



# Electronic Geometry Inspection

## For Internal Pipelines, Sizes 6" and Larger



T. D. Williamson, Inc.

Bulletin No: **4100.001.00**

Date: February 1999

Cross Indexing No: n/a

Supersedes: 751.0 (9/1/87)



■ **Electronic KALIPER® Surveyor**

### Description

The TDW Geometry Inspection Service provides the pipeline operator both on-stream pipelines and newly constructed pipelines with clear and accurate information about the internal condition of your pipeline.

These inspection services have also proven to be effective in providing safe passage of the massive corrosion-detection pigs.

TDW Pipeline Surveys offers geometry inspection with the choice of three unique tools:

- Electronic KALIPER® Surveyor is designed to detect, record and locate diameter reductions. These reductions may appear in the form of a dent, buckle, gouge, flat spot, ovality or pipewall change. It's available in sizes 6" and larger.
- Electronic RMT™ (Radius Measurement Tool) is designed to detect, record and locate pipe bends. The RMT categorizes pipeline bends, specifying the bend radius and bend angle. It's available in sizes 6" through 12".
- Electronic BVT (Bend Verification Tool) is designed to detect, record, locate and differentiate bends from 1.5 D to 3 D bends. It's available in sizes 14" and larger.

### Features

The Geometry Inspection Tools feature advanced technology that make internal conditions and repair decisions clearer to pipeline operators. These features include:

- on-board, solid-state memory
- a precision benchmark system for accurate distance and location measurements
- 360° inspection coverage for consistent, accurate and detailed data acquisition
- fast, reliable, on-site reporting
- speed profile
- ability to expand scale for precise information evaluation
- digital report summary



■ **Electronic BVT (Bend Verification Tool)**



■ **Electronic RMT™ (Radius Measurement Tool)**

Patented in the United States and in foreign countries.  
ISO 9001 Certified

**Toll Free**

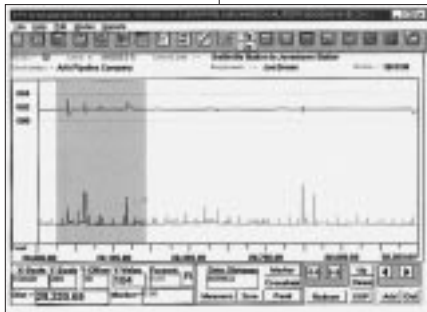
**1-888-TDWmSon (839-6766)**



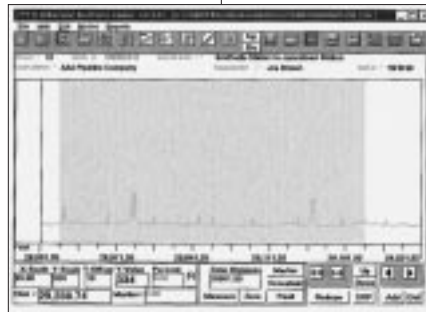
# Electronic Geometry Inspection



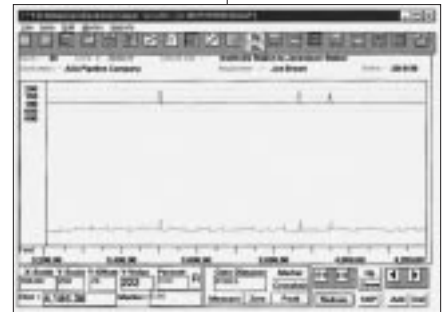
■ Analyze pipeline conditions to make repair decisions based on information that is clear, accurate and reliable.



Typical electronic KALIPER® data, with speed profile, improves accuracy of reporting defect anomalies.



Expanded data taken from screen (at left) magnifies the defect area for further analysis.



Electronic KALIPER® data overlaid with RMT data to correlate bend verification and KALIPER® Survey.

# Electronic Geometry Inspection



■ Electronic KALIPER® Surveyor

## Electronic KALIPER® Surveyor

- Lines sizes 6" through 60"
- Operating Speed: ideal range is 3 to 7 mph. A constant speed is recommended for best results.
- Operating temperature range: 30° to 200°F. Also available -40° to 85°F.
- Working pressure: 2,200 psi. Higher working pressure available upon request.
- Test pressure: 2,700 psi.
- Distance accuracy: 0.1% (1 ft./1,000 ft.).
- Post-run electronic expansion of chart scale for suspect areas.
- All KALIPER Surveyors traverse 1-1/2R-90° bends.
- For special applications, anomalies as small as 2% of internal pipe diameter can be reported.



■ Electronic BVT (Bend Verification Tool)

## Electronic BVT (Bend Verification Tool)

- Lines sizes 14" and larger
- Bend radius: 1-1/2D and 3D
- Bend angle: 22-1/2°, 45° and 90
- Operating speed: 15 mph maximum for specified accuracy; 3 to 7 mph typical
- Operating temperature: 30° to 200°F
- Working pressure: 2,200 psi
- Test pressure: 2,700 psi
- Location accuracy: 0.1% of distance from known benchmark
- Minimum bend traversed: 90° 1-1/2D radius bend



■ Electronic RMT™ (Radius Measurement Tool)

## Electronic RMT™ (Radius Measurement Tool)

- Lines sizes 6", 8", 10" and 12"
- Bend radius: 1-1/2D, 3D and 6D
- Bend angle: 22-1/2°, 45° and 90
- Operating speed: 15 mph maximum for specified accuracy; 3 to 7 mph typical
- Operating temperature: 30° to 200°F
- Working pressure: 2,200 psi
- Test pressure: 2,700 psi
- Location accuracy: 0.1% of distance from known benchmark
- Typical run length: 100 miles
- Maximum run duration: 7 days
- Minimum bend traversed: 90° 1-1/2D radius bend