



Heat Shrinkable Moulded Shapes

Product Guide



You are working on a higher level
We ensure highest quality



Perfect cable component solutions drawing on decades of engineering experience

Decades of collaboration with customers in many industries qualify HellermannTyton as an ideal partner for standard and tailor-made part solutions around all aspects of cable management.

New technologies place high demands on design and construction.

We can contribute positively to acceleration of development and production processes whilst helping you to ensure highest quality standards and maintaining cost-effectiveness.

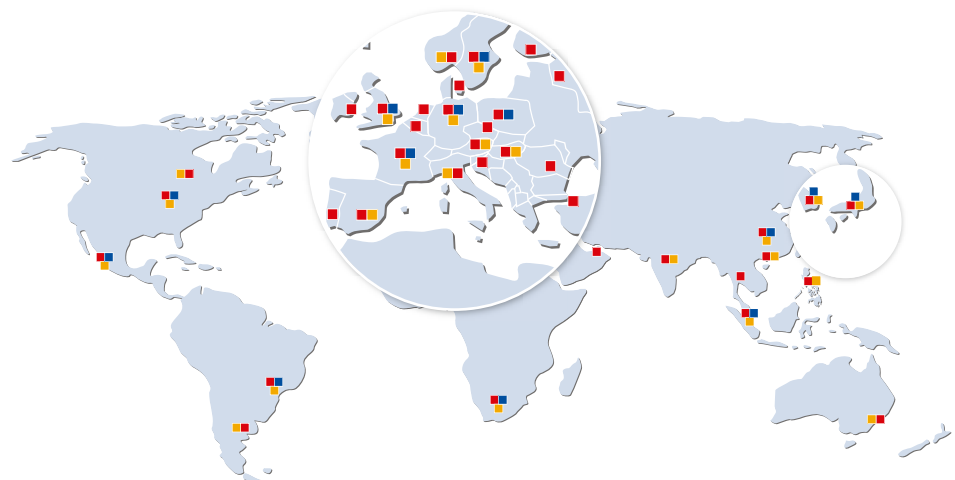
Heat shrinkable moulded shapes expertise you can count on – worldwide

With HellermannTyton you have the right specialist at your side. Whether for cable bundling and fastening systems or for cable protection and identification solutions, our components are certified according to the current standards.

In order to constantly reach and maintain this high level, we place great emphasis on keeping up a continuous interaction with our customers. We have been working closely with the aerospace industry in this way for over 40 years. The result: products that are tailored exactly to the construction requirements and new innovations for your individual demands.

Professional service worldwide.

Our network of branch offices and distribution partners around the globe ensures a consistently high level of service, high flexibility and the fast response and delivery times you expect.



■ Sales Office ■ Manufacturing & Research ■ Distribution Centre



You expect tailormade products
We offer you best-fit solutions

Heat shrinkable moulded shapes solutions that meet your special demands

HellermannTyton heat shrinkable moulded shapes combine the advantages of quick, easy installation with high electric strength, mechanical toughness and superior chemical and environmental resistance. Our products offer important functional and cost saving benefits for electrical and electronic applications ranging from insulation and protection of individual components to fabrication of complete inter-connecting cable harness assemblies.

Strain-relieving boots, transitions and connector backshell covers, as well as other specialised shapes, are **available in a wide range of sizes and options**. HellermannTyton's extensive product line includes low profile, bulbous and lipped types for use on circular and D-type connectors as well as complex multiway transitions. Only a minimum number of shapes are needed to cover a full range.

Your One-Stop-Cable-Management-Source: HellermannTyton

Applications

The use of our heat shrinkable moulded shapes in conjunction with our specialist heat shrinkable tubings makes it easy to ensure the proper degree of mechanical support, strain relief and environmental protection. Encapsulating the complete harnessing and interconnection system to the desired configuration is easily and neatly accomplished, with minimum weight and bulk.

Choice of Materials

A range of specially formulated materials is available to meet a variety of performance requirements.



Low Profile Convolute Boots.



TSA-200 adhesive tape.



Right Angle Cross Shapes.

You need the perfect solution
We deliver thousands of them





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Technical Introduction

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This selection guide will help you to find the correct moulded shape for your application:

Step 1. Product Style

Use the Selection Guide Overview on page 12 to quickly select a suitable product profile.

Step 2. Product Size

Choose the correct dimensions to meet your application from our sizes and types table which appears on the relevant product profile page.

An example of these tables is shown below:

| TYPE | ØH min. a | ØH max. b | ØJ min. a | ØJ max. b | P ± 10% | R ± 15% | T ± 0.8 | JO ± 10% | HW ± 1.5 | JW ± 0.8 | S ± 1.5 |
|---------|-----------------|-----------------|-----------------|-----------------|------------------|----------------|---------------|-----------------|---------------|---------------|---------------|
| 313F322 | 23.8 (.93") | 9.9 (.39") | 17.2 (.67") | 6.6 (.26") | 105.9 (4.13") | 11.6 (.45") | 1.3 (.05") | 86.3 (3.37") | 1.5 (.06") | 1.5 (.06") | 1.5 (.06") |
| 313F332 | 27.1 (1.06") | 13.2 (.51") | 20.8 (.81") | 7.6 (.30") | 121.1 (4.72") | 12.1 (.47") | 1.3 (.05") | 98.5 (3.84") | 1.5 (.06") | 1.5 (.06") | 1.5 (.06") |

Step 3. Material/ Adhesive

Choose a material and adhesive to meet your application requirements from the tables on page 14/15.

Further combinations are available.

Here is an example:

| Combinations "On request" | | | |
|---------------------------|----------|---|---|
| Adhesive | Material | | |
| | 9 | 8 | 6 |
| TSA-200 | • | • | • |
| -450 | • | - | • |
| -250 | • | - | • |
| W24 | • | - | • |
| V9500 | • | • | • |
| HMT200A | • | • | • |
| Without Adhesive | • | • | • |

These symbols denote the material or adhesive availability for each profile type. In this example the adhesive W24 is not available with the material 8 because of the "-".

But it is available with the material 9 and 6 because of the "•".

3.1 Material

Parts can be supplied in a choice of materials. The "combinations" table on each product page provides a quick and easy material recognition guide for the product profiled.

On page 14 you will find detailed information on our range of materials.

3.2 Adhesive

To maximise environmental protection and strain relief we recommend the use of an adhesive from our range below.

Pre-lined hot melt adhesive: **Component adhesive:**

- | | |
|---|--|
| <ul style="list-style-type: none"> • WM250 • W • W2 • W8 • W21 | <ul style="list-style-type: none"> • HMT200A • W24 • V9500 • TSA-200 |
|---|--|

For further information on adhesives please refer to page 15.

Step 4. Standard combinations

| Standard Combinations | |
|-----------------------|----------------|
| Type | Article Number |
| 217-2-B7 | 402-17014 |
| 218-2-B7 | 402-18020 |
| 219-2-B7W | 402-19039 |
| 220-1-B7 | 402-20008 |
| 216-3-B7 | 402-16057 |

To help you with your decision we offer standard combinations for each product type.

In this example we offer the Type 219-2 in B7 material and with the adhesive W.

5. Special Modifications

Filler ports and drain holes are also available where the injection of potting epoxy is required.

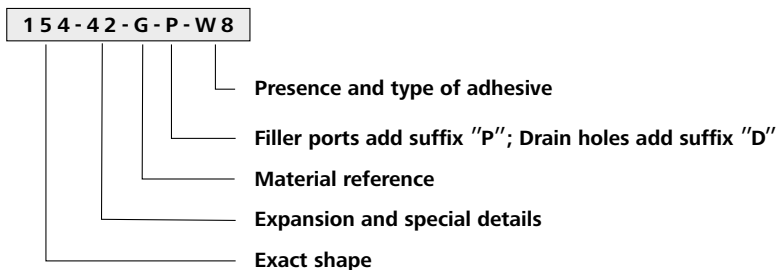
P = Filler ports for potting – 3mm Ø vent and 4.5mm Ø filler.

D = Drain holes for offset – 3mm Ø at H end equally spaced 90° apart.

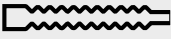



6. Ordering Procedure

When ordering heat shrinkable shapes, it is necessary to give a complete part number to enable efficient processing of your order. Part numbers can be made up of the following typical components:




Example:





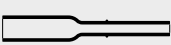

Low Profile Boots and Transitions

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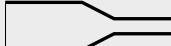
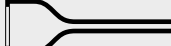




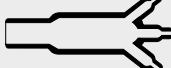
Low Profile Boots and Transitions

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Bulbous Boots and Transitions

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Bulbous Boots and Transitions

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Materials for Heat Shrinkable Moulded Shapes

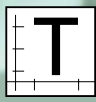
| Material Specifications | | | | |
|----------------------------------|---|--|---|--|
| | L | H | G | B7 |
| Material | Flexible flame retarded fluoroelastomer | Flexible limited fire hazard material | Fluid resistant elastomer | Semi-rigid flame retarded polyolefin |
| Operating Temperature | -67°F to +392°F (-55°C to +200°C) | -67°F to +221°F (-55°C to +105°C) | -103°F to +302°F (-75°C to +150°C) | -67°F to +275°F (-55°C to +135°C) |
| Min. Shrink Temperature | +347 °F (+175 °C) | +275 °F (+135 °C) | +275 °F (+135 °C) | +275 °F (+135 °C) |
| Specifications | DEF STAN 59-97, BSG198 Part 5, Type DD, MIL-81765/4 | DEF STAN 59-97, BSG198 Part 5, Type DF, VG95343 pt 29, NAVSEA 5617649 | DEF STAN 59-97, BSG198 Part 5, Type DE, VG 95343 Part 6, 18 | MIL-I-81765/1 Type 1, DEF STAN 59-97, BSG198 Part 5, Type DA |
| Tensile Strength | 12 MPa | 10 MPa | 15 MPa | 13 MPa |
| Elongation at break | 300 % | 450 % | 580 % | 500 % |
| Dielectric Strength | 8 kV/mm | 15 kV/mm | 14 kV/mm | 14 kV/mm |
| Flammability for Material | Excellent | Excellent | Excellent | Excellent |
| Features | High temperature excellent chemical resistance | Low smoke Halogen free | Excellent resistance to fuels | Good physical and chemical resistance |
| Typical Application | Military and high performance harnessing | Ships, submarines and railways | Military and general high performance harnessing | Military and general high performance harnessing |

| Material Specifications | | | | | |
|----------------------------------|--|--|--|--|--|
| | J | B8 | -8 | -9 | -6 |
| Material | Flexible polyolefin | Semi-rigid flame retarded polyolefin | Modified fluoroelastomer | Modified elastomer blend | Flexible flame retarded polyolefin |
| Operating Temperature | -67°F to +275°F (-55°C to +135°C) | -67°F to +212°F (-55°C to +100°C) | -67°F to +302°F (-55°C to +150°C) | -67°F to +248°F (-55°C to +120°C) | -67°F to +248°F (-55°C to +120°C) |
| Min. Shrink Temperature | +275 °F (+135 °C) | +275 °F (+135 °C) | +275 °F (+135 °C) | +275 °F (+135 °C) | +275 °F (+135 °C) |
| Specifications | MIL-I-81765/1 Type 2, DEF STAN 59-97, BSG198 Part 5, Type DB | EA-TS 09-11 | SCX15111 | SCX15112 | MIL-I-81765/1 Type 1, MIL-I-81765/1 Type 2 |
| Tensile Strength | 14 MPa | 15 MPa | 15 MPa | 12 MPa | 12 MPa |
| Elongation at break | 610 % | 500 % | 450 % | 500 % | 500 % |
| Dielectric Strength | 12 kV/mm | 15 kV/mm | 20 kV/mm | 20 kV/mm | 20 kV/mm |
| Flammability for Material | excellent | good | <25mm | excellent | excellent |
| Features | Flexible | Good physical and reasonable chemical resistance | Good physical and reasonable chemical resistance | Good physical and reasonable chemical resistance | Good physical and reasonable chemical resistance |
| Typical Application | Military and high performance harnessing | Power/utility shapes | Military and general high performance harnessing | Military and general high performance harnessing | Military and general high performance harnessing |

Adhesive for Heat Shrinkable Moulded Shapes

| Adhesive Specifications | | | | |
|---------------------------------|-----------------------------------|--|---|--|
| | W / W2 | W8 | W21 | W24 |
| Adhesive | General purpose hot melt adhesive | High performance EVA hot melt adhesive | Modified polyamide hot melt adhesive | High performance, pre-coat, 1 part epoxy |
| Operating Temperature | -67°F to +176°F (-55°C to +80°C) | -67°F to +221°F (-55°C to +105°C) | -67°F to +248°F (-55°C to +120°C) | -94°F to +428°F (-75°C to +200°C) |
| Softening Point Adhesive | +203°F (+95°C) | +230°F (+110°C) | +248°F (+120°C) | |
| Supplied Form | Pre-applied | Pre-applied | Pre-applied | Pre-applied |
| Shelf life | 5 years | 5 years | 5 years | 5 years |
| Solvent Resistance | Fair under splash conditions | Fair under splash conditions | Saline: Very good De-icing fluid: Good Diesel: Excellent Lubricating Oil: Good Hydraulic Oil: Excellent Aviation Fuel: Good Automotive Fuel: Good | De-icing fluid: Excellent Petrol: Excellent Lubricating Oil: Excellent Hydraulic Oil: Excellent |

| Adhesive Specifications | | | | | |
|---------------------------------|-----------------------------------|-----------------------------------|----------------------------------|---|-----------------------------------|
| | 450 | TSA200 | WM250 | V9500 | HMT200A |
| Adhesive | EVA hot melt adhesive | Thermoset +125° C | Hot melt adhesive | Two part, black, epoxy adhesive | Hot melt adhesive tape |
| Operating Temperature | -67°F to +221°F (-55°C to +105°C) | -67°F to +257°F (-55°C to +125°C) | -67°F to +176°F (-55°C to +80°C) | -103°F to +302°F (-75°C to +150°C) | -67°F to +221°F (-55°C to +105°C) |
| Softening Point Adhesive | +230°F (+110°C) | +203°F (+95°C) | +203°F (+95°C) | | +230°F (+110°C) |
| Supplied Form | Pre-applied | Tape | Pre-applied | Cardridge | Tape |
| Shelf life | 5 years | 5 years | 5 years | 18 months | 5 years |
| Solvent Resistance | Fair under splash conditions | Fair under splash conditions | Fair under splash conditions | De-icing fluid: Excellent, Petrol: Excellent, Lubricating Oil: Excellent, Hydraulic Oil: Excellent | Fair under splash conditions |

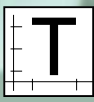


Use this table to find the adhesive compatibility for your preferred material.

| Material Combinations | Material | | | |
|---|------------------------------------|---------------------------------------|---------------------------------------|---|
| | G | B7 | B8 | H |
| Material Description | Fluid resistant elastomer | Semi -rigid flame retarded polyolefin | Semi -rigid flame retarded polyolefin | Flexible limited fire hazard polyolefin |
| Shape | | | | |
| Minimum Shrink Temperature | +275°F (+135°C) | +275°F (+135°C) | +275°F (+135°C) | +275°F (+135°C) |
| Operating Temperature Range | -103°F to +302°F (-75°C to +150°C) | -67°F to +275°F (-55°C to +135°C) | -67°F to +212°F (-55°C to +100°C) | -67°F to +221°F (-55°C to +105°C) |
| Shelf Life | 5 years | 5 years | 5 years | 5 years |
| Helashrink 100 Series | yes | yes | no | yes |
| Helashrink 1100 Series | yes | yes | no | yes |
| Helashrink 200 Series | yes | yes | no | yes |
| Helashrink 300 Series | yes | yes | no | yes |
| Helashrink 400 Series | yes | yes | no | yes |
| Helashrink 1200 Series | yes | yes | no | yes |
| Helashrink 1300 Series | yes | yes | no | yes |
| Low Profile Shapes (Series 313, 412, 492, 573) | no | no | no | no |
| Helashrink 1600 Series | no | no | yes | no |
| Helashrink In Line Series, low voltage | no | no | yes | no |
| Adhesive Compatibility | WM250 | WM250 | WM250 | WM250 |
| | W8 | W8 | W8 | W8 |
| | W24 | W24 | | W24 |
| | V9500 | V9500 | | W21 |
| | HMT200A | HMT200A | HMT200A | HMT200A |



| Material Combinations | Material | | | |
|---|---|--|--|-----------------------------------|
| | L | -9 | -6 | -8 |
| Material Description | Flexible flame retarded fluoroelastomer | Modified elastomer blend | Flexible flame retarded polyolefin | Fluoro-elastomer polymer blend |
| Shape | | low profile | low profile | low profile |
| Minimum Shrink Temperature | +347°F (+175°C) | +275°F (+135°C) | +275°F (+135°C) | +275°F (+135°C) |
| Operating Temperature Range | -67°F to +392°F (-55°C to +200°C) | -67°F to +248°F (-55°C to +120°C) | -67°F to +248°F (-55°C to +120°C) | -67°F to +302°F (-55°C to +150°C) |
| Shelf Life | 5 years | 5 years | 5 years | 5 years |
| Helashrink 100 Series | yes | no | no | no |
| Helashrink 1100 Series | yes | no | no | no |
| Helashrink 200 Series | yes | no | no | no |
| Helashrink 300 Series | yes | no | no | no |
| Helashrink 400 Series | yes | no | no | no |
| Helashrink 1200 Series | yes | no | no | no |
| Helashrink 1300 Series | yes | no | no | no |
| Low Profile Shapes (Series 313, 412, 492, 573) | no | yes | yes | yes |
| Helashrink 1600 Series | no | no | no | no |
| Helashrink In Line Series, low voltage | no | no | no | no |
| Adhesive Compatibility | W24 V9500 | WM250 W8 W24 V9500 HMT200A TSA200 | WM250 W8 W24 V9500 HMT200A TSA200 | TSA200 |



Use this table to find the material compatibility for your preferred adhesive.

| Adhesive Combinations | Material | | | |
|---|-----------------------------------|-----------------------------------|--|--|
| | W / W2 | WM250 | W8 | W21 |
| Adhesive Description | General purpose hot melt adhesive | General purpose hot melt adhesive | EVA, high performance, hot melt adhesive | Modified polyamide hot melt adhesive |
| Operating Temperature Range | -67°F to +176°F (-55°C to +80°C) | -67°F to +176°F (-55°C to +80°C) | -67°F to +221°F (-55°C to +105°C) | -67°F to +248°F (-55°C to +120°C) |
| Softening Point | +203°F (+95°C) | +203°F (+95°C) | +230°F (+110°C) | - |
| Supplied Form | pre-applied | pre-applied | pre-applied | pre-applied |
| Shelf Life | 5 years | 5 years | 5 years | 5 years |
| Solvent Resistance | Fair under splash conditions | Fair under splash conditions | Fair under splash conditions | Saline: Very good De-icing fluid: Good Diesel: Excellent Lubricating Oil: Good Hydraulic Oil: Good Aviation Fuel: Good Automotive Fuel: Good |
| Helashrink 100 Series | no | yes | yes | yes |
| Helashrink 1100 Series | no | yes | yes | yes |
| Helashrink 200 Series | no | yes | yes | yes |
| Helashrink 300 Series | no | yes | yes | yes |
| Helashrink 400 Series | no | yes | yes | yes |
| Helashrink 1200 Series | no | yes | yes | yes |
| Helashrink 1300 Series | no | yes | yes | yes |
| Low Profile Shapes (Series 313, 412, 492, 573) | no | yes | yes | yes |
| Helashrink 1600 Series | yes | yes | no | no |
| Helashrink In Line Series, low voltage | yes | yes | no | no |
| Material Compatibility | B8 | G | G | G |
| | | B7 | B7 | B7 |
| | | B8 | H | B8 |
| | | H | 6 | H |
| | | 6 | 9 | |
| | | 9 | | |



| Adhesive Combinations | Material | | | |
|---|--|-----------------------------------|--|-----------------------------------|
| | W24 | TSA-200 | V9500 | HMT200A |
| Adhesive Description | High performance, pre-coat, 1 part epoxy | Thermoset +125°C | Two part, black, epoxy adhesive | Hot melt adhesive tape |
| Operating Temperature Range | -103°F to +392°F (-75°C to +200°C) | -67°F to +257°F (-55°C to +125°C) | -103°F to +302°F (-75°C to +150°C) | -67°F to +221°F (-55°C to +105°C) |
| Softening Point | - | - | - | - |
| Supplied Form | pre-applied | Tape | Cartridge | Tape |
| Shelf Life | 5 years | 5 years | 18 months | 5 years |
| Solvent Resistance | De-icing fluid: Excellent Petrol: Excellent Lubricating Oil: Excellent Hydraulic Oil: Excellent | Fair under splash conditions | De-icing fluid: Excellent Petrol: Excellent Lubricating Oil: Excellent Hydraulic Oil: Excellent | Fair under splash conditions |
| Helashrink 100 Series | yes | no | yes | yes |
| Helashrink 1100 Series | yes | no | yes | yes |
| Helashrink 200 Series | yes | no | yes | yes |
| Helashrink 300 Series | yes | no | yes | yes |
| Helashrink 400 Series | yes | no | yes | yes |
| Helashrink 1200 Series | yes | no | yes | yes |
| Helashrink 1300 Series | yes | no | yes | yes |
| Low Profile Shapes (Series 313, 412, 492, 573) | yes | yes | yes | yes |
| Helashrink 1600 Series | no | no | no | yes |
| Helashrink In Line Series, low voltage | no | no | no | yes |
| Material Compatibility | G | 6 | G | G |
| | B7 | 9 | B7 | B7 |
| | H | 9 | H | B8 |
| | L | | J | H |
| | 6 | | | 6 |
| | 9 | | | 9 |
| | J | | | 8 |
| | | | | J |



2.1 Low Profile Boots and Transitions

| | | |
|-------------------|---|----|
| Convolute Boots | Helashrink 313C Series, with adapter lip | 22 |
| Shim Boots | Helashrink 313E Series, without adapter lip | 23 |
| Straight Boots | Helashrink 313F Series, with adapter lip | 24 |
| Right Angle Boots | Helashrink 333F Series, with adapter lip, 90° angle | 25 |
| | Helashrink 412H Series, side breakout | 26 |
| Transition Boots | Helashrink 492H Series, 1 to 2 cables | 27 |
| | Helashrink 573H Series, 1 to 3 cables | 28 |



2.2 Bulbous Boots and Transitions

| | | |
|---------------------|--|----|
| Bottle Shapes | Helashrink 150 Series, with rib, VG | 29 |
| | Helashrink 100 Series, with rib, MIL | 31 |
| | Helashrink 100 Series, without rib | 33 |
| | Helashrink 120 Series, without rib | 35 |
| Long Outlet Shape | Helashrink 120 Series, with rib | 35 |
| | Helashrink 130 Series, with rib, low profile, VG | 36 |
| Long Outlet Shapes | Helashrink 140 Series, without rib | 38 |
| | Helashrink 160 Series, without rib | 39 |
| Bottle Shapes | Helashrink 170 Series, with rib, VG | 40 |
| | Helashrink 190 Series, with external ribs, VG | 41 |
| | Helashrink 200 Series, low profile | 42 |
| | Helashrink 200 Series, VG | 43 |
| 2-Way Outlet Shapes | Helashrink 200 Series, in line, low voltage | 44 |
| | Helashrink 300 Series, VG | 45 |
| 3-Way Outlet Shapes | Helashrink 300 Series, in line, low voltage | 46 |
| | Helashrink 400 Series, VG | 47 |
| 4-Way Outlet Shapes | Helashrink 400 Series, in line, low voltage | 48 |
| | Helashrink 500 Series, in line, low voltage | 49 |
| 5-Way Outlet Shapes | Helashrink 500 Series, in line, low voltage | 49 |
| 6-Way Outlet Shapes | Helashrink 600 Series, in line, low voltage | 50 |



| | | |
|----------------------------------|---|----|
| | Helashrink 1100 Series, with rib, VG | 51 |
| | Helashrink 1100 Series, without rib, thick wall, VG | 52 |
| Right-Angle Shapes | Helashrink 1100 Series, with rib, MIL | 53 |
| | Helashrink 1100 Series, without rib | 55 |
| | Helashrink 1100 Series, with rib, low profile, VG style/MIL style | 57 |
| | Helashrink 1100 Series, with rib, low profile, high ratio, VG | 59 |
| | Helashrink 1200 Series, VG/MIL | 60 |
| | Helashrink 1200 Series, Offset | 61 |
| T-Shapes | Helashrink 1200 Series, Offset, VG | 62 |
| | Helashrink 1300 Series, 30° & 45° angle, VG | 63 |
| Angled T-Shapes | Helashrink 1310 Series, 30° angle | 64 |
| Double T-Shapes | Helashrink 1400 Series, 90° angle | 65 |
| Angle Elbow Shapes | Helashrink 1500 Series, with top entry | 66 |
| Connector Cover for Min-D Series | Helashrink 1750 Series, with rib | 68 |
| GSR Graduated Strain Relief | Helashrink 1800 Series, with rib, 30°, 45°, 60° angle | 70 |
| Angle Shapes | Helashrink 2000 Series - T-Joint | 72 |
| Right Angle Cross Shapes | Helashrink 1760, 1790, 1820 Series | 73 |
| Locating Bushes | Helashrink 2100 Series, with 90° entry | 74 |
| Connector Cover for Min-D Series | | |



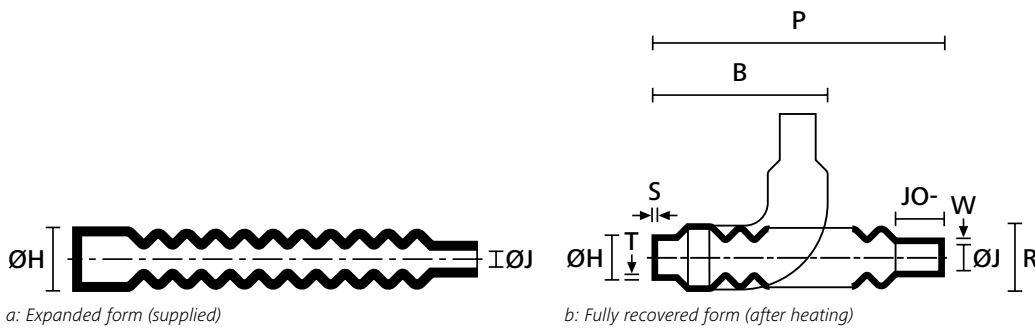
Low Profile Convolute Boots

Helashrink 313C Series, with adapter lip

- For circular grooved adapters to provide strain relief
- Excellent environmental sealing with adhesive
- Convoluted design grants flexibility for different cable outlet angles



313C722-774 Series supplied / fully recovered.

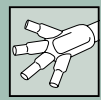


| TYPE | ØH min. a | ØH max. b | ØJ min. a | ØJ max. b | P ± 10% | R max. | JO ± 10% | W min. | B nom. | T ± 0.5 | S ± 0.5 |
|---------|-----------------|-----------------|-----------------|----------------|------------------|-----------------|-----------------|---------------|------------------|---------------|----------------|
| 313C722 | 14.2 (.55") | 6.9 (.27") | 11.1 (.43") | 4.8 (.19") | 120.6 (4.70") | 21.1 (.82") | 17.3 (.67") | 1.5 (.06") | 62.4 (2.43") | 1.3 (.05") | 1.5 (.06") |
| 313C732 | 22.4 (.87") | 11.7 (.46") | 17.7 (.69") | 8.1 (.32") | 133.3 (5.20") | 26.5 (1.03") | 19.8 (.77") | 1.5 (.06") | 67.8 (2.64") | 1.3 (.05") | 1.5 (.06") |
| 313C743 | 34.0 (1.33") | 17.5 (.68") | 26.9 (1.05") | 12.7 (.50") | 146.0 (5.69") | 32.7 (1.28") | 22.3 (.87") | 1.5 (.06") | 73.4 (2.86") | 1.3 (.05") | 1.8 (.07") |
| 313C753 | 44.2 (1.72") | 22.3 (.87") | 36.5 (1.42") | 17.5 (.68") | 158.7 (6.19") | 37.8 (1.47") | 25.4 (1") | 1.5 (.06") | 78.2 (3.05") | 1.3 (.05") | 1.8 (.07") |
| 313C764 | 53.8 (2.10") | 40.6 (1.09") | 45.7 (1.78") | 22.3 (.87") | 171.4 (6.68") | 42.9 (1.67") | 28.4 (1.11") | 1.5 (.06") | 82.8 (3.23") | 2.0 (.08") | 1.8 (.07") |
| 313C774 | 77.2 (3.01") | 40.6 (1.58") | 54.6 (2.13") | 22.8 (.89") | 236.2 (9.21") | 62.2 (2.43") | 25.4 (1") | 1.5 (.06") | 138.4 (5.40") | 2.0 (.08") | 2.0 (.078") |

Dimensions in mm, inches in brackets. Subject to technical changes.

| Combinations "On request" | | | |
|---------------------------|----------|---|---|
| Adhesive | Material | | |
| | 9 | 8 | 6 |
| TSA-200 | • | • | • |
| -450 | • | - | • |
| -250 | • | - | • |
| W24 | • | - | • |
| V9500 | • | - | • |
| HMT200A | • | - | • |
| Without Adhesive | • | • | • |

| Standard Combinations | |
|-----------------------|----------------|
| Type | Article Number |
| 313C722-9 | 422-00001 |
| 313C732-9 | 422-00101 |
| 313C743-9 | 422-00201 |
| 313C753-9 | 422-00302 |
| 313C764-9 | 422-00400 |
| 313C774-9 | 422-00501 |



Low Profile Shim Boots

Helashrink 313E Series, without adapter lip

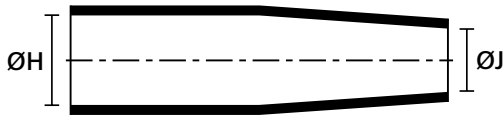
- Used to build up or shim a cable diameter
- Facilitates better fit for components in cable harness



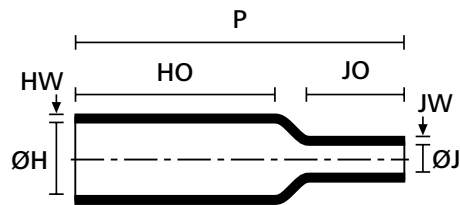
For Material / Adhesive selection and other information please refer to page 10.



313E445-457 Series supplied / fully recovered.



a: Expanded form (supplied)



b: Fully recovered form (after heating)

| TYPE | ØH min. a | ØH max. b | ØJ min. a | ØJ max. b | P ± 10% | HO ± 10% | HW ± 25% | JW ± 25% | JO ± 10% |
|---------|----------------|----------------|----------------|---------------|-----------------|-----------------|----------------|---------------|----------------|
| 313E445 | 12.7 (.50") | 12.7 (.50") | 11.1 (.43") | 3.3 (.13") | 63.5 (2.48") | 41.1 (1.6") | 1.5 (.06") | 1.5 (.06") | 15.7 (.61") |
| 313E447 | 20.8 (.81") | 14.7 (.57") | 20.6 (.80") | 9.9 (.39") | 63.5 (2.48") | 41.1 (1.6") | 1.5 (.06") | 1.5 (.06") | 16.5 (.64") |
| 313E455 | 22.1 (.86") | 22.1 (.86") | 11.2 (.44") | 3.3 (.13") | 53.3 (2.08") | 27.9 (1.09") | 2.3 (.089") | 1.5 (.06") | 15.7 (.61") |
| 313E457 | 22.1 (.86") | 22.1 (.86") | 20.6 (.80") | 9.9 (.39") | 53.3 (2.08") | 27.9 (1.09") | 2.3 (.089") | 1.5 (.06") | 14.0 (.54") |

Dimensions in mm, inches in brackets. Subject to technical changes.

| Combinations "On request" | | | |
|---------------------------|----------|---|---|
| Adhesive | Material | | |
| | 9 | 8 | 6 |
| TSA-200 | • | • | • |
| -450 | • | - | • |
| -250 | • | - | • |
| W24 | • | - | • |
| V9500 | • | - | • |
| HMT200A | • | - | • |
| Without Adhesive | • | • | • |

| Standard Combinations | |
|-----------------------|----------------|
| Type | Article Number |
| 313E445-9 | 422-10000 |
| 313E447-9 | 422-10100 |
| 313E455-9 | 422-10200 |
| 313E457-9 | 422-10300 |



Low Profile Straight Boots

Helashrink 313F Series, with adapter lip

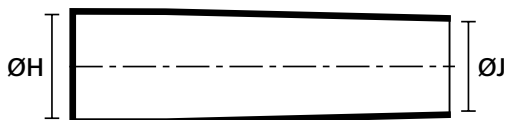
- Connector strain relief for small cable diameters requiring high shrink ratio



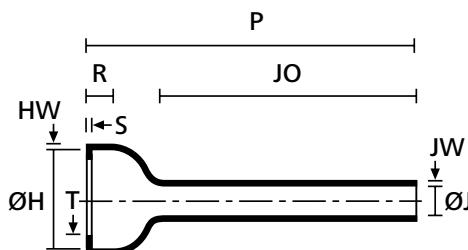
For Material / Adhesive selection and other information please refer to page 10.



313F322-396 Series supplied / fully recovered.



a: Expanded form (supplied)



b: Fully recovered form (after heating)

| TYPE | ØH min. a | ØH max. b | ØJ min. a | ØJ max. b | P ± 10% | R ± 15% | T ± 0.8 | JO ± 10% | HW ± 1.5 | JW ± 0.8 | S ± 1.5 |
|---------|-----------------|-----------------|-----------------|----------------|------------------|----------------|---------------|------------------|----------------|----------------|----------------|
| 313F322 | 23.8 (.93") | 9.9 (.39") | 17.2 (.67") | 6.6 (.26") | 105.9 (4.13") | 11.6 (.45") | 1.3 (.05") | 86.3 (3.37") | 1.5 (.06") | 1.5 (.06") | 1.5 (.06") |
| 313F332 | 27.1 (1.06") | 13.2 (.51") | 20.8 (.81") | 7.6 (.30") | 121.1 (4.72") | 12.1 (.47") | 1.3 (.05") | 98.5 (3.84") | 1.5 (.06") | 1.5 (.06") | 1.5 (.06") |
| 313F343 | 30.9 (1.21") | 18.5 (.72") | 24.3 (.95") | 8.9 (.35") | 138.6 (5.41") | 12.1 (.47") | 1.3 (.05") | 112.7 (4.4") | 1.7 (.066") | 1.5 (.06") | 1.7 (.066") |
| 313F353 | 35.6 (1.39") | 22.1 (.86") | 28.7 (1.12") | 10.1 (.39") | 159.5 (6.22") | 12.1 (.47") | 1.3 (.05") | 13.8 (5.1") | 1.7 (.066") | 1.5 (.06") | 1.7 (.066") |
| 313F364 | 38.8 (1.51") | 28.2 (1.10") | 31.4 (1.22") | 10.9 (.43") | 177.8 (6.93") | 13.9 (.54") | 1.8 (.07") | 142.2 (5.54") | 1.7 (.066") | 1.5 (.06") | 1.7 (.066") |
| 313F374 | 42.2 (1.65") | 32.2 (1.26") | 38.3 (1.49") | 12.7 (.50") | 203.2 (7.92") | 15.2 (.59") | 1.8 (.07") | 163.0 (6.36") | 1.7 (.066") | 1.5 (.06") | 1.7 (.066") |
| 313F385 | 51.5 (2.01") | 45.4 (1.77") | 45.4 (1.77") | 14.9 (.58") | 203.2 (7.92") | 15.2 (.59") | 1.8 (.07") | 157.7 (6.15") | 1.7 (.066") | 1.7 (.066") | 1.7 (.066") |
| 313F396 | 62.7 (2.45") | 45.4 (1.77") | 53.3 (2.08") | 16.7 (.65") | 228.6 (8.92") | 16.0 (.62") | 1.8 (.07") | 153.1 (5.97") | 1.7 (.066") | 1.7 (.066") | 1.7 (.066") |

Dimensions in mm, inches in brackets. Subject to technical changes.

| Combinations "On request" | | | |
|---------------------------|----------|---|---|
| Adhesive | Material | | |
| | 9 | 8 | 6 |
| TSA-200 | • | • | • |
| -450 | • | - | • |
| -250 | • | - | • |
| W24 | • | - | • |
| V9500 | • | - | • |
| HMT200A | • | - | • |
| Without Adhesive | • | • | • |

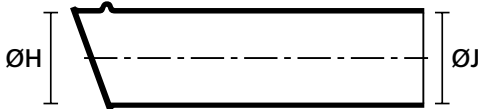
| Standard Combinations | |
|-----------------------|----------------|
| Type | Article Number |
| 313F322-9 | 422-20000 |
| 313F332-9 | 422-20100 |
| 313F343-9 | 422-20200 |
| 313F353-9 | 422-20300 |
| 313F364-9 | 422-20400 |
| 313F374-9 | 422-20500 |
| 313F385-9 | 422-20600 |
| 313F396-9 | 422-20700 |



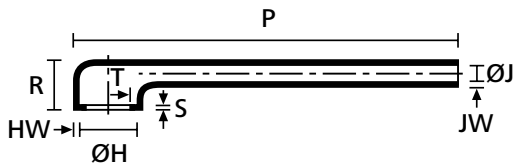
Low Profile Right Angle Boots

Helashrink 333F Series, with adapter lip, 90° angle

- Connector strain relief for small cable diameters requiring high shrink ratio



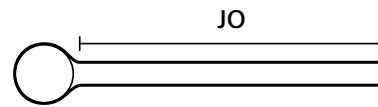
a: Expanded form (supplied)



b: Fully recovered form (after heating)



333F322-385 Series supplied / fully recovered.



Fully recovered form (after heating)

| TYPE | ØH min. a | ØH max. b | ØJ min. a | ØJ max. b | P ± 10% | R ± 15% | T ± 0.8 | HW ± 1.5 | JW ± 0.8 | S ± 1.5 |
|---------|-----------------|-----------------|-----------------|----------------|------------------|-----------------|----------------|----------------|----------------|----------------|
| 333F322 | 23.8 (.93") | 9.9 (.39") | 17.2 (.67") | 6.6 (.26") | 105.1 (4.10") | 18.5 (.72") | 1.3 (.05") | 1.5 (.06") | 1.5 (.06") | 1.5 (.06") |
| 333F332 | 27.1 (1.06") | 13.2 (.51") | 20.8 (.81") | 7.6 (.30") | 115.8 (4.52") | 19.8 (.77") | 1.3 (.05") | 1.5 (.06") | 1.5 (.06") | 1.5 (.06") |
| 333F343 | 30.9 (1.21") | 18.5 (.72") | 24.3 (.95") | 8.9 (.35") | 146.3 (5.71") | 20.8 (.81") | 1.3 (.05") | 1.7 (.066") | 1.5 (.06") | 1.7 (.066") |
| 333F353 | 35.3 (1.38") | 21.6 (.84") | 28.7 (1.12") | 10.1 (.39") | 172.2 (6.72") | 21.8 (.85") | 1.3 (.05") | 1.7 (.066") | 1.5 (.06") | 1.7 (.066") |
| 333F364 | 38.8 (1.51") | 27.9 (1.09") | 31.4 (1.22") | 10.9 (.43") | 185.1 (7.22") | 24.1 (.94") | 1.8 (.07") | 1.7 (.066") | 1.5 (.06") | 1.7 (.066") |
| 333F374 | 45.2 (1.76") | 34.0 (1.33") | 38.3 (1.49") | 12.1 (.47") | 213.6 (8.33") | 27.4 (1.06") | 1.8 (.07") | 1.7 (.066") | 1.5 (.06") | 1.7 (.066") |
| 333F385 | 51.5 (2.01") | 41.1 (1.60") | 44.4 (1.73") | 15.0 (.59") | 224.5 (8.76") | 29.4 (1.15") | 1.7 (.045") | 1.7 (.066") | 1.7 (.066") | 1.7 (.066") |

Dimensions in mm, inches in brackets. Subject to technical changes.

| Combinations "On request" | | | |
|---------------------------|----------|---|---|
| Adhesive | Material | | |
| | 9 | 8 | 6 |
| TSA-200 | • | • | • |
| -450 | • | - | • |
| -250 | • | - | • |
| W24 | • | - | • |
| V9500 | • | - | • |
| HMT200A | • | - | • |
| Without Adhesive | • | • | • |

| Standard Combinations | |
|-----------------------|----------------|
| Type | Article Number |
| 333F322-9 | 422-30000 |
| 333F332-9 | 422-30004 |
| 333F343-9 | 422-30100 |
| 333F353-9 | 422-30200 |
| 333F364-9 | 422-30301 |
| 333F374-9 | 422-30400 |
| 333F385-9 | 422-30500 |



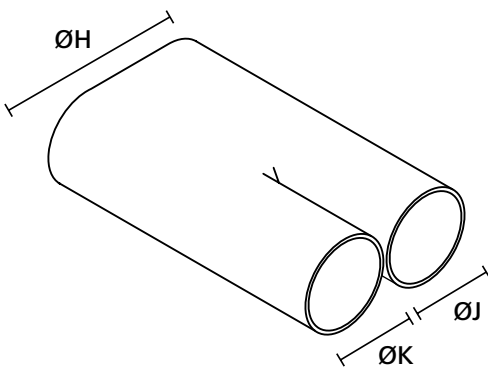
Low Profile Transition Boots

Helashrink 412H Series, side breakout

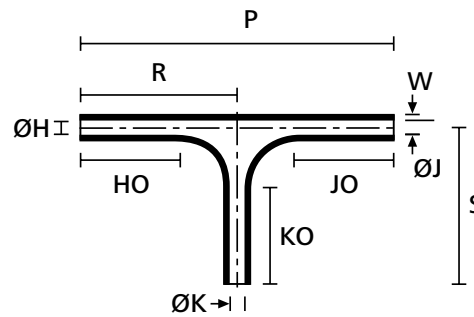
- Connector cable strain relief
- Used with circular adaptors



412H622-625 Series supplied / fully recovered.



a: Expanded form (supplied)



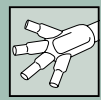
b: Fully recovered form (after heating)

| TYPE | ØH min. a | ØH max. b | ØJ/K min. a | ØJ/K max. b | HO/JO/KO ± 10% | P nom. | W nom. | R/S nom. |
|---------|-----------------|-----------------|-----------------|-----------------|-------------------|------------------|----------------|------------------|
| 412H622 | 19.8 (.77") | 6.6 (.26") | 13.2 (.51") | 6.6 (.25") | 25.4 (1") | 80.7 (3.15") | 1.0 (.039") | 40.3 (1.57") |
| 412H623 | 34.2 (1.33") | 11.4 (.44") | 22.8 (.88") | 6.6 (.25") | 41.1 (1.6") | 12.3 (4.69") | 1.3 (.05") | 60.1 (2.34") |
| 412H624 | 60.1 (2.34") | 20.0 (.78") | 40.1 (1.56") | 20 (.78") | 63.5 (2.47") | 175.7 (6.85") | 1.5 (.06") | 87.8 (3.42") |
| 412H625 | 83.3 (3.25") | 33.2 (1.29") | 54.8 (2.13") | 33.2 (1.29") | 88.9 (3.46") | 242.3 (9.45") | 1.7 (.066") | 121.1 (4.72") |

Dimensions in mm, inches in brackets. Subject to technical changes.

| Combinations "On request" | | | |
|---------------------------|----------|---|---|
| Adhesive | Material | | |
| | 9 | 8 | 6 |
| TSA-200 | • | • | • |
| -450 | • | - | • |
| -250 | • | - | • |
| W24 | • | - | • |
| V9500 | • | - | • |
| HMT200A | • | - | • |
| -200 | • | - | • |
| Without Adhesive | • | • | • |

| Standard Combinations | |
|-----------------------|----------------|
| Type | Article Number |
| 412H622-9 | 422-40000 |
| 412H623-9 | 422-40100 |
| 412H624-9 | 422-40200 |
| 412H625-9 | 422-40300 |



Low Profile Transition Boots

Helashrink 492H Series, 1 to 2 cables

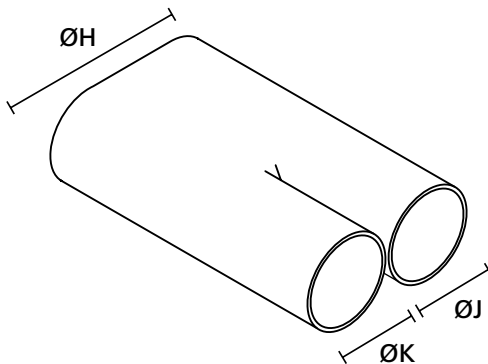
- For cable harness breakouts or transitions
- Strain relief, sealing and mechanical protection



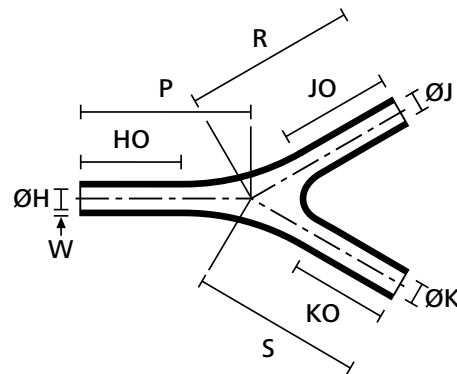
For Material / Adhesive selection and other information please refer to page 10.



492H412-415 Series supplied / fully recovered.



a: Expanded form (supplied)



b: Fully recovered form (after heating)

| TYPE | ØH min. a | ØH max. b | ØJ/K min. a | ØJ/K max. b | HO/JO/KO ± 15% | W nom. | P/R/S nom. |
|---------|-----------------|-----------------|-----------------|-----------------|-------------------|----------------|------------------|
| 492H412 | 19.8 (.77") | 6.6 (.26") | 13.2 (.51") | 6.6 (.25") | 25.4 (1") | 1.0 (.039") | 40.6 (1.58") |
| 492H413 | 34.2 (1.33") | 11.4 (.44") | 22.8 (.88") | 11.4 (.44") | 41.1 (1.6") | 1.3 (.05") | 62.9 (2.45") |
| 492H414 | 60.1 (2.34") | 20.0 (.78") | 40.1 (1.56") | 20.0 (.78") | 63.5 (2.48") | 1.5 (0.06") | 94.7 (3.69") |
| 492H415 | 83.3 (3.25") | 33.2 (1.29") | 54.8 (2.14") | 33.2 (1.29") | 49.7 (1.94") | 1.7 (.066") | 133.8 (5.22") |

Dimensions in mm, inches in brackets. Subject to technical changes.

| Combinations "On request" | | | |
|---------------------------|----------|---|---|
| Adhesive | Material | | |
| | 9 | 8 | 6 |
| TSA-200 | • | • | • |
| -450 | • | - | • |
| -250 | • | - | • |
| W24 | • | - | • |
| V9500 | • | - | • |
| HMT200A | • | - | • |
| -200 | • | - | • |
| Without Adhesive | • | • | • |

| Standard Combinations | |
|-----------------------|----------------|
| Type | Article Number |
| 492H412-9 | 422-50000 |
| 492H413-9 | 422-50101 |
| 492H414-9 | 422-50202 |
| 492H415-9 | 422-50302 |



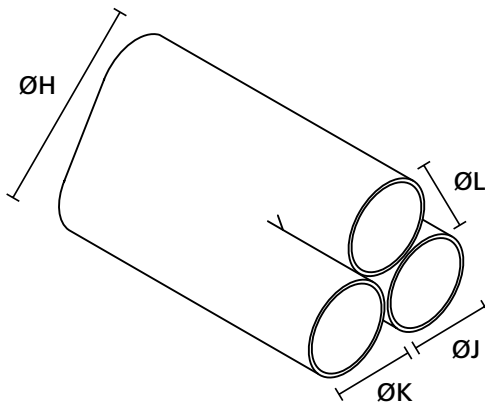
Low Profile Transition Boots

Helashrink 573H Series, 1 to 3 cables

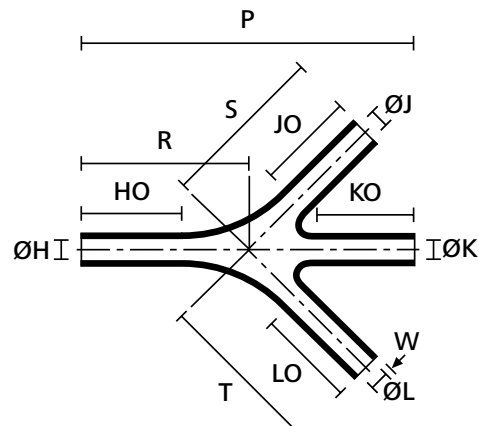
- For cable harness breakouts or transitions
- Strain relief, sealing and mechanical protection



573H532-535 Series supplied / fully recovered.



a: Expanded form (supplied)



b: Fully recovered form (after heating)

| TYPE | ØH min. a | ØH max. b | ØJ/K/L min. a | ØJ/K/L max. b | P nom. | R/S/T nom. | W nom. | HO/JO /KO/LO ± 15% |
|---------|-----------------|-----------------|------------------|------------------|-------------------|------------------|----------------|--------------------|
| 573H532 | 19.8 (.77") | 6.6 (.26") | 13.2 (.51") | 6.6 (.26") | 85.8 (3.35") | 42.9 (1.67") | 1.0 (.039") | 25.4 (1") |
| 573H533 | 34.2 (1.33") | 11.4 (.44") | 20.5 (.80") | 11.4 (.44") | 135.6 (5.29") | 67.8 (2.64") | 1.3 (.05") | 41.1 (1.6") |
| 573H534 | 60.1 (2.34") | 20.0 (.78") | 36.0 (1.40") | 20.0 (.78") | 207.2 (8.08") | 103.6 (4.04") | 1.5 (.06") | 63.5 (2.47") |
| 573H535 | 99.8 (3.89") | 33.2 (1.29") | 54.8 (2.13") | 33.2 (1.29") | 294.6 (11.49") | 147.3 (5.74") | 1.7 (.066") | 88.9 (3.46") |

Dimensions in mm, inches in brackets. Subject to technical changes.

| Combinations "On request" | | | |
|---------------------------|----------|---|---|
| Adhesive | Material | | |
| | 9 | 8 | 6 |
| TSA-200 | • | • | • |
| -450 | • | - | • |
| -250 | • | - | • |
| V9500 | • | - | • |
| HMT200A | • | - | • |
| -200 | • | - | • |
| Without Adhesive | • | • | • |

| Standard Combinations | |
|-----------------------|----------------|
| Type | Article Number |
| 573H532-9 | 422-60000 |
| 573H533-9 | 422-60100 |
| 573H534-9 | 422-60202 |
| 573H535-9 | 422-60302 |



Bottle Shapes, VG style

Helashrink 150 Series, with rib

- Use in conjunction with circular grooved adaptors
- For strain relief and environmental sealing



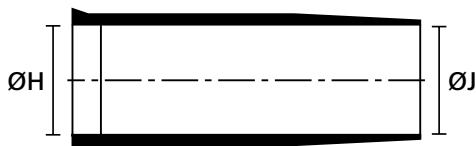
150 Series boot recovered onto a connectors.



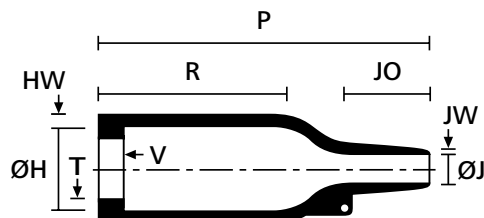
For Material / Adhesive selection and other information please refer to page 10.



150 Series supplied.



a: Expanded form (supplied)



b: Fully recovered form (after heating)

| TYPE | Designation as per AS/VG-Norm | ØH min. a | ØH max. b | ØJ min. a | ØJ max. b | P ± 10% | R ± 10% | JO ± 10% | HW ± 20% | JW ± 20% | V ± 10% | T ± 20% |
|--------|-------------------------------|--------------|-------------|--------------|------------|--------------|--------------|-------------|------------|------------|------------|------------|
| 152-41 | VG 95343 T06 A 001 A | 24.0 (.94") | 10.5 (.41") | 24.0 (.94") | 6.0 (.23") | 26.0 (1.01") | 9.0 (.35") | 10.0 (.39") | 1.6 (.06") | 0.5 (.02") | 3.0 (.12") | 1.0 (.04") |
| 152-42 | VG 95343 T06 B 001 A | 24.0 (.94") | 10.5 (.41") | 24.0 (.94") | 6.0 (.23") | 38.0 (1.48") | 21.0 (.82") | 10.0 (.39") | 1.6 (.06") | 0.5 (.02") | 3.0 (.12") | 1.0 (.04") |
| 153-41 | VG 95343 T06 A 002 A | 25.0 (.98") | 14.0 (.55") | 9.0 (.35") | 3.5 (.14") | 40.0 (1.56") | 13.0 (.51") | 16.0 (.62") | 1.8 (.07") | 0.5 (.02") | 3.0 (.12") | 1.0 (.04") |
| 153-42 | VG 95343 T06 B 002 A | 25.0 (.98") | 14.0 (.55") | 9.0 (.35") | 3.5 (.14") | 55.0 (2.15") | 28.0 (1.09") | 16.0 (.62") | 1.8 (.07") | 0.5 (.02") | 3.0 (.12") | 1.0 (.04") |
| 154-41 | VG 95343 T06 A 003 A | 30.0 (1.17") | 14.0 (.55") | 30.0 (1.17") | 6.0 (.23") | 43.0 (1.68") | 20.0 (.78") | 13.0 (.51") | 1.8 (.07") | 1.0 (.04") | 3.0 (.12") | 1.0 (.04") |
| 154-42 | VG 95343 T06 B 003 A | 30.0 (1.17") | 14.0 (.55") | 30.0 (1.17") | 6.0 (.23") | 55.0 (2.15") | 32.0 (1.25") | 13.0 (.51") | 1.8 (.07") | 1.0 (.04") | 3.0 (.12") | 1.0 (.04") |
| 155-41 | VG 95343 T06 A 004 A | 31.0 (1.21") | 18.0 (.7") | 31.0 (1.21") | 7.0 (.27") | 47.0 (1.83") | 15.0 (.59") | 18.0 (.70") | 1.8 (.07") | 1.0 (.04") | 3.0 (.12") | 1.0 (.04") |

Dimensions in mm, inches in brackets. Subject to technical changes.





Bottle Shapes, VG style

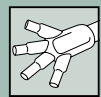
Helashrink 150 Series, with rib

| TYPE | Designation as per AS/VG-Norm | ØH min. a | ØH max. b | ØJ min. a | ØJ max. b | P ± 10% | R ± 10% | JO ± 10% | HW ± 20% | JW ± 20% | V ± 10% | T ± 20% |
|--------|-------------------------------|-----------------|-----------------|-----------------|-----------------|------------------|------------------|-----------------|---------------|---------------|---------------|---------------|
| 155-42 | VG 95343 T06 B 004 A | 31.0 (1.21") | 18.0 (.7") | 31.0 (1.21") | 7.0 (.27") | 67.0 (2.61") | 35.0 (1.37") | 18.0 (.7") | 1.8 (.07") | 1.0 (.04") | 3.0 (.12") | 1.0 (.04") |
| 156-41 | VG 95343 T06 A 005 A | 36.0 (1.4") | 22.5 (.88") | 36.0 (1.4") | 8.5 (.33") | 60.0 (2.34") | 22.0 (.86") | 20.0 (.78") | 2.0 (.08") | 1.0 (.04") | 3.0 (.12") | 1.0 (.04") |
| 156-42 | VG 95343 T06 B 005 A | 36.0 (1.4") | 22.5 (.88") | 36.0 (1.4") | 8.5 (.33") | 80.0 (3.12") | 42.0 (1.64") | 20.0 (.78") | 2.0 (.08") | 1.0 (.04") | 3.0 (.12") | 1.0 (.04") |
| 157-42 | VG 95343 T06 B 006 A | 43.0 (1.68") | 28.0 (1.09") | 43.0 (1.68") | 10.0 (.39") | 79.0 (3.08") | 41.0 (1.6") | 20.0 (.78") | 2.2 (.09") | 1.0 (.04") | 3.0 (.12") | 1.7 (.07") |
| 157-43 | VG 95343 T06 C 001 A | 43.0 (1.68") | 28.0 (1.09") | 43.0 (1.68") | 10.0 (.39") | 99.0 (3.86") | 61.0 (2.38") | 20.0 (.78") | 2.2 (.09") | 1.0 (.04") | 3.0 (.12") | 1.7 (.07") |
| 158-41 | VG 95343 T06 A 007 A | 60.0 (2.34") | 35.0 (1.37") | 60.0 (2.34") | 16.0 (.62") | 90.0 (3.51") | 32.0 (1.25") | 38.0 (1.48") | 3.2 (.12") | 1.5 (.06") | 3.0 (.12") | 1.7 (.07") |
| 158-43 | VG 95343 T06 C 002 A | 60.0 (2.34") | 35.0 (1.37") | 60.0 (2.34") | 16.0 (.62") | 130.0 (5.07") | 72.0 (2.81") | 38.0 (1.48") | 3.2 (.12") | 1.5 (.06") | 3.0 (.12") | 1.7 (.07") |
| 159-41 | VG 95343 T06 A 008 A | 66.0 (2.57") | 45.0 (1.76") | 66.0 (2.57") | 17.0 (.66") | 130.0 (5.07") | 50.0 (1.95") | 50.0 (1.95") | 3.8 (.15") | 2.0 (.08") | 3.0 (.12") | 2.0 (.08") |
| 159-42 | VG 95343 T06 B 008 A | 66.0 (2.57") | 45.0 (1.76") | 66.0 (2.57") | 17.0 (.66") | 150.0 (5.85") | 70.0 (2.73") | 50.0 (1.95") | 3.8 (.15") | 2.0 (.08") | 3.0 (.12") | 2.0 (.08") |
| 159-43 | VG 95343 T06 C 003 A | 66.0 (2.57") | 45.0 (1.76") | 66.0 (2.57") | 17.0 (.66") | 171.0 (6.67") | 90.0 (3.51") | 50.0 (1.95") | 3.8 (.15") | 2.0 (.08") | 3.0 (.12") | 2.0 (.08") |
| 160-41 | VG 95343 T06 A 009 A | 82.0 (3.2") | 58.0 (2.26") | 82.0 (3.2") | 27.0 (1.05") | 137.0 (5.34") | 37.0 (1.44") | 62.0 (2.42") | 3.8 (.15") | 3.8 (.15") | 3.0 (.12") | 2.0 (.08") |
| 160-42 | VG 95343 T06 B 009 A | 82.0 (3.2") | 58.0 (2.26") | 82.0 (3.2") | 27.0 (1.05") | 158.0 (6.16") | 58.0 (2.26") | 62.0 (2.42") | 3.8 (.15") | 3.8 (.15") | 3.0 (.12") | 2.0 (.08") |
| 160-43 | VG 95343 T06 C 004 A | 82.0 (3.2") | 58.0 (2.26") | 82.0 (3.2") | 27.0 (1.05") | 213.0 (8.31") | 113.0 (4.41") | 62.0 (2.42") | 3.8 (.15") | 3.8 (.15") | 3.0 (.12") | 2.0 (.08") |

Dimensions in mm, inches in brackets. Subject to technical changes.

| Combinations "On request" | | | | | |
|---------------------------|----------|---|---|---|---|
| Adhesive | Material | | | | |
| | B7 | G | J | H | L |
| WM250 | • | • | • | • | - |
| W8 | • | • | • | • | - |
| W24 | • | • | • | • | • |
| W21 | • | • | • | • | - |
| HMT200A | • | • | • | • | - |
| V9500 | • | • | • | • | • |
| Without Adhesive | • | • | • | • | • |

| Standard Combinations | |
|-----------------------|----------------|
| Type | Article Number |
| 152-41-G | 401-52780 |
| 152-42-G | 401-52880 |
| 153-41-G | 401-53780 |
| 153-42-G | 401-53880 |
| 154-41-G | 401-54780 |
| 154-42-G | 401-54880 |
| 155-41-G | 401-55780 |
| 155-42-G | 401-55880 |
| 156-41-G | 401-56780 |
| 156-42-G | 401-56880 |
| 157-42-G | 401-57880 |
| 157-43-G | 401-57980 |
| 158-41-G | 401-58780 |
| 158-43-G | 401-58980 |
| 159-41-G | 401-59780 |
| 159-42-G | 401-59880 |
| 159-43-G | 401-59980 |
| 160-41-G | 401-60780 |
| 160-42-G | 401-60880 |
| 160-43-G | 401-60980 |



Bottle Shapes, MIL style

Helashrink 100 Series, with rib

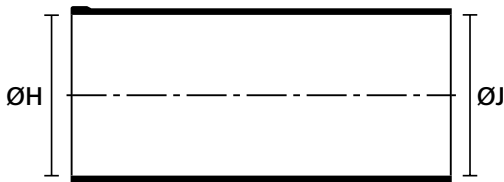
- With circular grooved adaptor for strain relief
- Combine with complementary adhesives for environmental sealing



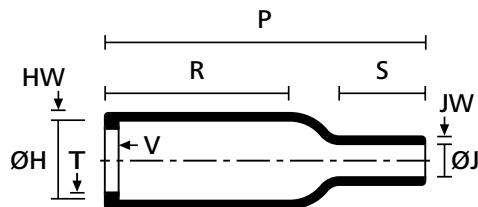
For Material / Adhesive selection and other information please refer to page 10.



100 series supplied / fully recovered.



a: Expanded form (supplied)



b: Fully recovered form (after heating)

| TYPE | Designation as per AS/VG-Norm | ØH min. a | ØH max. b | ØJ min. a | ØJ max. b | P ± 10% | R ± 10% | HW ± 20% | JW ± 20% | V ± 10% | T ± 20% | S nom. |
|--------|-------------------------------|-----------------|-----------------|-----------------|----------------|------------------|-----------------|---------------|---------------|---------------|---------------|-----------------|
| 101-4 | AS85049/14003HU | 31.0 (1.21") | 17.8 (.69") | 31.0 (1.21") | 7.1 (.28") | 67.0 (2.61") | 38.1 (1.49") | 2.0 (.08") | 2.0 (.08") | 3.0 (.12") | 1.0 (.04") | 17.8 (.69") |
| 102-4 | AS85049/14004HU | 36.1 (1.41") | 22.4 (.87") | 36.1 (1.41") | 8.4 (.33") | 73.7 (2.87") | 43.2 (1.68") | 1.8 (.07") | 1.8 (.07") | 3.0 (.12") | 1.0 (.04") | 21 (.82") |
| 103-4 | AS85049/14005HU | 42.7 (1.67") | 28.2 (1.1") | 42.7 (1.67") | 9.9 (.39") | 99.1 (3.86") | 54.0 (2.11") | 2.0 (.08") | 2.0 (.08") | 3.0 (.12") | 1.7 (.07") | 24 (.94") |
| 104-4 | | 16.5 (.64") | 7.9 (.31") | 16.5 (.64") | 3.8 (.15") | 25.4 (.99") | 14.2 (.55") | 1.3 (.05") | 1.3 (.05") | 3.0 (.12") | 1.0 (.04") | 6.9 (.27") |
| 105-4 | AS85049/14001HU | 23.4 (.91") | 10.4 (.41") | 23.4 (.91") | 5.6 (.22") | 38.1 (1.49") | 14.2 (.55") | 1.5 (.06") | 1.5 (.06") | 3.0 (.12") | 1.0 (.04") | 10.2 (.4") |
| 106-4 | | 31.0 (1.21") | 14.2 (.55") | 31.0 (1.21") | 6.6 (.26") | 55.4 (2.16") | 22.9 (.89") | 1.8 (.07") | 1.8 (.07") | 3.0 (.12") | 1.0 (.04") | 10.2 (.4") |
| 107-4 | AS85049/14006HU | 51.9 (2.02") | 35.1 (1.37") | 51.9 (2.02") | 15.8 (.62") | 124.5 (4.86") | 66.0 (2.57") | 3.1 (.12") | 3.1 (.12") | 3.0 (.12") | 1.7 (.07") | 40.6 (1.58") |
| 113-4 | | 10.7 (.42") | 7.9 (.31") | 4.6 (.18") | 2.0 (.08") | 25.4 (.99") | 14.5 (.57") | 1.3 (.05") | 1.0 (.04") | 3.0 (.12") | 1.0 (.04") | 4.6 (.18") |
| 118-4 | AS85049/14007HU | 66.0 (2.57") | 44.4 (1.73") | 66.0 (2.57") | 20.3 (.79") | 160.5 (6.26") | 91.4 (3.56") | 3.8 (.15") | 3.8 (.15") | 3.0 (.12") | 2.0 (.08") | 48.3 (1.88") |
| 1009-1 | | 9.0 (.35") | 5.6 (.22") | 4.0 (.16") | 3.2 (.12") | 27.0 (1.05") | 14.0 (.55") | 1.0 (.04") | 0.5 (.02") | 1.6 (.06") | 0.9 (.04") | 7.5 (.29") |
| 1030-4 | | 12.0 (.47") | 9.8 (.38") | 6.0 (.23") | 2.0 (.08") | 19.0 (.74") | 8.0 (.31") | 1.0 (.04") | 0.5 (.02") | 1.5 (.06") | 0.5 (.02") | 4.6 (.18") |
| 1031-4 | | 12.0 (.47") | 9.8 (.38") | 6.0 (.23") | 2.0 (.08") | 15.0 (.59") | 4.0 (.16") | 1.0 (.04") | 0.5 (.02") | 1.5 (.06") | 0.5 (.02") | 4.6 (.18") |
| 1037-4 | | 9.0 (.35") | 5.6 (.22") | 9.0 (.35") | 2.0 (.08") | 19.0 (.74") | 9.0 (.35") | 1.0 (.04") | 0.6 (.02") | 1.5 (.06") | 0.6 (.02") | 4.5 (.18") |

Dimensions in mm, inches in brackets. Subject to technical changes.



Bottle Shapes, MIL style

Helashrink 100 Series, with rib

| Combinations "On request" | | | | | |
|---------------------------|----------|---|---|---|---|
| Adhesive | Material | | | | |
| | B7 | G | J | H | L |
| WM250 | . | . | . | . | - |
| W8 | . | . | . | . | - |
| W24 | . | . | . | . | . |
| W21 | . | . | . | . | - |
| HMT200A | . | . | . | . | - |
| V9500 | . | . | . | . | . |
| Without Adhesive | . | . | . | . | . |

| Standard Combinations | |
|-----------------------|----------------|
| Type | Article Number |
| 101-4-G | 401-01037 |
| 102-4-G | 401-02031 |
| 103-4-G | 401-03041 |
| 104-4-G | 401-04024 |
| 105-4-G | 401-05034 |
| 106-4-G | 401-06036 |
| 107-4-G | 401-07030 |
| 113-4-G | 401-13480 |
| 118-4-B7 | 401-18018 |
| 1009-1-G | 410-09001 |
| 1030-4-G | 410-30480 |
| 1031-4-G | 410-31001 |
| 1037-4-G | 410-37001 |



Bottle Shapes

Helashrink 100 Series, without rib

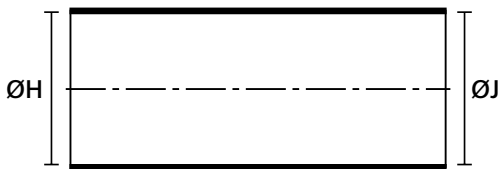
- Strain relief for connector cable
- Easy re-entry for repair when combined with hot melt adhesive



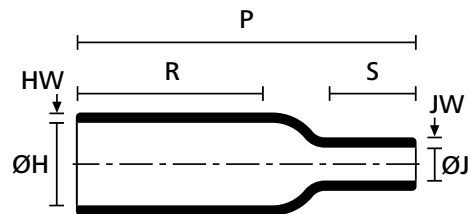
For Material / Adhesive selection and other information please refer to page 10.



100 series supplied / fully recovered.



a: Expanded form (supplied)



b: Fully recovered form (after heating)

| TYPE | ØH min. a | ØH max. b | ØJ min. a | ØJ max. b | P ± 10% | R max. | HW ± 20% | JW ± 30% | S nom. |
|-------|-----------------|-----------------|-----------------|----------------|------------------|-----------------|---------------|---------------|-----------------|
| 101-1 | 31.0 (1.21") | 17.8 (.69") | 31.0 (1.21") | 7.1 (.28") | 66.0 (2.57") | 38.1 (1.49") | 2.0 (.08") | 2.0 (.08") | 17.8 (.69") |
| 101-2 | 23.9 (.93") | 17.8 (.69") | 15.5 (.6") | 7.1 (.28") | 66.0 (2.57") | 38.1 (1.49") | 2.0 (.08") | 2.0 (.08") | 17.8 (.69") |
| 102-1 | 36.1 (1.41") | 22.4 (.87") | 36.1 (1.41") | 8.4 (.33") | 73.7 (2.87") | 43.2 (1.68") | 1.8 (.07") | 1.8 (.07") | 17.8 (.69") |
| 102-2 | 30.0 (1.17") | 22.4 (.87") | 18.0 (.7") | 8.4 (.33") | 73.7 (2.87") | 43.2 (1.68") | 1.8 (.07") | 1.8 (.07") | 17.8 (.69") |
| 103-1 | 42.7 (1.67") | 28.2 (1.1") | 42.7 (1.67") | 9.9 (.39") | 95.5 (3.72") | 54.0 (2.11") | 2.0 (.08") | 2.0 (.08") | 24 (.94") |
| 103-2 | 37.8 (1.47") | 28.2 (1.1") | 21.3 (.83") | 9.9 (.39") | 95.5 (3.72") | 54.0 (2.11") | 2.0 (.08") | 2.0 (.08") | 24 (.94") |
| 104-1 | 16.5 (.64") | 7.9 (.31") | 16.5 (.64") | 3.8 (.15") | 25.4 (.99") | 14.2 (.55") | 1.3 (.05") | 1.3 (.05") | 6.9 (.27") |
| 104-2 | 10.7 (.42") | 7.9 (.31") | 8.4 (.33") | 3.8 (.15") | 25.4 (.99") | 14.2 (.55") | 1.3 (.05") | 1.3 (.05") | 6.9 (.27") |
| 105-1 | 23.4 (.91") | 10.4 (.41") | 23.4 (.91") | 5.6 (.22") | 38.1 (1.49") | 22.9 (.89") | 1.5 (.06") | 1.5 (.06") | 10.2 (.4") |
| 106-1 | 31.0 (1.21") | 14.2 (.55") | 31.0 (1.21") | 6.6 (.26") | 55.4 (2.16") | 26.5 (1.03") | 1.8 (.07") | 1.8 (.07") | 16.5 (.64") |
| 106-2 | 19.3 (.75") | 14.2 (.55") | 14.2 (.55") | 6.6 (.26") | 55.4 (2.16") | 26.5 (1.03") | 1.8 (.07") | 1.8 (.07") | 16.5 (.64") |
| 107-1 | 51.9 (2.02") | 35.1 (1.37") | 51.9 (2.02") | 15.8 (.62") | 124.5 (4.86") | 66.0 (2.57") | 3.1 (.12") | 3.1 (.12") | 40.6 (1.58") |
| 107-2 | 46.9 (1.83") | 35.1 (1.37") | 35.6 (1.39") | 15.8 (.62") | 124.5 (4.86") | 66.0 (2.57") | 3.1 (.12") | 3.1 (.12") | 40.6 (1.58") |
| 108-1 | 13.7 (.53") | 10.4 (.41") | 6.6 (.26") | 3.1 (.12") | 38.1 (1.49") | 22.9 (.89") | 1.5 (.06") | 1.0 (.04") | 7.6 (.3") |
| 108-2 | 27.9 (1.09") | 10.4 (.41") | 7.9 (.31") | 3.1 (.12") | 38.1 (1.49") | 22.9 (.89") | 1.5 (.06") | 1.0 (.04") | 7.6 (.3") |
| 109-1 | 19.3 (.75") | 14.2 (.55") | 8.1 (.32") | 4.1 (.16") | 53.3 (2.08") | 35.6 (1.39") | 2.0 (.08") | 1.3 (.05") | 7.6 (.3") |

Dimensions in mm, inches in brackets. Subject to technical changes.





Bottle Shapes

Helashrink 100 Series

| TYPE | ØH min. a | ØH max. b | ØJ min. a | ØJ max. b | P ± 10% | R max. | HW ± 20% | JW ± 30% | S nom. |
|--------|-----------------|-----------------|-----------------|-----------------|------------------|------------------|---------------|---------------|-----------------|
| 109-2 | 38.1 (1.49") | 14.2 (.55") | 11.7 (.46") | 4.1 (.16") | 53.3 (2.08") | 35.6 (1.39") | 2.0 (.08") | 1.3 (.05") | 7.6 (.3") |
| 110-1 | 23.9 (.93") | 17.8 (.69") | 11.7 (.46") | 5.6 (.22") | 63.5 (2.48") | 38.1 (1.49") | 2.5 (.1") | 1.5 (.06") | 12.7 (.5") |
| 110-2 | 50.8 (1.98") | 17.8 (.69") | 17.0 (.66") | 5.6 (.22") | 63.5 (2.48") | 38.1 (1.49") | 2.5 (.1") | 1.5 (.06") | 12.7 (.5") |
| 111-1 | 30.0 (1.17") | 22.4 (.87") | 14.7 (.57") | 7.1 (.28") | 76.2 (2.97") | 43.2 (1.68") | 3.1 (.12") | 1.8 (.07") | 15.2 (.59") |
| 111-2 | 63.5 (2.48") | 22.4 (.87") | 21.3 (.83") | 7.1 (.28") | 76.2 (2.97") | 43.2 (1.68") | 3.1 (.12") | 1.8 (.07") | 15.2 (.59") |
| 116-1 | 59.4 (2.32") | 44.5 (1.74") | 43.7 (1.7") | 20.8 (.81") | 158.8 (6.19") | 91.4 (3.56") | 5.6 (.22") | 4.6 (.18") | 41.9 (1.63") |
| 118-1 | 66.0 (2.57") | 44.4 (1.73") | 66.0 (2.57") | 20.3 (.79") | 150.0 (5.85") | 80.0 (3.12") | 3.8 (.15") | 3.8 (.15") | 48.3 (1.88") |
| 119-1 | 86.4 (3.37") | 57.2 (2.23") | 86.4 (3.37") | 26.6 (1.04") | 209.6 (8.17") | 118.1 (4.61") | 4.6 (.18") | 4.6 (.18") | 61 (2.38") |
| 1006-1 | 40.0 (1.56") | 20.0 (.78") | 20.0 (.78") | 6.0 (.23") | 78.8 (3.07") | 30.0 (1.17") | 1.5 (.06") | 1.0 (.04") | 20 (.78") |

Dimensions in mm, inches in brackets. Subject to technical changes.

| Standard Combinations | |
|-----------------------|----------------|
| Type | Article Number |
| 101-1-G | 401-01006 |
| 101-2-G | 401-01026 |
| 102-1-G | 401-02005 |
| 102-2-G | 401-02020 |
| 103-1-G | 401-03006 |
| 103-2-B7 | 401-03024 |
| 104-1-G | 401-04006 |
| 104-2-G | 401-04017 |
| 105-1-G | 401-05005 |
| 106-1-G | 401-06005 |
| 106-2-G | 401-06023 |
| 107-1-G | 401-07006 |
| 107-2-B7 | 401-07016 |
| 108-1-B7 | 401-08001 |
| 108-2-G | 401-08016 |
| 109-1-B7 | 401-09002 |
| 109-2-G | 401-09011 |
| 110-1-G | 401-10005 |
| 110-2-G | 401-10011 |
| 111-1-J | 401-11003 |
| 111-2-G | 401-11011 |
| 118-1-G | 401-18005 |
| 119-1-B7 | 401-19001 |
| 1006-1-B7 | 410-06006 |
| 116-1-B7. | 401-16007 |

| Combinations "On request" | | | | | |
|---------------------------|----------|---|---|---|---|
| Adhesive | Material | | | | |
| | B7 | G | J | H | L |
| WM250 | • | • | • | • | - |
| W8 | • | • | • | • | - |
| W24 | • | • | • | • | • |
| W21 | - | - | - | • | - |
| HMT200A | • | • | • | • | - |
| V9500 | • | • | • | • | • |
| Without Adhesive | • | • | • | • | - |



Bottle Shapes

Helashrink 120 Series, without rib

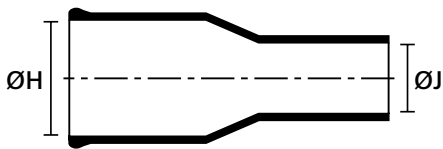
- This style has a long tail providing extended strain relief for small diameter wires
- Supplied without rib and in various material / adhesive combinations to meet your requirement



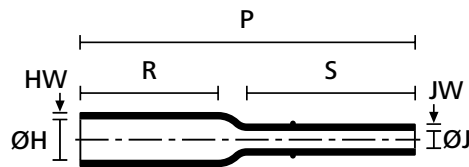
For Material / Adhesive selection and other information please refer to page 10.



120-42-G supplied / fully recovered.



a: Expanded form (supplied)

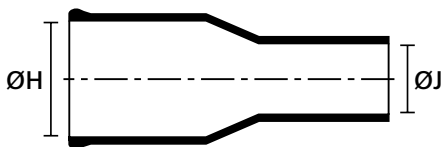


Fully recovered form without end ribs (after heating)

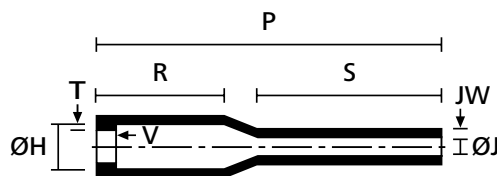
| TYPE | ØH min. a | ØH max. b | ØJ min. a | ØJ max. b | P ± 10% | R ± 10% | W ± 20% | HW ± 20% | JW ± 20% | S nom. |
|-------|----------------|---------------|----------------|---------------|-----------------|----------------|---------------|---------------|---------------|-----------------|
| 120-1 | 16.5 (.64") | 7.0 (.27") | 10.2 (.4") | 3.0 (.12") | 60.9 (2.38") | 24.0 (.94") | 1.3 (.05") | 1.3 (.05") | 1.3 (.05") | 32.0 (1.25") |
| 120-2 | 20.3 (.79") | 7.0 (.27") | 10.2 (.4") | 3.0 (.12") | 60.9 (2.38") | 24.0 (.94") | 1.3 (.05") | 1.3 (.05") | 1.3 (.05") | 32.0 (1.25") |
| 120-3 | 16.5 (.64") | 7.0 (.27") | 10.7 (.42") | 3.0 (.12") | 38.0 (1.48") | 24.0 (.94") | 1.3 (.05") | 1.3 (.05") | 1.3 (.05") | 9.1 (.35") |

Dimensions in mm, inches in brackets. Subject to technical changes.

Helashrink 120 Series, with rib



a: Expanded form (supplied)



b: Fully recovered form with end ribs (after heating)

| TYPE | ØH min. a | ØH max. b | ØJ min. a | ØJ max. b | P ± 10% | R ± 10% | HW ± 20% | JW ± 20% | V ± 10% | T ± 10% | S nom. |
|--------|----------------|---------------|----------------|---------------|-----------------|----------------|---------------|---------------|---------------|---------------|-----------------|
| 120-41 | 16.5 (.64") | 7.0 (.27") | 10.7 (.42") | 3.0 (.12") | 38.0 (1.48") | 24.0 (.94") | 1.3 (.05") | 1.3 (.05") | 3.0 (.12") | 1.0 (.04") | 32.0 (1.25") |
| 120-42 | 16.5 (.64") | 7.0 (.27") | 10.2 (.4") | 3.0 (.12") | 60.9 (2.38") | 24.0 (.94") | 1.3 (.05") | 1.3 (.05") | 3.0 (.12") | 1.0 (.04") | 32.0 (1.26") |

Dimensions in mm, inches in brackets. Subject to technical changes.

| Standard Combinations | |
|-----------------------|----------------|
| Type | Article Number |
| 120-1-G | 401-20003 |
| 120-2-G | 401-20014 |
| 120-3-G | 401-20020 |

| Standard Combinations | |
|-----------------------|----------------|
| Type | Article Number |
| 120-41-G | 401-20022 |
| 120-42-G | 401-20026 |



Long Outlet Shape, VG style

Helashrink 130 Series, with rib, low profile

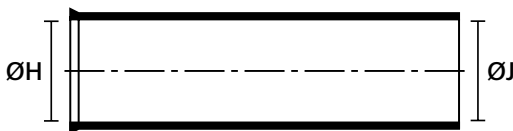
- Low profile and lightweight
- Typically used on airborne harnesses
- Rib locates on circular backshell



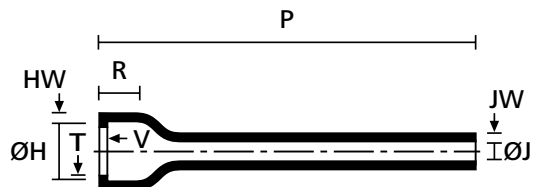
For Material / Adhesive selection and other information please refer to page 10.



135-1 supplied / fully recovered.



a: Expanded form (supplied)



b: Fully recovered form (after heating)

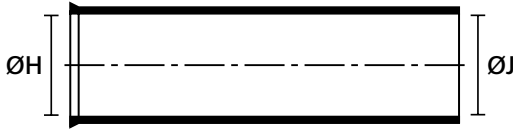
| TYPE | Designation as per AS/VG-Norm | ØH min. a | ØH max. b | ØJ min. a | ØJ max. b | P ± 10% | R ± 10% | HW ± 20% | JW ± 20% | V ± 10% | T ± 10% |
|-------|-------------------------------|--------------|--------------|--------------|-------------|---------------|-------------|------------|------------|------------|-------------|
| 129-1 | VG 95343 T06 D 001 A | 22.0 (.86") | 12.0 (.47") | 22.0 (.86") | 6.5 (.25") | 76.0 (2.96") | 12.0 (.47") | 1.5 (.06") | 1.1 (.04") | 3.0 (.12") | 1.0 (.04") |
| 129-4 | AS85049/14009HU | 22.3 (.87") | 11.4 (.44") | 22.3 (.87") | 6.5 (.25") | 105.9 (4.13") | 11.7 (.46") | 1.5 (.06") | 1.1 (.04") | 3.0 (.12") | 1.0 (.04") |
| 130-1 | VG 95343 T06 D 002 A | 25.5 (.99") | 15.0 (.59") | 25.5 (.99") | 7.5 (.29") | 83.0 (3.24") | 12.0 (.47") | 1.5 (.06") | 1.1 (.04") | 3.0 (.12") | 1.0 (.04") |
| 130-4 | AS85049/14010HU | 25.6 (1") | 15.0 (.59") | 25.6 (1") | 7.4 (.29") | 121.2 (4.73") | 12.2 (.48") | 1.5 (.06") | 1.1 (.04") | 3.0 (.12") | 1.0 (.04") |
| 131-1 | VG 95343 T06 D 003 A | 29.0 (1.13") | 19.0 (.74") | 29.0 (1.13") | 8.5 (.33") | 89.0 (3.47") | 12.0 (.47") | 1.8 (.07") | 1.1 (.04") | 3.0 (.12") | 1.0 (.04") |
| 131-4 | AS85049/14011HU | 29.4 (1.15") | 18.8 (.73") | 29.4 (1.15") | 8.4 (.33") | 138.7 (5.41") | 12.2 (.48") | 1.8 (.07") | 1.1 (.04") | 1.0 (.04") | 1.0 (.04") |
| 132-1 | VG 95343 T06 D 004 A | 34.0 (1.33") | 23.0 (.9") | 34.0 (1.33") | 10.0 (.39") | 102.0 (3.98") | 12.0 (.47") | 1.8 (.07") | 1.1 (.04") | 3.0 (.12") | 1.0 (0.39") |
| 132-2 | | 34.0 (1.33") | 22.9 (.89") | 34.0 (1.33") | 9.7 (.38") | 35.0 (1.37") | 12.2 (.48") | 1.8 (.07") | 1.1 (.04") | 3.0 (.12") | 1.0 (.04") |
| 132-4 | AS85049/14012HU | 34.0 (1.33") | 22.9 (.89") | 34.0 (1.33") | 9.7 (.38") | 159.5 (6.22") | 12.2 (.48") | 1.8 (.07") | 1.1 (.04") | 3.0 (.12") | 1.0 (.04") |
| 133-1 | VG 95343 T06 D 005 A | 37.0 (1.44") | 30.0 (1.17") | 37.0 (1.44") | 11.0 (.43") | 108.0 (4.21") | 14.0 (.55") | 2.0 (.08") | 1.1 (.04") | 3.0 (.12") | 1.7 (.07") |
| 133-2 | | 37.3 (1.45") | 26.9 (1.05") | 37.3 (1.45") | 10.4 (.41") | 47.0 (1.83") | 14.0 (.55") | 2.0 (.08") | 1.1 (.04") | 3.0 (.12") | 1.7 (.07") |
| 133-3 | | 37.3 (1.45") | 29.5 (1.15") | 37.3 (1.45") | 10.4 (.41") | 60.0 (2.34") | 14.0 (.55") | 2.0 (.08") | 1.1 (.04") | 3.0 (.12") | 1.7 (.07") |
| 133-4 | AS85049/14013HU | 37.3 (1.45") | 26.9 (1.05") | 37.3 (1.45") | 10.4 (.41") | 177.8 (6.93") | 14.0 (.55") | 2.0 (.08") | 1.1 (.04") | 3.0 (.12") | 1.7 (.07") |
| 134-1 | VG 95343 T06 D 006 A | 43.5 (1.7") | 34.0 (1.33") | 43.5 (1.7") | 12.0 (.47") | 114.0 (4.45") | 15.0 (.59") | 2.0 (.08") | 1.1 (.04") | 3.0 (.12") | 1.7 (.07") |
| 134-4 | AS85049/14014HU | 43.7 (1.7") | 34.0 (1.33") | 43.7 (1.7") | 12.2 (.48") | 203.2 (7.92") | 15.2 (.59") | 2.0 (.08") | 1.1 (.04") | 3.0 (.12") | 1.7 (.07") |
| 135-1 | VG 95343 T06 D 007 A | 50.0 (1.95") | 41.0 (1.6") | 50.0 (1.95") | 14.5 (.57") | 118.0 (4.6") | 15.0 (.59") | 2.3 (.09") | 1.4 (.05") | 3.0 (.12") | 1.7 (.07") |
| 135-4 | AS85049/14015HU | 50.0 (1.95") | 41.2 (1.61") | 50.0 (1.95") | 14.2 (.55") | 203.2 (7.92") | 15.2 (.59") | 2.3 (.09") | 1.4 (.05") | 3.0 (.12") | 1.7 (.07") |

Dimensions in mm, inches in brackets. Subject to technical changes.

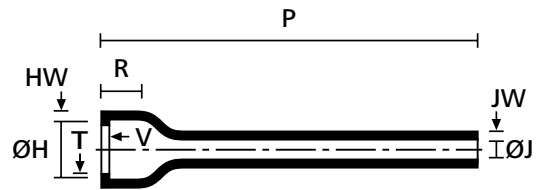


Long Outlet Shape, VG style

Helashrink 130 Series, with rib, low profile



a: Expanded form (supplied)



b: Fully recovered form (after heating)

| TYPE | Designation as per AS/VG-Norm | ØH min. a | ØH max. b | ØJ min. a | ØJ max. b | P ± 10% | R ± 10% | HW ± 20% | JW ± 20% | V ± 10% | T ± 10% |
|-------|-------------------------------|-----------------|-----------------|-----------------|----------------|------------------|----------------|---------------|----------------|---------------|---------------|
| 136-1 | VG 95343 T06 D 008 A | 62.5 (2.44") | 47.0 (1.83") | 62.5 (2.44") | 18.0 (.7") | 121.0 (4.72") | 16.0 (.62") | 2.5 (.1") | 1.4 (.05") | 3.0 (.12") | 2.0 (.08") |
| 136-2 | | 70.0 (2.73") | 47.0 (1.83") | 70.0 (2.73") | 17.5 (.68") | 125.0 (4.88") | 16.0 (.62") | 2.5 (.1") | 1.4 (.05") | 3.0 (.12") | 2.0 (.08") |
| 136-4 | AS85049/14016HU | 62.7 (2.45") | 47.0 (1.83") | 62.7 (2.45") | 17.5 (.68") | 203.2 (7.92") | 16.0 (.62") | 2.5 (.1") | 1.4 (.05") | 3.0 (.12") | 2.0 (.08") |
| 138-1 | VG 95343 T06 D 009 A | 69.0 (2.69") | 60.0 (2.34") | 69.0 (2.69") | 20.0 (.78") | 127.0 (4.95") | 16.0 (.62") | 2.5 (.1") | 1.4 (.05") | 3.0 (.12") | 2.0 (.08") |
| 138-4 | AS85049/14017HU | 69.3 (2.73") | 59.7 (2.35") | 69.3 (2.73") | 19.6 (.77") | 203.2 (8.00") | - | 2.5 (.10") | 1.4 (.055") | - | - |

Dimensions in mm, inches in brackets. Subject to technical changes.

| Combinations "On request" | | | | | |
|---------------------------|----------|---|---|---|---|
| Adhesive | Material | | | | |
| | B7 | G | J | H | L |
| WM250 | • | • | • | • | - |
| W8 | • | • | • | • | - |
| W24 | • | • | • | • | • |
| W21 | • | • | • | • | - |
| HMT200A | • | • | • | • | - |
| V9500 | • | • | • | • | • |
| Without Adhesive | • | • | • | • | • |

| Standard Combinations | |
|-----------------------|----------------|
| Type | Article Number |
| 129-4-G | 401-29025 |
| 129-1-G | 401-29180 |
| 130-4-G | 401-30021 |
| 130-1-G | 401-30180 |
| 131-4-G | 401-31028 |
| 131-1-G | 401-31180 |
| 132-2-G | 401-32014 |
| 132-4-G | 401-32030 |
| 132-1-G | 401-32180 |
| 133-2-JWM250 | 401-33008 |
| 133-4-G | 401-33021 |
| 133-3-B7WM250 | 401-33036 |
| 133-1-G | 401-33180 |
| 134-4-G | 401-34015 |
| 134-1-G | 401-34180 |
| 135-4-G | 401-35009 |
| 135-1-G | 401-35180 |
| 136-4-G | 401-36006 |
| 136-2-JW8 | 401-36024 |
| 136-1-G | 401-36180 |
| 138-1-G | 401-38180 |



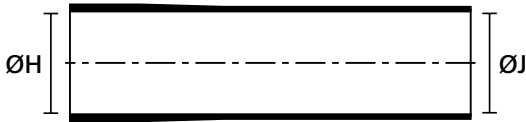
Long Outlet Shapes

Helashrink 140 Series, without rib

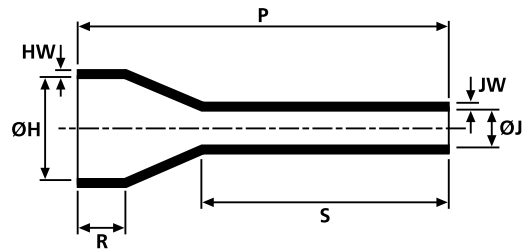
- Low profile and light weight
- Suited for aerospace harness assemblies
- Extended tail provides excellent strain relief and flexibility



146-1 supplied / fully recovered.



a: Expanded form (supplied)



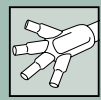
b: Fully recovered form (after heating)

| TYPE | ØH min. a | ØH max. b | ØJ min. a | ØJ max. b | P ± 10% | R ± 10% | HW ± 20% | JW ± 30% | S nom. |
|-------|-----------------|----------------|-----------------|---------------|------------------|----------------|---------------|---------------|------------------|
| 146-1 | 20.1 (.78") | 14.5 (.57") | 20.1 (.78") | 5.3 (.21") | 127.0 (4.95") | 15.7 (.61") | 2.0 (.08") | 2.0 (.08") | 97.0 (3.78") |
| 146-2 | 22.3 (.87") | 14.5 (.57") | 10.2 (.4") | 5.3 (.21") | 127.0 (4.95") | 15.7 (.61") | 2.0 (.08") | 2.0 (.08") | 97.0 (3.78") |
| 148-1 | 30.5 (1.19") | 18.0 (.7") | 30.5 (1.19") | 7.9 (.31") | 146.0 (5.69") | 15.7 (.61") | 2.0 (.08") | 2.0 (.08") | 125.0 (4.88") |
| 148-2 | 30.5 (1.19") | 18.0 (.7") | 15.2 (.59") | 7.9 (.31") | 146.0 (5.69") | 15.7 (.61") | 2.3 (.09") | 2.3 (.09") | 125.0 (4.88") |
| 149-1 | 41.2 (1.61") | 21.8 (.85") | 41.2 (1.61") | 10.2 (.4") | 162.1 (6.32") | 22.4 (.87") | 2.3 (.09") | 2.3 (.09") | 127.0 (4.95") |

Dimensions in mm, inches in brackets. Subject to technical changes.

| Combinations "On request" | | | | | |
|---------------------------|----------|---|---|---|---|
| Adhesive | Material | | | | |
| | B7 | G | J | H | L |
| WM250 | • | • | • | • | - |
| W8 | • | • | • | • | - |
| W24 | • | • | • | • | • |
| W21 | - | - | - | • | - |
| HMT200A | - | • | • | • | - |
| V9500 | • | • | • | • | • |
| Without Adhesive | • | • | • | • | • |

| Standard Combinations | |
|-----------------------|----------------|
| Type | Article Number |
| 146-1-B7 | 401-46001 |
| 146-2-G | 401-46009 |
| 148-1-G | 401-48006 |
| 148-2-J | 401-48016 |
| 149-1-J | 401-49006 |



Bottle Shapes

Helashrink 160 Series, without rib

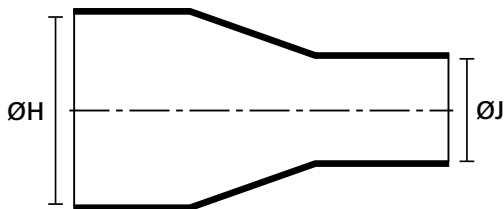
- This style is a straight boot used for cable strain relief and environmental protection on many applications
- Ideally suited where space is a premium



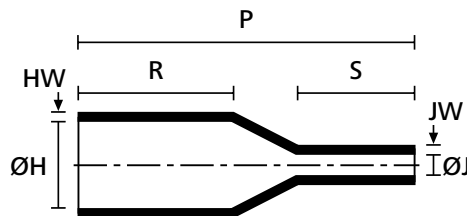
For Material / Adhesive selection and other information please refer to page 10.



162-1-G supplied / fully recovered.



a: Expanded form (supplied)



b: Fully recovered form (after heating)

| TYPE | ØH min. a | ØH max. b | ØJ min. a | ØJ max. b | P ± 10% | R ± 10% | HW ± 20% | JW ± 20% | S nom. |
|-------|----------------|----------------|---------------|---------------|-----------------|----------------|---------------|---------------|----------------|
| 162-1 | 22.0 (.86") | 14.2 (.55") | 9.0 (.35") | 4.1 (.16") | 44.0 (1.72") | 15.7 (.61") | 1.8 (.07") | 1.8 (.07") | 16.0 (.62") |

Dimensions in mm, inches in brackets. Subject to technical changes.

| Combinations "On request" | | | | |
|---------------------------|----------|---|---|---|
| Adhesive | Material | | | |
| | B7 | G | J | H |
| WM250 | • | • | • | • |
| W8 | • | • | • | • |
| W24 | • | • | • | • |
| W21 | - | - | - | • |
| HMT200A | • | • | • | • |
| V9500 | • | • | • | • |
| Without Adhesive | • | • | • | • |

| Standard Combinations | |
|-----------------------|----------------|
| Type | Article Number |
| 162-1-G | 401-62180 |



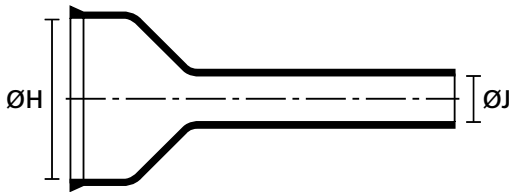
Bottle Shapes, VG style

Helashrink 170 Series, with rib

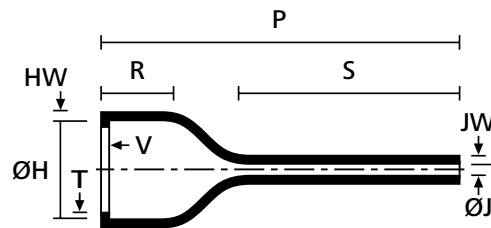
- Cable strain relief for partially loaded connectors
- Small cable diameters
- Use with our W24 adhesive for excellent chemical resistance



177-1-G supplied / fully recovered.



a: Expanded form (supplied)



b: Fully recovered form (after heating)

| TYPE | Designation as per AS/VG-Norm | ØH min. a | ØH max. b | ØJ min. a | ØJ max. b | P ± 10% | R ± 10% | T ± 20% | JW nom. | HW ± 20% | V max. | S nom. |
|-------|-------------------------------|--------------|--------------|-------------|------------|--------------|-------------|------------|------------|------------|------------|--------------|
| 176-1 | VG 95343 T06 D 011 A | 19.3 (.75") | 13.0 (.51") | 6.3 (.25") | 2.1 (.08") | 60.0 (2.34") | 11.7 (.46") | 1.0 (.04") | 1.1 (.04") | 1.5 (.06") | 3.3 (.13") | 38.0 (1.48") |
| 176-2 | | 19.0 (.74") | 13.0 (.51") | 6.0 (.23") | 2.0 (.08") | 30.0 (1.17") | 11.7 (.46") | 1.0 (.04") | 1.1 (.04") | 1.5 (.06") | 3.3 (.13") | 8.0 (.31") |
| 176-3 | | 25.0 (.98") | 13.0 (.51") | 4.0 (.16") | 2.0 (.08") | 45.0 (1.76") | 11.7 (.46") | 1.0 (.04") | 1.1 (.04") | 1.5 (.06") | 3.3 (.13") | 23.0 (.9") |
| 176-4 | AS85049/14019HU | 19.0 (.74") | 13.0 (.51") | 6.0 (.23") | 2.0 (.08") | 60.0 (2.34") | 11.7 (.46") | 1.0 (.04") | 1.1 (.04") | 1.5 (.06") | 3.3 (.13") | 38.0 (1.48") |
| 177-1 | AS85049/14020HU | 26.1 (1.02") | 19.1 (.75") | 7.6 (.30") | 2.6 (.10") | 74.2 (2.91") | 12.2 (.48") | 1.0 (.04") | 1.1 (.04") | 1.8 (.07") | 3.3 (.13") | 45.0 (1.77") |
| 178-1 | AS85049/14021HU | 34.2 (1.33") | 26.0 (1.01") | 9.6 (.37") | 3.1 (.12") | 84.0 (3.28") | 12.2 (.48") | 1.0 (.04") | 1.1 (.04") | 1.8 (.07") | 3.3 (.13") | 51.0 (1.99") |
| | VG 95343 T06 D 013 A | | | | | | | | | | | |
| 179-1 | AS85049/14022HU | 43.6 (1.7") | 34.1 (1.33") | 11.4 (.44") | 3.6 (.14") | 100.0 (3.9") | 12.2 (.48") | 1.7 (.07") | 1.1 (.04") | 1.8 (.07") | 3.3 (.13") | 58.0 (2.26") |
| | VG 95343 T06 D 014 A | | | | | | | | | | | |

Dimensions in mm, inches in brackets. Subject to technical changes.

| Combinations "On request" | | | | | |
|---------------------------|----------|---|---|---|---|
| Adhesive | Material | | | | |
| | B7 | G | J | H | L |
| WM250 | • | • | • | • | - |
| W8 | • | • | • | • | - |
| W24 | • | • | • | • | • |
| W21 | - | - | - | • | - |
| HMT200A | • | • | • | • | - |
| V9500 | • | • | • | • | • |
| Without Adhesive | • | • | • | • | • |

| Standard Combinations | |
|-----------------------|----------------|
| Type | Article Number |
| 176-2-B7 | 401-76014 |
| 176-3-G | 401-76018 |
| 176-4-J | 401-76022 |
| 176-1-G | 401-76180 |
| 178-1-G | 401-78180 |
| 179-1-G | 401-79180 |



Bottle Shapes, VG style

Helashrink 190 Series, with external ribs

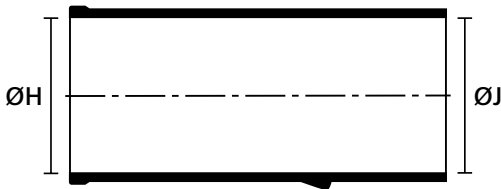
- Specifically for small audio connectors
- Multiple external ribs to improve grip in harsh conditions



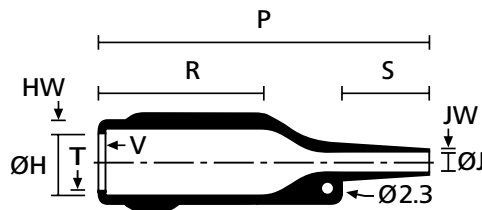
For Material / Adhesive selection and other information please refer to page 10.



199-4-G supplied / fully recovered.



a: Expanded form (supplied)



b: Fully recovered form (after heating)

| TYPE | Designation as per AS/VG-Norm | ØH min. a | ØH max. b | ØJ min. a | ØJ max. b | P ± 10% | R ± 10% | HW ± 20% | JW ± 20% | V ± 10% | T ± 10% | T ± 20% | S nom. |
|-------|-------------------------------|-------------|-------------|-------------|------------|--------------|--------------|------------|------------|------------|------------|------------|-------------|
| 199-4 | VG 95343 T06 A 010 A | 17.5 (.68") | 14.0 (.55") | 7.0 (.27") | 4.3 (.17") | 70.0 (2.73") | 35.0 (1.37") | 1.8 (.07") | 0.5 (.02") | 1.5 (.06") | - | 1.0 (.04") | 20.0 (.78") |
| 199-6 | | 18.5 (.72") | 14.0 (.55") | 18.5 (.72") | 4.3 (.17") | 70.0 (2.73") | 35.0 (1.37") | 1.8 (.07") | 0.5 (.02") | 1.5 (.06") | 1.0 (.04") | 1.0 (.04") | 20.0 (.78") |

Dimensions in mm, inches in brackets. Subject to technical changes.

| Combinations "On request" | | | | |
|---------------------------|----------|---|---|---|
| Adhesive | Material | | | |
| | B7 | G | J | H |
| WM250 | • | • | • | • |
| W8 | • | • | • | • |
| W24 | • | • | • | • |
| W21 | - | - | - | • |
| HMT200A | • | • | • | • |
| V9500 | • | • | • | • |
| Without Adhesive | • | • | • | • |

| Standard Combinations | |
|-----------------------|----------------|
| Type | Article Number |
| 199-4-G | 401-99480 |
| 199-6-G | 401-99007 |



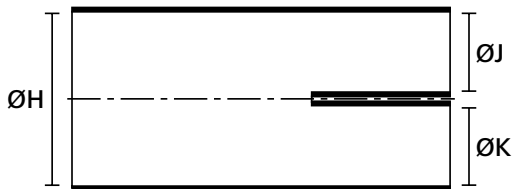
2-Way Outlet Shapes

Helashrink 200 Series, low profile

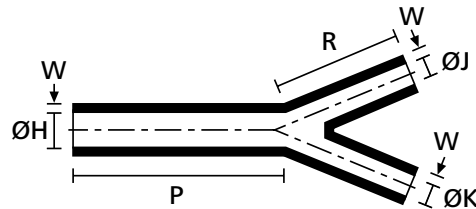
- For harnesses which route multi-core cables in different directions
- High ratio expansion for quick and easy installation
- Mechanical tension relief



200 series supplied / fully recovered.



a: Expanded form (supplied)



b: Fully recovered form (after heating)

| TYPE | ØH min. a | ØH max. b | ØJ min. a | ØJ max. b | ØK min. a | ØK max. b | P ± 10% | R ± 10% | W ± 20% |
|-------|-------------|------------|-------------|-------------|-------------|-------------|--------------|--------------|------------|
| 201-1 | 19.0 (.74") | 9.4 (.37") | 6.4 (.25") | 14.0 (.55") | 6.4 (.25") | 14.0 (.55") | 50.8 (1.98") | 30.5 (1.19") | 1.5 (.06") |
| 201-3 | 24.5 (.96") | 9.4 (.37") | 14.0 (.55") | 6.4 (.25") | 14.0 (.55") | 6.4 (.25") | 50.8 (1.98") | 30.5 (1.19") | 1.5 (.06") |
| 202-1 | 19.0 (.74") | 9.4 (.37") | 7.6 (.3") | 3.8 (.15") | 7.6 (.3") | 3.8 (.15") | 50.8 (1.98") | 30.5 (1.19") | 1.5 (.06") |
| 202-2 | 20.0 (.78") | 9.4 (.37") | 12.5 (.49") | 3.8 (.15") | 12.5 (.49") | 3.8 (.15") | 50.8 (1.98") | 30.5 (1.19") | 1.5 (.06") |
| 202-3 | 24.5 (.96") | 9.4 (.37") | 16.0 (.62") | 3.8 (.15") | 16.0 (.62") | 3.8 (.15") | 50.8 (1.98") | 30.5 (1.19") | 1.5 (.06") |

Dimensions in mm, inches in brackets. Subject to technical changes.

| Combinations "On request" | | | | |
|---------------------------|----------|---|---|---|
| Adhesive | Material | | | |
| | B7 | G | J | H |
| WM250 | • | • | • | • |
| W8 | • | • | • | • |
| W24 | • | • | • | • |
| W21 | - | - | - | - |
| HMT200A | • | • | • | - |
| V9500 | • | • | • | - |
| Without Adhesive | • | • | • | • |

| Standard Combinations | |
|-----------------------|----------------|
| Type | Article Number |
| 201-3-G | 402-01020 |
| 201-1-G | 402-01180 |
| 202-1-G | 402-02004 |
| 202-2-G | 402-02011 |
| 202-3-G | 402-02019 |



2-Way Outlet Shapes, VG style

Helashrink 200 Series

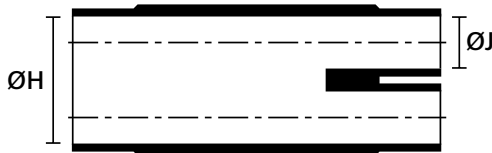
- Mechanical tension relief in cable harnesses



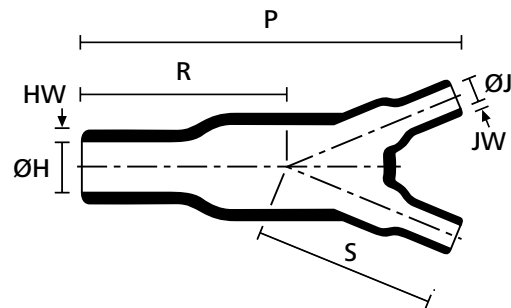
For Material / Adhesive selection and other information please refer to page 10.



203-1 supplied / fully recovered.



a: Expanded form (supplied)



b: Fully recovered form (after heating)

| TYPE | Designation as per AS/VG-Norm | ØH min. a | ØH max. b | ØJ min. a | ØJ max. b | P ± 10% | R ± 10% | HW ± 20% | JW nom. | S nom. |
|-------|-------------------------------|-----------------|----------------|-----------------|----------------|------------------|-----------------|---------------|---------------|-----------------|
| 203-1 | AS85049/14206HU | 27.0 (1.05") | 12.0 (.47") | 13.0 (.51") | 6.0 (.23") | 80.0 (3.15") | 43.0 (1.68") | 2.5 (.1") | 1.5 (.06") | 43.0 (1.68") |
| | VG 95343 T08 C 002 A | | | | | | | | | |
| 204-1 | AS85049/14207HU | 39.0 (1.52") | 18.0 (.7") | 27.0 (1.05") | 12.0 (.47") | 66.0 (2.57") | 81.0 (3.16") | 3.1 (.12") | 2.0 (.08") | 81.0 (3.16") |
| | VG 95343 T08 C 003 A | | | | | | | | | |
| 206-1 | AS85049/14205HU | 13.0 (.51") | 6.0 (.23") | 7.0 (.27") | 3.0 (.12") | 41.0 (1.62") | 19.0 (.74") | 1.5 (.06") | 1.0 (.04") | 19.0 (.74") |
| | VG 95343 T08 C 001 A | | | | | | | | | |
| 212-1 | VG 95343 T08 C 005 A | 14.5 (.57") | 8.0 (.31") | 8.5 (.33") | 5.5 (.21") | 82.6 (3.22") | 83.0 (3.24") | 2.3 (.09") | 2.0 (.08") | 63.0 (2.46") |
| 213-1 | | 17.3 (.67") | 7.9 (.31") | 11.1 (.43") | 7.9 (.31") | 140.0 (5.46") | 83.1 (3.24") | 2.3 (.09") | 1.0 (.04") | 64.0 (2.5") |
| 213-2 | | 40.0 (1.56") | 8.5 (.33") | 31.8 (1.24") | 7.9 (.31") | 140.0 (5.46") | 83.1 (3.24") | 2.3 (.09") | 2.3 (.09") | 64.0 (2.5") |

Dimensions in mm, inches in brackets. Subject to technical changes.

| Combinations "On request" | | | | | |
|---------------------------|----------|---|---|---|---|
| Adhesive | Material | | | | |
| | B7 | G | J | H | L |
| WM250 | • | • | • | • | - |
| W8 | • | • | • | • | - |
| W24 | • | • | • | • | • |
| W21 | - | - | - | • | - |
| HMT200A | • | • | • | - | - |
| V9500 | • | • | • | - | • |
| Without Adhesive | • | • | • | • | • |

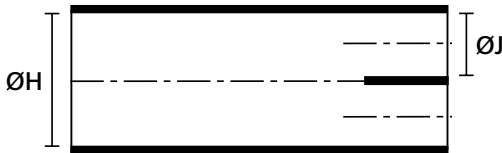
| Standard Combinations | |
|-----------------------|----------------|
| Type | Article Number |
| 203-1-G | 402-03180 |
| 204-1-G | 402-04180 |
| 206-1-G | 402-06180 |
| 212-1-G | 402-12180 |
| 213-1-G | 402-13180 |
| 213-2-G | 402-13021 |



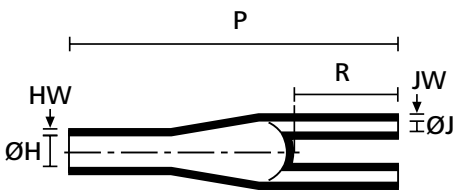
2-Way Outlet Shapes, Breakout Boots

Helashrink 200 Series, in line, low voltage

- Easy, time-saving insulation of cable branch point where it splits into single wires
- Adhesive is applied to relieve mechanical tension in cable harnesses



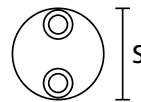
a: Expanded form (supplied)



b: Fully recovered form (after heating)



223-2 supplied / fully recovered.



Fully recovered form (after heating)

| TYPE | ØH min. a | ØH max. b | ØJ min. a | ØJ max. b | P ± 10% | R ± 10% | HW ± 20% | JW ± 20% | S nom. |
|-------|-----------------|-----------------|-----------------|---------------|------------------|-----------------|---------------|---------------|-----------------|
| 216-3 | 21.0 (.82") | 9.4 (.37") | 9.0 (.35") | 2.8 (.11") | 76.5 (2.98") | 20.0 (.78") | 1.6 (.06") | 1.6 (.06") | - |
| 217-2 | 31.0 (1.21") | 15.2 (.59") | 13.0 (.51") | 4.3 (.17") | 99.5 (3.88") | 28.5 (1.11") | 2.2 (.09") | 2.2 (.09") | 19.0 (.74") |
| 218-2 | 49.0 (1.91") | 22.9 (.89") | 20.0 (.78") | 7.6 (.3") | 119.0 (4.64") | 34.0 (1.33") | 3.2 (.12") | 3.2 (.12") | - |
| 219-2 | 77.0 (3") | 38.1 (1.49") | 37.0 (1.44") | 12.7 (.5") | 141.5 (5.52") | 42.5 (1.66") | 3.8 (.15") | 3.8 (.15") | 44.0 (1.72") |
| 220-1 | 50.0 (1.95") | 28.0 (1.09") | 23.0 (.9") | 8.0 (.31") | 175.0 (6.83") | 100.0 (3.9") | 2.5 (.1") | 2.0 (.08") | 33.0 (1.29") |

Dimensions in mm, inches in brackets. Subject to technical changes.

| Combinations "On request" | | | | |
|---------------------------|----------|---|---|----|
| Adhesive | Material | | | |
| | B7 | G | H | B8 |
| W | • | • | • | • |
| W2 | • | • | • | • |
| V9500 | • | • | - | - |
| HMT200A | • | • | - | • |
| W21 | - | - | • | - |
| Without Adhesive | • | • | • | • |

| Standard Combinations | |
|-----------------------|----------------|
| Type | Article Number |
| 217-2-B7 | 402-17014 |
| 218-2-B7 | 402-18020 |
| 219-2-B7W | 402-19039 |
| 220-1-B7 | 402-20008 |
| 216-3-B7 | 402-16057 |



3-Way Outlet Shapes, VG style

Helashrink 300 Series

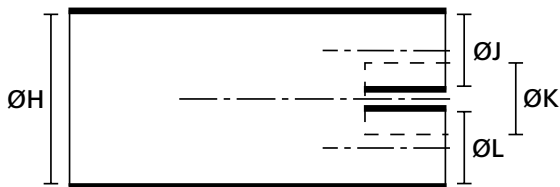
- Cable strain relief and mechanical protection at harness transition points
- All outlets clearly marked to aid orientation during installation



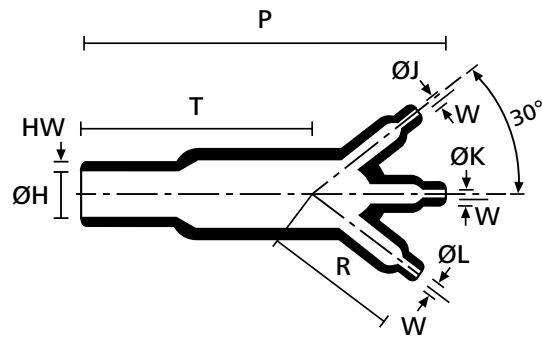
For Material / Adhesive selection and other information please refer to page 10.



304-1-G supplied / fully recovered.



a: Expanded form (supplied)



b: Fully recovered form (after heating)

| TYPE | Designation as per AS/VG-Norm | ØH min. a | ØH max. b | ØJ/K/L min. a | ØJ/K/L max. b | P ± 10% | R ± 10% | HW ± 20% | W ± 20% | T ± 10% |
|-------|-------------------------------|-----------------|----------------|-----------------|----------------|------------------|------------------|---------------|---------------|-----------------|
| 304-1 | AS85049/14210HU | 27.0 (1.05") | 13.5 (.53") | 13.0 (.51") | 7.0 (.27") | 93.0 (3.63") | 50.3 (1.96") | 2.5 (.1") | 1.5 (.06") | 42.9 (1.67") |
| | VG 95343 T08 D 002 A | | | | | | | | | |
| 306-1 | AS85049/14209HU | 13.0 (.51") | 6.5 (.25") | 6.5 (.25") | 3.5 (.14") | 46.0 (1.79") | 25.4 (.99") | 1.3 (.05") | 1.0 (.04") | 20.3 (.79") |
| | VG 95343 T08 D 001 A | | | | | | | | | |
| 310-1 | AS85049/14211HU | 38.5 (1.5") | 19.0 (.74") | 19.0 (.74") | 10.0 (.39") | 135.0 (5.27") | 73.7 (2.87") | 3.0 (.12") | 1.8 (.07") | 61.0 (2.38") |
| | VG 95343 T08 D 003 A | | | | | | | | | |
| 311-1 | AS85049/14212HU | 55.5 (2.16") | 25.5 (.99") | 27.0 (1.05") | 12.5 (.49") | 192.0 (7.49") | 103.1 (4.02") | 4.6 (.18") | 3.1 (.12") | 88.9 (3.47") |
| | VG 95343 T08 D 004 A | | | | | | | | | |

Dimensions in mm, inches in brackets. Subject to technical changes.

| Combinations "On request" | | | | | |
|---------------------------|----------|---|---|---|---|
| Adhesive | Material | | | | |
| | B7 | G | J | H | L |
| WM250 | • | • | • | • | - |
| W8 | • | • | • | • | - |
| W24 | • | • | • | • | • |
| W21 | - | - | - | • | - |
| HMT200A | • | • | • | • | - |
| V9500 | • | • | • | • | • |
| Without Adhesive | • | • | • | • | • |

| Standard Combinations | |
|-----------------------|----------------|
| Type | Article Number |
| 304-1-G | 403-04180 |
| 306-1-G | 403-06180 |
| 310-1-G | 403-10180 |
| 311-1-G | 403-11180 |



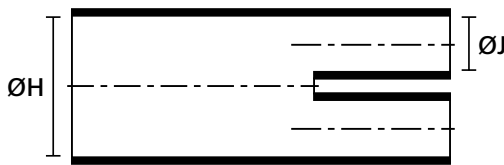
3-Way Outlet Shapes, Breakout Boots

Helashrink 300 Series, in line, low voltage

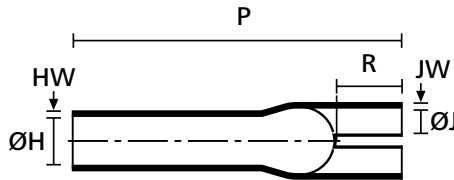
- Easy, time-saving insulation of cable branch point where it splits into single wires
- Adhesive is applied to relieve mechanical tension in cable harnesses



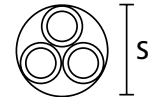
300 Series supplied / fully recovered.



a: Expanded form (supplied)



b: Fully recovered form (after heating)



Fully recovered form (after heating)

| TYPE | ØH min. a | ØH max. b | ØJ min. a | ØJ max. b | P ± 10% | R ± 10% | HW ± 20% | JW ± 20% | S nom. |
|-------|-----------------|-----------------|-----------------|---------------|------------------|-----------------|---------------|---------------|-----------------|
| 318-1 | 23.0 (.9") | 9.1 (.35") | 9.0 (.35") | 3.0 (.12") | 76.5 (2.98") | 20.0 (.78") | 2.5 (.1") | 2.5 (.1") | 16.0 (.62") |
| 319-1 | 31.0 (1.21") | 17.5 (.68") | 13.0 (.51") | 4.6 (.18") | 93.5 (3.65") | 28.5 (1.11") | 2.9 (.11") | 2.9 (.11") | 23.0 (.9") |
| 328-2 | 44.0 (1.72") | 22.8 (.89") | 21.0 (.82") | 7.6 (.3") | 99.0 (3.86") | 34.0 (1.33") | 3.8 (.15") | 3.8 (.15") | - |
| 330-2 | 61.0 (2.38") | 35.5 (1.38") | 32.0 (1.25") | 12.7 (.5") | 144.5 (5.64") | 45.5 (1.77") | 3.8 (.15") | 3.8 (.15") | 47.0 (1.83") |
| 339-2 | 39.0 (1.52") | 12.7 (.5") | 17.0 (.66") | 4.1 (.16") | 102.0 (3.98") | 56.0 (2.18") | 2.9 (.11") | 2.9 (.11") | 26.0 (1.01") |

Dimensions in mm, inches in brackets. Subject to technical changes.

| Combinations "On request" | | | | | |
|---------------------------|----------|---|---|----|---|
| Adhesive | Material | | | | |
| | B7 | G | H | B8 | J |
| W | • | • | • | • | • |
| W2 | • | • | • | • | - |
| WM250 | • | • | • | • | • |
| V9500 | • | • | - | - | • |
| HMT200A | • | • | - | • | • |
| W21 | - | - | • | - | - |
| Without Adhesive | • | • | • | • | • |

| Standard Combinations | |
|-----------------------|----------------|
| Type | Article Number |
| 319-1-G | 403-19022 |
| 328-2-J | 403-28015 |
| 330-2-B7WM250 | 403-30014 |
| 339-2-G | 403-39017 |
| 318-1-G | 403-18018 |



4-Way Outlet Shapes, VG style

Helashrink 400 Series

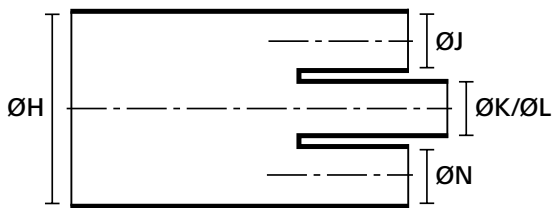
- All outlets clearly marked to aid orientation during installation
- Cable strain relief and mechanical protection at harness transition points



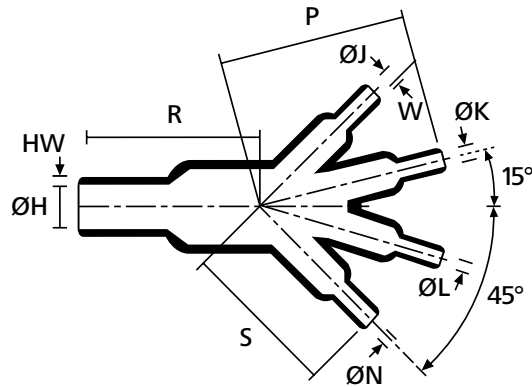
For Material / Adhesive selection and other information please refer to page 10.



403-1 supplied / fully recovered.



a: Expanded form (supplied)



b: Fully recovered form (after heating)

| TYPE | Designation as per AS/VG-Norm | ØH min. a | ØH max. b | ØJ/K/L/N min. a | ØJ/K/L/N max. b | P ± 10% | R ± 10% | S ± 10% | W ± 10% | HW ± 20% |
|-------|-------------------------------|-----------------|----------------|-----------------|-----------------|-----------------|-----------------|-----------------|---------------|---------------|
| 403-1 | VG 95343 T08 E 004 A | 27.0 (1.05") | 13.0 (.51") | 13.0 (.51") | 7.0 (.27") | 51.8 (2.02") | 49.0 (1.91") | 45.0 (1.76") | 1.0 (.04") | 2.5 (.1") |
| 410-1 | VG95343T19E001A | 12.0 (.47") | 7.0 (.27") | 6.6 (.26") | 3.5 (.14") | 65.0 (2.54") | 24.0 (9.4") | 24.0 (.94") | 1.0 (.04") | 1.5 (.06") |
| 411-1 | VG 95343 T08 E 002 A | 19.0 (.74") | 10.0 (.39") | 9.5 (.37") | 5.5 (.21") | 36.1 (1.41") | 35.6 (1.39") | 32 (1.25") | 1.0 (.04") | 1.8 (.07") |
| 413-1 | VG 95343 T08 E 005 A | 38.6 (1.51") | 19.0 (.74") | 19.0 (.74") | 10.0 (.39") | 74.9 (2.92") | 75.0 (2.93") | 65.3 (2.55") | 1.0 (.04") | 1.8 (.07") |

Dimensions in mm, inches in brackets. Subject to technical changes.

| Combinations "On request" | | | | | |
|---------------------------|----------|---|---|---|---|
| Adhesive | Material | | | | |
| | B7 | G | J | H | L |
| WM250 | • | • | • | • | - |
| W8 | • | • | • | • | - |
| W24 | • | • | • | • | • |
| W21 | - | - | - | • | - |
| HMT200A | • | • | - | • | - |
| V9500 | • | • | • | - | • |
| Without Adhesive | • | • | • | • | • |

| Standard Combinations | |
|-----------------------|----------------|
| Type | Article Number |
| 403-1-G | 404-03180 |
| 410-1-G | 404-10003 |
| 411-1-G | 404-11180 |
| 413-1-G | 404-13180 |



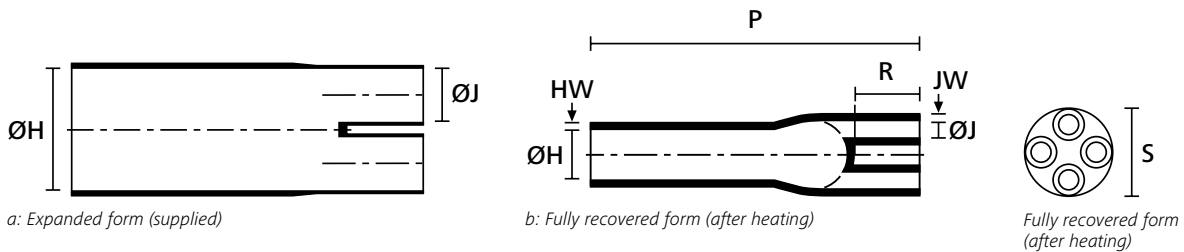
4-Way Outlet Shapes, Breakout Boots

Helashrink 400 Series, in line, low voltage

- Easy, time-saving insulation of cable branch point where it splits into single wires
- Made of tough, cross-linked, Polyolefin
- Adhesive is applied to relieve mechanical tension in cable harnesses



400 series supplied / fully recovered.



| TYPE | ØH min. a | ØH max. b | ØJ min. a | ØJ max. b | P ± 10% | R ± 10% | HW ± 20% | JW ± 20% | S nom. |
|-------|-----------------|-----------------|-----------------|----------------|------------------|-----------------|---------------|---------------|-----------------|
| 434-2 | 23.0 (.9") | 11.0 (.43") | 8.0 (.31") | 2.8 (.11") | 78.0 (3.04") | 22.0 (.86") | 1.6 (.06") | 1.6 (.06") | 18.0 (.7") |
| 435-2 | 32.0 (1.25") | 20.3 (.79") | 13.0 (.51") | 4.8 (.19") | 93.5 (3.65") | 28.5 (1.11") | 2.9 (.11") | 2.9 (.11") | 27.0 (1.05") |
| 437-1 | 60.0 (2.34") | 25.4 (.99") | 26.0 (1.01") | 8.9 (.35") | 240.0 (9.36") | 48.0 (1.87") | 4.5 (.18") | 4.5 (.18") | 43.0 (1.68") |
| 438-2 | 68.0 (2.65") | 35.6 (1.39") | 31.0 (1.21") | 13.5 (.53") | 141.5 (5.52") | 42.5 (1.66") | 4.5 (.18") | 4.5 (.18") | 54.0 (2.11") |

Dimensions in mm, inches in brackets. Subject to technical changes.

| Combinations "On request" | | | | | |
|---------------------------|----------|---|---|----|---|
| Adhesive | Material | | | | |
| | B7 | G | H | B8 | J |
| W | • | • | • | • | • |
| W2 | • | • | • | - | - |
| W24 | • | • | • | - | • |
| V9500 | • | • | - | - | • |
| HMT200A | • | • | - | • | • |
| W21 | - | - | • | - | • |
| Without Adhesive | • | • | • | • | • |

| Standard Combinations | |
|-----------------------|----------------|
| Type | Article Number |
| 435-2-J | 404-35007 |
| 437-1-B7 | 404-37001 |
| 438-2-J | 404-38008 |
| 434-2-G | 404-34017 |



5-Way Outlet Shapes, Breakout Boots

Helashrink 500 Series, in line, low voltage

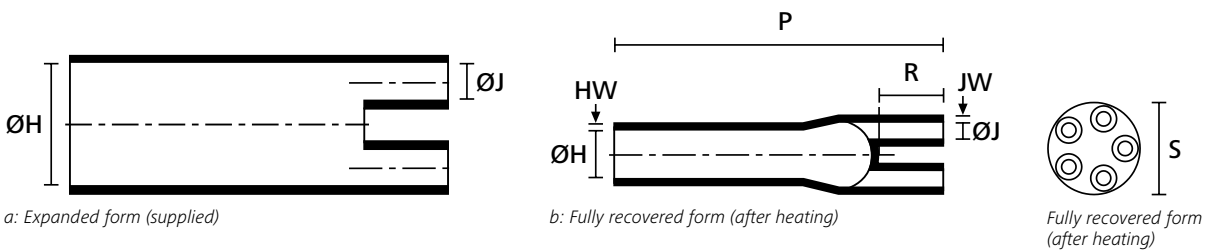
- Cable breakout boots for insulating and sealing cable crotch or conduit system
- Excellent resistance to abrasion and weathering



For Material / Adhesive selection and other information please refer to page 10.



500 Series supplied / fully recovered.



| TYPE | ØH min. a | ØH max. b | ØJ min. a | ØJ max. b | P ± 10% | R ± 10% | HW ± 20% | JW ± 20% | S nom. |
|-------|-----------------|----------------|-----------------|---------------|------------------|-----------------|---------------|---------------|-----------------|
| 508-1 | 60.0 (2.36") | 24.5 (.96") | 30.0 (1.17") | 7.5 (.29") | 180.0 (7.02") | 30.0 (1.17") | 3.5 (.14") | 3.0 (.12") | 48.0 (1.87") |

Dimensions in mm, inches in brackets. Subject to technical changes.

| Combinations "On request" | | | |
|---------------------------|----------|---|---|
| Adhesive | Material | | |
| | B7 | G | H |
| W | • | • | • |
| W2 | • | • | - |
| V9500 | • | • | - |
| HMT200A | • | • | • |
| W21 | - | - | • |
| Without Adhesive | • | • | • |

| Standard Combinations | |
|-----------------------|----------------|
| Type | Article Number |
| 508-1-B7 | 405-08021 |



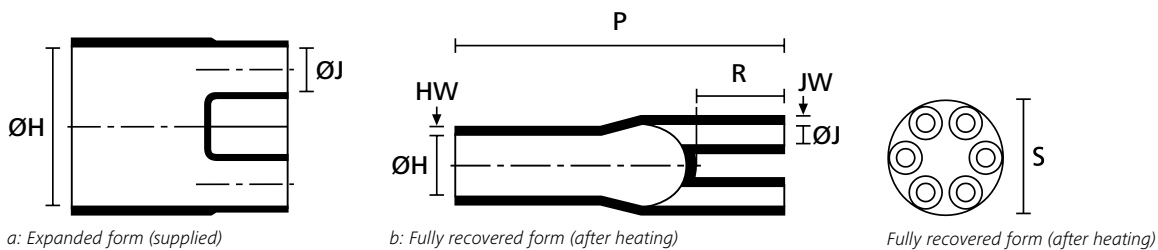
6-Way Outlet Shapes, Breakout Boots

Helashrink 600 Series, in line, low voltage

- Cable breakout boots for insulating and sealing cable crotch or conduit system
- Excellent resistance to abrasion and weathering



600 Series supplied / fully recovered.

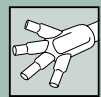


| TYPE | ØH min. a | ØH max. b | ØJ min. a | ØJ max. b | P ± 10% | R ± 10% | HW ± 20% | JW ± 20% | S nom. |
|-------|-----------------|-----------------|----------------|---------------|------------------|-----------------|---------------|---------------|----------------|
| 608-2 | 61.0 (2.38") | 37.0 (1.44") | 21.0 (.82") | 9.0 (.35") | 152.0 (5.93") | 56.0 (2.18") | 3.2 (.12") | 3.2 (.12") | 46 (1.79") |
| 609-1 | 30.0 (1.17") | 16.0 (.62") | 8.2 (.32") | 4.0 (.16") | 75.0 (2.93") | 20.0 (.78") | 2.5 (.1") | 1.5 (.06") | 25.0 (.98") |
| 609-2 | 40.0 (1.56") | 16.0 (.62") | 12.0 (.47") | 4.0 (.16") | 75.0 (2.93") | 20.0 (.78") | 2.5 (.1") | 1.5 (.06") | 25.0 (.98") |

Dimensions in mm, inches in brackets. Subject to technical changes.

| Combinations "On request" | | | |
|---------------------------|----------|---|---|
| Adhesive | Material | | |
| | B7 | G | H |
| W | • | • | • |
| W2 | • | • | - |
| V9500 | • | • | - |
| HMT200A | • | • | • |
| W21 | - | - | • |
| Without Adhesive | • | • | • |

| Standard Combinations | |
|-----------------------|----------------|
| Type | Article Number |
| 608-2-B7 | 406-08023 |
| 609-1-G | 406-09003 |
| 609-2-B7 | 406-09023 |



Right-Angle Shapes, VG style

Helashrink 1100 Series, with rib

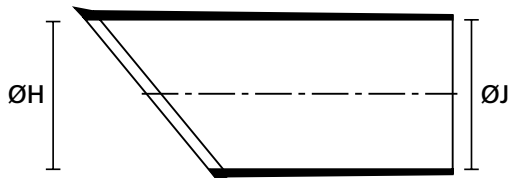
- Used in conjunction with a circular grooved adaptor
- Provides strain relief and an environmental seal



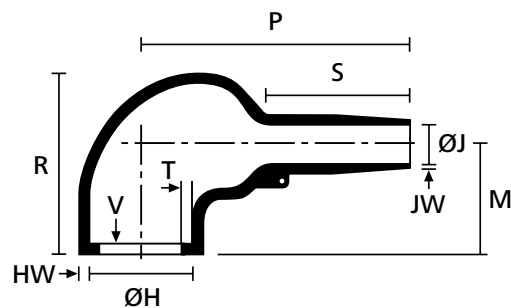
1152-4-G recovered onto a connector.



For Material / Adhesive selection and other information please refer to page 10.



a: Expanded form (supplied)



b: Fully recovered form (after heating)

| TYPE | Designation as per AS/VG-Norm | ØH min. a | ØH max. b | ØJ min. a | ØJ max. b | P ± 10% | R ± 10% | HW ± 20% | JW ± 20% | V ± 10% | T ± 20% | M nom. | S nom. |
|--------|-------------------------------|--------------|--------------|--------------|-------------|---------------|--------------|------------|------------|------------|------------|--------------|--------------|
| 1152-4 | VG 95343 T06 E 001 A | 24.0 (.94") | 10.5 (.41") | 24.0 (.94") | 6.0 (.23") | 26.0 (1.01") | 25.0 (.98") | 1.3 (.05") | 0.5 (.02") | 3.0 (.12") | 1.0 (.04") | 19.0 (.74") | 10.0 (.39") |
| 1154-4 | VG 95343 T06 E 002 A | 30.0 (1.17") | 15.5 (.6") | 30.0 (1.17") | 6.0 (.23") | 32.0 (1.25") | 27.0 (1.05") | 1.5 (.06") | 0.8 (.03") | 3.0 (.12") | 1.0 (.04") | 19.0 (.74") | 12.0 (.47") |
| 1155-4 | VG 95343 T06 E 003 A | 31.0 (1.21") | 18.0 (.7") | 31.0 (1.21") | 7.0 (.27") | 40.0 (1.56") | 31.0 (1.21") | 1.8 (.07") | 1.0 (.04") | 3.0 (.12") | 1.0 (.04") | 21.0 (.82") | 15.0 (.59") |
| 1156-4 | VG 95343 T06 E 004 A | 36.0 (1.4") | 22.5 (.88") | 36.0 (1.4") | 8.5 (.33") | 46.0 (1.79") | 38.0 (1.48") | 1.8 (.07") | 1.0 (.04") | 3.0 (.12") | 1.0 (.04") | 26.0 (1.01") | 15.0 (.59") |
| 1157-4 | VG 95343 T06 E 005 A | 43.0 (1.68") | 28.5 (1.11") | 43.0 (1.68") | 10.0 (.39") | 55.0 (2.15") | 45.0 (1.76") | 2.0 (.08") | 1.0 (.04") | 3.0 (.12") | 1.7 (.07") | 30.0 (1.17") | 16.0 (.62") |
| 1158-4 | VG 95343 T06 E 006 A | 60.0 (2.34") | 35.0 (1.37") | 60.0 (2.34") | 16.0 (.62") | 80.0 (3.12") | 54.0 (2.11") | 3.3 (.13") | 1.5 (.06") | 3.0 (.12") | 1.7 (.07") | 35.0 (1.37") | 30.0 (1.17") |
| 1159-4 | VG 95343 T06 E 007 A | 66.0 (2.57") | 45.0 (1.76") | 66.0 (2.57") | 17.0 (.66") | 108.0 (4.21") | 68.0 (2.65") | 3.8 (.15") | 2.0 (.08") | 3.0 (.12") | 2.0 (.08") | 42.0 (1.64") | 51.0 (1.99") |
| 1160-4 | VG 95343 T06 E 008 A | 82.0 (3.2") | 61.0 (2.38") | 82.0 (3.2") | 25.0 (.98") | 118.0 (4.6") | 84.0 (3.28") | 4.0 (.16") | 4.0 (.16") | 3.0 (.12") | 2.0 (.08") | 52.0 (2.03") | 39.0 (1.52") |

Dimensions in mm, inches in brackets. Subject to technical changes.

| Combinations "On request" | | | | | |
|---------------------------|----------|---|---|---|---|
| Adhesive | Material | | | | |
| | B7 | G | J | H | L |
| WM250 | • | • | • | • | - |
| W8 | • | • | • | • | - |
| W24 | • | • | • | • | • |
| W21 | - | - | • | • | - |
| HMT200A | • | • | • | • | - |
| V9500 | • | • | • | - | - |
| Without Adhesive | • | • | • | • | • |

| Standard Combinations | |
|-----------------------|----------------|
| Type | Article Number |
| 1152-4-G | 411-52480 |
| 1154-4-G | 411-54480 |
| 1155-4-G | 411-55480 |
| 1156-4-G | 411-56480 |
| 1157-4-G | 411-57480 |
| 1158-4-G | 411-58480 |
| 1159-4-G | 411-59480 |
| 1160-4-G | 411-60480 |



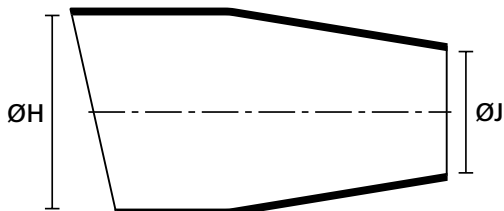
Right-Angle Shapes, VG style

Helashrink 1100 Series, without rib, thick wall

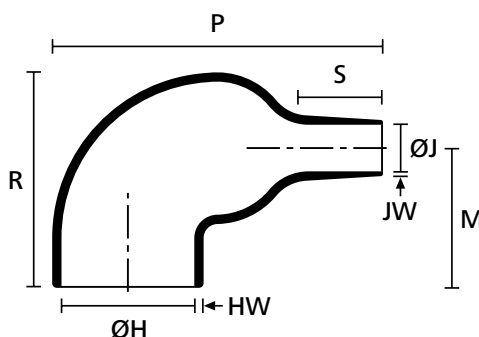
- Provides connector cable strain relief
- Can be installed on the connector rear thread or plain shaft
- Allows easy re-entry for repair when combined with a hot melt adhesive



1114-1 supplied / fully recovered.



a: Expanded form (supplied)



b: Fully recovered form (after heating)

| TYPE | Designation as per AS/VG-Norm | ØH min. a | ØH max. b | ØJ min. a | ØJ max. b | P ± 20% | R ± 10% | HW ± 30% | JW ± 30% | M nom. | S nom. |
|--------|-------------------------------|-------------|-------------|-------------|------------|------------|--------------|------------|------------|-------------|------------|
| 1113-1 | VG 95343 T06 J 003 A | 19.0 (.74") | 14.5 (.57") | 8.0 (.31") | 4.5 (.18") | 39 (1.52") | 26.0 (1.01") | 2.5 (.1") | 1.8 (.07") | 19.0 (.74") | 8.0 (.31") |
| 1114-1 | VG 95343 T06 J 004 A | 23.5 (.92") | 18.0 (.7") | 11.5 (.45") | 5.5 (.21") | 51 (1.99") | 33.0 (1.29") | 3.0 (.12") | 1.0 (.04") | 22.0 (.86") | 9.5 (.37") |

Dimensions in mm, inches in brackets. Subject to technical changes.

| Combinations "On request" | | | | |
|---------------------------|----------|---|---|---|
| Adhesive | Material | | | |
| | B7 | G | J | H |
| WM250 | • | • | • | • |
| W8 | • | • | • | • |
| W24 | • | • | • | • |
| W21 | - | - | - | • |
| HMT200A | • | • | • | • |
| V9500 | • | • | • | - |
| Without Adhesive | • | • | • | • |

| Standard Combinations | |
|-----------------------|----------------|
| Type | Article Number |
| 1113-1-G | 411-13002 |
| 1114-1-G | 411-14004 |



Right-Angle Shapes, MIL style

Helashrink 1100 Series, with rib

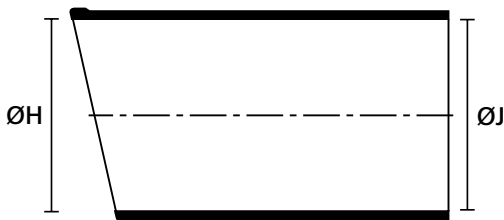
- Used in conjunction with a circular grooved adaptor for strain relief



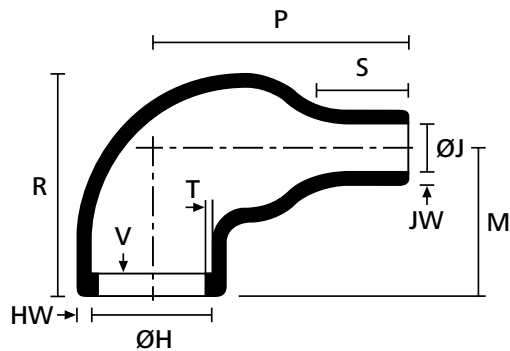
For Material / Adhesive selection and other information please refer to page 10.



1108-4 supplied / fully recovered.



a: Expanded form (supplied)



b: Fully recovered form (after heating)

| TYPE | Designation as per AS/VG-Norm | ØH min. a | ØH max. b | ØJ min. a | ØJ max. b | P ± 10% | R ± 10% | HW ± 20% | M nom. | JW ± 30% | V max. | T ± 20% | S nom. |
|--------|-------------------------------|-----------------|-----------------|-----------------|----------------|-----------------|-----------------|---------------|-----------------|---------------|---------------|---------------|-----------------|
| 1101-4 | AS85049/14105HU | 42.6 (1.66") | 27.9 (1.09") | 42.6 (1.66") | 9.7 (.38") | 53.3 (2.08") | 43.2 (1.68") | 2.0 (.08") | 27.9 (1.09") | 2.0 (.08") | 3.3 (.13") | 1.7 (.07") | 15.7 (.61") |
| 1103-4 | AS85049/14104HU | 36.0 (1.4") | 22.4 (.87") | 36.0 (1.4") | 8.4 (.33") | 43.2 (1.68") | 35.6 (1.39") | 1.8 (.07") | 22.9 (.89") | 1.8 (.07") | 3.3 (.13") | 1.0 (.04") | 12.7 (.5") |
| 1104-4 | AS85049/14103HU | 30.9 (1.21") | 17.8 (.69") | 30.9 (1.21") | 7.1 (.28") | 35.6 (1.39") | 30.5 (1.19") | 1.8 (.07") | 20.6 (.8") | 1.8 (.07") | 3.3 (.13") | 1.0 (.04") | 8.6 (.34") |
| 1105-4 | AS85049/14106HU | 51.8 (2.02") | 35.1 (1.37") | 51.8 (2.02") | 15.7 (.61") | 78.7 (3.07") | 53.3 (2.08") | 3.3 (.13") | 33 (1.29") | 3.3 (.13") | 3.3 (.13") | 1.7 (.07") | 30.5 (1.19") |
| 1106-4 | AS85049/14101HU | 23.3 (.91") | 10.4 (.41") | 23.3 (.91") | 5.6 (.22") | 20.3 (.79") | 22.9 (.89") | 1.3 (.05") | 15.2 (.59") | 1.3 (.05") | 3.3 (.13") | 1.0 (.04") | 5.8 (.23") |
| 1107-4 | AS85049/14102HU | 28.4 (1.11") | 14.2 (.55") | 28.4 (1.11") | 6.3 (.25") | 29.8 (1.16") | 28.5 (1.11") | 1.5 (.06") | 21.4 (.83") | 1.5 (.06") | 3.3 (.13") | 1.0 (.04") | 7.1 (.28") |
| 1108-4 | | 16.5 (.64") | 7.9 (.31") | 16.5 (.64") | 2.5 (.1") | 18.3 (.71") | 20.1 (.78") | 1.0 (.04") | 15.2 (.59") | 1.6 (.06") | 3.3 (.13") | 1.0 (.04") | 5.1 (.2") |
| 1109-4 | AS85049/14107HU | 66.0 (2.60") | 44.5 (1.75") | 66.0 (2.60") | 20.3 (.80") | 97.5 (3.84") | 66.0 (2.60") | 3.8 (.15") | - | 3.8 (.15") | - | - | 40.6 (1.60") |
| 1181-4 | | 12.0 (.47") | 9.8 (.38") | 6.0 (.23") | 2.0 (.08") | 19.0 (.74") | 13.0 (.51") | 1.0 (.04") | 11.0 (.43") | 0.5 (.02") | 1.5 (.06") | 0.6 (.02") | 6.0 (.23") |
| 1182-4 | | 12.0 (.47") | 7.6 (.3") | 6.0 (.23") | 2.0 (.08") | 16.8 (.66") | 13.0 (.51") | 1.0 (.04") | - | 0.5 (.02") | - | 0.3 (.01") | 6.0 (.23") |

Dimensions in mm, inches in brackets. Subject to technical changes.



Right-Angle Shapes, MIL style

Helashrink 1100 Series, with rib

| Combinations "On request" | | | | | |
|---------------------------|----------|---|---|---|---|
| Adhesive | Material | | | | |
| | B7 | G | J | H | L |
| WM250 | • | • | • | • | - |
| W8 | • | • | • | • | - |
| W24 | • | • | • | • | • |
| HMT200A | • | • | • | • | - |
| V9500 | • | • | • | - | - |
| Without Adhesive | • | • | • | • | • |

| Standard Combinations | |
|-----------------------|----------------|
| Type | Article Number |
| 1101-4-G | 411-01020 |
| 1103-4-G | 411-03024 |
| 1104-4-G | 411-04032 |
| 1105-4-J | 411-05019 |
| 1106-4-G | 411-06019 |
| 1107-4-G | 411-07020 |
| 1108-4-B7 | 411-08015 |
| 1181-4-G | 411-81480 |
| 1182-4-G | 411-82001 |



Right-Angle Shapes

Helashrink 1100 Series, without rib

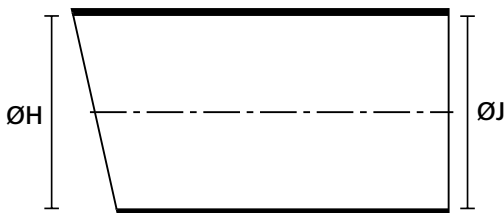
- Strain relief for connector cable
- Can be installed on the connector rear thread or plain shaft
- Easy re-entry for repair when combined with hot melt adhesive



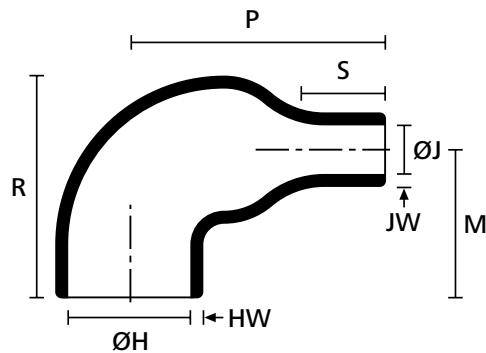
For Material / Adhesive selection and other information please refer to page 10.



1108-1 supplied / fully recovered.



a: Expanded form (supplied)



b: Fully recovered form (after heating)

| TYPE | ØH min. a | ØH max. b | ØJ min. a | ØJ max. b | P ± 10% | R ± 10% | HW ± 20% | M nom. | JW ± 30% | S nom. |
|--------|-----------------|-----------------|-----------------|----------------|-----------------|-----------------|---------------|-----------------|---------------|-----------------|
| 1100-4 | 26.0 (1.01") | 15.5 (.6") | 16.0 (.62") | 4.0 (.16") | 25.0 (.98") | 17.0 (.66") | 1.8 (.07") | 17.0 (.66") | 1.0 (.04") | 20 (.78") |
| 1101-1 | 43.1 (1.68") | 27.9 (1.09") | 43.1 (1.68") | 9.7 (.38") | 53.3 (2.08") | 43.2 (1.68") | 2.0 (.08") | 27.9 (1.09") | 2.0 (.08") | 15.7 (.61") |
| 1101-2 | 38.1 (1.49") | 27.9 (1.09") | 22.8 (.89") | 9.7 (.38") | 53.3 (2.08") | 43.2 (1.68") | 2.0 (.08") | 27.9 (1.09") | 2.0 (.08") | 15.7 (.61") |
| 1103-1 | 38.1 (1.49") | 22.4 (.87") | 38.1 (1.49") | 8.4 (.33") | 43.2 (1.68") | 35.6 (1.39") | 1.8 (.07") | 22.9 (.89") | 1.8 (.07") | 12.7 (.5") |
| 1103-2 | 30.4 (1.19") | 22.4 (.87") | 19.0 (.74") | 8.4 (.33") | 43.2 (1.68") | 35.6 (1.39") | 1.8 (.07") | 22.9 (.89") | 1.8 (.07") | 12.7 (.5") |
| 1104-1 | 24.1 (.94") | 17.8 (.69") | 15.7 (.61") | 7.1 (.28") | 35.6 (1.39") | 30.5 (1.19") | 1.8 (.07") | 20.6 (.8") | 1.8 (.07") | 8.6 (.34") |
| 1104-2 | 31.7 (1.24") | 17.8 (.69") | 31.7 (1.24") | 7.1 (.28") | 35.6 (1.39") | 30.5 (1.19") | 1.8 (.07") | 20.6 (.8") | 1.8 (.07") | 8.6 (.34") |
| 1105-1 | 52.3 (2.04") | 35.1 (1.37") | 52.3 (2.04") | 15.7 (.61") | 78.7 (3.07") | 53.5 (2.09") | 3.3 (.13") | 33 (1.29") | 3.3 (.13") | 30.5 (1.19") |
| 1105-2 | 46.9 (1.83") | 35.1 (1.37") | 35.3 (1.38") | 15.7 (.61") | 78.7 (3.07") | 53.5 (2.09") | 3.3 (.13") | 33 (1.29") | 3.3 (.13") | 30.5 (1.19") |
| 1106-1 | 23.6 (.92") | 10.4 (.41") | 23.6 (.92") | 5.6 (.22") | 20.3 (.79") | 22.9 (.89") | 1.3 (.05") | 15.2 (.59") | 1.3 (.05") | 5.8 (.23") |
| 1106-2 | 13.7 (.53") | 10.4 (.41") | 11.6 (.45") | 5.6 (.22") | 20.3 (.79") | 22.9 (.89") | 1.3 (.05") | 15.2 (.59") | 1.3 (.05") | 5.8 (.23") |
| 1107-1 | 28.4 (1.11") | 14.2 (.55") | 28.4 (1.11") | 6.3 (.25") | 29.8 (1.16") | 28.5 (1.11") | 1.5 (.06") | 18.5 (.72") | 1.5 (.06") | 7.1 (.28") |
| 1107-2 | 19.3 (.75") | 14.2 (.55") | 14.2 (.55") | 6.3 (.25") | 29.8 (1.16") | 28.5 (1.11") | 1.5 (.06") | 18.5 (.72") | 1.5 (.06") | 7.1 (.28") |

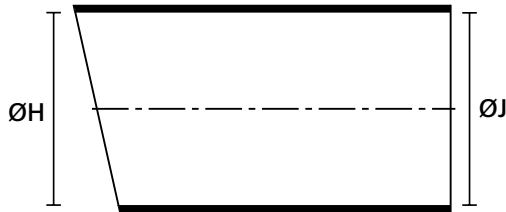
Dimensions in mm, inches in brackets. Subject to technical changes.



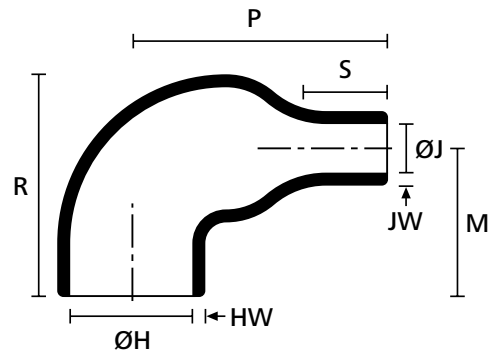


Right-Angle Shapes

Helashrink 1100 Series, without rib



a: Expanded form (supplied)



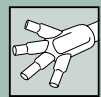
b: Fully recovered form (after heating)

| TYPE | ØH min. a | ØH max. b | ØJ min. a | ØJ max. b | P ± 10% | R ± 10% | HW ± 20% | M nom. | JW ± 30% | S nom. |
|--------|-----------------|-----------------|-----------------|----------------|----------------|-----------------|---------------|-----------------|---------------|-----------------|
| 1108-1 | 16.5 (.64") | 7.9 (.31") | 16.5 (.64") | 2.5 (.1") | 18.3 (.71") | 20.1 (.78") | 1.0 (.04") | 15.2 (.59") | 1.6 (.06") | 5.1 (.2") |
| 1108-2 | 10.6 (.41") | 7.9 (.31") | 8.3 (.32") | 2.5 (.1") | 18.3 (.71") | 20.1 (.78") | 1.0 (.04") | 15.2 (.59") | 1.6 (.06") | 5.1 (.2") |
| 1109-1 | 66.0 (2.57") | 44.5 (1.74") | 66.0 (2.57") | 20.3 (.79") | 97.5 (3.8") | 66.0 (2.57") | 3.8 (.15") | 41.7 (1.63") | 3.8 (.15") | 40.6 (1.58") |

Dimensions in mm, inches in brackets. Subject to technical changes.

| Combinations "On request" | | | | | |
|---------------------------|----------|---|---|---|---|
| Adhesive | Material | | | | |
| | B7 | G | J | H | L |
| WM250 | • | • | • | • | - |
| W8 | • | • | • | • | - |
| W24 | • | • | • | • | • |
| HMT200A | • | • | • | • | - |
| V9500 | • | • | • | - | - |
| W21 | - | - | - | • | - |
| Without Adhesive | • | • | • | • | • |

| Standard Combinations | |
|-----------------------|----------------|
| Type | Article Number |
| 1100-4-G | 411-00001 |
| 1101-1-GW8 | 411-01029 |
| 1101-2-G | 411-01058 |
| 1103-1-G | 411-03003 |
| 1103-2-G | 411-03012 |
| 1104-1-G | 411-04005 |
| 1104-2-G | 411-04013 |
| 1105-1-G | 411-05005 |
| 1105-2-G | 411-05010 |
| 1106-1-G | 411-06003 |
| 1106-2-B7. | 411-06051 |
| 1107-1-G | 411-07004 |
| 1107-2-G | 411-07011 |
| 1108-1-B7 | 411-08002 |
| 1108-2-G | 411-08011 |
| 1109-1-G | 411-09004 |



Right-Angle Shapes, VG style/MIL style

Helashrink 1100 Series, with rib, low profile

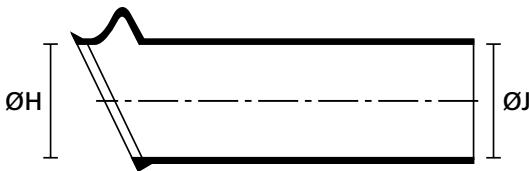
- Lightweight, low profile, compact strain relief and mechanical protection
- Typically used on airborne harnesses



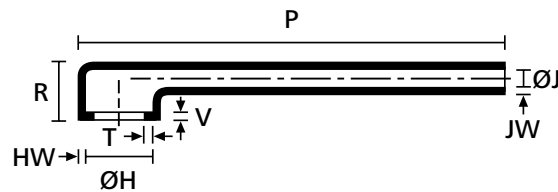
For Material / Adhesive selection and other information please refer to page 10.



1123-1-G supplied / fully recovered.



a: Expanded form (supplied)



b: Fully recovered form (after heating)

| TYPE | Designation as per AS/VG-Norm | ØH min. a | ØH max. b | ØJ min. a | ØJ max. b | P ± 10% | R ± 10% | HW ± 20% | T ± 10% | JW ± 30% | V ± 10% |
|--------|-------------------------------|--------------|--------------|--------------|-------------|---------------|--------------|------------|------------|------------|------------|
| 1121-1 | VG 95343 T06 F 001 A | 22.0 (.86") | 12.0 (.47") | 22.0 (.86") | 6.5 (.25") | 70.0 (2.73") | 19.0 (.74") | 1.5 (.06") | 1.0 (.04") | 1.1 (.04") | 3.0 (.12") |
| 1121-4 | AS85049/14109HU | 22.3 (.87") | 11.4 (.44") | 22.3 (.87") | 6.4 (.25") | 105.2 (4.1") | 18.5 (.72") | 1.5 (.06") | 1.0 (.04") | 1.1 (.04") | 3.3 (.13") |
| 1122-1 | VG 95343 T06 F 002 A | 25.5 (.99") | 15.0 (.59") | 25.0 (.98") | 7.5 (.29") | 79.0 (3.08") | 20.0 (.78") | 1.5 (.06") | 1.0 (.04") | 1.1 (.04") | 3.0 (.12") |
| 1122-4 | AS85049/14110HU | 25.6 (1") | 15.0 (.59") | 25.6 (1") | 7.5 (.29") | 124.0 (4.84") | 19.8 (.77") | 1.5 (.06") | 1.0 (.04") | 1.1 (.04") | 3.3 (.13") |
| 1123-1 | VG 95343 T06 F 003 A | 29.0 (1.13") | 19.0 (.74") | 29.0 (1.13") | 8.5 (.33") | 89.0 (3.47") | 21.0 (.82") | 1.8 (.07") | 1.0 (.04") | 1.1 (.04") | 3.0 (.12") |
| 1123-4 | AS85049/14111HU | 29.4 (1.15") | 19.0 (.74") | 29.4 (1.15") | 8.5 (.33") | 146.3 (5.71") | 20.8 (.81") | 1.8 (.07") | 1.0 (.04") | 1.1 (.04") | 3.3 (.13") |
| 1124-1 | VG 95343 T06 F 004 A | 34.0 (1.33") | 23.0 (.9") | 34.0 (1.33") | 10.0 (.39") | 102.0 (3.98") | 22.0 (.86") | 1.8 (.07") | 1.0 (.04") | 1.1 (.04") | 3.0 (.12") |
| 1124-4 | AS85049/14112HU | 34.0 (1.33") | 22.9 (.89") | 34.0 (1.33") | 10.0 (.39") | 172.2 (6.72") | 21.8 (.85") | 1.8 (.07") | 1.0 (.04") | 1.1 (.04") | 3.3 (.13") |
| 1125-1 | VG 95343 T06 F 005 A | 37.0 (1.44") | 30.0 (1.17") | 37.0 (1.44") | 11.0 (.43") | 108.0 (4.21") | 24.0 (.94") | 2.0 (.08") | 1.7 (.07") | 1.1 (.04") | 3.0 (.12") |
| 1125-2 | | 41.2 (1.61") | 29.5 (1.15") | 41.2 (1.61") | 11.0 (.43") | 82.0 (3.2") | 24.4 (.95") | 2.0 (.08") | 1.7 (.07") | 1.1 (.04") | 3.3 (.13") |
| 1125-4 | AS85049/14113HU | 29.5 (1.15") | 37.3 (1.45") | 37.3 (1.45") | 11.0 (.43") | 185.2 (7.22") | 24.4 (.95") | 2.0 (.08") | 1.7 (.07") | 1.1 (.04") | 3.3 (.13") |
| 1126-1 | VG 95343 T06 F 006 A | 43.5 (1.7") | 34.0 (1.33") | 43.5 (1.7") | 12.0 (.47") | 121.0 (4.72") | 27.0 (1.05") | 2.0 (.08") | 1.7 (.07") | 1.1 (.04") | 3.0 (.12") |
| 1126-4 | AS85049/14114HU | 43.7 (1.7") | 34.0 (1.33") | 43.7 (1.7") | 12.0 (.47") | 213.6 (8.33") | 27.0 (1.05") | 2.0 (.08") | 1.7 (.07") | 1.1 (.04") | 3.3 (.13") |
| 1127-1 | VG 95343 T06 F 007 A | 50.0 (1.95") | 41.5 (1.62") | 50.0 (1.95") | 14.5 (.57") | 132.0 (5.15") | 30.0 (1.17") | 2.3 (.09") | 1.7 (.07") | 1.4 (.05") | 3.0 (.12") |
| 1127-3 | | 50.0 (1.95") | 41.1 (1.6") | 2.3 (.09") | 14.5 (.57") | 65.0 (2.54") | 29.5 (1.15") | 2.3 (.09") | 1.7 (.07") | 1.4 (.05") | 3.3 (.13") |
| 1127-4 | AS85049/14115HU | 50.0 (1.95") | 41.1 (1.6") | 2.3 (.09") | 14.5 (.57") | 224.5 (8.76") | 9.5 (.37") | 2.3 (.09") | 1.7 (.07") | 1.4 (.05") | 3.3 (.13") |

Dimensions in mm, inches in brackets. Subject to technical changes.





Right-Angle Shapes, VG style/MIL style

Helashrink 1100 Series, with rib, low profile

| TYPE | Designation as per AS/VG-Norm | ØH min. a | ØH max. b | ØJ min. a | ØJ max. b | P ± 10% | R ± 10% | HW ± 20% | T ± 10% | JW ± 30% | V ± 10% |
|--------|-------------------------------|-----------------|-----------------|-----------------|----------------|------------------|-----------------|--------------|---------------|---------------|---------------|
| 1128-1 | VG 95343 T06 F 008 A | 62.5 (2.44") | 47.0 (1.83") | 62.5 (2.44") | 18.0 (.7") | 133.0 (5.19") | 33.0 (1.29") | 2.5 (.1") | 2.0 (.08") | 1.4 (.05") | 3.0 (.12") |
| 1128-4 | AS85049/14116HU | 62.7 (2.45") | 47.0 (1.83") | 62.7 (2.45") | 18.0 (.7") | 227.3 (8.86") | 33.3 (1.3") | 2.5 (.1") | 2.0 (.08") | 1.4 (.05") | 3.3 (.13") |
| 1129-1 | VG 95343 T06 F 009 A | 69.0 (2.69") | 60.0 (2.34") | 69.0 (2.69") | 20.0 (.78") | 137.0 (5.34") | 35.0 (1.37") | 2.5 (.1") | 2.0 (.08") | 1.4 (.05") | 3.0 (.12") |
| 1129-4 | AS85049/14117HU | 69.3 (2.7") | 59.7 (2.33") | 69.3 (2.7") | 20.0 (.78") | 233.4 (9.1") | 35.1 (1.37") | 2.5 (.1") | 2.0 (.08") | 1.4 (.05") | 3.3 (.13") |

Dimensions in mm, inches in brackets. Subject to technical changes.

| Combinations "On request" | | | | | |
|---------------------------|----------|---|---|---|---|
| Adhesive | Material | | | | |
| | B7 | G | J | H | L |
| WM250 | • | • | • | • | - |
| W8 | • | • | • | • | - |
| W24 | • | • | • | • | • |
| HMT200A | • | • | • | • | - |
| V9500 | • | • | • | - | - |
| W21 | - | - | - | • | - |
| Without Adhesive | • | • | • | • | • |

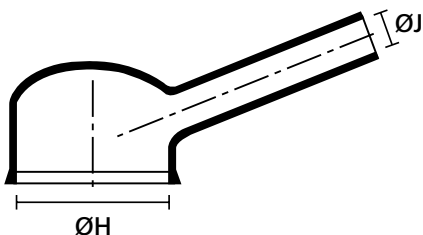
| Standard Combinations | |
|-----------------------|----------------|
| Type | Article Number |
| 1121-4-G | 411-21007 |
| 1121-1-G | 411-21180 |
| 1122-4-G | 411-22015 |
| 1122-1-G | 411-22180 |
| 1123-4-G | 411-23013 |
| 1123-1-G | 411-23180 |
| 1124-4-G | 411-24009 |
| 1124-1-G | 411-24180 |
| 1125-4-G | 411-25008 |
| 1125-2-G | 411-25027 |
| 1125-1-G | 411-25180 |
| 1126-4-G | 411-26008 |
| 1126-1-G | 411-26180 |
| 1127-3-B7 | 411-27005 |
| 1127-4-G | 411-27008 |
| 1127-1-G | 411-27180 |
| 1128-4-G | 411-28002 |
| 1128-1-G | 411-28180 |
| 1129-1-G | 411-29180 |
| 1129-4-J | 411-29001 |



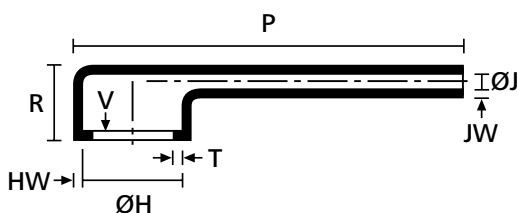
Right-Angle Shapes, VG style

Helashrink 1100 Series, with rib, low profile, high ratio

- Use in applications of partially loaded connectors with small cable diameters
- Tail design for easy orientation prior to cooling
- Strain relief for connector cable



a: Expanded form (supplied)



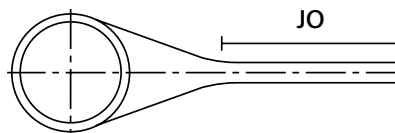
b: Fully recovered form (after heating)



1135-1-G supplied / fully recovered.



For Material / Adhesive selection and other information please refer to page 10.



Fully recovered form (after heating)

| TYPE | Designation as per AS/VG-Norm | ØH min. a | ØH max. b | ØJ min. a | ØJ max. b | P ± 10% | R ± 10% | HW ± 20% | JO ± 10% | JW ± 20% | V ± 10% | T ± 20% |
|--------|-------------------------------|-----------|-----------|-----------|-----------|---------|---------|----------|----------|----------|---------|---------|
| 1133-1 | AS85049/14119HU | 19.0 | 13.0 | 6.0 | 2.0 | 44.0 | 16.3 | 1.5 | 21.8 | 1.1 | 3.0 | 1.0 |
| | VG 95343 T06 F 011 A | (.74") | (.51") | (.23") | (.08") | (1.72") | (.64") | (.06") | (.85") | (.04") | (.12") | (.04") |
| 1133-2 | | 19.0 | 13.0 | 6.0 | 2.0 | 30.0 | 16.0 | 1.5 | 1.0 | 1.1 | 3.3 | 1.0 |
| | | (.74") | (.51") | (.23") | (.08") | (1.17") | (.62") | (.06") | (.04") | (.04") | (.13") | (.04") |
| 1134-1 | AS85049/14120HU | 26.0 | 19.0 | 7.5 | 2.5 | 67.0 | 18.0 | 1.8 | 29.2 | 1.1 | 3.0 | 1.0 |
| | VG 95343 T18 H 001 A | (1.01") | (.74") | (.29") | (.1") | (2.61") | (.7") | (.07") | (1.14") | (.04") | (.12") | (.04") |
| 1135-1 | AS85049/14121HU | 34.0 | 26.0 | 9.5 | 3.0 | 81.0 | 18.8 | 1.8 | 35.3 | 1.1 | 3.0 | 1.0 |
| | VG 95343 T06 F 013 A | (1.33") | (1.01") | (.37") | (.12") | (3.16") | (.73") | (.07") | (1.38") | (.04") | (.12") | (.04") |
| 1136-1 | AS85049/14122HU | 43.5 | 34.0 | 11.5 | 3.5 | 116.0 | 21.3 | 1.8 | 47.0 | 1.1 | 3.0 | 1.7 |
| | VG 95343 T06 F 014 A | (1.7") | (1.33") | (.45") | (.14") | (4.52") | (.83") | (.07") | (1.83") | (.04") | (.12") | (.07") |

Dimensions in mm, inches in brackets. Subject to technical changes.

| Combinations "On request" | | | | | |
|---------------------------|----------|---|---|---|---|
| Adhesive | Material | | | | |
| | B7 | G | J | H | L |
| WM250 | • | • | • | • | - |
| W8 | • | • | • | • | - |
| W24 | • | • | • | • | • |
| HMT200A | • | • | • | • | - |
| V9500 | • | • | • | - | - |
| W21 | - | - | - | • | - |
| Without Adhesive | • | • | • | • | • |

| Standard Combinations | |
|-----------------------|----------------|
| Type | Article Number |
| 1133-2-G | 411-33011 |
| 1133-1-G | 411-33180 |
| 1134-1-G | 411-34180 |
| 1135-1-G | 411-35180 |
| 1136-1-G | 411-36180 |



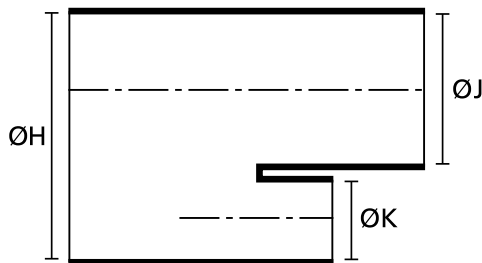
T-Shapes, VG style/MIL style

Helashrink 1200 Series

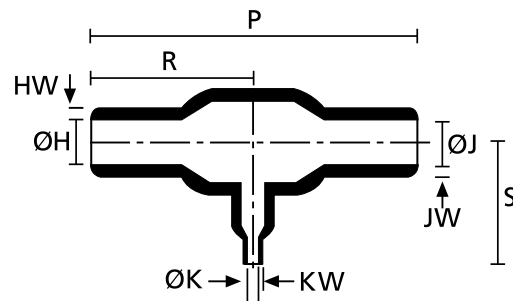
- Strain relief, sealing and mechanical protection on cable harnesses



1202-1-G recovered onto a cable harness.



a: Expanded form (supplied)



b: Fully recovered form (after heating)

| TYPE | Designation as per AS/VG-Norm | ØH/J min. a | ØH/J max. b | ØK min. a | ØK max. b | P ± 10% | R ± 10% | HW ± 20% | S ± 10% | JW ± 20% | KW ± 20% |
|--------|-------------------------------|--------------|-------------|--------------|-------------|---------------|--------------|------------|--------------|------------|------------|
| 1201-1 | VG 95343 T08 A 007 A | 17.7 (.69") | 8.9 (.35") | 10.1 (.39") | 5.1 (.2") | 47.5 (1.85") | 23.6 (.92") | 1.5 (.06") | 23.6 (.92") | 1.5 (.06") | 1.0 (.04") |
| 1202-1 | AS85049/14202HU | 13.2 (.51") | 6.1 (.24") | 13.2 (.51") | 6.1 (.24") | 58.7 (2.29") | 29.2 (1.14") | 1.5 (.06") | 29.2 (1.14") | 1.5 (.06") | 1.5 (.06") |
| | VG 95343 T08 A 010 A | | | | | | | | | | |
| 1203-1 | VG 95343 T08 A 001 A | 13.2 (.51") | 6.0 (.23") | 6.5 (.25") | 3.0 (.12") | 52.0 (2.03") | 26.0 (1.01") | 1.5 (.06") | 19.3 (.75") | 1.5 (.06") | 1.0 (.04") |
| 1205-1 | | 17.7 (.69") | 8.9 (.35") | 7.6 (.3") | 3.8 (.15") | 50.8 (1.98") | 25.4 (.99") | 1.5 (.06") | 25.4 (.99") | 1.5 (.06") | 1.0 (.04") |
| 1206-1 | AS85049/14201HU | 6.6 (.26") | 3.0 (.12") | 6.6 (.26") | 3.0 (.12") | 29.7 (1.16") | 14.7 (.57") | 1.0 (.04") | 14.7 (.57") | 1.0 (.04") | 1.0 (.04") |
| | VG 95343 T08 A 009 A | | | | | | | | | | |
| 1207-1 | AS85049/14203HU | 26.9 (1.05") | 12.4 (.48") | 26.9 (1.05") | 12.4 (.48") | 120.1 (4.68") | 55.9 (2.18") | 2.5 (.1") | 59.9 (2.34") | 2.5 (.1") | 2.5 (.1") |
| | VG 95343 T08 A 011 A | | | | | | | | | | |
| 1209-1 | VG 95343 T08 A 002 A | 27 (1.05") | 12.4 (.48") | 13.2 (.51") | 6.0 (.23") | 108.0 (4.21") | 54.0 (2.11") | 2.5 (.1") | 38.6 (1.51") | 2.5 (.1") | 1.5 (.06") |

Dimensions in mm, inches in brackets. Subject to technical changes.

| Combinations "On request" | | | | | |
|---------------------------|----------|---|---|---|---|
| Adhesive | Material | | | | |
| | B7 | G | J | H | L |
| WM250 | • | • | • | • | - |
| W8 | • | • | • | • | - |
| W24 | • | • | • | • | • |
| HMT200A | • | • | • | • | - |
| V9500 | • | • | • | • | - |
| W21 | - | - | - | • | - |
| Without Adhesive | • | • | • | • | • |

| Standard Combinations | |
|-----------------------|----------------|
| Type | Article Number |
| 1201-1-G | 412-01180 |
| 1202-1-G | 412-02180 |
| 1203-1-G | 412-03180 |
| 1205-1-G | 412-05180 |
| 1206-1-G | 412-06180 |
| 1207-1-G | 412-07180 |
| 1209-1-G | 412-09180 |



T-Shapes

Helashrink 1200 Series, Offset

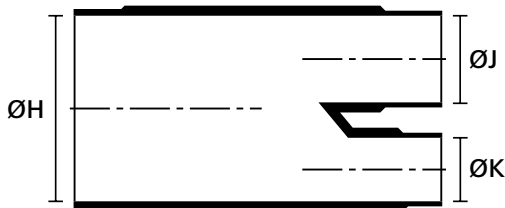
- This style provides strain relief, sealing and mechanical protection where a cable transition is required on the harness
- It is recommended that an adhesive be used if environmental sealing is required



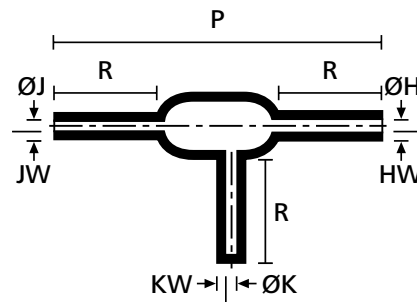
For Material / Adhesive selection and other information please refer to page 10.



1217-1 supplied / fully recovered.



a: Expanded form (supplied)



b: Fully recovered form (after heating)

| TYPE | ØH min. a | ØH max. b | ØJ min. a | ØJ max. b | ØK min. a | ØK max. b | P ± 10% | R ± 10% | HW ± 20% | JW ± 20% | KW ± 20% |
|--------|-----------------|----------------|---------------|---------------|-----------------|----------------|-----------------|-----------------|---------------|---------------|---------------|
| 1217-1 | 10.0 (.39") | 2.6 (.1") | 6.0 (.23") | 2.2 (.09") | 6.0 (.23") | 2.6 (.1") | 57.0 (2.22") | 19.0 (.74") | 1.0 (.04") | 1.0 (.04") | 1.0 (.04") |
| 1222-1 | 31.0 (1.21") | 15.2 (.59") | 18.0 (.7") | 8.9 (.35") | 25.0 (.98") | 15.0 (.59") | 92.0 (3.59") | 52.0 (2.03") | 2.3 (.09") | 1.8 (.07") | 2.3 (.09") |
| 1223-1 | 29.5 (1.15") | 16.3 (.64") | 9.6 (.37") | 5.3 (.21") | 29.5 (1.15") | 16.3 (.64") | 93.2 (3.63") | 56.6 (2.21") | 2.5 (.1") | 1.8 (.07") | 2.5 (.1") |

Dimensions in mm, inches in brackets. Subject to technical changes.

| Combinations "On request" | | | | | |
|---------------------------|----------|---|---|---|---|
| Adhesive | Material | | | | |
| | B7 | G | J | H | L |
| WM250 | • | • | • | • | - |
| W8 | • | • | • | • | - |
| W24 | • | • | • | • | • |
| HMT200A | • | • | • | • | - |
| V9500 | • | • | • | - | - |
| W21 | - | - | - | • | - |
| Without Adhesive | • | • | • | • | • |

| Standard Combinations | |
|-----------------------|----------------|
| Type | Article Number |
| 1217-1-G | 412-17003 |
| 1222-1-G | 412-22002 |
| 1223-1-G | 412-23002 |



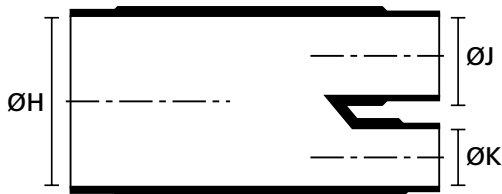
T-Shapes, VG style

Helashrink 1200 Series, Offset

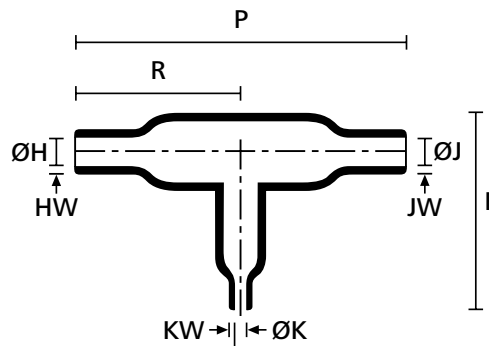
- For strain relief, sealing and mechanical protection
- Use adhesive for cable transition on harness, if environmental sealing is required



1204-1 supplied / fully recovered.



a: Expanded form (supplied)



b: Fully recovered form (after heating)

| TYPE | Designation as per AS/VG-Norm | ØH min. a | ØH max. b | ØJ min. a | ØJ max. b | ØK min. a | ØK max. b | P ± 10% | R ± 10% | HW ± 20% | KW ± 20% | S ± 10% | F ± 15% | JW ± 20% |
|--------|-------------------------------|--------------|-------------|-------------|------------|-------------|------------|--------------|--------------|------------|------------|--------------|------------|------------|
| 1204-1 | VG 95343 T08 A 016 A | 13.0 (.51") | 7.5 (.29") | 6.5 (.25") | 4.0 (.16") | 6.5 (.25") | 4.0 (.16") | 56.0 (2.18") | 33.0 (1.29") | 1.5 (.06") | 1.0 (.04") | - | 27 (1.05") | 1.0 (.04") |
| 1216-1 | VG 95343 T08 A 017 A | 33.0 (1.29") | 13.0 (.51") | 16.5 (.64") | 6.5 (.25") | 16.5 (.64") | 6.5 (.25") | 97.0 (3.78") | 54.0 (2.11") | 2.5 (.1") | 1.5 (.06") | 38.5 (1.5") | - | 1.5 (.06") |
| 1226-1 | | 30.5 (1.19") | 15.2 (.59") | 17.8 (.69") | 8.9 (.35") | 17.8 (.69") | 8.9 (.35") | 81.3 (3.17") | 47.5 (1.85") | 2.3 (.09") | 1.3 (.05") | 38.1 (1.49") | - | 1.3 (.05") |

Dimensions in mm, inches in brackets. Subject to technical changes.

| Combinations "On request" | | | | | |
|---------------------------|----------|---|---|---|---|
| Adhesive | Material | | | | |
| | B7 | G | J | H | L |
| WM250 | • | • | • | • | - |
| W8 | • | • | • | • | - |
| W24 | • | • | • | • | • |
| HMT200A | • | • | • | • | - |
| V9500 | • | • | • | - | - |
| W21 | - | - | - | • | - |
| Without Adhesive | • | • | • | • | • |

| Standard Combinations | |
|-----------------------|----------------|
| Type | Article Number |
| 1204-1-G | 412-04180 |
| 1216-1-G | 412-16180 |
| 1226-1-G | 412-26002 |



Angled T-Shapes, VG style

Helashrink 1300 Series, 30° & 45° angle

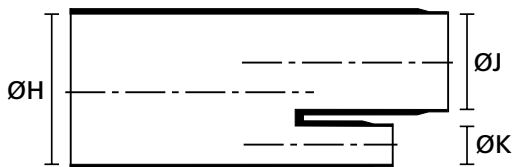
- Strain relief, sealing and mechanical protection on cable harnesses
- Branching part 30° & 45° Y-joint
- Mechanical strain relief for cable harnesses



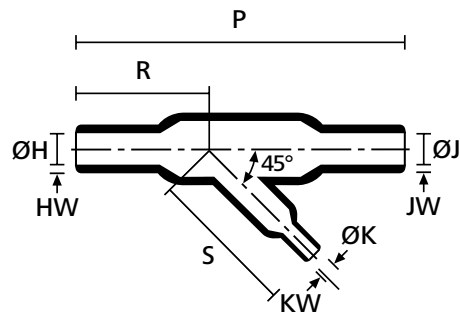
For Material / Adhesive selection and other information please refer to page 10.



1303-1-G supplied / fully recovered.



a: Expanded form (supplied)



b: Fully recovered form (after heating)

| TYPE | Angle | Designation as per AS/VG-Norm | ØH min. a | ØH max. b | ØJ min. a | ØJ max. b | ØK min. a | ØK max. b | P ± 10% | R ± 10% | KW ± 20% | S ± 10% | HW ± 30% | JW ± 30% |
|--------|-------|-------------------------------|--------------|-------------|--------------|-------------|-------------|-------------|---------------|--------------|------------|--------------|------------|------------|
| 1301-1 | 45° | VG 95343 T08 B 001 A | 13.0 (.51") | 7.0 (.27") | 13.0 (.51") | 7.0 (.27") | 7.0 (.27") | 3.5 (.14") | 50.0 (1.95") | 23.0 (.9") | 1.0 (.04") | 23.0 (.9") | 1.5 (.06") | 1.5 (.06") |
| 1302-1 | 45° | VG 95343 T08 B 004 A | 27.0 (1.05") | 13.0 (.51") | 27.0 (1.05") | 13.0 (.51") | 7.0 (.27") | 3.5 (.14") | 93.0 (3.63") | 41.0 (1.6") | 1.0 (.04") | 36.0 (1.4") | 2.5 (.1") | 2.5 (.1") |
| 1303-1 | 45° | VG 95343 T08 B 002 A | 27.0 (1.05") | 14.0 (.55") | 27.0 (1.05") | 14.0 (.55") | 13.0 (.51") | 7.5 (.29") | 145.0 (5.66") | 70.0 (2.73") | 1.5 (.06") | 54.0 (2.11") | 1.5 (.06") | 1.5 (.06") |
| 1306-1 | 45° | VG 95343 T06 B 010 A | 13.0 (.51") | 6.0 (.23") | 6.5 (.25") | 3.0 (.12") | 6.5 (.25") | 3.0 (.12") | 45.0 (1.76") | 23.0 (.9") | 1.5 (.06") | 21.5 (.84") | 1.5 (.06") | 1.0 (.04") |
| 1307-1 | 45° | VG 95343 T19 B 011 A | 27.0 (1.05") | 12.5 (.49") | 13.0 (.51") | 6.0 (.23") | 13.0 (.51") | 6.0 (.23") | 90.0 (3.51") | 42.0 (1.64") | 1.5 (.06") | 43 (1.68") | 2.5 (.1") | 1.5 (.06") |
| 1311-1 | 30° | | 30.4 (1.19") | 15.0 (.59") | 30.4 (1.19") | 15.0 (.59") | 20.3 (.79") | 10.0 (.39") | 82.6 (3.22") | 32.0 (1.25") | 1.8 (.07") | 51 (1.99") | 2.5 (.1") | 2.5 (.1") |

Dimensions in mm, inches in brackets. Subject to technical changes.

| Combinations "On request" | | | | | |
|---------------------------|----------|---|---|---|---|
| Adhesive | Material | | | | |
| | B7 | G | J | H | L |
| WM250 | • | • | • | • | - |
| W8 | • | • | • | • | - |
| W24 | • | • | • | • | • |
| HMT200A | • | • | • | • | - |
| V9500 | • | • | • | - | - |
| W21 | • | • | • | • | - |
| Without Adhesive | • | • | • | • | • |

| Standard Combinations | |
|-----------------------|----------------|
| Type | Article Number |
| 1301-1-G | 413-01180 |
| 1302-1-G | 413-02180 |
| 1303-1-G | 413-03180 |
| 1306-1-G | 413-06180 |
| 1307-1-GW24 | 413-07184 |
| 1311-1-G | 413-11010 |



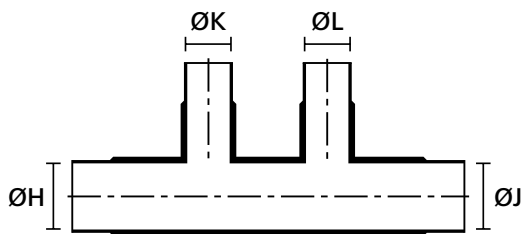
Double T-Shapes

Helashrink 1310 Series, 30° angle

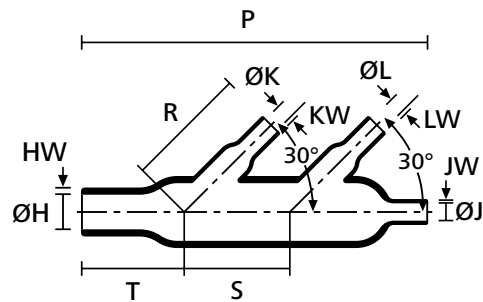
- For cable harnesses needing specialised orientation
- Strain relief, sealing and mechanical protection



1310-1 supplied / fully recovered.



a: Expanded form (supplied)



b: Fully recovered form (after heating)

| TYPE | ØH min. a | ØH max. b | ØJ min. a | ØJ max. b | ØK min. a | ØK max. b | ØL min. a | ØL max. b | P ± 10% | R ± 10% | HW ± 20% | JW ± 20% | KW ± 20% | LW ± 20% | S ± 10% | T ± 10% |
|--------|-----------------|----------------|-----------------|----------------|---------------|---------------|---------------|---------------|-----------------|-----------------|--------------|--------------|---------------|---------------|----------------|----------------|
| 1310-1 | 30.4 (1.19") | 15.2 (.59") | 30.4 (1.19") | 15.2 (.59") | 12.7 (.5") | 6.4 (.25") | 12.7 (.5") | 6.4 (.25") | 88.9 (3.47") | 50.8 (1.98") | 2.5 (.1") | 2.5 (.1") | 1.3 (.05") | 1.3 (.05") | 25.4 (.99") | 19.1 (.74") |

Dimensions in mm, inches in brackets. Subject to technical changes.

| Combinations "On request" | | | | | |
|---------------------------|----------|---|---|---|---|
| Adhesive | Material | | | | |
| | B7 | G | J | H | L |
| WM250 | • | • | • | • | - |
| W8 | • | • | • | • | - |
| W24 | • | • | • | • | • |
| HMT200A | • | • | • | • | - |
| V9500 | • | • | • | - | - |
| Without Adhesive | • | • | • | • | • |

| Standard Combinations | |
|-----------------------|----------------|
| Type | Article Number |
| 1310-1-G | 413-10003 |



Angle Elbow Shapes

Helashrink 1400 Series, 90° angle

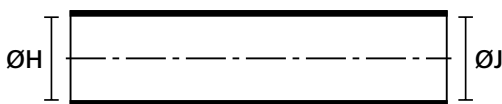
- Provides strain relief and mechanical protection on cable orientations up to 90°
- Efficient design and numerous material/adhesive combinations provide quick and easy installation across a range of applications



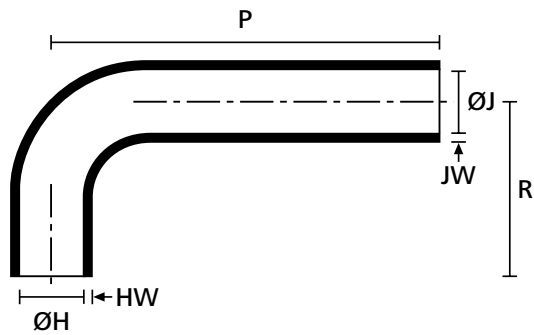
1403-1 supplied / fully recovered.



For Material / Adhesive selection and other information please refer to page 10.



a: Expanded form (supplied)



b: Fully recovered form (after heating)

| TYPE | ØH min. a | ØH max. b | ØJ min. a | ØJ max. b | P ± 10% | R ± 10% | HW ± 20% | JW ± 20% |
|--------|-----------------|----------------|-----------------|----------------|-----------------|-----------------|---------------|---------------|
| 1401-1 | 31.7 (1.24") | 15.7 (.61") | 31.7 (1.24") | 15.7 (.61") | 88.9 (3.47") | 50.8 (1.98") | 2.3 (.09") | 2.3 (.09") |
| 1401-2 | 38.1 (1.49") | 15.7 (.61") | 38.1 (1.49") | 15.7 (.61") | 88.9 (3.47") | 50.8 (1.98") | 2.3 (.09") | 2.3 (.09") |
| 1403-1 | 15.7 (.61") | 7.9 (.31") | 15.7 (.61") | 7.9 (.31") | 44.5 (1.74") | 25.4 (.99") | 2.3 (.09") | 2.3 (.09") |
| 1405-1 | 25.0 (.98") | 7.9 (.31") | 25.0 (.98") | 7.9 (.31") | 30.0 (1.17") | 15.0 (.59") | 1.5 (.06") | 1.5 (.06") |
| 1406-1 | 20.0 (.78") | 7.9 (.31") | 20.0 (.78") | 7.9 (.31") | 45.0 (1.76") | 15.0 (.59") | 1.5 (.06") | 1.5 (.06") |
| 1408-2 | 19.0 (.74") | 9.0 (.35") | 19.0 (.74") | 9.0 (.35") | 44.5 (1.74") | 44.5 (1.74") | 1.8 (.07") | 1.8 (.07") |

Dimensions in mm, inches in brackets. Subject to technical changes.

| Combinations "On request" | | | | | |
|---------------------------|----------|---|---|---|---|
| Adhesive | Material | | | | |
| | B7 | G | J | H | L |
| WM250 | • | • | • | • | - |
| W8 | • | • | • | • | - |
| W24 | • | • | • | • | • |
| HMT200A | • | • | • | • | - |
| V9500 | • | • | • | - | - |
| W21 | • | • | • | • | - |
| Without Adhesive | • | • | • | • | • |

| Standard Combinations | |
|-----------------------|----------------|
| Type | Article Number |
| 1401-1-G | 414-01003 |
| 1401-2-G | 414-01006 |
| 1403-1-G | 414-03002 |
| 1405-1-G | 414-05003 |
| 1406-1-G | 414-06003 |
| 1408-2-G | 414-08004 |



Connector Cover for Min-D Series

Helashrink 1500 Series, with top entry

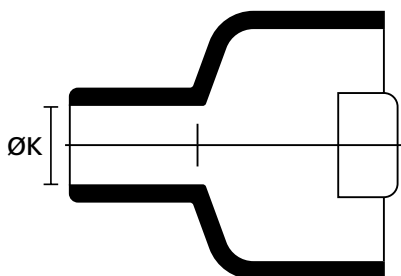
- Provides strain relief and mechanical protection for Min-D series connectors



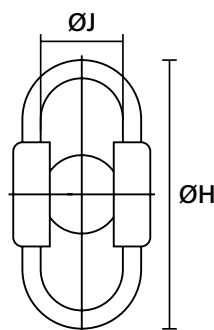
For Material / Adhesive selection and other information please refer to page 10.



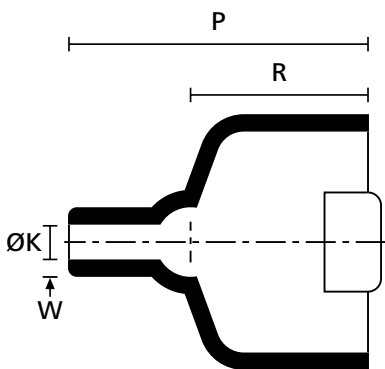
1505-1 supplied / fully recovered.



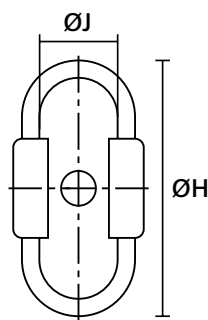
a: Expanded form (supplied)



a: Expanded form (supplied)



b: Fully recovered form (after heating)



b: Fully recovered form (after heating)

| TYPE | ØH min. a | ØH max. b | ØJ min. a | ØJ max. b | ØK min. a | ØK max. b | P ± 10% | R ± 10% | W ± 20% |
|--------|-----------------|-----------------|-----------------|----------------|-----------------|----------------|-----------------|-----------------|---------------|
| 1501-1 | 58.4 (2.28") | 58.7 (2.29") | 10.6 (.41") | 10.7 (.42") | 17.2 (.67") | 8.6 (.34") | 53.3 (2.08") | 28.4 (1.11") | 1.0 (.04") |
| 1501-2 | 34.2 (1.33") | 58.7 (2.29") | 34.2 (1.33") | 10.7 (.42") | 34.2 (1.33") | 8.6 (.34") | 53.3 (2.08") | 28.4 (1.11") | 1.0 (.04") |
| 1501-3 | 59.6 (2.32") | 58.7 (2.29") | 12.4 (.48") | 10.7 (.42") | 17.2 (.67") | 8.6 (.34") | 53.3 (2.08") | 28.4 (1.11") | 1.0 (.04") |
| 1501-7 | 58.4 (2.28") | 58.7 (2.29") | 10.6 (.41") | 10.7 (.42") | 17.2 (.67") | 8.6 (.34") | 53.3 (2.08") | 28.4 (1.11") | 1.0 (.04") |
| 1502-1 | 37.5 (1.46") | 57.9 (2.26") | 37.5 (1.46") | 13.7 (.53") | 37.5 (1.46") | 10.4 (.41") | 61.0 (2.38") | 31.8 (1.24") | 1.0 (.04") |
| 1502-2 | 57.9 (2.26") | 57.9 (2.26") | 13.7 (.53") | 3.7 (.14") | 19.0 (.74") | 10.4 (.41") | 61.0 (2.38") | 31.8 (1.24") | 1.0 (.04") |

Dimensions in mm, inches in brackets. Subject to technical changes.



Connector Cover for Min-D Series

Helashrink 1500 Series, with top entry

| TYPE | ØH min. a | ØH max. b | ØJ min. a | ØJ max. b | ØK min. a | ØK max. b | P ± 10% | R ± 10% | W ± 20% |
|--------|-----------------|-----------------|-----------------|----------------|-----------------|----------------|-----------------|-----------------|---------------|
| 1502-3 | 57.4 (2.24") | 57.9 (2.26") | 13.7 (.53") | 13.7 (.53") | 19.0 (.74") | 10.4 (.41") | 61.0 (2.38") | 31.8 (1.24") | 1.0 (.04") |
| 1505-1 | 20.3 (.79") | 20.3 (.79") | 10.7 (.42") | 10.7 (.42") | 7.8 (.3") | 4.1 (.16") | 33.0 (1.29") | 19.1 (.74") | 1.0 (.04") |
| 1505-2 | 16.0 (.62") | 20.3 (.79") | 16.0 (.62") | 10.7 (.42") | 16.0 (.62") | 4.1 (.16") | 33.0 (1.29") | 19.1 (.74") | 1.0 (.04") |
| 1505-3 | 21.0 (.82") | 20.3 (.79") | 12.4 (.48") | 10.7 (.42") | 7.8 (.3") | 4.1 (.16") | 33.0 (1.29") | 19.1 (.74") | 1.0 (.04") |
| 1505-7 | 20.3 (.79") | 20.3 (.79") | 15.0 (.59") | 10.7 (.42") | 2.0 (.08") | 4.1 (.16") | 48.0 (1.87") | 19.1 (.74") | 1.0 (.04") |
| 1506-1 | 28.1 (1.1") | 28.2 (1.1") | 10.7 (.42") | 10.7 (.42") | 10.1 (.39") | 5.3 (.21") | 38.9 (1.52") | 22.1 (.86") | 1.0 (.04") |
| 1506-2 | 19.0 (.74") | 28.2 (1.1") | 19.0 (.74") | 10.7 (.42") | 19.0 (.74") | 5.3 (.21") | 38.9 (1.52") | 22.1 (.86") | 1.0 (.04") |
| 1507-1 | 42.1 (1.64") | 42.2 (1.65") | 10.7 (.42") | 10.7 (.42") | 13.9 (.54") | 8.1 (.32") | 45.0 (1.76") | 25.4 (.99") | 1.0 (.04") |
| 1507-2 | 29.2 (1.14") | 42.2 (1.65") | 29.2 (1.14") | 10.7 (.42") | 29.2 (1.14") | 8.1 (.32") | 45.0 (1.76") | 25.4 (.99") | 1.0 (.04") |
| 1507-3 | 42.1 (1.64") | 42.2 (1.65") | 10.7 (.42") | 10.7 (.42") | 13.9 (.54") | 8.1 (.32") | 45.0 (1.76") | 25.4 (.99") | 1.0 (.04") |
| 1507-7 | 55.0 (2.15") | 42.2 (1.65") | 13.9 (.54") | 10.7 (.42") | 25.0 (.98") | 8.1 (.32") | 45.0 (1.76") | 25.4 (.99") | 1.0 (.04") |

Dimensions in mm, inches in brackets. Subject to technical changes.

| Combinations "On request" | | | | |
|---------------------------|----------|---|---|---|
| Adhesive | Material | | | |
| | B7 | G | J | H |
| WM250 | • | • | • | • |
| W8 | • | • | • | • |
| W24 | • | • | • | • |
| HMT200A | • | • | • | • |
| V9500 | • | • | • | - |
| W21 | - | - | - | • |
| Without Adhesive | • | • | • | • |

| Standard Combinations | |
|-----------------------|----------------|
| Type | Article Number |
| 1501-1-B7 | 415-01001 |
| 1501-2-G | 415-01010 |
| 1501-3-J | 415-01016 |
| 1501-7-B7 | 415-01017 |
| 1502-1-J | 415-02005 |
| 1502-2-G | 415-02009 |
| 1502-3-J | 415-02020 |
| 1505-1-G | 415-05004 |
| 1505-2-B7 | 415-05011 |
| 1505-3-B7 | 415-05015 |
| 1505-7-J | 415-05021 |
| 1506-1-G | 415-06005 |
| 1506-2-B7 | 415-06012 |
| 1507-1-G | 415-07005 |
| 1507-2-B7 | 415-07013 |
| 1507-3-G | 415-07030 |
| 1507-7-G | 415-07024 |



GSR Graduated Strain Relief

Helashrink 1750 Series, with rib

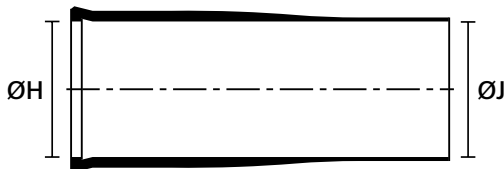
- Features superior crush resistance and excellent strain relief



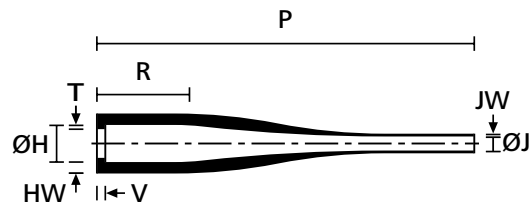
For Material / Adhesive selection and other information please refer to page 10.



1751-1 supplied / fully recovered.



a: Expanded form (supplied)



b: Fully recovered form (after heating)

| TYPE | Designation as per AS/VG-Norm | ØH min. a | ØH max. b | ØJ min. a | ØJ max. b | P ± 10% | R ± 10% | HW ± 20% | JW ± 20% | V ± 10% | T ± 10% |
|--------|-------------------------------|--------------|--------------|--------------|-------------|---------------|--------------|------------|------------|------------|------------|
| 1751-1 | AS85049/14024HU | 25.4 (.99") | 16.5 (.64") | 25.4 (.99") | 8.3 (.32") | 152.4 (5.94") | 30.5 (1.19") | 4.1 (.16") | 1.5 (.06") | 3.0 (.12") | 1.5 (.06") |
| 1751-2 | | 33.0 (1.29") | 16.5 (.64") | 33.0 (1.29") | 8.4 (.33") | 153.0 (5.97") | 30.5 (1.19") | 4.1 (.16") | 1.5 (.06") | 3.0 (.12") | 1.5 (.06") |
| 1752-1 | AS85049/14025HU | 33.1 (1.29") | 20.3 (.79") | 33.1 (1.29") | 10.9 (.43") | 152.4 (5.94") | 30.5 (1.19") | 4.1 (.16") | 1.5 (.06") | 3.0 (.12") | 1.5 (.06") |
| 1752-2 | | 43.2 (1.68") | 20.3 (.79") | 43.2 (1.68") | 10.9 (.43") | 153.0 (5.97") | 30.5 (1.19") | 4.1 (.16") | 1.5 (.06") | 3.0 (.12") | 1.5 (.06") |
| 1753-1 | AS85049/14026HU | 43.2 (1.68") | 22.8 (.89") | 43.2 (1.68") | 14.2 (.55") | 175.3 (6.84") | 38.1 (1.49") | 4.1 (.16") | 2.0 (.08") | 3.0 (.12") | 1.5 (.06") |
| 1753-2 | | 53.3 (2.08") | 22.9 (.89") | 53.3 (2.08") | 14.2 (.55") | 175.3 (6.84") | 38.0 (1.48") | 4.1 (.16") | 2.0 (.08") | 3.0 (.12") | 1.5 (.06") |
| 1754-1 | AS85049/14027HU | 53.4 (2.08") | 27.9 (1.09") | 53.4 (2.08") | 17.7 (.69") | 175.3 (6.84") | 38.1 (1.49") | 4.1 (.16") | 2.0 (.08") | 3.0 (.12") | 1.5 (.06") |
| 1754-2 | | 72.4 (2.82") | 27.9 (1.09") | 72.4 (2.82") | 17.8 (.69") | 175.3 (6.84") | 38.0 (1.48") | 4.1 (.16") | 2.0 (.08") | 3.0 (.12") | 1.5 (.06") |
| 1755-1 | AS85049/14028HU | 72.4 (2.82") | 36.8 (1.44") | 72.4 (2.82") | 24.1 (.94") | 182.9 (7.13") | 40.6 (1.58") | 4.1 (.16") | 2.5 (.1") | 3.0 (.12") | 1.5 (.06") |
| 1755-2 | | 87.0 (3.39") | 36.8 (1.44") | 87.0 (3.39") | 24.1 (.94") | 184.0 (7.18") | 41.0 (1.6") | 4.1 (.16") | 2.5 (.1") | 3.0 (.12") | 1.5 (.06") |

Dimensions in mm, inches in brackets. Subject to technical changes.



GSR Graduated Strain Relief

Helashrink 1750 Series, with rib

| Combinations "On request" | | | | |
|---------------------------|----------|---|---|---|
| Adhesive | Material | | | |
| | B7 | G | J | H |
| WM250 | . | . | . | . |
| W8 | . | . | . | . |
| W24 | . | . | . | . |
| HMT200A | . | . | . | . |
| V9500 | . | . | . | - |
| W21 | - | - | - | . |
| Without Adhesive | . | . | . | . |

| Standard Combinations | |
|-----------------------|----------------|
| Type | Article Number |
| 1751-1-H | 417-51001 |
| 1751-2-H | 417-51009 |
| 1752-1-H | 417-52001 |
| 1752-2-H | 417-52005 |
| 1753-1-H | 417-53001 |
| 1753-2-H | 417-53005 |
| 1754-1-H | 417-54001 |
| 1754-2-H | 417-54005 |
| 1755-1-H | 417-55001 |
| 1755-2-H | 417-55005 |



Angle Shapes

Helashrink 1800 Series, with rib, 30°, 45°, 60° angle

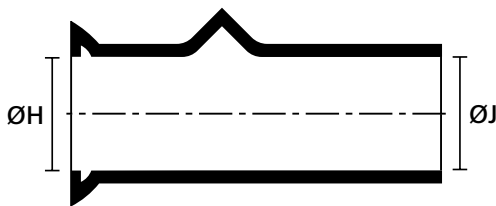
- Provides strain relief and mechanical protection for harness systems
- Use in conjunction with a circular grooved adaptor



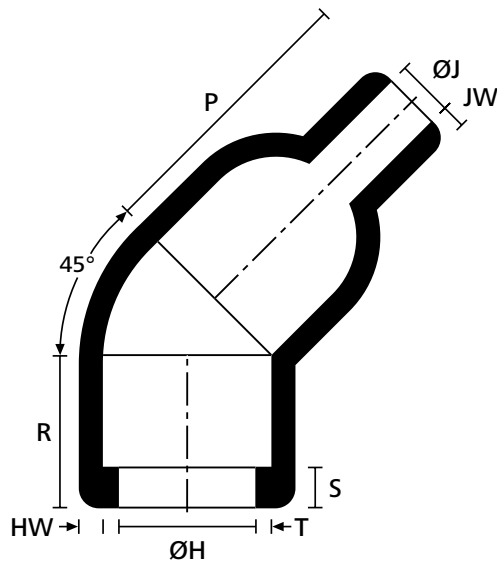
1821-42 supplied / fully recovered.



For Material / Adhesive selection and other information please refer to page 10.



a: Expanded form (supplied)



b: Fully recovered form (after heating)

| TYPE | Angle | ØH min. a | ØH max. b | ØJ min. a | ØJ max. b | P ± 10% | R ± 10% | HW ± 20% | S ± 10% | JW ± 20% | T ± 10% |
|---------|-------|-----------------|-----------------|-----------------|----------------|-----------------|-----------------|---------------|-----------------|---------------|---------------|
| 1803-4 | 45° | 24.0 (.94") | 17.8 (.69") | 12.0 (.47") | 5.6 (.22") | 28.0 (1.09") | 14.0 (.55") | 2.8 (.11") | 3.0 (.12") | 2.3 (.09") | 1.0 (.04") |
| 1805-4 | 45° | 40.0 (1.56") | 18.8 (.73") | 40.0 (1.56") | 7.0 (.27") | 28.0 (1.09") | 11.0 (.43") | 1.5 (.06") | 3.0 (.12") | 1.5 (.06") | 1.0 (.04") |
| 1806-4 | 45° | 42.6 (1.66") | 27.9 (1.09") | 42.6 (1.66") | 9.7 (.38") | 85.0 (3.32") | 17.8 (.69") | 2.0 (.08") | 3.0 (.12") | 2.0 (.08") | 1.7 (.07") |
| 1807-4 | 45° | 35.6 (1.39") | 18.0 (.7") | 35.6 (1.39") | 7.4 (.29") | 43.2 (1.68") | 10.2 (.4") | 1.8 (.07") | 3.0 (.12") | 1.8 (.07") | 1.0 (.04") |
| 1817-4 | 60° | 60.0 (2.34") | 33.7 (1.31") | 60.0 (2.34") | 14.8 (.58") | 65.0 (2.54") | 32.0 (1.25") | 2.0 (.08") | 32.0 (1.25") | 1.0 (.04") | 3.0 (.12") |
| 1819-4 | 60° | 43.0 (1.68") | 28.2 (1.1") | 43.0 (1.68") | 9.9 (.39") | 55.0 (2.15") | 18.0 (.7") | 2.0 (.08") | 18.0 (.7") | 1.0 (.04") | 3.0 (.12") |
| 1820-4 | 30° | 36.0 (1.4") | 21.4 (.83") | 36.0 (1.4") | 8.3 (.32") | 46.0 (1.79") | 26.0 (1.01") | 1.8 (.07") | 26.0 (1.01") | 1.0 (.04") | 8.6 (.34") |
| 1821-42 | 45° | 20.0 (.78") | 14.2 (.55") | 20.0 (.78") | 4.1 (.16") | 24.0 (.94") | 10.0 (.39") | 2.3 (.09") | 3.0 (.12") | 1.8 (.07") | 1.1 (.04") |
| 1830-4 | 45° | 31.0 (1.22") | 17.9 (.70") | 31.0 (1.22") | 7.0 (.28") | 55.0 (2.28") | 35.0 (1.38") | 1.8 (.07") | - | 1.8 (.07") | 2.0 (.08") |
| 1831-4 | 45° | 36.0 (1.42") | 22.1 (.87") | 36.0 (1.42") | 8.4 (.33") | 60.0 (2.36") | 40.0 (1.57") | 2.0 (.08") | - | 2.0 (.08") | 2.0 (.08") |
| 1832-4 | 45° | 43.0 (1.69") | 27.9 (1.10") | 43.0 (1.69") | 9.9 (.39") | 65.0 (2.56") | 45.0 (1.77") | 2.2 (.09") | - | 2.2 (.09") | 2.0 (.08") |

Dimensions in mm, inches in brackets. Subject to technical changes.



Angle Shapes

Helashrink 1800 Series, with rib, 30°, 45°, 60° angle

| Combinations "On request" | | | | | |
|---------------------------|----------|---|---|---|---|
| Adhesive | Material | | | | |
| | B7 | G | J | H | L |
| WM250 | • | • | • | • | - |
| W8 | • | • | • | • | - |
| W24 | • | • | • | • | • |
| HMT200A | • | • | • | - | - |
| V9500 | • | • | • | • | - |
| W21 | - | - | - | • | - |
| Without Adhesive | • | • | • | • | • |

| Standard Combinations | |
|-----------------------|----------------|
| Type | Article Number |
| 1803-4-G | 418-03005 |
| 1805-4-G | 418-05003 |
| 1806-4-G | 418-06002 |
| 1807-4-G | 418-07003 |
| 1817-4-G | 418-17001 |
| 1819-4-G | 418-19001 |
| 1820-4-G | 418-20001 |
| 1821-42-G | 418-21013 |
| 1830-4-G | 418-30003 |
| 1831-4-G | 418-31001 |
| 1832-4-G | 418-32000 |



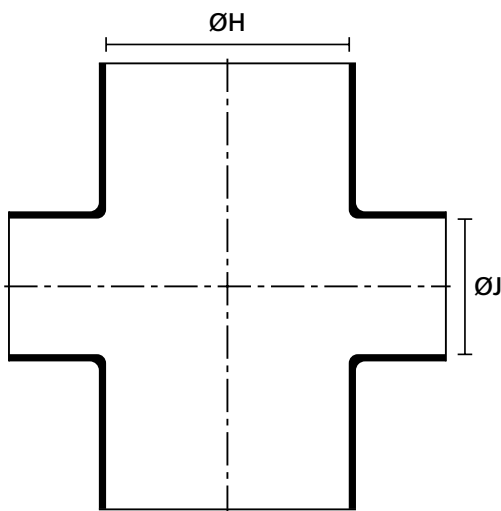
Right Angle Cross Shapes

Helashrink 2000 Series

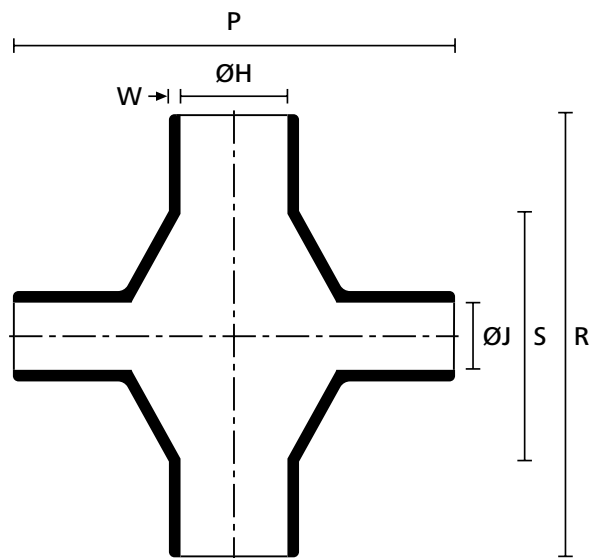
- The right-angle cross shape allows wires to be routed in four 90° directions
- Provides strain relief and mechanical protection



2003-1 supplied / fully recovered.



a: Expanded form (supplied)



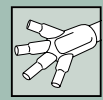
b: Fully recovered form (after heating)

| TYPE | ØH min. a | ØH max. b | ØJ min. a | ØJ max. b | P ± 10% | R ± 10% | S ± 10% | W ± 20% |
|--------|----------------|---------------|----------------|---------------|-----------------|-----------------|----------------|---------------|
| 2003-1 | 19.3 (.75") | 9.7 (.38") | 13.2 (.52") | 9.7 (.38") | 38.1 (1.49") | 38.1 (1.49") | 22.1 (.86") | 1.1 (.04") |

Dimensions in mm, inches in brackets. Subject to technical changes.

| Combinations "On request" | | | | |
|---------------------------|----------|---|---|---|
| Adhesive | Material | | | |
| | B7 | G | J | H |
| WM250 | • | • | • | • |
| W8 | • | • | • | • |
| W24 | • | • | • | • |
| HMT200A | • | • | • | • |
| V9500 | • | • | • | - |
| W21 | - | - | - | • |
| Without Adhesive | • | • | • | • |

| Standard Combinations | |
|-----------------------|----------------|
| Type | Article Number |
| 2003-1-G | 420-03002 |



Locating Bushes

Helashrink 1760, 1790, 1820 Series

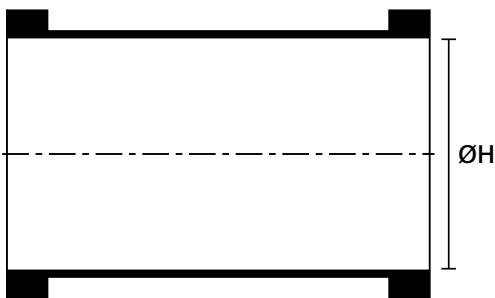
- Provides location, cushioning, shimming and protection on cable runs through bulk head or enclosure entry points
- Available in a range of materials and adhesives for most applications



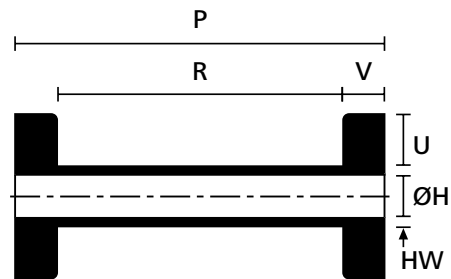
For Material / Adhesive selection and other information please refer to page 10.



1793-1 supplied / fully recovered.



a: Expanded form (supplied)



b: Fully recovered form (after heating)

| TYPE | ØH min. a | ØH max. b | P ± 10% | R ± 10% | HW ± 20% | V ± 10% | U ± 20% |
|--------|-----------------|---------------|-----------------|----------------|---------------|---------------|---------------|
| 1793-1 | 20.0 (.78") | 9.5 (.37") | 35.0 (1.37") | 25.0 (.98") | 1.5 (.06") | 5.0 (.2") | 3.0 (.12") |
| 1794-1 | 30.0 (1.17") | 18.0 (.7") | 35.0 (1.37") | 25.0 (.98") | 2.0 (.08") | 5.0 (.2") | 3.0 (.12") |
| 1795-1 | 26.0 (1.01") | 12.7 (.5") | 35.0 (1.37") | 25.0 (.98") | 2.0 (.08") | 5.0 (.2") | 3.0 (.12") |
| 1796-1 | 15.0 (.59") | 6.4 (.25") | 29.0 (1.13") | 24.0 (.94") | 1.5 (.06") | 2.5 (.1") | 2.0 (.08") |
| 1822-1 | 12.0 (.47") | 5.9 (.23") | 30.0 (1.17") | 24.0 (.94") | 6.1 (.24") | 3.0 (.12") | 2.0 (.08") |
| 1823-1 | 16.0 (.62") | 7.8 (.3") | 32.0 (1.25") | 24.0 (.94") | 6.2 (.24") | 4.0 (.16") | 2.0 (.08") |

Dimensions in mm, inches in brackets. Subject to technical changes.

| Combinations "On request" | | | | | |
|---------------------------|----------|---|---|---|---|
| Adhesive | Material | | | | |
| | B7 | G | J | H | L |
| WM250 | • | • | • | • | - |
| W8 | • | • | • | • | - |
| W24 | • | • | • | • | • |
| HMT200A | • | • | • | • | - |
| V9500 | • | • | • | - | - |
| W21 | - | - | - | • | - |
| Without Adhesive | • | • | • | • | • |

| Standard Combinations | |
|-----------------------|----------------|
| Type | Article Number |
| 1793-1-G | 417-93001 |
| 1794-1-L | 417-94002 |
| 1795-1-G | 417-95001 |
| 1796-1-G | 417-96001 |
| 1822-1-G | 418-22001 |
| 1823-1-G | 418-23001 |



Connector Cover for Min-D Series

Helashrink 2100 Series, with 90° entry

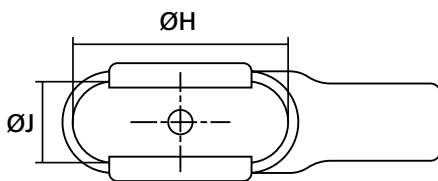
- Provides strain relief and mechanical protection for Min-D series connectors



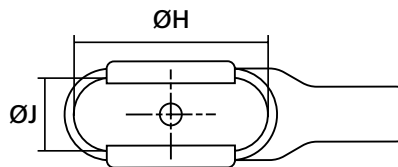
For Material / Adhesive selection and other information please refer to page 10.



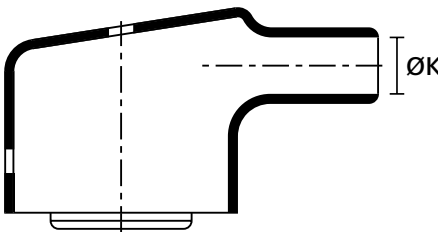
2101-1 supplied / fully recovered.



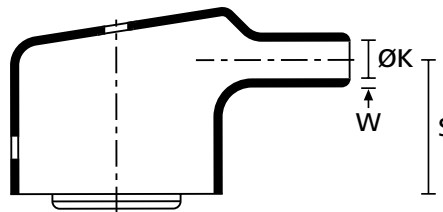
a: Expanded form (supplied)



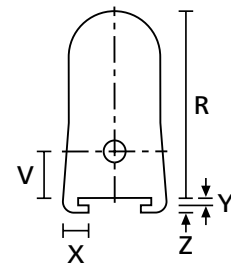
b: Fully recovered form (after heating)



a: Expanded form (supplied)



b: Fully recovered form (after heating)



| TYPE | ØH min. a | ØH max. b | ØJ min. a | ØJ max. b | ØK min. a | ØK max. b | R ± 10% | V ± 10% | W ± 20% | S ± 10% | X ± 10% | Y ± 10% | Z ± 10% |
|---------|--------------|--------------|--------------|-------------|--------------|-------------|--------------|-------------|------------|-------------|------------|------------|------------|
| 2101-1 | 20.3 (.79") | 20.3 (.79") | 10.7 (.42") | 10.7 (.42") | 7.8 (.3") | 4.1 (.16") | 21.6 (.84") | 15.0 (.59") | 1.0 (.04") | 15.2 (.59") | 3.0 (.12") | 3.0 (.12") | 1.1 (.04") |
| 2101-2 | 16.0 (.62") | 20.3 (.79") | 10.0 (.39") | 16.0 (.62") | 16.0 (.62") | 4.1 (.16") | 21.6 (.84") | 15.0 (.59") | 1.0 (.04") | 15.2 (.59") | 3.0 (.12") | 3.0 (.12") | 1.1 (.04") |
| 2102-1 | 28.1 (1.1") | 28.2 (1.1") | 10.6 (.41") | 10.7 (.42") | 10.1 (.39") | 5.3 (.21") | 24.6 (.96") | 15.0 (.59") | 1.0 (.04") | 18.5 (.72") | 3.0 (.12") | 3.0 (.12") | 1.1 (.04") |
| 2102-2 | 19.0 (.74") | 28.2 (1.1") | 19.0 (.74") | 10.7 (.42") | 19.0 (.74") | 5.3 (.21") | 24.6 (.96") | 15.0 (.59") | 1.0 (.04") | 18.5 (.72") | 3.0 (.12") | 3.0 (.12") | 1.1 (.04") |
| 2103-1 | 42.1 (1.64") | 42.2 (1.65") | 10.6 (.41") | 10.7 (.42") | 13.9 (.54") | 7.4 (.29") | 27.9 (1.09") | 15.0 (.59") | 1.1 (.04") | 22.1 (.86") | 3.0 (.12") | 3.0 (.12") | 1.1 (.04") |
| 2103-2 | 29.2 (1.14") | 42.2 (1.65") | 29.2 (1.14") | 10.7 (.42") | 29.2 (1.14") | 7.4 (.29") | 27.9 (1.09") | 15.0 (.59") | 1.1 (.04") | 22.1 (.86") | 3.0 (.12") | 3.0 (.12") | 1.1 (.04") |
| 2103-3* | 42.9 (1.67") | 42.2 (1.65") | 12.4 (.48") | 10.7 (.42") | 13.9 (.54") | 7.4 (.29") | 27.9 (1.09") | 15.0 (.59") | 1.1 (.04") | 22.1 (.86") | 3.0 (.12") | 1.1 (.04") | 1.1 (.04") |
| 2104-1 | 58.6 (2.29") | 58.7 (2.29") | 10.6 (.41") | 10.7 (.42") | 17.2 (.67") | 8.6 (.34") | 30.5 (1.19") | 15.0 (.59") | 1.0 (.04") | 25.4 (.99") | 3.0 (.12") | 3.0 (.12") | 1.1 (.04") |
| 2105-1 | 57.9 (2.26") | 57.9 (2.26") | 13.7 (.53") | 13.7 (.53") | 19.0 (.74") | 10.7 (.42") | 32.3 (1.26") | 15.0 (.59") | 1.0 (.04") | 25.4 (.99") | 3.0 (.12") | 1.1 (.04") | 1.1 (.04") |
| 2105-2 | 37.5 (1.46") | 57.9 (2.26") | 37.5 (1.46") | 13.7 (.53") | 37.5 (1.46") | 10.7 (.42") | 32.3 (1.26") | 15.0 (.59") | 1.0 (.04") | 25.4 (.99") | 3.0 (.12") | 1.1 (.04") | 1.1 (.04") |

Dimensions in mm, inches in brackets. Subject to technical changes. * This style is without lips.



Connector Cover for Min-D Series

Helashrink 2100 Series, with 90° entry

| Combinations "On request" | | | | |
|---------------------------|----------|---|---|---|
| Adhesive | Material | | | |
| | B7 | G | J | H |
| WM250 | . | . | . | . |
| W8 | . | . | . | . |
| W24 | . | . | . | . |
| HMT200A | . | . | . | . |
| V9500 | . | . | . | - |
| W21 | - | - | - | . |
| Without Adhesive | . | . | . | . |

| Standard Combinations | |
|-----------------------|----------------|
| Type | Article Number |
| 2101-1-G | 421-01004 |
| 2101-2-G | 421-01010 |
| 2102-1-G | 421-02004 |
| 2102-2-B7 | 421-02009 |
| 2103-1-G | 421-03004 |
| 2103-2-G | 421-03014 |
| 2103-3-J | 421-03019 |
| 2104-1-G | 421-04005 |
| 2105-1-G | 421-05003 |
| 2105-2-J | 421-05010 |





3.1 Breakout Boots and End Caps

| | | |
|----------------------|---|----|
| 2-Way Outlet Shapes | Helashrink 200 Series, in line, low voltage | 78 |
| 3-Way Outlet Shapes | Helashrink 300 Series, in line, low voltage | 79 |
| 4-Way Outlet Shapes | Helashrink 400 Series, in line, low voltage | 80 |
| End Caps Low voltage | Helashrink 1600 Series | 81 |
| | Helashrink PEC Series, pinched | 82 |



3.2 Constant Force Spring Adaptor

| | |
|---------|----|
| Zetalok | 83 |
|---------|----|



3.3 Adhesives for Heat Shrinkable Moulded Shapes

| | | |
|---|---------|----|
| Two-Component Adhesive | V9500 | 84 |
| Hot Melt Tape | HMT200A | 85 |
| Hot Melt Adhesive Tape for Low Profile Products | TSA-200 | 86 |



2-Way Outlet Shapes, Breakout Boots

Helashrink 200 Series, in line, low voltage

Features and Benefits

- Easy, time-saving insulation of cable branch point where it splits into single wires
- Adhesive to relieve mechanical tension in cable harnesses



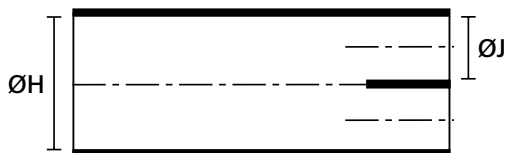
223-2 supplied / fully recovered.



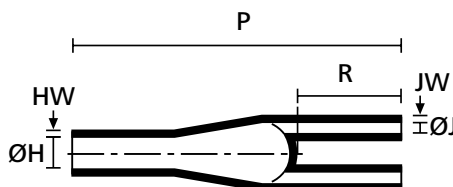
Cable breakouts are available for 2, 3, 4, 5 and 6 core cables.

| | |
|------------------------------|-----------------------------------|
| MATERIAL | Polyolefin, cross-linked (PO-X) |
| Color | Black (BK) |
| Shrink Ratio | up to 3:1 |
| Dielectric Strength | 15 kV/mm |
| Operating Temperature | -67°F to +212°F (-55°C to +100°C) |
| Flammability | ASTM D635 |

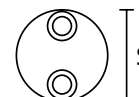
RoHS



a: Expanded form (supplied)



b: Fully recovered form (after heating)



Fully recovered form (after heating)

| TYPE | ØH min. a | ØH max. b | ØJ min. a | ØJ max. b | P ± 10% | R ± 10% | HW ± 20% | JW ± 20% | S nom. | Article No. |
|-----------|--------------|--------------|--------------|------------|---------------|--------------|------------|------------|-------------|-------------|
| 223-2-B8W | 33.0 (1.29") | 9.4 (.37") | 17.5 (.68") | 4.1 (.16") | 94.0 (3.67") | 30.0 (1.17") | 1.5 (.06") | 1.2 (.05") | 20.0 (.78") | 402-23058 |
| 219-2-B8 | 77.0 (3.00") | 38.1 (1.49") | 37.0 (1.44") | 12.7 (.5") | 141.5 (5.52") | 42.5 (1.66") | 3.8 (.15") | 3.8 (.15") | 44 (1.72") | 402-19020 |
| 219-2-B8W | 77.0 (3.00") | 38.1 (1.49") | 37.0 (1.46") | 12.7 (.5") | 141.5 (5.52") | 42.5 (1.66") | 3.8 (.15") | 3.8 (.15") | 44 (1.72") | 402-19032 |

Dimensions in mm, inches in brackets. Subject to technical changes.



3-Way Outlet Shapes, Breakout Boots

Helashrink 300 Series, in line, low voltage

Features and Benefits

- Easy, time-saving insulation of cable branch point where it splits into single wires
- Adhesive is applied to relieve mechanical tension in cable harnesses



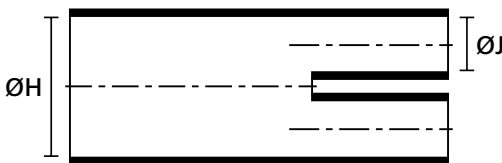
300 Series supplied / fully recovered.



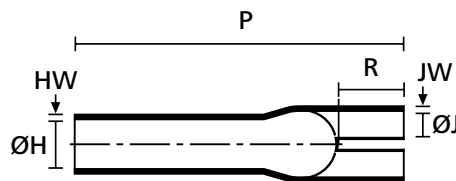
Cable breakouts are available for 2, 3, 4, 5 and 6 core cables.

| | |
|------------------------------|-----------------------------------|
| Color | Black (BK) |
| Shrink Ratio | up to 3:1 |
| Dielectric Strength | 15 kV/mm |
| Operating Temperature | -67°F to +212°F (-55°C to +100°C) |
| Flammability | ASTM D635 |

RoHS



a: Expanded form (supplied)



b: Fully recovered form (after heating)



Fully recovered form (after heating)

| TYPE | ØH min. a | ØH max. b | ØJ min. a | ØJ max. b | P ± 10% | R ± 10% | HW ± 20% | JW ± 20% | S nom. | Article No. |
|------------|---------------|--------------|--------------|-------------|----------------|--------------|------------|------------|--------------|-------------|
| 354-1-B8W | 45.0 (1.76") | 10.0 (.39") | 16.0 (.62") | 4.0 (.16") | 100.0 (3.9") | 25.0 (.98") | 3.0 (.12") | 2.0 (.08") | - | 403-54004 |
| 320-1-B8W | 55.8 (2.18") | 22.5 (.88") | 30.4 (1.19") | 9.0 (.35") | 180.0 (7.02") | 44.0 (1.72") | 3.0 (.12") | 2.0 (.08") | 37.0 (1.44") | 403-20012 |
| 355-1-B8W | 100.0 (3.9") | 28.0 (1.09") | 40.0 (1.56") | 13.0 (.51") | 210.0 (8.19") | 50.0 (1.95") | 3.5 (.14") | 2.5 (.1") | - | 403-55005 |
| 342-1-B8W2 | 110.0 (4.29") | 35.0 (1.37") | 40.0 (1.56") | 17.5 (.68") | 230.0 (8.97") | 45.0 (1.76") | 4.0 (.16") | 3.5 (.14") | 65.0 (2.54") | 403-42006 |
| 341-1-B8W2 | 125.0 (4.88") | 59.0 (2.3") | 50.8 (1.98") | 25.4 (.99") | 283.0 (11.04") | 71.0 (2.77") | 3.8 (.15") | 3.8 (.15") | 75.0 (2.93") | 403-41005 |

Dimensions in mm, inches in brackets. Subject to technical changes.



Please note! Not all products listed on this page may have this approval.



4-Way Outlet Shapes, Breakout Boots

Helashrink 400 Series, in line, low voltage

Features and Benefits

- Easy, time-saving insulation of cable branch point where it splits into single wires
- Made of tough, cross-linked, Polyolefin
- Adhesive is applied to relieve mechanical tension in cable harnesses

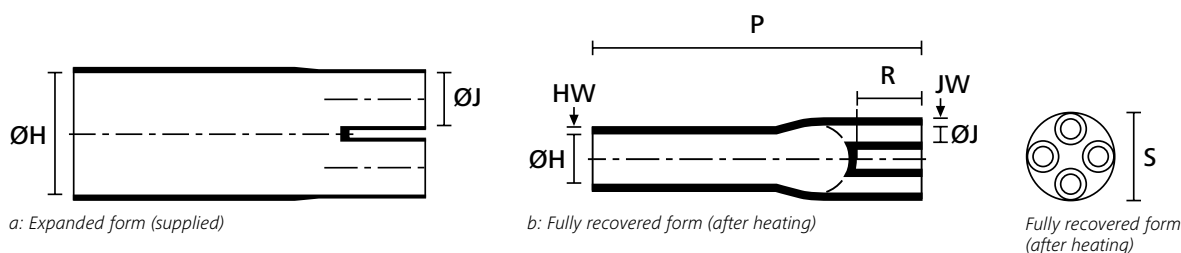


400 series supplied / fully recovered.



Cable breakouts are available for 2, 3, 4, 5 and 6 core cables.

| | |
|------------------------------|-----------------------------------|
| Color | Black (BK) |
| Shrink Ratio | up to 3:1 |
| Dielectric Strength | 15 kV/mm |
| Operating Temperature | -67°F to +212°F (-55°C to +100°C) |
| Flammability | ASTM D635 |



| TYPE | $\varnothing H$ min. a | $\varnothing H$ max. b | $\varnothing J$ min. a | $\varnothing J$ max. b | $P \pm 10\%$ | $R \pm 10\%$ | $HW \pm 20\%$ | $JW \pm 20\%$ | S nom. | Article No. |
|------------|------------------------|------------------------|------------------------|------------------------|---------------|--------------|---------------|---------------|--------------|-------------|
| 442-1-B8W | 28.0 (1.09") | 9.0 (.35") | 9.0 (.35") | 1.8 (.07") | 78.0 (3.04") | 17.0 (.66") | 2.7 (.11") | 2.0 (.08") | 20.0 (.78") | 404-42022 |
| 408-2-B8W2 | 35.0 (1.37") | 12.0 (.47") | 15.0 (.59") | 3.0 (.12") | 95.0 (3.71") | 24.0 (.94") | 2.5 (.1") | 2.0 (.08") | 22.0 (.86") | 404-08022 |
| 443-1-B8 | 35.0 (1.37") | 12.0 (.47") | 15.0 (.59") | 3.0 (.12") | 132.0 (5.15") | 26.0 (1.01") | 3.0 (.12") | 2.5 (.1") | 22.0 (.86") | 404-43002 |
| 409-2-B8W2 | 47.4 (1.85") | 22.9 (.89") | 21.5 (.84") | 6.4 (.25") | 165.0 (6.44") | 38.1 (1.49") | 4.1 (.16") | 3.3 (.13") | 38.1 (1.49") | 404-09021 |
| 418-4-B8W2 | 60.0 (2.34") | 22.9 (.89") | 30.0 (1.17") | 6.4 (.25") | 202.0 (7.88") | 38.1 (1.49") | 4.1 (.16") | 3.3 (.13") | 38.1 (1.49") | 404-18020 |
| 444-2-B8W2 | 95.0 (3.71") | 35.6 (1.39") | 35.6 (1.39") | 12.5 (.49") | 240.0 (9.36") | 55.0 (2.15") | 4.0 (.16") | 3.5 (.14") | 50.8 (1.98") | 404-44022 |

Dimensions in mm, inches in brackets. Subject to technical changes.



End Caps

Helashrink 1600 Series, low voltage

End caps are suitable for use on both polymeric and paper insulated, lead jacketed cables which may include aluminium or steel armouring.

Features and Benefits

- Seal cables during storage or transportation
- Insulating cap for live LV cables (0.6/1kV)
- Adhesive lining for excellent environmental seal
- High shrink ratio to minimise number of sizes needed
- Outer end seal marked with lightning flashes to indicate live circuit
- Can be fitted with air valves for pressurised cable applications
- High shrink ratio to minimise number of sizes needed



The appropriate end cap for every cable diameter, and cable types.



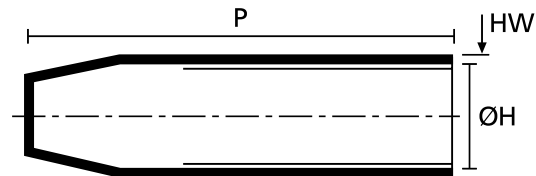
For Material / Adhesive information please refer to page 14.

| | |
|--------------------------------|----------------------------------|
| MATERIAL | Polyolefin, cross-linked (PO-X) |
| Color | Black (BK) |
| Shrink Ratio | up to 3:1 |
| Min. Shrink Temperature | +275 °F (+135 °C) |
| Operating Temperature | -67°F to +176°F (-55°C to +80°C) |
| Dielectric Strength | 15 kV/mm |
| Flammability | ASTM D635 |

RoHS



a: Expanded form (supplied)



b: Fully recovered form (after heating)

| TYPE | Bundle Ø min. | Bundle Ø max. | ØH min. a | ØH max. b | P ± 10% | HW ± 20% | Article No. |
|-------------|---------------|---------------|---------------|---------------|---------------|------------|-------------|
| 1612-1-B5W2 | 4.0 (.16") | 8.0 (.31") | 12.0 (.47") | 4.0 (.16") | 40.0 (1.57") | 2.6 (.1") | 416-12046 |
| 1613-1-B5W2 | 6.5 (.26") | 16.0 (.63") | 20.0 (.79") | 6.0 (.24") | 55.0 (2.17") | 2.8 (.11") | 416-13054 |
| 1601-1-B8W | 10.0 (.39") | 19.0 (.75") | 25.0 (.98") | 8.5 (.33") | 65.0 (2.56") | 2.8 (.11") | 416-01013 |
| 1620-1-B5W2 | 13.0 (.51") | 28.0 (1.10") | 35.0 (1.37") | 12.7 (.5") | 184.0 (7.18") | 3.3 (.13") | 416-20028 |
| 1614-1-B5W2 | 16.0 (.63") | 32.0 (1.26") | 40.0 (1.57") | 15.0 (.59") | 75.0 (2.95") | 3.3 (.13") | 416-14047 |
| 1615-1-B5W2 | 26.0 (1.02") | 51.0 (2.01") | 62.0 (2.44") | 23.0 (.90") | 132.0 (5.20") | 3.8 (.15") | 416-15035 |
| 1617-1-B5W2 | 32.0 (1.26") | 61.0 (2.4") | 75.0 (2.95") | 32.0 (1.26") | 140.0 (5.51") | 4.0 (.16") | 416-17033 |
| 1616-1-B5W2 | 48.0 (1.89") | 80.0 (3.15") | 105.0 (4.13") | 45.0 (1.77") | 135.0 (5.31") | 4.0 (.16") | 416-16053 |
| 1609-1-B5W2 | 65.0 (2.56") | 110.0 (4.33") | 60.0 (2.36") | 120.0 (4.72") | 150.0 (5.90") | 4.2 (.17") | 416-09000 |
| 1610-1-B5W2 | 90.0 (3.54") | 135.0 (5.31") | 160.0 (6.30") | 82.0 (3.23") | 135.0 (5.31") | 4.5 (.18") | 416-10000 |

Dimensions in mm, inches in brackets. Subject to technical changes.



Pinched End Caps

Helashrink PEC Series, low voltage

Pinched End Caps can be used for mechanical and environmental protection of stub splices in electrical harnesses. Due to the fast and easy installation, these caps can be used for non-electrical applications as well.

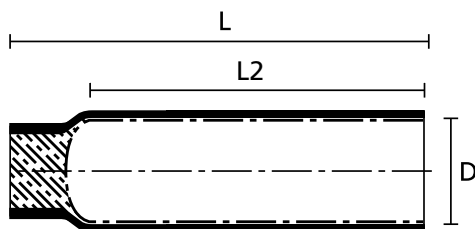
Features and Benefits

- Small size End Caps
- Fast and easy application
- With Inner adhesive layer for moisture sealing
- 3:1 shrink ratio
- Different diameters for wide application range
- Other lengths available on request

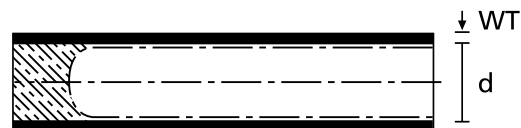


The appropriate end cap for every cable diameter, and cable types.

| | |
|--------------------------------|---|
| MATERIAL | Polyolefin, cross-linked (PO-X) |
| Color | Black (BK) |
| Shrink Ratio | 3:1 |
| Min. Shrink Temperature | +248 °F (+120 °C) |
| Operating Temperature | -49°F to +257°F (-45°C to +125°C) |
| Dielectric Strength | 15 kV/mm according to IEC 684 P2 |
| Flammability | self-extinguishing in 30 seconds according to SAE-AMS-DTL-23053/4 |



PEC-Series expanded.



PEC-Series recovered.

RoHS

| TYPE | Supplied Ø (D) | Recovered Ø (D) | Wall Thickness (WT) | Length (L) | Length (L2) | Pkg. Qty. | Article No. |
|-------------|----------------|-----------------|---------------------|--------------|--------------|-----------|-------------|
| PEC-3/1 | 3.0 (.12") | 1.0 (.04") | 1.0 (.04") | 25.0 (.98") | 20.0 (.79") | 50 Pieces | 416-00000 |
| PEC-4.8/1.5 | 4.8 (.19") | 1.5 (.06") | 1.0 (.04") | 30.0 (1.18") | 25.0 (.98") | 50 Pieces | 416-00003 |
| PEC-6/2 | 6.0 (.24") | 2.0 (.08") | 1.0 (.04") | 30.0 (1.19") | 25.0 (.98") | 50 Pieces | 416-00001 |
| PEC-9/3 | 9.0 (.35") | 3.0 (.12") | 1.4 (.06") | 35.0 (1.38") | 27.0 (1.06") | 50 Pieces | 416-00002 |

Dimensions in mm, inches in brackets. Subject to technical changes.



Constant Force Spring Adaptor

Zetalok

Predominantly used in the Aerospace, Defence and Professional Electronics sectors.

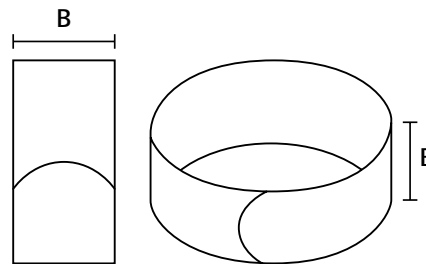
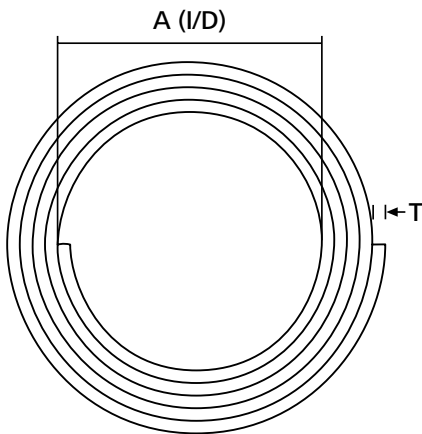
Features and Benefits

- Unique re-enterable termination system for connecting a cable shielding braid to a circular connector
- In conjunction with our Heatshrink moulded shape, a sealed environmental termination system is achieved
- The main feature is that the termination can be re-entered when required
- Possible to effect repairs to connector pins/sockets without the need to discard any part of the shielding system
- Due to the self-tensioning nature of the spring, it provides excellent resistance to vibration and shock



Zetalok installation system.

| | | |
|-----------------|----------------------|-------------|
| MATERIAL | Stainless Steel (SS) | |
| Color | Metal (ML) | Silver (SR) |



| TYPE | Inside Ø (A) | Material Width (B) | Length (L) | Thickness (T) | Article No. |
|----------|--------------|--------------------|----------------|----------------|-------------|
| HE-050-2 | 7.14 (.28") | 6.53 (.26") | 108.0 (4.25") | 0.1016 (.004") | 425-00003 |
| HE-050 | 7.34 (.29") | 9.53 (.38") | 107.9 (4.25") | 0.1016 (.004") | 425-00002 |
| HE-100-1 | 9.10 (.36") | 9.53 (.38") | 119.0 (4.69") | 0.1016 (.004") | 425-00004 |
| HE-200-2 | 14.40 (.57") | 9.53 (.38") | 127.0 (5") | 0.1775 (.007") | 425-00005 |
| HE-300-3 | 18.51 (.73") | 6.35 (.25") | 232.0 (9.13") | 0.2540 (.01") | 425-00007 |
| HE-300-4 | 18.64 (.73") | 9.53 (.38") | 260.3 (10.25") | 0.2540 (.01") | 425-00008 |
| HE-400-4 | 24.86 (.98") | 9.53 (.38") | 217.5 (8.56") | 0.3048 (.012") | 425-00009 |

Dimensions in mm, inches in brackets. Subject to technical changes.



Two-Component Adhesive for Heat Shrinkable Tubing and Shapes

V9500

Features and Benefits

- High performance, two-part epoxy adhesive
- Very resistant to most solvents and fuels, even at elevated temperatures
- Two different packages available
- V9500 available in 10g sachets for manual mixing
- Processing set: emery paper, small mixing bowl and wooden spatula
- High performance bonding
- Meets military requirements for heat shrinkable components for harnesses
- VG-approved



Two-component epoxy adhesive V9500.



The V9500 applicator gun guarantees the clean and precise coating of special fittings.

| | |
|------------------------------|---|
| MATERIAL | Epoxy resins (EP) |
| Color | Black (BK) |
| Curing Temperature | +275°F (+135°C) |
| Curing Time | 24 hours at +77°F (+25°C), 2 hours at +185°F (+85°C) |
| Operating Temperature | -103°F to +302°F (-75°C to +150°C) |
| Specifications | VG 95343 |

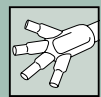


| TYPE | Description | Designation as per AS/VG-Norm | Article No. |
|--------------------------------|---|-------------------------------|-------------|
| V9500 Epoxy Kit | 5 x 10g sachets (50g), 5 x mixing pots, 5 x mixing sticks, 5 x emery papers | VG 95343 T15 A 001 A | 627-95000 |
| | 1 x dual cartridge, 5 x mixing pots, 5 x mixing sticks, 5 x emery papers | VG 95343 T15 A 002 B | 627-95001 |
| V9500 Epoxy Cartridge | Two-component adhesive cartridge | VG 95343 T15 A | 627-95002 |
| V9500 Applicator Gun | Applicator gun | VG 95343 T15 DA | 627-95003 |
| V9500 Applicator Nozzle | Mixing nozzle | VG 95343 T15 MA | 627-95004 |

Dimensions in mm, inches in brackets. Subject to technical changes.



Please note! Not all products listed on this page may have this approval.



Hot Melt Tape for Heat Shrinkable Tubing and Shapes

HMT200A

Designed for use with heat shrink sleeving and mouldings.

Features and Benefits

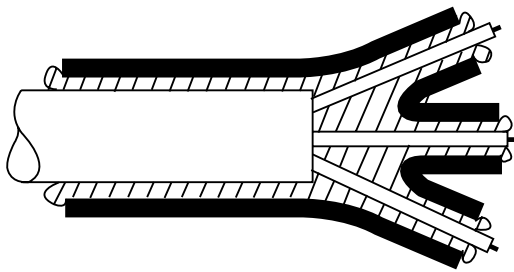
- Hot melt tape flows when heated to seal against moisture
- For heat shrink tubing and mouldings



HMT200A-Tape.



Adhesive tape HMT200A for sealing against humidity.



HMT200A

| | |
|------------------------------|-----------------------------------|
| MATERIAL | Ethylenevinylacetate (EVA) |
| Operating Temperature | -67°F to +221°F (-55°C to +105°C) |
| Specifications | DEF STAN 59-97 Type W (W) |



| TYPE | Thickness (T) | Width (W) | Color | Reel Length | Article No. |
|---------|---------------|-------------|------------------|-----------------|-------------|
| HMT200A | 0.25 (.0098") | 25.0 (.98") | Translucent (TT) | 10.0 m (32 ft) | 354-02260 |
| | 0.25 (.0098") | 25.0 (.98") | Translucent (TT) | 50.0 m (164 ft) | 354-02259 |

Dimensions in mm, inches in brackets. Subject to technical changes.



Please note! Not all products listed on this page may have this approval.



High Temperature Hot Melt Adhesive Tape for Low Profile Products

TSA-200

Designed for use with our -9 and -8 heat shrink materials.

Features and Benefits

- A high temperature hot melt adhesive that bonds well to polyethylene and metals
- Compliments -9 and -8 material (SCX15112 and SCX15111) whilst having good resistance to water ingress
- The hotmelt tape flows when heated to provide a permanent environmental seal
- Store below 40°C and away from direct sunlight



Hot melt adhesive TSA-200.

| | |
|------------------------------|---|
| MATERIAL | Thermoplastic Polyester Elastomer (TPC) |
| Color | Black (BK) |
| Operating Temperature | -67°F to +257°F (-55°C to +125°C) |

RoHS ✓

| TYPE | Thickness (T) | Width (W) | Reel Length | Article No. |
|---------|---------------|-------------|--------------|-------------|
| TSA-200 | 0.6 (.024") | 22.0 (.87") | 25 m (83 ft) | 354-03000 |

Dimensions in mm, inches in brackets. Subject to technical changes.



4.1 HellermannTyton Product Standards

| | |
|---|----|
| Standards for HellermannTyton Heat Shrinkable Moulded Shapes according to VG Norm | 88 |
| VG/MIL Specification Cross Reference | 90 |
| HellermannTyton Shapes for use with MIL Connectors | 91 |
| MIL Specification Slash Sheet Cross Reference | 92 |
| AS85049 Qualification | 93 |



Standards for HellermannTyton Heat Shrinkable Moulded Shapes according to VG Norm

| Description VG-Norm | Description HellermannTyton |
|----------------------|-----------------------------|
| VG 95343 T06 A 001 A | 152-41-G |
| VG 95343 T06 A 002 A | 153-41-G |
| VG 95343 T06 A 003 A | 154-41-G |
| VG 95343 T06 A 004 A | 155-41-G |
| VG 95343 T06 A 005 A | 156-41-G |
| VG 95343 T06 A 006 A | 157-41-G |
| VG 95343 T06 A 007 A | 158-41-G |
| VG 95343 T06 A 008 A | 159-41-G |
| VG 95343 T06 A 009 A | 160-41-G |
| VG 95343 T06 A 010 A | 199-4-G |
| VG 95343 T06 B 001 A | 152-42-G |
| VG 95343 T06 B 002 A | 153-42-G |
| VG 95343 T06 B 003 A | 154-42-G |
| VG 95343 T06 B 004 A | 155-42-G |
| VG 95343 T06 B 005 A | 156-42-G |
| VG 95343 T06 B 006 A | 157-42-G |
| VG 95343 T06 B 007 A | 158-42-G |
| VG 95343 T06 B 008 A | 159-42-G |
| VG 95343 T06 B 009 A | 160-42-G |
| VG 95343 T06 C 001 A | 157-43-G |
| VG 95343 T06 C 002 A | 158-43-G |
| VG 95343 T06 C 003 A | 159-43-G |
| VG 95343 T06 C 004 A | 160-43-G |
| VG 95343 T06 D 001 A | 129-1-G |
| VG 95343 T06 D 002 A | 130-1-G |
| VG 95343 T06 D 003 A | 131-1-G |
| VG 95343 T06 D 004 A | 132-1-G |
| VG 95343 T06 D 005 A | 133-1-G |
| VG 95343 T06 D 006 A | 134-1-G |
| VG 95343 T06 D 007 A | 135-1-G |
| VG 95343 T06 D 008 A | 136-1-G |
| VG 95343 T06 D 009 A | 138-1-G |
| VG 95343 T06 D 011 A | 176-1-G |
| VG 95343 T06 D 012 A | 177-1-G |
| VG 95343 T06 D 013 A | 178-1-G |
| VG 95343 T06 D 014 A | 179-1-G |
| VG 95343 T06 E 001 A | 1152-4-G |
| VG 95343 T06 E 002 A | 1154-4-G |
| VG 95343 T06 E 003 A | 1155-4-G |
| VG 95343 T06 E 004 A | 1156-4-G |
| VG 95343 T06 E 005 A | 1157-4-G |
| VG 95343 T06 E 006 A | 1158-4-G |
| VG 95343 T06 E 007 A | 1159-4-G |
| VG 95343 T06 E 008 A | 1160-4-G |
| VG 95343 T06 F 001 A | 1121-1-G |
| VG 95343 T06 F 002 A | 1122-1-G |
| VG 95343 T06 F 003 A | 1123-1-G |
| VG 95343 T06 F 004 A | 1124-1-G |
| VG 95343 T06 F 005 A | 1125-1-G |
| VG 95343 T06 F 006 A | 1126-1-G |
| VG 95343 T06 F 007 A | 1127-1-G |
| VG 95343 T06 F 008 A | 1128-1-G |
| VG 95343 T06 F 009 A | 1129-1-G |
| VG 95343 T06 F 010 A | 1141-1-G |
| VG 95343 T06 F 011 A | 1133-1-G |

| Description VG-Norm | Description HellermannTyton |
|----------------------|-----------------------------|
| VG 95343 T06 F 012 A | 1134-1-G |
| VG 95343 T06 F 013 A | 1135-1-G |
| VG 95343 T06 F 014 A | 1136-1-G |
| VG 95343 T06 J 001 A | 1111-1-G |
| VG 95343 T06 J 002 A | 1112-1-G |
| VG 95343 T06 J 003 A | 1113-1-G |
| VG 95343 T06 J 004 A | 1114-1-G |
| VG 95343 T06 J 006 A | 1116-1-G |
| VG 95343 T06 J 007 A | 1117-1-G |
| VG 95343 T06 J 008 A | 1118-1-G |
| VG 95343 T06 K 001 A | 1505-1-G |
| VG 95343 T06 K 002 A | 1506-1-G |
| VG 95343 T06 K 003 A | 1507-1-G |
| VG 95343 T06 K 004 A | 1501-1-G |
| VG 95343 T06 K 005 A | 1502-2-G |
| VG 95343 T06 K 006 A | 1502-2-G |
| VG 95343 T06 K 007 A | 1506-2-G |
| VG 95343 T06 K 008 A | 1507-2-G |
| VG 95343 T06 K 009 A | 1501-2-G |
| VG 95343 T06 K 010 A | 1502-1-G |
| VG 95343 T06 L 001 A | 2101-1-G |
| VG 95343 T06 L 002 A | 2102-1-G |
| VG 95343 T06 L 003 A | 2103-1-G |
| VG 95343 T06 L 004 A | 2104-1-G |
| VG 95343 T06 L 005 A | 2105-1-G |
| VG 95343 T06 L 006 A | 2101-2-G |
| VG 95343 T06 L 007 A | 2102-2-G |
| VG 95343 T06 L 008 A | 2103-2-G |
| VG 95343 T06 L 009 A | 2105-2-G |
| VG 95343 T07 A 001 A | 152-41-GP |
| VG 95343 T07 A 002 A | 153-41-GP |
| VG 95343 T07 A 003 A | 154-41-GP |
| VG 95343 T07 A 004 A | 155-41-GP |
| VG 95343 T07 A 005 A | 156-41-GP |
| VG 95343 T07 A 006 A | 157-41-GP |
| VG 95343 T07 A 007 A | 158-41-GP |
| VG 95343 T07 A 008 A | 159-41-GP |
| VG 95343 T07 A 009 A | 160-41-GP |
| VG 95343 T07 B 001 A | 152-42-GP |
| VG 95343 T07 B 002 A | 153-42-GP |
| VG 95343 T07 B 003 A | 154-42-GP |
| VG 95343 T07 B 004 A | 155-42-GP |
| VG 95343 T07 B 005 A | 156-42-GP |
| VG 95343 T07 B 006 A | 157-42-GP |
| VG 95343 T07 B 007 A | 158-42-GP |
| VG 95343 T07 B 008 A | 159-42-GP |
| VG 95343 T07 B 009 A | 160-42-GP |
| VG 95343 T07 C 001 A | 157-43-GP |
| VG 95343 T07 C 002 A | 158-43-GP |
| VG 95343 T07 C 003 A | 159-43-GP |
| VG 95343 T07 C 004 A | 160-43-GP |
| VG 95343 T07 D 001 A | 129-1-GP |
| VG 95343 T07 D 002 A | 130-1-GP |
| VG 95343 T07 D 003 A | 131-1-GP |
| VG 95343 T07 D 004 A | 132-1-GP |

| Description VG-Norm | Description HellermannTyton |
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| VG 95343 T07 D 006 A | 134-1-GP |
| VG 95343 T07 D 007 A | 135-1-GP |
| VG 95343 T07 D 008 A | 136-1-GP |
| VG 95343 T07 D 009 A | 138-1-GP |
| VG 95343 T07 D 010 A | 187-1-GP |
| VG 95343 T07 E 001 A | 1152-4-GP |
| VG 95343 T07 E 002 A | 1154-4-GP |
| VG 95343 T07 E 003 A | 1155-4-GP |
| VG 95343 T07 E 004 A | 1156-4-GP |
| VG 95343 T07 E 005 A | 1157-4-GP |
| VG 95343 T07 E 006 A | 1158-4-GP |
| VG 95343 T07 E 007 A | 1159-4-GP |
| VG 95343 T07 E 008 A | 1160-4-GP |
| VG 95343 T07 F 002 A | 1122-1-GP |
| VG 95343 T07 F 003 A | 1123-1-GP |
| VG 95343 T07 F 004 A | 1124-1-GP |
| VG 95343 T07 F 005 A | 1125-1-GP |
| VG 95343 T07 F 006 A | 1126-1-GP |
| VG 95343 T07 F 007 A | 1127-1-GP |
| VG 95343 T07 F 008 A | 1128-1-GP |
| VG 95343 T07 F 009 A | 1129-1-GP |
| VG 95343 T07 F 010 A | 1141-1-GP |
| VG 95343 T08 A 001 A | 1203-1-G |
| VG 95343 T08 A 002 A | 1209-1-G |
| VG 95343 T08 A 007 A | 1201-1-G |
| VG 95343 T08 A 009 A | 1206-1-G |
| VG 95343 T08 A 010 A | 1202-1-G |
| VG 95343 T08 A 011 A | 1207-1-G |
| VG 95343 T08 A 016 A | 1204-1-G |
| VG 95343 T08 A 017 A | 1216-1-G |
| VG 95343 T08 B 001 A | 1301-1-G |
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| VG 95343 T08 B 003 A | 1311-1-G |
| VG 95343 T08 B 004 A | 1302-1-G |
| VG 95343 T08 B 005 A | 1304-1-G |
| VG 95343 T08 B 006 A | 1305-1-G |
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| VG 95343 T08 B 008 A | 1316-1-G |
| VG 95343 T08 B 009 A | 1313-1-G |
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| VG 95343 T08 C 005 A | 212-1-G |
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| VG 95343 T08 E 002 A | 411-1-G |
| VG 95343 T08 E 004 A | 403-1-G |
| VG 95343 T08 E 005 A | 413-1-G |



| Description VG-Norm | Description HellermannTyton |
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| VG 95343 T09 B 001 A | 1301-1-GP |
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| VG 95343 T09 B 003 A | 1311-1-GP |
| VG 95343 T09 C 001 A | 206-1-GP |
| VG 95343 T09 C 002 A | 203-1-GP |
| VG 95343 T09 C 003 A | 204-1-GP |
| VG 95343 T15 A 001 A | V9500 PK |
| VG 95343 T15 A 002 B | V9500 B |
| VG 95343 T15 A | V9500 P |
| VG 95343 T15 DA | P9500 |
| VG 95343 T15 MA | M9500 |
| VG 95343 T18 A 001 A | 152-41-GW24 |
| VG 95343 T18 A 002 A | 153-41-GW24 |
| VG 95343 T18 A 003 A | 154-41-GW24 |
| VG 95343 T18 A 004 A | 155-41-GW24 |
| VG 95343 T18 A 005 A | 156-41-GW24 |
| VG 95343 T18 A 006 A | 157-41-GW24 |
| VG 95343 T18 A 007 A | 158-41-GW24 |
| VG 95343 T18 A 008 A | 159-41-GW24 |
| VG 95343 T18 A 009 A | 160-41-GW24 |
| VG 95343 T18 A 010 A | 199-41-GW24 |
| VG 95343 T18 E 001 A | 1505-1-GW24 |
| VG 95343 T18 E 002 A | 1506-1-GW24 |
| VG 95343 T18 E 003 A | 1507-1-GW24 |
| VG 95343 T18 E 004 A | 1501-1-GW24 |
| VG 95343 T18 E 005 A | 1502-2-GW24 |
| VG 95343 T18 E 006 A | 1505-2-GW24 |
| VG 95343 T18 E 007 A | 1506-2-GW24 |
| VG 95343 T18 E 008 A | 1507-2-GW24 |
| VG 95343 T18 E 009 A | 1501-2-GW24 |
| VG 95343 T18 E 010 A | 1502-1-GW24 |
| VG 95343 T18 B 001 A | 152-42-GW24 |
| VG 95343 T18 B 002 A | 153-42-GW24 |
| VG 95343 T18 B 003 A | 154-42-GW24 |
| VG 95343 T18 B 004 A | 155-42-GW24 |
| VG 95343 T18 B 005 A | 156-42-GW24 |
| VG 95343 T18 B 006 A | 157-42-GW24 |
| VG 95343 T18 B 007 A | 158-42-GW24 |
| VG 95343 T18 B 008 A | 159-42-GW24 |
| VG 95343 T18 B 009 A | 160-42-GW24 |
| VG 95343 T18 C 001 A | 157-43-GW24 |
| VG 95343 T18 C 002 A | 158-43-GW24 |
| VG 95343 T18 C 003 A | 159-43-GW24 |
| VG 95343 T18 C 004 A | 160-43-GW24 |
| VG 95343 T18 D 001 A | 1152-4-GW24 |
| VG 95343 T18 D 002 A | 1154-4-GW24 |
| VG 95343 T18 D 003 A | 1155-4-GW24 |
| VG 95343 T18 D 004 A | 1156-4-GW24 |
| VG 95343 T18 D 005 A | 1157-4-GW24 |
| VG 95343 T18 D 006 A | 1158-4-GW24 |
| VG 95343 T18 D 007 A | 1159-4-GW24 |
| VG 95343 T18 D 008 A | 1160-4-GW24 |
| VG 95343 T18 G 001 A | 2101-1-GW24 |
| VG 95343 T18 G 003 A | 2102-1-GW24 |

| Description VG-Norm | Description HellermannTyton |
|----------------------|-----------------------------|
| VG 95343 T18 G 005 A | 2103-1-GW24 |
| VG 95343 T18 G 006 A | 2104-1-GW24 |
| VG 95343 T18 G 007 A | 2105-1-GW24 |
| VG 95343 T18 G 008 A | 2101-2-GW24 |
| VG 95343 T18 G 010 A | 2102-2-GW24 |
| VG 95343 T18 G 012 A | 2103-2-GW24 |
| VG 95343 T18 G 014 A | 2105-2-GW24 |
| VG 95343 T18 H 001 A | 1133-2-GW24 |
| VG 95343 T18 H 002 A | 1133-1-GW24 |
| VG 95343 T19 A 001 A | 1203-1-GW24 |
| VG 95343 T19 A 002 A | 1209-1-GW24 |
| VG 95343 T19 A 003 A | 1214-1-GW24 |
| VG 95343 T19 A 004 A | 1210-1-GW24 |
| VG 95343 T19 A 006 A | 1212-1-GW24 |
| VG 95343 T19 A 007 A | 1201-1-GW24 |
| VG 95343 T19 A 008 A | 1213-1-GW24 |
| VG 95343 T19 A 009 A | 1206-1-GW24 |
| VG 95343 T19 A 010 A | 1202-1-GW24 |
| VG 95343 T19 A 011 A | 1207-1-GW24 |
| VG 95343 T19 A 012 A | 1208-1-GW24 |
| VG 95343 T19 A 016 A | 1204-1-GW24 |
| VG 95343 T19 A 017 A | 1216-1-GW24 |
| VG 95343 T19 A 018 A | 1220-1-GW24 |
| VG 95343 T19 E 002 A | 411-1-GW24 |
| VG 95343 T19 E 003 A | 412-1-GW24 |
| VG 95343 T19 E 004 A | 403-1-GW24 |
| VG 95343 T19 E 005 A | 413-1-GW24 |
| VG 95343 T19 E 009 A | 414-1-GW24 |
| VG 95343 T19 B 001 A | 1301-1-GW24 |
| VG 95343 T19 B 002 A | 1303-1-GW24 |
| VG 95343 T19 B 003 A | 1311-1-GW24 |
| VG 95343 T19 B 004 A | 1302-1-GW24 |
| VG 95343 T19 B 006 A | 1305-1-GW24 |
| VG 95343 T19 B 007 A | 1312-1-GW24 |
| VG 95343 T19 B 008 A | 1316-1-GW24 |
| VG 95343 T19 B 009 A | 1313-1-GW24 |
| VG 95343 T19 B 010 A | 1306-1-GW24 |
| VG 95343 T19 B 011 A | 1307-1-GW24 |
| VG 95343 T19 B 012 A | 1308-1-GW24 |
| VG 95343 T19 C 001 A | 206-1-GW24 |
| VG 95343 T19 C 002 A | 203-1-GW24 |
| VG 95343 T19 C 003 A | 204-1-GW24 |
| VG 95343 T19 C 004 A | 211-1-GW24 |
| VG 95343 T19 C 005 A | 212-1-GW24 |
| VG 95343 T19 D 001 A | 306-1-GW24 |
| VG 95343 T19 D 002 A | 304-1-GW24 |
| VG 95343 T19 D 003 A | 310-1-GW24 |
| VG 95343 T19 D 004 A | 311-1-GW24 |
| VG 95343 T19 D 005 A | 312-1-GW24 |
| VG 95343 T29 A 001 A | 152-61-HW21 |
| VG 95343 T29 A 002 A | 153-61-HW21 |
| VG 95343 T29 A 003 A | 154-61-HW21 |
| VG 95343 T29 A 004 A | 155-61-HW21 |
| VG 95343 T29 A 005 A | 156-61-HW21 |
| VG 95343 T29 A 006 A | 157-61-HW21 |
| VG 95343 T29 B 001 A | 152-62-HW21 |
| VG 95343 T29 B 002 A | 153-62-HW21 |

| Description VG-Norm | Description HellermannTyton |
|----------------------|-----------------------------|
| VG 95343 T29 B 003 A | 154-62-HW21 |
| VG 95343 T29 B 004 A | 155-62-HW21 |
| VG 95343 T29 B 005 A | 156-62-HW21 |
| VG 95343 T29 B 006 A | 157-62-HW21 |
| VG 95343 T29 B 007 A | 158-62-HW21 |
| VG 95343 T29 C 001 A | 157-63-HW21 |
| VG 95343 T29 C 002 A | 158-63-HW21 |
| VG 95343 T29 D 001 A | 1152-6-HW21 |
| VG 95343 T29 D 002 A | 1154-6-HW21 |
| VG 95343 T29 D 003 A | 1155-6-HW21 |
| VG 95343 T29 D 004 A | 1156-6-HW21 |
| VG 95343 T29 D 005 A | 1157-6-HW21 |
| VG 95343 T29 D 006 A | 1158-6-HW21 |
| VG 95343 T30 A 001 A | 1203-1-HW21 |
| VG 95343 T30 A 002 A | 1209-1-HW21 |
| VG 95343 T30 A 007 A | 1201-1-HW21 |
| VG 95343 T30 A 009 A | 1206-1-HW21 |
| VG 95343 T30 A 010 A | 1202-1-HW21 |
| VG 95343 T30 A 011 A | 1207-1-HW21 |
| VG 95343 T30 A 016 A | 1204-1-HW21 |
| VG 95343 T30 A 017 A | 1216-1-HW21 |
| VG 95343 T30 B 001 A | 1301-1-HW21 |
| VG 95343 T30 B 002 A | 1303-1-HW21 |
| VG 95343 T30 B 003 A | 1311-1-HW21 |
| VG 95343 T30 B 004 A | 1302-1-HW21 |
| VG 95343 T30 C 001 A | 206-1-HW21 |
| VG 95343 T30 C 002 A | 203-1-HW21 |
| VG 95343 T30 C 003 A | 204-1-HW21 |
| VG 95343 T30 C 004 A | 211-1-HW21 |
| VG 95343 T30 C 005 A | 212-1-HW21 |
| VG 95343 T30 D 001 A | 306-1-HW21 |
| VG 95343 T30 D 002 A | 304-1-HW21 |
| VG 95343 T30 D 003 A | 310-1-HW21 |
| VG 95343 T30 D 004 A | 311-1-HW21 |



VG Style/MIL Specification Style Cross Reference

Products listed below in VG style or MIL specification style can be substituted with each other, to achieve similar fit and function.

| VG Parts | MIL Specification Parts |
|----------|-------------------------|
| 152-42 | 105-4 |
| 153-42 | N/A |
| 154-42 | 106-4 |
| 155-42 | 101-4 |
| 156-42 | 102-4 |
| 157-43 | 103-4 |
| 158-43 | 107-4 |
| 159-43 | 118-4 |
| 1152-4 | 1106-4 |
| 1154-4 | 1107-4 |
| 1155-4 | 1104-4 |
| 1156-4 | 1103-4 |
| 1157-4 | 1101-4 |
| 1158-4 | 1105-4 |
| 1159-4 | 1109-4 |
| 129-1 | 129-4* |
| 130-1 | 130-4* |
| 131-1 | 131-4* |
| 132-1 | 132-4* |
| 133-1 | 133-4* |
| 134-1 | 134-4* |
| 135-1 | 135-4* |
| 136-1 | 136-4* |
| 138-1 | 138-4* |
| 187-1 | 187-4* |
| 1122-1 | 1122-4* |
| 1123-1 | 1123-4* |
| 1124-1 | 1124-4* |
| 1125-1 | 1125-4* |
| 1126-1 | 1126-4* |
| 1127-1 | 1127-4* |
| 1128-1 | 1128-4* |
| 1129-1 | 1129-4* |
| 1141-1 | 1141-4* |

* Note: These have a longer overall length than VG parts



HellermannTyton Shapes for use with circular MIL Specification Connectors MS 5015 AB

| Connector Shell Size | Knurl Dia inch (mm) | Orientation | | Cable Dia inch (mm) | |
|----------------------|---------------------|--------------|----------------|---------------------|-------------|
| | | Straight | 90° | Min. | Max. |
| 10 SL* | 0.6" (15.7) | 153-42 | 1152-4/1106-4* | 0.2" (4.2) | 0.3" (7.7) |
| 14 S | 0.8" (19.3) | 154-42/106-4 | 1154-4/1107-4 | 0.3" (7.2) | 0.4" (10.6) |
| 16 S | 0.9" (24.1) | 155-42/101-4 | 1155-4/1104-4 | 0.3" (8.4) | 0.5" (13.5) |
| 16 | 0.9" (24.1) | 155-42/101-4 | 1155-4/1104-4 | 0.3" (8.4) | 0.5" (13.5) |
| 18 | 0.9" (24.1) | 155-42/101-4 | 1155-4/1104-4 | 0.3" (8.4) | 0.6" (14.6) |
| 20 | 1.2" (29.8) | 156-42/102-4 | 1156-4/1103-4 | 0.4" (10.2) | 0.7" (18.7) |
| 22 | 1.2" (29.8) | 156-42/102-4 | 1156-4/1103-4 | 0.4" (10.2) | 0.8" (20.8) |
| 24 | 1.5" (38.0) | 157-43/103-4 | 1157-4/1101-4 | 0.5" (12.0) | 1.0" (24.6) |
| 28 | 1.5" (38.0) | 157-43/103-4 | 1157-4/1101-4 | 0.5" (12.0) | 1.1" (27.0) |
| 32 | 1.9" (48.0) | 158-43/107-4 | 1158-4/1105-4 | 0.8" (19.2) | 1.3" (33.3) |
| 36 | 1.9" (48.0) | 158-43/107-4 | 1158-4/1105-4 | 0.8" (19.2) | 1.5" (38.5) |

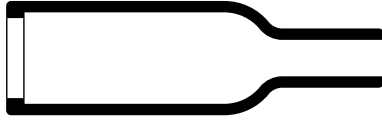

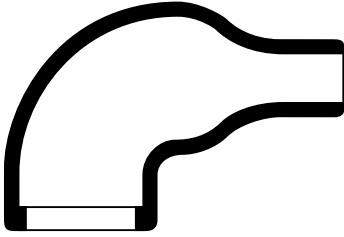

* Note: Shell 10 SL for 90° moulded part min cable diameter 6.6 mm (0.3")

HellermannTyton Shapes for use with MIL-C-26482-I/II and 38999/Series I, II, III, IV

| Connector Shell Size | Knurl Dia inch (mm) | Orientation | | Cable Dia inch (mm) | |
|----------------------|-----------------------|--------------|---------------|---------------------|-----------------------|
| | | Straight | 90° | Min. | Max. |
| 8/9 | 0.5" (13.0) | 152-42/105-4 | 1152-4/1106-4 | 0.3" (7.2) | 0.3" (7.0) |
| 10/11 | 0.6" (15.0) | 152-42/105-4 | 1152-4/1106-4 | 0.3" (7.2) | 0.4" (10.0) |
| 10/12 | 0.6"/0.7" (15.0/19.0) | 153-42/NA | - | 0.3" (7.2) | 0.4"/0.5" (10.0/13.5) |
| 12/13 | 0.7" (19.0) | 154-42/106-4 | 1154-4/1107-4 | 0.3" (7.2) | 0.5" (13.5) |
| 14/15 | 0.8" (21.0) | 155-42/101-4 | 1155-4/1104-4 | 0.3" (8.4) | 0.6" (16.5) |
| 16/17 | 0.9" (24.0) | 155-42/101-4 | 1155-4/1104-4 | 0.3" (8.4) | 0.8" (19.5) |
| 18/19 | 1.0" (26.5) | 156-42/102-4 | 1156-4/1103-4 | 0.4" (10.2) | 0.9" (22.0) |
| 20/21 | 1.2" (30.5) | 156-42/102-4 | 1156-4/1103-4 | 0.4" (10.2) | 1.0" (25.0) |
| 22/23 | 1.3" (34.0) | 157-43/103-4 | 1157-4/1101-4 | 0.5" (12.0) | 1.1" (28.5) |
| 24/25 | 1.4" (36.0) | 157-43/103-4 | 1157-4/1101-4 | 0.5" (12.0) | 1.2" (31.0) |



MIL Specification Slash Sheet Cross Reference

| HellermannTyton | MS3109 | Description | Style | | |
|-----------------|--------|--|--|---|--|
| 105-4-JL | -11AU | Bottle Shapes with rib "J" or "B7" material J = Red stripe B7 = White stripe Optional drainholes (D) |  | | |
| 105-4-B7L | -11BU | | | | |
| 106-4-JL | -12AU | | | | |
| 106-4-B7L | -12BU | | | | |
| 101-4-JL | -13AU | | | | |
| 101-4-B7L | -13BU | | | | |
| 102-4-JL | -14AU | | | | |
| 102-4-B7L | -14BU | | | | |
| 103-4-JL | -15AU | | | | |
| 103-4-B7L | -15BU | | | | |
| 107-4-JL | -16AU | | | | |
| 107-4-B7L | -16BU | | | | |
| 118-4-JL | -17AU | | | | |
| 118-4-B7L | -17BU | | | | |
| 129-4-JDL | -01AU | | | Low profile long outlet bottle shape with rib "J" or "B7" material J = Red stripe B7 = White stripe Supplied with drainholes (D) |  |
| 129-4-B7DL | -01BU | | | | |
| 130-4-JDL | -02AU | | | | |
| 130-4-B7DL | -02BU | | | | |
| 131-4-JDL | -03AU | | | | |
| 131-4-B7DL | -03BU | | | | |
| 132-4-JDL | -04AU | | | | |
| 132-4-B7DL | -04BU | | | | |
| 133-4-JDL | -05AU | | | | |
| 133-4-B7DL | -05BU | | | | |
| 134-4-JDL | -06AU | | | | |
| 134-4-B7DL | -06BU | | | | |
| 135-4-JDL | -07AU | | | | |
| 135-4-B7DL | -07BU | | | | |
| 136-4-JDL | -08AU | | | | |
| 136-4-B7DL | -08BU | | | | |
| 138-4-JDL | -09AU | | | | |
| 138-4-B7DL | -09BU | | | | |
| 187-4-JDL | -10AU | | | | |
| 187-4-B7DL | -10BU | | | | |
| HellermannTyton | MS3117 | Description | Style | | |
| 1106-4-JL | -11AU | Right angle shape with rib "J" or "B7" material J = Red stripe B7 = White stripe Optional drainholes (D) |  | | |
| 1106-4-B7L | -11BU | | | | |
| 1107-4-JL | -12AU | | | | |
| 1107-4-B7L | -12BU | | | | |
| 1104-4-JL | -13AU | | | | |
| 1104-4-B7L | -13BU | | | | |
| 1103-4-JL | -14AU | | | | |
| 1103-4-B7L | -14BU | | | | |
| 1101-4-JL | -15AU | | | | |
| 1101-4-B7L | -15BU | | | | |
| 1105-4-JL | -16AU | | | | |
| 1105-4-B7L | -16BU | | | | |
| 1109-4-JL | -17AU | | | | |
| 1109-4-B7L | -17BU | | | | |
| 1121-4-JDL | -01AU | | | Right angle shapes Low profile with rib "J" or "B7" material J = Red stripe B7 = White stripe Supplied with drainholes (D) |  |
| 1121-4-B7DL | -01BU | | | | |
| 1122-4-JDL | -02AU | | | | |
| 1122-4-B7DL | -02BU | | | | |
| 1123-4-JDL | -03AU | | | | |
| 1123-4-B7DL | -03BU | | | | |
| 1124-4-JDL | -04AU | | | | |
| 1124-4-B7DL | -04BU | | | | |
| 1125-4-JDL | -05AU | | | | |
| 1125-4-B7DL | -05BU | | | | |
| 1126-4-JDL | -06AU | | | | |
| 1126-4-B7DL | -06BU | | | | |
| 1127-4-JDL | -07AU | | | | |
| 1127-4-B7DL | -07BU | | | | |
| 1128-4-JDL | -08AU | | | | |
| 1128-4-B7DL | -08BU | | | | |
| 1129-4-JDL | -09AU | | | | |
| 1129-4-B7DL | -09BU | | | | |
| 1141-4-JDL | -10AU | | | | |
| 1141-4-B7DL | -10BU | | | | |

L denotes the MIL Specification Stripes.



AS85049 Qualification

Straight boots with Adhesive

| Type A | | Type B | | Type D | | Type G | | Type H | |
|-----------|---------------|-----------|-------------|-----------|---------|-----------|--------------|-----------|--------------|
| AS85049 | HT part | AS85049 | HT part | AS85049 | HT part | AS85049 | HT part | AS85049 | HT part |
| /140-01AC | 105-4-B7LW24 | /140-01BC | 105-4-JLW8 | /140-01DC | * | /140-01GC | 105-53-HLW21 | /140-01HC | 105-4-GLW24 |
| /140-02AC | 106-4-B7LW24 | /140-02BC | 106-4-JLW8 | /140-02DC | * | /140-02GC | 106-53-HLW21 | /140-02HC | 106-4-GLW24 |
| /140-03AC | 101-4-B7LW24 | /140-03BC | 101-4-JLW8 | /140-03DC | * | /140-03GC | 101-53-HLW21 | /140-03HC | 101-4-GLW24 |
| /140-04AC | 102-4-B7LW24 | /140-04BC | 102-4-JLW8 | /140-04DC | * | /140-04GC | 102-53-HLW21 | /140-04HC | 102-4-GLW24 |
| /140-05AC | 103-4-B7LW24 | /140-05BC | 103-4-JLW8 | /140-05DC | * | /140-05GC | 103-53-HLW21 | /140-05HC | 103-4-GLW24 |
| /140-06AC | 107-4-B7LW24 | /140-06BC | 107-4-JLW8 | /140-06DC | * | /140-06GC | 107-53-HLW21 | /140-06HC | 107-4-GLW24 |
| /140-07AC | 118-4-B7LW24 | /140-07BC | 118-4-JLW8 | /140-07DC | * | /140-07GC | 118-53-HLW21 | /140-07HC | 118-4-GLW24 |
| /140-08AC | - | /140-08BC | - | /140-08DC | * | /140-08GC | - | /140-08HC | - |
| /140-09AC | 129-4-B7LW24 | /140-09BC | 129-4-JLW8 | /140-09DC | * | /140-09GC | 129-50-HLW21 | /140-09HC | 129-4-GLW24 |
| /140-10AC | 130-4-B7LW24 | /140-10BC | 130-4-JLW8 | /140-10DC | * | /140-10GC | 130-50-HLW21 | /140-10HC | 130-4-GLW24 |
| /140-11AC | 131-4-B7LW24 | /140-11BC | 131-4-JLW8 | /140-11DC | * | /140-11GC | 131-51-HLW21 | /140-11HC | 131-4-GLW24 |
| /140-12AC | 132-4-B7LW24 | /140-12BC | 132-4-JLW8 | /140-12DC | * | /140-12GC | 132-51-HLW21 | /140-12HC | 132-4-GLW24 |
| /140-13AC | 133-4-B7LW24 | /140-13BC | 133-4-JLW8 | /140-13DC | * | /140-13GC | 133-51-HLW21 | /140-13HC | 133-4-GLW24 |
| /140-14AC | 134-4-B7LW24 | /140-14BC | 134-4-JLW8 | /140-14DC | * | /140-14GC | 134-51-HLW21 | /140-14HC | 134-4-GLW24 |
| /140-15AC | 135-4-B7LW24 | /140-15BC | 135-4-JLW8 | /140-15DC | * | /140-15GC | 135-51-HLW21 | /140-15HC | 135-4-GLW24 |
| /140-16AC | 136-4-B7LW24 | /140-16BC | 136-4-JLW8 | /140-16DC | * | /140-16GC | 136-51-HLW24 | /140-16HC | 136-4-GLW24 |
| /140-17AC | 138-4-B7LW24 | /140-17BC | 138-4-JLW8 | /140-17DC | * | /140-17GC | 138-51-HLW21 | /140-17HC | 138-4-GLW24 |
| /140-18AC | 187-4-B7LW24 | /140-18BC | 187-4-JLW8 | /140-18DC | * | /140-18GC | 187-51-HLW21 | /140-18HC | 187-4-GLW24 |
| /140-19AC | 176-4-B7LW24 | /140-19BC | 176-4-JLW8 | /140-19DC | * | /140-19GC | 176-50-HLW21 | /140-19HC | 176-4-GLW24 |
| /140-20AC | 177-1-B7LW24 | /140-20BC | 177-1-JLW8 | /140-20DC | * | /140-20GC | 177-5-HLW21 | /140-20HC | 177-1-GLW24 |
| /140-21AC | 178-1-B7LW24 | /140-21BC | 178-1-JLW8 | /140-21DC | * | /140-21GC | 178-5-HLW21 | /140-21HC | 178-1-GLW24 |
| /140-22AC | 179-1-B7LW24 | /140-22BC | 179-1-JLW8 | /140-22DC | * | /140-22GC | 179-5-HLW21 | /140-22HC | 179-1-GLW24 |
| /140-23AC | 1750-1-B7LW24 | /140-23BC | 1750-1-JLW8 | - | * | /140-23GC | 1750-1-HLW21 | /140-23HC | 1750-1-GLW24 |
| /140-24AC | 1751-1-B7LW24 | /140-24BC | 1751-1-JLW8 | - | * | /140-24GC | 1751-1-HLW21 | /140-24HC | 1751-1-GLW24 |
| /140-25AC | 1752-1-B7LW24 | /140-25BC | 1752-1-JLW8 | - | * | /140-25GC | 1752-1-HLW21 | /140-25HC | 1752-1-GLW24 |
| /140-26AC | 1753-1-B7LW24 | /140-26BC | 1753-1-JLW8 | - | * | /140-26GC | 1753-1-HLW21 | /140-26HC | 1753-1-GLW24 |
| /140-27AC | 1754-1-B7LW24 | /140-27BC | 1754-1-JLW8 | - | * | /140-27GC | 1754-1-HLW21 | /140-27HC | 1754-1-GLW24 |
| /140-28AC | 1755-1-B7LW24 | /140-28BC | 1755-1-JLW8 | - | * | /140-28GC | 1755-1-HLW21 | /140-28HC | 1755-1-GLW24 |

All items will have the option of Drain holes or Potting holes these will be signified by a D or P at the end of the AS Part number and after the material reference in the HellermannTyton part number. For ordering purpose AS will be substituted with H for example H85049/142-01AC.

*Qualified with V9500 two part Epoxy adhesive please refer to Factory.



Straight boots with No Adhesive

| Type A | | Type B | | Type D | | Type G | | Type H | |
|-----------|------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| AS85049 | HT part | AS85049 | HT part | AS85049 | HT part | AS85049 | HT part | AS85049 | HT part |
| /140-01AU | 105-4-B7L | /140-01BU | 105-4-JL | /140-01DU | 105-53-LL | /140-01GU | 105-53-HL | /140-01HU | 105-4-GL |
| /140-02AU | 106-4-B7L | /140-02BU | 106-4-JL | /140-02DU | 106-53-LL | /140-02GU | 106-53-HL | /140-02HU | 106-4-GL |
| /140-03AU | 101-4-B7L | /140-03BU | 101-4-JL | /140-03DU | 101-53-LL | /140-03GU | 101-53-HL | /140-03HU | 101-4-GL |
| /140-04AU | 102-4-B7L | /140-04BU | 102-4-JL | /140-04DU | 102-53-LL | /140-04GU | 102-53-HL | /140-04HU | 102-4-GL |
| /140-05AU | 103-4-B7L | /140-05BU | 103-4-JL | /140-05DU | 103-53-LL | /140-05GU | 103-53-HL | /140-05HU | 103-4-GL |
| /140-06AU | 107-4-B7L | /140-06BU | 107-4-JL | /140-06DU | 107-53-LL | /140-06GU | 107-53-HL | /140-06HU | 107-4-GL |
| /140-07AU | 118-4-B7L | /140-07BU | 118-4-JL | /140-07DU | 118-53-LL | /140-07GU | 118-53-HL | /140-07HU | 118-4-GL |
| /140-08AU | - | /140-08BU | - | /140-08DU | - | /140-08GU | - | /140-08HU | - |
| /140-09AU | 129-4-B7L | /140-09BU | 129-4-JL | /140-09DU | 129-50-LL | /140-09GU | 129-50-HL | /140-09HU | 129-4-GL |
| /140-10AU | 130-4-B7L | /140-10BU | 130-4-JL | /140-10DU | 130-50-LL | /140-10GU | 130-50-HL | /140-10HU | 130-4-GL |
| /140-11AU | 131-4-B7L | /140-11BU | 131-4-JL | /140-11DU | 131-51-LL | /140-11GU | 131-51-HL | /140-11HU | 131-4-GL |
| /140-12AU | 132-4-B7L | /140-12BU | 132-4-JL | /140-12DU | 132-51-LL | /140-12GU | 132-51-HL | /140-12HU | 132-4-GL |
| /140-13AU | 133-4-B7L | /140-13BU | 133-4-JL | /140-13DU | 133-51-LL | /140-13GU | 133-51-HL | /140-13HU | 133-4-GL |
| /140-14AU | 134-4-B7L | /140-14BU | 134-4-JL | /140-14DU | 134-51-LL | /140-14GU | 134-51-HL | /140-14HU | 134-4-GL |
| /140-15AU | 135-4-B7L | /140-15BU | 135-4-JL | /140-15DU | 135-51-LL | /140-15GU | 135-51-HL | /140-15HU | 135-4-GL |
| /140-16AU | 136-4-B7L | /140-16BU | 136-4-JL | /140-16DU | 136-51-LL | /140-16GU | 136-51-HL | /140-16HU | 136-4-GL |
| /140-17AU | 138-4-B7L | /140-17BU | 138-4-JL | /140-17DU | 138-51-LL | /140-17GU | 138-51-HL | /140-17HU | 138-4-GL |
| /140-18AU | 187-4-B7L | /140-18BU | 187-4-JL | /140-18DU | 187-51-LL | /140-18GU | 187-51-HL | /140-18HU | 187-4-GL |
| /140-19AU | 176-4-B7L | /140-19BU | 176-4-JL | /140-19DU | 176-4-LL | /140-19GU | 176-50-HL | /140-19HU | 176-4-GL |
| /140-20AU | 177-1-B7L | /140-20BU | 177-1-JL | /140-20DU | 177-1-LL | /140-20GU | 177-5-HL | /140-20HU | 177-1-GL |
| /140-21AU | 178-1-B7L | /140-21BU | 178-1-JL | /140-21DU | 178-1-LL | /140-21GU | 178-5-HL | /140-21HU | 178-1-GL |
| /140-22AU | 179-1-B7L | /140-22BU | 179-1-JL | /140-22DU | 179-1-LL | /140-22GU | 179-5-HL | /140-22HU | 179-1-GL |
| /140-23AU | 1750-1-B7L | /140-23BU | 1750-1-JL | - | - | /140-23GU | 1750-1-HL | /140-23HU | 1750-1-GL |
| /140-24AU | 1751-1-B7L | /140-24BU | 1751-1-JL | - | - | /140-24GU | 1751-1-HL | /140-24HU | 1751-1-GL |
| /140-25AU | 1752-1-B7L | /140-25BU | 1752-1-JL | - | - | /140-25GU | 1752-1-HL | /140-25HU | 1752-1-GL |
| /140-26AU | 1753-1-B7L | /140-26BU | 1753-1-JL | - | - | /140-26GU | 1753-1-HL | /140-26HU | 1753-1-GL |
| /140-27AU | 1754-1-B7L | /140-27BU | 1754-1-JL | - | - | /140-27GU | 1754-1-HL | /140-27HU | 1754-1-GL |
| /140-28AU | 1755-1-B7L | /140-28BU | 1755-1-JL | - | - | /140-28GU | 1755-1-HL | /140-28HU | 1755-1-GL |

All items will have the option of Drain holes or Potting holes these will be signified by a D or P at the end of the AS Part number and after the material reference in the HellermannTyton part number. For ordering purpose AS will be substituted with H for example H85049/142-01AC.



90 Degree boots with Adhesive

| Type A | | Type B | | Type D | | Type G | | Type H | |
|-----------|---------------|-----------|-------------|-----------|---------|-----------|---------------|-----------|--------------|
| AS85049 | HT part | AS85049 | HT part | AS85049 | HT part | AS85049 | HT part | AS85049 | HT part |
| /141-01AC | 1106-4-B7LW24 | /141-01BC | 1106-4-JLW8 | /141-01DC | * | /141-01GC | 1106-50-HLW21 | /141-01HC | 1106-4-GLW24 |
| /141-02AC | 1107-4-B7LW24 | /141-02BC | 1107-4-JLW8 | /141-02DC | * | /141-02GC | 1107-50-HLW21 | /141-02HC | 1107-4-GLW24 |
| /141-03AC | 1104-4-B7LW24 | /141-03BC | 1104-4-JLW8 | /141-03DC | * | /141-03GC | 1104-50-HLW21 | /141-03HC | 1104-4-GLW24 |
| /141-04AC | 1103-4-B7LW24 | /141-04BC | 1103-4-JLW8 | /141-04DC | * | /141-04GC | 1103-50-HLW21 | /141-04HC | 1103-4-GLW24 |
| /141-05AC | 1101-4-B7LW24 | /141-05BC | 1101-4-JLW8 | /141-05DC | * | /141-05GC | 1101-52-HLW21 | /141-05HC | 1101-4-GLW24 |
| /141-06AC | 1105-4-B7LW24 | /141-06BC | 1105-4-JLW8 | /141-06DC | * | /141-06GC | 1105-50-HLW21 | /141-06HC | 1105-4-GLW24 |
| /141-07AC | 1109-4-B7LW24 | /141-07BC | 1109-4-JLW8 | /141-07DC | * | /141-07GC | 1109-50-HLW21 | /141-07HC | 1109-4-GLW24 |
| /141-08AC | - | /141-08BC | - | /141-08DC | * | /141-08GC | - | /141-08HC | - |
| /141-09AC | 1121-4-B7LW24 | /141-09BC | 1121-4-JLW8 | /141-09DC | * | /141-09GC | 1121-50-HLW21 | /141-09HC | 1121-4-GLW24 |
| /141-10AC | 1122-4-B7LW24 | /141-10BC | 1122-4-JLW8 | /141-10DC | * | /141-10GC | 1122-50-HLW21 | /141-10HC | 1122-4-GLW24 |
| /141-11AC | 1123-4-B7LW24 | /141-11BC | 1123-4-JLW8 | /141-11DC | * | /141-11GC | 1123-50-HLW21 | /141-11HC | 1123-4-GLW24 |
| /141-12AC | 1124-4-B7LW24 | /141-12BC | 1124-4-JLW8 | /141-12DC | * | /141-12GC | 1124-50-HLW21 | /141-12HC | 1124-4-GLW24 |
| /141-13AC | 1125-4-B7LW24 | /141-13BC | 1125-4-JLW8 | /141-13DC | * | /141-13GC | 1125-50-HLW21 | /141-13HC | 1125-4-GLW24 |
| /141-14AC | 1126-4-B7LW24 | /141-14BC | 1126-4-JLW8 | /141-14DC | * | /141-14GC | 1126-50-HLW21 | /141-14HC | 1126-4-GLW24 |
| /141-15AC | 1127-4-B7LW24 | /141-15BC | 1127-4-JLW8 | /141-15DC | * | /141-15GC | 1127-50-HLW21 | /141-15HC | 1127-4-GLW24 |
| /141-16AC | 1128-4-B7LW24 | /141-16BC | 1128-4-JLW8 | /141-16DC | * | /141-16GC | 1128-50-HLW21 | /141-16HC | 1128-4-GLW24 |
| /141-17AC | 1129-4-B7LW24 | /141-17BC | 1129-4-JLW8 | /141-17DC | * | /141-17GC | 1129-50-HLW21 | /141-17HC | 1129-4-GLW24 |
| /141-18AC | 1141-4-B7LW24 | /141-18BC | 1141-4-JLW8 | /141-18DC | * | /141-18GC | 1141-50-HLW21 | /141-18HC | 1141-4-GLW24 |
| /141-19AC | 1133-1-B7LW24 | /141-19BC | 1133-1-JLW8 | /141-19DC | * | /141-19GC | 1133-4-HLW21 | /141-19HC | 1133-1-GLW24 |
| /141-20AC | 1134-1-B7LW24 | /141-20BC | 1134-1-JLW8 | /141-20DC | * | /141-20GC | 1134-5-HLW21 | /141-20HC | 1134-1-GLW24 |
| /141-21AC | 1135-1-B7LW24 | /141-21BC | 1135-1-JLW8 | /141-21DC | * | /141-21GC | 1135-4-HLW21 | /141-21HC | 1135-1-GLW24 |
| /141-22AC | 1136-1-B7LW24 | /141-22BC | 1136-1-JLW8 | /141-22DC | * | /141-22GC | 1136-4-HLW21 | /141-22HC | 1136-1-GLW24 |

All items will have the option of Drain holes or Potting holes these will be signified by a D or P at the end of the AS Part number and after the material reference in the HellermannTyton part number. For ordering purpose AS will be substituted with H for example H85049/142-01AC.

*Qualified with V9500 two part Epoxy adhesive please refer to Factory.



90 Degree boots with No Adhesive

| Type A | | Type B | | Type D | | Type G | | Type H | |
|-----------|------------|-----------|-----------|-----------|------------|-----------|------------|-----------|-----------|
| AS85049 | HT part | AS85049 | HT part | AS85049 | HT part | AS85049 | HT part | AS85049 | HT part |
| /141-01AU | 1106-4-B7L | /141-01BU | 1106-4-JL | /141-01DU | 1106-50-LL | /141-01GU | 1106-50-HL | /141-01HU | 1106-4-GL |
| /141-02AU | 1107-4-B7L | /141-02BU | 1107-4-JL | /141-02DU | 1107-50-LL | /141-02GU | 1107-50-HL | /141-02HU | 1107-4-GL |
| /141-03AU | 1104-4-B7L | /141-03BU | 1104-4-JL | /141-03DU | 1104-50-LL | /141-03GU | 1104-50-HL | /141-03HU | 1104-4-GL |
| /141-04AU | 1103-4-B7L | /141-04BU | 1103-4-JL | /141-04DU | 1103-50-LL | /141-04GU | 1103-50-HL | /141-04HU | 1103-4-GL |
| /141-05AU | 1101-4-B7L | /141-05BU | 1101-4-JL | /141-05DU | 1101-52-LL | /141-05GU | 1101-52-HL | /141-05HU | 1101-4-GL |
| /141-06AU | 1105-4-B7L | /141-06BU | 1105-4-JL | /141-06DU | 1105-50-LL | /141-06GU | 1105-50-HL | /141-06HU | 1105-4-GL |
| /141-07AU | 1109-4-B7L | /141-07BU | 1109-4-JL | /141-07DU | 1109-50-LL | /141-07GU | 1109-50-HL | /141-07HU | 1109-4-GL |
| /141-08AU | - | /141-08BU | - | /141-08DU | - | /141-08GU | - | /141-08HU | - |
| /141-09AU | 1121-4-B7L | /141-09BU | 1121-4-JL | /141-09DU | 1121-50-LL | /141-09GU | 1121-50-HL | /141-09HU | 1121-4-GL |
| /141-10AU | 1122-4-B7L | /141-10BU | 1122-4-JL | /141-10DU | 1122-50-LL | /141-10GU | 1122-50-HL | /141-10HU | 1122-4-GL |
| /141-11AU | 1123-4-B7L | /141-11BU | 1123-4-JL | /141-11DU | 1123-50-LL | /141-11GU | 1123-50-HL | /141-11HU | 1123-4-GL |
| /141-12AU | 1124-4-B7L | /141-12BU | 1124-4-JL | /141-12DU | 1124-50-LL | /141-12GU | 1124-50-HL | /141-12HU | 1124-4-GL |
| /141-13AU | 1125-4-B7L | /141-13BU | 1125-4-JL | /141-13DU | 1125-50-LL | /141-13GU | 1125-50-HL | /141-13HU | 1125-4-GL |
| /141-14AU | 1126-4-B7L | /141-14BU | 1126-4-JL | /141-14DU | 1126-50-LL | /141-14GU | 1126-50-HL | /141-14HU | 1126-4-GL |
| /141-15AU | 1127-4-B7L | /141-15BU | 1127-4-JL | /141-15DU | 1127-50-LL | /141-15GU | 1127-50-HL | /141-15HU | 1127-4-GL |
| /141-16AU | 1128-4-B7L | /141-16BU | 1128-4-JL | /141-16DU | 1128-50-LL | /141-16GU | 1128-50-HL | /141-16HU | 1128-4-GL |
| /141-17AU | 1129-4-B7L | /141-17BU | 1129-4-JL | /141-17DU | 1129-50-LL | /141-17GU | 1129-50-HL | /141-17HU | 1129-4-GL |
| /141-18AU | 1141-4-B7L | /141-18BU | 1141-4-JL | /141-18DU | 1141-50-LL | /141-18GU | 1141-50-HL | /141-18HU | 1141-4-GL |
| /141-19AU | 1133-1-B7L | /141-19BU | 1133-1-JL | /141-19DU | 1133-4-LL | /141-19GU | 1133-4-HL | /141-19HU | 1133-1-GL |
| /141-20AU | 1134-1-B7L | /141-20BU | 1134-1-JL | /141-20DU | 1134-5-LL | /141-20GU | 1134-5-HL | /141-20HU | 1134-1-GL |
| /141-21AU | 1135-1-B7L | /141-21BU | 1135-1-JL | /141-21DU | 1135-4-LL | /141-21GU | 1135-4-HL | /141-21HU | 1135-1-GL |
| /141-22AU | 1136-1-B7L | /141-22BU | 1136-1-JL | /141-22DU | 1136-4-LL | /141-22GU | 1136-4-HL | /141-22HU | 1136-1-GL |

All items will have the option of Drain holes or Potting holes these will be signified by a D or P at the end of the AS Part number and after the material reference in the HellermannTyton part number. For ordering purpose AS will be substituted with H for example H85049/142-01AC.



Transitions with Adhesive

| Type A | | Type B | | Type D | | Type G | | Type H | |
|-----------|---------------|-----------|-------------|-----------|---------|-----------|--------------|-----------|--------------|
| AS85049 | HT part | AS85049 | HT part | AS85049 | HT part | AS85049 | HT part | AS85049 | HT part |
| /142-01AC | 1206-1-B7LW24 | /142-01BC | 1206-1-JLW8 | /142-01DC | * | /142-01GC | 1206-1-HLW21 | /142-01HC | 1206-1-GLW24 |
| /142-02AC | 1202-1-B7LW24 | /142-02BC | 1202-1-JLW8 | /142-02DC | * | /142-02GC | 1202-1-HLW21 | /142-02HC | 1202-1-GLW24 |
| /142-03AC | 1207-1-B7LW24 | /142-03BC | 1207-1-JLW8 | /142-03DC | * | /142-03GC | 1207-1-HLW21 | /142-03HC | 1207-1-GLW24 |
| /142-05AC | 206-1-B7LW24 | /142-05BC | 206-1-JLW8 | /142-05DC | * | /142-05GC | 206-1-HLW21 | /142-05HC | 206-1-GLW24 |
| /142-06AC | 203-1-B7LW24 | /142-06BC | 203-1-JLW8 | /142-06DC | * | /142-06GC | 203-1-HLW21 | /142-06HC | 203-1-GLW24 |
| /142-07AC | 204-1-B7LW24 | /142-07BC | 204-1-JLW8 | /142-07DC | * | /142-07GC | 204-1-HLW21 | /142-07HC | 204-1-GLW24 |
| /142-08AC | - | /142-08BC | - | /142-08DC | * | /142-08GC | - | /142-08HC | - |
| /142-09AC | 306-1-B7LW24 | /142-09BC | 306-1-JLW8 | /142-09DC | * | /142-09GC | 306-1-HLW21 | /142-09HC | 306-1-GLW24 |
| /142-10AC | 304-1-B7LW24 | /142-10BC | 304-1-JLW8 | /142-10DC | * | /142-10GC | 304-1-HLW21 | /142-10HC | 304-1-GLW24 |
| /142-11AC | 310-1-B7LW24 | /142-11BC | 310-1-JLW8 | /142-11DC | * | /142-11GC | 310-1-HLW21 | /142-11HC | 310-1-GLW24 |
| /142-12AC | 311-1-B7LW24 | /142-12BC | 311-1-JLW8 | /142-12DC | * | /142-12GC | 311-1-HLW21 | /142-12HC | 311-1-GLW24 |
| /142-13AC | - | /142-13BC | - | /142-13DC | * | /142-13GC | - | /142-13HC | - |

*Qualified with V9500 two part Epoxy adhesive please refer to Factory.

Transitions with No Adhesive

| Type A | | Type B | | Type D | | Type G | | Type H | |
|-----------|------------|------------|-----------|-----------|-----------|------------|-----------|------------|-----------|
| AS85049 | HT part | AS85049 | HT part | AS85049 | HT part | AS85049 | HT part | AS85049 | HT part |
| /142-01AU | 1206-1-B7L | /142-01B U | 1206-1-JL | /142-01DU | 1206-1-LL | /142-01G U | 1206-1-HL | /142-01H U | 1206-1-GL |
| /142-02AU | 1202-1-B7L | /142-02B U | 1202-1-JL | /142-02DU | 1202-1-LL | /142-02G U | 1202-1-HL | /142-02H U | 1202-1-GL |
| /142-03AU | 1207-1-B7L | /142-03B U | 1207-1-JL | /142-03DU | 1207-1-LL | /142-03G U | 1207-1-HL | /142-03H U | 1207-1-GL |
| /142-05AU | 206-1-B7L | 142-05B U | 206-1-JL | /142-05DU | 206-1-LL | /142-05G U | 206-1-HL | 142-05H U | 206-1-GL |
| /142-06AU | 203-1-B7L | 142-06B U | 203-1-JL | /142-06DU | 203-1-LL | /142-06G U | 203-1-HL | 142-06H U | 203-1-GL |
| /142-07AU | 204-1-B7L | 142-07B U | 204-1-JL | /142-07DU | 204-1-LL | /142-07G U | 204-1-HL | 142-07H U | 204-1-GL |
| /142-08AU | - | 142-08B U | - | /142-08DU | - | /142-08G U | - | 142-08H U | - |
| /142-09AU | 306-1-B7L | /142-09B U | 306-1-JL | /142-09DU | 306-1-LL | /142-09G U | 306-1-HL | /142-09H U | 306-1-GL |
| /142-10AU | 304-1-B7L | /142-10B U | 304-1-JL | /142-10DU | 304-1-LL | /142-10G U | 304-1-HL | /142-10H U | 304-1-GL |
| /142-11AU | 310-1-B7L | /142-11B U | 310-1-JL | /142-11DU | 310-1-LL | /142-11G U | 310-1-HL | /142-11H U | 310-1-GL |
| /142-12AU | 311-1-B7L | /142-12B U | 311-1-JL | /142-12DU | 311-1-LL | /142-12G U | 311-1-HL | /142-12H U | 311-1-GL |
| /142-13AU | - | /142-13BU | - | /142-13DU | - | /142-13GU | - | /142-13HU | - |


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If you have any questions about a particular application or would like more information, we are at your disposal – with all our experience and virtually unlimited technical capabilities.



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please visit our website www.HellermannTyton.com

Choose your country and you will be directed to the respective HellermannTyton company.

