

MÜHLBAUER'S INSPECTION SOLUTION

FOR ALL QUALITY ASPECTS OF YOUR COIN

Mühlbauer's new inspection solution COIN INSPECT FLEX has been designed to cover all quality aspects of blank, minted and used coins. Its modular concept gives you the full flexibility to exactly configure the inspection machine according to your specific application.

Based on long-term experience, field proven methods, and state of the art technologies COIN INSPECT FLEX offers the highest performance available on the market for a full-area, double-sided inspection and measurement of

- Disks, rings, polygons, assembled / bi-metal, colored coins
- Steel, copper, aluminum, nickel, brass, alloyed & coated coins
- Diameter 10.0 – 35.0 mm, thickness 0.8 – 4.0 mm, weight 1.5 – 30.0 gr.

at a throughput rate of max. 3,000 upm in a three-shift-operation.

The smooth coin flow on two lanes is maintained through the whole inspection process by the perfect interplay of coin feed, separation / alignment unit, and transport incl. turning station. Up to four active eject channels are available for coin sorting according to the inspection results. Due to the certified reject process mixing of defective coins with good quality coins is excluded. COIN INSPECT FLEX generates a detailed job / batch report.

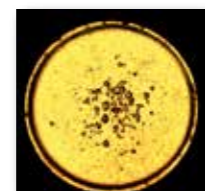
The standardized cassette system enables individual configurations and easy upgrades of the COIN INSPECT FLEX up to its full version which provides:

- Inspection of blanks
- Inspection of coinage
- Color inspection for minted coins
- Inspection of coin edge & coinage
- Determination of diameter & thickness
- Determination of electrical inductivity

The windows-based inspection software has a well-structured graphical user interface and comes with a user administration for access control. The operator is granted easy access to all mechanical parts of the machine. Maintenance and changeover are quick and simple.

We provide our customers with local support – worldwide and without any external partners.

ACCURACY



BLANK

Resolution ratio:
0.030 - 0.035 mm/pixel



COINAGE

Resolution ratio:
0.030 - 0.035 mm/pixel



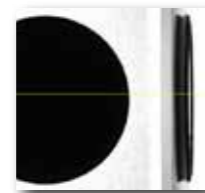
COLOR OF MINTED COINS

Resolution ratio:
0.030 - 0.035 mm/pixel



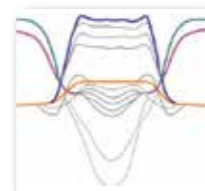
EDGE & COINAGE

Resolution ratio:
0.065 mm/pixel



DIAMETER / THICKNESS

± 0.025 mm / ± 0.040 mm



INDUCTIVITY

Transmissive & reflective

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COIN INSPECT FLEX

MODULAR INSPECTION SOLUTION FOR BLANKS & COINS



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COIN INSPECT FLEX

THE INSPECTION SOLUTION FOR ALL QUALITY ASPECTS OF YOUR COIN

Length of machine: 2,664 mm
 Depth of machine: 700 mm
 Max. depth with hopper & control cabinet: 2,086 mm
 Height with closed doors: 1,910 mm



KEY MODULES

-  Coin feed & coin separation
-  Vision unit: co-axial lighting
-  Vision unit: transmitted light
-  High speed double lane coin transport
-  Vision unit: dark-field lighting
-  EM-Sensor
-  Coin turning unit
-  Vision unit: dome lighting
-  Coin sorting
-  Vision unit: dark-field with mirror



FEATURES & ADVANTAGES



CAPACITY

- Usable for blanks, new coins, & used coins
- Up to 180,000 UPH; up to 3,000 UPM
- Coin diameter: 10.0 - 35.0 mm
- Coin thickness: 0.8 - 4.0 mm
- Coin weight: 1.5 - 30.0 gr.



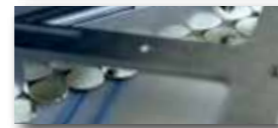
COIN FEED

- Loading hopper capacity: 400 liters
- Vibrating extraction tray with guillotine door
- Continuous feed through additional container
- Output controlled by level sensors



COIN HANDLING

- Separation & alignment unit
- Recirculation of coin overflow to the hopper unit
- Two parallel transport lanes constantly maintained
- Smooth transport on seamless conveyer belts
- No coin jamming between belt & alignment rails
- Sensor system for continuous coin tracking
- Practice approved turning wheel for double-sided inspection
- Easy changeover to new coin type in less than two minutes



SORTING

- Up to 4 active eject channels per lane for detailed sorting (patent pending WO2018050427A1)
- One passive eject channel per lane
- 100% reliable sorting technology
- Good parts are actively removed from the belt
- Output channel as an open interface to local material transport



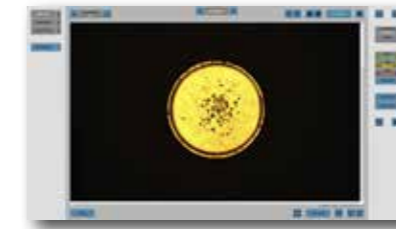
VISION

- Windows based operating system
- Straightforward GUI for easy operation
- Parameters can be copied to other inspection stations
- Different types of job / batch reports available
- User management with different user levels



CONFIGURATION

- Inspection units housed in standardized cassette system
- 7 configurable inspection units for both lanes
- Quick & easy upgrades, retooling, & maintenance



INSPECTION OF BLANKS

- Precise & reliable detection of
 - » Scratches, blisters, stains, dents, rim defects
 - » Half-moons, break ups, cracks
 - » Color deviations, corrosion, partially plated coins
- Bright, long-life, flashable LED co-axial lighting
- Ultra-flat ring lighting for optimal rim illumination
- High resolution color matrix camera



INSPECTION OF COINAGE

- High precision verification of coinage quality
- detection of
 - » Rim defects
 - » Miss striking
 - » Die cracks
 - » Wrong intensity of coinage
- Bright, long-life, flashable LED dark-field lighting
- High-resolution monochrome matrix camera



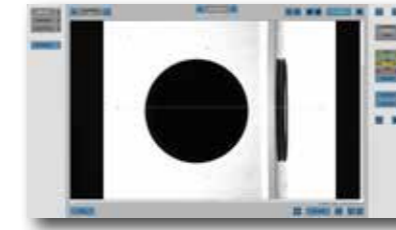
COLOR INSPECTION FOR MINTED COINS

- High-precision detection of color variations on minted coins
 - » Stains
 - » Dirt
 - » Corrosion
- Bright, long-life, flashable LED dome lighting
- High-resolution color matrix camera



INSPECTION OF COIN EDGE & COINAGE

- High-precision inspection of coinage & coin edge in top view
 - » Deformation
 - » Edge defects
 - » Coinage defects
- Bright, long-life, dark-field LED lighting
- Mirror optic for edge inspection on the belt
- High-resolution monochrome matrix camera



DETERMINATION OF DIAMETER & THICKNESS

- Camera-prism technology for precise determination of coin diameter & thickness on the belt
- Determination of rim thickness
- Diameter verified at various measurement points



DETERMINATION OF ELECTRICAL INDUCTIVITY

- Determination of material structure
- Contactless sensor
- Several frequencies
- Transmissive & reflective

