

Fastenal (Winona) Lab Equipment

30,000 lb. & 200,000 lb. Tensile Testers---Testing externally threaded fasteners for tensile, proof load, and yield strengths; Testing internally threaded fasteners for proof loads. Software: MTESTQuattro Version 5.07.07

Rockwell Hardness Tester--- Testing Rockwell hardness in the B and C scales, and surface hardness on the 30N.

Micro-hardness Tester---Hardness testing using the Vickers scale. Software: Confident Version 2.6.0

Skidmore-Wilhelm---Measurement of clamp load between internal and external thread assembly.

Spectrometer---Chemical analysis for Iron, Nickel, Aluminum, Copper, and Titanium base materials. Software Version: 1.2.2c

Portable XRF---Rapid Alloy Identification, PMI (Positive Material Identification). Software Version: 8.2.1

Metallographic Microscope---Analysis of grain structures and boundaries on raw material and finished product. Software: Paxit! 2 Version 1.5.2

Mag-Particle (AC/DC) ---Nondestructive inspection for cracks above and below the surface.

Variable Thread Gauging---Inspection of internal and external threads for pitch and functional diameters

Ring and Plug Gauges---Go and No-Go thread inspection for inch and metric sizes.

Optical Comparator---Dimensional inspection of linear measurements, angles, thread profiles, and radiuses.

Drive Test Plates, Torsional Collets, and Ductility Blocks---Performance testing for tapping, thread cutting, and thread rolling screws.

Length Gauges---6 and 12 inch gages for measuring lengths.

Recess Checker---Recess depth and penetration depth on cross-recessed, hex, six lobe, square, and slotted drives.

Protrusion Gauge---Measurement of head protrusion on countersunk fasteners.

Drill Drive Tester---Drill-Drive performance test for self-drilling tapping screws.

CMM---Coordinate Measuring Machine for precise measurements of angles, concentricity, roundness, diameter of holes, distance of points, etc.

Corrosion Test Chamber---Salt Spray (Fog) Testing per ASTM B117

Charpy Impact Machine---Impact testing up to 264 ft/lbs with a temperature range of +410 F to -202°F. Software Version: 6.2.7

Liquid Penetrant---NDT (non-destructive testing) of non-magnetic materials

Fatigue Testing---Cyclic loading of fasteners

UT Testing---NDT (non-destructive testing) with high frequency sound waves

Additional Equipment:

Profilometer, Elongation Gauge, Torque Wrenches, Digital Calipers, Micrometers, Pitch Micrometers, 1-2-3 Block, Wobble Gauge, Straightness Gauge.