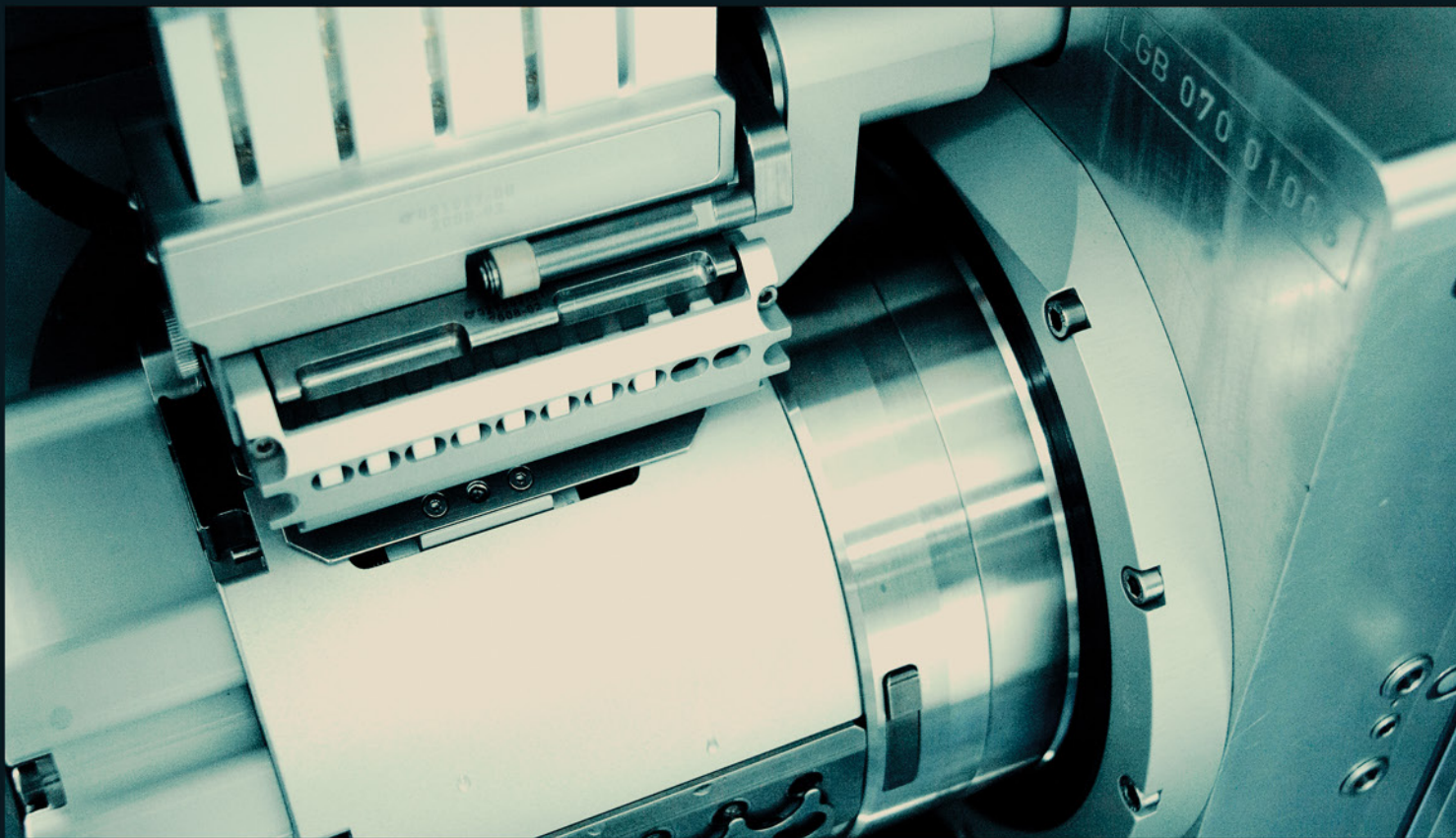


**Lonza Engine™**  
*Accelerate Innovation*

---

## **LEMS® 70**

Liquid Encapsulation  
Microspray Sealing  
system



**Lonza**

# Realize the potential of lipid-based formulations for poorly soluble compounds and achieve Faster Time to ‘First in Man’

## Our offer

A complete line of equipment, including a capsule filling machine for developing and manufacturing liquid pharmaceutical products using Capsugel® Licaps® Drug delivery system.

## Features and Benefits

### Production scale of liquid filled hard capsules

Stand alone sealing system at an operating speed of up to 55,000 capsules per hour

### Easy installation and start-up

### User-friendly system/easy operation

Quick size changing reducing downtime  
Easy disassembling resulting in rapid order change over  
Practically no tools needed  
Recipe management and updated operator screens

### Optimize your workforce

1 technician can supervise both filling and LEMS system simultaneously

### GMP compliant

Stainless steel body and frame

### CFR21.11 compliant

Software compliant with 21 CFR Part 11 requirements

### Flexible

Fits with most major capsule filling technologies  
Capsule size range 000, 00el, 00, 0el, 0, 1, 2, 3, 4

**A full range of LEMS® accessories, parts and spares are available upon request.**

LEMS® 70



Utilizing our proprietary LEMS® technology (Liquid Encapsulation Microspray Sealing), developed for secure sealing of two-piece liquid Licaps® capsules, the LEMS® 70 system is a high-speed production-scale sealing system which provides a superior alternative to banding. This innovative system is easy to operate and is a cost-effective way to handle in-house production for Capsugel® Licaps® Drug Delivery System (Licaps® capsules and LEMS® technology).

## Specifications

### Dimensions

151 x 87 x (H) 141.5 cm

### Weight

700 Kg

### Operating Speed

Up to 55,000 capsules per hour

### Capsule Size Range

Sizes 000, 00el, 00, 0el, 0, 1, 2, 3, 4

### Sealing Technology

A precise microspray of hydroalcoholic solution is used to fuse the body and cap of the capsule

- HGC sealing fluid: 50% ethanol + 50% water

- Air heating drying cycle about 1 minute

- Air heating temperature range: 40 - 60° C

### Power Requirements

Voltage: 400 V AC +/- 5%

Current: 14 A max @ 400 VAC

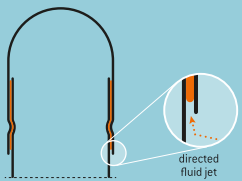
Phase: 3

Frequency: 50/60 Hz

### Warranty

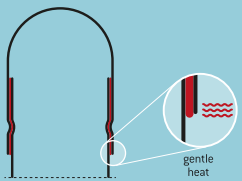
One year

## LEMS® (Liquid Encapsulation Microspray Sealing) proprietary technology



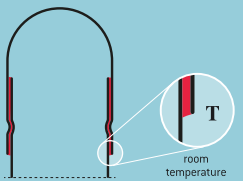
### STAGE 1: SPRAYING

Sealing fluid is sprayed onto joint between cap and body.  
Capillary action draws fluid up between the cap and the body.  
Suction removes excess fluid.



### STAGE 2: WARMING

A gentle heat application completes melting and fusion.  
Gentle heat melts the two layers which fuse together to form an impervious seal.



### STAGE 3: SETTING

Capsules equilibrate at room temperature.

The setting and hardening can be accomplished within one hour in open trays, and is completed while the product returns to room temperature; alternatively, to maintain productivity, the capsules can be subjected to the vacuum chamber on open trays as soon as they leave the sealing system. The larger size of the sealed area, compared to traditional banding processes, contributes to a robust and impervious seal.

## Licaps® capsules

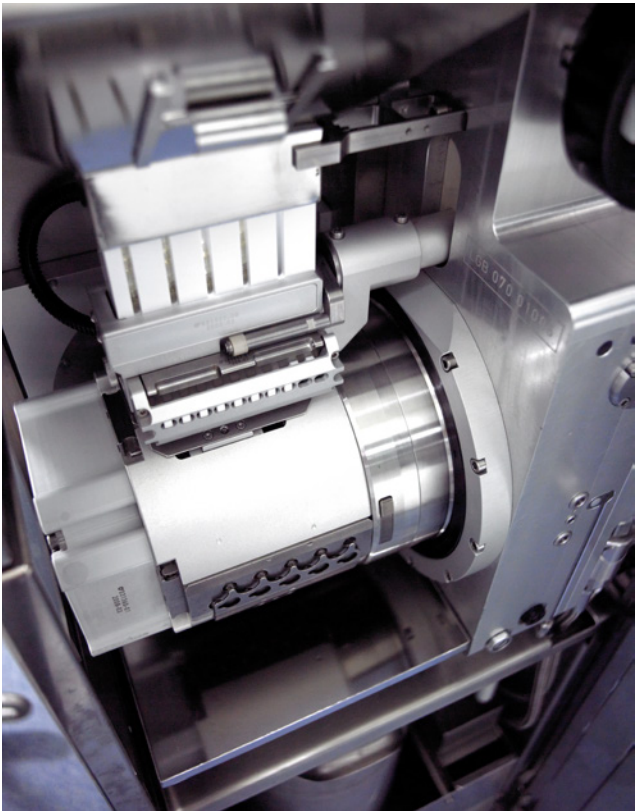
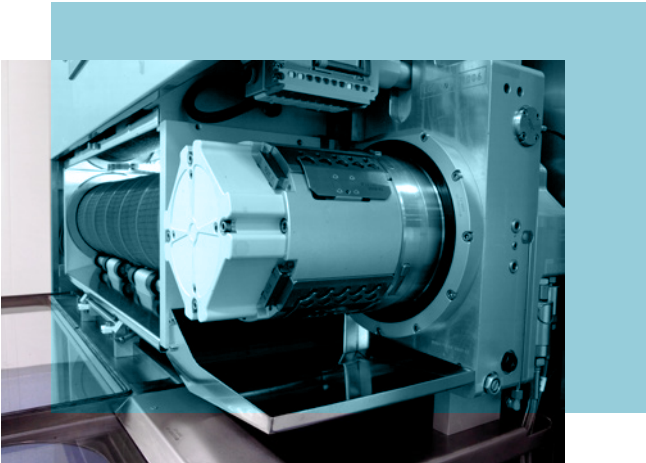
Licaps® capsules are compatible with a wide range of excipients, which may improve bioavailability for poorly soluble drugs. Their key benefits include:

- Unique capsule design that maximizes seal integrity to prevent leakage after sealing
- Low oxygen permeability
- Can be filled with hotmelts (up to 70° C)

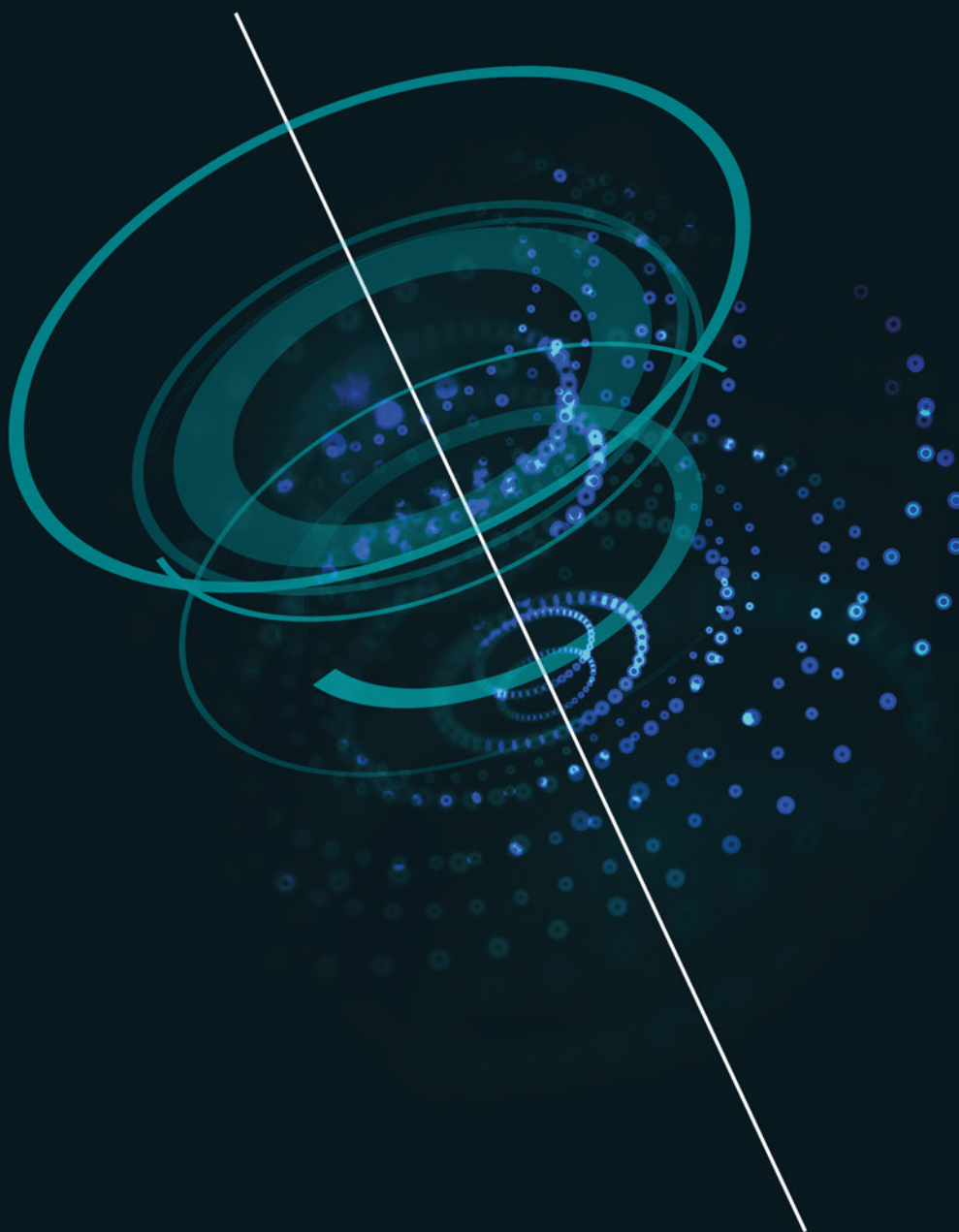


## Technical Support and Service

Lonza's experienced service and support team will provide installation, validation packages and on-site training as requested. Also available are ongoing support and preventative maintenance agreements to keep your Lonza Engine™ equipment operating at optimal efficiency. For more information on services by our dedicated team of engineers and technicians contact your Lonza sales representative or visit [www.lonza.com](http://www.lonza.com).







# Lonza

---

To order now or to obtain more information  
about the equipment:

Visit: [www.capsugel.com](http://www.capsugel.com)

Email: [solutions.emea@lonza.com](mailto:solutions.emea@lonza.com) /  
[solutions@lonza.com](mailto:solutions@lonza.com)

Call: +33 3 89 20 57 25 / 800-845-6973

Or contact your Lonza representative

All product information corresponds to Lonza's  
knowledge on the subject on the date of publication,  
but Lonza makes no warranty of any sort, including  
with regard to its accuracy or completeness and  
Lonza assumes no obligation whatsoever, including  
any obligation to update it. All trademarks belong to  
Lonza or its affiliates. ©2019

LIT201906009