

# HARNESS REPAIR PRODUCTS

## EVERYTHING YOU NEED TO HELP KEEP HARNESSES MISSION READY

### QUICK REFERENCE GUIDE

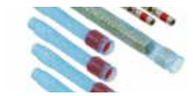
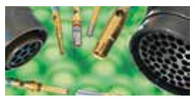
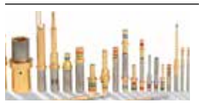
#### Flexible

- Convenient permanent or temporary repairs to restore the harness
- Rugged solutions matched to your application hazards

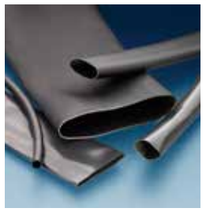
#### Fast and Easy

- Complete line for quick, effective field repairs
- Repair conductors, jackets, bundles, shields, and backshells

## Wire and Conductor Repair

| | Product Family | Description | Standards | Features | Max. Temperature | Temporary / Permanent | Re-Enterable / Re-Workable | Side Entry | Installation Practices & Instructions | Tooling |
|---|---|---|---|---|---|---|---|---|---|---|
|  | **MiniSeal Splices**<br>D-436-XX<br>D-200-XX | Sealed wire-to-wire crimp splice | SAE AS81824/1<br>SAE AS81824/11 Pending | High temperature<br>Sealed<br>Immersion resistant<br>26 thru 12 AWG | 150°C<br>200°C | Perm | – | – | RCPS-200-20 | AD-1377<br>Heat gun |
| | **In-Line Sealed Crimp Splices**<br>W-096-XX | Sealed wire-to-wire crimp/solder splice | EN3373-001 & 013 | High temperature<br>Immersion resistant<br>26 thru 12 AWG | 260°C | Perm | – | – | RPIP-685-00 | AS-1377-S<br>Heat gun |
|  | **SolderSleeve Shield Terminators**<br>S-200-XX | Silver/nickel braid termination | SAE AS83519/5 Pending | High temperature<br>Seals to PTFE | 200°C | Perm | – | – | RCPS-100-71 | Heat gun |
| | **SolderSleeve Splices**<br>D-1744-XX | Sealed wire-to-wire solder splice | NAS 1744 | Sealed<br>Immersion resistant<br>26 thru 12 AWG | 150°C | Perm | – | – | RPIP-850-00 | Heat gun |
|  | **RF One-Step Connectors**<br>RBD-XX-X-XX<br>RTD-XX-X-XX | Solder termination | Meets performance requirements of<br>MIL-C-39012 up to 2.8 GHz | Excellent strain relief<br>Sealed | 150°C | Perm | ✓ | – | RPIP-683-00 | Heat gun |
|  | **Data Bus Splice Kit**<br>D-150-0708-5 | | MIL-STD-1553b<br>Data Bus USAF 8340708 | Sealed<br>EMI resistant | 150°C | Perm | – | – | RPIP-600-12 | AD-1377<br>Heat gun |
|  | **SolderShield Splices**<br>D-150-0XXX | Shielded splice for coax<br>and twisted pairs | | Sealed<br>EMI resistant | 150°C | Perm | – | – | RCPS-150-02 | AD-1377<br>Heat gun |
| | **SolderShield Splices**<br>D-155-XXXX | Shield-only splice | | Sealed<br>EMI resistant | 150°C | Perm | – | – | c/w drawing | Heat gun |
|  | **Cold Applied Splices**<br>D-436-3X-COLD | Gel sealed in-line butt crimp | SAE AS81824/12 | Sealed<br>Altitude immersion<br>No heat gun required<br>26 thru 12 AWG | 150°C | Perm | – | – | RPIP-1102 | AD-1381-1 |
|  | **C-Wrap Repair Sleeves**<br>D-150-C-1X | Jacket repair wrap | SAE AS6224/1 pending | Sealed 26 thru 12 AWG | 150°C | Perm | – | ✓ | RPIP-1101 | Heat gun<br>M81969/8<br>removal tool |
|  | **Rayseal Repair Sleeves**<br>D-260-C-X | Jacket repair wrap | SAE AS6224/2 in process | Sealed 10 AWG thru 4/0 AWG | 260°C | Perm | – | ✓ | RPIP-1106 | CV2014 Heat gun<br>PR-38 Reflector |
|  | **SolderTacts Coax Contacts**<br>D-602-0140 Pin<br>D-602-0141 Socket | One-piece solder contact | MIL-DTL-38999 Series I thru IV<br>M39029/76 and 77 | Unsealed | 150°C | Perm | – | ✓ | ES61226 | Heat gun<br>AD-1565 fixture |
|  | **DEUTSCH Crimp Contacts**<br>38943-2238941-22 | Crimp Contact (Size 22) | M39029/56-348 Socket<br>M39029/58-360 Pin<br>MIL-DTL-38999 Series I thru IV<br>M39029/56 & 59 | Unsealed | 125°C | Perm | – | – | Crimp tool specific | Crimp tool |
|  | **SOLISTRAND Splices** | Butt or inline crimp splice | MIL-T-7928 T Type 1, Class 1 & 2 | Unsealed<br>26 thru 2 AWG<br>1/0 AWG thru 600 MCM | 170°C | Perm | – | – | Crimp tool specific | Various crimp |
| | **STRATO-THERM Splices** | High-temp splice | | Unsealed<br>22 thru 10 AWG | 649°C | Perm | – | – | Crimp tool specific | Various crimp |
|  | **COPALUM Splices** | Butt or inline crimp splice for<br>copper or aluminum | | Unsealed<br>Dry crimp<br>8 thru 3/0 AWG aluminum<br>10 thru 2/0 AWG copper | 150°C | Perm | – | – | Crimp tool specific | Various crimp |
|  | **LightCrimp Fiber Optic Splices** | Fiber-optic field splice<br>250/ 900 um buffered fiber<br>1.8/2.0 mm jacket | | Sealed | 70°C | Perm | – | – | 408-10193 | Kit |

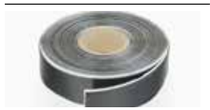
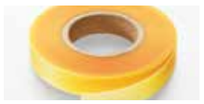
## Bundle and Shield Repair

| | Product Family | Description | Standards | Features | Max. Temperature | Temporary / Permanent | Re-Enterable / Re-Workable | Side Entry | Installation Practices & Instructions | Tooling |
|---|---|---|---|---|---|---|---|---|---|---|
|  | **High-Shrink-Ratio Tubing**<br>RP-4800-XX | 4:1 shrink ratio | VDE 0341 PT 9005 Part A<br>SAE AMS-DTL-23053/5 | High temperature<br>Sealed & Unsealed | 135°C | Perm | ✓ | – | COP551 | Heat gun |
| | **High-Shrink-Ratio Flexible Tubing**<br>HRHF-XX | 5.5:1 shrink ratio | | High temperature<br>Sealed & Unsealed | 135°C | Perm | ✓ | – | COP551 | Heat gun |
| | **High-Shrink-Ratio Tubing**<br>HRHT-XX | 5.5:1 shrink ratio | SAE AMS-DTL-23053/15<br>(except some sizes) | High temperature<br>Sealed & Unsealed | 135°C | Perm | ✓ | – | COP551 | Heat gun |
| | **Ultra-High-Shrink-Ratio Tubing**<br>URHT-XX | Up to 8:1 shrink ratio | UL E85381 | High temperature<br>Sealed & Unsealed | 135°C | Perm | ✓ | – | COP551 | Heat gun |
|  | **RayOLOn Roll-On Sealing Sleeves**<br>LNCL-XX-XXX | Roll-on sleeve | | Reusable<br>Nonshrink<br>Gel strips for sealing<br>NSN listed | 70°C | Perm & Temp | ✓ | – | TUS-41-3007 | – |
|  | **RayRim Edging Material** | Protective, self-adhering edging profile | | Edge protection | 80°C | Perm | ✓ | ✓ | PIP-067 | Heat gun |
|  | **Side-Entry Bushing**<br>SEB-XX | Coiled bushing | SAE AMS-DTL-23052/10<br>MIL-PRF-46846 Type II Class 1 | Side entry | 180°C | Perm | ✓ | ✓ | N/A | – |
|  | **RayBraid Tubular Copper Braid**<br>Ray101-XX ( tin plated)<br>Ray103-XX (nickel plated)<br>LWB-10X-XX (lightweight) | Copper braid over plastic former | | Pull on<br>Add heat shrink tubing for sealing<br>Alternative to braiding machine | 150°C<br>200°C | Perm | ✓ | – | COP361 | – |
|  | **Electrical Shielding Tape**<br>000W280 | Shielded gauze tape | | Tinned copper<br>Wrapping transitions | 150°C<br>200°C | Perm | ✓ | ✓ | – | – |
|  | **INSTALITE Cable Bundle Management Sleeves**<br>CBMS-XX-P | Low friction, light weight system for open wire bundle management | RW3042 | Very lightweight<br>Easy to install<br>Uses standard termination equipment/method<br>Low friction | 150°C | Perm | – | – | ELE-3COP-365 | Available |

## Backshell Terminations

| | Product Family | Description | Standards | Features | Max. Temperature | Temporary / Permanent | Re-Enterable / Re-Workable | Side Entry | Installation Practices & Instructions | Tooling |
|---|---|---|---|---|---|---|---|---|---|---|
|  | **Wrap-Around Heat-Shrink Boot**<br>209W2XX-XX | Zipper termination spine<br>Allows repair when there is no access to end of harness | | | 200°C | Perm | – | ✓ | | Heat gun |
| | **Tinel-Lock Splice**<br>TXS51-XX | Split metal ferrule, for bandstrap shield splice | | Two piece<br>Midpoint shield butt splice | 150°C to 200°C | Perm | ✓ | ✓ | | Banding tool |
| | **Tinel-Lock Splice**<br>TSR-XX | Metal ferrule for Tinel shield splice | | Midpoint shield butt splice | 150°C to 200°C | Perm | ✓ | – | | Tinel heat tool |
|  | **HexaShield Adapters**<br>Hex-XX…. | Metal ferrule individual shield terminations | | Overall shield termination | 150°C to 200°C | Perm | ✓ | – | | Torque tool |
|  | **Bandstrap**<br>BND-1225S | Steel straps, nickel or cadmium plated | | Easy replacement of shield termination | 150°C to 200°C | Perm | ✓ | ✓ | | Banding tool |
|  | **Side-Entry Tinel Ring**<br>SETR-XX | Split Tinel Ring shield termination | | Notch engagement<br>Easy replacement of Tinel Ring | 150°C to 200°C | Perm | ✓ | ✓ | | Tinel heat tool |

## Jacket Repair

| | Product Family | Description | Standards | Features | Max. Temperature | Temporary / Permanent | Re-Enterable / Re-Workable | Side Entry | Installation Practices & Instructions | Tooling |
|---|---|---|---|---|---|---|---|---|---|---|
|  | **High-Temp Heat-Shrink Tape**<br>RT-555-TX.X-A260-XX | High-temperature, side-entry, shrinkable repair tape | RT-1381 | High temperature<br>Sealed<br>Fluids resistant<br>Altitude immersion<br>Moderate peel strength | 200°C | Perm | ✓ | ✓ | TUS-41-3032 | Heat gun<br>PTFE tape |
|  | **Self-Amalgamating Tape**<br>S-1081 | Bonds to itself | RK-6019 | Supplement with adhesive at ends for sealing | 130°C | Perm & Temp | ✓ | ✓ | ELE-3COP-606<br>c/w data sheet<br>HSL#04146 | Heat gun |
|  | **Silicone Fusion Tape**<br>608036 | | | High temperature sealing<br>Low peel<br>Supplement with heat shrink tubing for mechanical protection | 200°C | Temp | ✓ | ✓ | 408-9716 | N/A |
|  | **Chemical- and Abrasion-Resistant Heat-Shrink Tubing**<br>DR-25 | 2:1 shrink ratio | SAE AMS-DTL-23053/16<br>VG95343 Part 5 Type D<br>DEF STAN 59-97 Issue 3 | Sealing, strain-relief<br>Mechanical protection<br>Supplement with adhesive | 150°C | Perm | ✓ | – | ELE-3COP-551<br>PIP-068<br>COP551TUS-41-3024 | Heat gun |
| | **High-Temperature Heat-Shrink Tubing**<br>RT-555-XX | 2:1 shrink ratio | RT-555 | High temp<br>Mechanical protection<br>Supplement with adhesive | 200°C | Perm | ✓ | – | ELE-3COP-551 | Heat gun |
| | **Semiflexible Dual-Wall Heat-Shrink Tubing**<br>HTAT-XX | 4:1 shrink ratio<br>Hotmelt adhesive | SAE AMS-DTL-23053/16 | Sealing, strain-relief | 125°C | ✓ | ✓ | – | COP610 | Heat gun |
|  | **Heat-Shrink Molded Parts**<br>AT-099-XX<br>INSTALITE | High shrink ratio<br>Elastomer sleeve | MIL-S<br>VG95343<br>VG95343/XX<br>AS85049/XX | Sealing, strain-relief<br>Heat-activated epoxy adhesive Refurbish back-shell<br>Anti-rotation | 150°C | Perm | ✓ | – | COP554 | Heat gun |
|  | **Helical Convolex Conduit Tubing**<br>HCTE | High temperature, fluid resistant<br>Conduit, nonheat shrink | VG96936 Part 6<br>RT-1162 | High temp<br>Impact protection<br>Flexing<br>Supplement with shrink boots<br>Supplement with adhesive | 200°C | Perm | ✓ | – | COP566 | N/A |
|  | **COPALUM Splice Cover**<br>RT-555-XXX-YYY-A287 | High-temperature, heat-shrinkable, fluid-resistant sealing sleeves | FAR Part 25<br>FAA Standard | Sealed, high temp | 200°C | ✓ | ✓ | – | TUS-41-3026 | Heat gun |
|  | **Wrap-Around Marker**<br>WM-SCE | Wrap around heat-shrink identification marker | | Adhesive lined<br>Harness marking<br>Any difficult to access area | 135°C | ✓ | ✓ | ✓ | 411-121004 | Heat gun<br>PTFE tape<br>Thermal printer |
|  | **S1260 Adhesive Tape** | Fast, permanent repair to high temperature PTFE jacket | RT-1050/29 | High temperature sealing<br>Fluid resistance<br>Seals to PTFE<br>Cures with heat gun, no oven required | 240°C | Perm | – | ✓ | TUS-44-3039 | Heat gun rated to 2200 W |
|  | **Epoxy Adhesive**<br>S-1125 | Two-component liquid<br>Sealing and mechanical bonding | VG95343/15<br>RK-6619 | Flexibility<br>Potting<br>High peel strength<br>Room temp cure, no oven required | 240°C | Perm | – | ✓ | COP604 | N/A |
|  | **Hotmelt Adhesive Tape**<br>S-1048 | Sealing and mechanical bonding | RT-1050/3 | Flexibility<br>High peel strength<br>No curing<br>Heat gun set<br>Re-workable | 120°C | Perm | ✓ | ✓ | COP607 | Heat gun |
| | **Conductive Epoxy**<br>S-1184 | Two-component liquid<br>Sealing and mechanical bonding | RK-6627 | Flexibility, Potting, Braid shield termination<br>Low electrical resistance<br>No heat, no solder, no clamping<br>Supplement with structural/ sealing epoxy<br>Caution with shelf life & storage | 150°C | Perm | – | ✓ | COP522<br>COP505 | N/A |
| | **Shrink Tape**<br>T-DR-25 | No adhesive<br>Sealing and mechanical bonding | | Flexibility<br>Mechanical protection<br>Nonself-amalgamating<br>Supplement with adhesive for sealing and bonding | 135°C | Perm | – | ✓ | TDR25INSTALL | Heat gun |

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