JOINT SERVICES WIRING ACTION GROUP

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JSWAG Conferences/ Announcements

The next JSWAG/JFOWG Meeting is scheduled for March 26-29, 2012 in Virginia Beach, VA. Please visit https://jswag.navair.navy.mil/ for more information.

Voting for the 2011 Lu Roberts award recipient has begun. Please visit https://jswag.navair.navy.mil/ to place your vote. Voting will end March 15 so the winner can be annouced at the 2012 Spring JSWAG/JFOWG meeting.

Other Conferences

- EA-6B MAG -- St. Augustine, FL *February 7-8, 2012*
- Dixie Crow -- Warner Robins, GA *March 18-22, 2012*
- Quad-A -- Nashville, TN *April 1-4, 2012*
- AA&S -- Baltimore, MD *April 2-5, 2012*
- AEA -- Washington, DC *April 3-6, 2012*
- AIMS Conference -- Panama City Beach, FL *April 30-May 3, 2012*
- AUVSI Unmanned Systems 2012 -- Las Vegas, NV *August 6-9, 2012*
- DoD Maintenance Symposium & Exhibition -- Grand Rapids, MI *November 13-16, 2012*

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Splices and More Splices

The NAVAIR Wiring Systems Team (AIR-4.4.5.3 and 6.7.1.3) in cooperation with TE Connectivity and the SAE (Society of Automotive Engineers) is working to standardize environmental resistant splices. The most commonly used environmental resistant splices are the M81824/1-1, 2 and 3 splices specified by SAE standard AS81824/1 for single wire to wire splices and are rated to 150°C (Fig. 1). Standardization efforts have centered on the development of high temperature, multi-wire and heatless environmental resistant splices. The following lists the recently approved splices which have published SAE specifications. They will be updated in the NA 01-1A-505-1 manual, WP 014 00.

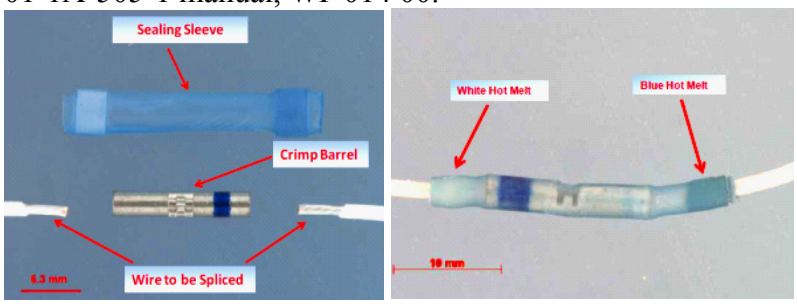


Figure 1- Environmental Splice M81824/1-2

High temperature splice – The new SAE standard AS81824/11 details the requirements for a 200°C environmental resistant splice. This splice uses a nickel plated copper metal crimp splice and a cross-linked Fluoropolymer sealing sleeve to permit usage in higher temperature operating environments. The same crimp tool (M22520/37) is used for the conventional environmental splice M81824/1. The high temp splice can be distinguished from the M81824/1 splice, as the sealing sleeve has two light blue inserts for all sizes, while the M81824/1 uses a clear end and a colored end which identifies the size (Fig. 2).

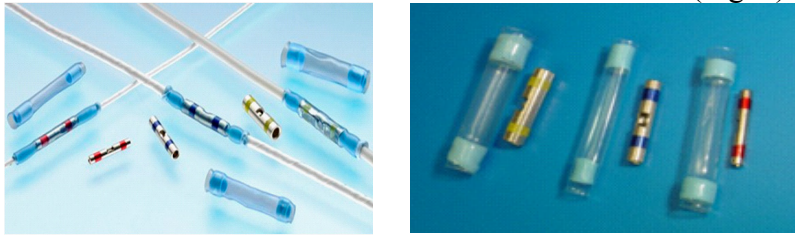


Figure 2 - High Temperature Environmental Splice M81824/11

see Splices, page 2

Splices from page 1

Heatless / Cold splice – The new SAE standard AS81824/12 details the requirements for a 150°C rated splice, which does not require a heat gun to shrink the sealing sleeve. This splice is a one piece splice, which combines a metal crimp sleeve and a sealing sleeve. Environmental resistance protection is provided by an encapsulated transparent cross-linked gel. It is slightly larger than the current M81824/1, it is a permanent repair splice, and can be used anywhere that the current M81824/1 splice can be used. It does require a new crimp tool M81824/44-1 and uses the same color convention (red, blue, yellow) for sizing applications (Fig. 3).

Figure 3 – Cold Splice M81824/12-1, -2 and -3

Multi-wire splices – New SAE standards AS81824/6 through /10 detail the requirements for splices, which are designed to splice a different combination of wire sizes in a single splice. These splices will be available in two temperature ranges 150°C and 175°C, which use tin plated and nickel plated copper metal crimp splice, respectively, to meet the temperature requirements. Multi-wire sealing is accomplished by using a multi-hole enclosure (wagon wheel insert) to environmentally seal three or more wires. Tables are included in these standards with the detail combination of wire sizes, which can be spliced (Fig 4).

AS81824/6 - Splices maximum of two wires in, to maximum of two wires out (175°C).
AS81824/7 – Splices maximum of two wires in, to maximum of six wires out (150°C).
AS81824/8 – Splices maximum of two wires in, to maximum of six wires out (175°C).
AS81824/9 – Splices maximum of six wires in, to maximum of six wires out (150°C).
AS81824/10 – Splices maximum of six wires in, to maximum of six wires out (175°C).

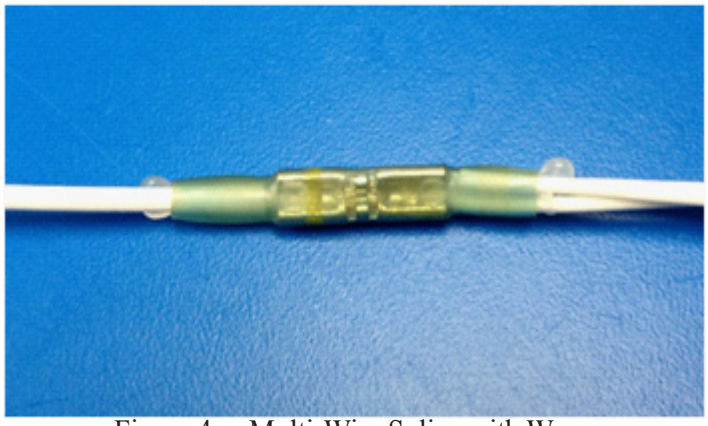
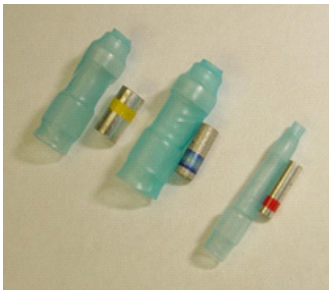


Figure 4a - Multi-Wire Splice with Wagon Wheel Insert (1 X 3)

Figure 4b - Multi-Wire Splice with Wagon Wheel Insert (3 X 3)

Stub Splice – A new SAE standard AS81824/13 details the process of how to terminate a single, or multiple wires using a stub splice which is rated to 200°C. These splices are capable of terminating wire sizes 12 to 26, and two wire combinations, of wire sizes 26, 24, 22, 20, 18 and 12. This type of splice is favored by some aircraft manufacturers, instead of the conventional in-line environmental splice M81824/1 (Fig. 5).



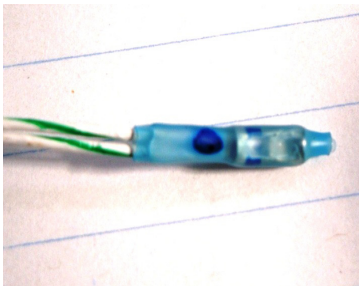


Figure 5a and b - Stub Splice