



## MSI NPST Flowline

MSI Technical Bulletin 004

Subject: Leaking union subs and visible lines of thread post-assembly.

The intent of this document is to address recent concerns related to machining and assembly issues with MSI NPST flowline.

MSI's machining procedures by default include edge breaks for any sharp corners or edges. This is done for many reasons: simplify assembly of parts, transition flow bores, eliminate potential stress risers, and reduce possibility of lacerations during part handling among other reasons. Included in that procedure are the NPST union subs and the tubing used to manufacture flowline.

Prior to machining the API EU or NU threads, the lead-in edge (small end of thread taper) of the mating parts are chamfered as a general machining practice. Once the joint is made up power tight the protruding portion of the tubing is removed flush with the sub face. At that point the tubing OD chamfer has been removed yet the sub ID chamfer remains and greatly outlines the seam between the mating components. An apparent gap or seam will remain at the thread interface due to the remaining chamfer on the flowline sub.

Recently it was brought to MSI's attention that several new joints of flowline were visibly leaking between the union sub and the tubing. Hence, questions were raised about the gap between the joints and the possible relation to the leaking issue. While the two are unrelated, a review of our manufacturing procedures revealed that improper machining and assembly techniques had been adopted outside of accepted practice. Excessive machine tool offset was causing the pitch of the thread to be cut slightly undersized. At the same time it was found that our thread locking compound applicator was not properly mixing the two part epoxy thus leaving a partially cured joint. The leaking flowline issue is directly attributed to the combination of these two factors, it is not a result of the gap on the face of the joint. Equipment related to this problem were documented in accordance with Dixie's Quality Manual, removed from service, and replaced under full warranty.

Additionally, due to requests for a better final appearance, MSI is removing the chamfer from the NPST union subs. This will lessen but not eliminate the seam that is visible at the thread interface. There will always be a portion of the seam visible due to the geometry of the thread profile yet this will be minimized by leaving the partial first thread. It should be noted that although the appearance of the joint is improved no increase in performance should be expected.

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