

# GORE® High Speed Data Cables

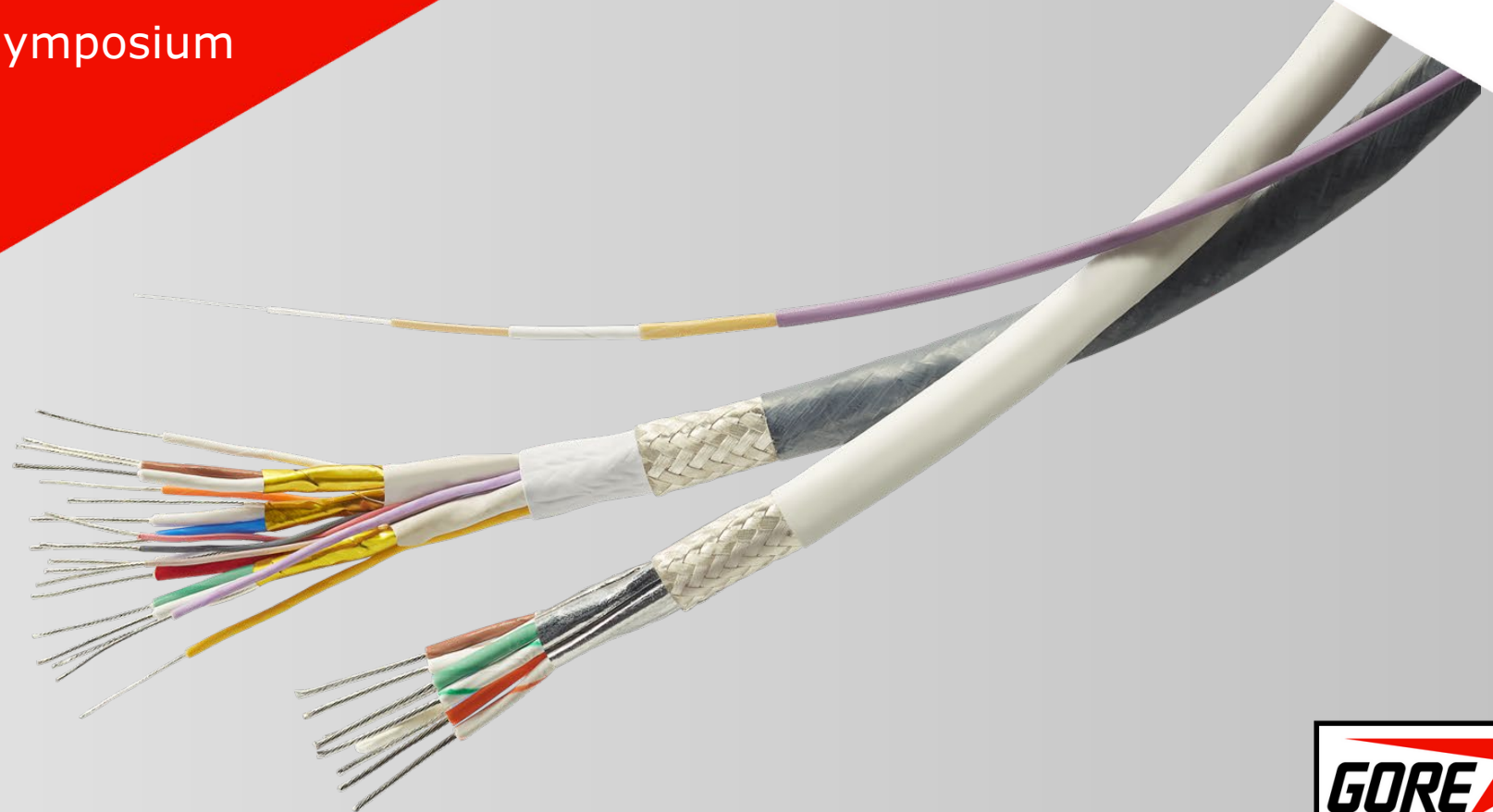
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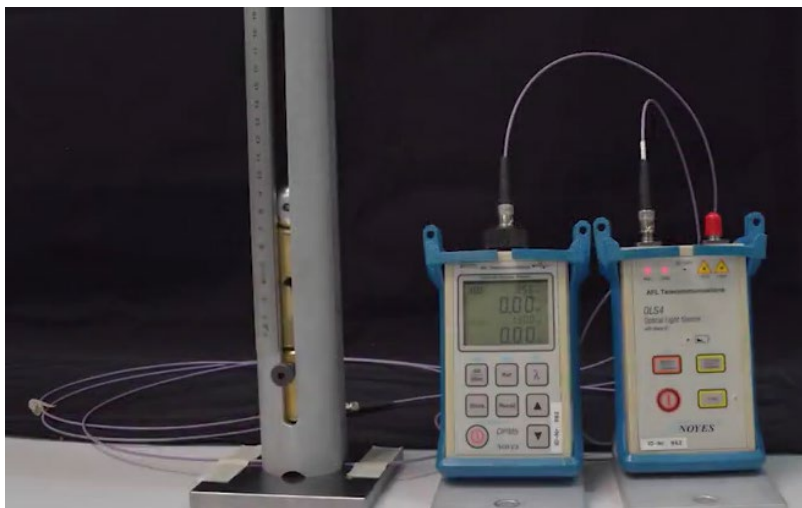
*Together, improving life*



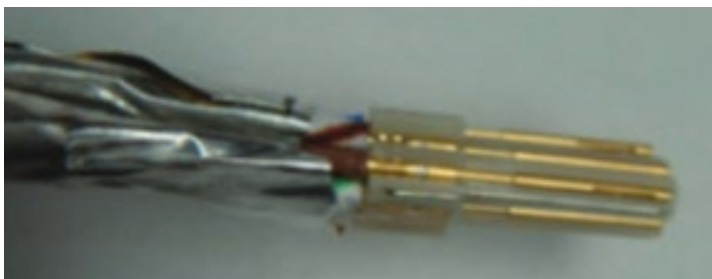
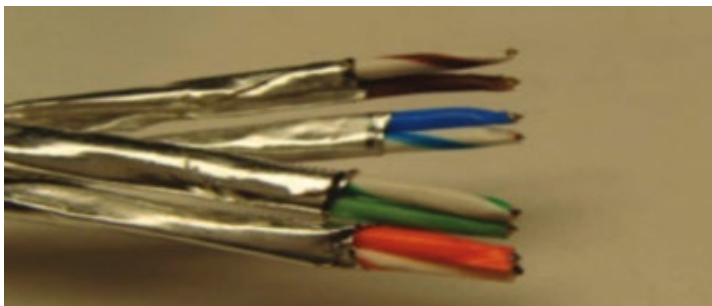
## Demos:

- Fiber Optic Drop Test
- Cat6a Termination
- Inverted Dielectric Termination

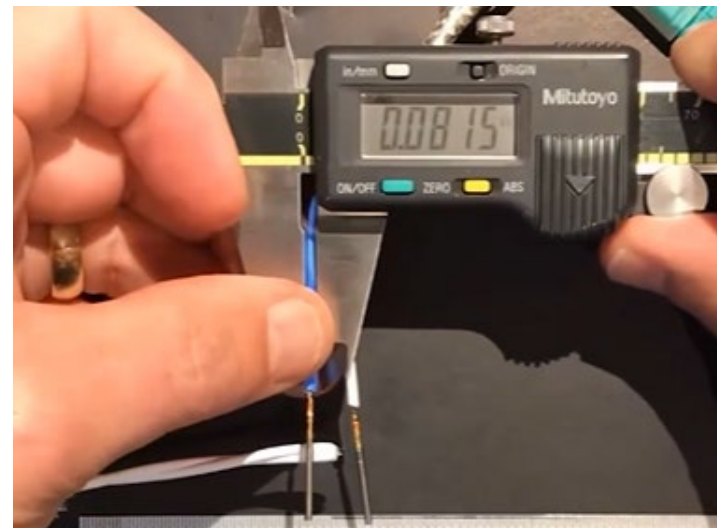
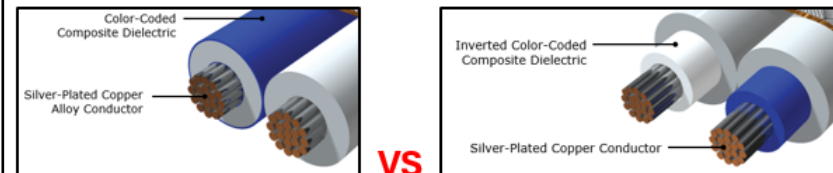
ARINC 802-2



## Size 8 Ethernet Contact



## Inverted Dielectric



# Fiber Optic Drop Test



Advanced cable engineering and materials significantly enhance the durability of fiber optic cables.

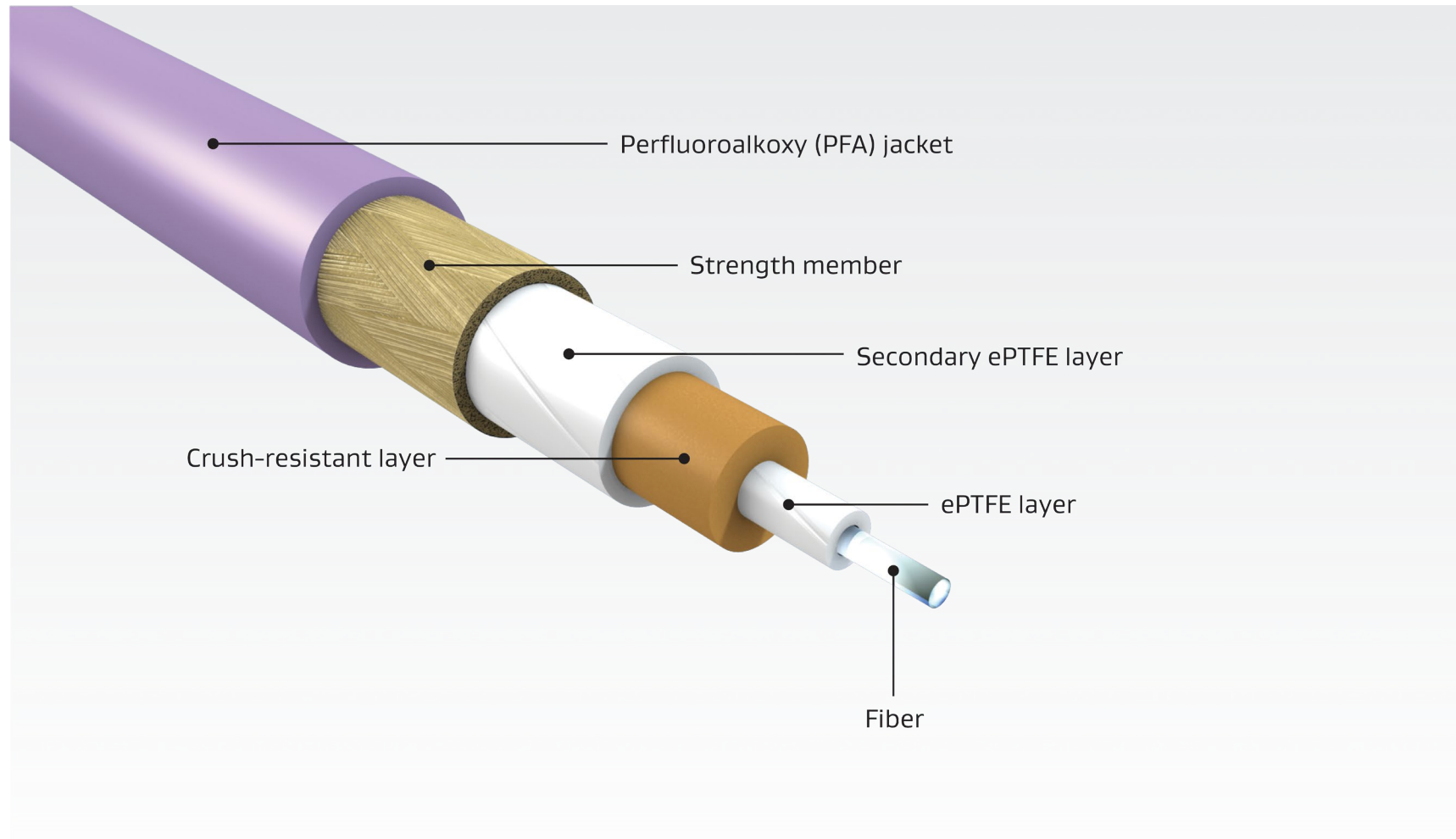


We will show exactly where the material is used and explain its function.



We will compare the durability of a standard aerospace fiber optic cable with a Gore 1.8 mm simplex fiber optic cable.

# Better Materials. Better Insulation. Better Engineering — for Exceptional Performance.



# Video: Impact Resistance Test

Rugged 1.8 mm Simplex



# Ethernet Contacts

## Challenges & Options

- No clear aerospace connector choice for data interconnects.
- Industry needs a solution compatible with **standard tools and workmanship**.
- Must balance **durability, size, and signal density**.
- Resistance to connectors requiring special parts or incompatible with legacy systems.
- **Shell size 11 / sz 22D (Fas-X)**: fits but low signal density, large footprint.
- **Other options**: all-special parts, minimal size advantage.
- **sz8 contacts**: high signal density, fit 38999 inserts, but require special tooling/training and are delicate.

# Size 8 Contact Parts

Crimp Ferrule



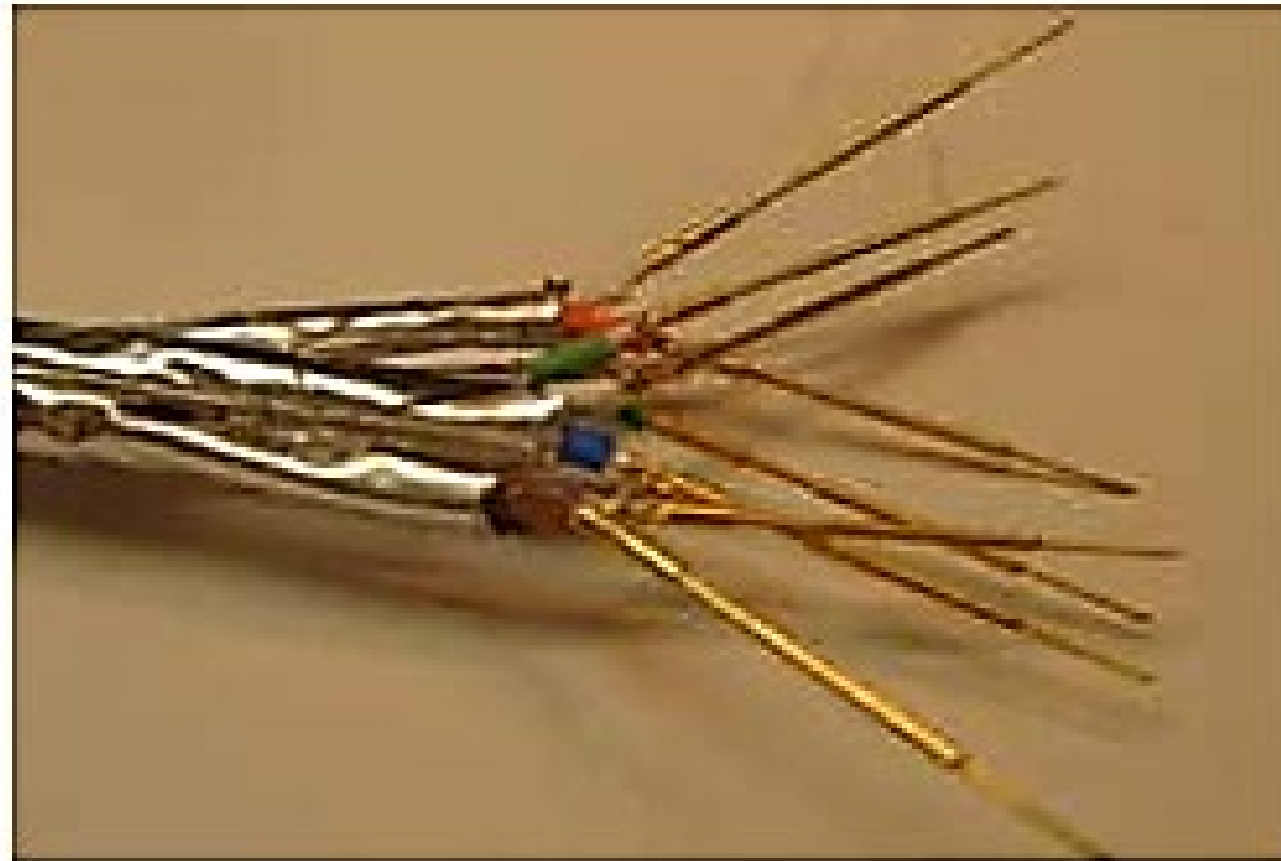
# Size 8 Contact Parts

Bushing



# Size 8 Contact Parts

Individual Contacts – Pins and Sockets



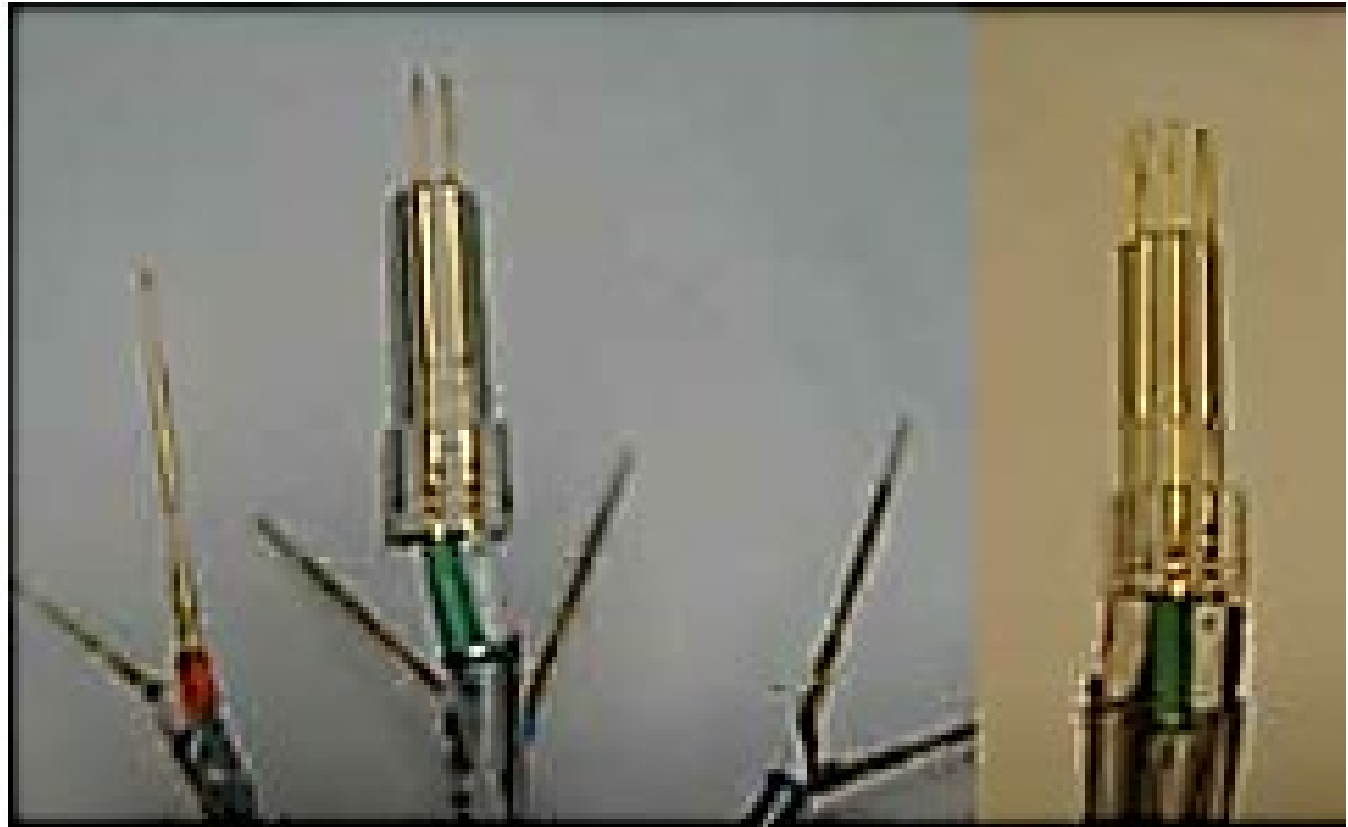
# Size 8 Contact Parts

Inner Insulator and Metal Spacer



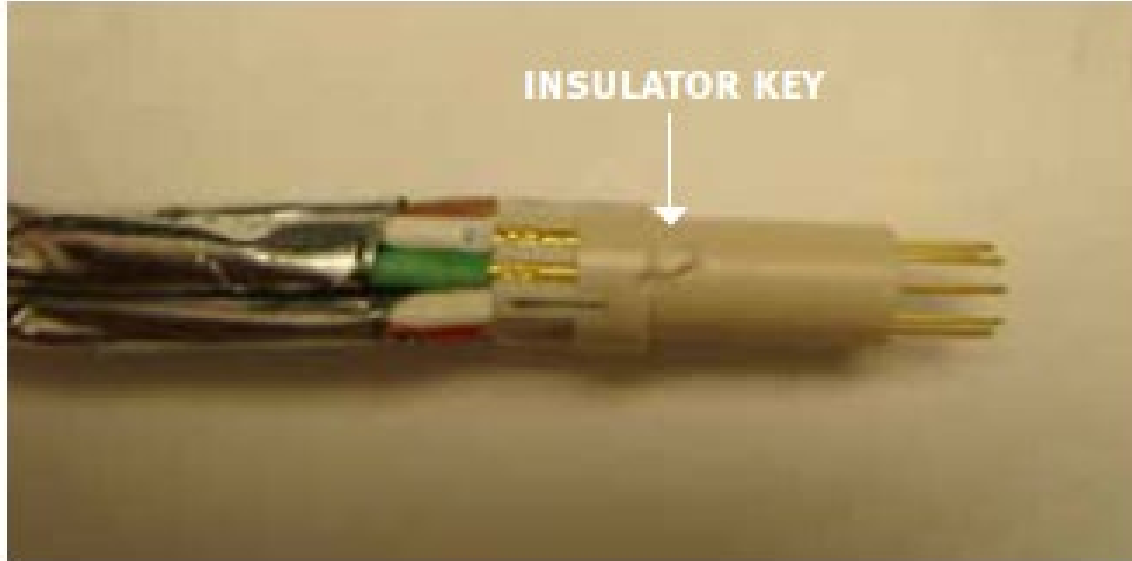
# Size 8 Contact Parts

Inner Insulator with Contacts in Place



# Size 8 Contact Parts

Alignment Key, Outer Insulator and Bushing



# Size 8 Contact Parts

Final Close with Outer Barrel Over Crimp Ferrule



# Cable Color Sequence and Mirror Effect

It's normal for the color sequence at one end to be a mirror image of the other.

- If the same gender contact is used on **both** ends, the wire color sequence must be adjusted by crossing two pairs from top to bottom.
- A crossover near the contact can be difficult to execute and may place high stress on the wires, increasing the risk of shorts.



# Inverted Dielectric Data Cables



Challenges with impedance-controlled wire diameters.



Workmanship issues and common workarounds with standard cables.



How inverted dielectric technology elegantly solves the fitment challenge.

# Inverted Dielectric

Typical insulation

Cable diameter is proportional to an exponent of impedance. For the relatively high 120 Ohm impedance of CAN bus, wire diameters often far exceed the maximum allowable OD.



This results in an awkward interface at the sealing edge of the connector insert.

# Inverted Dielectric

## Current Workarounds

1. Strip the wire much longer than normal (~1.0").
2. Apply thin-walled heat shrink (e.g., Kynar), then re-strip to normal length.
3. Populate the Size 22 AWG contact with the prepared wire.
4. Drawback: Requires extra time, materials, and technician training.

# Inverted Dielectric

## Two-Layer System

1. Cable features an outer ePTFE layer that can be removed separately from the diameter-controlled inner PTFE layer.
2. Use the “next size up” on a wire stripper to score the ePTFE layer, then pull it off by hand, leaving the inner layer intact.
3. With practice, the ePTFE can be pushed back without cutting it off entirely.
4. Strip the inner layer as normal and terminate into the connector insert.

OBRIGADO      GRAZIE  
GRACIAS      DANKE  
THANK YOU      謝謝  
고맙습니다      TACK  
ありがとう  
谢谢

*Together, improving life*

