The background of the advertisement is a dark, high-contrast image. On the right side, there is a detailed profile of a man's face, looking towards the left. The lighting is dramatic, highlighting the contours of his face. Overlaid on the entire image is a complex technical drawing in white lines. This drawing includes various mechanical components, cross-sections, and concentric circles. Specific parts are labeled with letters like 'A', 'B', 'C', and 'D'. There are also circular callouts containing the numbers '10' and '11'. The overall aesthetic is one of precision and engineering.

MIND & COMPETENCE



**micromacinazione®**  
the value of experience

# THE VALUE OF EXPERIENCE

Micromacinazione is a Swiss company founded in 1970 in Molinazzo di Monteggio as an engineering company for jet-mill technology development. Since 1975, the company started promoting itself on the international market with its own micronization services. In 1999 a second factory in Madonna del Piano was built following the current GMP.

In 2011 a new engineering building was constructed to meet the increased business demands.



Production site  
Madonna Del Piano

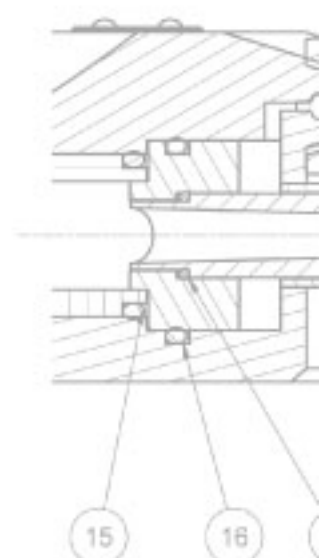


Production site  
Molinazzo di Monteggio

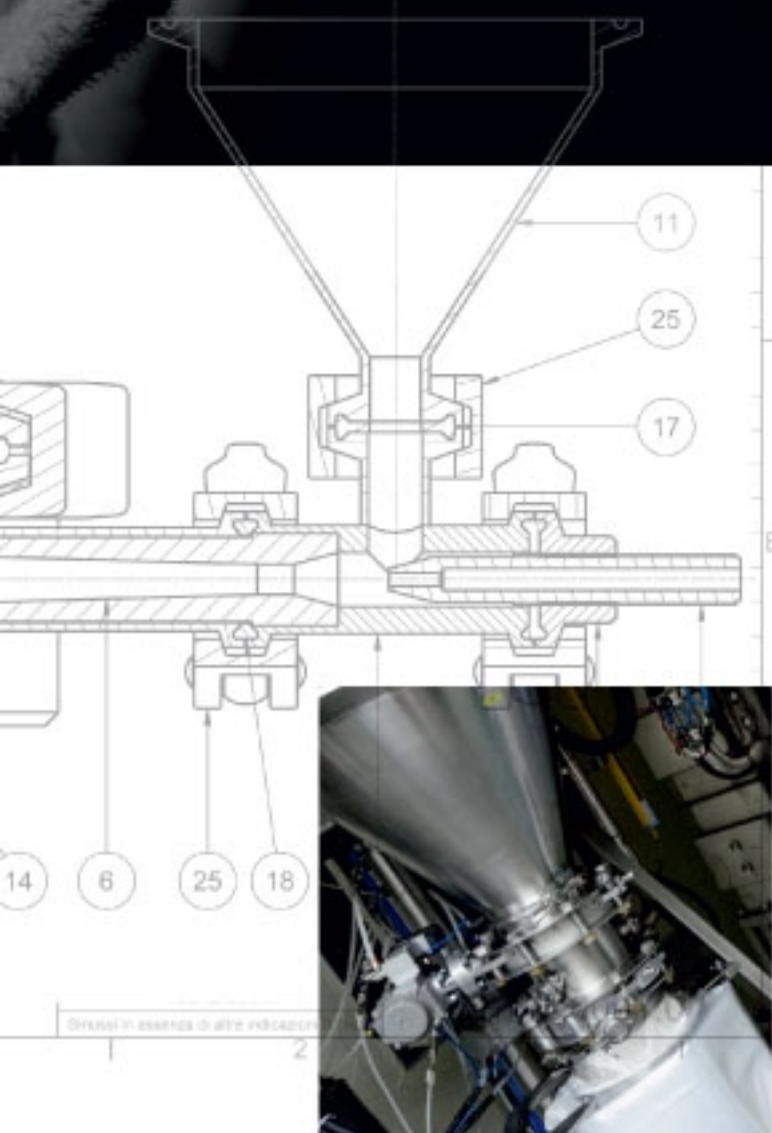
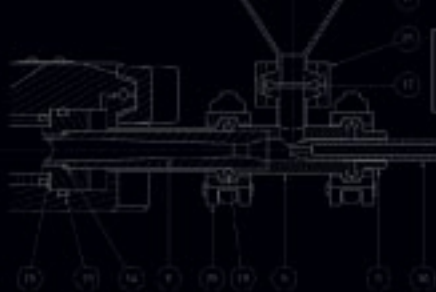


Engineering site  
Madonna Del Piano

With 3 sites located in Ticino - two dedicated to micronization services, and one to R&D and engineering - Micromacinazione offers a unique combination of equipment supply and micronization service provision.







40 years of experience  
in micronization coupled  
with Swiss quality and  
reliability.

# WHY US

Ø 185

R2

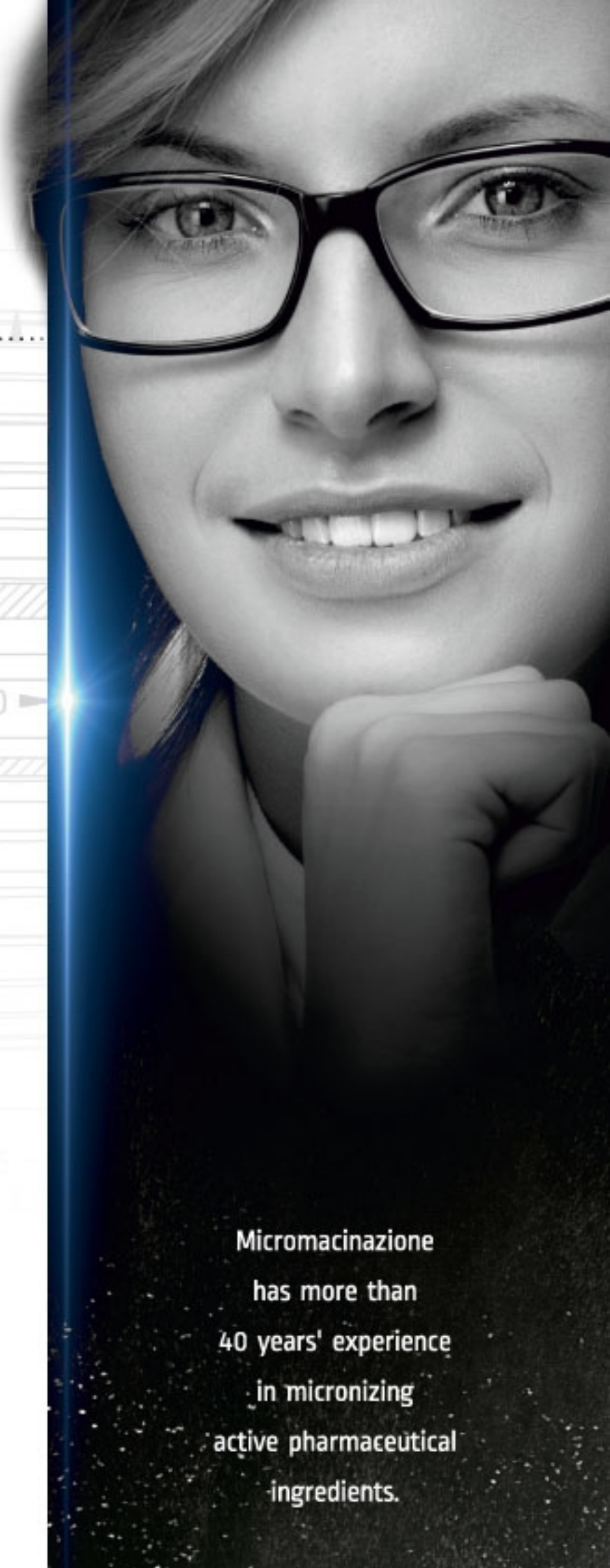
30

Our two separate production sites are regularly inspected by FDA, Swiss Medic and are certified by the Japanese Authorities.


Our capacity is more than 1000 metricTons/year with 29 installed mills working under GMP conditions. Micromacinazione works closely with the foremost multinational pharmaceutical industries, taking an active part from the early development stages of a new project through to industrial production.

We use our own engineering competences in designing and manufacturing jetmills.

**Micromacinazione**  
has more than  
40 years' experience  
in micronizing  
active pharmaceutical  
ingredients.







Micronization lines are fully designed and built by our internal engineering department based on customer requirements.







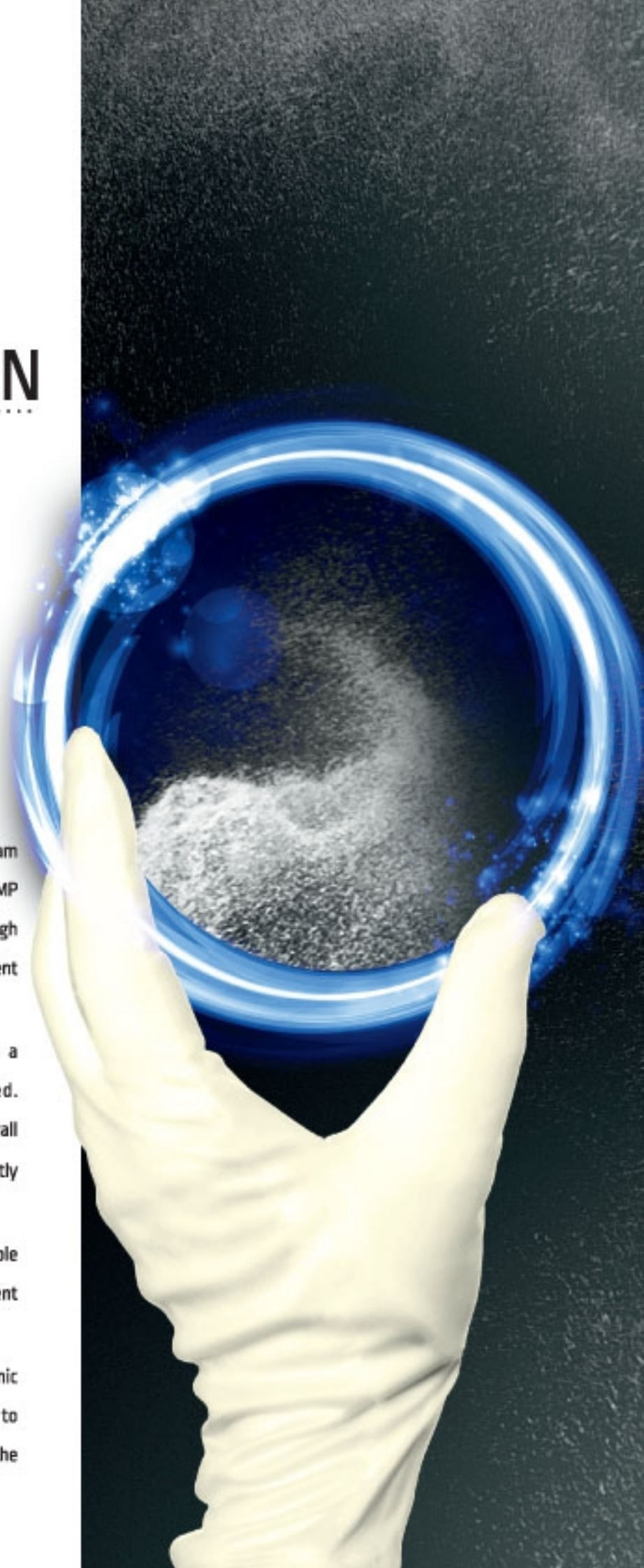
# CONTRACT MICRONIZATION

Micromacinazione has 27 jet mills both spiral and opposed with different capacities, from a few gram batches up to tons of APIs, all installed under cGMP conditions. Dedicated areas for steroids and a high barrier containment system for handling high potent and cytotoxic compounds are available.


Before processing, every product is classified and a suitable containment system is determined. Installations for micronizing products with an Overall Exposure Limit [OEL]  $\geq 200$  ng/m<sup>3</sup> are currently available.

Micromacinazione has a number of rigid and flexible isolators, according to the products' containment requirements.


We are able to perform micronization in cryogenic conditions [liquid nitrogen], which can be applied to certain APIs for stability reasons or for managing the solid state transition during particle size reduction.







Experience with more than 1000  
different APIs and handling of more  
than 200 active ingredients per year.



Thanks to our skilled team of engineers,  
Micromacinazione provides a micronization  
service with equipment customized on  
products' properties to improve  
the performance of each unit .



# DESIGN & SUPPLY OF EQUIPMENT

Micromacinazione can offer standard or fully customized equipment according to customers' User Requirement Specifications.

Each standard equipment is installed in our contract micronization department and is tested and improved according to the feedback of our operators. Thanks to our internal multidisciplinary competences we offer tailor made and innovative solutions to meet our customers' needs.

A dedicated QA staff is available for validation and preparation of all necessary documentation that accompanies the unit (FAT, SAT, IQ, OQ).





Our engineering solutions include the design and manufacturing of Jet mills [both spiral and opposed], glove boxes and pneumatic conveyors.





# QUALITY & ANALYTICAL SERVICES

## INTERNAL SERVICES

- Laser Helos Sympatec
- Laser Malvern Mastersizer 2000
- Video Microscope
- Melting Point
- FT/IR
- UV/Visible Spectrophotometer
- HPLC
- Karl Fischer
- DSC

## EXTERNAL SERVICES

- Dissolution Test
- ICH Stability Studies
- Power XRay Diffraction
- SEM
- Specific Surface Area(BET)



## QUALITY ASSURANCE

Micromacinazione's commitment to excellence is ensured by the continuous improvement of our Quality Systems. Over the last 10 years, our facilities have been inspected by more than 200 different audit teams. The regular customer, health authorities and internal audits further contribute to assure compliance of the GMP requirements.

swissmedic



KFDA

Pmda







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# Jet-Mill



## MC 44 IR / MC 50 IR

Lab scale compact micronizer, for R&D applications.

### TECHNICAL DETAILS

	MC 44 IR	MC 50 IR
Air consumption at 7 [bar]	0.3 Nm <sup>3</sup> /min.	0.41 Nm <sup>3</sup> /min.
Feed rate	50-400 [g/h]	50-1000 [g/h]
Mill size	44 [mm] [1 3/4"]	66 [mm] [2 1/2"]
Global dimensions [LxWxH]	650 x 400 x 750 [mm]	700 x 450 x 800 [mm]



## MC 100 IR / MC 150 IR

Integrated micronizing plant for small batches.

### TECHNICAL DETAILS

	MC 100 IR	MC 150 IR
Air consumption at 7 [bar]	0.8 Nm <sup>3</sup> /min.	1.8 Nm <sup>3</sup> /min.
Feed rate	0.5-5 [Kg/h]	1-15 [Kg/h]
Mill size	100 [mm] [4"]	150 [mm] [6"]
Global dimensions [LxWxH]	1200 x 690 x 1700 [mm]	1200 x 750 x 1900 [mm]

## MC 200 IR

The most flexible micronizing plant.

### TECHNICAL DETAILS

	MC 200 IR
Air consumption at 7 [bar]	3.1 Nm <sup>3</sup> /min.
Feed rate	1-30 [Kg/h]
Mill size	200 [mm] [8"]
Global dimensions [LxWxH]	2500 x 2000 x 2700 [mm]



## MC 300 KX

Large batch size industrial plants.

### TECHNICAL DETAILS

	MC 300 IR
Air consumption at 7 [bar]	6.5 Nm <sup>3</sup> /min.
Feed rate	5-100 [Kg/h]
Mill size	300 [mm] [12"]
Global dimensions [LxWxH]	400 x 2500 x 4200 [mm] [160" x 100" x 165"]



## Industrial scale plants MC 500/600/750/900 KX

Large batch size industrial plants. The sizes varies from 500 [mm] [20"] to 900 [mm] [36"] depending on process requirements.

### TECHNICAL DETAILS

	MC 500 KX	MC 600 KX	MC 750 KX	MC 900 KX
Air consumption at 7 [bar]	19 Nm <sup>3</sup> /min.	27 Nm <sup>3</sup> /min.	45 Nm <sup>3</sup> /min.	63 Nm <sup>3</sup> /min.
Feed rate	10-500 [Kg/h]	15-700 [Kg/h]	20-1000 [Kg/h]	30-1500 [Kg/h]
Mill size	500 [mm] [20"]	600 [mm] [24"]	750 [mm] [30"]	900 [mm] [36"]
Global dimensions [LxWxH]	4000 x 3000 x 4700 [mm] [160" x 120" x 185"]	4200 x 3000 x 5200 [mm] [165" x 120" x 205"]	4600 x 4000 x 5700 [mm] [180" x 160" x 225"]	5000 x 4500 x 6200 [mm] [200" x 180" x 245"]



# Glove-Box



## GLOVE BOX FOR JET MILLING

Compact micronizing glove box with the possibility to install from lab scale MC44 to production scale MC300.



## GLOVE BOX FOR DISPENSING

Glove box designed for dispensing of APIs/ HPAPIs and cytotoxic compounds.



## MODULAR GLOVE BOX

Glove box composed by different modules, each one independent from the other, and with the possibility to install additional modules in future.



## GLOVE BOX FOR LOADING AND UNLOADING

Glove box designed to isolate open operations (like loading, unloading, sampling, etc.)

## GLOVE BOX FOR R&D

Glove box designed to house several kilolab equipments and tools (Static dryer, reactors, balance, filter dryer, etc.).



- OEL<50ng/m<sup>3</sup> (SMEPAC test)
- According to cGMP regulations
- Built up on internal feedbacks

- Mock-up study
- Installation/ commissioning & validation
- CE marking

Micro-Macinazione SA

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