

TWPC-0310-1, 0410-1 BANDPASS CAVITIES

The Telewave TWPC-0310-1 and TWPC-0410-1 are 10" diameter, ¼-wavelength, high "Q" bandpass cavity filters with superior selectivity. Bandpass cavities reject all frequencies outside a narrow pass band. These cavities reduce transmitter sideband noise, and also protect receivers against desensitization.

The TWPC-0310-1 covers 30–40 MHz, and the TWPC-0410-1 covers 40–50 MHz. The tuning range of these cavities is approximately ±2.5 MHz from center frequency as built. All cavities are tuned to specified frequencies prior to shipping. No further adjustments should be required. The positive locking mechanism allows for quick field re-tuning if frequency changes become necessary.

These cavities feature calibrated adjustable coupling, so that insertion loss can be easily set from 0.5 dB to 2 dB or more with corresponding increases in selectivity. This allows cavity response to be optimized for any operating environment. At densely populated sites, the 0310 / 0410-2 dual and 0310 / 0410-3 triple cavity filters provide much greater selectivity with minimum insertion loss. Multiple cavities can also provide a wider passband when required. Mounting rails are provided for all multiple-cavity filters.

Excellent frequency stability is achieved by the use of a specially machined compensator and Invar rod. The pass frequency is temperature stable from -30°C to +70°C. Ground loop technology places the center pin of each coupling loop at DC ground potential.

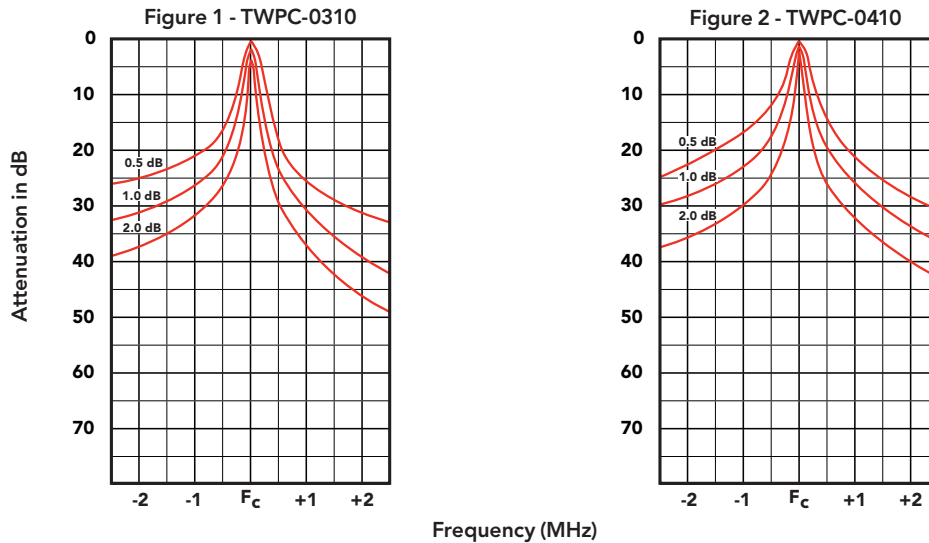
Heavy duty materials are used throughout each cavity to insure high performance and long life. Cavity top plates are machined from ¼-inch aluminum, and are heliarc welded to the cavity body at the high current point for improved conductivity and strength. This allows Telewave cavities to handle up to 350 watts, depending on insertion loss.

Rigid foam inserts support the tuner assembly allowing vertical or horizontal mounting. Similar metals and alodined aluminum help prevent galvanic corrosion. Silver plated tuners and beryllium copper finger stock provide non-corrosive low loss contact, and ensure reliable, long-term performance.



TWPC-0310-1, 0410-1

TYPICAL SELECTIVITY CHARACTERISTICS



| MODEL | TWPC-0310 | TWPC-0410 |
|--|--|--------------------|
| Frequency coverage | 30-40 MHz | 40-50 MHz |
| Tuning range from center frequency | ± 2.5 MHz | ± 2.5 MHz |
| Insertion loss (adjustable) | 0.5 to 2.0 dB | 0.5 to 2.0 dB |
| Attenuation | See figure 1 | See figure 2 |
| Cavity dimensions (Diam. x H) in. (cm) | 10 x 88 (25 x 224) | 10 x 72 (25 x 183) |
| Maximum dimensions with tuners extended in. (cm) | 10 x 97 (25 x 246) | 10 x 81 (25 x 206) |
| Net weight lb. (kg) | 29 (13.2) | 26 (11.8) |
| Shipping weight lb. (kg) | 40 (18.2) | 36 (16.3) |
| COMMON SPECIFICATIONS | | |
| Nominal impedance | 50 ohms | |
| VSWR at resonance (max) | 1.5:1 | |
| Input power (max) vs. insertion loss | 0.5 dB - 350 watts, 1 dB - 250 watts, 2 dB - 150 watts | |
| Temperature range | -30°C to +70°C | |
| Cavity electrical length | 1/4 wavelength | |
| Outer conductor, end plates | 6061-T6 aluminum | |
| Inner conductor, coupling loops | Silver plated copper | |
| Tuning rod | Invar | |
| Contactors, fingerstock | Beryllium copper | |
| Connectors | N or UHF female (opt.) | |
| Finish | Gray acrylic enamel | |