filling Method
<ul style="list-style-type: none"><li>• Ambient</li><li>• Hot-Fill</li><li>• Retort</li></ul>	<ul style="list-style-type: none"><li>• Through Spout</li></ul>



CS85DG + CC85 Spline Cap

- Provide tamper evidence while preserving the freshness of your products and extending their shelf life.
- Only available as individual components
  - Simple functionality
  - 8.5mm inner diameter

Process Compatibility	Filling Method
<ul style="list-style-type: none"><li>• Ambient</li><li>• Hot-Fill</li></ul>	<ul style="list-style-type: none"><li>• Through Spout</li></ul>



CS100 XLR Spout + CC100 XLR Cap

- Preserves the freshness of your products while extending their shelf life.
- Tamper evident
  - 10mm inner diameter

Process Compatibility	Filling Method
<ul style="list-style-type: none"><li>• Ambient</li><li>• Hot-Fill</li></ul>	<ul style="list-style-type: none"><li>• Horizontal Form-Fill-Seal</li></ul>





CS106 XLR + CC106V3 – Hanger Cap

Easy-to-open option for retail products sold on store peg hooks.

- Ideal for point-of-purchase displays
- Tamper evident
- 10.6mm inner diameter

Process Compatibility

- Ambient
- Hot-Fill

Filling Method

- Through Spout
- Horizontal Form-Fill-Seal



CS117LW

Easy-to-use spline-style cap uses less material than a standard spline cap. The tamper evident ring stays connected to the spout upon opening.

- Tamper evident
- 11.7mm inner diameter

Process Compatibility

- Ambient
- Hot-Fill

Filling Method

- Through Spout
- Horizontal Form-Fill-Seal



DD08 – 21mm

Provides quick pour-out functionality for large particulates in industrial applications.

- Works well for large particulates
- Ideal for pour-out applications
- Tamper evident
- 21mm inner diameter

Process Compatibility

- Ambient
- Hot-Fill

Filling Method

- Through Spout



DD09 – 5.5mm

Simple, pour-out functionality for small-dose, retail applications.

- Works well for small-volume pouches
- Excellent option for product sample sachets
- 5.5mm inner diameter

Process Compatibility

- Ambient
- Hot-Fill

Filling Method

- Horizontal Form-Fill-Seal



LinkCap™

Lightweight design offers reduction of raw material usage as well as recyclability. This choke-proof fitment contains a dual-purpose tamper evidence that functions as a tether to keep cap connected to pouch.

- Improved spout seal and film interaction
- Snap-on feature reduces energy required in manufacturing and assembly process

Process Compatibility

- Ambient
- Hot-Fill

Filling Method

- Through Spout
- Horizontal Form-Fill-Seal



LinkCap™ 15

Large-format pouch fitment boasts an integrated hinge for ease-of-use and tamper evidence. The diamond-shaped seal boat offers compatibility with induction sealing and recyclable films.

- Lightweight design offers reduction in raw materials
- 15mm inner diameter

Process Compatibility

- Ambient
- Hot-Fill

Filling Method

- Through Spout
- Horizontal Form-Fill-Seal



FlipCap™ FTF30 XLR

Simple, one-piece fitment with flip-top functionality works well for lower viscosity products like hand sanitizer.

- Easy-to-open for all ages and abilities
- 3mm inner diameter
- Tamper evident

Process Compatibility

- Ambient

Filling Method

- Horizontal Form-Fill-Seal



FlipCap™ FTP21

Easy-to-use cap screws onto spout and locks into place to ensure product sterility. Flip-top cap boasts a directionally-oriented pour spout to aid in dispensing.

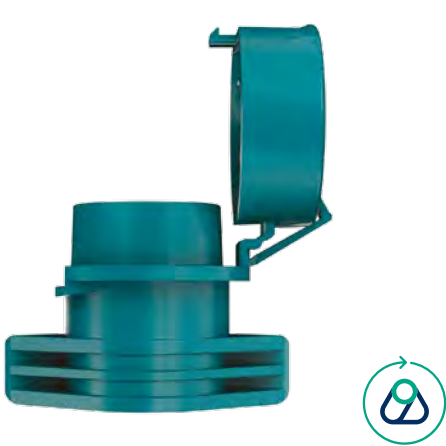
- Tamper evidence integrated into cap
- 21mm inner diameter
- Flip-top design ensures pouch will not twist when pouring

Process Compatibility

- Ambient

Filling Method

- Horizontal Form-Fill-Seal



FlipCap™ FTR108

Simple, one-piece design and flip-top functionality for pour-out products with higher viscosities.

- Easy-to-open for all ages and abilities
- Choke resistant
- 10.8mm inner diameter
- Tamper evident

Process Compatibility

- Ambient
- Hot-Fill

Filling Method

- Horizontal Form-Fill-Seal

Tethered Caps and Toynorm Compliance

What does it mean to be “Toynorm compliant?”

EN71-1, commonly referred to as “Toynorm,” is used as a reference to ensure our products are safe for children. Any components that separate from the pouch cannot fit in the small parts cylinder, as specified by EN71-1. This standard aims to reduce any possible hazards that may not be evident to users. To be compliant, a product must:

- Use clean, safe materials
- Have no sharp edges or sharp points
- Be choke-proof

What does this have to do with tethered caps?

We have designed our various tethered cap solutions, specifically ones that will be used in children’s products, to be Toynorm compliant. We use an independent lab to test and verify that our fitments are fully compliant. Since many of our tethered cap solutions, including the CC85LFS, will be utilized for products consumed by children, we strive to ensure that these hazards are not present.

How does a part become certified as “Toynorm compliant?”

The component must pass the specified use and abuse tests of EN71-1. These include, but are not limited to:

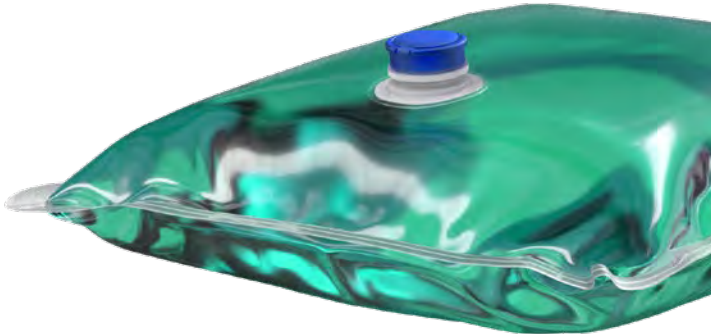
- Torque test
- Tensile test
- Impact test

If during any of these tests, the parts or pieces separate, they may not fit in the small parts cylinder. If any of the aforementioned tests fail, the product will not be certified as Toynorm compliant.





# Institutional Fitments for Bag-in-Box



Our institutional fitments power dispensing systems around the world. Any flowable liquid product - whether it's a food, beverage, or chemical - dispenses safely, efficiently, and thoroughly with our complete flexible packaging systems.



800

This hose cap is a two-position fitment designed for use with standard gravity dispensing systems.

- ESL-capable
- Ideal for gravity dispensing

Process Compatibility

- Ambient
- Ultra-Clean (ESL)

Filling Method

- Through Spout



1500

The 1500 is a single-position cap for use in ambient and aseptic applications for pump-out dispensing.

- Low-acid aseptic-capable
- Ideal for pump-out dispensing

Process Compatibility

- Ambient
- Ultra-Clean (ESL)
- High-Acid Aseptic
- Low-Acid Aseptic

Filling Method

- Through Spout



4100

The 4100 cap provides a safe, economical, pour-out system for dairy applications.

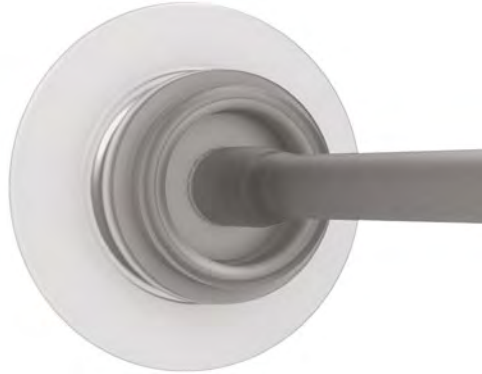
- Low-acid aseptic-capable
- Hand-removable
- Ideal for pump-out applications

Process Compatibility

- Ambient
- Ultra-Clean (ESL)
- High-Acid Aseptic
- Low-Acid Aseptic

Filling Method

- Through Spout



4105

Easy-to-assemble hose fitment for gravity or peristaltic-style dispensers.

- Crimped hose end is easily cut to begin flow
- Hose wrapped in plastic to ensure cleanliness
- Flow restrictor plate allows for dosing of both thick and thin liquids

Process Compatibility

- Ambient
- Ultra-Clean (ESL)
- High-Acid Aseptic
- Low-Acid Aseptic

Filling Method

- Through Spout



1400

The 1400 cap is a single position, hand-removable cap designed primarily for use in the dairy and egg industry.

- Hand-removable cap
- ESL-capable
- Hose options available

Process Compatibility

- Ambient
- Ultra-Clean (ESL)
- High-Acid Aseptic
- Low-Acid Aseptic

Filling Method

- Through Spout

Institutional Fitments for Bag-in-Box



800X

Single-position, removable cap for bulk liquids.

- High-acid aseptic capable
- Hermetic seal for shelf life protection
- Ideal for pour-out applications
- Cap is hand-removable

Process Compatibility

- Ambient
- Hot-Fill
- High-Acid Aseptic

Filling Method

- Through Spout



800L

Single-position, removable cap for bulk liquids.

- Low-acid aseptic capable
- Hermetic seal for shelf life protection
- Ideal for pour-out applications
- Cap is hand-removable

Process Compatibility

- High-Acid Aseptic
- Low-Acid Aseptic

Filling Method

- Through Spout



800R

Single-position, removable cap for bulk liquids.

- High-acid aseptic capable
- Hermetic seal for shelf life protection
- Ideal for pour-out applications
- Cap is hand-removable

Process Compatibility

- Ambient
- Hot-Fill
- Ultra-Clean (ESL)
- High-Acid Aseptic

Filling Method

- Through Spout

Institutional Fitments for Bag-in-Box



2500

Pour-out fitment with a sealed membrane to provide tamper evidence. Can be used in dispensing systems.

- Innovative, twist-on cap
- Works well for products with lower viscosities like soy sauce

Process Compatibility

- Ambient

Filling Method

- Through Spout



6300

Single-position, removable cap for bulk liquids.

- High-acid aseptic capable
- Hermetic seal for shelf life protection
- Ideal for pour-out applications
- Requires tool to remove cap
- 38mm thread

Process Compatibility

- Ambient
- Ultra-Clean (ESL)
- High-Acid Aseptic

Filling Method

- Through Spout



6300T

The 6300 T combination is designed for aseptic, ESL, and ambient filling applications.

- Hand-removable via screw-on/screw-off functionality
- 38mm thread

Process Compatibility

- Ambient
- Ultra-Clean (ESL)
- Hot-Fill
- High-Acid Aseptic

Filling Method

- Through Spout





8100

Provides a simple interface and maximum protection with a screw cap and secondary tamper-evident plug.

- Tamper evident
- Ideal for pour-out applications

Process Compatibility

- Ambient
- Hot-Fill

Filling Method

- Through Spout

8105

Provide a simple interface and maximum protection with a screw cap and secondary tamper-evident plug.

- Low-acid aseptic-capable
- Tamper evident
- Ideal for pour-out applications

Process Compatibility

- Ambient
- Hot-Fill
- High-Acid Aseptic
- Low-Acid Aseptic

Filling Method

- Through Spout

1900 Adapter

Dispense products safely and economically with this closed-loop option for pump-out dispensers. Available in SBS for the beverage market and SEBS for chemical markets.

- Provides closed-loop dispensing
- Ideal for pump-out applications
- Available in both 4-pitch (4NC) and 6-pitch (NC) thread options

Process Compatibility

- Ambient
- Ultra-Clean (ESL)
- High-Acid Aseptic
- Low-Acid Aseptic

Filling Method

- Through Spout



1910 L Connector

Good for connecting one bag at a time or when using a changeover valve. Available in 3/16", 1/4", and 3/8" hose barbs.

- Provides closed-loop dispensing
- Works well in chemical and beverage applications

Process Compatibility

- Ambient

Filling Method

- N/A

1910 T Connector

Good for connecting multiple bag-in-box packages in series. Available in both 3/16" and 3/8" hose barbs.

- Provides closed-loop dispensing
- Works well in chemical and beverage applications

Process Compatibility

- Ambient

Filling Method

- N/A

1910 S Connector

Good for when space is at a premium. Available in a 3/8" hose barb.

- Provides closed-loop dispensing
- Works well in chemical and beverage applications

Process Compatibility

- Ambient

Filling Method

- N/A

Institutional Fitments for Bag-in-Box



Steriseal® - 8900

A circular, aseptic fill fitment typically used on 2-fitment bags up to 20L.

- 32mm inner diameter
- Dispense is typically through a hose fitment

**Process Compatibility**

- High-Acid Aseptic
- Low-Acid Aseptic

**Filling Method**

- Through Spout



Steriseal® - 9003

A circular fill and dispense fitment. Typically used for lower viscosity products like coffee concentrates.

- 16mm inner diameter
- Can be plugged into an adapter

**Process Compatibility**

- High-Acid Aseptic
- Low-Acid Aseptic

**Filling Method**

- Through Spout



Versi

A universal, high-flow beverage fitment, compatible with all relevant trade connectors and filling equipment.

- Compatible with all relevant trade connectors
- Requires no change parts for filling equipment

**Process Compatibility**

- Ambient

**Filling Method**

- Through Spout

Institutional Fitments for Bag-in-Box



Versi L Connector

Good for connecting one bag at a time or when using a changeover valve. Available in a 3/8" hose barb.

- Provides closed-loop dispensing
- Works well in soft drink, flavoring, coffee, and tea applications

**Process Compatibility**

- Ambient

**Filling Method**

N/A



Versi T Connector

Good for connecting multiple bag-in-box packages in series. Available in a 3/8" hose barb.

- Provides closed-loop dispensing
- Works well in soft drink, flavoring, coffee, and tea applications

**Process Compatibility**

- Ambient

**Filling Method**

N/A



Versi S Connector

Good for when space is at a premium. Available in a 3/8" hose barb.

- Provides closed-loop dispensing
- Works well in soft drink, flavoring, coffee, and tea applications

**Process Compatibility**

- Ambient

**Filling Method**

N/A





**PureFlow™ Aseptic Ball Valve**

An aseptic-capable ball valve fitment that allows for dispensing of preservative-free beverage products.

- Works with BUNN and Cornelius dispensers
- Ideal for dispensing preservative-free products

Process Compatibility	Filling Method
<ul style="list-style-type: none"><li>• Ambient</li><li>• Ultra-Clean (ESL)</li><li>• Hot-Fill</li><li>• High-Acid Aseptic</li></ul>	<ul style="list-style-type: none"><li>• Through Spout</li></ul>



**HFT**

A simple, two-position turn tap functionality for easy-on/easy-off gravity dispensing.

- Two-position turn tap
- Ideal for gravity dispensing
- High-flow tap for more efficient dispensing

Process Compatibility	Filling Method
<ul style="list-style-type: none"><li>• Ambient</li></ul>	<ul style="list-style-type: none"><li>• Through Spout</li></ul>

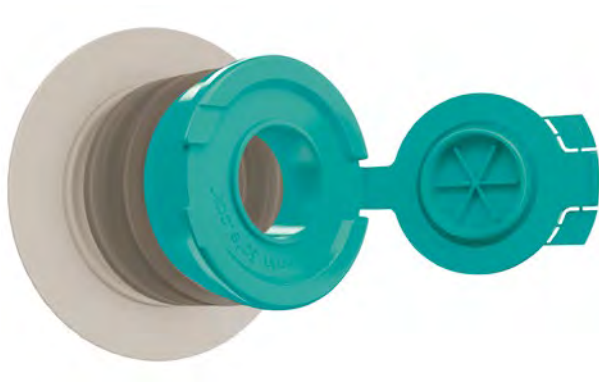


**TruSeal® - 4200**

Intuitive toggle-style fitment uses gravity to dispense liquids.

- Clip-on toggle lock prevents accidental activation of the fitment
- Rugged construction ideal for institutional use
- Design allows the user to easily regulate speed of flow

Process Compatibility	Filling Method
<ul style="list-style-type: none"><li>• Ambient</li></ul>	<ul style="list-style-type: none"><li>• Through Spout</li></ul>



**FastFlow Sentry SafeLock®**

Offer safety and convenience with simple hose or direct-connect functionality.

- Ideal for closed-loop dispensing
- Hose options available

Process Compatibility	Filling Method
<ul style="list-style-type: none"><li>• Ambient</li><li>• Hot-Fill</li><li>• Ultra-Clean (ESL)</li><li>• High-Acid Aseptic</li></ul>	<ul style="list-style-type: none"><li>• Through Spout</li></ul>



**FastFlow Sentry SafeLock® Pierce Probe**

Connector that plugs into a FastFlow Sentry SafeLock. Typically used as a 1/2" hose solution on single-fitment bags.

- Works well for higher viscosity liquids like milkshakes
- Peels membrane from fitment when engaged

Process Compatibility	Filling Method
<ul style="list-style-type: none"><li>• Ambient</li></ul>	<ul style="list-style-type: none"><li>• Through Spout</li></ul>



**QuickSeal Sentry SafeLock®**

Offer safety and convenience with simple hose or direct-connect functionality.

- Ideal for closed-loop dispensing
- Can be disconnected for dispenser cleaning protocols

Process Compatibility	Filling Method
<ul style="list-style-type: none"><li>• Ambient</li><li>• Hot-Fill</li><li>• Ultra-Clean (ESL)</li><li>• High-Acid Aseptic</li></ul>	<ul style="list-style-type: none"><li>• Through Spout</li></ul>



QuickSeal Sentry SafeLock® Connect

Connector that locks into the QuickSeal Sentry SafeLock fitment for use in dispensing applications like smoothies and coffees.

- Comes in 3/16" and 3/8" hose barbs
- Available with and without check valves
- Ideal for closed-loop dispensing
- Locks into place for added security

Process Compatibility

- Ambient

Filling Method

- Through Spout



Sentry SafeLock®

Offer safety and convenience within closed-loop dispensing systems.

- Ideal for closed-loop dispensing
- Hose options available

Process Compatibility

- Ambient
- Hot-Fill
- Ultra-Clean (ESL)
- High-Acid Aseptic
- Low-Acid Aseptic

Filling Method

- Through Spout



Sentry SafeLock® Connect

Connector that locks into the Sentry SafeLock fitment for use in dispensing applications like smoothies and coffees.

- Comes in 3/10" hose barb
- Available with and without check valves
- Peels membrane from fitment when engaged
- Locks into place for added security

Process Compatibility

- Ambient

Filling Method

- Through Spout



Sentry SafeLock® Pierce Probe

Connector that plugs into a Sentry SafeLock. Typically used as a 3/10" hose solution on single-fitment bags.

- Peels membrane from fitment when engaged
- Works well with lower viscosity liquids like coffee creamer

Process Compatibility

- Ambient

Filling Method

- Through Spout



Each year, Scholle IPN molds billions of fitments and packaging components in locations across the globe in highly-automated, clean room facilities with Industry 4.0 technology.



# Institutional Fitments for Pouches



Whether it's a concentrated chemical or flavorings for beverages, our institutional pouch fitments allow you to safely and efficiently dispense your products in precise doses.



## Clean-Clic® Connector Family

Provides maximum product safety by keeping the flexible packaging completely closed throughout the filling process.

- Ideal for closed-loop dispensing
- Works well in quick-connect applications
- 4mm or 6mm inner diameter

### Process Compatibility

- Ambient
- Hot-Fill

### Filling Method

- Horizontal Form-Fill-Seal



## Fluid Connector Family

Provides maximum product safety by keeping your package fully closed throughout the dispensing process. Offers airless filling, closing automatically and protecting your product from oxygen exposure.

- Ideal for closed-loop dispensing of oxygen-sensitive products
- Leak-resistant during disconnection
- Variety of sizes

### Process Compatibility

- Ambient
- Hot-Fill

### Filling Method

- Form-Fill-Seal

# Fluid Connector System

The Fluid Connector family of products offers not only a closed-loop dispensing option, but also a closed-loop filling option. Ideal for oxygen-sensitive products, our Fluid Connector fitments provide maximum product and consumer safety.

Designed for horizontal form-fill-seal packaging, these fitments work well for chemical, nutraceutical, pharmaceutical, and post-mix applications.

With the Fluid Connector family of fitments, you can ship your products in concentrate, reducing the amount of water being shipped. This offers a reduction in carbon emissions created due to the filling and shipping of your product.



The Coca-Cola Freestyle® features the FC78 pouch connector for highly-concentrated fluids.

# Industrial Fitments for Bag-in-Box



Our industrial filling and dispensing fitments allow you to safely fill, transport, and dispense your products and ingredients in secure packaging that offers cost savings and reduced stress throughout the supply chain.



800

Simple, reliable aseptic pour-out functionality for industrial applications.

- Low-acid aseptic-capable
- Ideal for pour-out applications
- Different cap colors available

Process Compatibility

- Ambient
- Hot-Fill
- Ultra-Clean (ESL)
- High-Acid Aseptic
- Low-Acid Aseptic

Filling Method

- Through Spout



3400

Quickly load and unload bulk, hot-fill or aseptically-packaged fruits and vegetables.

- Ideal for bulk storage and dispensing
- Works well in high-volume processing environments

Process Compatibility

- Ambient
- Hot-Fill
- High-Acid Aseptic

Filling Method

- Through Spout



5900

The 5900 is a 2” dispense fitment for use on IBCs. Includes a cutting edge to cut through the membrane, preparing the package for pump-out dispensing.

- Membrane for tamper evidence
- Applicable for food and chemical markets
- Resealable
- Typically used on two-fitment packages

Process Compatibility

- Ambient
- High-Acid Aseptic
- Low-Acid Aseptic

Filling Method

- Through Spout



Tri-Sure®

The Tri-Sure is a 2” fill fitment for use on IBCs, but can also be used for dispense. The cap can be replaced to close the package for future use if not fully dispensed.

- Membrane for tamper evidence
- Applicable for food and chemical markets
- Typically used on two-fitment packages

Process Compatibility

- Ambient

Filling Method

- Through Spout

## Industrial Fitments for Bag-in-Box



2600

A two-position fitment combination for use in low-acid aseptic filling applications.

- High- and low-acid aseptic-capable
- Ideal for institutional and industrial applications

Process Compatibility

- Ambient
- Hot-Fill
- Ultra-Clean (ESL)
- High-Acid Aseptic
- Low-Acid Aseptic

Filling Method

- Through Spout





1700

Safely fill and store a wide range of aseptic fruit and vegetable products.

- High- and low-acid aseptic-capable
- Ideal for bulk fruit and vegetable packaging

- Process Compatibility**
- High-Acid Aseptic
  - Low-Acid Aseptic

- Filling Method**
- Through Spout



5100

Designed to provide tamper-evident, aseptic protection for bulk flexible packaging.

- Low-acid aseptic-capable
- Tamper-evident
- Ideal for bulk transport of fruit and vegetables

- Process Compatibility**
- High-Acid Aseptic
  - Low-Acid Aseptic

- Filling Method**
- Through Spout



Steriseal® - 8900R

A rectangular fill fitment typically used for high fill speeds or large particulates in packages up to 300 gallons.

- 32mm inner diameter

- Process Compatibility**
- High-Acid Aseptic
  - Low-Acid Aseptic

- Filling Method**
- Through Spout



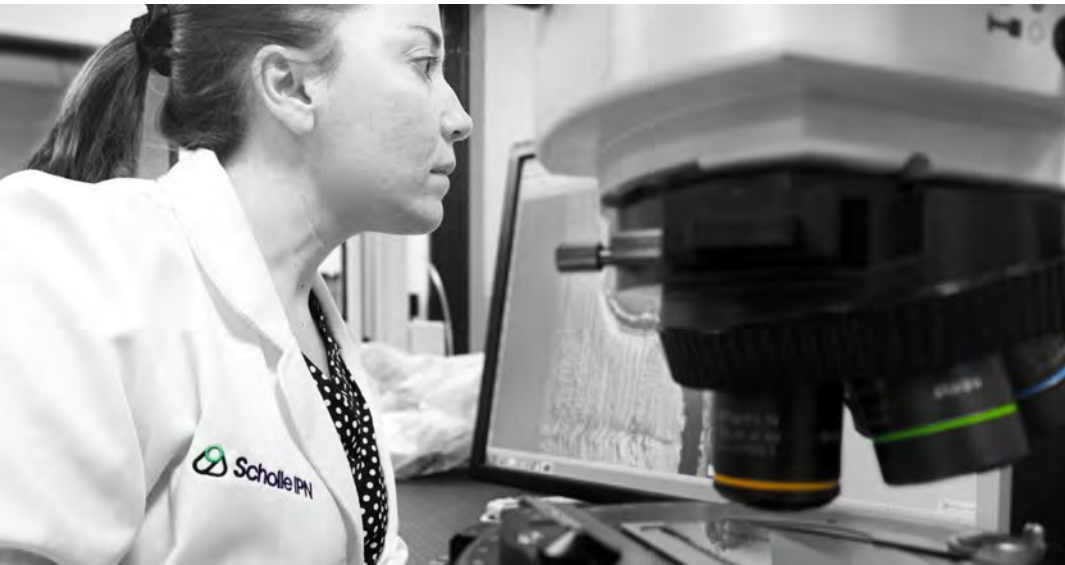
Jerribox

Composite packaging for agricultural chemicals that minimizes user risk.

- Ideal for agricultural chemicals and edible oil
- Eliminates glugging associated with rigid packaging
- Sustainable solution with less landfill waste

- Process Compatibility**
- Ambient

- Filling Method**
- Through Spout



Quality is at the core of our business. Our fitments are designed and produced to meet rigorous specifications that help protect your product throughout its life.





## Film Extrusion and Lamination

We have extensive experience developing unique film blends which provide the ultimate protection and package performance for a diverse range of flowable products.

From time-sensitive, fresh foods and beverages, to aggressive chemicals and sensitive pH products, our flexible packaging solutions are designed to protect your product and keep it safe from fill through final dispensing. We offer:

- Recyclable film solutions that enable you on your journey towards a more circular economy.
- Barrier protection designed to keep your product safe and extend secondary shelf life.
- Solutions that fits seamlessly where you need them, whether in retail, institutional, or industrial applications.







# Equipment

## A Total Solution for Any Requirement

For over 60 years, Scholle IPN and Bossar have engineered, built, and serviced a wide range of forming and filling equipment for flexible packaging, including bag-in-box and spouted pouches. From manual fillers for start-ups to fully automatic, aseptic-capable bag-in-box and spouted pouch HFFS systems, we have what you need to provide a diverse range of products in flexible packaging.



**Self-Manufacture**



**Pre-Made**

### HFFS +Efficiency

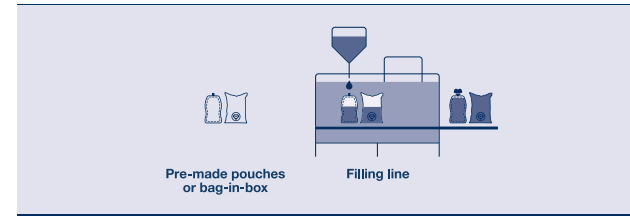
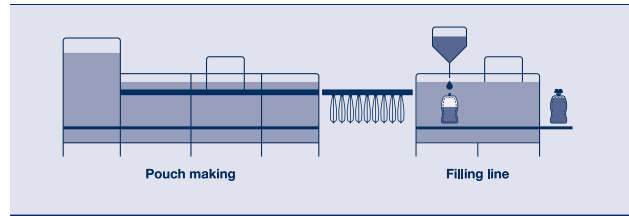
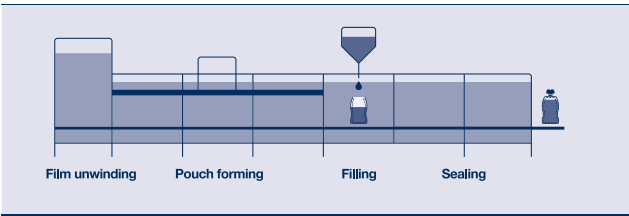
Horizontal form-fill-seal equipment combines component materials (film and fitments) into a formed, filled product all in one, highly-efficient machine.

### HYBRID +Flexibility

Hybrid equipment brings together the speed and efficiency of on-site package manufacture with the consistency and quality of through-spout filling in a form-seal-fill method.

### PRE-MADE +Simplicity

Keep it simple. Scholle IPN manages the quality manufacture of your pouches or bag-in-box packaging. Once on-site, your operations finish the job with reliable, modular filling systems.



# Locations

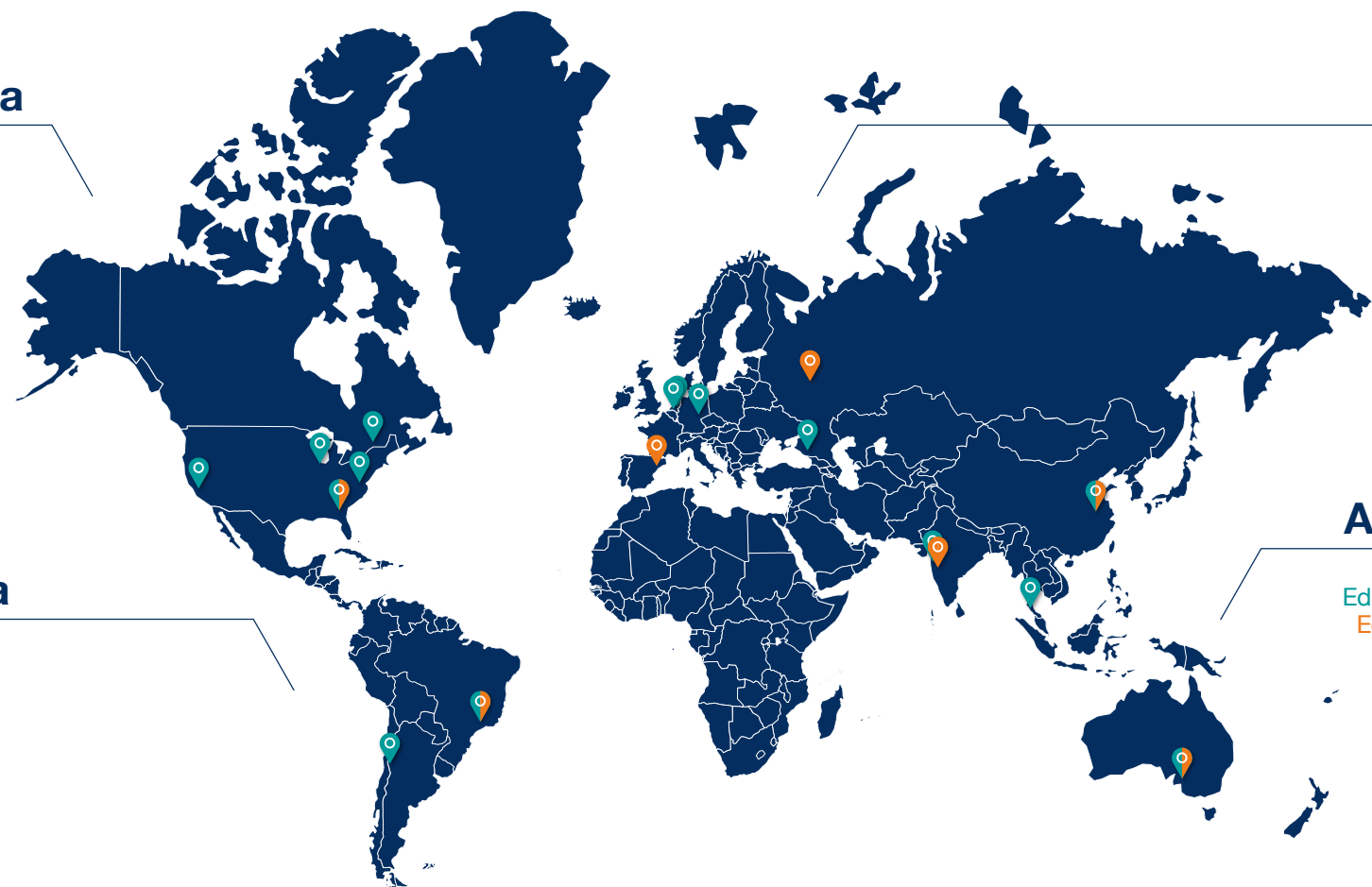
## North America

**United States**  
Chilhowie, VA  
Merced, CA+  
Northlake, IL+  
Peachtree City, GA  
Peachtree City, GA  
**Canada**  
Baie-D'Urfé, QC  
**Mexico**  
Mexico City\*

## Latin America

**Brazil**  
Vinhedo+  
Vinhedo  
**Chile**  
Santiago

- Scholle IPN
- ★ sales office
- + equipment field service
- Bossar



## EMEA

**The Netherlands**  
Kampen  
Tilburg (H)  
Tilburg (J)+  
**Spain**  
Barcelona  
**Germany**  
Eisfeld  
**Russia**  
Moscow  
Voronezh

## Asia-Pacific

**Australia**  
Edinburgh North, SA+  
Edinburgh North, SA  
**India**  
Palghar  
Pune  
**Malaysia**  
Kuala Lumpur\*  
**China**  
Suzhou+  
Suzhou

# Contact

## Northlake, IL USA

**Scholle IPN Packaging, Inc.**  
200 West North Avenue  
Northlake, IL 60164  
USA  
Tel: +1.708.562.7290  
northamerica@scholleipn.com

## Tilburg, The Netherlands

**Scholle IPN Europe B.V.**  
Heieinde 15  
5047 SX Tilburg  
The Netherlands  
Tel: +31.88.572.977.7  
emea@scholleipn.com

## Vinhedo, Brazil

**Scholle Ltda.**  
Av. Fernando Piccinini, 700  
Distrito Industrial Vinhedo  
SP-Brazil, 13288-009  
Brazil  
Tel: +55.19.3826.8800  
latinamerica@scholleipn.com

## Edinburgh North, SA, Australia

**Scholle IPN Pty, Ltd.**  
32 Hewittson Road  
Edinburgh North, S.A., 5113  
Australia  
Tel: +61.8.8255.4366  
asiapacific@scholleipn.com

## Suzhou, China

**Scholle IPN Packaging (Suzhou) Co., Ltd.**  
No. 579 Fengting Avenue  
Suzhou Industrial Park  
Jiangsu Province 215122  
PR China  
Tel: +86.512.6283.3559  
sipnchina@scholleipn.com

## Palghar, India

**Scholle IPN India Packaging Pvt. Ltd.**  
Plot No. 14, 15, 16, 17  
Sundaram Industrial Zone  
Chintupada Road, Village Mahim  
Palghar (West), Dist. Palghar – 401404  
India  
Tel: +91.9607905231  
info.india@scholleipn.com



# Total Flexible Packaging Solutions

---



Film



Fitment



Equipment

REV 06072021