**Figure QW-461.10**
Rotating Tool Design Characteristics (FSW) Referenced in QW-410

The purpose of the QW-462 figures is to give the organization guidance in dimensioning test specimens for tests required for procedure and performance qualifications. Unless a minimum, maximum, or tolerance is given in the figures (or as QW-150, QW-160, or QW-180 requires), the dimensions are to be considered approximate. All welding processes and filler material to be qualified must be included in the test specimen.

The following nomenclature is in reference to Figures QW-462.1(a) through QW-462.1(e):

\[ T = \text{coupon thickness excluding reinforcement} \]

\[ W = \text{specimen width, } 3/4 \text{ in. (19 mm)} \]

\[ x = \text{coupon thickness including reinforcement} \]

\[ y = \text{specimen thickness} \]

As an alternative, any tension specimen dimensional geometry meeting the requirements of another welding qualification standard is acceptable as long as a cross section can be measured so that an ultimate tensile strength can be determined. All welding processes, filler materials, and heat-affected zones to be qualified shall be included in the test specimen. Weld reinforcement shall be removed prior to testing.

Single or multiple bend test specimens and jigs meeting the dimensional requirements of ISO 5173 are also acceptable provided the bend radius to specimen thickness ratios shown in Figure QW-466.1 are met.