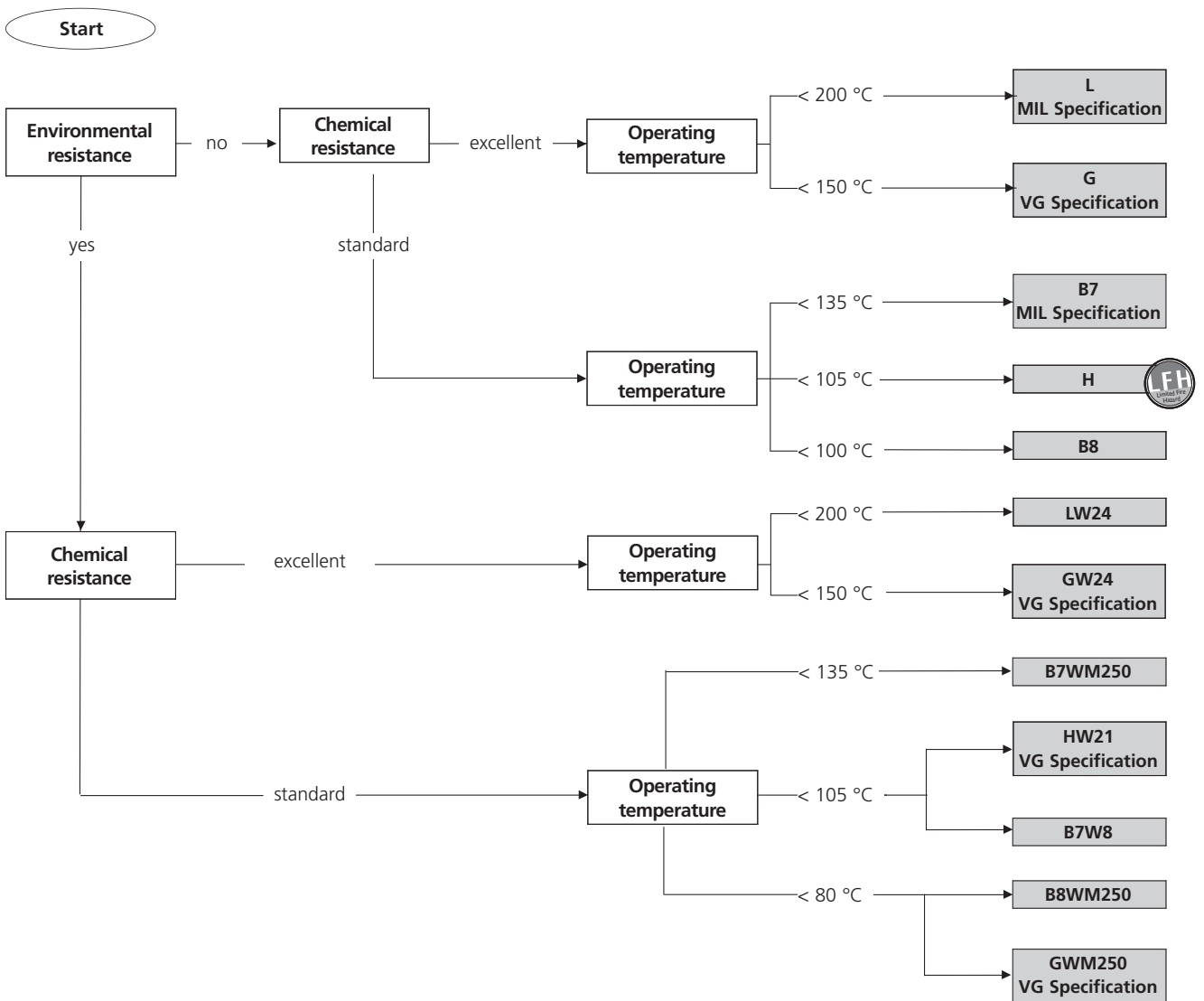




Use our flow chart to find the correct product or solution for your particular application.

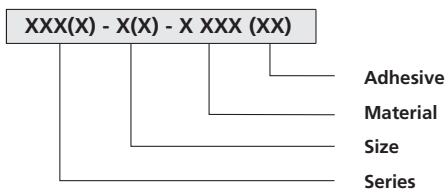
Begin your search in the flow chart at the START point. You will be guided through the page according to your requirements. Using the "yes/no" and "either/or" decisions, you will be able to select the correct product or solution.

Of course, you can always call us whenever you wish on our usual telephone numbers.

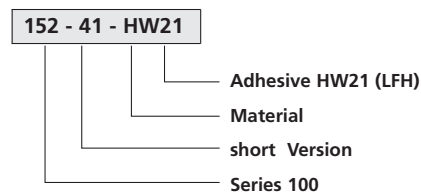


Order Example

Type:



Example:





Adhesives for moulded parts

In today's competitive environment, the assembly of wire harnesses must be both fast and reliable. With conventional methods however, speed and reliability can rarely be guaranteed. Therefore you should try HellermannTyton heat shrinkable moulded shapes.

Shapes made of H material are halogen-free and self-extinguishing. The shapes are coated with a hot melt adhesive (W21) that provides a reliable environmental seal. This adhesive has a low melting point and the post-cure time is minimal, taking only 45-60 seconds. HW21 material and adhesive combination is certified according to VG 95343 parts 29 and 30.

Heatshrinkable shapes made of elastomer material G can be pre-coated with W24 epoxy adhesive. After complete recovery of the shape no additional reheating of the adhesive joints is necessary.

Since GW24 parts are very fast shrinking, the processing time of HellermannTyton shapes can be reduced to just a few seconds! GW24 moulded parts have a shelf life of 5 years under normal conditions and do not have to be stored in closed packing. GW24 material and adhesive combination is certified according to VG 95343 parts 18 and 19.

| Material specifications | | | |
|-----------------------------------|--|--|---|
| Description | G* | B7 | H |
| Material | Fluid resistant elastomer | Semi-rigid flame retarded Polyolefin | Flexible Limited Fire Hazard Polyolefin |
| Application | standard material; excellent resistance against petrol | good mechanical and chemical resistance | low smoke emission, halogen free |
| Colour | Black (BK) | Black (BK) | Black (BK) |
| Minimum Shrink Temperature | +135 °C | +135 °C | +135 °C |
| Operating Temperature | -75 °C to +150 °C | -55 °C to +135 °C , Intermittent +225 °C | -55 °C to +105 °C |
| Dielectric Strength | 14 kV/mm to ASTM D2671 | 14 kV/mm to ASTM D2671 | 15 kV/mm |
| Flexibility | Semi rigid | Semi rigid | Flexible |
| Flammability | VG 95343 | ASTM D635 | VG 95343 |
| Specification | VG 95343 Part 6, 8, 9 DEF STAN 59-97 / 3 | MIL-I-81765/1 Type 1 DEF STAN 59-97 / 3 | VG 95343 Part 29, 30 NAVSEA 5617649, DEF STAN 59-97/3 |

* standard material

| Material specifications | | | |
|-----------------------------------|---|--|---|
| Description | L | -9 | B8 |
| Material | Flexible flame retardant Fluorelastomer | Polyolefin, cross-linked (POX)Modified elastomer blend | Polyolefin, Chemically cross-linked (POX)Semi-rigid flame retarded Polyolefin |
| Application | high temperature resistance and excellent chemical properties | standard material for low profile boots | General Purpose for 0.6/1kV systems |
| Colour | Black (BK) | Black (BK) | Black (BK) |
| Minimum Shrink Temperature | +175 °C | +135 °C | +135 °C |
| Operating Temperature | -55 °C to +200 °C | -55 °C to +120 °C | -55 °C to +100 °C |
| Dielectric Strength | 9 kV/mm to ASTM D2671 | 20 kV/mm to ASTM D2671 | 15 kV/mm |
| Flexibility | flexible | flexible | Semi rigid |
| Flammability | ASTM D635 | ASTM D635 | ASTM D635 |
| Specification | DEF STAN 59-97/3; MIL-I-81765/4 | SCX15112 | Det Norske Veritas |

| Adhesive specifications | | | | |
|----------------------------------|---|---|---|-----------------------------------|
| Description | W24 | W21 | W8 | WM250 |
| Material | High performance, pre-coat, 1 part epoxy | Modified polyamide hot melt adhesive | EVA, High performance hot melt adhesive | General purpose Hot melt adhesive |
| Application | Specially modified to meet military cable and harness needs | High temperature hot melt adhesive | High temperature hot melt that compliments H material | Good general purpose adhesive |
| Softening Point | N/A | 120 °C to ASTM E28 | 110 °C to ASTM E28 | 95 °C to ASTM E28 |
| Operating Temperature | -75 °C to +200 °C | -55 °C to +120 °C | -55 °C to +105 °C | -50 °C to +80 °C |
| Peel Strength | VG 95343 Part 14 | VG 95343 Part 14 | VG 95343 Part 14 | VG 95343 Part 14 |
| Water Absorption at 25 °C | ASTM D570 | ASTM D570 | ASTM D570 | ASTM D570 |
| Solvent Resistance | Very good to excellent under most conditions | Very good under most especially saline conditions | Fair under splash conditions | Fair under splash conditions |
| Specification | VG 95343 Part 18, 19; DEF STAN 59-97/3 | VG 95343 Part 29, 30 | DEF STAN 59-97/3 | DEF STAN 59-97/3 |



Helashrink 100 Series

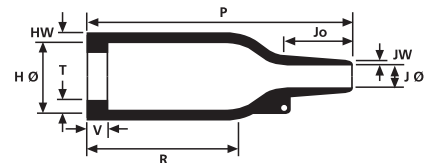
Straight plug-and-socket connector terminal casing. This style is used in conjunction with circular grooved adaptor, providing protection against environmental stresses. The inside lip has been designed to provide extra reinforced stress relief. Special fitting 199-4-G for audio plugs has external ribs for an improved grip.



Recovered 199-4-G, VG style shape for small audio connectors with external ribs for improved grip.



150 series boot recovered on to connector.



Technical Table

| Article-No. | Type | Designation as per VG-Norm | H min a | H max b | J min a | J max b | P ± 10% | R ± 10% | JO ± 10% | HW ± 20% | JW ± 20% | V ± 10% | T ± 20% |
|-------------|----------|----------------------------|------------|------------|------------|------------|------------|------------|-------------|-------------|-------------|------------|------------|
| 401-52780 | 152-41-G | VG 95343 T06 A 001 A | 24.0 | 10.5 | 24.0 | 6.0 | 26.0 | 9.0 | 10.0 | 1.6 | 0.5 | 3.0 | 1.0 |
| 401-52880 | 152-42-G | VG 95343 T06 B 001 A | 24.0 | 10.5 | 24.0 | 6.0 | 38.0 | 21.0 | 10.0 | 1.6 | 0.5 | 3.0 | 1.0 |
| 401-53780 | 153-41-G | VG 95343 T06 A 002 A | 25.0 | 14.0 | 9.0 | 3.5 | 40.0 | 13.0 | 16.0 | 1.8 | 0.5 | 3.0 | 1.0 |
| 401-53880 | 153-42-G | VG 95343 T06 B 002 A | 25.0 | 14.0 | 9.0 | 3.5 | 55.0 | 28.0 | 16.0 | 1.8 | 0.5 | 3.0 | 1.0 |
| 401-54780 | 154-41-G | VG 95343 T06 A 003 A | 30.0 | 14.0 | 30.0 | 6.0 | 43.0 | 20.0 | 13.0 | 1.8 | 1.0 | 3.0 | 1.0 |
| 401-54880 | 154-42-G | VG 95343 T06 B 003 A | 30.0 | 14.0 | 30.0 | 6.0 | 55.0 | 32.0 | 13.0 | 1.8 | 1.0 | 3.0 | 1.0 |
| 401-55780 | 155-41-G | VG 95343 T06 A 004 A | 31.0 | 18.0 | 31.0 | 7.0 | 47.0 | 15.0 | 18.0 | 1.8 | 1.0 | 3.0 | 1.0 |
| 401-55880 | 155-42-G | VG 95343 T06 B 004 A | 31.0 | 18.0 | 31.0 | 7.0 | 67.0 | 35.0 | 18.0 | 1.8 | 1.0 | 3.0 | 1.0 |
| 401-56780 | 156-41-G | VG 95343 T06 A 005 A | 36.0 | 22.5 | 36.0 | 8.5 | 60.0 | 22.0 | 20.0 | 2.0 | 1.0 | 3.0 | 1.0 |
| 401-56880 | 156-42-G | VG 95343 T06 B 005 A | 36.0 | 22.5 | 36.0 | 8.5 | 80.0 | 42.0 | 20.0 | 2.0 | 1.0 | 3.0 | 1.0 |
| 401-57780 | 157-41-G | VG 95343 T06 A 006 A | 43.0 | 28.0 | 43.0 | 10.0 | 60.0 | 21.0 | 20.0 | 2.2 | 1.0 | 3.0 | 1.7 |
| 401-57880 | 157-42-G | VG 95343 T06 B 006 A | 43.0 | 28.0 | 43.0 | 10.0 | 79.0 | 41.0 | 20.0 | 2.2 | 1.0 | 3.0 | 1.7 |
| 401-57980 | 157-43-G | VG 95343 T06 C 001 A | 43.0 | 28.0 | 43.0 | 10.0 | 99.0 | 61.0 | 20.0 | 2.2 | 1.0 | 3.0 | 1.7 |
| 401-58780 | 158-41-G | VG 95343 T06 A 007 A | 60.0 | 35.0 | 60.0 | 16.0 | 90.0 | 32.0 | 38.0 | 3.2 | 1.5 | 3.0 | 1.7 |
| 401-58880 | 158-42-G | VG 95343 T06 B 007 A | 60.0 | 35.0 | 60.0 | 16.0 | 110.0 | 52.0 | 38.0 | 3.2 | 1.5 | 3.0 | 1.7 |
| 401-58980 | 158-43-G | VG 95343 T06 C 002 A | 60.0 | 35.0 | 60.0 | 16.0 | 130.0 | 72.0 | 38.0 | 3.2 | 1.5 | 3.0 | 1.7 |
| 401-59780 | 159-41-G | VG 95343 T06 A 008 A | 66.0 | 45.0 | 66.0 | 17.0 | 130.0 | 50.0 | 50.0 | 3.8 | 2.0 | 3.0 | 2.0 |
| 401-59880 | 159-42-G | VG 95343 T06 B 008 A | 66.0 | 45.0 | 66.0 | 17.0 | 150.0 | 70.0 | 50.0 | 3.8 | 2.0 | 3.0 | 2.0 |
| 401-59980 | 159-43-G | VG 95343 T06 C 003 A | 66.0 | 45.0 | 66.0 | 17.0 | 171.0 | 90.0 | 50.0 | 3.8 | 2.0 | 3.0 | 2.0 |
| 401-60780 | 160-41-G | VG 95343 T06 A 009 A | 82.0 | 58.0 | 82.0 | 27.0 | 137.0 | 37.0 | 62.0 | 3.8 | 3.8 | 3.0 | 2.0 |
| 401-60880 | 160-42-G | VG 95343 T06 B 009 A | 82.0 | 58.0 | 82.0 | 27.0 | 158.0 | 58.0 | 62.0 | 3.8 | 3.8 | 3.0 | 2.0 |
| 401-60980 | 160-43-G | VG 95343 T06 C 004 A | 82.0 | 58.0 | 82.0 | 27.0 | 213.0 | 113.0 | 62.0 | 3.8 | 3.8 | 3.0 | 2.0 |
| 401-99480 | 199-4-G | VG 95343 T06 A 010 A | 17.5 | 14.0 | 7.0 | 4.3 | 70.0 | 35.0 | 20.0 | 1.8 | 0.5 | 1.5 | 1.0 |
| 401-13180 | 113-1-G | - | 10.7 | 7.9 | 4.6 | 2.0 | 25.4 | 14.5 | 4.6 | 1.3 | 1.0 | - | 1.0 |
| 401-13480 | 113-4-G | - | 10.7 | 7.9 | 4.6 | 2.0 | 25.4 | 14.5 | 4.6 | 1.3 | 1.0 | 3.0 | 1.0 |

All dimensions in mm. Subject to technical changes.

These moulded shapes are also available in the materials B7 and H, on request. In addition, the moulded shapes can also be supplied with an inner coating or epoxy adhesives.

a as supplied
b recovered

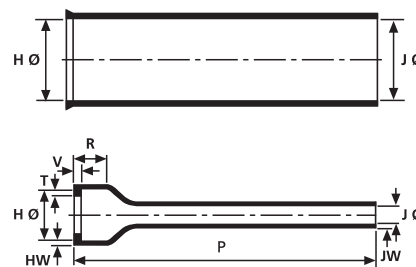


Helashrink 100 Series

Straight plug-and-socket connector terminal casing has protection against environmental stresses for circular plug connectors, according to VG. The inside lip is used for a reinforced stress relief.



135-1-G as supplied / fully recovered.



Technical Table

| Article-No. | Type | Designation as per VG-Norm | H min a | H max b | J min a | J max b | P ±10% = overall length | R ± 10% | HW ± 20% | JW ± 20% | V ± 10% | T ± 10% |
|-------------|---------|----------------------------|------------|------------|------------|------------|----------------------------|------------|-------------|-------------|------------|------------|
| 401-29180 | 129-1-G | VG95343T06D001A | 22.0 | 12.0 | 22.0 | 6.5 | 76.0 | 12.0 | 1.5 | 1.1 | 3.0 | 1.0 |
| 401-30180 | 130-1-G | VG95343T06D002A | 25.5 | 15.0 | 25.5 | 7.5 | 83.0 | 12.0 | 1.5 | 1.1 | 3.0 | 1.0 |
| 401-31180 | 131-1-G | VG95343T06D003A | 29.0 | 19.0 | 29.0 | 8.5 | 89.0 | 12.0 | 1.8 | 1.1 | 3.0 | 1.0 |
| 401-32180 | 132-1-G | VG95343T06D004A | 34.0 | 23.0 | 34.0 | 10.0 | 102.0 | 12.0 | 1.8 | 1.1 | 3.0 | 1.0 |
| 401-33180 | 133-1-G | VG95343T06D005A | 37.0 | 30.0 | 37.0 | 11.0 | 108.0 | 14.0 | 2.0 | 1.1 | 3.0 | 1.7 |
| 401-34180 | 134-1-G | VG95343T06D006A | 43.5 | 34.0 | 43.5 | 12.0 | 114.0 | 15.0 | 2.0 | 1.1 | 3.0 | 1.7 |
| 401-35180 | 135-1-G | VG95343T06D007A | 50.0 | 41.0 | 50.0 | 14.5 | 118.0 | 15.0 | 2.3 | 1.4 | 3.0 | 1.7 |
| 401-36180 | 136-1-G | VG95343T06D008A | 62.5 | 47.0 | 62.5 | 18.0 | 121.0 | 16.0 | 2.5 | 1.4 | 3.0 | 2.0 |
| 401-38180 | 138-1-G | VG95343T06D009A | 69.0 | 60.0 | 69.0 | 20.0 | 127.0 | 16.0 | 2.5 | 1.4 | 3.0 | 2.0 |
| 401-87180 | 187-1-G | VG95343T06D010A | 81.5 | 67.0 | 81.5 | 23.0 | 133.0 | 16.0 | 2.5 | 1.4 | 3.0 | 2.0 |

All dimensions in mm. Subject to technical changes.

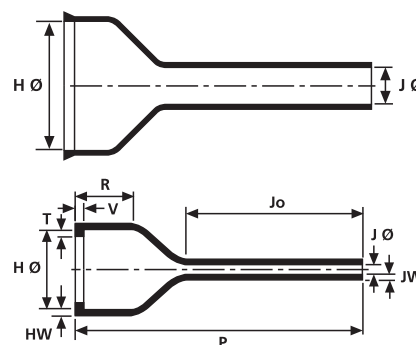
These moulded shapes are also available in various materials from our range, eg, B7, H, Land J on request.

In addition, the moulded shapes can also be supplied with an inner coating from our range of hot-melt and epoxy adhesives, eg, W24, W1, W8 and WM250.

a as supplied
b recovered



177-1-G as supplied / fully recovered.



Technical Table

| Article-No. | Type | Designation as per VG-Norm | H min a | H max b | J min a | J max b | P ±10% = overall length | R ± 10% | JO ± 10% | HW ± 20% | JW ± 20% | V ± 10% | T ± 10% |
|-------------|---------|----------------------------|------------|------------|------------|------------|----------------------------|------------|-------------|-------------|-------------|------------|------------|
| 401-76180 | 176-1-G | VG95343T06D011A | 19.3 | 13.0 | 6.3 | 2.1 | 60.0 | 11.7 | 37.6 | 1.5 | 1.1 | 3.1 | 1.0 |
| 401-77180 | 177-1-G | VG95343T06D012A | 26.1 | 19.1 | 7.6 | 2.6 | 74.0 | 12.2 | 45.0 | 1.8 | 1.1 | 3.1 | 1.0 |
| 401-78180 | 178-1-G | VG95343T06D013A | 34.2 | 26.0 | 9.6 | 3.1 | 84.0 | 12.2 | 51.1 | 1.8 | 1.1 | 3.1 | 1.0 |
| 401-79180 | 179-1-G | VG95343T06D014A | 43.6 | 34.1 | 11.4 | 3.6 | 100.0 | 12.2 | 60.0 | 1.8 | 1.1 | 3.1 | 1.7 |

All dimensions in mm. Subject to technical changes.

These moulded shapes are also available in the materials B7 and H, on request.

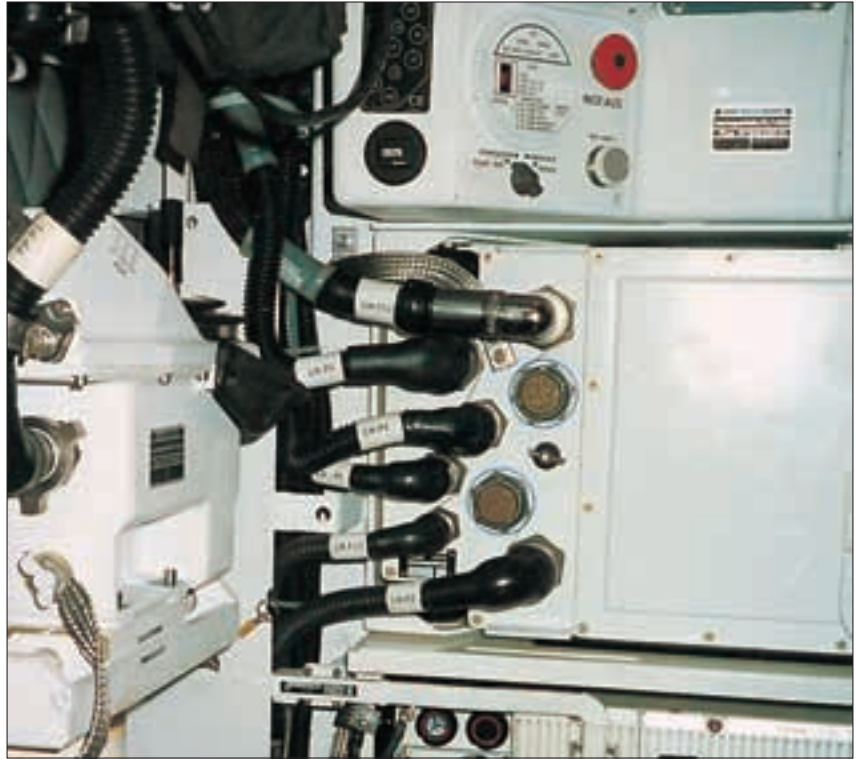
In addition, the moulded shapes can also be supplied with an inner coating from our range of hot-melt or epoxy adhesives.

a as supplied
b recovered

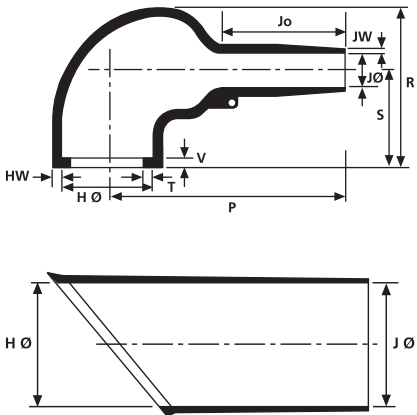


Helashrink 1100 Series

Right-angle, VG style shape with rib. This style provides connector cable strain relief and can be installed directly onto connector rear thread.



Space saving right-angle shapes used here in a military application.



1152-4-G recovered on to a connector.

Technical Table

| Article-No. | Type | Designation as per VG-Norm | H min a | H max b | J min a | J max b | P ± 10% | R ± 10% | S ± 10% | JO ± 10% | HW ± 20% | JW ± 20% | V ± 10% | T ± 20% |
|-------------|----------|----------------------------|------------|------------|------------|------------|------------|------------|------------|-------------|-------------|-------------|------------|------------|
| 411-08180 | 1108-1-G | - | 16.5 | 7.9 | 16.5 | 3.8 | 17.3 | 20.1 | 15.2 | 4.1 | 1.0 | 1.0 | - | 1.0 |
| 411-08480 | 1108-4-G | - | 16.5 | 7.9 | 16.5 | 3.8 | 17.3 | 20.1 | 15.2 | 4.1 | 1.0 | 1.0 | 3.0 | 1.0 |
| 411-52480 | 1152-4-G | VG95343T06E001A | 24.0 | 10.5 | 24.0 | 6.0 | 26.0 | 25.0 | 19.0 | 10.0 | 1.3 | 0.5 | 3.0 | 1.0 |
| 411-54480 | 1154-4-G | VG95343T06E002A | 30.0 | 15.5 | 30.0 | 6.0 | 32.0 | 27.0 | 20.0 | 12.0 | 1.5 | 0.8 | 3.0 | 1.0 |
| 411-55480 | 1155-4-G | VG95343T06E003A | 31.0 | 18.0 | 31.0 | 7.0 | 40.0 | 31.0 | 21.0 | 15.0 | 1.8 | 1.0 | 3.0 | 1.0 |
| 411-56480 | 1156-4-G | VG95343T06E004A | 36.0 | 22.5 | 36.0 | 8.5 | 46.0 | 38.0 | 26.0 | 15.0 | 1.8 | 1.0 | 3.0 | 1.0 |
| 411-57480 | 1157-4-G | VG95343T06E005A | 43.0 | 28.5 | 43.0 | 10.0 | 55.0 | 45.0 | 30.0 | 16.0 | 2.0 | 1.0 | 3.0 | 1.7 |
| 411-58480 | 1158-4-G | VG95343T06E006A | 60.0 | 35.0 | 60.0 | 16.0 | 80.0 | 54.0 | 35.0 | 30.0 | 3.3 | 1.5 | 3.0 | 1.7 |
| 411-59480 | 1159-4-G | VG95343T06E007A | 66.0 | 45.0 | 66.0 | 17.0 | 108.0 | 68.0 | 42.0 | 51.0 | 3.8 | 2.0 | 3.0 | 2.0 |
| 411-60480 | 1160-4-G | VG95343T06E008A | 82.0 | 61.0 | 82.0 | 25.0 | 118.0 | 84.0 | 52.0 | 39.0 | 4.0 | 4.0 | 3.0 | 2.0 |

All dimensions in mm. Subject to technical changes.

These moulded shapes are also available in the materials B7 and H, on request.

In addition, the moulded shapes can also be supplied with an inner coating from our range of hot-melt or epoxy adhesives.

a as supplied
b recovered



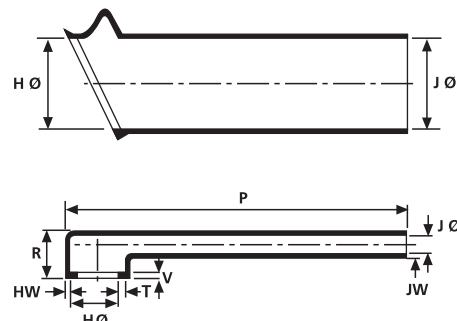
Helashrink 1100 Series

Right-angle, low profile shape with rib, VG/Mil style, often used on airborne harnesses to achieve low profile, compact strain relief and mechanical protection.

The photo below shows a shape style that provides connector strain relief and is used in applications of partially loaded connectors with small cable diameters.



1123-1-G Supplied and recovered.



Technical Table

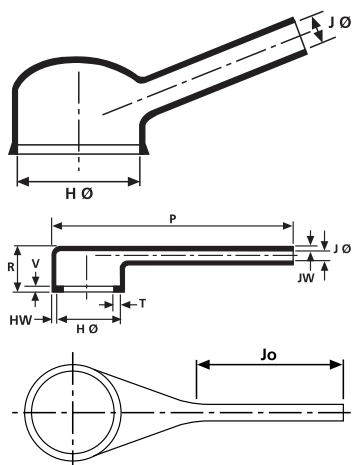
| Article-No. | Type | Designation as per VG-Norm | H min a | H max b | J min a | J max b | P ±10% = overall length | R ± 10% | HW ± 20% | JW ± 20% | V ± 10% | T ± 10% |
|-------------|----------|----------------------------|------------|------------|------------|------------|----------------------------|------------|-------------|-------------|------------|------------|
| 411-21180 | 1121-1-G | VG95343T06F001A | 22.0 | 12.0 | 22.0 | 6.5 | 70.0 | 19.0 | 1.5 | 1.1 | 3.0 | 1.0 |
| 411-22180 | 1122-1-G | VG95343T06F002A | 25.5 | 15.0 | 25.0 | 7.5 | 79.0 | 20.0 | 1.5 | 1.1 | 3.0 | 1.0 |
| 411-23180 | 1123-1-G | VG95343T06F003A | 29.0 | 19.0 | 29.0 | 8.5 | 89.0 | 21.0 | 1.8 | 1.1 | 3.0 | 1.0 |
| 411-24180 | 1124-1-G | VG95343T06F004A | 34.0 | 23.0 | 34.0 | 10.0 | 102.0 | 22.0 | 1.8 | 1.1 | 3.0 | 1.0 |
| 411-25180 | 1125-1-G | VG95343T06F005A | 37.0 | 30.0 | 37.0 | 11.0 | 108.0 | 24.0 | 2.0 | 1.1 | 3.0 | 1.7 |
| 411-26180 | 1126-1-G | VG95343T06F006A | 43.5 | 34.0 | 43.5 | 12.0 | 121.0 | 27.0 | 2.0 | 1.1 | 3.0 | 1.7 |
| 411-27180 | 1127-1-G | VG95343T06F007A | 50.0 | 41.5 | 50.0 | 14.5 | 132.0 | 30.0 | 2.3 | 1.4 | 3.0 | 1.7 |
| 411-28180 | 1128-1-G | VG95343T06F008A | 62.5 | 47.0 | 62.5 | 18.0 | 133.0 | 33.0 | 2.5 | 1.4 | 3.0 | 2.0 |
| 411-29180 | 1129-1-G | VG95343T06F009A | 69.0 | 60.0 | 69.0 | 20.0 | 137.0 | 35.0 | 2.5 | 1.4 | 3.0 | 2.0 |
| 411-41180 | 1141-1-G | VG95343T06F010A | 82.0 | 67.0 | 82.0 | 23.0 | 140.0 | 45.0 | 2.5 | 1.4 | 3.0 | 2.0 |

All dimensions in mm. Subject to technical changes.

These moulded shapes are also available in the materials B7 and H, on request.

In addition, the moulded shapes can also be supplied with an inner coating from our range of hot-melt or epoxy adhesives.

a as supplied
b recovered



1135-1-G Supplied and recovered.

Technical Table

| Article-No. | Type | Designation as per VG-Norm | H min a | H max b | J min a | J max b | P ±10% = overall length | R ± 10% | JO ± 10% | HW ± 20% | JW ± 20% | V ± 10% | T ± 10% |
|-------------|----------|----------------------------|------------|------------|------------|------------|----------------------------|------------|-------------|-------------|-------------|------------|------------|
| 411-33180 | 1133-1-G | VG95343T06F011A | 19.0 | 13.0 | 6.0 | 2.0 | 44.0 | 16.3 | 21.8 | 1.5 | 1.1 | 3.0 | 1.0 |
| 411-34180 | 1134-1-G | VG95343T18H001A | 26.0 | 19.0 | 7.5 | 2.5 | 67.0 | 18.0 | 29.2 | 1.8 | 1.1 | 3.0 | 1.0 |
| 411-35180 | 1135-1-G | VG95343T06F013A | 34.0 | 26.0 | 9.5 | 3.0 | 81.0 | 18.8 | 35.3 | 1.8 | 1.1 | 3.0 | 1.0 |
| 411-36180 | 1136-1-G | VG95343T06F014A | 43.5 | 34.0 | 11.5 | 3.5 | 116.0 | 21.3 | 47.0 | 1.8 | 1.1 | 3.0 | 1.7 |

All dimensions in mm. Subject to technical changes.

These moulded shapes are also available in the materials B7 and H, on request.

In addition, the moulded shapes can also be supplied with an inner coating or epoxy adhesives.

a as supplied
b recovered

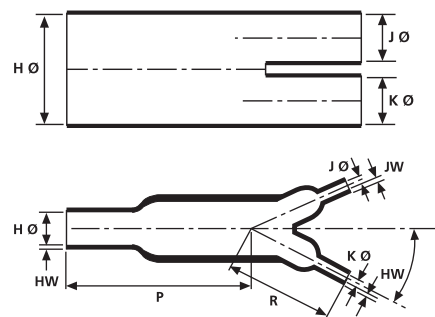


Helashrink 200 Series

Branching parts are used for easy, time-saving insulation of the branch point of a cable where it is split into single wires. Branching parts with hot-melt adhesive also serve to relieve the mechanical tension in cable harnesses.



Two-way outlet shape 203-1-G as supplied and recovered.



Technical Table

| Article-No. | Type | Designation as per VG-Norm | H min a | H max b | J/K min a | J/K max b | P ± 10% | R ± 10% | HW ± 20% | JW/KW ± 20% |
|-------------|---------|----------------------------|---------|---------|-----------|-----------|---------|---------|----------|-------------|
| 402-06180 | 206-1-G | VG95343T08C001A | 13.0 | 6.0 | 7.0 | 3.0 | 22.0 | 19.0 | 1.5 | 1.0 |
| 402-12180 | 212-1-G | VG95343T08C005A | 14.5 | 8.0 | 8.5 | 5.5 | 82.6 | 63.5 | 2.3 | 2.0 |
| 402-13180 | 213-1-G | - | 17.3 | 7.9 | 11.1 | 7.9 | 83.1 | 64.0 | 2.3 | 2.3 |
| 402-03180 | 203-1-G | VG95343T08C002A | 27.0 | 12.0 | 13.0 | 6.0 | 39.0 | 43.0 | 2.5 | 1.5 |
| 402-04180 | 204-1-G | VG95343T08C003A | 39.0 | 18.0 | 27.0 | 12.0 | 66.0 | 81.0 | 3.1 | 2.5 |
| 402-01180 | 201-1-G | - | 19.0 | 9.4 | 6.4 | 14.0 | 50.8 | 30.5 | 1.5 | 1.5 |
| 402-01220 | 201-2-G | - | 31.8 | 9.4 | 15.7 | 6.4 | 50.8 | 30.5 | 1.5 | 1.5 |

All dimensions in mm. Subject to technical changes.

These moulded shapes are also available in the materials B7 and H, on request.

In addition, the moulded shapes can also be supplied with an inner coating from our range of hot-melt or epoxy adhesives.

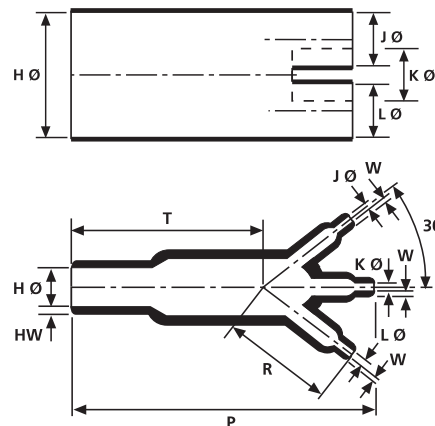
a as supplied
b recovered

Helashrink 300 Series

Branching parts are used for easy, time-saving insulation of the branch point of a cable where it is split into single wires. Branching parts with hot-melt adhesive also serve to relieve the mechanical tension in cable harnesses.



304-1-G as supplied / fully recovered.



Technical Table

| Article-No. | Type | Designation as per VG-Norm | H min a | H max b | J/K/L min a | J/K/L max b | P ± 10% | R ± 10% | HW ± 20% | W ± 20% | T ± 10% |
|-------------|---------|----------------------------|---------|---------|-------------|-------------|---------|---------|----------|---------|---------|
| 403-06180 | 306-1-G | VG95343T08D001A | 13.0 | 6.5 | 6.5 | 3.5 | 46.0 | 25.4 | 1.3 | 1.0 | 20.3 |
| 403-04180 | 304-1-G | VG95343T08D002A | 27.0 | 13.5 | 13.0 | 7.0 | 93.0 | 50.3 | 2.5 | 1.5 | 42.9 |
| 403-10180 | 310-1-G | VG95343T08D003A | 38.5 | 19.0 | 19.0 | 10.0 | 135.0 | 73.7 | 3.1 | 1.8 | 61.0 |
| 403-11180 | 311-1-G | VG95343T08D004A | 55.5 | 25.5 | 27.0 | 12.5 | 192.0 | 103.1 | 4.6 | 3.1 | 88.9 |

All dimensions in mm. Subject to technical changes.

These moulded shapes are also available in the materials B7 and H, on request.

In addition, the moulded shapes can also be supplied with an inner coating from our range of hot-melt or epoxy adhesives.

a as supplied
b recovered

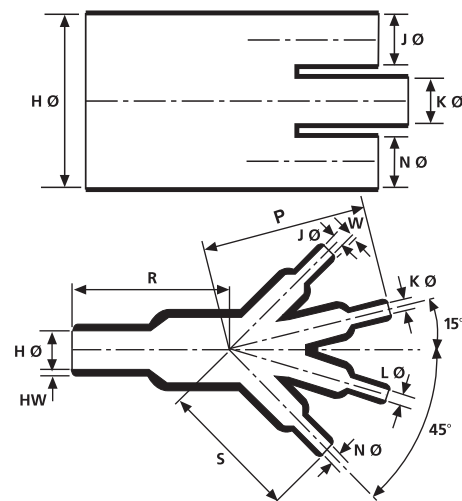


Helashrink 400 Series

Branching parts are used for easy, time-saving insulation of the branch point of a cable where it is split into single wires. Adhesive lined branching parts also serve to relieve the mechanical tension in cable harnesses.



403-1-G as supplied / recovered.



Technical Table

| Article-No. | Type | Designation as per VG-Norm | H min a | H max b | J/K/L/N min a | J/K/L/N max b | P ± 10% | R ± 10% | S ± 10% | HW ± 20% | W ± 10% |
|-------------|---------|----------------------------|---------|---------|---------------|---------------|---------|---------|---------|----------|---------|
| 404-11180 | 411-1-G | VG95343T08E002A | 19.0 | 10.0 | 9.5 | 5.5 | 36.1 | 35.6 | 32.0 | 1.8 | 1.0 |
| 404-03180 | 403-1-G | VG95343T08E004A | 27.0 | 13.0 | 13.0 | 7.0 | 51.8 | 49.0 | 45.0 | 2.5 | 1.0 |
| 404-13180 | 413-1-G | VG95343T08E005A | 38.6 | 19.0 | 19.0 | 10.0 | 74.9 | 75.0 | 65.3 | 1.8 | 1.0 |

All dimensions in mm. Subject to technical changes.

These moulded shapes are also available in the materials B7 and H, on request. In addition, the moulded shapes can also be supplied with an inner coating from our range of hot-melt or epoxy adhesives.

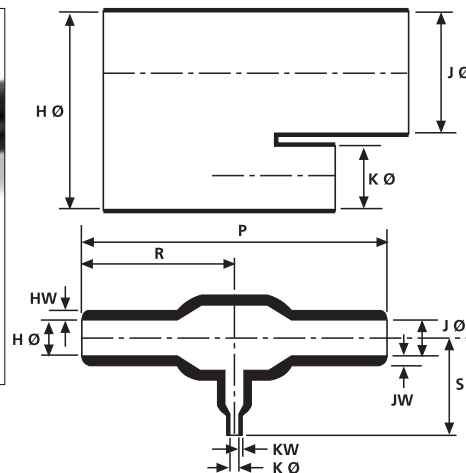
a as supplied
b recovered

Helashrink 1200 Series

90° (right angled) transition parts (T-joints) are used for a simple time-saving insulation of the branch point of a cable, where it is split into single wires. Adhesive lined T-joints also serve to relieve the mechanical tension and to protect against corrosion in cable harnesses.



Moulded shape 1202-1-G.



Technical Table

| Article-No. | Type | Designation as per VG-Norm | H/J min a | H/J max b | K min a | K max b | P ± 10% = overall length | R ± 10% | S ± 10% | KW ± 20% | HW/JW ± 10% |
|-------------|----------|----------------------------|-----------|-----------|---------|---------|--------------------------|---------|---------|----------|-------------|
| 412-06180 | 1206-1-G | VG95343T08A009A | 6.6 | 3.0 | 6.6 | 3.0 | 29.7 | 14.7 | 14.7 | 1.0 | 1.0 |
| 412-03180 | 1203-1-G | VG95343T08A001A | 13.2 | 6.0 | 6.5 | 3.0 | 52.0 | 26.0 | 19.3 | 1.0 | 1.5 |
| 412-02180 | 1202-1-G | VG95343T08A010A | 13.2 | 6.1 | 13.2 | 6.1 | 58.7 | 29.2 | 29.2 | 1.5 | 1.5 |
| 412-05180 | 1205-1-G | - | 17.7 | 8.9 | 7.6 | 3.8 | 50.8 | 25.4 | 25.4 | 1.0 | 1.5 |
| 412-01180 | 1201-1-G | VG95343T08A007A | 17.7 | 8.9 | 10.1 | 5.1 | 47.5 | 23.6 | 23.6 | 1.0 | 1.5 |
| 412-09180 | 1209-1-G | VG95343T08A002A | 27.0 | 12.4 | 13.2 | 6.0 | 108.0 | 54.0 | 38.6 | 1.5 | 2.5 |
| 412-07180 | 1207-1-G | VG95343T08A011A | 26.9 | 12.4 | 26.9 | 12.4 | 120.1 | 55.9 | 59.9 | 2.5 | 2.5 |
| 412-04180 | 1204-1-G | VG95343T08A016A | 13.0/6.5 | 7.5/4.0 | 6.5 | 4.0 | 56.0 | 33.0 | 19.3 | 1.0 | 1.5/1.0 |
| 412-16180 | 1216-1-G | VG95343T08A017A | 33.0/16.5 | 13.0/6.5 | 16.5 | 6.5 | 97.0 | 54.0 | 38.5 | 1.5 | 2.5/1.5 |

All dimensions in mm. Subject to technical changes.

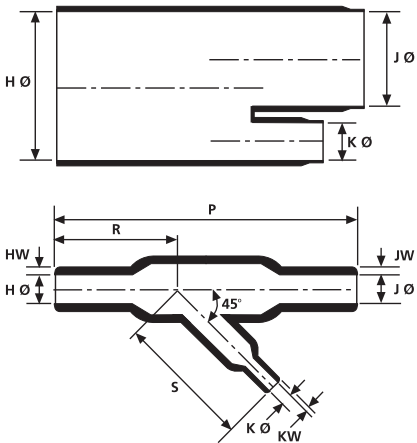
These moulded shapes are also available in the materials B7 and H, on request. In addition, the moulded shapes can also be supplied with an inner coating from our range of hot-melt or epoxy adhesives.

a as supplied
b recovered



Helashrink 1300 Series

45° transition parts (Y-joints) are used for a simple time-saving insulation of the branch point of a cable where it is divided into single wires. Y-joints with hot-melt adhesive also serve to relieve the mechanical tension in cable harnesses.



Angled T shape 1303-1-G as supplied/ recovered.

Technical Table

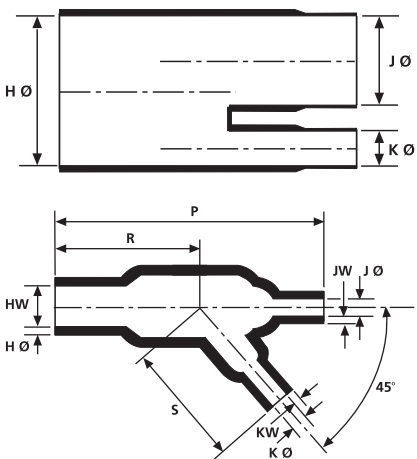
| Article-No. | Type | Designation as per VG-Norm | H min a | H max b | J min a | J max b | K min a | K max b | P ±10%= overall length | R ± 10% | S ± 10% | KW ± 20% | HW ± 20% | JW ± 20% |
|-------------|-----------|----------------------------|---------|---------|---------|---------|---------|---------|------------------------|---------|---------|----------|----------|----------|
| 413-01180 | 1301-1-G | VG 95343 T08 B 001 A | 13.0 | 7.0 | 13.0 | 7.0 | 7.0 | 3.5 | 50.0 | 23.0 | 23.0 | 1.0 | 1.5 | 1.5 |
| 413-02180 | 1302-1-G | VG 95343 T08 B 004 A | 27.0 | 13.0 | 27.0 | 13.0 | 7.0 | 3.5 | 93.0 | 41.0 | 36.0 | 1.0 | 2.5 | 2.5 |
| 413-03180 | 1303-1-G | VG 95343 T08 B 002 A | 27.0 | 14.0 | 27.0 | 14.0 | 13.0 | 7.5 | 145.0 | 70.0 | 54.0 | 1.5 | 2.5 | 2.5 |
| 413-13180 | 1313-1-G | VG 95343 T06 B 009 A | 28.5 | 13.5 | 27.0 | 13.5 | 27.0 | 13.5 | 150.0 | 70.0 | 80.0 | 2.5 | 2.5 | 2.5 |
| 413-11180 | 1311-1-G* | VG 95343 T08 B 003 A | 30.4 | 15.0 | 30.4 | 15.0 | 20.3 | 10.0 | 83.0 | 32.0 | 51.0 | 1.8 | 2.5 | 2.5 |

All dimensions in mm. Subject to technical changes. * 30° transition part

These moulded shapes are also available in the materials B7 and H, on request.

In addition, the moulded shapes can also be supplied with an inner coating from our range of hot-melt or epoxy adhesives.

a as supplied
b recovered



Angled T shape 1306-1-G as supplied/ recovered.

Technical Table

| Article-No. | Type | Designation as per VG-Norm | H min a | H max b | J min a | J max b | K min a | K max b | P ±10%= overall length | R ± 10% | S ± 10% | KW ± 20% | HW ± 20% | JW ± 20% |
|-------------|----------|----------------------------|---------|---------|---------|---------|---------|---------|------------------------|---------|---------|----------|----------|----------|
| 413-06180 | 1306-1-G | VG95343T06B010A | 13.0 | 6.0 | 6.5 | 3.0 | 6.5 | 3.0 | 45.0 | 23.0 | 21.5 | 1.5 | 1.0 | 1.0 |

All dimensions in mm. Subject to technical changes.

These moulded shapes are also available in the materials B7 and H, on request.

In addition, the moulded shapes can also be supplied with an inner coating from our range of hot-melt or epoxy adhesives.

a as supplied
b recovered



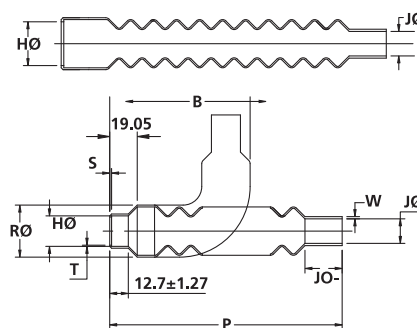
Helashrink 313C Series Convolute boot, low profile with adapter lip

This style is used with a circular grooved adapter to provide strain relief and if adhesive is used, excellent environmental sealing can be achieved.

The convolute design provides the flexibility to accommodate different cable outlet angles.



313C722-774 series as supplied / recovered.



Technical Table

| Article-No. | Type | H DIA min a | H DIA max b | J DIA min a | J DIA max b | P ± 10% b | R max b | JO ± 1.8 | W min b | B nom b | T ± 0.5 | S ± 0.5 |
|-------------|-----------|-------------|-------------|-------------|-------------|-----------|---------|----------|---------|---------|---------|---------|
| 422-00001 | 313C722-9 | 14.2 | 6.9 | 11.1 | 4.8 | 120.6 | 21.1 | 17.3 | 1.5 | 62.4 | 1.3 | 1.5 |
| 422-00101 | 313C732-9 | 22.4 | 11.7 | 17.7 | 8.1 | 133.3 | 26.5 | 19.8 | 1.5 | 67.8 | 1.3 | 1.5 |
| 422-00201 | 313C743-9 | 34.0 | 17.5 | 26.9 | 12.7 | 146.0 | 32.7 | 22.3 | 1.5 | 73.4 | 1.3 | 1.8 |
| 422-00302 | 313C753-9 | 44.2 | 22.3 | 36.5 | 17.5 | 158.7 | 37.8 | 25.4 | 1.5 | 78.2 | 1.3 | 1.8 |
| 422-00400 | 313C764-9 | 53.8 | 27.9 | 45.7 | 22.3 | 171.4 | 42.9 | 28.4 | 1.5 | 82.8 | 2.0 | 1.8 |
| 422-00501 | 313C774-9 | 77.2 | 40.6 | 54.6 | 22.8 | 236.2 | 62.2 | 35.4 | 1.5 | 138.4 | 2.0 | 2.0 |

a as supplied
b recovered

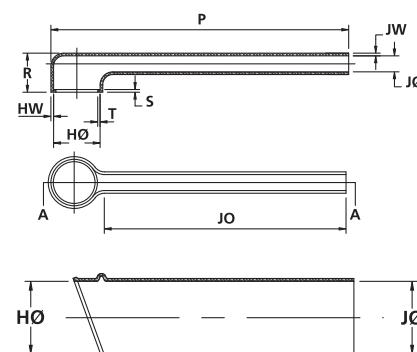
All dimensions in mm. Subject to technical changes.

Helashrink 333F Series Right angle, boot 90°, low profile with adapter lip

The boot provides connector strain relief in applications with partially loaded connectors, resulting in small cable diameters requiring a high shrink ratio.



333F322-385 series as supplied / recovered.



Technical Table

| Article-No. | Type | H DIA min a | H DIA max b | J DIA min a | J DIA max b | P ± 10% b | R ± 15% | T ± 0.8 | JO ± 10% b | HW ± 1.5 | JW ± 0.8 | S ± 1.5 |
|-------------|-----------|-------------|-------------|-------------|-------------|-----------|---------|---------|------------|----------|----------|---------|
| 422-30000 | 333F322-9 | 23.8 | 9.9 | 17.2 | 6.6 | 105.1 | 18.5 | 1.3 | 87.6 | 1.5 | 1.5 | 1.5 |
| 422-30004 | 333F332-9 | 27.1 | 13.2 | 20.8 | 7.6 | 115.8 | 19.8 | 1.3 | 99.0 | 1.5 | 1.5 | 1.5 |
| 422-30100 | 333F343-9 | 30.9 | 18.5 | 4.3 | 8.9 | 146.3 | 20.8 | 1.3 | 114.3 | 1.7 | 1.7 | 1.7 |
| 422-30200 | 333F353-9 | 35.3 | 21.6 | 28.7 | 10.1 | 172.2 | 21.8 | 1.3 | 132.5 | 1.7 | 1.5 | 1.7 |
| 422-30301 | 333F364-9 | 38.8 | 27.9 | 31.4 | 10.9 | 185.1 | 24.1 | 1.8 | 143.7 | 1.7 | 1.5 | 1.7 |
| 422-30400 | 333F374-9 | 45.2 | 34.0 | 38.3 | 12.1 | 213.6 | 27.4 | 1.8 | 169.0 | 1.7 | 1.5 | 1.7 |
| 422-30500 | 333F385-9 | 51.5 | 41.1 | 44.4 | 15.0 | 224.5 | 29.4 | 1.7 | 173.2 | 1.7 | 1.7 | 1.7 |

a as supplied
b recovered

All dimensions in mm. Subject to technical changes.

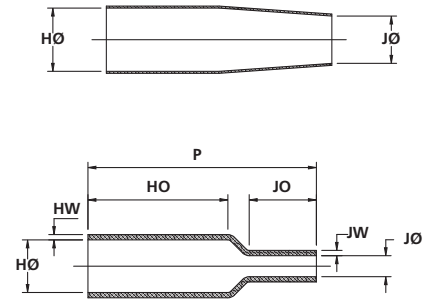


Helashrink 313E Series Shim boot, low profile, no adapter lip

This part is normally used to build up, or shim a cable diameter to facilitate a better fit for components in a cable harness.



313E445-457 series as supplied / recovered.



Technical Table

| Article-No. | Type | H DIA min a | H DIA max b | J DIA min a | J DIA max b | P ± 10% b | JO ± 10% b |
|-------------|-----------|-------------------|-------------------|-------------------|-------------------|-----------------|------------------|
| 422-10000 | 313E445-9 | 14.7 | 12.7 | 11.1 | 3.3 | 63.5 | 15.7 |
| 422-10200 | 313E455-9 | 25.7 | 22.1 | 11.2 | 3.3 | 53.3 | 15.7 |
| 422-10100 | 313E447-9 | 20.8 | 14.7 | 20.6 | 9.9 | 63.5 | 16.5 |
| 422-10300 | 313E457-9 | 25.7 | 22.1 | 20.6 | 9.9 | 53.3 | 14.0 |

All dimensions in mm. Subject to technical changes.

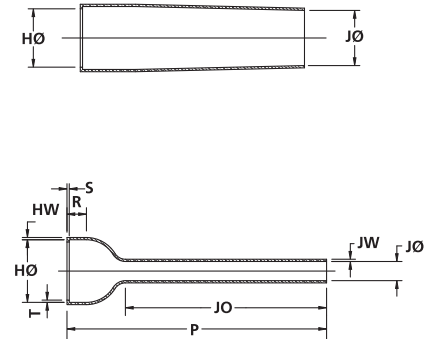
a as supplied
b recovered

Helashrink 313F Series Straight boot, low profile with adapter lip

This boot provides strain relief in applications with partially loaded connectors, resulting in small cable diameters requiring a high shrink ratio.



313F322-396 series as supplied / recovered



Technical Table

| Article-No. | Type | H DIA min a | H DIA max b | J DIA min a | J DIA max b | P ± 10% b | R ± 15% | T ± 0.8 | JO ± 10% b | HW ± 1.5 | JW ± 0.8 | S ± 1.5 |
|-------------|-----------|-------------------|-------------------|-------------------|-------------------|-----------------|------------|------------|------------------|-------------|-------------|------------|
| 422-20000 | 313F322-9 | 23.8 | 9.9 | 17.2 | 6.6 | 105.9 | 11.6 | 1.3 | 86.3 | 1.5 | 1.5 | 1.5 |
| 422-20100 | 313F332-9 | 27.1 | 13.2 | 20.8 | 7.6 | 121.1 | 12.1 | 1.3 | 98.5 | 1.5 | 1.5 | 1.5 |
| 422-20200 | 313F343-9 | 30.9 | 18.5 | 24.3 | 8.9 | 138.6 | 12.1 | 1.3 | 112.7 | 1.7 | 1.5 | 1.7 |
| 422-20300 | 313F353-9 | 35.6 | 22.1 | 28.7 | 10.1 | 159.5 | 12.1 | 1.3 | 130.8 | 1.7 | 1.5 | 1.7 |
| 422-20400 | 313F364-9 | 38.8 | 28.2 | 31.4 | 10.9 | 177.8 | 13.9 | 1.8 | 142.2 | 1.7 | 1.5 | 1.7 |
| 422-20500 | 313F374-9 | 42.2 | 32.2 | 38.3 | 12.7 | 203.2 | 15.2 | 1.8 | 163.0 | 1.7 | 1.5 | 1.7 |
| 422-20600 | 313F385-9 | 51.5 | 45.4 | 45.4 | 14.9 | 203.2 | 15.2 | 1.8 | 157.7 | 1.7 | 1.7 | 1.7 |
| 422-20700 | 313F396-9 | 62.7 | 45.4 | 53.3 | 16.7 | 228.6 | 16.0 | 1.8 | 153.1 | 1.7 | 1.7 | 1.7 |

All dimensions in mm. Subject to technical changes.

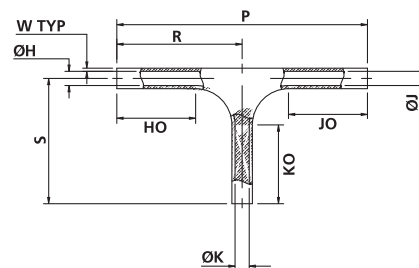
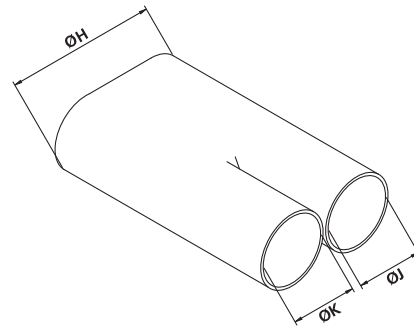


Helashrink 412H Series Transition, side breakout, low profile

This style provides connector cable strain relief and is used in conjunction with a circular grooved adapter.



412H622-625 as supplied / recovered.



Technical Table

| Article-No. | Type | H DIA min a | H DIA max b | J DIA min a | J DIA max b | HO,JO & KO ± 10% b | P nom b | W nom b | R&S nom b |
|-------------|-----------|-------------|-------------|-------------|-------------|--------------------|---------|---------|-----------|
| 422-40000 | 412H622-9 | 19.8 | 6.6 | 13.2 | 6.6 | 25.4 | 80.7 | 1.0 | 40.3 |
| 422-40100 | 412H623-9 | 34.2 | 11.4 | 22.8 | 6.6 | 41.1 | 120.3 | 1.3 | 60.1 |
| 422-40200 | 412H624-9 | 60.1 | 20.0 | 40.1 | 20.0 | 63.5 | 175.7 | 1.5 | 87.8 |
| 422-40300 | 412H625-9 | 83.3 | 33.2 | 54.8 | 33.2 | 88.9 | 242.3 | 1.7 | 121.1 |

All dimensions in mm. Subject to technical changes.

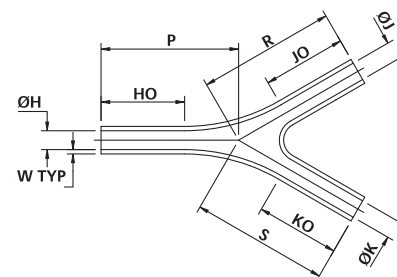
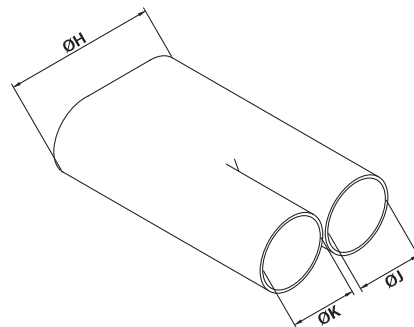
a as supplied
b recovered

Helashrink 492H Series Transition 1 to 2 cables, Y, low profile

This style provides strain relief, sealing and mechanical protection on cable harness break-outs or transitions.



492H412-415 series as supplied / recovered.



Technical Table

| Article-No. | Type | H DIA min a | H DIA max b | HO,JO & KO ± 15% b | W nom b | P,R&S nom b | J & K DIA min a | J & K DIA max b |
|-------------|--------------|-------------|-------------|--------------------|---------|-------------|-----------------|-----------------|
| 422-50000 | 492H412-9 | 19.8 | 6.6 | 25.4 | 1.0 | 40.6 | 13.2 | 6.6 |
| 422-50101 | 492H413-9 | 34.2 | 11.4 | 41.1 | 1.3 | 62.9 | 22.8 | 11.4 |
| 422-50202 | 492H414-9 | 60.1 | 20.0 | 63.5 | 1.5 | 94.7 | 40.1 | 20.0 |
| 422-50302 | 492H415-9 | 83.3 | 33.2 | 49.7 | 1.7 | 133.8 | 54.8 | 33.2 |
| 422-50200 | 492H414-9-01 | 60.1 | 20.0 | 31.7 | 1.5 | 94.7 | 40.1 | 20.0 |
| 422-50300 | 492H415-9-01 | 83.3 | 33.2 | 49.7 | 1.7 | 94.7 | 54.8 | 33.2 |

All dimensions in mm. Subject to technical changes.

a as supplied
b recovered

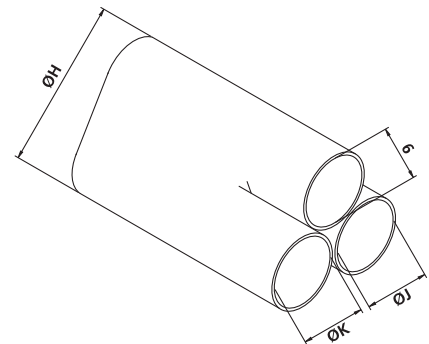
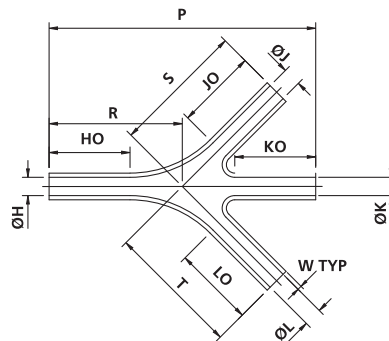


Helashrink 573H Series Transition, 1 to 3 cables, low profile

This style provides strain relief, sealing and mechanical protection on cable harness breakouts or transitions.



573H532-535 series as supplied / recovered.



Technical Table

| Article-No. | Type | H DIA min a | H DIA max b | P nom b | R,S&T nom b | W nom b | J,K & L DIA min a | J,K & L Diamete r max b | HO,JO, KO & LO ± 3.8 |
|-------------|--------------|-------------|-------------|---------|-------------|---------|-------------------|-------------------------|----------------------|
| 422-60000 | 573H532-9 | 19.8 | 6.6 | 85.8 | 42.9 | 1.0 | 13.2 | 6.6 | 25.4 |
| 422-60100 | 573H533-9 | 34.2 | 11.4 | 135.6 | 67.8 | 1.3 | 20.5 | 11.4 | 41.1 |
| 422-60202 | 573H534-9 | 60.1 | 20.0 | 207.2 | 103.6 | 1.5 | 36.0 | 20.0 | 27.6 |
| 422-60302 | 573H535-9 | 99.8 | 33.2 | 294.6 | 147.3 | 1.7 | 54.8 | 33.2 | 88.9 |
| 422-60200 | 573H534-9-01 | 60.1 | 20.0 | 135.6 | 67.8 | 1.5 | 36.0 | 20.0 | 27.6 |
| 422-60300 | 573H535-9-01 | 99.8 | 33.2 | 207.2 | 103.6 | 1.7 | 54.8 | 33.2 | 45.4 |

a as supplied
b recovered

All dimensions in mm. Subject to technical changes.



Two-component epoxy resin adhesive V9500

This high performance, VG-approved, two part epoxy adhesive has been developed to meet the military requirements associated with heat shrinkable components for wire and cable harnesses. It has a very good resistance against most solvents and fuels, even at elevated temperatures. The two-part epoxy adhesive is available in two different packages.

When heat is applied during the shrinking of the moulded shape the two part components react, which results in a high performance bond.



Two-component epoxy adhesive V9500.

Material Data

| | |
|-----------------------|---------------------------------------|
| Material | Epoxy resins (EP) |
| Colour | Black (BK) |
| Curing Temperature | +135 °C |
| Curing Time | 24 hours at +25 °C, 2 hours at +85 °C |
| Operating Temperature | -75 °C to +150 °C |
| Specification | VG 95343 T15 DA |



V9500 applicator gun

The V9500 dosing gun allows for clean processing and individual metering. It is employed in conjunction with the dual cartridges 627-95002.

The V9500 lockable cartridges are available with or without the processing set. The processing set is available in two versions (see table for contents).

The cartridges can be re-used even after a lapse of several days, because the closure prevents the adhesive from hardening.



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

Technical Table

| Article-No. | Type | Designation as per VG-Norm | Content |
|-------------|--------------------------|----------------------------|---|
| 627-95001 | V9500 epoxy adhesive kit | VG 95343 T15 A 001 A | 1 x dual cartridge (50g), 5 x mixing pots, 5 x mixing sticks, 5 x emery papers |
| 627-95010 | V9500 epoxy adhesive kit | VG 95343 T15 A 002 B | 1 x dual cartridge (50g), 1 x mixing pot, 1 x mixing stick, 1 x emery paper, 3 x mixing nozzles |
| 627-95002 | V9500 Duo pack | VG 95343 T15 A | Two-component adhesive cartridge |
| 627-95003 | V9500 Applicator gun | VG 95343 T15 DA | Applicator gun |
| 627-95004 | V9500 Nozzle | VG 95343 T15 MA | Mixing nozzle |

Subject to technical changes.



Please note! Not every product listed carries these approvals! For Product Specific Approvals please refer to the Appendix.



HEK Cable End Caps

Features and Benefits

End caps are used to seal cables during storage or transportation. HEK end caps can be used as an insulating cap for live LV cables (0.6/1kV), and the cap is marked with a lightning flash to indicate a live circuit. The adhesive lining provides an excellent environmental seal.

End caps can be fitted with air valves for certain pressurised cable applications.

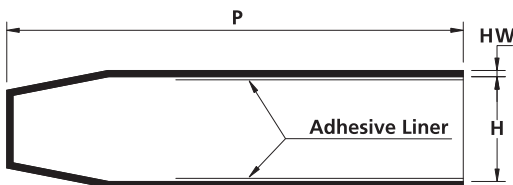
The high shrink ratio minimises the number of end cap sizes needed.

Application

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



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



HEK

| Material Data | |
|----------------------------|--|
| Material | Polyolefin, Chemically cross-linked (POX) |
| Colour | Black (BK) |
| Shrink Ratio | up to 3:1 |
| Minimum Shrink Temperature | +135 °C |
| Operating Temperature | -55 °C to +80 °C |
| Dielectric Strength | 15 kV/mm |
| Flammability | ASTM D635 |



Technical Table

| Article-No. | Type | Recomm. application | | H min a | H max b | Fully recovered | |
|--------------------|--------------------|---------------------|-------|------------|------------|-----------------|----------|
| | | From | To | | | P ± 10% | HW ± 20% |
| HEK Standard Range | | | | | | | |
| 416-12046 | 1612-1-B8W | 4.0 | 8.0 | 10.0 | 4.0 | 33.5 | 2.0 |
| 416-13054 | 1613-1-B8W | 8.0 | 16.0 | 20.0 | 7.5 | 55.3 | 2.3 |
| 416-14047 | 1614-1-B8W2 | 16.0 | 32.0 | 40.0 | 15.0 | 90.0 | 3.0 |
| 416-15035 | 1615-1-B8W2 | 26.0 | 51.0 | 63.0 | 25.0 | 143.0 | 3.3 |
| 416-15070 | 1615-2-B8W2 | 26.0 | 44.0 | 55.0 | 25.0 | 143.0 | 3.3 |
| 416-17033 | 1617-1-B8W2 | 32.0 | 61.0 | 76.0 | 30.0 | 158.0 | 4.0 |
| 416-16053 | 1616-1-B8W2 | 48.0 | 80.0 | 100.0 | 45.0 | 162.0 | 4.0 |
| 416-16110 | 1616-7-B8W | 48.0 | 100.0 | 125.0 | 45.0 | 162.0 | 4.0 |
| HEK Special Range | | | | | | | |
| 416-18019 | 1618-1-B8W | 6.0 | 11.0 | 14.0 | 6.0 | 55.3 | 2.3 |
| 416-01013 | 1601-1-B8W | 10.0 | 19.0 | 23.8 | 9.4 | 89.0 | 2.0 |
| 416-20023 | 1620-1-B8W | 13.0 | 28.0 | 35.0 | 12.7 | 184.0 | 3.3 |
| 416-08012 | 1608-1-B8W | 70.0 | 130.0 | 159.0 | 63.5 | 127.0 | 3.3 |

a as supplied
b recovered

All dimensions in mm. Subject to technical changes.



HEV Cable Breakout Boots

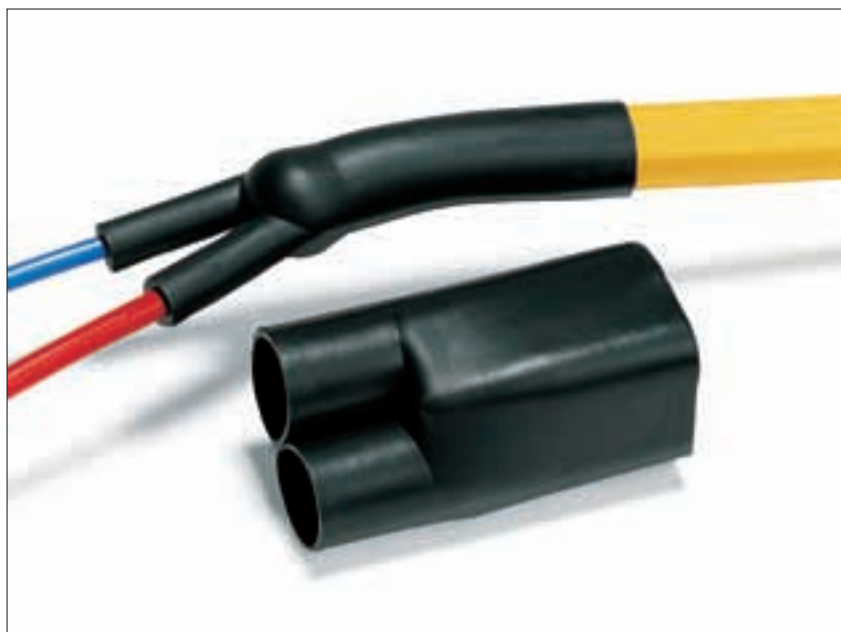
Features and Benefits

Cable breakout boots are designed for insulating and sealing a cable crotch, or conduit system, and provide excellent resistance to abrasion and weathering.

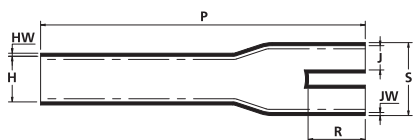
Application

Cable breakouts are manufactured from a tough cross-linked polyolefin containing a flame retardant. This allows the breakouts to be used for both interior and exterior applications. They offer excellent electrical and mechanical protection.

Cable breakouts are supplied with an adhesive inner coating for reliable environmental sealing, and are available for 2, 3, 4, 5 and 6 core cables.



HEV breakout boot for two-core cable.



HEV breakout boot



Please note! Not every product listed carries these approvals! For Product Specific Approvals please refer to the Appendix.

Material Data

| | |
|----------------------------|--|
| Material | Polyolefin, Chemically cross-linked (POX) |
| Colour | Black (BK) |
| Shrink Ratio | up to 3:1 |
| Dielectric Strength | 15 kV/mm |
| Minimum Shrink Temperature | +135 °C |
| Operating Temperature | -55 °C to +80 °C |
| Flammability | ASTM D635 |
| Specification | Det Norske Veritas |



Technical Table

| Article-No. | Type | Recomm. application (mm ²) | | H min a | H max b | J min a | J max b | Recovered | | | | |
|-------------------------------|-------------------|--|-------|---------|---------|---------|---------|-----------|---------|-------|----------|----------|
| | | from | to | | | | | P ± 10% | R ± 10% | S nom | HW ± 20% | JW ± 20% |
| 2 Finger Breakout Boot | | | | | | | | | | | | |
| 402-16007 | 216-1-B8W | 2.5 | 10.0 | 21.0 | 9.4 | 9.0 | 2.8 | 76.5 | 20.0 | 15.0 | 1.6 | 1.6 |
| 402-23058 | 223-2-B8W | 4.0 | 35.0 | 33.0 | 9.4 | 17.5 | 4.1 | 94.0 | 30.0 | 20.0 | 1.5 | 1.2 |
| 402-18051 | 218-2-B8W | 50.0 | 150.0 | 49.0 | 22.9 | 20.0 | 7.6 | 119.0 | 34.0 | 30.0 | 3.2 | 3.2 |
| 402-19032 | 219-2-B8W | 185 | 400 | 87.0 | 38.1 | 43.0 | 12.7 | 141.5 | 42.5 | 44.0 | 3.8 | 3.8 |
| 3 Finger Breakout Boot | | | | | | | | | | | | |
| 403-18046 | 318-2-B8W | 4.0 | 16.0 | 25.0 | 9.1 | 9.0 | 3.0 | 76.5 | 20.0 | 16.0 | 2.5 | 2.5 |
| 403-19056 | 319-2-B8W | 16.0 | 35.0 | 31.0 | 17.5 | 15.0 | 4.6 | 93.5 | 28.5 | 23.0 | 2.9 | 2.9 |
| 403-20031 | 320-2-B8W | 50.0 | 150.0 | 63.0 | 22.5 | 26.0 | 9.0 | 180.0 | 44.0 | 37.0 | 3.0 | 2.0 |
| 403-24016 | 324-1-B8W | 150 | 300.0 | 90.0 | 34.0 | 35.0 | 14.0 | 200.0 | 50.0 | 54.0 | 3.0 | 2.0 |
| 403-42006 | 342-1-B8W2 | 185 | 400 | 110.0 | 35.0 | 40.0 | 17.5 | 230.0 | 45.0 | 55.0 | 4.0 | 3.5 |
| 403-41005 | 341-1-B8W2 | 240 | 400.0 | 125.0 | 59.0 | 50.8 | 25.4 | 283.0 | 71.0 | 75.0 | 3.8 | 3.8 |
| 4 Finger Breakout Boot | | | | | | | | | | | | |
| 404-42022 | 442-1-B8W | 2.5 | 10.0 | 28.0 | 9.0 | 9.0 | 1.8 | 78.0 | 17.0 | 20.0 | 2.7 | 2.0 |
| 404-08022 | 408-2-B8W2 | 4.0 | 35.0 | 35.0 | 12.0 | 15.0 | 3.0 | 95.0 | 24.0 | 22.0 | 2.5 | 2.0 |
| 404-09021 | 409-2-B8W2 | 35.0 | 70.0 | 47.4 | 22.9 | 21.5 | 6.4 | 165.0 | 38.1 | 38.1 | 4.1 | 3.3 |
| 404-18020 | 418-4-B8W2 | 70.0 | 150.0 | 60.0 | 22.9 | 30.0 | 6.4 | 202.0 | 38.1 | 38.0 | 4.1 | 3.3 |
| 404-44010 | 444-1-B8W2 | 150 | 300.0 | 78.7 | 35.6 | 38.1 | 12.5 | 240.0 | 55.0 | 55.0 | 4.0 | 3.5 |

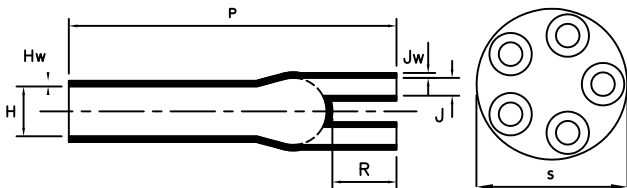
All Dimensions in mm, except for "mm²". Subject to technical changes.

a as supplied
b recovere



Helashrink 500 Series

Cable breakout boots are designed for insulating and sealing a cable crotch, or conduit system, and provide excellent resistance to abrasion and weathering.



Helashrink 500 Series supplied and recovered.

Technical Table

| Article-No. | Type | H min a | H max b | J min a | J max b | P ± 10% | R ± 10% | HW ± 20% | S nom | JW ± 20% |
|-------------|------------------|------------|------------|------------|------------|------------|------------|-------------|----------|-------------|
| 405-08029 | 508-3-B8 | 89.0 | 24.5 | 33.0 | 7.5 | 180.0 | 30.0 | 3.5 | 48.0 | 3.0 |
| 405-08030 | 508-3-B8W | 89.0 | 24.5 | 33.0 | 7.5 | 180.0 | 30.0 | 3.5 | 48.0 | 3.0 |

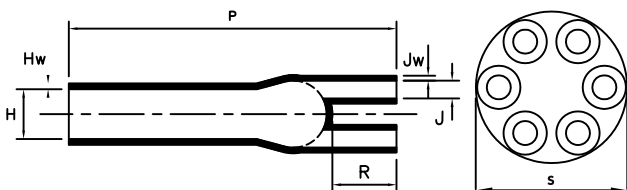
a as supplied
b recovered

All dimensions in mm. Subject to technical changes.

These moulded shapes can also be supplied with an inner coating of high temperature hot melt (W8) or epoxy adhesive (W24). Also available in G and H materials, upon request.

Helashrink 600 Series

Cable breakout boots are designed for insulating and sealing a cable crotch, or conduit system, and provide excellent resistance to abrasion and weathering.



Helashrink 600 Series supplied and recovered.

Technical Table

| Article-No. | Type | H min a | H max b | J min a | J max b | P ± 10% | R ± 10% | HW ± 20% | S nom | JW ± 20% |
|-------------|------------------|------------|------------|------------|------------|------------|------------|-------------|----------|-------------|
| 406-08018 | 608-2-B8 | 61.0 | 37.0 | 21.0 | 9.0 | 152.0 | 56.0 | 3.2 | 46.0 | 3.2 |
| 406-08019 | 608-2-B8W | 61.0 | 37.0 | 21.0 | 9.0 | 152.0 | 56.0 | 3.2 | 46.0 | 3.2 |
| 406-09010 | 609-2-B8 | 40.0 | 16.0 | 12.0 | 4.0 | 75.0 | 20.0 | 2.5 | 25.0 | 1.5 |
| 406-09020 | 609-2-B8W | 40.0 | 16.0 | 12.0 | 4.0 | 75.0 | 20.0 | 2.5 | 25.0 | 1.5 |

a as supplied
b recovered

All dimensions in mm. Subject to technical changes.

These moulded shapes can also be supplied with an inner coating of high temperature hot melt (W8) or epoxy adhesive (W24). Also available in G and H materials, upon request.