



Best Practices for Cleaning MIL DTL 38999 (1.6mm) Connectors

Presenter | Date



Connector Cleaning and Sources of Contamination

REASON FOR CLEANING CONNECTORS:

- Mating dirty connectors will cause scratching and pitting ruining termini end faces
- Cleaning both end of mated connector pair before mating will extend service life of assemblies and ensure reliability of signals

COMMON SOURCES OF CONTAMINATION:

- Wear debris generated from moving parts when mating connectors
- Electrostatic charge caused by contact friction from dry cleaning processes
- Cross contaminated alcohol that has been diluted from atmospheric moisture, lint from paper based wipes, and broken cellular structure of foam tipped sticks

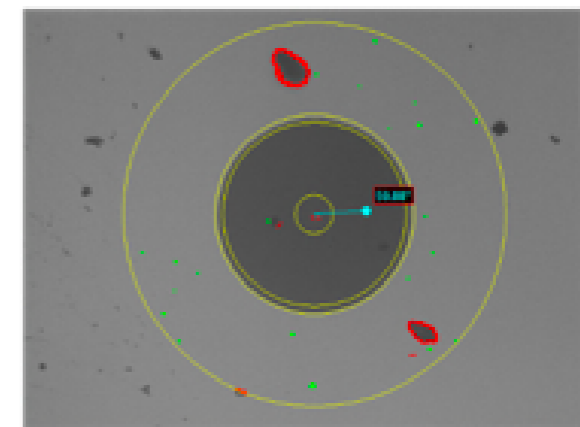
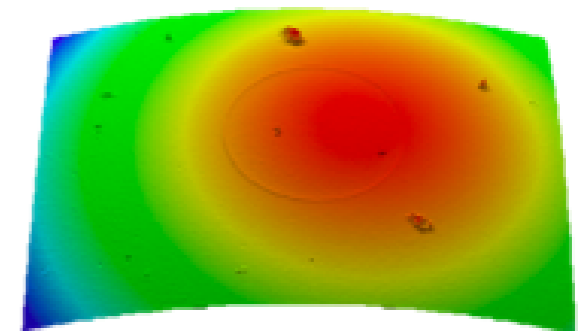


Image of dust contaminated end face courtesy of Promet Optics



Case for Using Sticks and Cleaning Fluid

1. CLEANING PERFORMANCE:

- The use of cleaning fluid breaks up heavy oils and residue contamination
- The strands in the cleaning tip create a capillary action which wicks up contamination from the end face



2. ELMINATION OF ELECTROSTATIC CHARGE EFFECT:

- The cleaning fluid becomes the dissipative medium that eliminates the electrostatic charge on the ferrule and connector housing
- Cleaning with a moisten cleaning stick does not create an electrostatic charge during the wiping process
- The cleaning stick's tip makes contact with the socket wall of MIL PRF 29504/5 termini during the rotation process which dissipates the electrostatic charge
- Using the cleaning fluid will ensure compliance to IPC 8497-1 Sect 10





Case for Using Sticks and Cleaning Fluid

3. LARGEST EFFECTIVE CLEANING REGION:

- The cleaning stick's tip diameter is able to reach contamination that resides in the outer regions of the ferrule end face
- Removing contamination from end face periphery significantly reduces particle migration

LIMITATIONS OF MECHANICAL CLEANERS:

- Dry wiping with mechanical cleaner causes an electrostatic charge from the contract friction between the cleaner's cleaning strand flowing across the ferrule end face
- Wet-dry cleaning with mechanical cleaner is ineffective because the cleaning strand wicks up on both sides of the cleaning strand requiring multiple engages
- The cleaning tip outer diameter is reduced to prevent contact with socket walls that would interfere with the cleaning strand flow
- The effective region for current cleaners is limited to $< \text{Ø}0.6\text{mm}$ for $\text{Ø}1.6\text{mm}$ terminus





Recommended Sticklers Products



MCC P/N: S16
NSN 6070-01-553-2262

22mm length cleaning tip reaches
29504/5 socket termini and
29504/4 pin termini with an
inspection adapter



MCC P/N: P25
NSN 6070-01-553-2258

Recessed cleaning tip in handle
enable cleaning of the periphery
of 29504/4 pin termini



MCC P/N: POC03M
NSN 6850-01-592-9391

Non flammable, non
aerosol precision cleaning
fluid in hermitically sealed
3oz air ship safe steel can





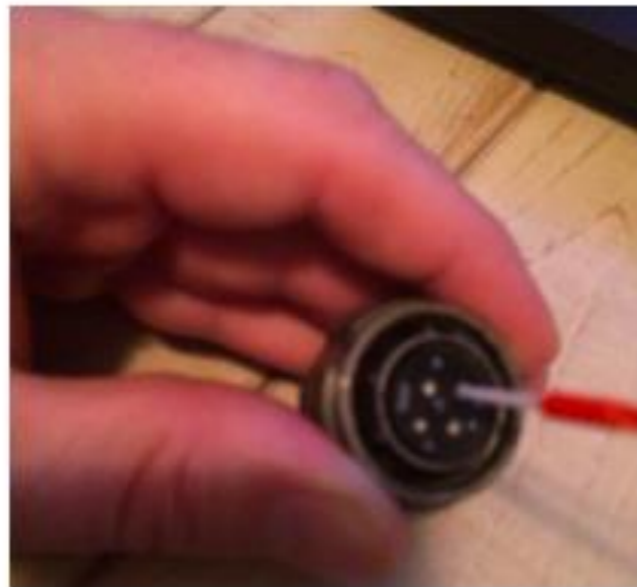
Recommended Cleaning Process

MIL PRF 29504/5 Termini - MIL DTL 38999



APPLICABLE PRODUCTS:

- MCC P/N POC03M
Fiber Optic Splice & Connector Cleaner cleaning fluid
- MCC P/N S16
1.6mm CLEANSTIXX cleaning sticks



FOR BEST RESULTS:

- Moisten stick taking care not to over saturate
- Angle cleaning fluid can and gently engage pump
- Rotate stick in same direction 6X to 8X in same direction
- Use stick once to avoid accidental cross contamination
- To minimize FOD risk, work with single sleeve with 10 sticks





Recommended Cleaning Process

MIL PRF 29504/4 Termini - MIL DTL 38999



APPLICABLE PRODUCTS:

- MCC P/N POC03M
Fiber Optic Splice & Connector Cleaner cleaning fluid
- MCC P/N P25
Pin CLEANSTIXX cleaning sticks



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Thank you.

www.SticklersCleaners.com

