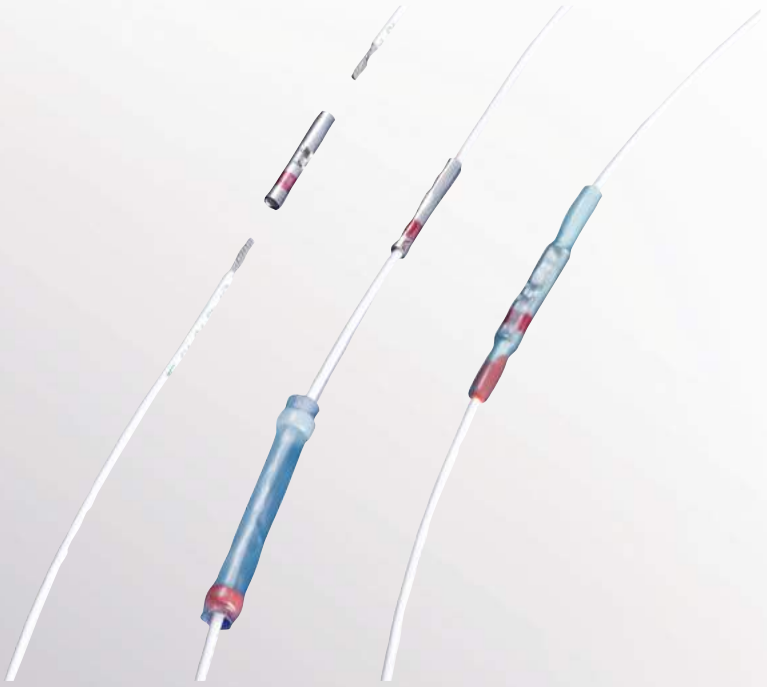
# STS SOLDER TERMINATION SLEEVES
# PRODUCT SOLUTIONS GUIDE



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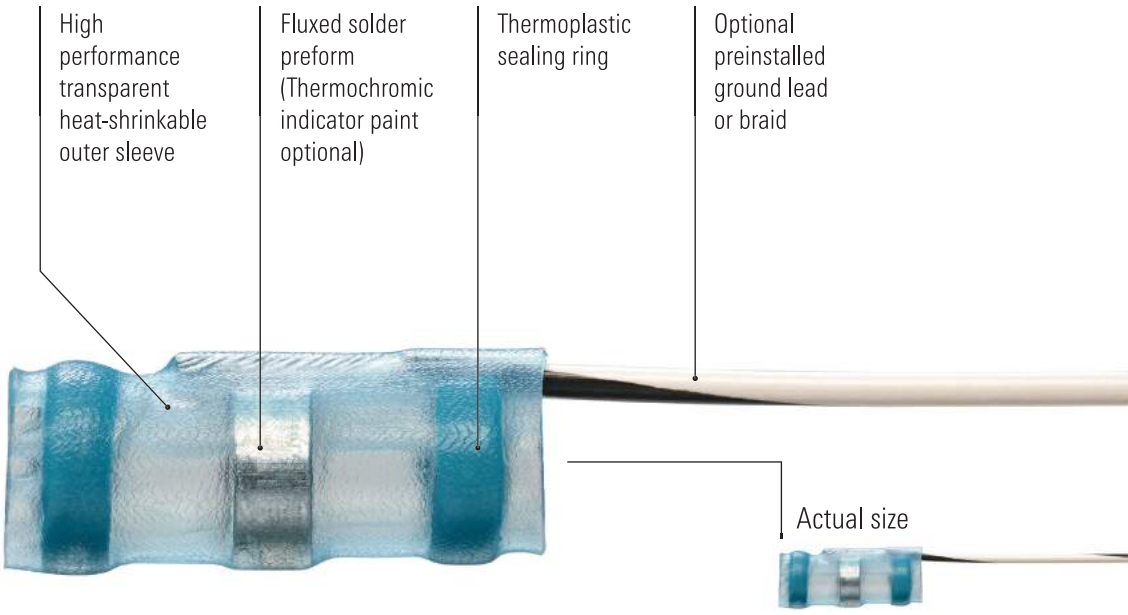
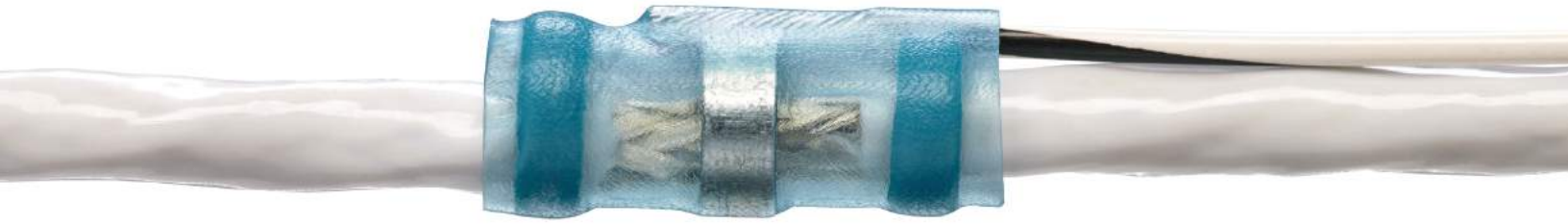
## Typical STS Construction Details

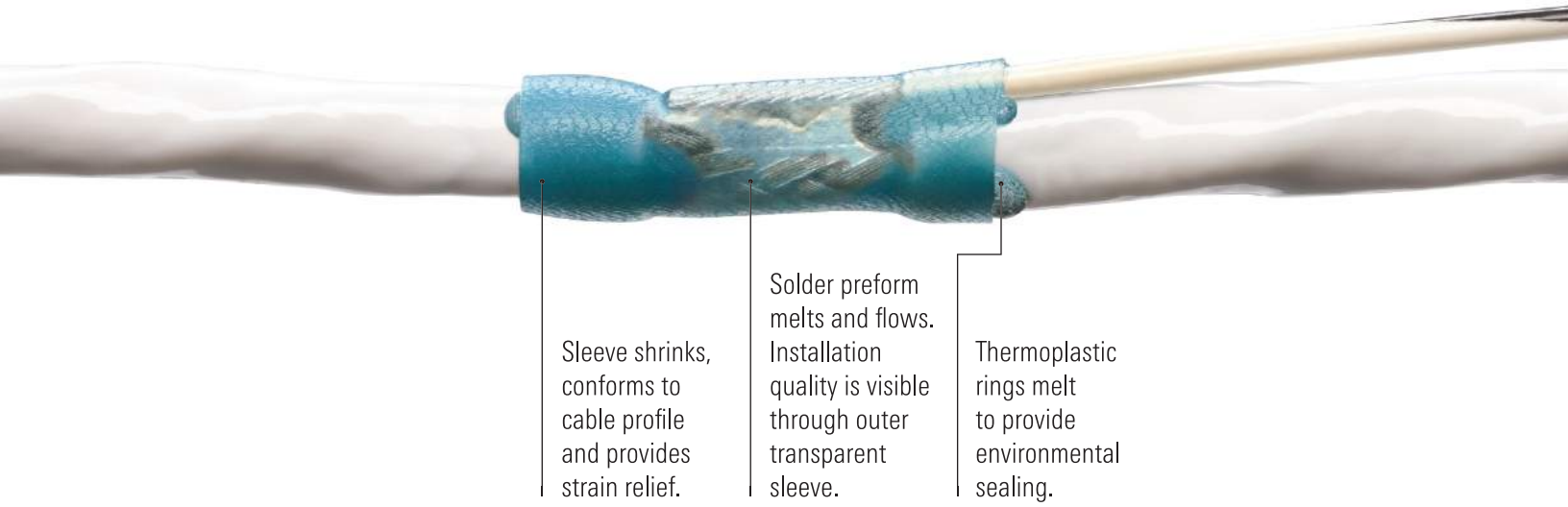



## Installation Instructions

1. Insert prepared cable.



2. Apply heat (hot air or infrared heating tool).



# RELIABLE • REPEATABLE • INSPECTABLE

STS Solder Termination Sleeves provide the most reliable means of terminating a wide variety of coaxial cables types. In addition, they can be used for wire-to-wire or wire-to-pin style connections, and even on triaxial cable assemblies. They solder, seal, insulate, and strain relieve critical connections in one simple step. STS devices are available for low and high temperature cables and come in a range of sizes, with or without preinstalled lead wires or braid conductors. Lead wires come in many choices of color, AWG sizes and types.

Built to stringent standards, including SAE-AS83519 and NAS 1744, 1745 & 1746, each STS device has an internal precision engineered pre-fluxed solder preform, meaning that every connection receives identical amounts of solder and flux resulting in highly repeatable processes. STS products have a long history of use in a variety of areas ranging from commercial aircraft and military aerospace & defense to high volume commercial applications.

Certain STS parts also have a temperature indicating (TI) paint on the solder rings that changes color when sufficient heat has been applied as visual evidence that the termination has been properly completed. High performance sealing inserts at each end ensure that connections are environmentally resistant. A transparent tough outer shrinkable sleeve made from semi-rigid crosslinked fluoroplastic provides strain relief, insulation and mechanical protection of the finished solder joint and allows for convenient visual inspection.

| STS Part Number Family | Industry Specification |
|---|---|
| H-M Series (Immersion resistant w/o lead wire, 150°C) | AS83519/1 (QPL listed product) |
| H-ML Series (Immersion resistant with lead wire 150° C) | AS83519/2 (QPL listed product) |
| H-MB Series (w/braided lead, 150°C) | ---- |
| H-H Series (High Temperature, 175°C) | RoHS |
| H-C Series (High Temperature Convection Heated, 150°C) | NAS 1744, NAS 1745 |
| L-C Series (Low Temperature Convection Heated, 125° C) | NAS 1745 |
| H-I Series (High Temperature Infrared Heated, 150°C) | NAS 1746 |
| E-C Series (Commercial Wire Termination, 125°C) | RoHS |

## STS Part Numbering Identification

**H – ML – X** *EXAMPLE*

### Sleeve Size
1 is smallest, 5 is largest (for lead wire products, dash #s = 1-5, 6-10, 11-15, 16-20 , respectively)

### Preinstalled Lead Wire or Braid

L = Lead Wire

*Dash # "X" = Size; Gauge*
- 1-5 = 20 awg
- 6-10 = 22 awg
- 11-15 = 24 awg
- 16-20 = 26 awg

B = Braid

*Dash # "XXXX" = Size; Length; Plating (T= Tin, N= Nickel, S= Silver)*
Sizes 1-5 available in various lengths & plating types (call SEIP Customer Support for detailed part #)

### Heating Method
C = Convection / Hot Air
I = Infrared
M = Mil-Spec (thermochromic indicator) Hot Air or Infrared

| Solder Alloys | *Content* | *RoHS* | *Solder Melt Temp* | *Operating Temp* |
|---|---|---|---|---|
| H-H = Sn96 | 96% tin;4% silver | YES | (221°C) | (175°C) |
| H = Sn63 | 63% tin;37% lead | NO | (183°C) | (150°C) |
| L = Cd18 | 18% cadmium;32% lead;50% tin | NO | (145°C) | (125°C) |
| E = Bi58/Sn42 | 58% bismuth;42% tin | YES | (138°C) | (125°C) |

# 150ºC Operating Temperature STS

**AS83519/1 & 2 (150˚C)**
**Convection or Infrared Applications**
**Sn63 (RMA flux)**

| Size | CABLE OD RANGE | NO PREINSTALLED WIRE | | PREINSTALLED 20 AWG WIRE (M22759/32-20-90) | | PREINSTALLED 22 AWG WIRE (M22759/32-22-90) | | PREINSTALLED 24 AWG WIRE (M22759/32-24-90) | | PREINSTALLED 26 AWG WIRE (M22759/32-26-90) | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | INCHES | SEIP | AS (MIL) | SEIP | AS (MIL) | SEIP | AS (MIL) | SEIP | AS (MIL) | SEIP | AS (MIL) |
| 1 | .020-.105 | H-M-1 | M83519/1-1 | H-ML-1 | M83519/2-1 | H-ML-6 | M83519/2-6 | H-ML-11 | M83519/2-11 | H-ML-16 | M83519/2-16 |
| 2 | .030-.145 | H-M-2 | M83519/1-2 | H-ML-2 | M83519/2-2 | H-ML-7 | M83519/2-7 | H-ML-12 | M83519/2-12 | H-ML-17 | M83519/2-17 |
| 3 | .050-.200 | H-M-3 | M83519/1-3 | H-ML-3 | M83519/2-3 | H-ML-8 | M83519/2-8 | H-ML-13 | M83519/2-13 | H-ML-18 | M83519/2-18 |
| 4 | .070-.255 | H-M-4 | M83519/1-4 | H-ML-4 | M83519/2-4 | H-ML-9 | M83519/2-9 | H-ML-14 | M83519/2-14 | H-ML-19 | M83519/2-19 |
| 5 | .100-.300 | H-M-5 | M83519/1-5 | H-ML-5 | M83519/2-5 | H-ML-10 | M83519/2-10 | H-ML-15 | M83519/2-15 | H-ML-20 | M83519/2-20 |

**NAS 1744 (150˚C)**
**Convection or Infrared Applications**
**Sn63 (RMA flux)**

| Size | CABLE OD RANGE | NO PREINSTALLED WIRE | |
|---|---|---|---|
| | INCHES | SEIP | NAS |
| 1 | .020-.095 | H-C4-1 | 1744-1 |
| 2 | .030-.125 | H-C4-2 | 1744-2 |
| 3 or 4 | .050-.200 | H-C4-3 | 1744-3 |
| 4 or 5 | .100-.300 | H-C4-4 | 1744-4 |

**NAS 1744 (150˚C)**
**Convection or Infrared Applications**
**Sn63 (RA flux)**

| Size | CABLE OD RANGE | NO PREINSTALLED WIRE | |
|---|---|---|---|
| | INCHES | SEIP | NAS |
| 1 | .020-.095 | H-C4-5 | 1744-5 |
| 2 | .030-.125 | H-C4-6 | 1744-6 |
| 3 or 4 | .050-.200 | H-C4-7 | 1744-7 |
| 4 or 5 | .100-.300 | H-C4-8 | 1744-8 |

***NAS 1745 (125˚C)**
**Convection Applications**
**Cd18 (RMA flux)**

| Size | CABLE OD RANGE | NO PREINSTALLED WIRE | |
|---|---|---|---|
| | INCHES | SEIP | NAS |
| 1 | .020-.095 | L-C-1 | 1745-13 |
| 2 | .030-.125 | L-C-2 | 1745-14 |
| 3 | .050-.200 | L-C-3 | 1745-15 |
| 4 | .070-.255 | L-C-4 | 1745-23 |
| 5 | .100-.300 | L-C-5 | 1745-16 |
| 6 | .220-.460 | L-C-6 | 1745-24 |
| 7 | .260-.545 | L-C-7 | 1745-25 |

**NAS 1745 (150˚C)**
**Convection Applications**
**Sn63 (RMA flux)**

| Size | CABLE OD RANGE | NO PREINSTALLED WIRE | |
|---|---|---|---|
| | INCHES | SEIP | NAS |
| 1 | .020-.095 | H-C-1 | 1745-1 |
| 2 | .030-.125 | H-C-2 | 1745-2 |
| 3 | .050-.200 | H-C-3 | 1745-3 |
| 4 | .070-.255 | H-C-4 | 1745-17 |
| 5 | .100-.300 | H-C-5 | 1745-4 |
| 6 | .220-.460 | H-C-6 | 1745-18 |
| 7 | .260-.545 | H-C-7 | 1745-19 |

**NAS 1745 (150˚C)**
**Convection Applications**
**Sn63 (RA flux)**

| Size | CABLE OD RANGE | NO PREINSTALLED WIRE | |
|---|---|---|---|
| | INCHES | SEIP | NAS |
| 1 | .020-.095 | H-C5-5 | 1745-5 |
| 2 | .030-.125 | H-C5-6 | 1745-6 |
| 3 | .050-.200 | H-C5-7 | 1745-7 |
| 4 | .070-.255 | H-C5-20 | 1745-20 |
| 5 | .100-.300 | H-C5-8 | 1745-8 |
| 6 | .220-.460 | H-C5-21 | 1745-21 |
| 7 | .260-.545 | H-C5-22 | 1745-22 |

**NAS 1746 (150˚C)**
**Infrared Applications**
**Sn63 (RMA flux)**

| Size | CABLE OD RANGE | NO PREINSTALLED WIRE | |
|---|---|---|---|
| | INCHES | SEIP | NAS |
| 1 | .020-.095 | H-I-1 | 1746-1 |
| 2 | .030-.125 | H-I-2 | 1746-2 |
| 3 | .050-.200 | H-I-3 | 1746-3 |
| 4 | .070-.250 | H-I-4 | 1746-9 |
| 5 | .100-.300 | H-I-5 | 1746-4 |

**NAS 1746 (150˚C)**
**Infrared Applications**
**Sn63 (RA flux)**

| Size | CABLE OD RANGE | NO PREINSTALLED WIRE | |
|---|---|---|---|
| | INCHES | SEIP | NAS |
| 1 | .020-.095 | H-I-1-3 | 1746-5 |
| 2 | .030-.125 | H-I-2-3 | 1746-6 |
| 3 | .050-.200 | H-I-3-3 | 1746-7 |
| 4 | .070-.250 | H-I-4-3 | 1746-10 |
| 5 | .100-.300 | H-I-5-3 | 1746-8 |

**Low temperature @125ºC - See STS part number identification for operating temperature detail*

## 175°C High Operating Temperature STS – RoHS

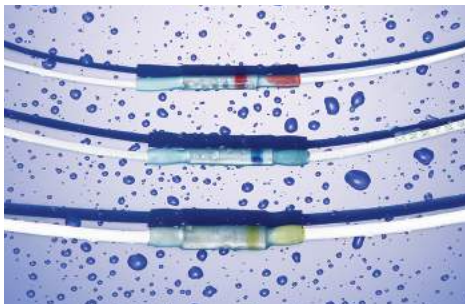
| HIGH TEMP STS (175°C) Convection Applications Sn96 (RA flux) | | |
|---|---|---|
| Size | CABLE OD RANGE | NO PREINSTALLED WIRE |
| | INCHES | SEIP |
| 1 | .020-.105 | H-HC-1 |
| 2 | .030-.125 | H-HC-2 |
| 3 | .050-.200 | H-HC-3 |
| 4 | .070-.280 | H-HC-4 |
| 5 | .100-.300 | H-HC-5 |

| HIGH TEMP STS with leads(175°C) Convection Applications Sn96 (RA flux) | | | |
|---|---|---|---|
| Size | CABLE OD RANGE | PREINSTALLED 20 AWG WIRE (M22759/41-20-90) | PREINSTALLED 22 AWG WIRE (M22759/41-22-YY) |
| | INCHES | SEIP | SEIP |
| 1 | .020-.105 | H-HML-1 | H-HML-6-YY |
| 2 | .030-.145 | H-HML-2 | H-HML-7-YY |
| 3 | .050-.200 | H-HML-3 | H-HML-8-YY |
| 4 | .070-.255 | H-HML-4 | H-HML-9-YY |
| 5 | .100-.300 | H-HML-5 | H-HML-10-YY |

## 125°C Low Operating Temperature STS – RoHS

| LOW TEMP STS (125°C) Convection Applications Bi58 (RMA flux) | | |
|---|---|---|
| Size | CABLE OD RANGE | NO PREINSTALLED WIRE |
| | INCHES | SEIP |
| 1 | .020-.095 | E-C4-1 |
| 2 | .030-.125 | E-C4-2 |
| 3 | .050-.200 | E-C4-3 |
| 4 | .070-.235 | E-C4-4 |
| 5 | .100-.300 | E-C4-5 |

## 150°C Operating Temperature Crimp STS – RoHS



| Crimp Kit Color Code Selection | | | | | |
|---|---|---|---|---|---|
| Product name | SAE Spec Equivalent | 1 to 1 Splice Wire Range (AWG) | Crimp Barrel Size Range CMA - ($mm^2$) | Shrink Sleeve Sealing Inserts - Inside Diameter Inches (mm) | Color Code |
| H-CR-436-36 | AS81824/1-1 | 26 - 20 | 304 - 1510 (0.15 - 0.75) | .085 (2.16) | RED |
| H-CR-436-37 | AS81824/1-2 | 20 - 16 | 779 - 2680 (0.39 - 1.34) | .110 (2.79) | BLUE |
| H-CR-436-38 | AS81824/1-3 | 16 - 12 | 1900 - 6755 (0.95 - 3.37) | .170 (4.32) | YELLOW |

**STS** sealed crimp kits provide reliable, stable, environmentally sealed crimp splices in the most extreme operating environments.

**Features:**

**Temperature range: -55°C to +150°C**
**Moisture resistant**
**RoHS compliant**

Required Crimping Tool: Per SAE-AS22520

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