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Light Based Measurement for Light Weight Cans

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Brief History of the Beverage Can

- First aluminum cans marketed in 1958
- Very slow production process
(3600pcs per hour = 60 cpm)
- Very thick base (0.03")
- Only 7 oz. can

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Brief History of the Beverage Can

- Alcoa introduced its Featherlite Can in 1970, 20% lighter than the average aluminum can
- 2013 Ultra Light Cans, a 330ml aluminum can body weights ~9.45g

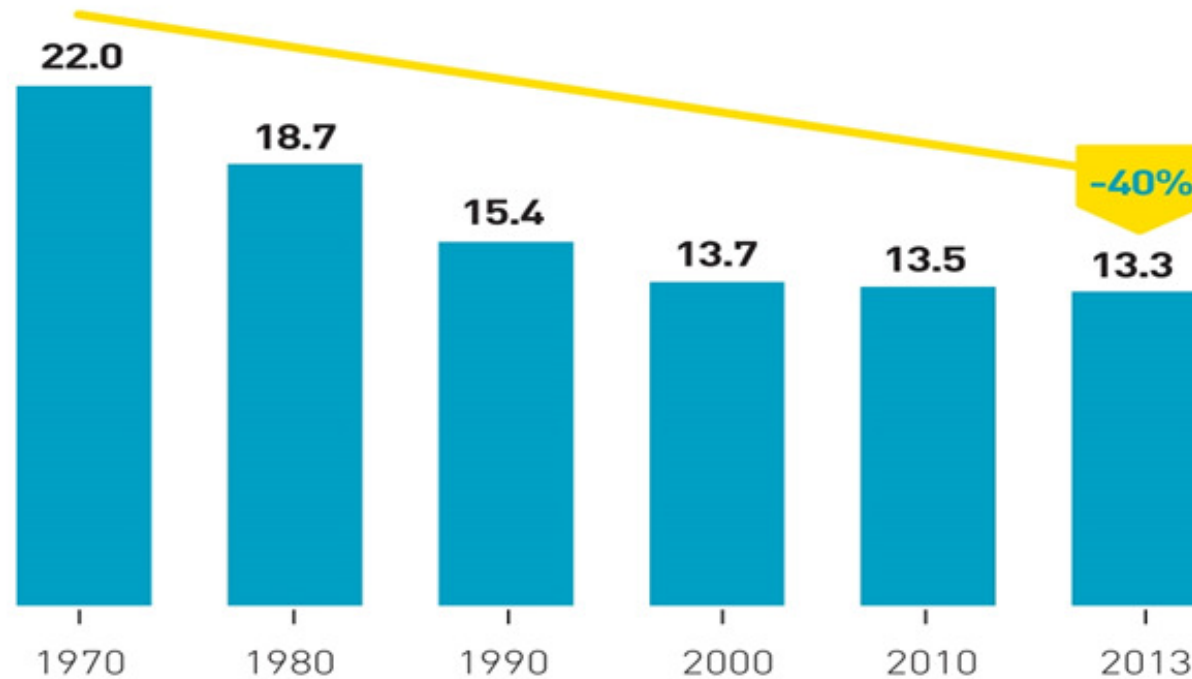
Lightweighting still continues....

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The Future is Lighter

AVERAGE WEIGHT 12-OUNCE CAN AND END (U.S.)
(grams)



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Lightweighting means... (also called downgauging)

- Reduced costs
- Reduced energy use and emissions (CO₂)
- Lightest metal containers possible while meeting the performance requirements of customers and consumers.

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Alternative Ways of Lightweighting

- Reducing the size of can lids
- Narrow the can body (reduce the can body diameter)
- Can body tapered at the top
- Thinner can body

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Lower Weights Need

- Tighter specifications / tolerances
- Improved process capability (Cpk)
- Better measurement (Gauge R&R)
- More attributes controlled

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Gauge Capability

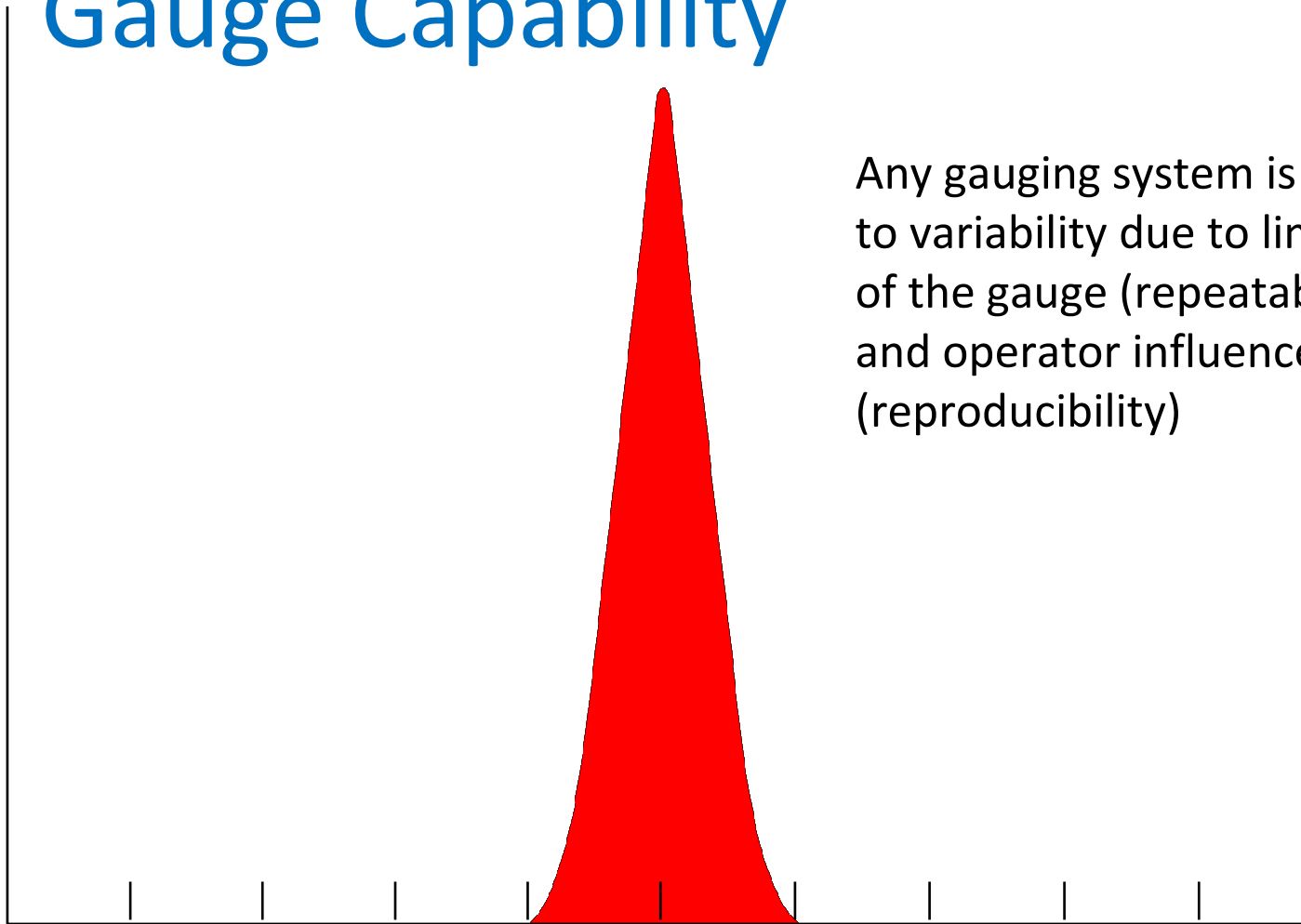
- Measured using statistical methods as Reproducibility and Repeatability and known as Gauge R&R
- “Gauge R&R ... measures the amount of variation in the measurement system arising from the measurement device and the people taking the measurement.”

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Gauge Capability

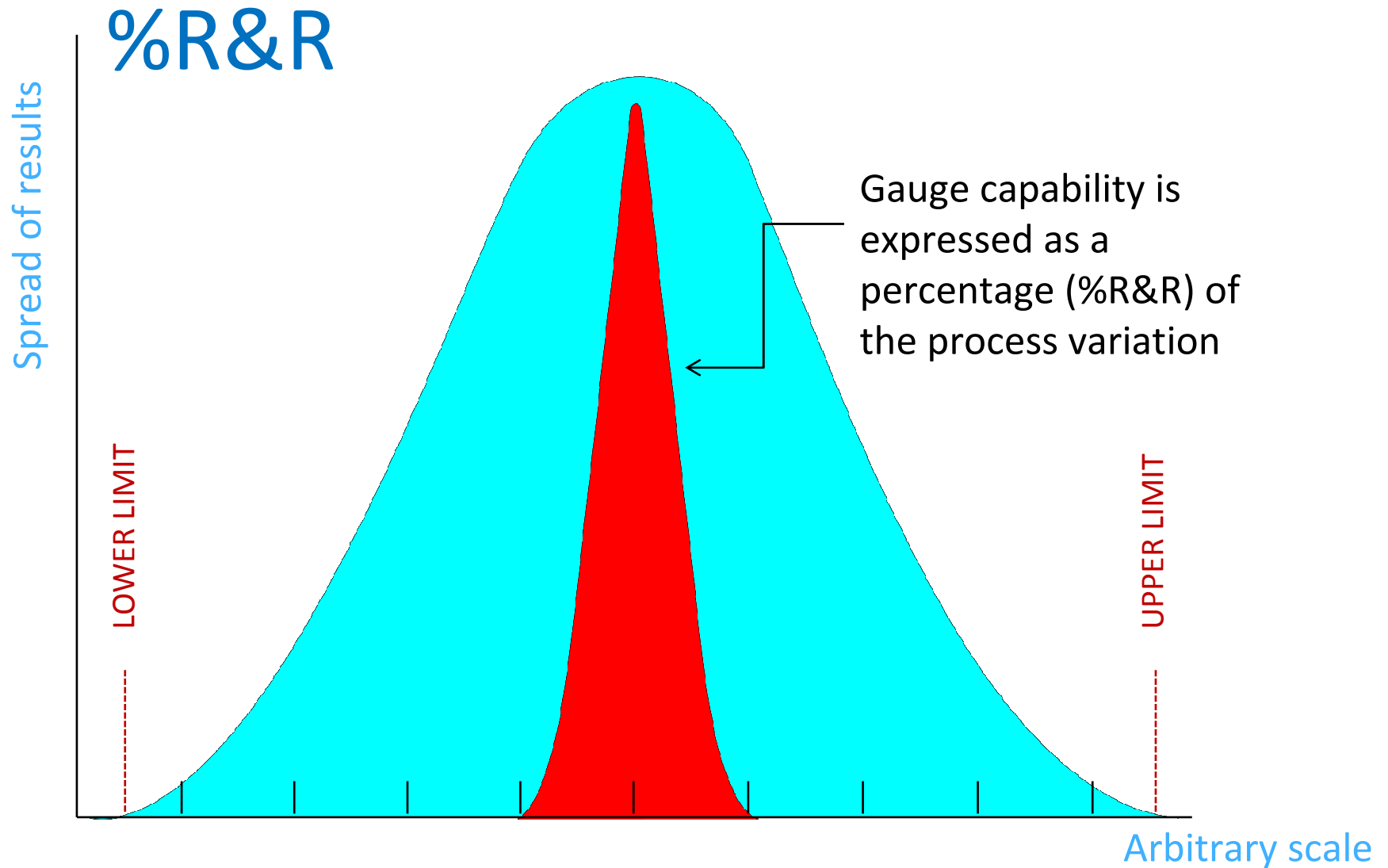
Spread of results



Any gauging system is subject to variability due to limitations of the gauge (repeatability) and operator influence (reproducibility)

Arbitrary scale

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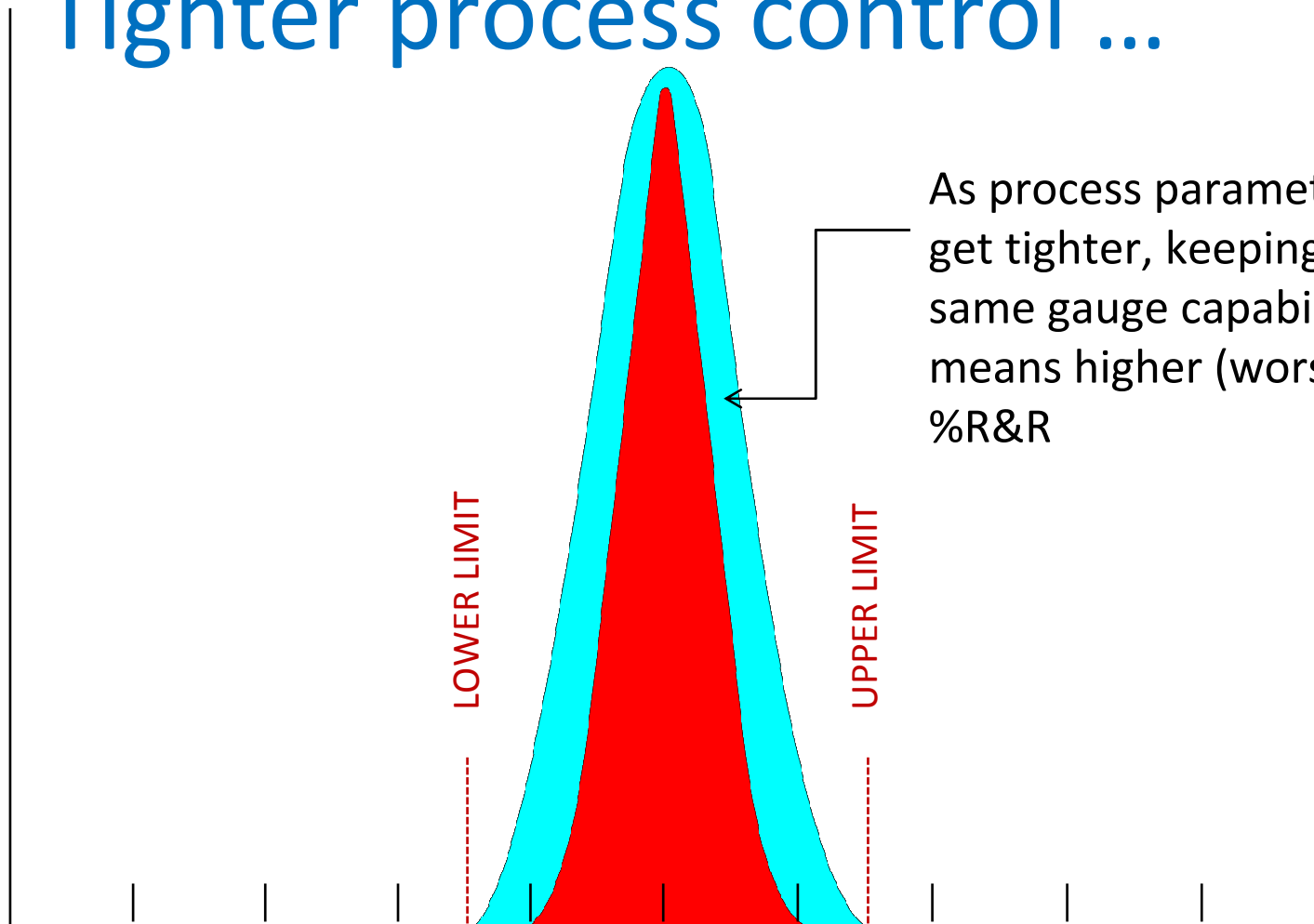


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Tighter process control ...

Spread of results



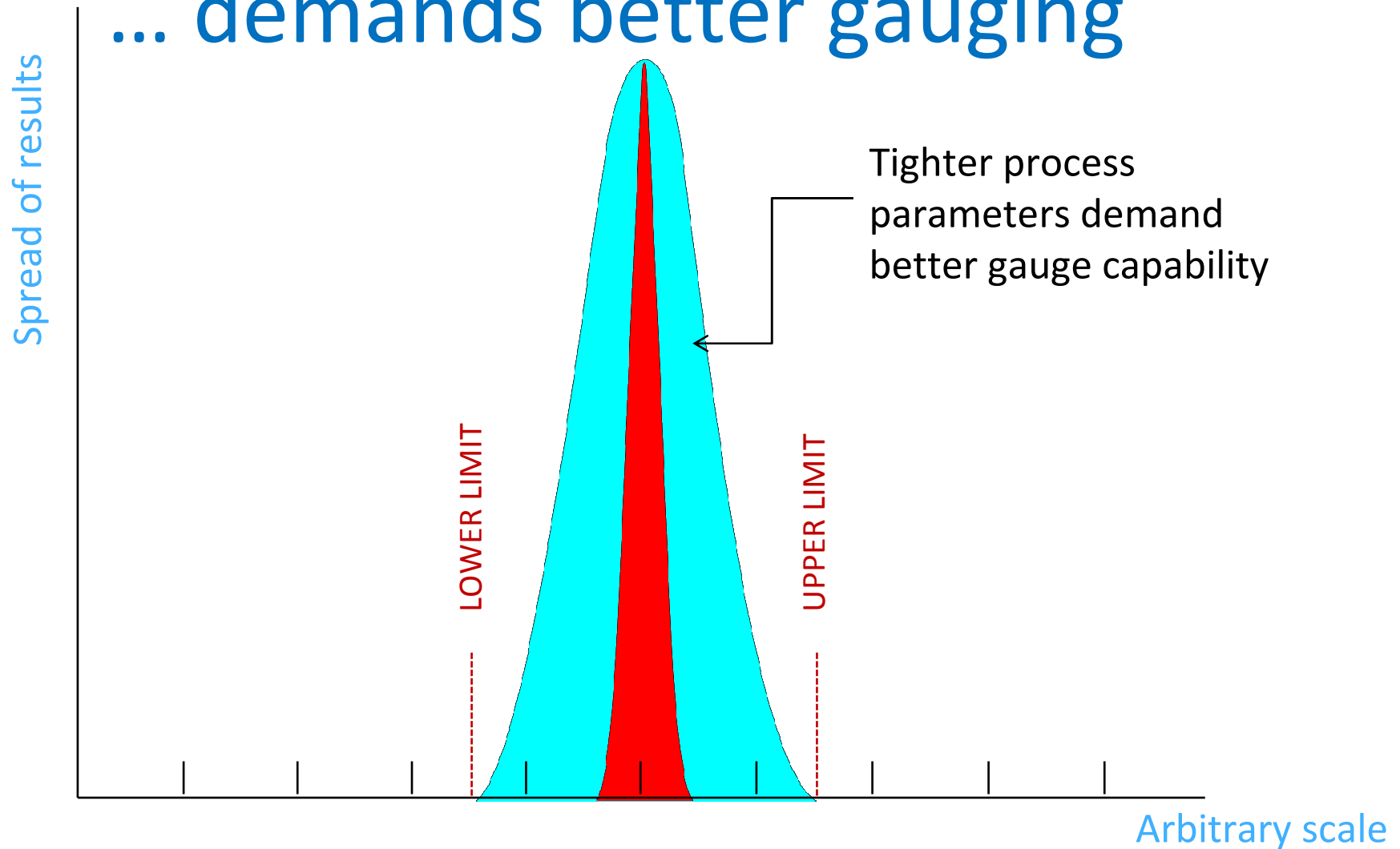
As process parameters get tighter, keeping the same gauge capability means higher (worse) %R&R

Arbitrary scale

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... demands better gauging



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Eliminate Drift & Deterioration

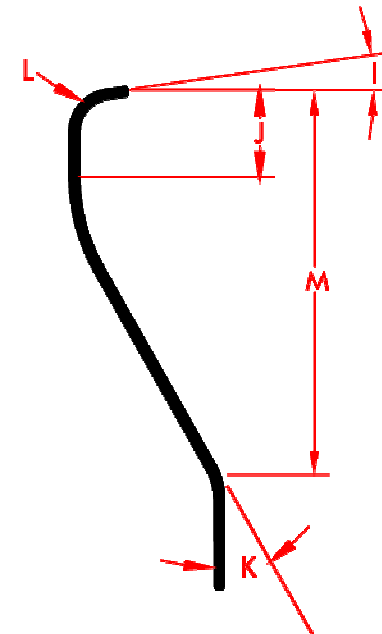
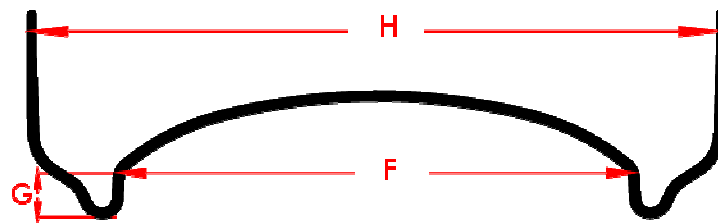
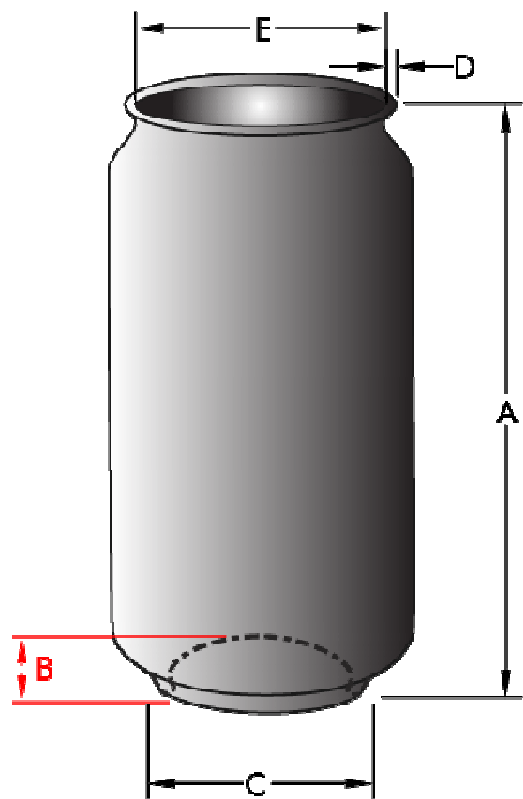
Non contact optical gauging means:

- No wear
- No deformation of the can
- No contamination of slides or transducers
- Nothing to adjust
- No change parts
- No maintenance (almost)

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Measure What's Needed



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Proven Reliability

- Optical Ends gauges
– June 2001

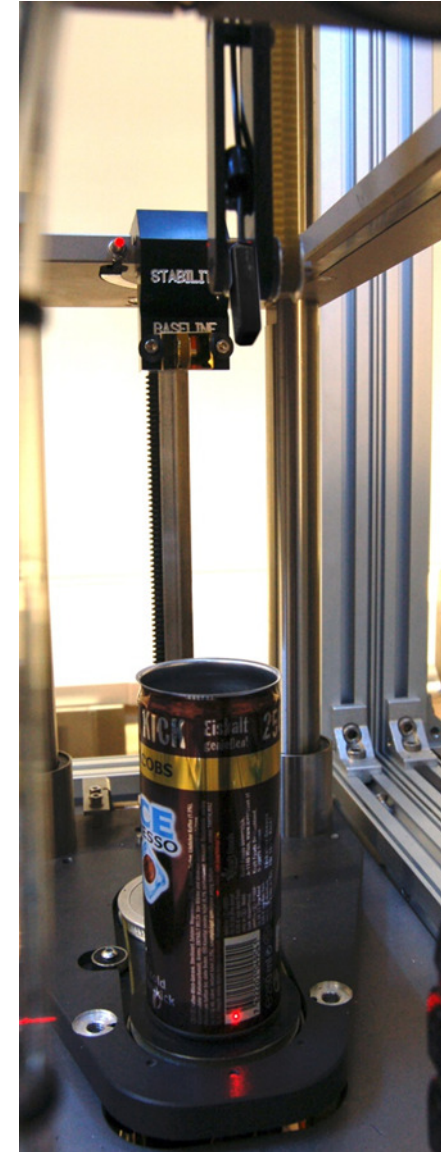


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Proven Reliability

- Optical Coatings Gauges
– Sept 2012

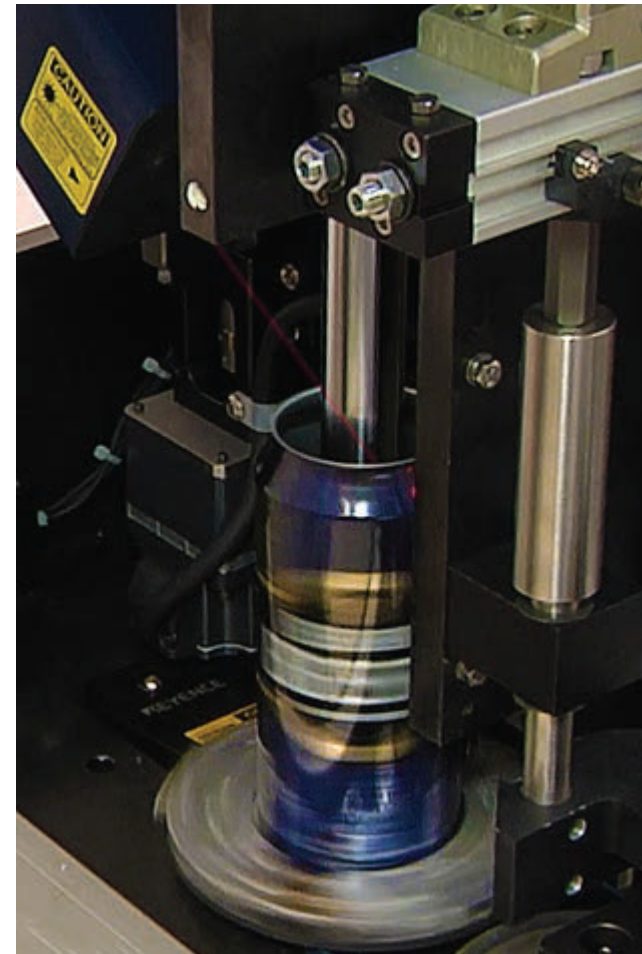


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Proven Reliability

- Optical Can Gauges
- March 2013
- Optical Shell Gauge
– October 2014!



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Trusted Sencon Support

- Dedicated to can making for 37 years
- Trusted products that always work
- Supported from America, Europe and Asia
- The safest investment choice

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Summary

- Quality cans need good gauges
- Lighter cans need even better gauges
- Optical technology makes gauges great
- Optical technology brings lowest costs
- For a safe investment – talk to Sencon

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Thanks!