

### Industries:

- Automotive
- Agricultural
- Construction

### End Uses:

- Shock Absorber Shafts, MacPherson Strut Shafts, Motor Shafts, crews, and Other Parts

### Defects:

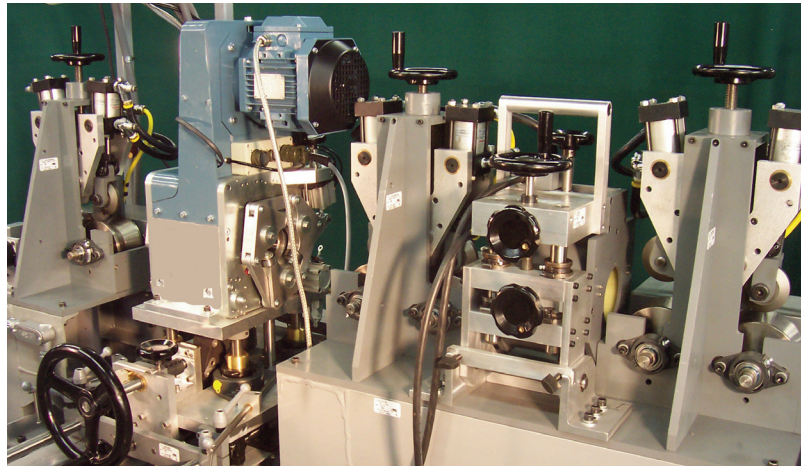
- Surface & Subsurface Longitudinal & Transverse Defects
- Cracks
- Scabs
- Pits
- Seams

### Bar Specifications:

- Carbon Steel Cold Drawn Bar
- Cut lengths - 10' -28' (3m – 9m)
- Diameter - 1/4" - 1" (6mm – 25mm)

### Equipment:

- MultiMac® Electronics
- Ec Rotary - 9r 150 4 Channels
- 352 Coil Platform- 1 Channel
- 475 Demagnetizer
- "V" Roll Test Bench
- Inlet/Outlet Conveyors



EC (Eddy Current) Rotary on the left, followed by the 352 Coil Platform (CP). All mounted on a "v" Roll Dual Pinch test bench.

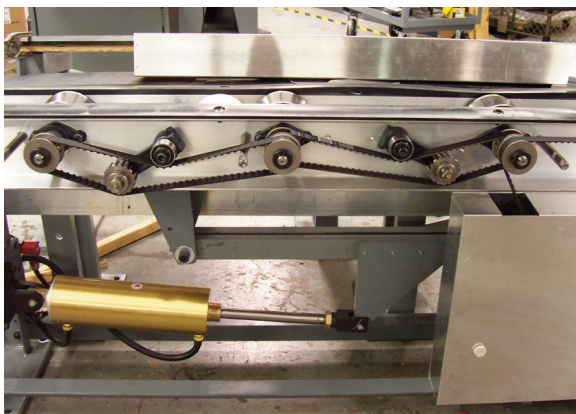
The eddy current (EC) rotary system utilizes probes that spin around the circumference of the bar as the bar is passed through the center of the machine. This portion of the system is setup with 4 channels to detect longer longitudinally oriented surface defects such as seams, laps, scabs, and cracks. A dynamic calibration with 0.005" deep x 0.5" long longitudinal standard notch is performed.

The single channel EC coil system utilizes an encircling coil on a CP 352 (Coil Platform) to detect shorter, transversely oriented defects such as short cracks, seams, scabs, and pits. Dynamic calibration is performed with a 1/4" round file notch, transversely oriented, at a depth of 0.005". The encircling coil unit compliments the rotary unit with the detection of short and/or transversely oriented defects. In addition, an EC coil test will penetrate further into the material and depending on the test parameters chosen, can detect some sub-surface anomalies as well.

When testing magnetic materials for defects, a magnetic saturation system must be used. CP 352 uses direct current (DC) saturation to provide adequate magnetization. Without magnetic saturation, the eddy currents would travel in random directions around the bar with the result being a large noise signal often larger than the defect signal.

A demagnetizer is then used to remove any residual magnetization left in the bar.

The MultiMac Electronics is a multi mode tester with 4 channels for the rotary and 1 channel for the encircling coil. Up to 8 channels may be provided all in one tester.



To improve the speed (up to 600 fpm or 200 mpm), reliability and reduce noise of the system the rolls for all inlet and outlet conveyors and the test bench are belt driven.