

OEM Metlsaw Finds Solution To Downtime Due To Linear Encoder Field Failures



Metlsaw Systems Inc., Benicia, CA, is a manufacturer of plate, cut off, extrusion, cold and combination saws for industrial metalworking and plastics production applications. Spanning a multitude of industries, aluminum extrusion companies comprise one of their largest market segments, who purchase several MetlSaw Systems cut off saws per year.

MetlSaw differentiates itself by producing saws which offer a unique combination of accuracy, speed and automation advancements not offered by any other saw manufacturer. This combination allows precision-manufactured parts to be cut once, with little or no subsequent machining required. Eliminating a step reduces costs and decreases lead times, which is vital in this extremely cost and delivery sensitive industry.

What enables the MetlSaw fully automatic Cut Off saw to offer such high precision positioning tolerances is the use of a linear encoder for closed loop feedback of the back gage position. Since saw travel capacities of 288" and 340" are typical, rotary encoders proved insufficient to maintain the required accuracy over time. Although possible to enter linear compensation for measured inaccuracies in the control, this proved time consuming and the errors would change constantly, requiring the process be repeated frequently. The first solution to this was to use an optical tape linear encoder, which solved the first problem but created a second: the small, fine aluminum chips generated in the production sawing environments (often 24/7) built up between the read head and tape in the optical system. This created miss-cuts, scrap and machine down time due to linear encoder failure. Switching to a magnetic based tape linear encoder did little to solve the problem.

Newall worked with a MetlSaw customer, Kaiser Aluminum, in replacing the optical tape encoder on their MetlSaw with a 284" Newall SHG-TT linear encoder. The SHG is based on the world famous Spherosyn linear transducer's robust design, found in Newall's DRO systems. The SHG contains high speed digital signal processing, which allows SHG to output various industry standard signals accepted by a majority of CNC and PLC controls. This proved so successful that when Kaiser was ready to purchase another MetlSaw cut off saw machine, they agreed to do so only if MetlSaw provided it equipped with a Newall linear encoder from the factory. The rest is history - all MetlSaw Cut Off saws today now come with Newall SHG-TT encoders as standard equipment.

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Mailing Address: Sensata Technologies, Inc., 529 Pleasant Street, Attleboro, MA 02703, USA

CONTACT US

Americas

Newall Electronics Inc.
1803 OBrien Rd
Columbus, OH 43228
Tel: +1 614 771 0213
sales@newall.com
newall.com

Rest of World:

Newall Measurement Systems, Ltd.
Business Park, Unit 1 Wharf Way
Glen Parva, Leicester LE2 9UT
United Kingdom
Tel: +44 (0) 116 264 2730
sales@newall.co.uk
newall.co.uk