

## Slip joints

Before assembly, the top and bottom of shaft sections must be inspected, both inside and out for foreign objects such as burrs, dirt, or galvanizing build-up. Any such items should be cleaned and removed to prevent potential slip problems.

Although pole sections can be jacked together in either a horizontal or vertical position, the factory recommends assembling the poles in a horizontal position. To facilitate the assembly of the pole sections, mating surfaces should be lubricated with soapy water. Other lubricants may be used, but care should be taken not to use a lubricant that may later leak from the joint and stain the pole.

The contractor should mark the male pole section with a marker to designate the minimum slip distance as detailed in the submitted project drawings. If drawings are not available, please contact the factory for minimum slip distances. Typically, minimum slip distances are equal to 1.5 times the female section inside diameter at the slip joint elevation. Manufacturing tolerances may allow the pole to slip past the minimum slip distance. Any distance past the minimum length is acceptable. The joint must be tight with no gaps.

It is extremely important that the pole sections are aligned properly prior to slipping the sections together. The orientation of all appurtenances on the pole should be in an alignment consistent with the Whitco Company pole drawings. When viewing a Whitco pole drawing, primarily the top view for stub base and anchor base type pole assemblies, there is typically one bolt hole on the base plate at the zero degree, or North orientation (4-bolt patterns have 2 bolts at 45 degrees from the North direction). It is critical that the cross arms and/or cages are aligned perfectly perpendicular to this northerly-facing anchor bolt orientation.

The recommended method for applying the necessary force to achieve a tight joint is the use of a ratcheting device (i.e. come-along) with at least a 2 ton capacity on either side of the pole. The "D" rings on each pole section should be aligned and



Figure 7 - Proper Slip Joint



**Figure 8 - "D" Rings**

the ratcheting device (come-alongs) should be securely attached to each side of the pole (see figure 10). As a note of reference, these "D" rings are used as jacking assist points, as general orientation markers and as lifting points during the galvanizing process (see figure 8). Care should be taken to assure that the sections are straight and not binding during the jacking process. If pole sections are misaligned (i.e. not parallel), the sections can wedge together.

To facilitate the joint tightening, the advancing section supported by the crane may be gently oscillated and/or the joint area may be cushioned with a block of wood and the block of wood struck with a hammer (taking care not to strike or otherwise damage the pole).



**Figure 9 - Improper Slip Joint**



**Figure 10 - Slip Joint Assembly**

**Warning:** If the slip joint, when jacked together, comes within 2 inches of a step clip (when applicable) then the factory must be consulted (see figure 9).

**In the event that the minimum slip distance is not satisfied, do not erect pole. Contact factory for authorization of a mechanical connection.**