



# SERVICE BULLETIN

1-800-237-0022

**SUBJECT:** SCALE INSTALLATION REDUCING STRESS CONCENTRATIONS

**EFFECTIVITY:** ALL SIDE MOUNT LOAD CELL INSTALLATIONS USING A WELD-ON BRACKET

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## SCALE INSTALLATION

### REDUCING STRESS CONCENTRATIONS

**PROBLEM:** Every structure will deform ( bend, twist, sag, or oil can) a certain amount when carrying a load. When a body supported scale system is installed, the load bearing stresses must go through the load cells. The load cells are designed and built to withstand these concentrated stresses but not all bodies and frames are.

**SOLUTION:** It may be necessary to add additional frame and body stiffness in the vicinity of the load cells to help spread out the stresses. The installer must ensure that the modified structure is strong enough to prevent not only permanent deformation, but also to limit the amount of non-permanent (elastic) bending so that the body frame will not contact the truck chassis and create an alternate load path around the load cells. Excessive frame bending or oil canning can be prevented by either adding a glove or a fishplate to the body frame, or by adding additional load cells in that area for more support.

Because there are virtually unlimited numbers of body and chassis configurations, we are unable to provide specific instructions for the installation of mounting brackets and load cells for every configuration. However we can give general installation recommendations. The installer must determine the integrity of the truck and body at the time of installation by checking for such things as frame or body cracking, corrosion and wear. This inspection may reveal areas of weakness that need to be strengthened. All repairs, fishplating or gloving must be made to the truck and body prior to the installation of the weighing system. It is the installers responsibility to make sure this is done to ensure a structurally sound installation.

**FISHPLATING:** All body structural members supporting a weld-on load cell bracket should be no less then 3/8" of an inch thick. If less than 3/8" of an inch, additional reinforcing material (fishplate) must be added to bring the total thickness up to 7/16". The fishplate should extend 12" past each end of the load cell mounting bracket.



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**EXAMPLE:** If the member is 1/4" inch thick, a 3/16" fishplate should be used. This brings the thickness up to 7/16" behind the weld-on bracket and spreads the load over a greater area on the body structural long member, **see Figure 1**. The fishplate must span the web of the structural member and be welded solid with a 1/4" fillet weld on the 3/16" fishplate. Three additional plug welds should also be used.

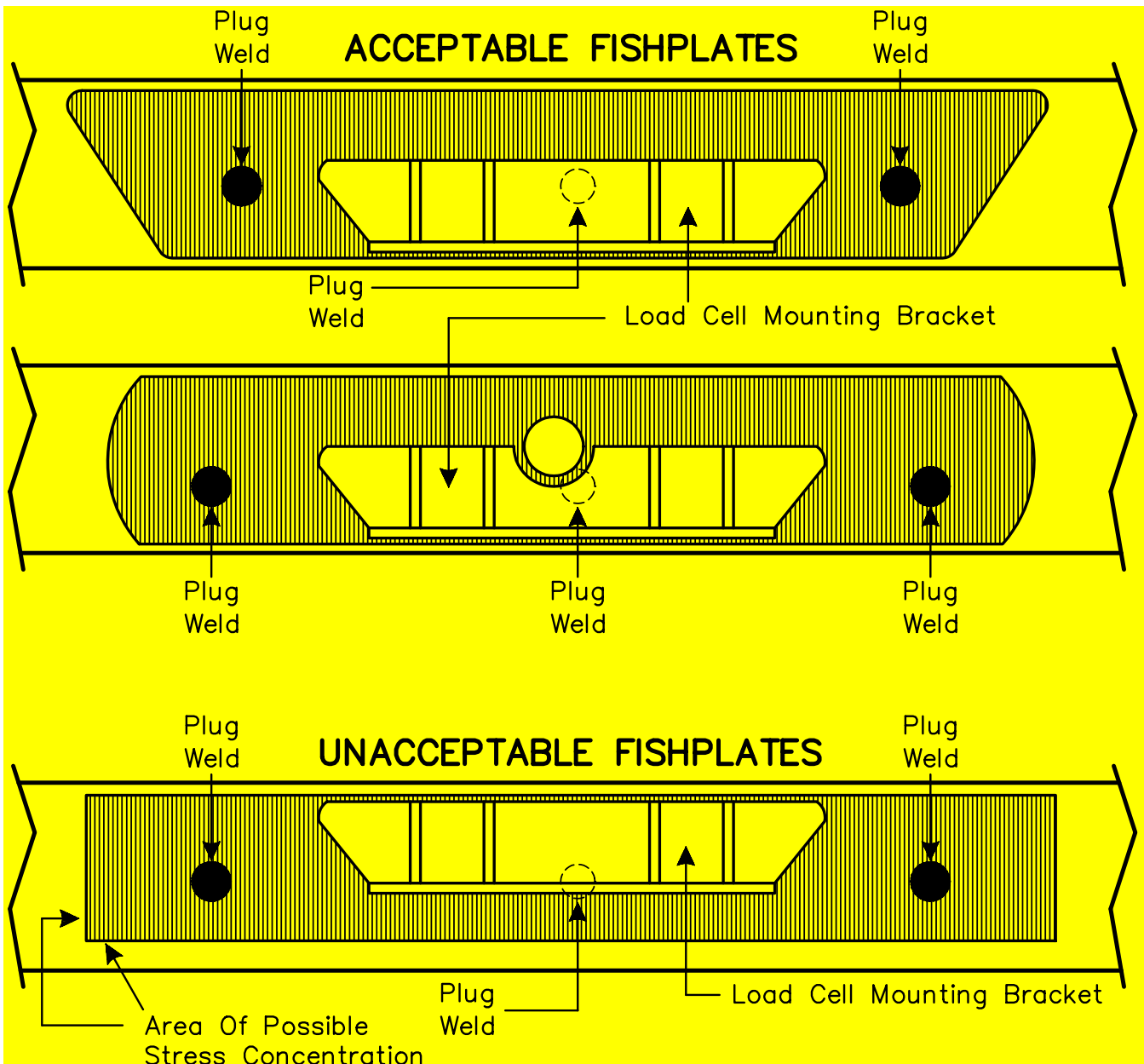


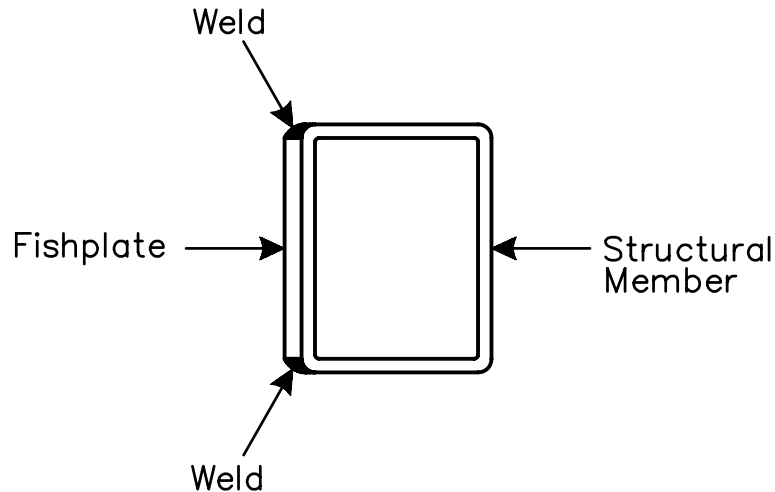
Figure 1



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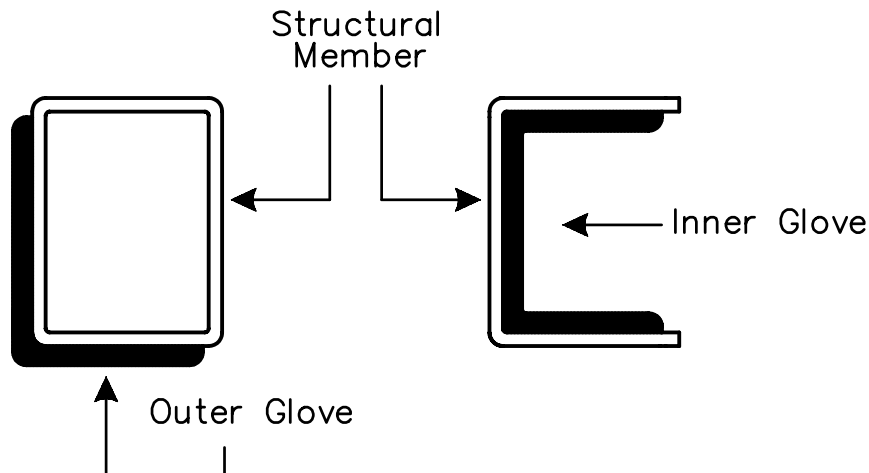
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**EXAMPLE:** If the structural member has a six inch web a five inch fishplate must be used allowing one half inch top and bottom for the 1/4" fillet weld, **see Figure 2.**



**Figure 2**

**GLOVING:** A bolted inner glove or a welded outer glove may be used on structural members that need reinforcement when an outer fishplate cannot be applied. For gloving use the same procedure as fishplating where all body structural members supporting a weld-on load cell bracket should be no less than 3/8" of an inch thick. If less than 3/8" of an inch, additional reinforcing material (glove) must be added to bring the total thickness up to 7/16". The glove should extend 12" past each end of the load cell bracket, **see Figure 3**



**Figure 3**