

PC pigtail head making



Overview

Knowing how to make an electric pigtail is essential for car wiring projects. You might encounter damaged wire sections or short wires that need extensions to create electrical continuity...

Key Takeaways

A PC fiber optic pigtail is made by attaching a factory-polished connector to one end of a bare fiber, ensuring precise alignment and low-loss performance for splicing into fiber networks. What is a PC Pigtail?

A P

C (Physical Contact) pigtail is a short fiber optic cable with a factory-terminated connector on one end and a bare fiber on the other for splicing into a larger cable or network system.

The P

C connector ensures that the fiber cores make direct contact, minimizing back reflection and insertion loss, which is critical for high-performance networks ().

Materials and Tools Needed

Fiber optic cable (single-mode or multimode) PC connectors (LC, SC, ST, etc.) Epoxy or adhesive (commonly 353 epoxy) Fiber stripper and jacket stripper Polishing films and pads Microscope (400x–600x) for inspection Ultrasonic cleaning machine Solidification furnace (vertical or horizontal) for curing epoxy ()

Step-by-Step Production Process

Prepare the Fiber: Cut the fiber to the required length using a fiber cutting machine. Strip the outer jacket and remove the tight buffer to expose the bare fiber core. Clean the fiber to remove dust and contaminants ().

Insert Fiber into Connector: Apply epoxy inside the ferrule of the PC connector and carefully insert the stripped fiber. Ensure proper alignment to avoid signal loss.

Curing: Place the connector in a solidification furnace to cure the epoxy, securing the fiber in place.

Polishing: Polish the connector end to achieve a smooth, flat surface for physical contact. This step is crucial for minimizing insertion loss and back reflection.

Cleaning and Inspection: Use an ultrasonic cleaning machine to remove debris, then inspect the connector end under a microscope to ensure the fiber is properly aligned and free of defects ().

Testing: Measure insertion loss and return loss to verify the pigtail meets quality standards.

Key Considerations

Connector Type: Choose the correct PC connector (LC, SC, ST) based on network requirements ().

Splicing Method: The bare fiber end is typically fusion spliced or mechanically spliced to the main fiber cable for a low-loss connection ().

Quality Control: Proper polishing, cleaning, and inspection are essential to ensure reliable network performance.

By following these steps, a PC fiber optic pigtail can be produced with high precision, ready for integration into optical distribution frames, patch panels, or field installations, providing both reliability and efficiency in fiber optic networks ().

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Pigtails

Explore Belden's fiber pre-term assembly solutions and discover how traditional Fusion Splice-On Connectors with Mass Fusion Pigtails provide factory-polished performance with field-termination

Fiber Pigtails | Leviton Network Solutions

Leviton fiber optic pigtail kits are for mechanical or fusion splicing applications, and are available in a range of multimode and single-mode fibers.

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Seasonic is known to make quality units, I find it odd that they would put this recommendation for something that has been proven as wasteful many times over. I can also verify as I'm using a splitter

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