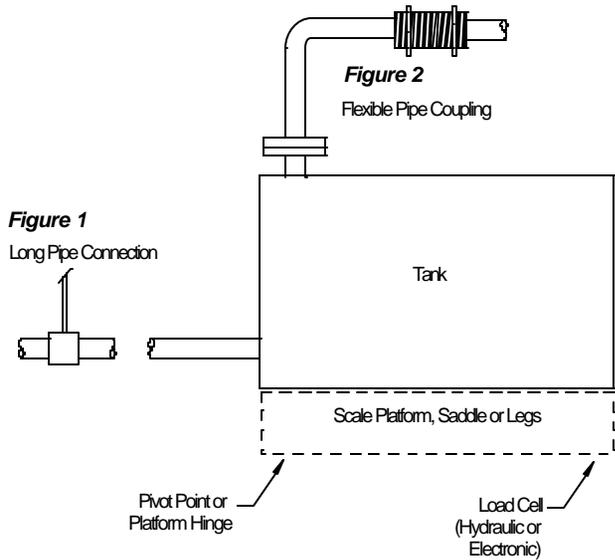


**WHEN NOT ABLE TO USE FLEXIBLE HOSE:**

1. All pipe connections should be flexible so as not to restrain platform.
2. All pipe connections should preferably be attached toward the pivot side of scale platform or tank.



C.1.131  
S.1.131  
W.1.131

**SUPPLY CONNECTION CONSIDERATIONS:**

Containers usually require supply connections, for example for bringing the material into and taking it out of the container, and for the electrical, hydraulic or pneumatic supply of the auxiliary equipment on the container. These supply connections can lead to vertical force restraints and must be flexible in both the horizontal and vertical direction to avoid weighing inaccuracies.

**To avoid vertical force restraint, the best results are achieved with hose connections in easily shaped hose materials.**

**When you are NOT able to use flexible hose, the following piping considerations must be taken into account:**

**Figures 1 and 2**  
**HORIZONTAL PIPE CONNECTIONS:**

When rigid pipes are used without flexible interconnection it is advisable to connect the container (as shown in FIGURE 1) via a piece of pipe which is horizontal and as long as possible, and must have stress compensation in the longitudinal direction. The unsupported pipe should be a length at least 30 times the diameter of the pipe. The horizontal piece of pipe has a spring action and becomes more flexible with increasing length. In accordance with FIGURE 2, instead of a long horizontal pipe, one or more flexible couplings can be used. FIGURE 1 and 2 shows the structure of a container system with flexible couplings in the pipe connection.

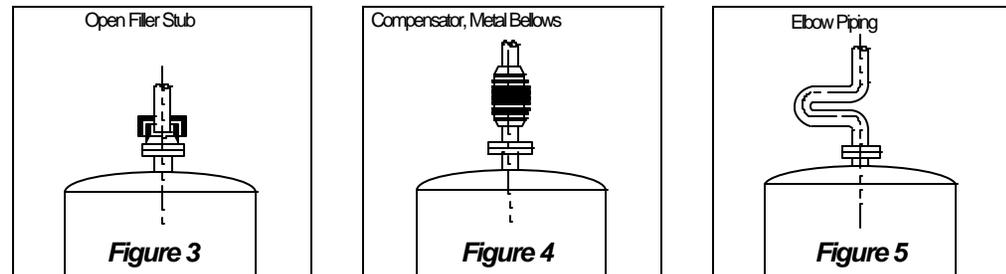
**Figures 3, 4 and 5**  
**VERTICAL PIPE CONNECTIONS:**

The open connection stub shown in FIGURE 3 gives the best solution as regards to reducing vertical force restraints, and permits very accurate weighing equipments. With an open connection stub, contact between the pipe connection and the container is avoided. A protective cover is advisable in all cases.

A further possibility of reducing undesired force restraints from the connection pipes involves using an elbow as shown in FIGURE 5. It shows the design of a container system with an elbow connection, which allows for a flexible "spring action" similar to FIGURE 1.

FIGURE 4 illustrates the arrangement of a mechanical compensator (metal bellows) and shows the equipment on an upright container with pipe connections via metal bellows. The use of a mechanical compensator requires relatively tight position tolerances. By using a second metal bellows linked to the first via a piece of piping, even large tolerances can be compensated.

**OTHER SUGGESTED FLEXIBLE COUPLING METHODS:**



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**SUPPLY CONNECTION INSTRUCTIONS**

Drawn by: SLP  
Date: 01/15/90  
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Drawing Number

**29906**