



SENSUM



SPINE

Automatic Inspection
and Sorting of
Tablets & Capsules & Softgels

Computer
Vision
Systems

SPINE

Automatic Inspection
and Sorting of
Tablets & Capsules & Softgels

Sensum | 02



Highlights

- All-in-one visual inspection machine for tablets, capsules and softgels
- High speed inspection of up to 630.000 products/hour
- Extensive range of product sizes from 4 mm up to 28 mm
- 3D surface inspection and high colour sensitivity
- Reliable active sorting with verification
- No defects needed for machine training
- Intuitive user-friendly graphical interface
- Ergonomic design and simple changeover
- Local and global support



**IMPROVE YOUR QUALITY
BY SORTING OUT DEFECTS**

ROUND TABLETS



shape



thickness



chips



cracks



dark dots



bright dots



colour deviation



coating defects



chipped coating



edge chips



edge cracks



edge dark dots



engraving defects



print defects

OVAL & OBLONG TABLETS



dots



lamination



chips



cracks



coating defects



engraving defects



print defects

CAPSULES



length



holes



dents



joints



damaged band



empty transparent



print defects

SOFTGELS



twins



size



damaged seam



dirt



hair



bubbles



broken

And many more ...

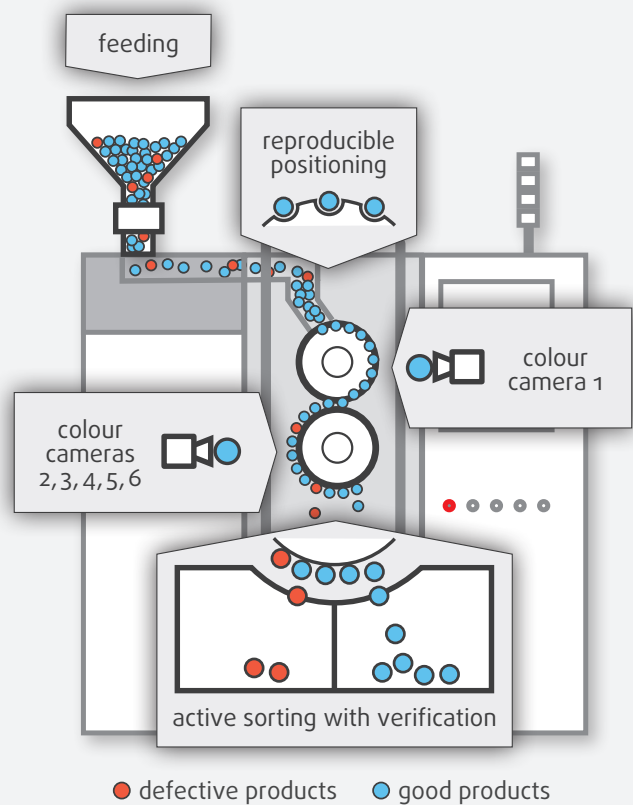


HIGH QUALITY INSPECTION








Sensum **SPINE** automatically inspects the entire surface of tablets, capsules and softgels at the speed of up to 630.000 products/hour. The products are held in **reproducible position** by a vacuum system and inspected by **six colour cameras**.

The machine is controlled via a user-friendly graphical interface, providing simple operation and training for the inspection of new products.

The **active sorting** system with **sorting verification** for both good and defective products ensures fail-safe and reliable operation.



Technical data

| | | |
|---|------------------------------|---|
|  | Application | <ul style="list-style-type: none"> Tablets, capsules and softgels |
|  | Inspection speed | <ul style="list-style-type: none"> Up to 630.000 products/hour |
|  | Electrical connection | <ul style="list-style-type: none"> 400/230V 3/N/PE 20A |
|  | Compressed air | <ul style="list-style-type: none"> 6 Bar, 100 Nm³/h |
|  | Dimensions (L×W×H) | <ul style="list-style-type: none"> 1860 × 860 × 2145 mm |
|  | Weight | <ul style="list-style-type: none"> ~ 1200 kg |
|  | Construction | <ul style="list-style-type: none"> CE, GMP, FDA acceptable materials |

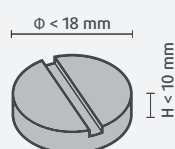
APPLICATIONS

Applicable products

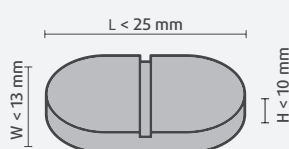
| Tablets | Capsules | Softgels | Other |
|---|--|---|--|
| <ul style="list-style-type: none"> • plain (uncoated) • sugar-coated • film-coated • multilayer | <ul style="list-style-type: none"> • opaque • bicolour • transparent • empty | <ul style="list-style-type: none"> • opaque • bicolour • transparent • seamless | <ul style="list-style-type: none"> • pastilles • chewing gums • caplet • ... |

Applicable dimensions

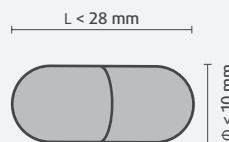
Round



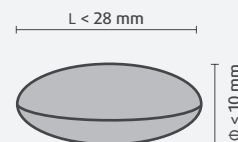
Oblong



Capsule



Softgel



Other non-specified or special types of products have to be checked if applicable.

Indicative inspection speeds

Round tablets

| Φ (diameter) in mm | Tablets / hour |
|-------------------------|----------------|
| 13 - 18 | 210.000 |
| 10 - 12 | 420.000 |
| 8 - 9 | 520.000 |
| < 8 | 630.000 |

Oval and oblong tablets

| L (length) in mm | Tablets / hour |
|------------------|----------------|
| > 18 | 150.000 |
| 14 - 18 | 230.000 |
| 11 - 13 | 310.000 |
| 8 - 10 | 390.000 |
| < 8 | 470.000 |

Capsules

| Size | Capsules / hour |
|---|-----------------|
| 0 & 1 & 2 | 200.000 |
| 3 & 4 & 5 | 300.000 |
| All other standard sizes of capsules are also supported | |

Softgels

| L (length) in mm | Softgels / hour |
|------------------|-----------------|
| > 15 | 160.000 |
| 14 - 15 | 280.000 |
| 11 - 13 | 380.000 |
| 8 - 10 | 470.000 |
| < 8 | 570.000 |

Actual inspection speed depends on the shape, size and type of products, and on the number of inspected features. In special cases extreme inspection speeds might be possible for some dedicated products.

MAIN ADVANTAGES

Maximal flexibility

- All-in-one machine for tablets, capsules and softgels
- Can inspect various colours, shapes and sizes up to 28 mm
- Can inspect transparent products (capsules, softgels)
- General format parts for round tablets and capsules

State-of-the-art inspection

- High speed inspection of up to 630.000 products/hour
- Standardized inspection quality among different products
- High quality inspection including 3D surface inspection
- Entire product surface inspected by six colour cameras
- Optimal illumination ensured by controllable LED

Proprietary software

- Image analysis based on the latest scientific developments
- Visual defect detection feedback on graphical user interface
- Statistical distributions of all inspected features
- Batch reports in electronic and/or printed form
- Compliant with FDA 21 CFR Part 11

Simple training for inspection of new products

- Training done within 10 minutes
- No defects needed for machine training
- Simple tolerance setting for selective sensitivity

Reliable sorting with verification

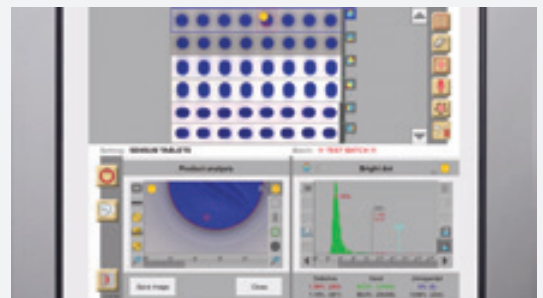
- Active sorting of each individual, good or defective product
- Optical sorting verification of each sorted product
- Fail-safe sorting design in case of media failure

User friendly device

- Touch-screen based intuitive user graphical interface
- Efficient self-cleaning system for active dedusting
- Easy cleaning and maintenance
- Fast changeover to other products within 10 minutes
- Ergonomic tool-free design

Strong aftersales support

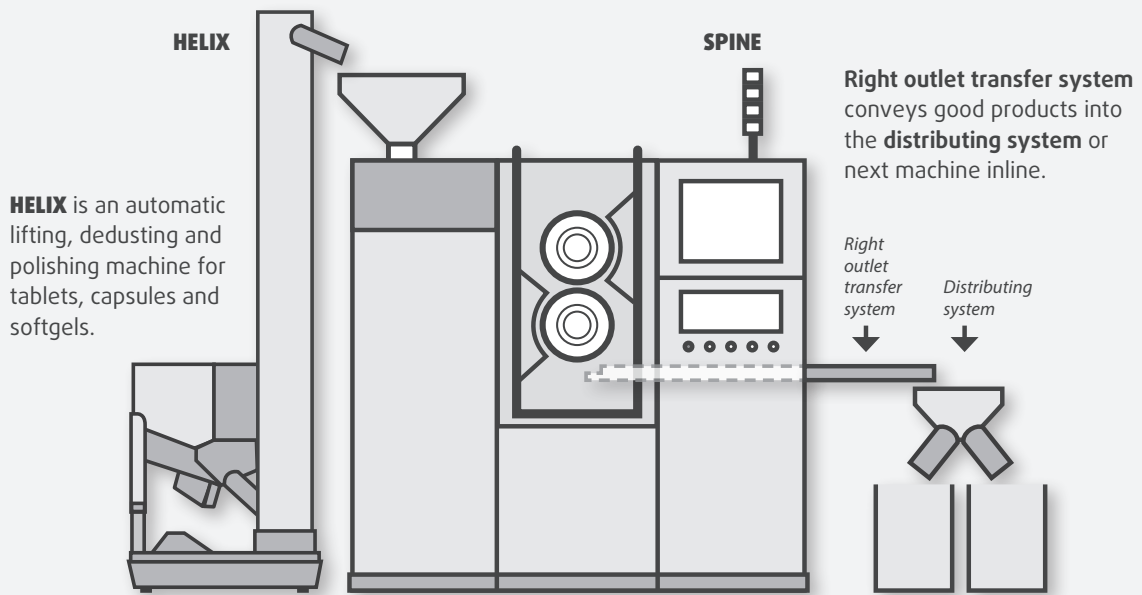
- Regular and responsive customer support
- Local and global service support
- On-site & on-line validation, troubleshooting and training





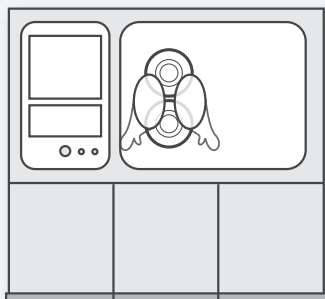
SET YOUR INSPECTION PROCESS

Inline operation



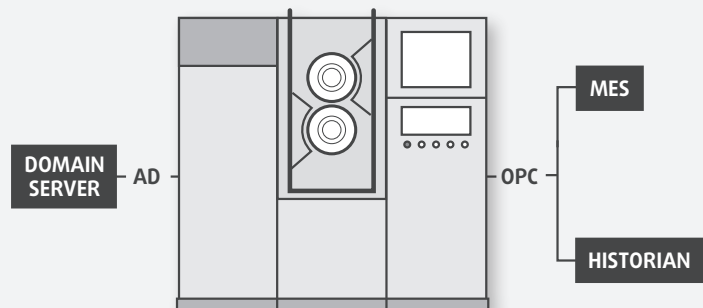
Containment solution

SPINE HYPO offers **SPINE** technology for contained automatic visual inspection and sorting of highly potent products.



Facility integration

SPINE is customizable to a wide variety of facility systems used in pharmaceutical industry.





SENSUM

Sensum

Computer Vision Systems

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Made in Slovenia, EU

The right solution for you

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