

CITADEL SERIES

SHEMESH AUTOMATION
PRUDENT PACKAGING SOLUTIONS
wet wipes



The World's first **complete** monoblock solution for round wipes packaging in ready-made bags

- FULLY AUTOMATED ■ BAG/POUCH FEED
- ROLL STUFFING ■ LIQUID FILLING ■ BAG/POUCH SEALING
- ALL IN ONE BLOCK WITH FULL QC!



Let us build your vision

The Citadel is the world's first complete, precision designed, single block, packaging machine for wipes in ready-made bags.



Let us build *your vision*

CITADEL



Left: Shai Shemesh, President & CEO.
Right: Eli Shemesh, Founder

Built on decades of industry experience supporting the wipes manufacturing sector with our in-line, high throughput downstream packaging portfolio, Shemesh Automation is once again first to market with an all-in-one system designed specifically to serve the round wipes in flexible packaging market.

The **CITADEL** harnesses all the knowledge and innovations that were key to our globally successful Xpander monoblock for wipes in canisters and other nonwovens packaging technologies such as the SAS120 stuffer. The tried and tested all-in-one monoblock design of the **CITADEL** encompasses all aspects of round wipes downstream packaging from bags/pouches feeding, roll stuffing, liquid filling, bag sealing with full built-in QC!

The **CITADEL** has a throughput of up to 30ppm (refill size)/ 12-15 (jumbo size) and is the only machine of its kind available on the market today — far exceeding the sophistication of existing market solutions.

Through a process of continual evolution and constant dialogue with our customers the all-new **CITADEL** offers significant productivity enhancements, benefiting manufacturers and boosting efficiency.

Requiring just one person for operation, the **CITADEL** affords flexible and efficient operation and offers exceptional ROI while reducing waste, cutting production times and maintaining high levels of product quality.

In addition, with a monoblock footprint of only under 2m x 2m, the **CITADEL** is capable of operating in very space-sensitive facilities.

CITADEL

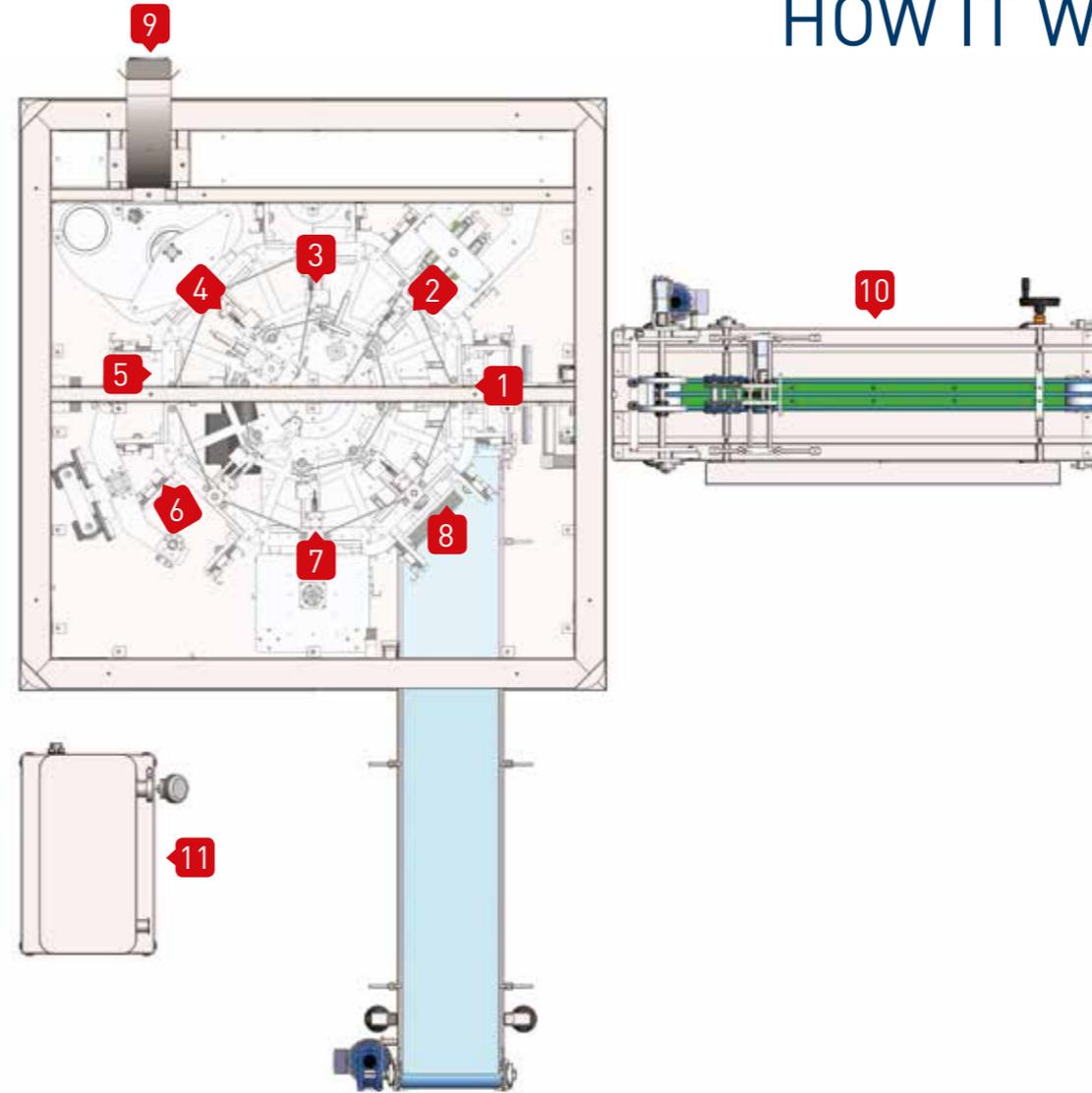
The 12-Station Servo Driven Index Table

- 1** Bags Inlet
- 2** Bags Opening
- 3** Bag Inflation
- 4** Bag Roll Stuffing
- 5** Two Step Liquid Filling
- 6** Two Step Liquid Filling
- 7** Bag Sealing
- 8** Bag discharging and QC
- 9** Logs Inlet
- 10** Bags Magazine
- 11** Smart liquid Tank

HOW IT WORKS

With operating speeds of up to 30ppm, the **CITADEL** is a robust, fully automatic, servo driven vertical index machine. It is specifically designed as a single block for the downstream packaging of round, nonwoven wet wipes in premade flexible packages.

Representing the state of the art packaging technology the **CITADEL** includes fully automatic feeding for both the rolls and the bags and functions as a hands-free turnkey unit.



Rolls and bag sizes supported by the CITADEL-R:

	Min. Width	Max. Width	Min. Height	Max. Height
Bag	140mm	300mm	200mm	350mm
Roll	Ø60mm	Ø130mm	120mm	250mm

Rolls and bag sizes supported by the CITADEL-J:

	Min. Width	Max. Width	Min. Height	Max. Height
Bag	280mm	500mm	250mm	550mm
Roll	Ø150mm	Ø250mm	150mm	250mm

Shemesh's unique **CITADEL** monoblock is offered as an "R" model for the refill/pouch market as well as a "J" model for the jumbo rolls market.

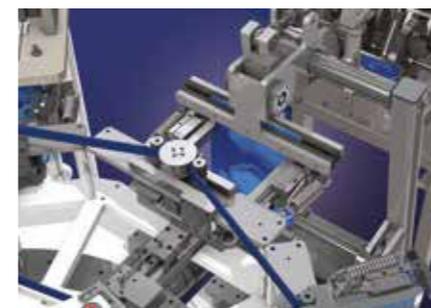
CITADEL FEATURES



Let us build your vision

The **CITADEL** possesses a number of specially designed features to support easy and reliable operation:

- Throughput of up to **30ppm** (refill size), **10-15** (jumbo size)
 - **Direct and easy** integration to the rewinding unit
 - Closed **bags opening** feature
 - All welded to pharma sanitary standards using **316/304 stainless steel**
 - Designed for operational flexibility and ultra low, tools free **sub 40 minutes format parts changeover** downtime
 - **INDUSTRY 4.0 READY:** SECOMA SiteManager 1139 modem, integrated into the machines' HMI to enable **SMART** remote support, live stats and performance analysis as well as manufacturer enhancement feedback
 - Advanced QC including multiple check-weighers significantly **increasing efficiency**
 - Enhanced, height-adjustable anti-overflow, proprietary designed filler nozzles. Portioning **tolerance of 0.5%** of filling volume – reducing waste
 - **Bag inflation:** bags are inflated with the exact amount of air needed to facilitate speedy opening and rolls stuffing
 - **Two-stage filling**, minimising foaming and spillover whilst achieving a higher throughput
 - A **newly developed design** for wipes bag loading
 - **Easy-to-access 'smart' controls** with multiple HMI's around the Citadel for simple operation
 - Adjustable **rewinder-to-CITADEL** throughput technology
 - **Air evacuation**
- ### STANDARD SPECS
- **Industry 4.0**-ready
 - **Festo (Germany) pneumatics and Servo systems**
 - Complete **SST304/316L** design
 - **FDA** approved piping as applicable
 - **SIEMENS (Germany) PLC & HMI and MOTORS**
 - **BANNER** sensors
 - **E-stop** buttons and safety interlocks wired through **CAT IV** safety controller.
 - **CE Marking**



STATION 1: BAG /POUCH AUTOMATIC FEEDING FROM THE CITADEL MAGAZINE

Bags/pouch magazine is/are loaded manually. Bag/pouch loading device pulls bags/pouch out of magazine and loads them into the carousel in a vertical position. A set of two top grippers transfers the bags/pouch into the next station.



STATION 2: BAG OPENING

The bags/pouches are then positioned beneath a set of pincer arms for initial opening. A piston-controlled conic pouch opener then moves down, into the bag/pouch and begins opening it.



STATION 3: BAG/POUCH INFLATION

The bags /pouches are inflated with the exact amount of air needed to complete the opening procedure and in order to facilitate the rolls stuffing.



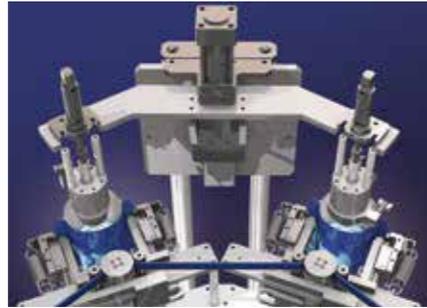
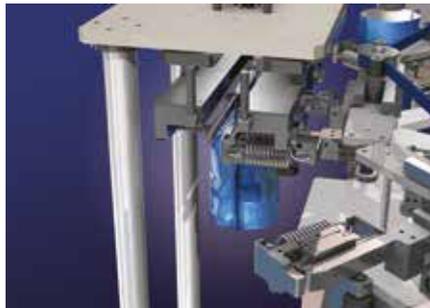
“Looking at the **CITADEL**, and the attention to detail with which its meticulous mechanics were designed, I can proudly say the Shemesh team has once again successfully identified an unanswered client need and brought a winning product to market. To achieve this, we truly leveraged our vast existing know-how, great experience and constant client interactions.”

Shai Shemesh, President & CEO.



STATION 4: VERTICAL BAG / POUCHES ROLL STUFFING

Rolls arrive from the rewinder machine through the Shemesh Automation integration system leading the rolls to an upward sloping belt-conveyor. Rolls are led through a chute into the open, pre made bags/pouches. Pistons push the rolls inside the bags/pouches to complete the insertion.



STATION 5 & 6: TWO-STEP BAG/POUCH LIQUID FILLING

The **CITADEL** employs two-station filling to avoid foaming and spillover, using encoder-equipped nozzles and gear pumps. Shemesh Automation's anti-overflow, proprietary designed, sanitary, screwless shower nozzles for rolled wipes spray the required pre-set amount of liquid equally and homogeneously onto each roll. Pumps filling speed may be adjusted through the touch screen. Filling capacity range from 50cc to 5000cc of liquid.

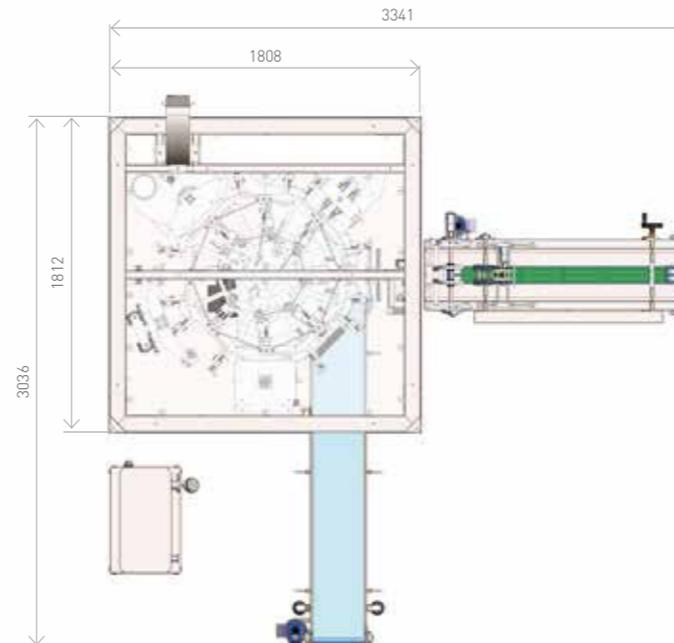
STATION 7: BAG/POUCH SEALING

The filled bags/pouches are positioned between the top sealing applicator clamps where a sealing applicator presses the top edges together until sealed.

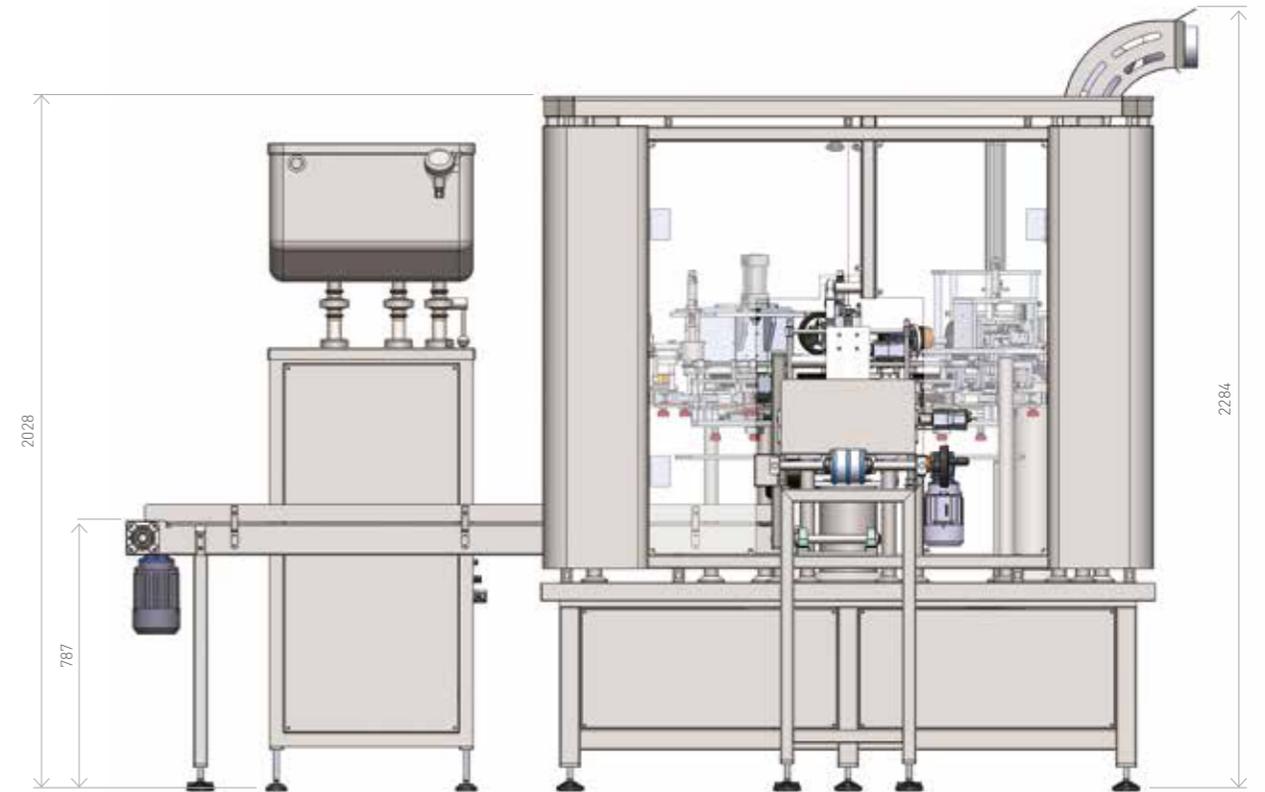
■ Optional: Air evacuation

STATION 8: BAG / POUCH COOLING, DISCHARGING AND QC

Bags/pouches are led into the cooling and discharging zone. The **CITADEL'S** cooling device grabs each bag/pouch for the optimal cooling time for any particular material. The product is then passed through a checkweighing system which will reject any irregular product via a discharge conveyor.



HOW THE CITADEL MEASURES UP





CITADEL

- FULLY AUTOMATED
- BAG / POUCH FEED
- ROLL STUFFING
- LIQUID FILLING
- BAG/POUCH SEALING
- ALL IN ONE BLOCK WITH FULL QC!



EXPLOSION PROOFED & CORROSION PROOFED



Corrosive or alcohol-based solutions dictate that your equipment is duly fitted to professionally handle these delicate environments. Years of experience in the field made it possible for us to tailor you the exact protection so your production is safe and stable while your people and equipment are well protected keeping your facility at the top of the range.



All of our machines are constructed using SST 304/316L, and are available with anti corrosive proprietary coating. As well as the machine base, all vital parts such as nozzles and pumps are also specially treated.



ANTI-CORROSION

SHEMESH AUTOMATION'S FGW-120 FILLING MACHINE WITH COMPLETE EXPLOSION (EX) AND CORROSION PROTECTION



GLOBAL PRESENCE

Wisconsin, USA
North America HQ

State-of-the-art machine showroom, sales and after-sales support, spare parts inventory and North American logistics centre.

Hampshire, UK
Global Headquarters

CEO's office, Marketing, Strategy, Business Development and Finance.

Semur-en-Auxois, France
European HQ

French team, Tech centre featuring state-of-the-art machinery showroom, sales and after-sales support and European logistics centre.

Tel Aviv, Israel
R&D and Manufacturing

Operations, R&D, Engineering and Manufacturing.



GLOBAL REPRESENTATION

Shemesh Automation collaborates with teams on complex Fortune 500 projects and has gained not only a proven and trusted network to put at your disposal, but also invaluable knowledge to help drive your projects.

We share our expertise to guarantee the maximum productivity of your machinery. Our global network of sales representatives and After Sales service specialists offer you flexible and efficient support. Our highly-qualified technicians ensure a fast solution whenever and wherever you need it.

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Proprietary Round Nonwoven Rolls Stuffer Technology

“Fully automatic station designed to stuff 30-35 nonwoven rolls into bags/pouches per minute. The **CITADEL** feeds the rolls coming out of the converting machine through a smart synching conveyors system vertically into a 90° chute that feeds the rolls to the main servo-driven rotary turret where each roll is stuffed by a pneumatic piston pusher into its designated bag/pouch. To reduce downtime, the **CITADEL** stuffer module is designed as a no-tool product change with **ultra low** changeover time. The Machine may be fully synchronized with the converting machine.”



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Let us build your vision