



At the request of the United States Marine Corps in early 1995 KITCO Fiber Optics expanded its fiber optic tool and kitting business into the land based Warfighter arena. KITCO had recently assisted the Navy in developing a comprehensive product line that, to this day, still supports all shipboard training & maintenance worldwide. With the assistance and direction of MARCOMSYSCOM (Marine Corps Systems Command) via GPETE (General Purpose Electronics & Test Equipment) and the DLA (Defense Logistics Agency, Columbus) our Tactical Fiber Optic Cable product line is now complete. The products described in this Military Catalog are the basic tools & tool kits that will allow the Warfighter to identify the problem, repair the cable and/or connector, inspect the quality of the work, and test the reel before returning it to the field.



There are basically two types of M85045 fiber optic cable used by the Warfighter. The first generation (50 micron core size) has two strands of distribution style fiber and is typically found on 300 meter or 1000 meter reels. On each end of the cable is a multi-channel dual, hermaphroditic connector. This simply means that the connector has one pin & one socket making the connector “genderless” so that either end may be held in place while the fiber is deployed. The connector that is placed on the first generation TFOCA fiber reel is a dual, hermaphroditic, Biconic connector and was formerly manufactured to Mil-C-83526/12. The Biconic termini is a physical contact termini that must be polished with a high precision length gauge in order for low losses to be obtained. KITCO has lead the way in developing a digital version of this gauge in conjunction with a new polishing fixture which has proven to yield high quality end-faces. The Warfighter now has modern tools to repair & maintain the first generation reels of fiber.

The second generation of Tactical Fiber Optic Cable is the M85045/8A. This fiber has a 62.5 micron core. The fiber is distribution style & also is usually found on 300 or 1000 meter reels but instead of two strands there are usually four. A new connector specification, M83526/16 (Plug) & M83526/17 (Receptacle) is ready for release in October of 2006. The 2.5mm termini that fits inside the plugs & receptacles is a performance specification Mil-PRF-29504/16. This specification is also due to be released in October. KITCO has proven that the Mil-STD-2042 polishing method for the Mil-PRF-29504/16 yields high quality end-faces and should be used in the termination/connectorization process for both the plug and receptacles.



The tools, tool kits, & test cables (HQJs or High Quality Jumpers) pictured and described in this Military Catalog have all been developed in strict adherence with the relevant military standards & specifications. A separate, more detailed TFOCA catalog is scheduled to be published soon.

**0801-8510 M83526, US Marine Corps,
TFOCA Fiber Optic Termination Kit**

NSN : 5180-01-516-7227

This termination kit was originally designed with input from the United States Marine Corp in 1995 to support the connectorization process for the M83526/12, Dual Biconic, Hermaphroditic Connector now commonly known as TFOCA (1). The original part number was #0801-8500 but was recently changed as the kit has been upgraded to accommodate M83526/16 & 17 TFOCA Second Generation products. This kit allows the Warfighter to replace either a TFOCA (1) or the new M83526/16 & 17 Plugs and/or receptacles. The #0801-8510 is uniquely designed to equip the Warfighter with all the proper tools & consumables to strictly follow the Mil-STD-2042(B) polishing procedure for the 2.5mm ferruled M29504/16 termini. The Defense Logistics Agency analyzed and approved the procedure to assure high quality end-faces, compatibility, & interoperability even in harsh field environments. The M83526/12, TFOCA (1), Dual Hermaphroditic termini's quality is assured by including a new high precision, digital polishing length gauge & an improved polishing fixture. All products placed in this kit, such as epoxy, heat curing oven, microscope, scissors etc. are products that are found on the DOD's Recommended Parts List (RPL) or the Qualified Parts List (QPL).



#0731-1115 M83526, US Marine Corps, TFOCA Fusion Splice Kit

NSN: 6080-01-520-8198

The #0731-1115 Fusion Splicer Kit is designed especially for Tactical Fiber Optic Cable splicing. The small, portable S121M-CUST2 Fusion Splicer was custom designed by the Marines in order to allow the Warfighter to splice two 900 micron buffered fibers at the same time. The fiber stripping, cleaving, & glass protection is also a dual process. The Warfighter can actually strip two fibers, cleave two fibers and splice two fibers simultaneously. This saves the Warfighter literally hours in maintenance costs and re-works. The unique case that this product is housed in is actually a tool that assists the Warfighter in the fusion process by aligning the fiber, securing it in place. The Warfighter need not remove the cleaver or the splicer itself from the case unless necessary. This kit should be used in conjunction with the KITCO Fiber Optics #0731-1170, JPS-400 Splice Protection Sleeve, NSN :6070-01-527-2509.



#0831-9010 M83526, TFOCA Consumables Kit

NSN 6080-01-527-6964

The #0831-9010 contains replenishment supplies for all the consumable items found in the #0801-8510 Termination Kit & the #0731-1115 Fusion Splice Kit.

#0831-8200 M83526/12, TFOCA (1) Fiber Optic Termination Kit

NSN 5180-01-503-8333

This termination kit is basically the same as the #0801-8510 kit but it only supports M83526/12, TFOCA (1), Dual Hermaphroditic Cable Assemblies and ST/SC connectors.

#0831-8210 M83526/16 & 17, TFOCA Second Generation Fiber Optic Termination Kit

NSN 5180-01-503-8930

This termination kit is basically the same as the #0801-8510 kit but it only supports M83526/16 & 17, TFOCA Second Generation Cable Assemblies and ST/SC connectors.

#0831-8220 M83526/12,16 & 17, TFOCA (1) & Second Generation Fiber Optic Termination Kit

NSN 5180-01-503-8937

This termination kit is basically the same as the #0801-8510 kit but it supports both the M83526/12, TFOCA (1), Dual Hermaphroditic Cable Assemblies & the M83526/16 & 17, TFOCA Second Generation Cable Assemblies and ST/SC connectors.



#0831-8230 M83526/12,16 & 17, TFOCA (1) & Second Generation Fiber Optic Termination Kit w/Fusion Splicer

NSN 5180-01-503-8251

This termination kit is basically the same as the #0801-8510 kit but it supports both the M83526/12, TFOCA (1), Dual Hermaphroditic Cable Assemblies, the M83526/16 & 17, TFOCA Second Generation Cable Assemblies, ST/SC connectors and it contains the S121M-CUST2 Dual Fusion Splicer and fusion splice support products.

0801-8505 M83526 TFOCA Upgrade Kit

NSN 6080-01-531-4862

This Upgrade Kit allows the Warfighter that has the #0801-8500 kit to upgrade to the newer #0801-8510 that supports M83526/16 & 17, TFOCA Second Generation products. Other product upgrades are also included such as a new 200X Microscope, better scissors, the new Biconic Polishing Fixture, & the new high precision Polishing Length Gauge.

#0731-1170 M83526 TFOCA Splice Protection Sleeve

NSN 6070-01-527-2509

The JPS-400 Splice Protection Sleeve was designed by KITCO & the US Marine Corps to allow the Warfighter to properly protect the M85045 Tactical Fiber Optic Cable after it has been spliced. Extremely rugged, yet completely flexible when the Warfighter reels the fiber back onto the reel the JPS-400 assumes the contour of the diameter of the fiber reel. Easily disassembled and re-used if a mistake is made during the initial protection process or if re-work should be required later makes this splice protector perfect for the battlefield environment. This product should be used in conjunction with the #0731-1115 Fusion Splice Kit.



#0731-1187 M83526 TFOCA Glass Protection Sleeve

NSN 6060-01-527-2497

These sleeves are used to protect the actual glass fiber after the fusion splice is accomplished. The oven that is attached to the S121M-CUST2 melts the shrinkable tubing that contains two metal "splints" that give the 900 buffered fiber tremendous support. Once the Glass Protection Sleeves are in place the #0731-1170 is placed around the cable area that has been spliced and the cable is now completely protected and can be spooled back onto the reel.

#0801-8525 M83526, US Marine Corps HQRC (High Quality Reference Cable) Kit

NSN: TBD

In order to properly test link loss in a cable reel or assembly that has been manufactured or re-connectorized a Light Source and Power Meter should be used. This equipment should be connected to the reel under test by utilizing High Quality Jumpers (HQJs). KITCO manufactures these jumpers in strict adherence to Military standards as mentioned above. Several kits have been produced to enable the Warfighter to have the proper jumpers to accurately test both the M83526/12 and the M83526/16, TFOCA Cable reels. The #0801-8525 contains all the proper jumpers & couplings that allow this process to occur.



#KFO 80050 M83526/12, US Marine Corps HQLC (High Quality Launch Cable)
NSN: TBD

An Optical Time Domain Reflectometer is used to determine the length of a fiber and to find fiber breaks. In order to accurately and consistently determine this a High Quality Launch Cable (HQLC) is required. These are available for multimode & singlemode testing.

#0701-5433 M83526, TFOCA Cleaning & Inspection Kit
NSN: TBD

The 0701-5433 Cleaning & inspection Kit is designed M83526/12, TFOCA (1) & M83526/16, TFOCA Second Generation Plugs & Receptacles. This kit allows the user to inspect the termini end-faces for debris or damage. A portable handheld video probe microscope is used to inspect termini end-faces without removing the front insert adapters or disassembling the connector backshell. This saves the technician hours of disassembly and reassembly of the connector backshell and eliminates the chance of damaging or breaking the termini. The unit can be operated using battery or AC power.



#0831-8240 M83526/16 TFOCA Optical Loss Test Set Kit
NSN: TBD

The #0831-8240 Optical Loss Test Set (OLTS) Kit is designed for testing the M83526/16, TFOCA Second Generation cable reels for link loss. This kit comes with all the required High Quality Reference Cables (HQRCs) & an approved stabilized multimode Light Source & Power Meter for testing. The unit can be operated using battery or AC power.

