Supplying testing systems to the industry since 1928

▲ *MultiMac eddy current instrument for inspecting wire and cable for surface and subsurface defects*

Magnetic Analysis Corp (MAC), founded in 1928, offers a full range of eddy current test instruments and systems for detecting surface and sub-surface defects including laps, slivers and cracks in non-ferrous and ferrous wire and bar.

The line of MultiMac® and Minimac® versatile eddy current instruments are used in a broad range of applications in wire mills during production. Minimacs can inspect welding wire, including flux core wire, where they can detect missing flux as well as flaws in the wire itself.

Checking continuity and locating welds in single and multi-conductor insulated wire and cable are other applications.

By using a magnetic inclusion detection (MID) option, the Minimac is also effective for detecting magnetic inclusions in non-magnetic product. For seam-type, longitudinal surface defects and laps in cold drawn wire, MAC's Rotomac® line of rotary probe eddy current testers include models for high-speed production, operating at up to 18,000 rpm on wire from 2 to 20mm (0.0787" to 0.7874") diameter, as well as the Rotomac RM for testing wire and rod from 3 to 25mm in diameter in slow throughput lines, such as in parts forming.

A wire alloy producer is using a MultiMac single-channel eddy current tester to inspect zirconium, copper and beryllium copper alloys, ranging from 0.838 to 6.35mm in diameter (0.033" to 0.25").

The test is part of the finish inspection, and typical defects detected include surface defects in plating and sub-surface anomalies in bonding, and inclusions in multiple layers.

A noise-cancelling test coil provides improved performance by minimising noise from mechanical vibration in the wire that otherwise might interfere with the test.

In another application, in a continuous cast, small-diameter copper rod mill in China, a MultiMac eddy current tester is installed just before the coiler, but after the rod is produced and drawn down to smaller diameters. The tester assesses grade, using MAC's Grading Software, and detects magnetic inclusions using a MID test coil.

The Grading Software provides a convenient, efficient means of automatically categorising the quality level of individual segments and entire coils of wire, and rod, during production. The customer can customise the defect types, each based on a specific threshold gate, specify the maximum number of defects for each grade level, and configure reports.

MultiMac eddy current testers are also going to be used to inspect continuous copper wire rod, used as feedstock in the production of wire copper strips. The rods range from 0.5 to 3.5mm (0.01968" to 0.13778"), and the test will look for external defects such as scratches, dents and gaps at speeds up to 20m/s.

Magnetic Analysis Corp
www.mac-ndt.com

Wire tooling

▲ *Grooved rolls from Sjogren*

Sjogren Industries, Inc, founded in 1927 by Oscar Sjogren, designs and manufactures customised solutions for the wire tooling trades, delivering machinery, tooling and accessories to a worldwide customer base.

The firm continues to introduce enhancements in wire straightening assemblies and components that provide efficiencies and increased productivity.

Sjogren has a highly skilled workforce, with its machinists averaging more than fifteen years of experience in the custom manufacturing field. This expertise, combined with lights-out manufacturing capabilities, offers efficiency and reduced waste.

In its climate-controlled facility, Sjogren employs duplicate tooling centres and has the ability to produce specific fixtures and tooling for customer requirements. Nothing is outsourced.

As a supplier of wire straighteners, straightener rolls and wire tooling equipment, Sjogren has innovated with its marker groove technology, which delivers precision, and reduced wear and downtime. The company has also developed a turnkey product maintenance programme for its grooved roll customers.

To help customers select the proper wire-straightening device, Sjogren offers ten different series of straightener designs to meet all requirements.

Each straightener series has a different design and specific features.

For in-line drawing systems, the company has models with quick-release handles, quick-release for tilt rails, both inch and metric measurements, mounting plates for vertical and horizontal requirements, individual roll adjustability to adjust or replace rolls quickly, and control of cast and helix.

For mesh machines, Sjogren offers narrow line design straighteners for applications that require multiple straighteners in limited space. For machine builders, the company customises its units to fit the application, and provides measuring devices to monitor and fix roll depth.

Products available from Sjogren Industries include wire straighteners, grooved rolls, wire pullers and wedge grips, wire guides, magnetic brakes and clutches, testing machines and handling machines. It also provides the industry with contract manufacturing services.

Sjogren Industries, Inc
https://sjogren.com