Western Instruments specializes in producing products for corrosion and erosion measurement. We offer a variety of dial and digital indicators, including the Tri-Gauge, Bridging Pit Gauge, and Western Instruments Dial Pit Gauges. These instruments are designed to measure pit depth and are commonly used in various industries such as oil and gas, storage tanks, and more.

**Product Series**

- **Tri-Gauge**
  - N88-1: Lower Type Pit Gauge for Evaluation of Corrosion
  - N88-2: Center mount 2.5" (64mm) Blade, our most popular gauge
  - N88-3: Center mount 1.5" (38mm) Blade
  - N88-3M: Center mount 1.5" (38mm) Blade, Magnetic
  - N88-4: Blade Edge Blade (reversible), 1.5" (38mm) long and spot base
  - N88-5: 4.75" (121mm) Blade, End Mount Dial Indicator with Nose Cap
  - N88-5M: 4.75" (121mm) Blade (w/Twist) 2 magnetic cartridges
  - N88-6: 6" (152mm) Blade, End Mount Dial Indicator with Nose Cap
  - N88-6M: 6" (152mm) Blade (w/Twist) 2 magnetic cartridges
  - N88-12: 5.5" (140mm) long, 0.75" (19mm) wide with reversed 1.5" (38mm) 2 magnetic cartridges. Similar to Industry and MoD

- **Pocket Pit Gauge**
  - Reversible Blade

- **Digital Indicators**

- **Contact Points**
  - Standard Tip
  - 3-Needle Tip

**Specifications for Corrosion & Erosion Depth Measurement**

- **Tri-Gauge**
- **Pocket Pit Gauge**

**Assuring Compliance**

Western Instruments warrants its products against defects in materials and workmanship for a period of 1 year from receipt by the end user. If the product proves to be defective, consumable items, such as Contact Points, Batteries, and the like are warranted for 30 days, from receipt by the end user.

**For more information, contact:**

- **Phone:** (780) 459 6720
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- **Email:** info@westerninstruments.com
- **Website:** www.westerninstruments.com

**Technical Support**

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**Warranty**

Western Instruments warrants its products against defects in materials and workmanship for a period of 1 year from receipt by the end user. If the product proves to be defective, consumable items, such as Contact Points, Batteries, and the like are warranted for 30 days, from receipt by the end user.

Any warranty voided if the unit has been modified in any way. If it has been repaired by anyone other than an authorized agent, or the product has been returned outside the warranty period. Western Instruments retains the right to inspect, repair, replace or extend the warranty for any products that prove to be defective. Consumable items, such as Contact Points, Batteries, and the like are warranted for 30 days, from receipt by the end user.

Western Instruments makes no other warranty, either expressed or implied, with respect to this product. In the event of a dispute, use of the product confers only such warranty as is expressly set forth in these terms and conditions. In no event shall Western Instruments be liable for any incidental, indirect, or consequential damages arising out of the use of the product. This warranty gives you specific legal rights, and you may have other rights which vary from jurisdiction to jurisdiction.

**Correct Use of the Product**

*Western Instruments makes no specific recommendation as to the correct use of the product. However, we highly recommend the use of this product in accordance with the Operating Instructions. Further, we recommend that the unit must be used in the correct condition and at the right time.*

**Contact Information**

- **Address:** Box 72, Site 2, R.R.1
- **St. Albert, AB**
- **T6N 1M8**

**Visit Us On The Web:**

www.westerninstruments.com
Western Instruments

Bridge Type Pit Gauges

Western’s advanced Bridging Pit Gauge System® and our new Jr. Bridging Pit Gauge take over, where the capabilities of our standard Pit Gauges fall short, for evaluating large areas of Weight Loss Corrosion. These Bridging Bar type Pit Gauges can also be used to measure Dents and Buckles on Pipelines, Shell Settlement on Storage Tanks, etc. These various forms of Bridging Bars can utilize any of our exclusive Dial Indicators (Imperial, Metric, or Digital), with any of our Custom Engineered Contact Points.

There are several important features to a Serrated Bridge, where various elements (Blades and Tees) are assembled to form a Bridging Bar. Firstly, they can be assembled to follow the contour of a slightly irregular surface. This contouring feature is important for Pipelines, Storage Tanks, and Pressure Vessel inspections, where hills and valleys always exist. Secondly, the models listed below are of a piece length, however extra elements can be added to increase their overall length. As illustrated, these units can be assembled in Spanning or Cantilevering configurations, and finally, the Main Blade can be used individually for isolated or core type Pittings.

Jr. Bridging Pit Gauge Group

The Jr. Bridging Pit Gauge Group provides inspectors with an economical alternative to the Bridging Pit Gauge Systems. The Jr. Bridging Pit Gauge® is available as 3 models, the standard Jr. Bridging Pit Gauge®, the Plus, and the Super. The standard Jr. Bridging Pit Gauge® assemblies to an overall length of 15 ½” (394mm) long. The Jr. Bridging Pit Gauge® Plus® can be assembled in either Spanning or Cantilevering configurations up to 15 ¾” (400mm) long. While the Jr. Bridging Pit Gauge® Super® can also be assembled in both Spanning or Cantilevering configurations, up to 27” (686mm) long.

The Junior’s Main Blade, and the optional Extender Blades are fitted with strong magnets that secure any of the Jr. Bridging Pit Gauge® to the surface of the workpiece. These Magnetic Hold Downs have several benefits, such as:

- Aligning the unit to Concave or Convex surfaces, keeping the operator free to record readings or manipulate the assembly when Scanning through Pitts and Weight Loss Corrosion. These features position the Plus, and the Super far ahead of any competitive units.

<table>
<thead>
<tr>
<th>Name</th>
<th>Part #</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Main Blade</td>
<td>N88-9-1</td>
<td>Center and End Dial Indicator Mounting Positions, 12 ½” (317mm) long.</td>
</tr>
<tr>
<td>Extender Tee</td>
<td>N88-9-5</td>
<td>Extends effective length of all models. 12” (305mm) long.</td>
</tr>
<tr>
<td>Knife Edge</td>
<td>N88-9-7</td>
<td>Fasteners, Allen Key, Nylon Thumb Screws, Contact Point.</td>
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<tr>
<td>Carrying Case</td>
<td>N88-9-8</td>
<td>Hard Sided Plastic Carrying Case for entire kit.</td>
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</table>

Assembly

All Bridge type Blades (Main, Extender, End & Side) have two distinct sides, that are differentiated by the transverse mount holes. On one side there is a clearance hole, while on the opposite side the hole is threaded (1/8”-24 UNC). When assembled, the assembly is sandwiched between the Thread Clearance Side of the Blades, so the fasteners can be properly tightened against the Extender’s Tees. Do not tighten fasteners if an Extender Tee is not within the Slot area of a Blade.

When the assembly unit, press firmly (as illustrated) on the Extender T, and the Blade(s) onto the 1 5/8” Button Head Machine Screws with the 11/16” Allen Key. When assembled in this fashion, the overall length of the unit should have a straightness of approximately +/-0.01”. When more accuracy is required, assemble the unit on a flat surface.

If the surface of the workpiece has an irregular surface (slight curve, distinct bend or hills and valleys), simply assemble the Bridging Bar, but do not tighten the fasteners. This will leave the Bridge loose and free to match the contour of the workpiece. When the operator has contoured the assembled Bridge, all the fasteners can be tightened. The operator should be mindful that this contouring assembly will be fine at a given point, however it will need to be checked when the Bridging Bar is repositioned.

Magnetic Hold Downs

Magnetic Hold Downs are intended for Scanning with a Bridging Pit Gauge®, however they can be used on any of the Jr. Bridging Pit Gauge® Group, with a diminished range of motion. Magnetic Hold Downs also provide the inspector with increased mobility, as they are not required to support the Bridging Pit Gauge. The following are instructions for the use, and using, the Magnetic Hold Down Blocks.

Magnetic Hold Down Blocks are designed to easily slide on the Extender’s Tees, and are best put in place prior to assembly. With the Bridging Bar assembly, and placed on the workpiece, the entire Bridging Pit Gauge can travel over a distance of about 9” (229mm). Longitudinal or position measurements of the Bridging Pit Gauge are taken off the Scales (imperial or metric divisions) that are fastened to the top of the Extender Tees.

The correct longitudinal position along the Extender Tee. When general evaluation is being done, and the operator is not recording measurements, place the Magnetic Hold Downs in the Middle of the Tee, to allow movement of the Bridge in all directions. When the operator is going to record measurements, for Plotting a Cross-Section, place the Magnetic Hold Downs at the end position of the scan, then move the bridge to the starting position. The operator takes a reference reading, between a magnetic Hold Down and the Scale on the Tee, before starting the longitudinal movement.

Scanning

Firstly, after a Bridge is assembled, adjusted for the surface contour, and the Magnetic Hold Downs aligned to the surface, the Dial Indicators must be Zeroed (Metric or Imperial). This will ensure accurate and reproducible measurements. Every time the Bridge is moved to a new location, these parameters (Contour Alignment, and Hold Down position) must be rechecked and the Dial Indicators re-zeroed.

Each Magnetic Hold Down is equipped with 2 (two) 1/4”-20 UNC Nylon Thumb Screws. The Thumb Screws have two purposes, firstly to retain or capture the Magnetic Hold Downs onto the Extender Tee. The second use of the Nytron Thumb Screws is to set the tension or to lock the Magnetic Hold Downs. As an example, if the Bridging Pit Gauge® is being used vertically, the operator will want the tension set higher, to keep the unit from sliding. If the Bridging Pit Gauge® is being used on a highly irregular surface, the operator will want the Nytron Thumb Screws set very loose, to allow the Blades to more easily slide over the workpiece.

When setting a Bridge to a Convex surface, such as the OD of a Pipe, or a Concave surface, such as the ID of a Vessel, the Magnetic Hold Downs are used to align the entire assembly. The operator will use the thumb screws to allow the Bridging Pit Gauge® (from Side to Side). If the unit rocks, the Magnetic Hold Downs are not in the same Longitudinal plane and must be realigned. When the rocking stops, the operator knows the Bridge is aligned, however, most formed surfaces (pipe, vessels, and tanks) are irregular, so rocking may not be eliminated but must be kept to a minimum to increase measurement accuracy.

Magnetic Hold Downs

Magentic Hold Downs are the correct longitudinal position along the Extender Tee. When general evaluation is being done, and the operator is not recording measurements, place the Magnetic Hold Downs in the Middle of the Tee, to allow movement of the Bridge in all directions. When the operator is going to record measurements, for Plotting a Cross-Section, place the Magnetic Hold Downs at the end position of the scan, then move the bridge to the starting position. The operator takes a reference reading, between a magnetic Hold Down and the Scale on the Tee, before starting the longitudinal movement.

Care and Maintenance

Western’s AGO Group 1 Dial Indicators (Imperial or Metric), as well as the Digital Indicator were developed for rugged, continuous measurements. While ruggedly manufactured, these units should not be dropped or subject to strong Vibration or Impact. While manufactured from Corrosion Resistant Materials, the Dial Indicators, and their Dial Indicators should be kept clean and dry. Fit and Finish of Bridge Type Pit Gauges®, as well as Standard Pit Gauge parts are very important. Operator’s attention to pressure on the Contact Point, or clean steel or 600 Grit wet/dry abrasive cloth. New parts tend to be lightly fit, and will loosen with use. Care must be taken to ensure fasteners are not cross-threaded.

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