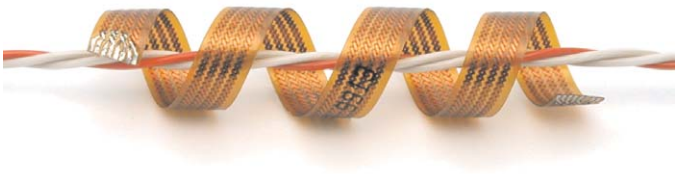
Twisty-Flex™ twisted-pair flex circuits

Get the noise rejection of a twisted wire pair or coax cable in a thin, flexible package!

- Typical thickness less than 0.015" (0.38 mm)
- Minimum bend radius less than ¼" (6 mm)
- Up to 16 pair in a 1" wide circuit
- Can be designed as part of a larger flex or rigid-flex design

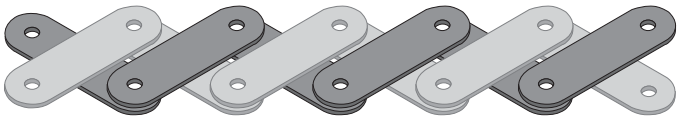


Twisty-Flex is Minco's unique alternative to twisted wire pairs or coax cable in military, avionics, communications and medical devices. Twisty-Flex consists of a two layer flex circuit design with alternating conductors connected by plated through holes. The result is a signal carrying circuit with the noise rejection and impedance matching of coax with the unlimited design possibilities of a flex circuit.

Twisty-Flex conductors can be up to 22" long. Termination can be by exposed pads, through holes or any connector suitable for a flex or hardboard circuit. Precise, repeatable circuits eliminate wiring errors that are possible with twisted wire pairs - each circuit fits only one way. Fast, error free wiring connections save time and rework costs in your production line.

Twisty-Flex is ideal for integrating high-frequency impedance matched conductors with DC or other signals in a single flex design. Use one or two Twisty-Flex pairs in a double- or multi-layer flex circuit to speed up and error proof assembly, while meeting the tightest space and assembly requirements.

How Twisty-Flex™ works



Conductors on the two isolated layers are offset and interconnected by plated through holes. The alternating positions provide the noise-cancelling benefits of twisted wire pairs. Impedance matching high frequency signals as with coax cable is also possible.

Typical specifications*

- Capacitance: 35pF/6" circuit length
- Inductance: <15μH/6" circuit length
- DC resistance: 0.2Ω/6" circuit length
- Impedance: 50 Ω or as specified
- Foil: 0.25 - 2.3 oz. (9 - 72μ) Copper
- Insulation: 0.007 - 0.005" (25 - 125μ) covers and innerlay
- Conductor width: 0.005" (125μ) minimum
- Dielectric strength: 500 VRMS at 60Hz for 30 seconds
- Temperature range: -65 to 150°C (-85 to 302°F). Will withstand a 5 second solder immersion at 260°C (500°F) without damage

* Detail specifications depend on your exact requirements.

Design ideas

- Use as a signal carrier between antenna and main circuit board
- Create board-to-board jumpers
- Partially overmold with rubber or epoxy to provide weatherproof signal entrance to an enclosure
- Combine signal and power carrying circuit for reduced component count and faster assembly

MINCO
ISO 9001

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