Table of Content
Shield-Kon® - shielded cable connectors

Installation methods and procedure
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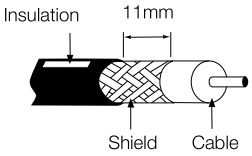
Installation methods

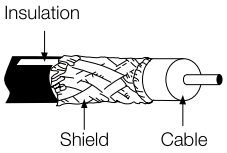
Standard method

Use the standard method when the shielded cable or the inner conductors are embedded in a dielectric.



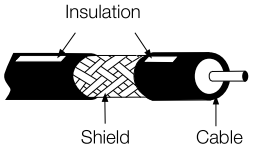
Fold-back method 1

If there is no common dielectric for several interior cables but the gaps are filled by textile threads or something similar, care should be taken to ensure that the insulating thickness of the individual cables is not less than 0.38 mm for PVC, and not less than 0.25 mm for Teflon. If this insulation thickness falls below this value, fold-back method 1 should be used.



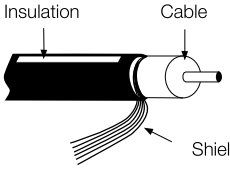
Mid-Span method

Allows installation anywhere along the cable.



Fold-back method 2

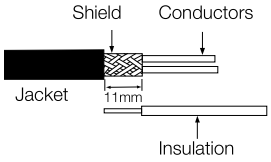
Fold-back method 2 should be used if the cable shield is applied spirally or if a foil shield is being used.

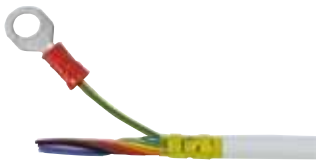


Installation procedures

Step 1

Prepare shielded wire and drain wire insulation as shown. If two earth wires are required in a Shield-Kon® connection, twist both conductors before insertion into the connector.

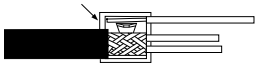




Step 2

Select the appropriate connector according to the size of the shielded cable (see page 127). Place the drain wire around the trap hook and the shielded wire into the bottom of the connector. When inserting the shielded cable and grounding wire, care must be taken to ensure that their insulation is overlapped by the connector's Polyester insulation film.
100% insulation is possible after crimping when the stripped length of outer jacket (visible shielding) is 11 mm maximum.

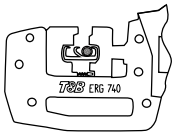
Butt insulating jackets against metal edge



Step 3

Select the appropriate die set for the crimp tool, according to the size of the shielded cable (See page 129) and mount the dies on the tool. Insert the connector (with the shielded cable and the drain wire) between the dies of the tool. Squeeze the tool handles firmly to crimp the connector around the shielding and the drain wire.

Connector opening faces away from tool



Connectors
Shield-Kon® - One-piece connector

Characteristics

- Compact, low profile connector
- One piece “Wrap-around” design
- Inventory savings: only 4 sizes
- Transparent insulation, easily inspected
- MIL specified MIL-F-21608, industry approved technology
- NO HEAT OR POWER REQUIRED to install
- No damage to inner conductor
- Less installation time required
- Uniform, precise connection every time
- Low installed cost
- Mid-span termination possible, eliminating the need to demount a cable already installed

Technical Information

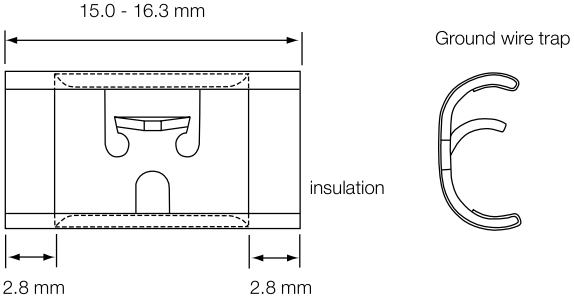
Material	Copper, conform to CDA No. 110
Plating	Tin, electro-plated (thickness 3 to 8 µm), in accordance with MIL-T-10727A
Insulation	Polyester film, colour coded for size identification
Temperature	-65°C to +125°C

MIL-F-21608 specifications

Voltage drop	9 mV max. at 1 Ampere after environmental exposure
Insulation	500 VRMS at 60 Hz for one minute dielectric strength
Corrosion resistance	48 hours in 5% salt fog
Pullout strength	67 N min. with 0.25 mm^2 drain wire and 85N min. with 0.5 mm^2 drain wire
Vibration	0.76 mm double amplitude between 10 and 55Hz for 6 hours on each of two axis

Product Ref.	Colour	Shield diameter range [mm]	Acceptable drain wire size**	Quantity [pieces]	Installation tool*
RSK101	Red	1.27 - 2.28	1 or 2 pieces 0.25mm^2	1000	
RSK5101				100	
RSK201	Blue	2.29 - 3.65	1 or 2 pieces 0.25mm^2	1000	
RSK5201			or 1 piece 0.5mm^2	100	ERG740
RSK301	Yellow	3.66 - 5.12	1 or 2 pieces 0.25mm^2,	1000	
RSK5301			or 1 piece 0.5mm^2	100	
RSK401	Green	5.13 - 7.62	1 or 2 pieces 0.5mm^2,	500	
RSK5401			or 1 piece 0.5mm^2	100	

(*) See page 129 for tooling specifications and for die selection
(**) Alternatively, a special accessory (RSK-flag) can be used in place of the drain wire, with the yellow and the green connectors



Selection gauge
Shield-Kon® - One-piece connector

Product Ref.: RSK-LEHRE

Characteristics

The choice of the appropriate connector and die set mainly depends on the size of the shielded cable.
The selection can be done very quickly with the RSK-LEHRE gauge.

1. Remove the outer jacket from the shielded cable, making the shielding visible
2. Insert this stripped end of the cable into the slots located around the gauge. The correct slot will be found when the cable can slide only in the upper part of the slot. If the cable can slide completely to the bottom of the slot, you should try with the smaller adjacent slot.
3. Once the appropriate slot is found, the corresponding RSK connector is defined by the colour of the strip around the slot, whereas the corresponding die set is given by the number marked below the slot (add prefix “D” to this number)
4. The table on page 132 summarises the different combinations of connector / die set, as well as the size of drain wire that can be used

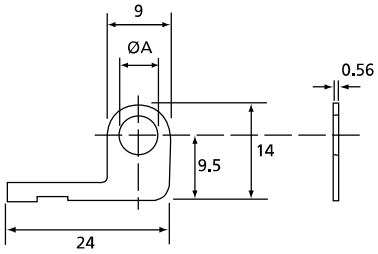
Accessories: the RSK-FLAG connectors
Shield-Kon® - One-piece connector

Product Ref.: RSK-FLAG

Characteristics

- The RSK-FLAG connector is inserted into the one-piece Shield-Kon® connector and replaces the drain-wire
- Easy & direct connection of the RSK-FLAG to a piece of earthed equipment thanks to the installation hole
- Available in 3 sizes of hole
- To be used with the RSK-301 (yellow) or RSK-401 (green) connectors
- Material: Electrolytic copper
- Plating: Zinc alloy

Product Ref.	Termination screw size ØA	Weight [g/100]	Quantity [pieces]
RSK-FLAG-B3	M3	75	1000
RSK-FLAG-B4	M4	75	1000
RSK-FLAG-B5	M5	75	1000



Ergonomic hand tools
Shield-Kon® - One-piece connector

Product Ref.: ERG740

Characteristics
- Robust construction: metallic frame, partially covered with plastic
- Dies are easily interchangeable (to be ordered separately)
- Parallel action crimp
- Shure-Stake™ mechanism: once pressing has commenced, the tool can be re-opened only after successful completion of the crimping cycle
- Supplied in a plastic case with: 1 tool, 1 bench-mount stand for easier use in volume production, 1 gauge (Product Ref. RSK-LEHRE) for instant selection of the die and the connector to be used
- Dimensions of tool (L x W x H): 210 x 155 x 25 mm
- Weight of tool: 470 g
- Dimensions of plastic case (L x W x H): 245 x 210 x 55 mm
- Weight of plastic case with content: 930 g

Product Ref.: ERG740-01

Characteristics
- Same as ERG740, but in addition, supplied with 4 metal dies (D-101A, D-201D, D-301G, D-401K)
- Dimensions of plastic case (L x W x H): 245 x 210 x 55 mm
- Weight of plastic case with content: 1200 g

Metal Dies for ERG740

Characteristics
- For mass production and medium to high volumes
- Made of hardened steel, does not wear
- The Product Ref. is engraved on the upper part and on the lower part of the die set and the die is marked with a dot having the same colour as the corresponding connector
- Packaging: 1 die set in a cardboard box with Euro slot
- Weight: approx. 75 g
- Packaging size (L x W x H): 45 x 45 x 70 mm

ERG740 die selection chart

Product Ref.	Colour	Shield diameter [mm]	For connector
D-101A	Red	1.27 - 1.79	RSK 101
D-101B	Red	1.80 - 2.28	RSK 101
D-201C	Blue	2.29 - 2.55	RSK 201
D-201D	Blue	2.56 - 3.00	RSK 201
D-201E	Blue	3.01 - 3.34	RSK 201
D-201F	Blue	3.35 - 3.65	RSK 201
D-301G	Yellow	3.66 - 4.13	RSK 301
D-301H	Yellow	4.14 - 4.71	RSK 301
D-301J	Yellow	4.72 - 5.12	RSK 301
D-401K	Green	5.13 - 5.86	RSK 401
D-401L	Green	5.87 - 6.36	RSK 401
D-401M	Green	6.37 - 7.00	RSK 401
D-401N	Green	7.01 - 7.62	RSK 401

Overview
Shield-Kon® - Two-piece connector - Hexagonal Range

In the “Hexagonal Range” (diameters of dielectric between 1.1 mm and 9.4 mm), the outer sleeve is crimped with a hand tool and the result is a hexagonal-shaped crimp.

The choice of the appropriate combination of inner sleeve, outer sleeve and crimp tool / die will depend on the diameter of the dielectric.

However, a direct correlation with the diameter of the dielectric is not possible, as several different inner sleeves can be combined with the same outer sleeve (according to the type of shield).

With the directions shown below, a measuring instrument (calliper) is all that is required to make the right selection in 3 steps:

1. Selection of the inner sleeve (GSB)

- Strip the outer insulator and remove the shield
- Measure the maximum value of the diameter of the dielectric (diameter without shield) by gently rotating the cable. When doing so, it should be possible to turn the cable easily between the jaws of the calliper
- Add 0.13 mm to the measured value. The sum will give the Inner Diameter (I.D.) of the GSB inner sleeve
- In the table, select the GSB inner sleeve having this I.D. or the nearest larger I.D

2. Selection of the outer sleeve (GSC)

Normal method:
- Slide the selected inner sleeve underneath the shield of the cable
- Measure the maximum diameter with the shield over the inner sleeve
- Add 0.8 mm to the measured value. The sum will give the Inner Diameter (I.D.) of the GSC sleeve
- In the table, select the GSC sleeve having this I.D. or the nearest larger I.D.

Quick method:
In most cases, a quicker method can be used to define the correct GSC outer sleeve:
- Once the appropriate GSB inner sleeve is found, the table will give the Outer Diameter (O.D.) of this GSB sleeve
- Add 1.5 mm to this O.D. and the sum will give the Inner Diameter (I.D.) of the GSC sleeve
- In the table, select the GSC sleeve having this I.D. or the nearest larger I.D.

3. Selection of the die

The Product Ref. for the appropriate die is given in the table hereafter, in the same row as the GSC sleeve that has just been defined and in the column of the chosen tool.

Installation methods
Shield-Kon® - Two-piece connector - Hexagonal Range

Three installation methods are possible in the hexagonal range, for a quick, neat and accurately completed termination...at a greatly reduced production cost.

Method 1: Standard

A 

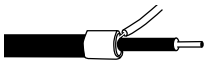
A. After stripping the shield (12.7 mm in length), slip the outer sleeve over the outer insulation. If this is too big, slip the outer sleeve on, after method described in Fig. 3.

B 

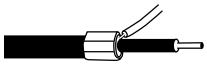
B. Widen the braided shield by gently rotating the inner conductor, then slip the inner sleeve under the braided shield.

C 

C. Position the inner sleeve so that about 1.6 mm protrudes beyond the end of the braided shield.

D 

D. Slip the drain wire (0.25–0.5 mm^2) under the outer sleeve (from the front or behind) and slip the outer sleeve over the braided shield.

E 

E. Position the outer sleeve and ensure that the ends of all wires in the braided shield and drain wire are covered. Crimp both sleeves with the correct tool and tool die. Finished.

Method 2:

A 

A. After stripping the shield (12.7 mm in length), slip the inner sleeve over the outer insulation.

B 

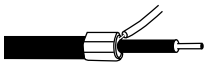
B. Widen the braided shield by gently rotating the inner conductor.

C 

C. Fold back the braided shield over the inner sleeve and slip the outer sleeve over the braided shield

D 

D. Slip the drain wire (0.25–0.5 mm^2) under the outer sleeve (from the front or behind) and slip the outer sleeve over the braided shield.

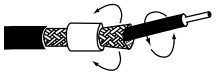
E 

E. Position the outer sleeve and ensure that the ends of all wires in the braided shield and drain wire are covered. Crimp both sleeves with the correct tool and tool die. Finished.

Method 3:

A 

A. After stripping the shield (25 mm in length), slip the inner sleeve over the braided shield

B 

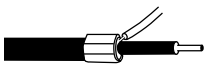
B. Widen the braided shield by gently rotating the inner conductor.

C 

C. Fold back the braided shield over the inner sleeve and slip the outer sleeve over the braided shield

D 

D. Slip the drain wire (0.25–0.5 mm^2) under the outer sleeve (from the front or behind) and slip the outer sleeve over the braided shield.

E 

E. Position the outer sleeve and ensure that the ends of all wires in the braided shield and drain wire are covered. Crimp both sleeves with the correct tool and tool die. Finished.

Connector and die selection
Shield-Kon® - Two-piece connector - Hexagonal Range

The Thomas & Betts hexagonal compression (for diameters of dielectric up to 9.4 mm) is a reliable method for grounding, terminating and insulating shielded and coaxial cable. It has literally hundreds of millions of installations in communications, aerospace, electronic, telephone, radio and TV applications.

- Material: Hard bronze (inner sleeve), Soft bronze (outer sleeve)
- Finish***: Tin plated (per MIL-T-10727A)
- Length: 7.9 mm (inner sleeve), 6.4 (outer sleeve)
- Standard packaging quantity: 1000 pcs. For 100 pcs packaging, add the code '5" in the Product Reference just after the "GSB" or "GSC" code. Example: GSC275 = 1000 pcs packaging, GSC5275 = 100 pcs packaging

Product Ref. GSB	Colour code	Inner Ø [mm]	Outer Ø [mm]	Product Ref. GSC	Colour code	Inner Ø [mm]	Outer Ø [mm]	Hand tool ERG4000KE	Nest number	Hand tool* WT440/WT540 MIL - Spec.
INNER SLEEVES				OUTER SLEEVES				DIES		
GSB 046	Silver	1.17	1.90	GSC 101	Silver	2.56	3.16	D-419403	19	4419
GSB 058	Yellow	1.47	2.10	GSC 128	Blue	3.25	3.86	D-419403	00	4400
GSB 063	Red	1.60	2.23	GSC 149	Purple	3.78	4.54	D-419403	01	4401
GSB 071	Green	1.87	2.44	GSC 156	Yellow	3.96	4.90	D-419403	02	4402
GSB 080	Blue	2.00	2.63	GSC 175	Blue	4.45	5.46	D-419403	03	4403
GSB 090	Orange	2.20	2.90	GSC 187	Orange	4.75	5.76	D-406410	06	4406
GSB 096	Purple	2.44	3.02	GSC 194	Red	4.93	5.74	D-406410	06	4406
GSB 101	Yellow	2.56	3.16	GSC 199	Silver	5.05	5.97	D-406410	06	4406
GSB 109	Red	2.76	3.36	GSC 205	Yellow	5.20	6.22	D-406410	08	4408
GSB 115	Silver	2.92	3.70	GSC 219	Green	5.56	6.35	D-406410	08	4408
GSB 124	Green	3.14	3.68	GSC 225	Purple	5.71	6.50	D-406410	09	4409
GSB 128	Silver	3.25	3.86	GSC 232	Orange	5.90	6.70	D-406410	10	4410
GSB 134	Orange	3.40	4.00	GSC 261	Yellow	6.63	7.54	D-411414	11	4411-SK
GSB 149	Blue	3.78	4.54	GSC 275	Silver	6.98	7.77	D-411414	12	4412
GSB 156	Red	3.96	4.90	GSC 281	Purple	7.14	8.40	D-411414	14	4414
GSB 165	Silver	4.20	4.92	GSC 287	Blue	7.29	8.30	D-411414	14	4414
GSB 175	Green	4.44	5.46	GSC 297	Green	7.54	8.50	D-411414	14	4414
GSB 187	Yellow	4.75	5.76	GSC 312	Yellow	7.92	9.20	D-415417	15	4415
GSB 194	Blue	4.93	5.76	GSC 327	Silver	8.30	9.45	D-415417	16	4416
GSB 205	Orange	5.20	6.22	GSC 348	Orange	8.84	9.98	D-415417	17	4417
GSB 219	Silver	5.56	6.35	GSC 359	Purple	9.12	10.13	D-450451	50	5450
GSB 225	Yellow	5.71	6.50	GSC 375	Yellow	9.53	10.31	D-450451	51	5451
GSB 232	Red	5.90	6.70	GSC 405	Red	10.28	11.50	D-452	52	5452
GSB 250	Green	6.35	7.14	GSC 415	Blue	10.54	11.76	D-452	52	5452
GSB 261	Blue	6.63	7.54	GSC 425	Silver	10.80	12.06	D-454	54	5454
GSB 266	Silver	6.75	7.54	GSC 460	Silver	11.68	12.95	ERG5456**	56	5456
GSB 275	Orange	6.98	7.77	GSC 500	Green	12.70	13.97	ERG5457**	57	5457
GSB 281	Yellow	7.14	8.40	GSC 460	Silver	11.68	12.95	ERG5456**	56	5456
GSB 287	Silver	7.29	8.30							
GSB 297	Red	7.54	8.50							
GSB 312	Purple	7.92	9.20							
GSB 348	Orange	8.84	10.20							
GSB 375	Blue	9.52	10.30							

* Dies 4419 and 4400 to 4417 are for the hand tool WT440. Dies 5450 to 5457 are for the hand tool WT540

** Note: Product Ref. ERG-5456 and ERG-5457 are complete hand tools with pre-mounted die set

*** For Nickel plated terminals, add suffix NP to the Product Reference. Example: GSB128NP, GSC128NP

Product Ref.: WT440 and WT540

Characteristics

- MIL-specified parallel action hand tool
- A versatile tool, one frame with a selection of interchangeable dies covers the whole range of shield diameters in the Hexagonal Range
- Shure-Stake™ mechanism: once pressing has commenced, the tool can be re-opened only after successful completion of the crimping cycle
- Packaging: box containing 1 frame (dies to be ordered separately)
- Length: 203 mm (WT440), 264 mm (WT540)
- Weight: 450 g (WT440), 540 g (WT540)

Dies for WT440 and WT540

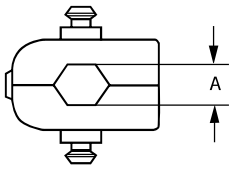
Characteristics

- Interchangeable dies with single nest
- Hexagonal crimp
- Material: alloy steel
- Finish: black oxide
- 44xx series dies (for WT440 tool): crimping range (outer sleeves): from GSC101 to GSC348
- 54xx series (for WT540 tool): crimping range (outer sleeves): from GSC359 to GSC500
- 54xx series dies are marked with the die number and a colour-coded dot
- Go/no-go gauges are available for inspection

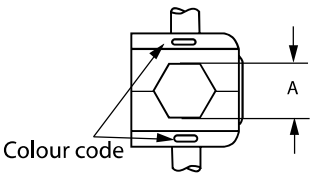
WT440 and WT540 die selection chart

Product Ref.	Dim. A across flats (+/- 0.10) [mm]	Colour code	For connector	Go / no-go gauge	Tooling
4419	2.67	-	GSC101	4419-G	
4400	3.25	-	GSC128	4400-G	
4401	3.84	-	GSC149	4401-G	
4402	4.06	-	GSC156	4402-G	
4403	4.52	-	GSC175	4403-G	
4406	5.00	-	GSC187, GSC194, GSC199	4406-G	
4408	5.41	-	GSC205, GSC219	4408-G	
4409	5.54	-	GSC225	4409-G	WT440
4410	5.87	-	GSC232	4410-G	
4411-SK	6.48	-	GSC261	4411-G	
4412	6.81	-	GSC275	4412-G	
4414	7.37	-	GSC281, GSC287, GSC297	4414-G	
4415	7.85	-	GSC312	4415-G	
4416	7.98	-	GSC327	4416-G	
4417	8.23	-	GSC348	4417-G	
5450	8.71	Purple	GSC359	5450-G	
5451	9.12	Yellow	GSC375	5451-G	
5452	9.75	Red	GSC405, GSC415	5452-G	WT540
5454	10.90	Silver	GSC425	5454-G	
5456	11.53	Silver	GSC460	5456-G	
5457	12.07	Green	GSC500	5457-G	

Dies for WT440 tool



Dies for WT540 tool



Tooling
Shield-Kon® - Two-piece connector - Hexagonal Range

Product Ref.: ERG4000KE

Characteristics
- Ergonomic hand tool
- A versatile tool, one frame with a selection of interchangeable dies covers a wide range of shield diameters in the Hexagonal Range
- Most dies have several nests (identified with a number) to allow the crimp of several GSC outer sleeves with the same die set.
- Shure-Stake™ mechanism: once pressing has commenced, the tool can be re-opened only after successful completion of the crimping cycle
- Length: 265 mm, Weight: 550 g
- Packaging: cardboard box containing 1 frame (dies to be ordered separately)

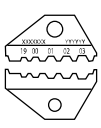
Dies for ERG4000KE

Characteristics
- Interchangeable dies (hexagonal crimp), with single or multiple nest
- Material: alloy steel
- The dies are marked with the die number
- Each nest is marked with a number to identify the GSC outer sleeves that can be crimped (see table)
- Crimping range (outer sleeves): from GSC101 to GSC425
- Packaging: 1 die set in a cardboard box with Euro slot
- Weight: approx. 50 g
- Packaging size (L x W x H): 45 x 45 x 70mm

ERG4000KE die selection chart

Product Ref.	Nest nr.	For connector	Dimension of the nest	Gauge dimensions	
				Ø Go [mm]	Ø No-go [mm]
D-419403	19	GSC101	HEX 2.68	2.63	2.73
	00	GSC128	HEX 3.24	3.19	3.29
	01	GSC149	HEX 3.80	3.75	3.85
	02	GSC156	HEX 4.03	3.98	4.08
	03	GSC175	HEX 4.50	4.45	4.55
D-406410	6	GSC187, GSC194, GSC199	HEX 5.00	4.95	5.05
	8	GSC205, GSC219	HEX 5.36	5.31	5.41
	9	GSC225	HEX 5.56	5.51	5.61
	10	GSC232	HEX 5.84	5.79	5.89
D-411414	11	GSC261	HEX 6.46	6.41	6.51
	12	GSC275	HEX 6.78	6.73	6.83
	14	GSC281, GSC287, GSC297	HEX 7.32	7.27	7.37
D-415417	15	GSC312	HEX 7.74	7.69	7.79
	16	GSC327	HEX 7.86	7.81	7.91
	17	GSC348	HEX 8.32	8.27	8.37
D-450451	50	GSC359	HEX 8.66	8.61	8.71
	51	GSC375	HEX 9.10	9.05	9.15
D-452	52	GSC405, GSC415	HEX 9.72	9.67	9.77
D-454	54	GSC425	HEX 10.88	10.83	10.93

D-419403



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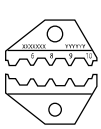

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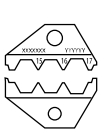

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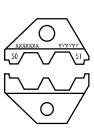

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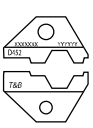

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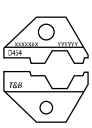
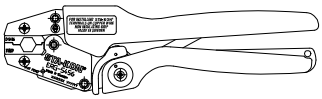
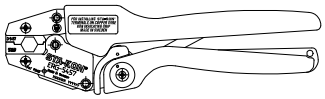


Tooling
Shield-Kon® - Two-piece connector - Hexagonal Range



Product Ref.: ERG5456

Characteristics
- Fixed die, ergonomic hand tool
- Designed to crimp the GSC460 outer sleeve
- Shure-Stake™ mechanism: once pressing has commenced, the tool can be re-opened only after successful completion of the crimping cycle
- Length: 252 mm
- Weight: 460 g
- Packaging: cardboard box containing 1 tool with pre-mounted die set



Product Ref.: ERG5457

Characteristics
- Fixed die, ergonomic hand tool
- Designed to crimp the GSC500 outer sleeve
- Shure-Stake™ mechanism: once pressing has commenced, the tool can be re-opened only after successful completion of the crimping cycle
- Length: 252 mm
- Weight: 460 g
- Packaging: cardboard box containing 1 tool with pre-mounted die set