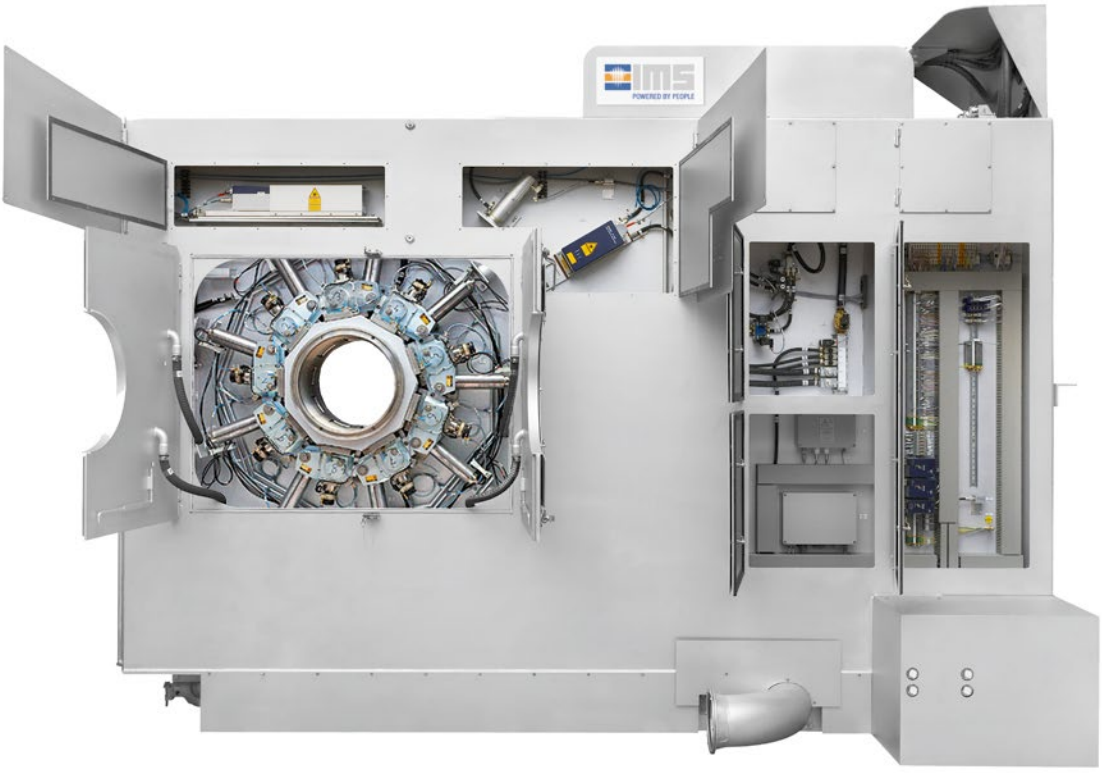
Polytec

Non-contact length and speed measurement

Optical sensor technology in tube and pipe production

Application note

Non-contact measurement for process control in tube and pipe production



1
Measurement of rotational and forward speed with laser precision during pipe wall thickness measurement

Avoid process uncertainty and added costs introduced by contact measuring techniques due to slippage, wear, damage to the product or increased maintenance requirements.

Accuracy, versatility and reliability make the LSV Laser Surface Velocimeter the perfect sensor solution throughout the tube and pipe industry where precise, real-time speed and length data are critical. In addition, the optical sensor LSV can reduce production costs by minimizing material scrap and optimizing product and process quality. The LSV optical sensor can be integrated easily and will replace less accurate and unreliable contact encoder and tachometer technology. The savings in reduced downtime and maintenance as well as increased product consistency provides an excellent ROI.

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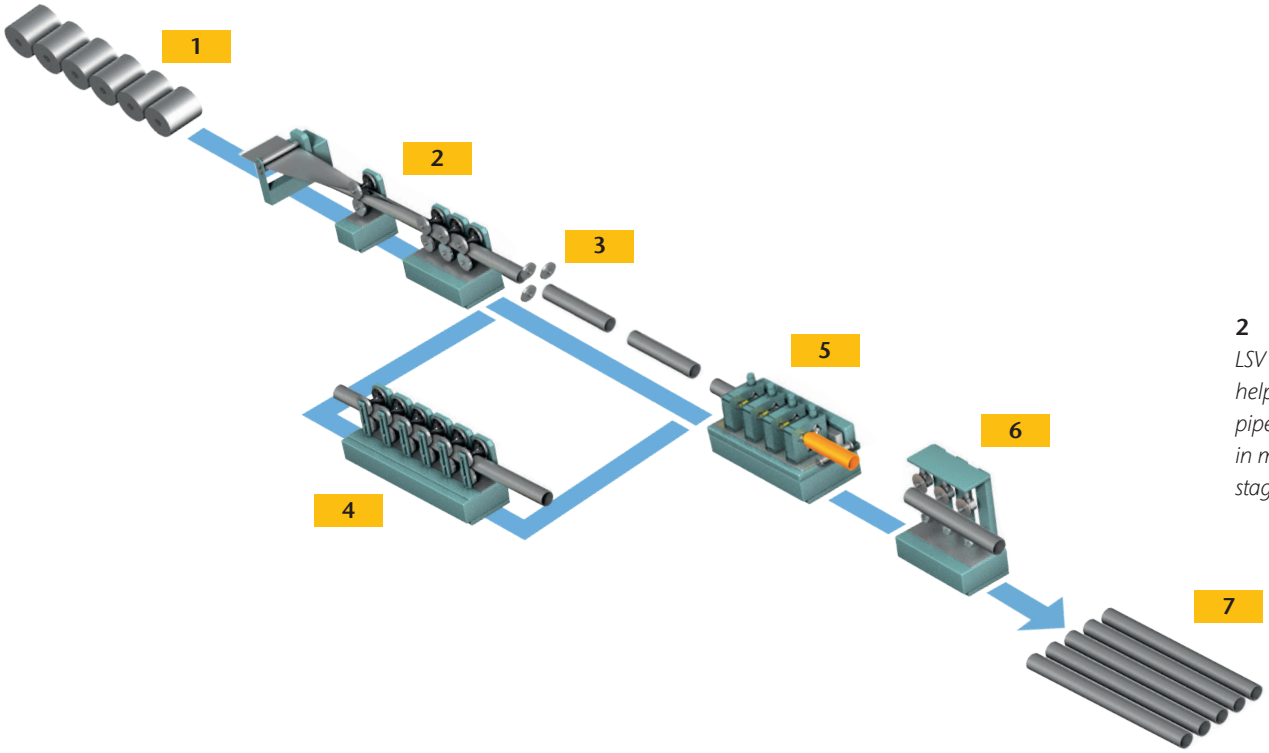
Highlights

- Optimize your process with laser accuracy
- Non-contact measurement without slippage or impact on material surface quality
- Cut your material cost by avoiding waste
- Measure on all surfaces including shiny, matt, oily, structured and more
- Wear-free sensor technology without moving parts



2
LSV laser sensors help tube and pipe production in many process stages

1 **Feed coil length entering forming section**
- Synchronize the coil feed speed and forming speed
- Optimize the length of the feed coil based on production schedules
- Verify the total length of the feed coil

2 **Pipe speed at weld head**
- Use the true pipe speed to monitor/control power to weld head
- Optimize the weld power for consistent weld quality

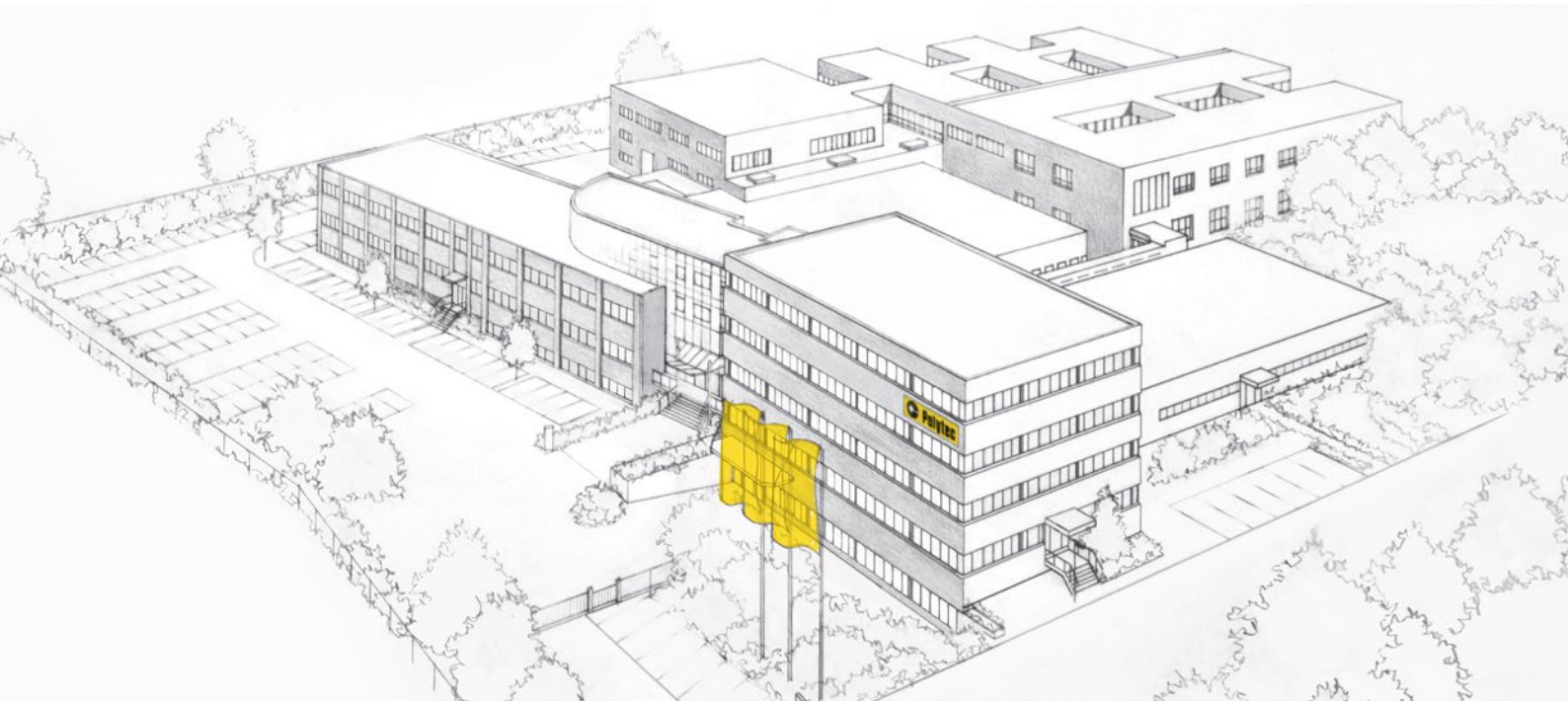
3 **Cut-to-length at cut-off**
- Benfit from non-contact cut to length control with laser precision
- Improve the cut length accuracy and repeatability
- Optimize yield and reduce scrap

4 **Position tracking and crop shear control in stretch reducing mill**
- Position tracking for defect detection systems. Track defects through the process
- Crop shear control at lead and tail ends of the pipe

5 **Pipe speed through temper/quench area**
- Increase process safety during induction coil heating by better movement control
- Control induction coil power based on the true pipe speed for consistent material quality

6 **Defect tracking in NDT area**
- Combine the length measurement with NDT equipment to track defects through the testing process
- Enable spot-on defect marking by accurate and reliable position tracking

7 **Length verification: weigh measure stencil area**
- Confirm the length of the finished product with laser precision
- Control the printing process for optimal and consistent positioning



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