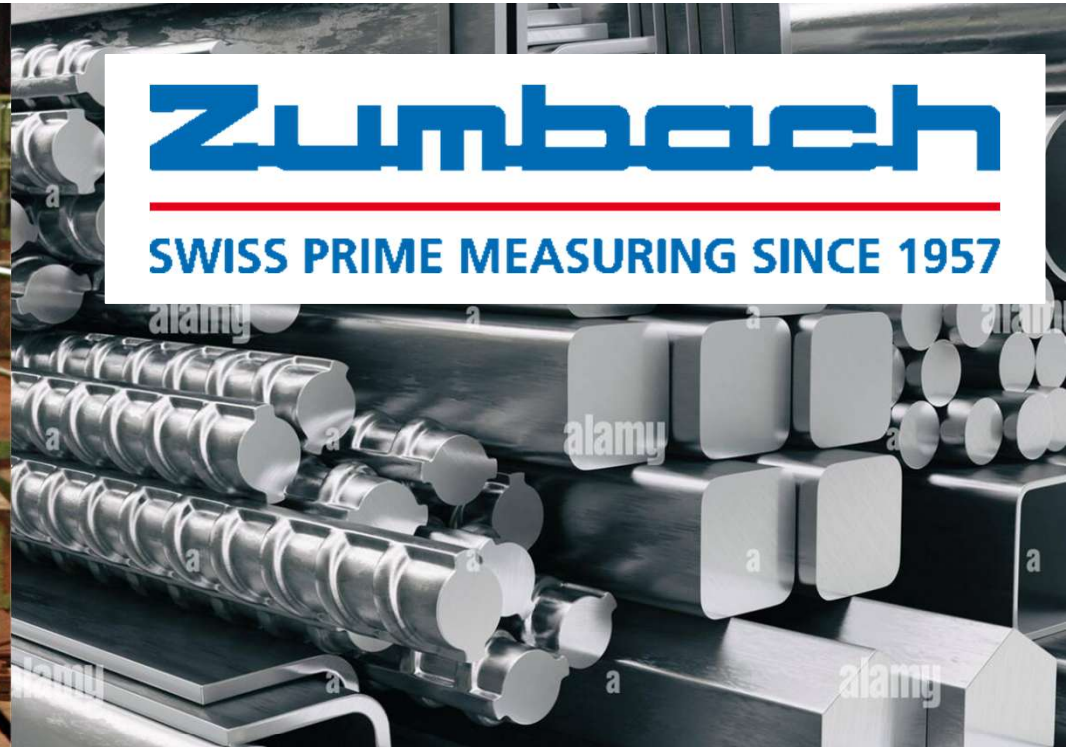


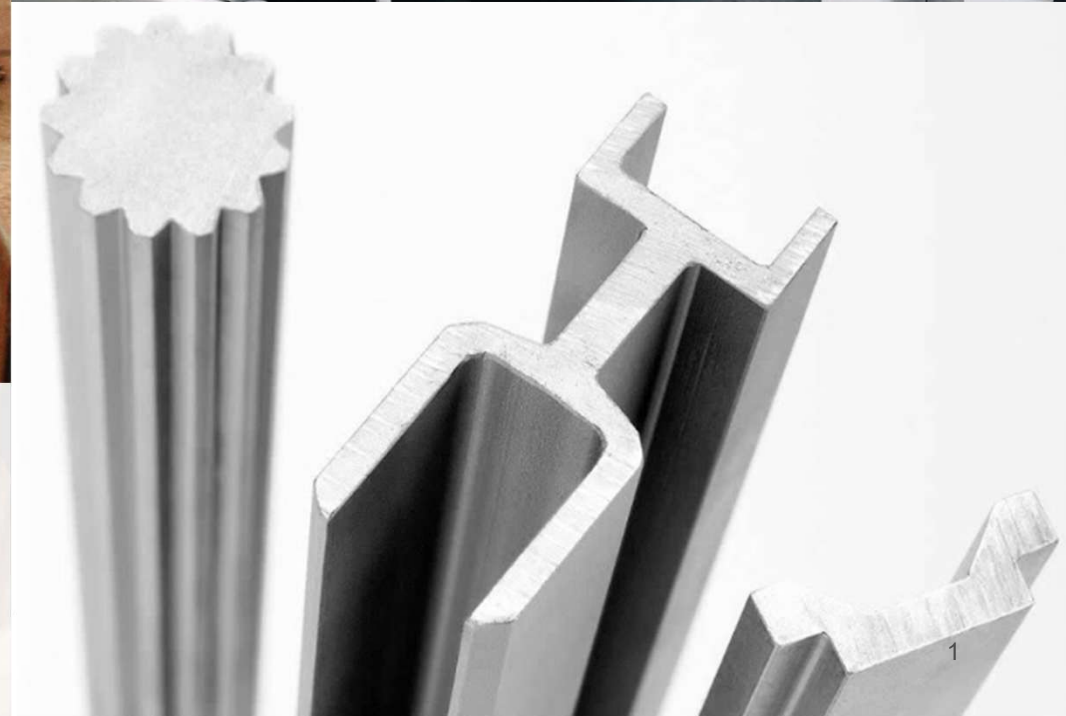


**Steel ; Metal
Hot & Cold – ODAC**



Zumbach

SWISS PRIME MEASURING SINCE 1957



IWCC Legal Disclaimer

The purpose of this presentation is to guide programs benefiting the copper industry and to provide attendees with information to make independent business decisions.

Agenda

Introductions

Zumbach Electronics Corp. overview

Measurement & Control Technologies

- Systems overview
- ODAC Technology
- Quality Impact
- Cost Savings Value

Presented by :

Kirk Stoker

Regional Sales Manager

Zumbach Electronics Corp.
140 Kisco Ave, Mt Kisco, NY
10549, USA

Cell: (914) 847-6637

Email: kstoker@zumbach.com

Headquarters



Main headquarters in Orpund, Switzerland





North American headquarters in Mount Kisco NY

Worldwide Customer Service

Always Close To You Wherever You Are



-  ZUMBACH Group
-  ZUMBACH Agencies

Zumbach structure - Americas

- Strategic Location for 2 continents



North American Headquarters Zumbach Electronics Corp.

140 Kisco Avenue
Mount Kisco NY 10549-1407

- Served the U.S. market since 1970
- 16,500-square-foot facility in Mount Kisco, New York.
- The U.S. division serves as the hub for the Americas for:
 - Sales
 - Service
 - Manufacturing
 - R&D for customer specific applications and needs with central R&D in Switzerland.

Our Strengths

Technology that pays off



Bespoke client solutions

- Wide range of technologies
- Robust, high quality products

Partnership that pays off



Dedicated team of professionals

- Service network
- Customer-orientation
- Local market presence

Results that pays off



Sustainable cost-efficiency

- Favourable price-to-performance ratio
- Optimal return on investment (ROI)

ODAC[®]

Laser measuring device for measuring diameter, ovality, roundness, width and height of round products and profiles

ODAC

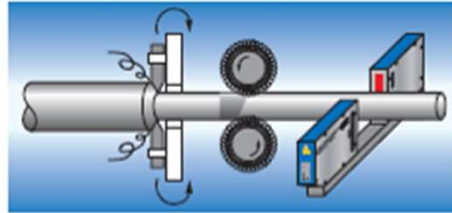
Non-Contact In-Line Application

**Over
100,000
units sold**

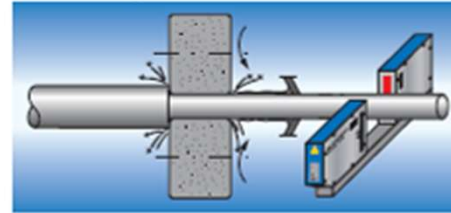


Cold Processes applications

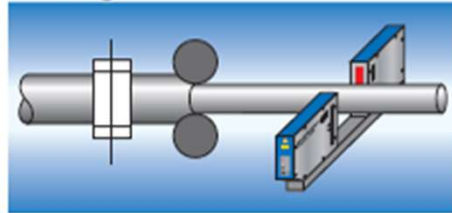
Peeling / Polishing



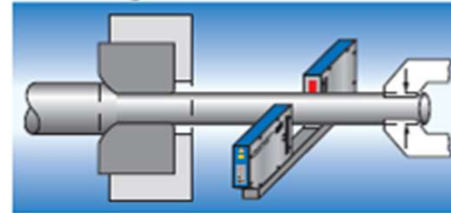
Grinding



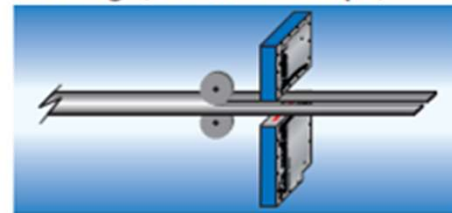
Rolling



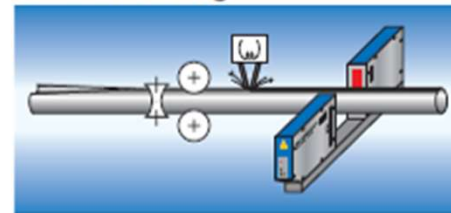
Drawing



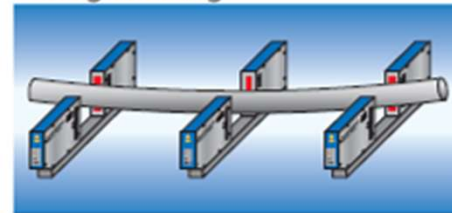
Slitting (width of strips)



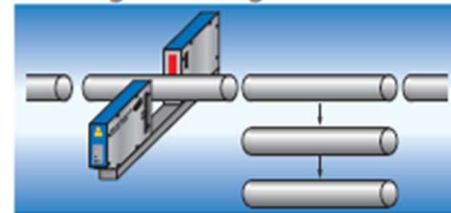
Tube Welding



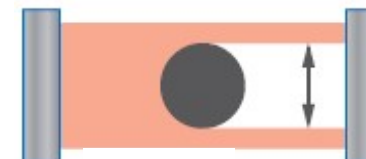
Straightening

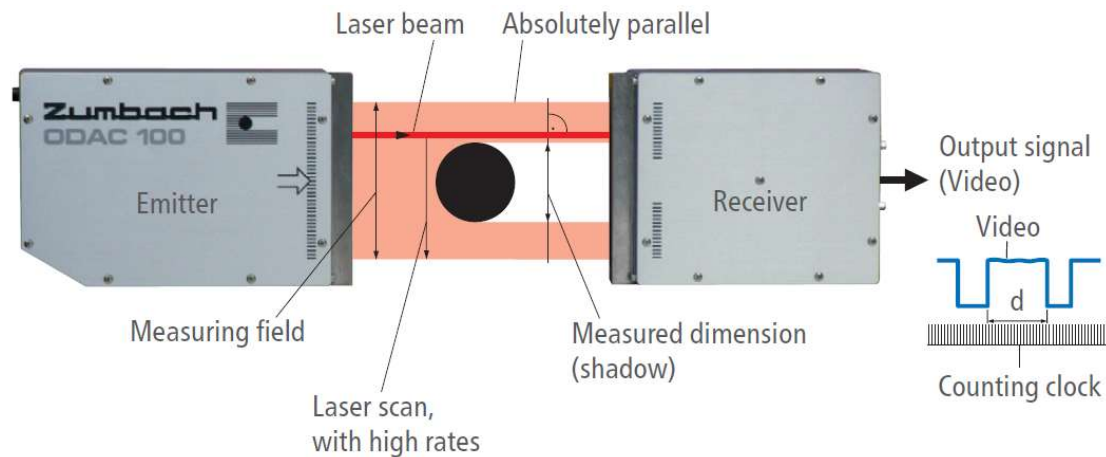


Testing / Sorting



Target:	Outer diameter (dimension), ovality and position
Applications:	Cable extrusion, Fibre drawing, Wire drawing, Tube and Pipe extrusion, Medical tube extrusion, Rubber hose extrusion, Steel & Metal and Glass manufacturing
Technology:	Laser Light/Shadow measuring principle
Diameter range:	0.012mm up to approx. 520mm
No. of measuring axes:	1, 2 or 3
Measuring frequency:	up to 3000 Scans/s
Accuracy:	Repeatability (3 σ): up to +/- 0.00004mm
Communication:	Profibus DP & Profinet IO Ethernet TCP/IP or Ethernet IP Serial RS 232/422/485 Analogue (option) Zumbach J communication
Special features:	Measurement of transparent objects Embedded lump and neckdown detector (KW function)





Measurement

- Very high accuracy (parallel/linear)
- High immunity to dirt
- Immune to ambient light variations
- High immunity to vertical and horizontal movements

1-, 2- and 3-Axis Heads

1 Axis



2 Axis

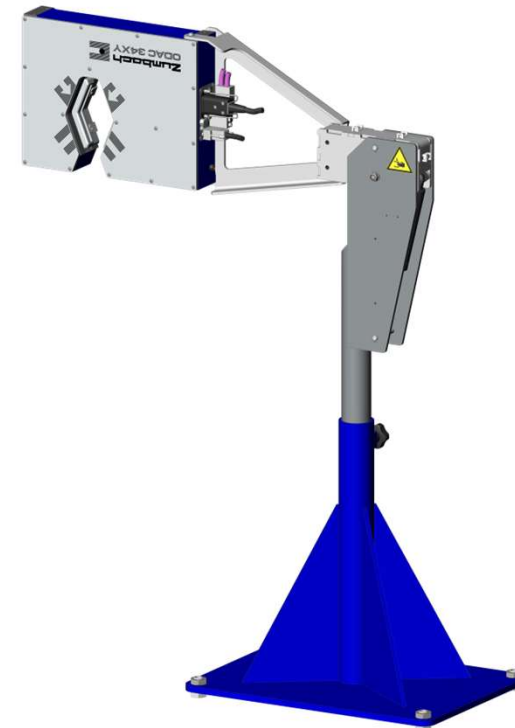


3 Axis



New Swivel floor stands

- Allows the heads to be moved up
- Simple removal out of the production line



ODAC[®] – Type Range

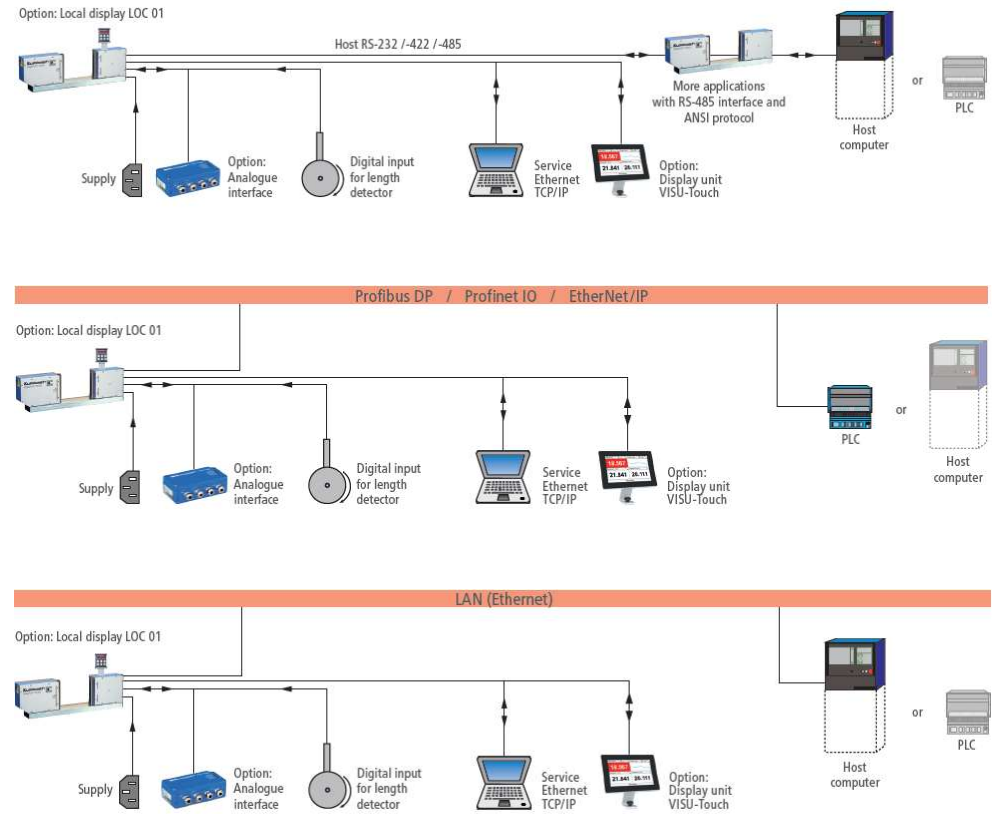
ODAC[®] laser gauges with J communication:

ODAC[®] 100Jxx with the corresponding external ZUMBACH processors



USYS processor and data acquisition systems offers tolerance survey, line control functions and statistical reportings.

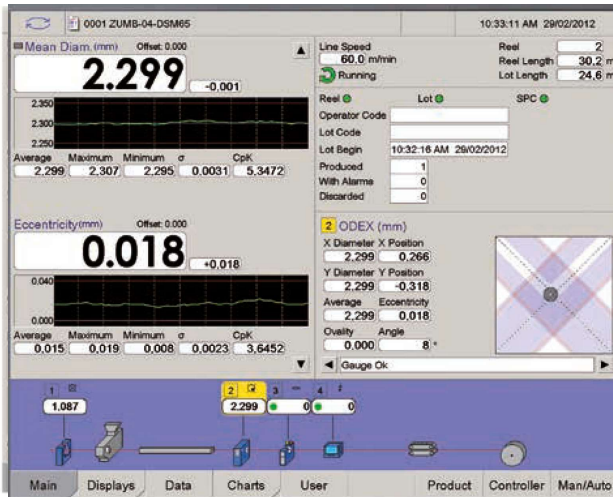
ODAC[®] laser gauges with embedded processor:



Today available:

EN-DP (Profibus), EN-PN (Profinet),
EN-EN (Ethernet TCP/IP),
EN-EI (Ethernet IP), EN-RS

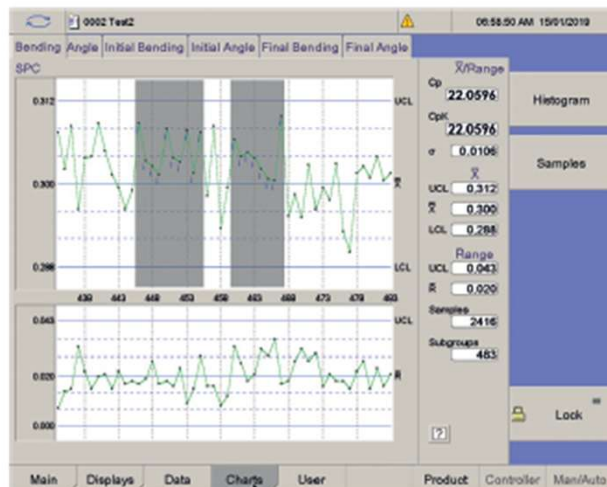
USYS - Self-Explanatory Screens



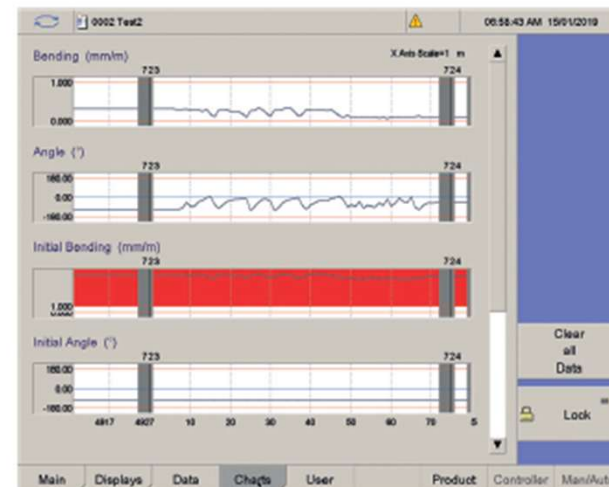
Main display



Display in numeric and graphical form



SPC charts and statistics



Strip charts

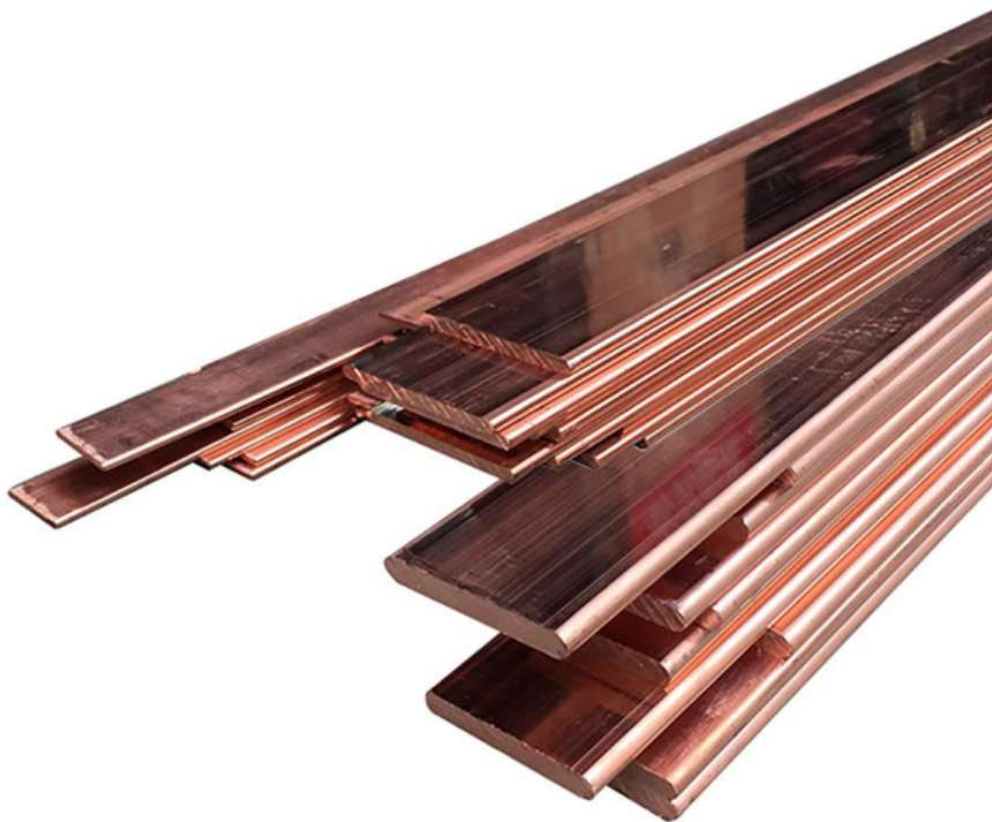


- This universal PoE (Power over Ethernet) powered touch screen enables display of the integrated web interface of the connected ZUMBACH sensor device, such as an ODAC.
- **VISU-Touch can be directly connected via Ethernet RJ45 to the Ethernet Service port on the Scanner.**

Advantages / Features:

- Hot pluggable with just 1 standard Ethernet cable
- Up to 6 display characteristics – User definable
- Set point and tolerance inputs with color variation for fast indication of in or out of specification
- Built in terminal for extended device configuration
- Can be used as localized display or remote networked display
- Base IP address can be re-configured to suit customized applications such as remote display within factory network
- Flexible use, compatible to all sensor devices without software/hardware adaptation

Round and Flat Copper





DVW / DVO - Oscillating
Height / Width Measurement

Where are you Measuring?



- 1. Throw a few wraps off, cut a sample.**
- 2. How fast is the line going at transfer?**
- 3. Are the tensions the same at slower speeds?**
- 4. What is the OD throughout the spool?**

1. Human Error 2. Human Nature



- 1. 14 Gauge Copper 0.0641”**
- 2. 1% heavy – 0.0644”**
- 3. 40,000 ft. spool 550lbs**
- 4. Cost of Copper \$4.57/lb**
- 5. 180 Spools per day**
- 6. 1% cost per day - \$4,524**

2 ODAC® 550J

Measurement of multiple strips, Böhler-Uddeholm, Austria



2 ODAC® 550J *cont.*

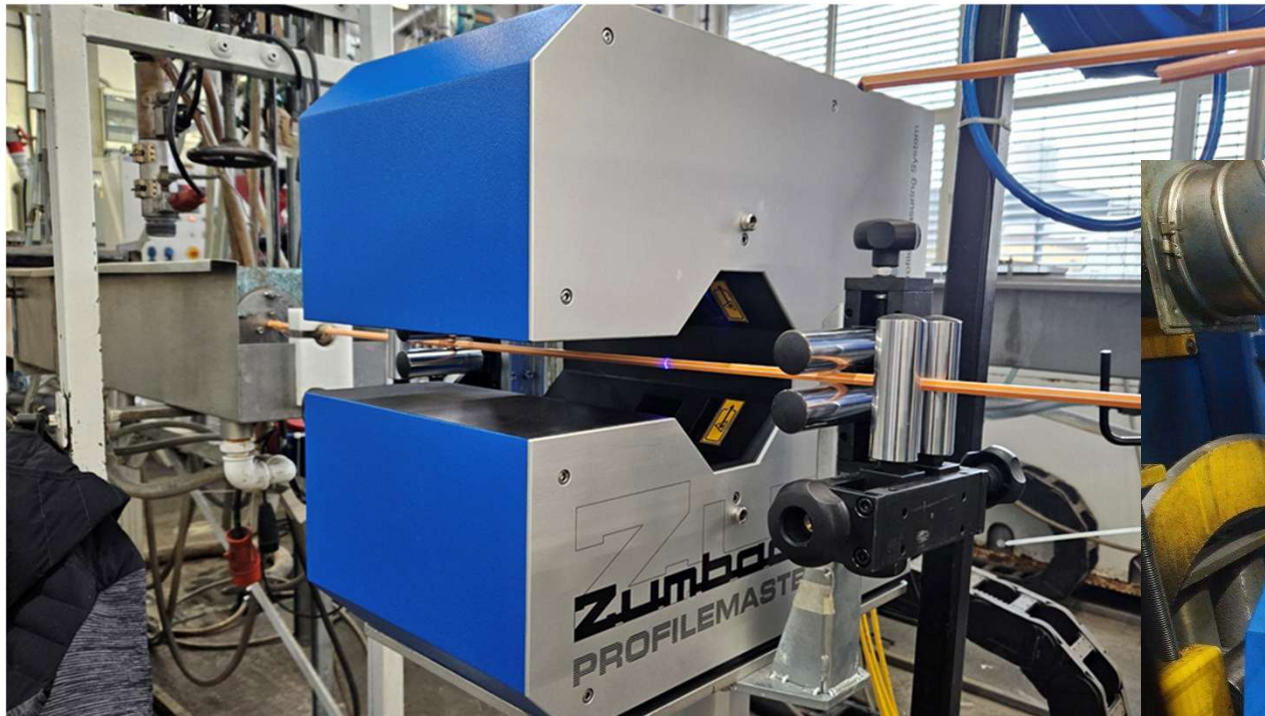
Measurement of multiple strips, Böhler-Uddeholm, Austria



ECOGAUGE - Hot Application

Diameter Measurement of Billets for Seamless Pipe





Zumbach

SWISS PRIME MEASURING SINCE 1957

Thank you