SPINE
Automatic Inspection and Sorting of Tablets & Capsules & Softgels
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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 ...
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**

<table>
<thead>
<tr>
<th>Application</th>
<th>Tablets, capsules and softgels</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inspection speed</td>
<td>Up to 630,000 products/hour</td>
</tr>
<tr>
<td>Electrical connection</td>
<td>400/230V 3/N/PE 20A</td>
</tr>
<tr>
<td>Compressed air</td>
<td>6 Bar, 100 Nm³/h</td>
</tr>
<tr>
<td>Dimensions (L×W×H)</td>
<td>1860 × 860 × 2145 mm</td>
</tr>
<tr>
<td>Weight</td>
<td>~ 1200 kg</td>
</tr>
<tr>
<td>Construction</td>
<td>CE, GMP, FDA acceptable materials</td>
</tr>
</tbody>
</table>
Applications

Applicable products

Tablets
- plain (uncoated)
- sugar-coated
- film-coated
- multilayer

Capsules
- opaque
- bicolour
- transparent
- empty

Softgels
- opaque
- bicolour
- transparent
- seamless

Other
- pastilles
- chewing gums
- caplet
- ...

Applicable dimensions

Round
- Ø < 18 mm
- H < 10 mm

Oblong
- L < 25 mm
- W < 13 mm
- H = 10 mm

Capsule
- L < 28 mm

Softgel
- L < 28 mm

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

Indicative inspection speeds

Round tablets

<table>
<thead>
<tr>
<th>Ø (diameter) in mm</th>
<th>Tablets / hour</th>
</tr>
</thead>
<tbody>
<tr>
<td>13 - 18</td>
<td>210.000</td>
</tr>
<tr>
<td>10 - 12</td>
<td>420.000</td>
</tr>
<tr>
<td>8 - 9</td>
<td>520.000</td>
</tr>
<tr>
<td>&lt; 8</td>
<td>630.000</td>
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</tbody>
</table>

Oval and oblong tablets

<table>
<thead>
<tr>
<th>L (length) in mm</th>
<th>Tablets / hour</th>
</tr>
</thead>
<tbody>
<tr>
<td>&gt; 18</td>
<td>150.000</td>
</tr>
<tr>
<td>14 - 18</td>
<td>230.000</td>
</tr>
<tr>
<td>11 - 13</td>
<td>310.000</td>
</tr>
<tr>
<td>8 - 10</td>
<td>390.000</td>
</tr>
<tr>
<td>&lt; 8</td>
<td>470.000</td>
</tr>
</tbody>
</table>

Capsules

<table>
<thead>
<tr>
<th>Size</th>
<th>Capsules / hour</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 &amp; 1 &amp; 2</td>
<td>200.000</td>
</tr>
<tr>
<td>3 &amp; 4 &amp; 5</td>
<td>300.000</td>
</tr>
</tbody>
</table>

Softgels

<table>
<thead>
<tr>
<th>L (length) in mm</th>
<th>Softgels / hour</th>
</tr>
</thead>
<tbody>
<tr>
<td>&gt; 15</td>
<td>160.000</td>
</tr>
<tr>
<td>14 - 15</td>
<td>280.000</td>
</tr>
<tr>
<td>11 - 13</td>
<td>380.000</td>
</tr>
<tr>
<td>8 - 10</td>
<td>470.000</td>
</tr>
<tr>
<td>&lt; 8</td>
<td>570.000</td>
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</tbody>
</table>

All other standard sizes of capsules are also supported.

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.
MAXIMUM 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
Facility integration

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

**Containment solution**

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

**Inline operation**

**HELIX** is an automatic lifting, dedusting and polishing machine for tablets, capsules and softgels.

**Right outlet transfer system** conveys good products into the **distributing system** or next machine inline.

**Facility integration**

**SPINE** is customizable to a wide variety of facility systems used in pharmaceutical industry.
The right solution for you
Find out more about SPINE and discuss the possibilities best for you by telephone, e-mail or webinar. You may also meet us on exhibitions or ask us for a visit at your facility.

The quality is in your reach
Visit us at our worldwide showroom locations and test the technology with your products.

Follow us
Follow us on LinkedIn for the latest updates on quality control in pharmaceutical and nutraceutical production.