

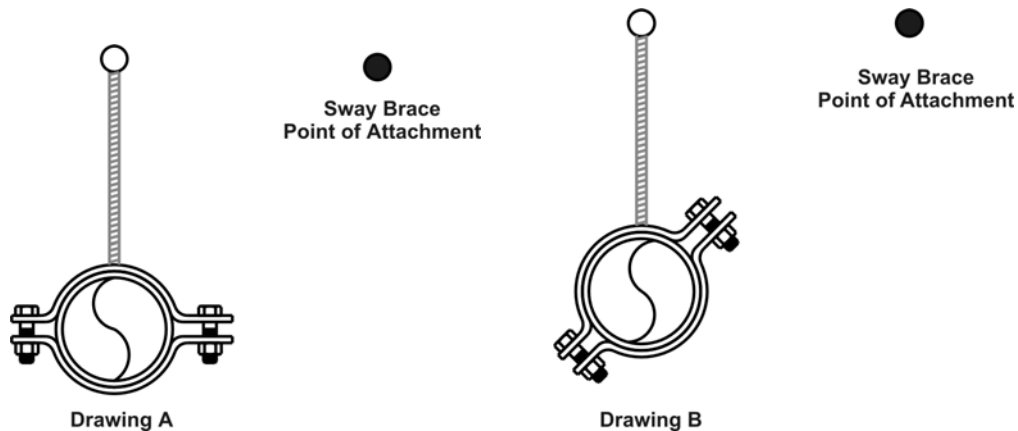
Longitudinal Sway Brace Assemblies

A Common Fitting Misapplication

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Parallel alignment is required for longitudinal sway brace installation in conformance to NFPA 13. Many longitudinal sway brace assemblies are installed directly above the system pipe at 0 degrees, when the structure will allow correct fastener attachment at this location. When positioning the sway brace assembly above, the longitudinal sway brace fittings fastener flanges will be vertical which enhances the optics that identify correct parallel alignment.

When the structure dictates a point of attachment that is not directly above the system pipe, sway brace alignment may become problematic. The offset dimension of the sway brace point of attachment may conflict with the optics of correct longitudinal sway brace alignment and could be harder to quantify. Whether for aesthetics of assembly, because they believe it looks better, or poor judgment fitters often rotate the mounting of the longitudinal sway brace fitting to horizontal with its fastener flanges at 90 degrees. **See drawing A.** This positions the sway brace assembly on a conflicting axis with the system pipe rather than the required NFPA 13 parallel axis. To correct this common fitting misapplication the axis of this sway brace assembly must be rotated into the same plane as the centerline of the system pipe.



Adjusting the mounting position of the longitudinal sway brace fitting will correct both the misalignment of sway brace fitting and the misalignment of the brace pipe. The fitter should rotate the fitting mounting position to align or index the fitting fastener flanges on a straight sight line toward the point of sway brace attachment to the structure, just like the hands on a clock. **See drawing B.** Now the sway brace point of attachment to the system pipe is aligned with its point of attachment to the structure creating a proper parallel axis in conformance to NFPA 13.

Further, listings of longitudinal sway brace fittings require the brace member be aligned parallel to the face of the fastener flanges, thus loading them from their edge as they are stronger in this orientation than against their flat. Improper mounting of the longitudinal sway brace fitting can cause non-axial loading on its structure resulting in reduced ability due to bending or twisting.

In summary, proper positioning of the longitudinal sway brace fitting, using the flat surface of the fastener flanges as a reference indicator, will determine the success of the longitudinal sway brace assembly and its conformity to NFPA 13.



Kraig Kirschner is a third generation fire sprinkler contractor and a journeyman fitter. He is a Principal Member of NFPA 13 - Hanging and Bracing Technical Committee and serves on Standard Technical Panels of UL 203, UL 203A and FM 1950. Kraig is a Life Member of the National Fire Protection Association and was named Person of the Year in 2009 Fire Protection Contractor Magazine. He holds dozens of patents that enhance the installation and application of hangers and sway braces.