

Product:
MTP® Fiber Optic
Connectors
Family:
Connectors

Tech
Tip

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With this document, LanPro wishes to highlight the significant benefits that LanPro Inc.'s MTP® Connectors Offer over Generic MPO Connectors.

The Information Technology environment of today is demanding the ability to transfer data as efficiently as possible due to the enormous pressure imposed by the cloud and high-definition video technologies in today's communication age.

An increase in data transfer remains the driving force on advances in the fiber optic connectors. Fiber optic networks are increasingly solving the problems of the backbone of most modern digital information systems and there is a growing focus upon the MPO type connector which has been designed to easily interconnect multiple fiber strands and transfer an ever increasing amount of data.

MTP® VS. MPO Fiber Optic Connectors

The MPO connector is a late 20th century development, and meanwhile many refinements to the original design have resulted in a much higher performance product. The MTP® connector manufactured by US Conec® is the most prominent and enhanced MPO connector available today.

LanPro Inc. has followed this path, and is assembling the MTP® connector from US Conec® in our factory with their authorization in order to offer our customers this top of the line technology.

While MTP® connector based cables, connectors, and adapters offer significant enhancements (as discussed below), they are fully compatible with generic MPO connectors and can be interchangeably utilized in any network design.

MPO (Multi-fiber push-on), MTP® (Mechanical Transfer Push-on) MTP® Tecnología MPO de alto desempeño.

Typically, an MTP® or MPO connector terminates an 8-144 strand multi-fiber ribbon in an integrated connector. The two types of connectors, Non-Pinned (Female) and Pinned (Male) can be used to join multiple MTP® (MPO) cables using MPO Adapters, or terminate multi-fiber links on a cassette in a fiber optic patch panel. LanPro also offers a range of MTP® Fiber Harnesses to individually route each fiber optic strand.



Figure 1 shows deconstruction of an MTP® connector



MTP® Technical Improvements over Standard MPO

The following section lists the technical improvements between the original MPO design and the modern MTP® connector. Enhancements in guide pins, spring, and ferrule design makes MTP® a better connector with less signal loss in comparison to the standard MPO design.

1. Guide Pins

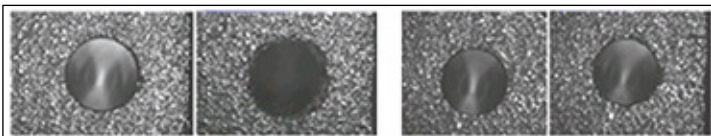
In all MPO and MTP® connectors, the guide pins are designed to accurately guide the mating of two connectors to form a physical connection.

MPO (non-MTP®) connectors have been manufactured with an inferior plastic pin clamp which may lead to effortless breaking of pins with constant cable mating.

LanPro Fiber Optic Cables along with US Conec® MTP® connectors both provide the benefit of having guide pins attached to a recessed metal pin clamp, ensuring a strong clasp on the pins and minimizing any inadvertent breaking when mating connectors.

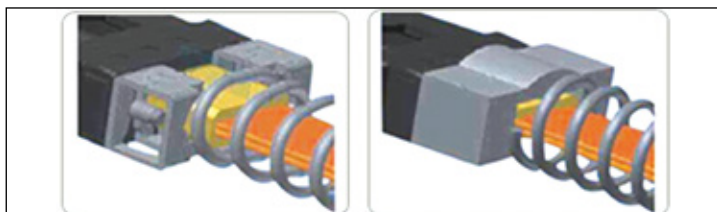
The pins on a standard MPO connector were designed with sharp edges which result in gradual damage to the mating connector.

The redesigned pins contained within MTP® connectors have elliptical edges, allowing for nearly no damage between mating connectors.



MPO guide holes after less than 500 matings

MTP® guide holes after 600 mating



MTP® Pin Clamp

MPO Pin Clamp



MTP® guide Pins

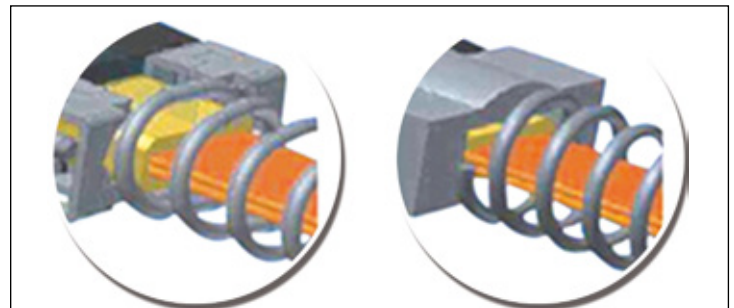
Sharp edges...
iNot good!

MPO guide Pins

2.- Sprin

The spring contained within MTP®/MPO connectors was implemented with the goal of maintaining the adequate force required to establish a constant physical connection when two MTP®/MPO connectors are mated.

The MPO spring to the left can be found in an MPO (Non-MTP®) connector. Due to being unsecured it may accidentally cause damage to the fiber ribbon.



MTP® Spring

MPO Spring

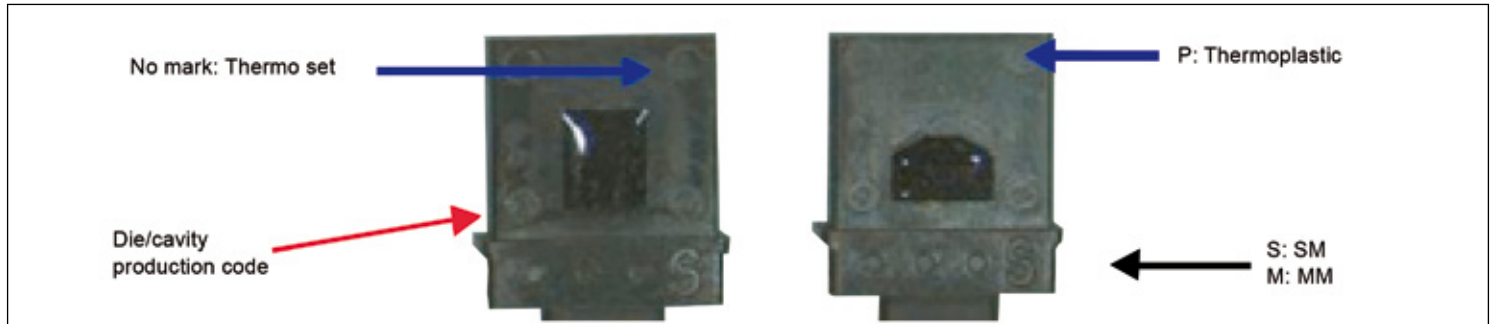
Refinement of the spring design has improved reliability by constraining the spring and modifying it from a circle to an oval shape (as seen in MTP® Spring above), accommodating the width of the fiber ribbon and minimizing any chance of internal damage when mating.



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3.- Férula

Within MTP®/MPO connectors, the ferrule is the component which surrounds the fiber strands and maintains their position throughout the physical connection.



The original compound used in MPO connectors to mold the ferrule was thermo set, a material which when exposed to varying temperatures may change in shape and thus alter the diameter of the guide holes when mating.

MTP® connectors have been improved to use ferrules molded from thermoplastic, which has proven to be much more resilient to varying temperatures. The new material maintains a constant diameter for the guide holes, and thus a more reliable physical connection.

In order to provide the highest quality networking components, LanPro, in partnership with US Conec®, proudly offers the most versatile and complete MTP®

solution. The previously mentioned advantages of the US Conec MTP® Connector paired with the quality of LanPro Fiber Optic Cables provides a high performance connection with rock solid network reliability. All LanPro MTP® fiber optic cables offer the following:

•	Genuine and complete MTP® connector assembly by US Conec®
•	All cables have been manufactured using US Conec® provided equipment.

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