AD-4991

X-ray Inspection System

Inspection Simplified

A&D Inspection
WHY A&D INSPECTION

Why X-ray?
A proper HACCP program will help prevent contamination as long as the technology and processes are suitable for the application. At A&D we are committed to providing a consultative approach to help our customers enjoy full benefit from the technologies that we have worked diligently to produce. Our systems protect brand image and allow companies to expand their future business because of our reliability, ease of operation, and serviceability.

Cutting Edge Inspection
A&D Inspection offers cutting edge X-Ray inspection systems to assist food packaging and pharmaceutical companies better understand how to leverage this incredible technology in an effort to improve and manage the quality of their products.

Top Considerations
X-ray systems use in food packaging and pharmaceutical applications are growing exponentially because of the versatility they provide. The increased dynamic inspection capabilities provide great confidence and increased quality control standards, which allow customers to further differentiate their brand.

XRAY Benefits Include
- Increased consumer protection
- Quality assurance - taken to new levels
- Brand protection and recall prevention
- Food safety compliance
- Customer trust
- High return on investment

Applications Include
- Ready Meals
- Prepared foods
- Meat
- Bakery Products
- Cereals
- Dairy foods
- Confectionery
- Vegetables
- Fruit
- Cosmetics

*but are not limited to
PROTEX SERIES

Most Compact System on the Market
- Overall length of 800mm/31.5” makes integration painless whether it be an existing line or new production line

15” Color Touchscreen for Easy Operation
- Simple GUI for Operators of all types
- Easy to discern good products from bad products

Product Setup is a Breeze
- Setting up a new product requires three passes through the machine
- Inspection thresholds will automatically be configured based on the sample that was registered, making product setup foolproof

1000 Unique Products
- Store products in 10 groups of 100
- Product selector window allows the user to see all registered products at a glance

Data Management and HACCP Compliance
- Export production reports, statistics, and images via USB or access on the machine in real-time
**Features**

**Foreign Matter Detection**
Precise detection of the smallest of foreign contaminants

Types of contaminants X-ray can detect
- Metal
- Non-ferrous metals in foil, including stainless steel
- Glass
- Bone (calcified)
- PVC plastic
- TFE (Teflon) plastic
- Ceramic or concrete
- Flavor/sugar clumps

**Shape Detection**
Check for product uniformity and flaws, such as cracks or chips

- Example of good products
- Example of a cracked product
Mass Estimation

**Estimate the weight of a product to determine if it meets desired weight parameters**

The X-ray machine measures the product density to determine the approximate mass of a product. This is especially useful with continuous packaging.

Piece Counting and Positioning

**Search for missing items within a package and verify proper positioning**

Example of a missing piece

Example of misplaced product
Masking Function **Confirm product integrity and reduce the number of incorrect rejections**

**FEATURES**

Example of seal inspection

Example of contrast inspection

Example of pattern inspection

A&D X-ray systems feature advanced inspection algorithms to tackle the toughest of applications. If you are checking for a broken seal, missing clip, or for presence of an oxygen absorber, we can help.
SAFETY AND DESIGN

Sanitary Design

Sloped surfaces are designed to minimize water collection and maximize cleanability

Quick release belt designed for easy cleaning and replacement

Quick release curtains allow for easy cleaning and replacement

X-Ray Safety

Safety sensors are embedded at access points to provide additional safety

Machine faults are visually displayed allowing operators to quickly fix and resume operation

Basic X-Ray Principles

- **Cannot Be Detected**
  - Hair, Paper, Cloth, Vinyl, Insects, Wood Chip, Cartilage
  - Things that float in water cannot be detected

**DETECTION OF MD**
- Plastic
- Hardbone
- Glass
- SUS Wire, Stone
- SUS Aluminum Foil

**DETECTION OF XRAY**
- Aluminun
- Fe, SUS

**X-ray**
- Easy
- Difficult

**DETECTION OF MD**
- Plastic
- Hardbone
- Glass
- SUS Wire, Stone
- SUS Aluminum Foil

**Metal Detector**
- Easy
- Difficult
<table>
<thead>
<tr>
<th>Specifications</th>
<th>AD-4991-2510</th>
<th>AD-4991-2515</th>
</tr>
</thead>
<tbody>
<tr>
<td>X-Ray Output</td>
<td>100W (50kV_2mA)</td>
<td>150W(50kV_3mA)</td>
</tr>
<tr>
<td>Conveyor Width</td>
<td>250mm (9.84 in)</td>
<td></td>
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<tr>
<td>Maximum Conveying Speed</td>
<td>45m/min (147 fpm)</td>
<td>70m/min (229 fpm)</td>
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<tr>
<td>System Length</td>
<td>800mm (31.5 in)</td>
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<tr>
<td>Conveyor Height</td>
<td>720 mm-860 mm (28-33 in)</td>
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<tr>
<td>Maximum Conveying Load</td>
<td>5kg (depends on speed)</td>
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<tr>
<td>IP Rating (Inspection Area)</td>
<td>IP66</td>
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<tr>
<td>X-Ray Safety</td>
<td>Complies with FDA Radiation Standards 21 CFR Subchapter J</td>
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<tr>
<td>Connectivity</td>
<td>Modbus TCP / Modbus RTU</td>
<td>RS23/ 485</td>
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<tr>
<td></td>
<td>TCP / IP</td>
<td>USB</td>
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<tr>
<td>Display Screen Size</td>
<td>15”</td>
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<tr>
<td>Shielding Curtain</td>
<td>Tungsten</td>
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<tr>
<td>Power Requirements</td>
<td>AC 100~240 +/- 10% 50/60Hz 570VA</td>
<td>AC 100~240 +/- 10% 50/60Hz 670VA</td>
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<tr>
<td>Environmental Operation</td>
<td>0<del>35°C 30</del>85% RH without condensation</td>
<td></td>
</tr>
</tbody>
</table>

**Dimensions (mm)**

![AD-4991-2510](image1.png)

![AD-4991-2515](image2.png)