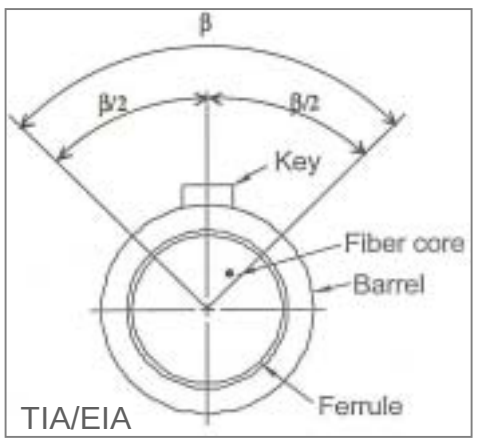
Why is the **TUNING** neccesary?

Optical Communication is made by Optical Cable which has a very thin optical fiber. Optical Communication has much more advantage than Coaxial Cable Telecommunication but only one, an interconnection is very weak point in Optical Communication. That is, the Coaxial Cable is no problem by twist as well as mismatch but the core of optical fiber must be connected exactly each other by straight line on x,y,z. However it is impossible actually that the manufacturer of optical components produce all their products through centered the core in the ferrule. And so TIA/EIA recommended all manufacturers to place the core center towards the connector key in +/-45degree. That is, even if any enduser use any interconnect components produced by any manufacturers, it could be connected for fiber core to match each other and it will be helped for minimized optical performance. This process call "**TUNING**".



TIA/EIA

In a tuned plug, the angular segment into which core eccentricities are to be tuned shall be oriented towards the connector key as illustrated left. This is **TIA/EIA standard** showing Plug Tuning Orientation and designed to serve the public interest through eliminating misunderstandings between manufacturers and purchasers/users, facilitating interchangeability and improvement of products, and assisting the user in selecting and obtaining with minimum delay the proper product for his particular need.

As be recommended by TIA/EIA, the fiber core of all manufacturers' optical fiber interconnect components shall be placed in **±45deg** (or ±30deg) of Key absolutely. This tuning results are helped for minimizing of Insertion Loss and Return Loss as well as Polarization Dependent Loss.

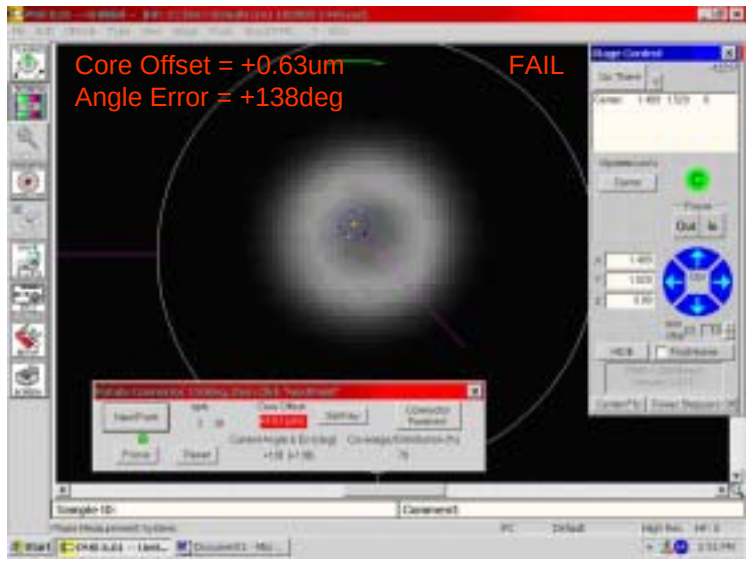
Present Conditions of **TUNING**?

Some manufacturers do not TUNING in their manufacturing process of Optical Fiber Interconnect Components. Some manufacturers do not USE a Standard Tuning Mastercord in there tuning process because of expensive Tuning Mastercords and Tuning Test Measurements and so it is not complied with TIA/EIA Tuning. Unfortunately some manufacturers do not know about the word of "**TUNING**" yet.

At present, the geometrical parameters like Radius, Apex Offset and Fiber Height are managed in the most of manufacturers. However most of them do not know **how much this Tuning process is important**.

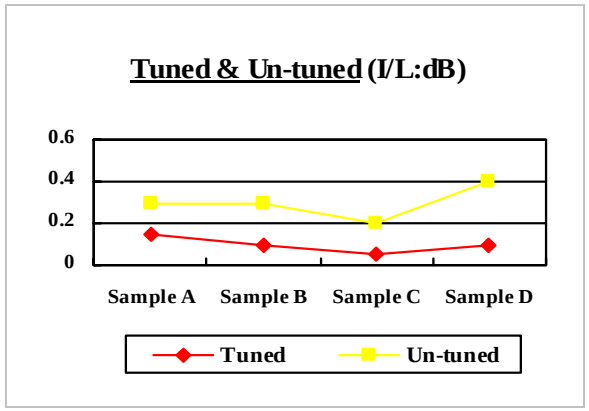
The standard Tuning Mastercords are supplied by JDS Uniphase/Canada, Seiko Instruments/Japan and TheFibers/Korea who is guaranteed by KETI (Korea Electronics Technology Institute) and KATS (Korean Agency for Technology and Standards).

The test measurements for Tuning are known to DORC/USA, DATA-PIXEL/France and SNU/Korea.



Relation of **TUNING** and Specification

From now, you MUST check whether you are using **Tuned** Interconnect Components to improve performance of your system/application. Also you MUST check if your vendor/supplier know about the word of “TUNING” and if he is tuning by the Standard Tuning Mastercord to be guaranteed. Because you MUST be required more tight specification from your customers at 2004. The Insertion Loss between Tuned products and Un-tuned products have much gap in this field.



The below shows the **Required Specification Transition** from Customers/Users.