

Inside : The Process Control in the Medtech & Biotech Industry



Machine vision in Medtech & Biotech industry

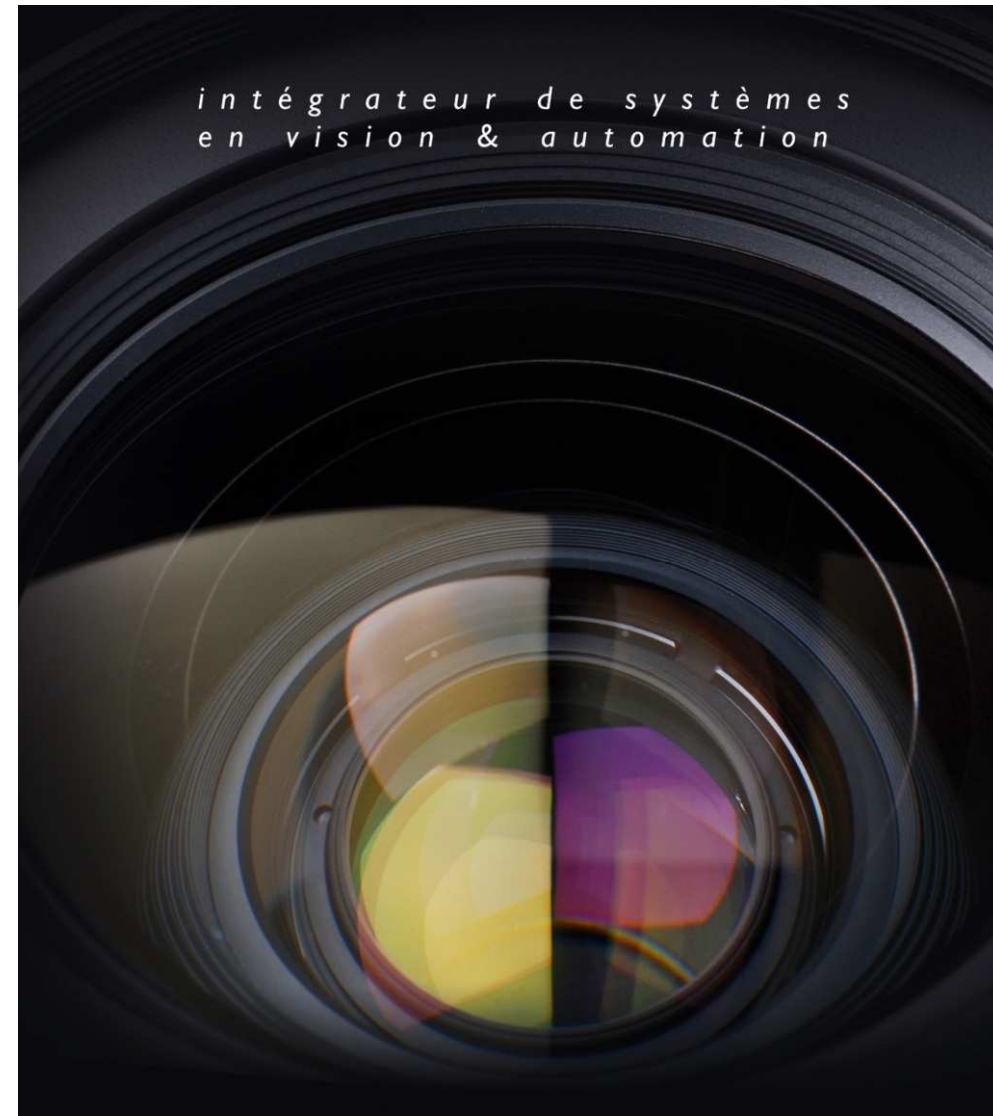
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Why using Machine Vision in Medtech & Biotech industry

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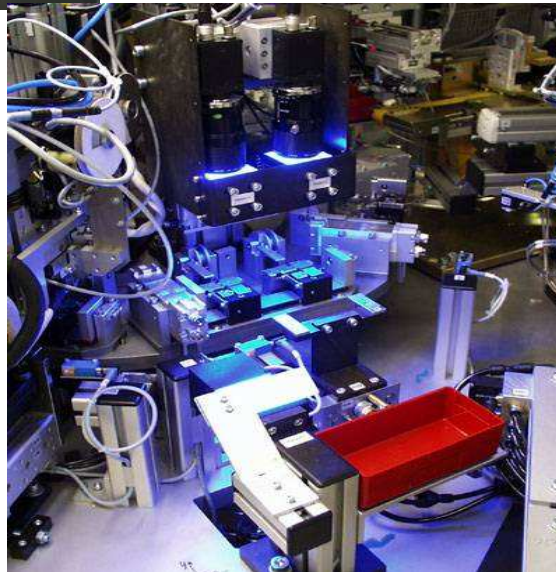
Why using vision in medical industry

- Improve quality
 - No human interpretation
 - More resolution
 - Control without contact
 - 100% control
- Improve productivity
 - Automatic control during the process
 - Faster control
- Improve traceability
 - High density code reading (datamatrix, ...)
 - Data and image logging

What are the applications for machine vision

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Robot guidance



BATTERIE POSIT Batteriepositionierungsoftware

PRODUKTION

STOP

HANDBETRIEB

Bild: Normal

Ausser Toleranz Fehler

Kontakthwinkel		
Ist-Wert	Soll-Wert	Toleranz
99.70	0.00	2.00

Kontaktbreite		
Ist-Wert	Soll-Wert	Toleranz
3.48	3.50	0.50

Radius		
Ist-Wert	Soll-Wert	Toleranz
4.62	4.60	0.51

Batterie		Offset		Fehlermeldungen	
Winkel	Center	Winkel	Center	Warte für Start	
24.22	x y	32.78	x y		
	13.15 9.33		5.33 -0.62		

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FLEX POSIT Flex Positionierungsoftware

PRODUKTION

STOP

HANDBETRIEB

Bild: Kamera 1

Im Toleranz Fehler

Offset Flex auf dem Greifer		
Winkel	Center	
0.13	x p	
	0.21	0.71

Offset Träger im Greifer Koordinaten		
Winkel	Center	
0.00	x p	
	0.00	0.00

Offset PCB im Greifer Koordinaten		
Winkel	Center	
4.60	x p	
	-0.03	0.41

Offset im Träger Koordinaten		
Winkel	Center	
0.13	x p	
	0.25	0.31

Offset Greifer		
Winkel	Center	
0.13	x p	
	0.39	0.05

Ueberdeckungsprofil

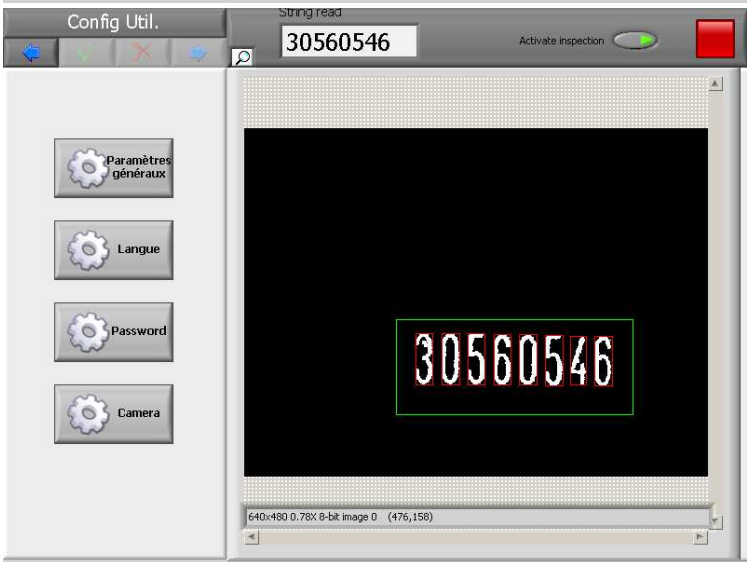
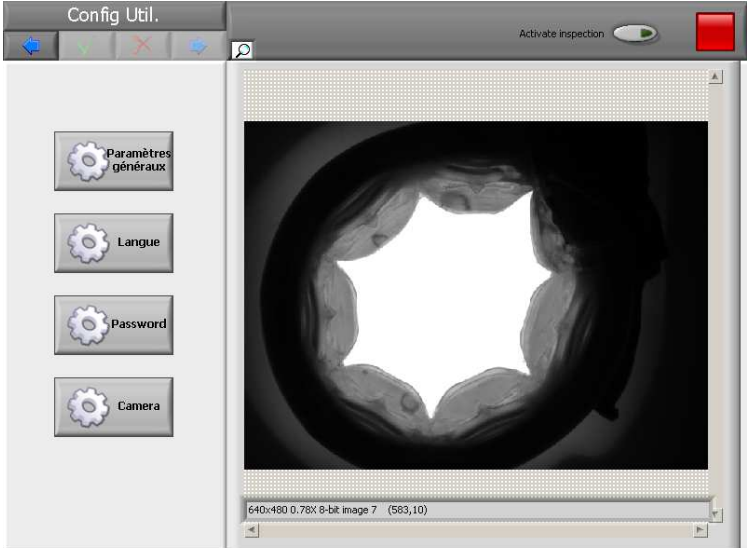
	0.44	0.43	0.42
ist	0.44	0.40	0.40

Fehlermeldungen

Warte für Start

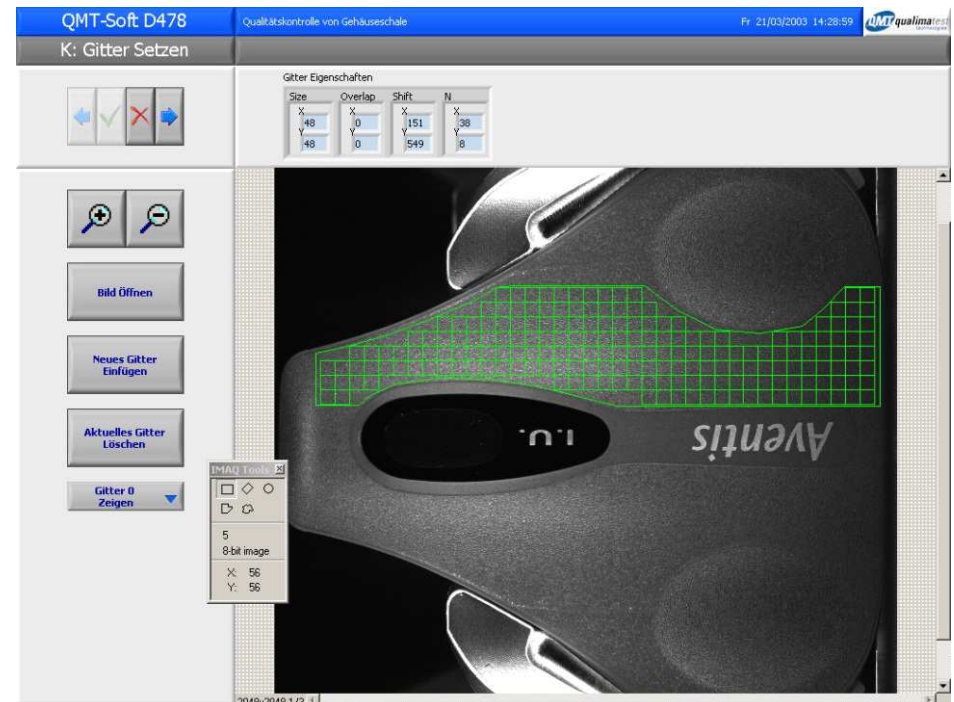
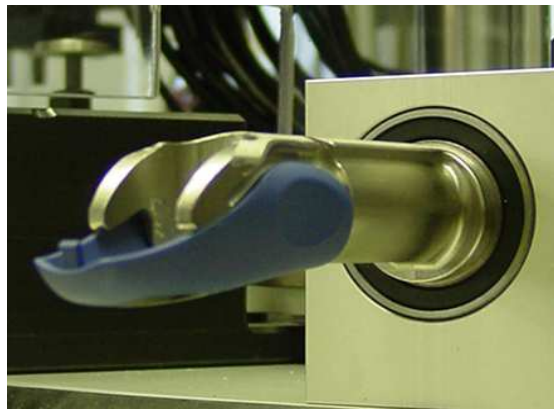
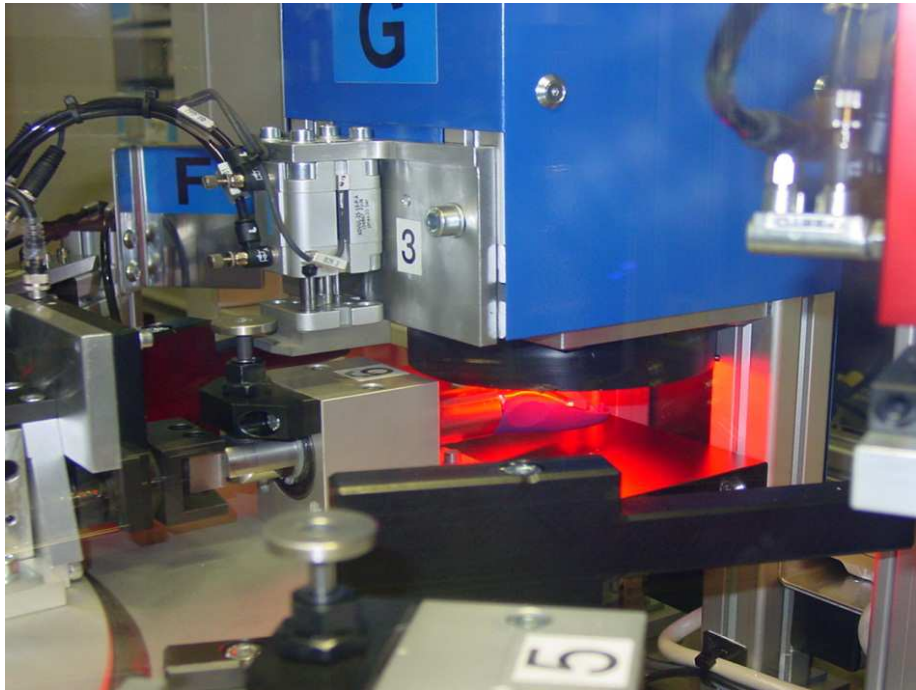
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Device functional test




Esthetical quality control



Replacing subjective and human analyses



Marking quality and traceability

TEXT KONTROLLE Software für die Text-Kontrolle 

PRODUKTION

Fehlermeldungen
Warte für Start

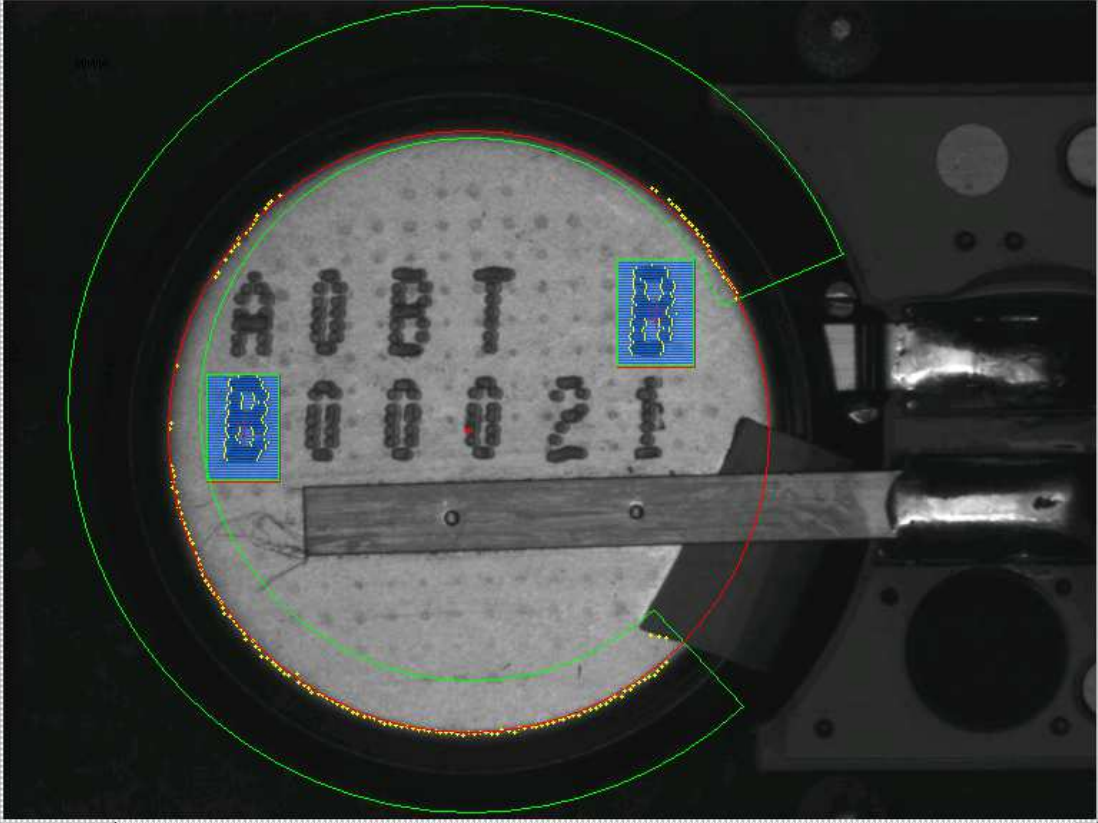
Ausser Toleranz Fehler

Unten Links

Score	Minimum
884.08	700.00
Verwischt-Ratio	Minimum
0.76	0.50
Erkannte schrift	
B Links	
Offset	Maximum
6.05	70

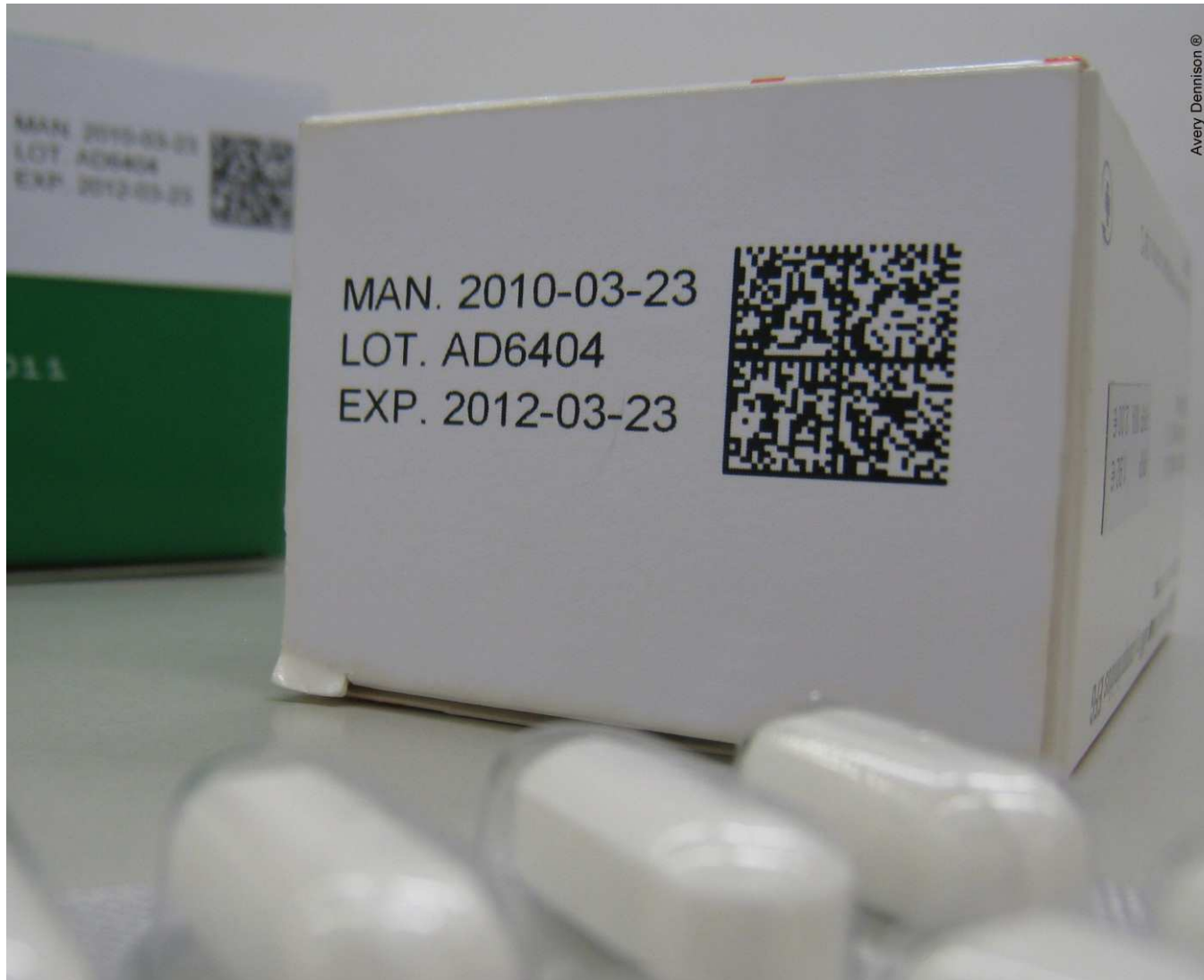
Oben Recht

Score	Minimum
826.05	700.00
Verwischt-Ratio	Minimum
0.76	0.50
Erkannte schrift 2	
B Recht	
Offset	Maximum
5.85	70

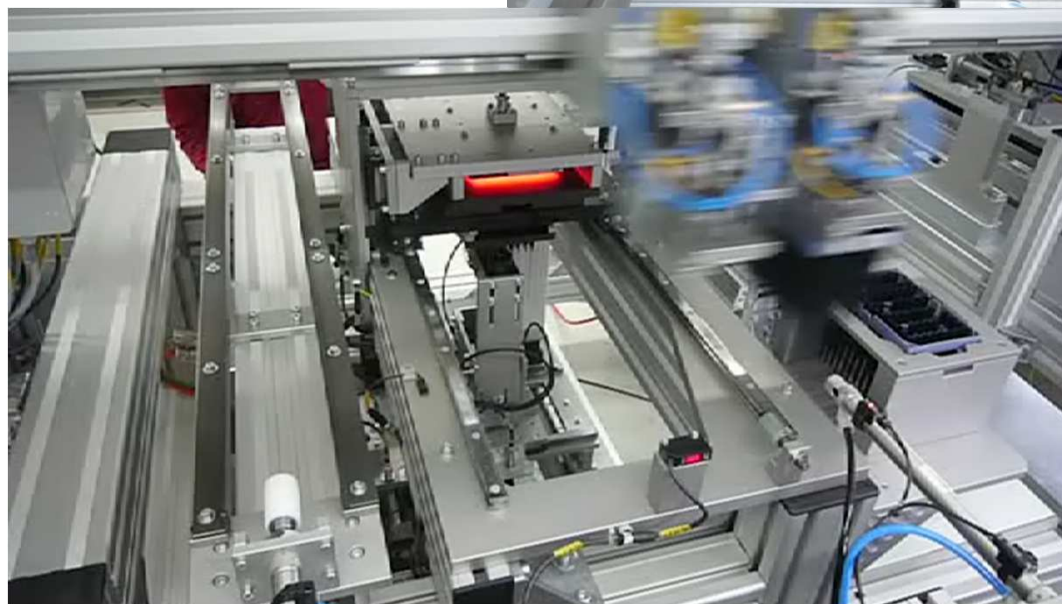
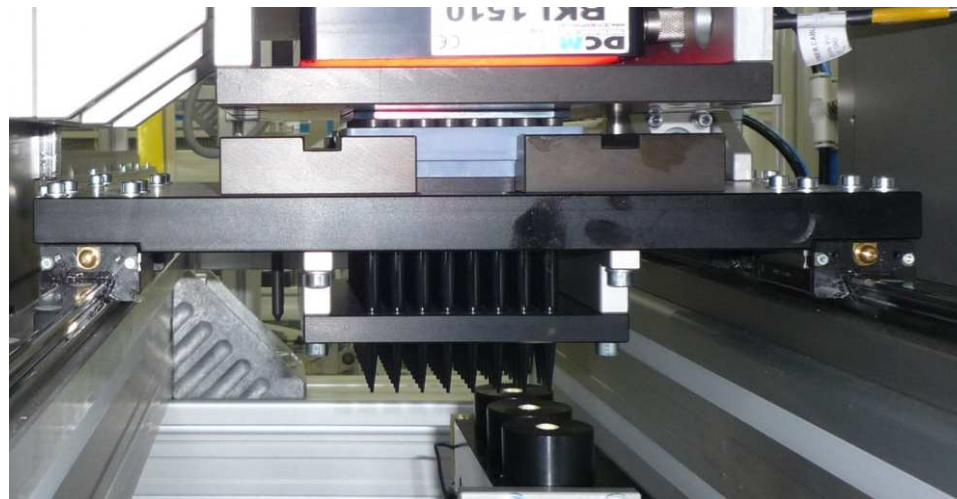


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Code reading and / or verification



Geometry and burrs detection



Accuracy and Precision

Unsurpassed Accuracy and Precision, Guaranteed

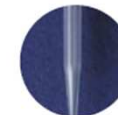
Guaranteed accuracy and precision are a function of both pipette and tip performance. Based on Hamilton SoftGrip™ pipette delivers the best overall accuracy and precision versus any other pipette. Hamilton AdvanTip™ Precision Pipette Tips create a liquid handling system designed for optimal performance, getting the Hamilton accuracy and precision advantage by using only Hamilton AdvanTip Precision Pipette Tips.

Hamilton SoftTouch™ electronic pipettes offer the highest level of accuracy and precision by maintaining consistency from one user to the next. The self-calibrating, microcomputer-controlled pipette automatically performs the blowout step based on the selected program. User-to-user variability is eliminated. Hamilton AdvanTip Precision Pipette Tips are recommended for use with SoftTouch electronic pipettes.

High Quality Tips for High Performance

There are several key pipette tip features that are critical to accuracy and precision. Hamilton AdvanTip Precision Pipette Tips are manufactured to the exacting standards required to meet accuracy and precision specifications.

Critical Features for Pipette Tips



Clean Hydroscopic Surfaces

Hamilton tips are made from chemically resistant, virgin polypropylene to ensure excellent clarity and smooth surfaces.



Absence of Flash (plastic burrs)

The presence of flash can severely diminish accuracy and precision, particularly at the tip orifice. Hamilton prevents flash with stringent specifications and tolerances for our precision tooling.



Consistent Geometry and Dimension

Uniform orifice geometry gives consistent drop size and less liquid retention. The tip cone geometry and dimensions are designed for a perfect fit.

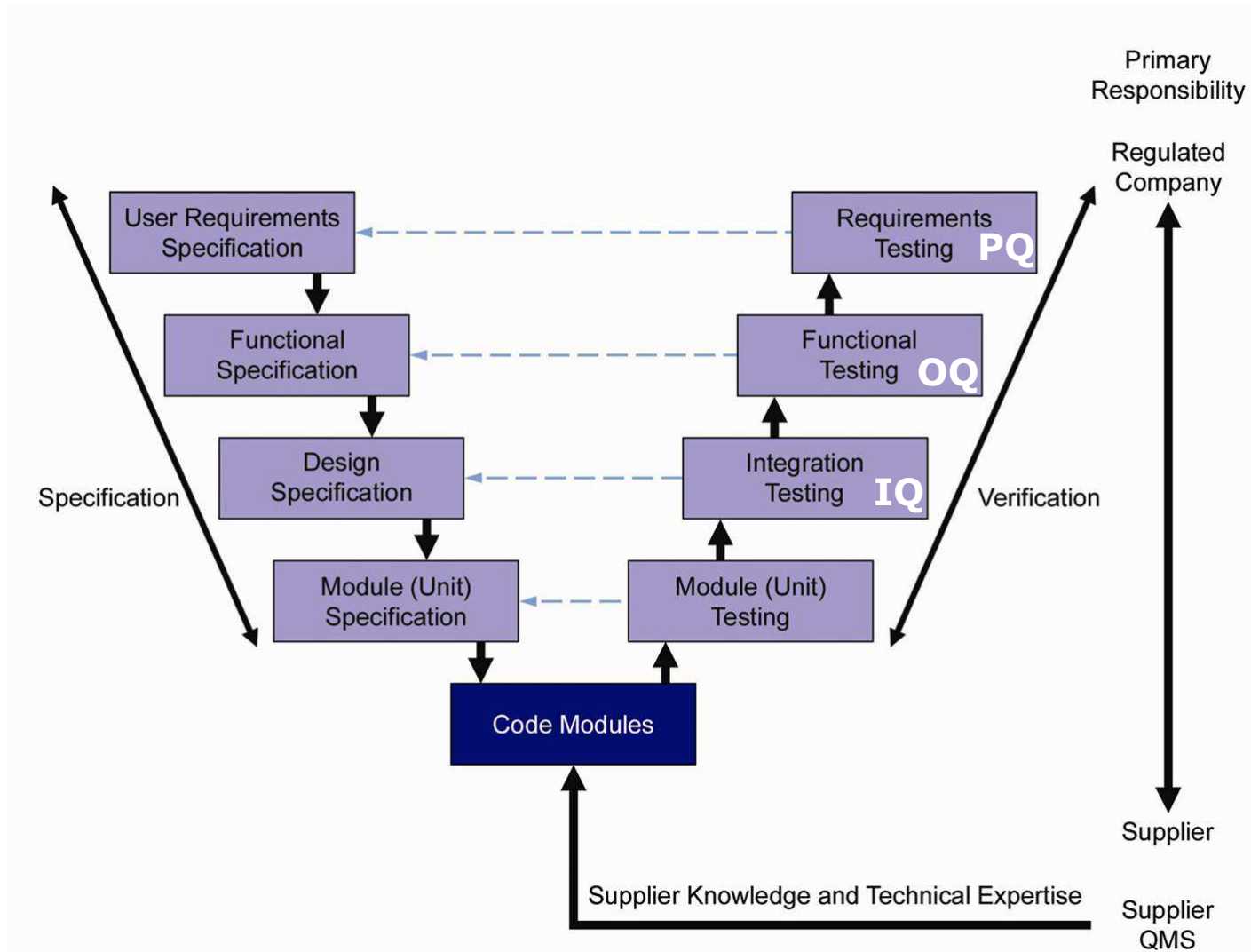
The Difference is in the Quality

There can be tremendous differences in various pipette tips on the market that can affect the quality of precise fluid measurement. Using Hamilton AdvanTip Precision Pipette Tips guarantees maximum accuracy and precision performance.

What are the specific challenges in Medtech & Biotech industry

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Project management and system validation according to GAMP5



Constraints, rules and regulations

- System documentation
- Traceability and monitoring of modifications
 - User management and security
 - Events logging
 - According to CFR 21, part 11
- Cleanroom constraints
 - System cleaning
 - Specific materials to used

What are the trends in machine vision technology







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What are the technology trends in machine vision

- More solutions in new applications
 - 2D½ and 3D Vision
 - Texture control, esthetical control, Golden template
- More performances
 - Cameras with smaller form factor, more speed and more resolution
 - Standard bus (USB3) and high throughput specific bus (HSLink, 6 GB/sec)
 - High power LED's
 - More choice in specific lenses : telecentric, pericentric, ...
- Ease of use
 - Configurable softwares with high level functions
 - Dedicated systems : datamatrix reader, ...

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-  fr.slideshare.net/QMTMeissner

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