Micron Optics, Inc.
os3100 Strain Gage (Weldable)
Installation Procedure

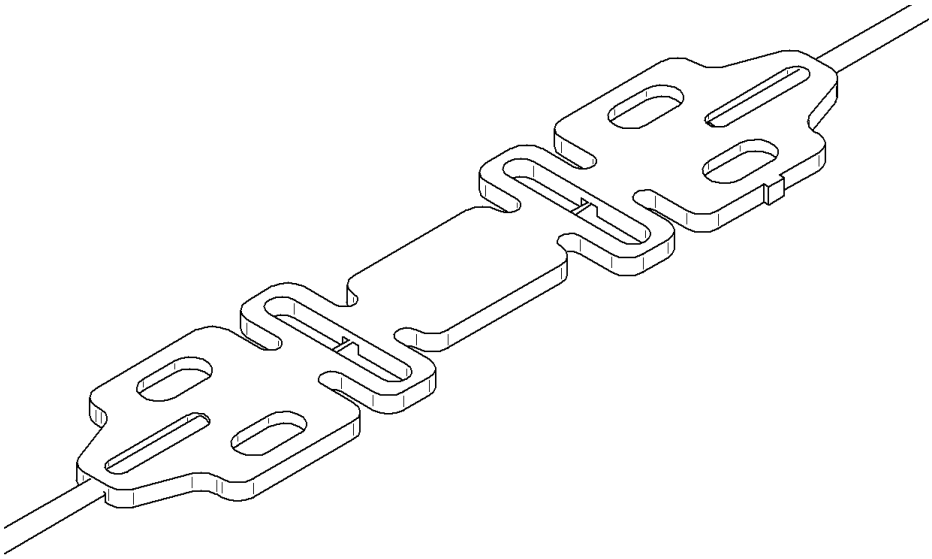

Figure 1 – os3100 Weldable Gage

Introduction:

Spot welding is the preferred method of mounting an os3100 gage to steel. A portable capacitive-discharge spot welder having 50 watt-seconds minimum energy rating is recommended for best results. The spot welder should be equipped with a small welding electrode having a spherical tip measuring approximately .030 inches [.76 mm] in diameter. It is often helpful to practice weld technique using a blank os3100 gage. Best results are usually obtained with a setting of 50 watt-seconds and firm pressure on the electrode. After making a practice weld, pull the gage off of the surface. A properly formed weld will result in a small piece of the surface or gage to break away. If needed, adjust the weld energy and electrode pressure until a satisfactory weld is obtained. (Contact Micron Optics for Welder recommendation)

Surface preparation:

The surface must be properly prepared to remove rust, scale, oil, and grease for a quality weld.

- Clean surface with a compatible solvent to remove all oil and grease.
- Abrade surface with 220 grit silicone carbide paper to remove any surface defects, scale, and oxide. Wipe the surface clean with a compatible solvent and inspect the surface to ensure that all surface defects have been removed. Continue to abrade surface with 400 grit silicone carbide paper to polish the surface.
- Thoroughly clean surface using a clean cloth saturated with a compatible solvent.

Gage Installation:

- Position the gage on the surface to be tested. Align the center axis of the gage with the strain axis to be measured. The gage may be held into position with cellophane tape. When applying tape, do not cover weld pockets. Figure 2 shows the gage axis and weld sequence.

- Tack gage in place using a single weld in corner 1. This initial weld should be centered in the weld pocket as shown in figure 3.

- Perform a single weld in the center of pockets 2, 3, 4. These welds should be performed in the order indicated and centered in the weld pocket.

- Add 2 additional welds to each weld pocket. Position one weld to the left of the initial centered weld. Position the other weld to the right of the initial centered weld as shown in figure 3.

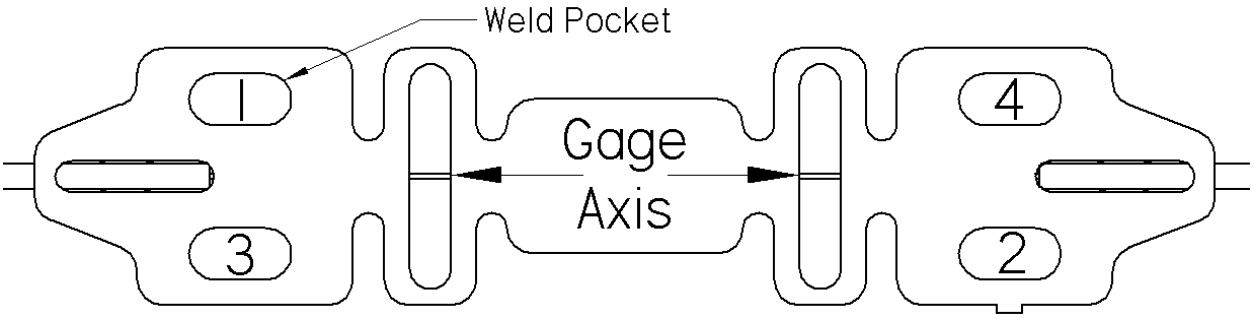

Figure 2 – Weld Location

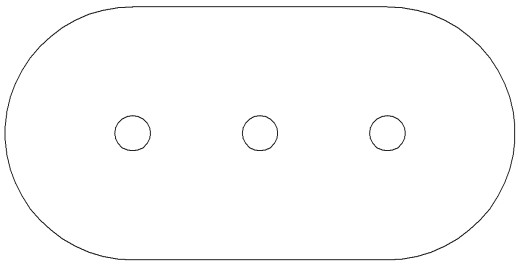

Figure 3 – Weld Pocket Detail