# Abstracts

## Step-Twist Waveguide Components

*H.A. Wheeler and H. Schwiebert. "Step-Twist Waveguide Components." 1955 Transactions on Microwave Theory and Techniques 3.5 (Oct. 1955 [T-MTT]): 44-52.*

The step twist is a number of adjoining sections of straight rectangular waveguide, twisted about their common axis at their junction faces. The technique of designing the step twist resides in the proportioning of the section dimensions and the angles at the twist faces. The resulting design is much shorter than the usual twisted waveguide; it offers further advantages in ease of specifying shape and dimensions, and in their reproducibility in construction. A series of fixed 90-degree step twists has been designed for the rated 40 per cent frequency bandwidths in the standard waveguide sizes for 1 to 40 kmc. The total angle is divided equally among seven faces spaced about 1/8 wavelength in the guide. Each step twist is matched within 0.3 db swr with plain flanges or 0.5 db swr with choke flanges at both ends. Rotary step twists for operation at all angles out to ±90 degrees have been designed for the same bandwidths. The total angle is divided unequally among four faces (choke flanges) spaced about ¼ wavelength in the guide. The entire unit at maximum rotation is matched within 1.2 db swr with choke flanges at both ends; the matching is closer at lesser rotation.

❑ Return to main document.