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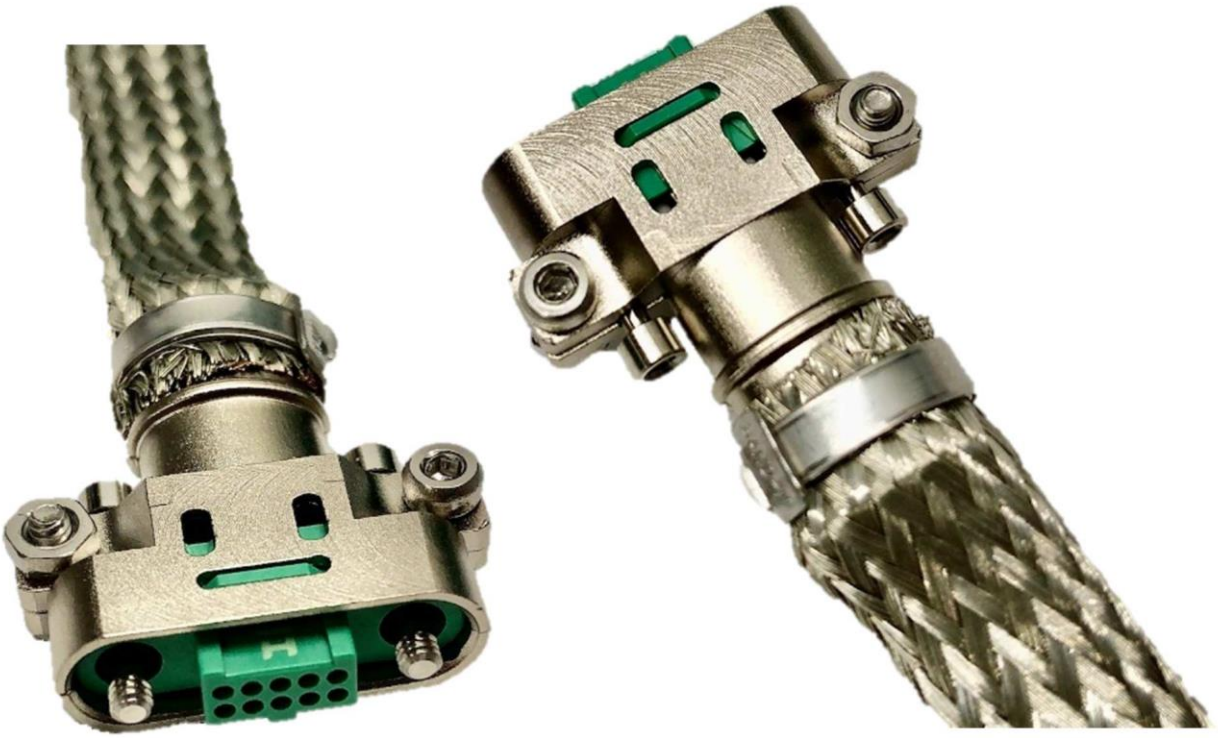
Instruction Sheet

IS-45

Assembly Procedure for Gecko-SL and Gecko-MT Metal Backshells



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SECTION 1 – GECKO-SL CABLE BACKSHELLS

INTRODUCTION

This instruction sheet is designed to demonstrate the assemble of metal backshells available for Gecko-SL female and male crimp connectors or cable assemblies. This document will provide details on adding the jackscrews and braid for a complete cable assembly solution.

Female backshell kit

Male backshell kit

Applicable Backshell products

G125-964XXF1 – Gecko-SL metal backshell kit for Female connectors, with hex socket screw-loks

G125-964XX00 – Gecko-SL metal backshell kit for Male connectors

Applicable Connector products

The metal backshells can be fitted to the following Gecko-SL housings and cable assemblies:

G125-224XX00 – Gecko-SL Female crimp housings, no screw-loks

G125-324XXM1 – Gecko-SL Male crimp housings fitted with internally threaded screw-loks

G125-FCXXX05F0-XXXXF0 – Gecko-SL Female double-ended cable assemblies, no screw-loks

G125-MCXXX05M1-XXXXF0 – Gecko-SL Female-to-Male double-ended cable assemblies, no screw-lok on the female

G125-MCXXX05M1-XXXXM1 – Gecko-SL Male double-ended cable assemblies

PREPARATION

Please consult the "Applicable Backshell products" to confirm the correct backshell kit is selected for the required connector gender. This instruction sheet uses assembly of G125-96416F1 to a ready-made cable assembly **G125-FC11605F0-0150L** as an example.

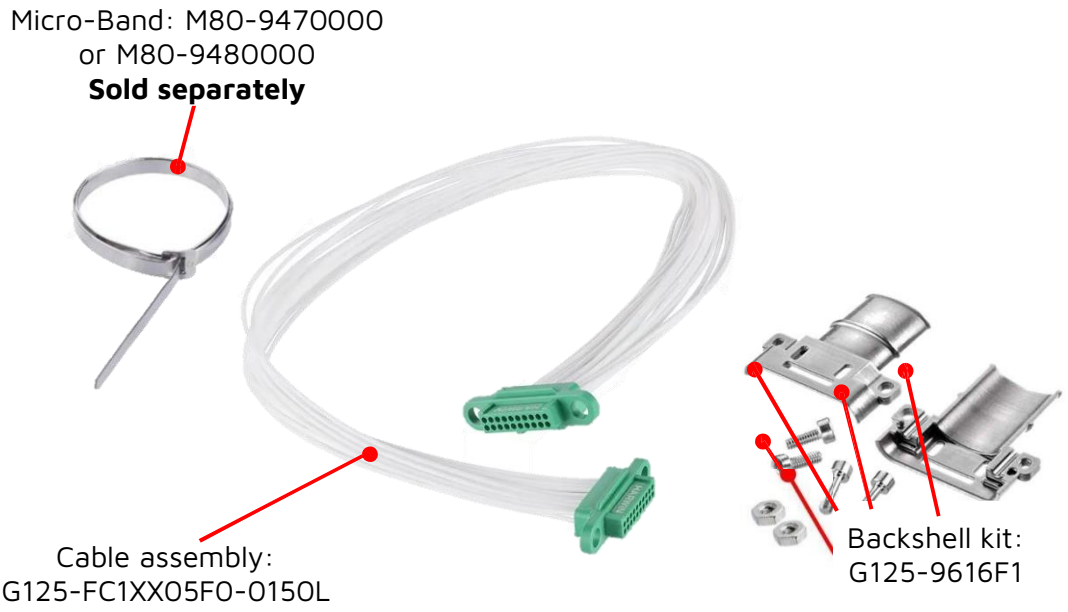
Additional Tooling and Products

The cable assembly should be manufactured before adding the backshell. If you are manufacturing your own custom cable assembly, you will need the Z125-900 crimp tool with Z125-901 positioner, plus the assembly tooling Z125-902 for the contacts - see IS-37 and IS-38 for full details.

For assembling the backshell, we recommend the additional tooling:

- Z9952-00, or Z9950-00 with a ¼" screwdriver handle.
- BAND-IT Tie-Dex II A30199 Micro Band tool (to fix the Micro-band if you are adding braid) – this tool is not sold by Harwin.
- 4mm open-ended spanner– this tool is not sold by Harwin.

ASSEMBLY METHOD

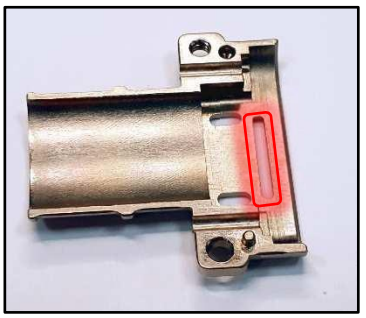


Typical kit, ready for assembly

The instructions also cover the copper braid being assembled, which provides EMC shielding, wear prevention and cable management.

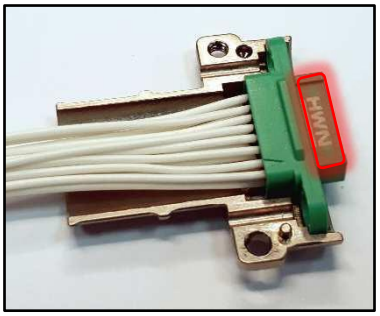
1. Take one half of the Gecko backshell and lay flat as shown on a clean working surface.

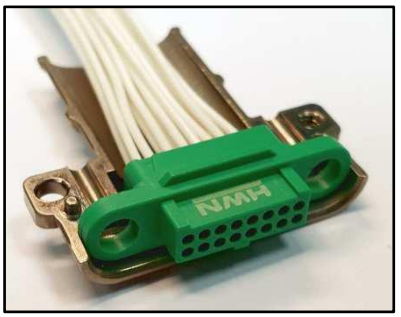
   Note: Pay attention to the slot highlighted in red as this is important in step 2.



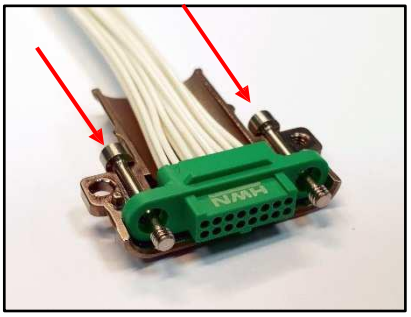
2. Place the cable assembly into the backshell.

   Note: Ensure the ledge highlighted in red sits into the slot shown in step 1. There is one each side of the connector body.



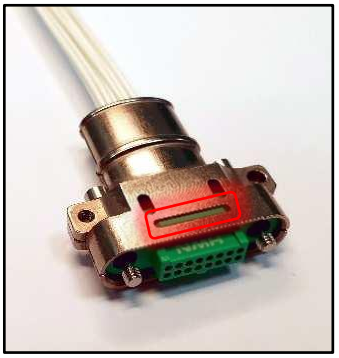


3. Insert both jackscrews supplied in the kit from the rear of the connector and lay into the groove in the backshell as shown.



4. Place the second side of the backshell over the assembly.

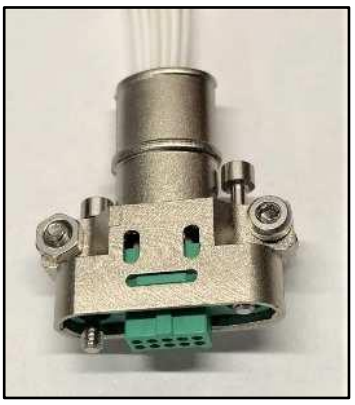
   Note: Ensure the ledge highlighted in red sits into the slot and press together.



5. Take one of the M2 hex socket screws and M2 hexagonal nuts and assemble to the two backshell halves, tightening loosely by hand.

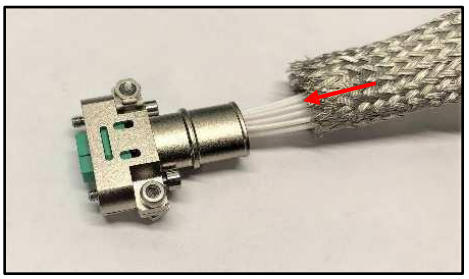
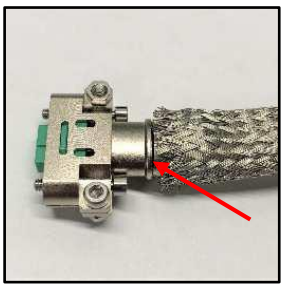
6. Secure the M2 hexagonal nut with the 4mm open-ended spanner, using Z9950-00 or Z9952-00 to tighten the M2 hex socket screw to 18Ncm-23Ncm.

7. Turn connector over and repeat steps 5 & 6.



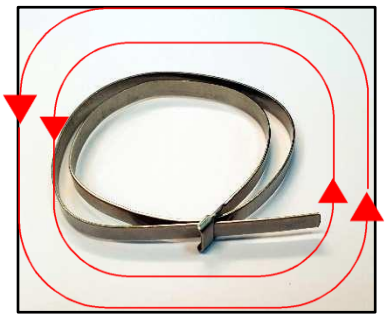
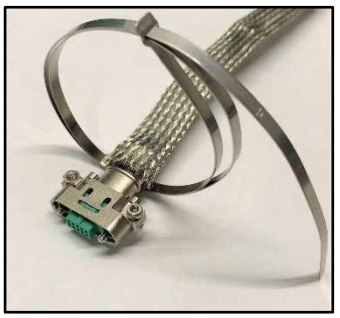
Adding Braid (if required)

1. Feed braiding over the wire and push up to the second ridge on the cable exit of the backshell as shown.

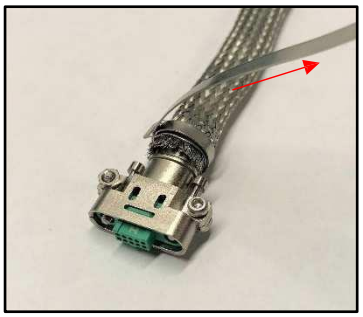



2. The micro-band is supplied straight. It must be coiled up around the cable assembly as shown.

   Note: Micro-band end must pass through the buckle **twice.**

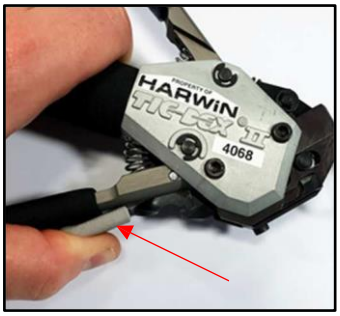



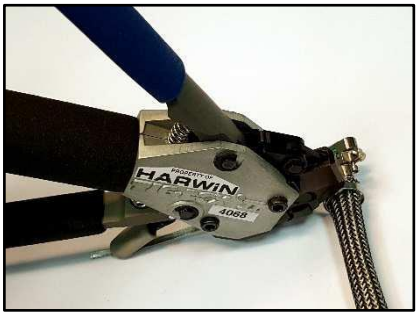
3. Pull end of band through buckle and remove slack.



4. Open tool by flipping the retaining straps out of the way.

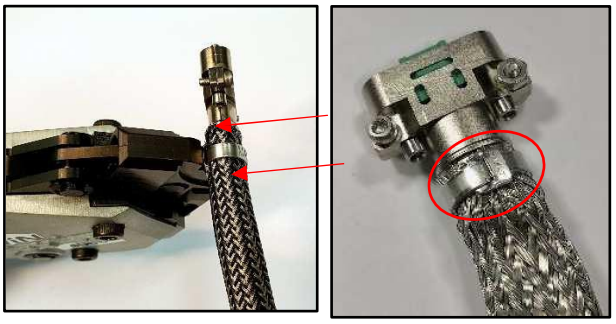
5. Depress the short finger toggle to allow the micro-band tail to pass through the tool. Once inserted to the full depth (buckle touches tool) then release the short grey lever.



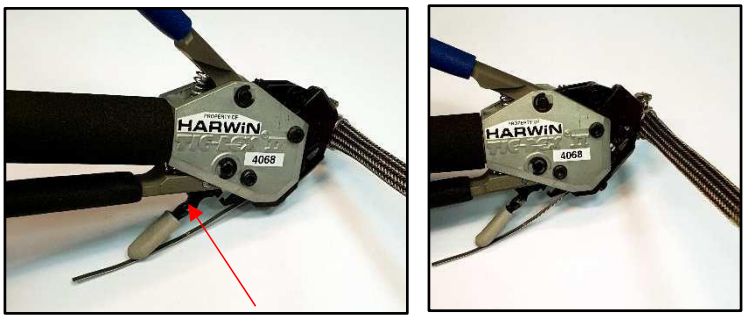


6. Position the buckle of the micro-band in the center of the two ridges of the backshell cable exit.

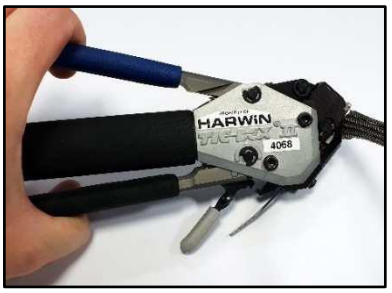
   Note: Rotate the buckle of the band-it tie to be **centrally** orientated on the longest side of the backshell as shown. This is important to achieve uniform clamping of braid.



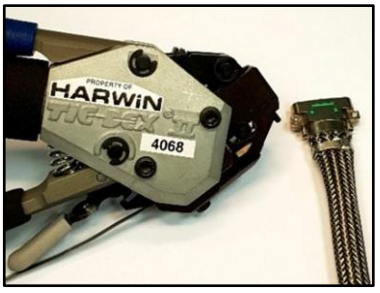
7. Once then micro-band is correctly positioned, squeeze the two black handles together and release. Repeat until the smaller handle will not return and remains locked.



8. To trim off the micro-band and complete the assembly process, squeeze the blue handle and the surplus tie will be trimmed off.



9. Remove the excess from the tool by pressing on the small grey handle and pull out the tail of the micro-band from the tool to the rear.



OTHER ASSEMBLY OPTIONS

The Gecko metal backshell range is expected to be used with metal braid, for EMC/RFI purposes. However, it is also possible to use polymer and glass-fiber braid types, depending on the desired result and application.

For full EMC/RFI shielding, Harwin recommends nickel-coated copper braid, using a Micro- band to secure it on the backshell.

For mechanical protection such as strain relief and abrasion protection, lightweight polymer braid can be used. Either a micro-band can be used to secure it to the backshell, or a miniature plastic cable tie can also be used. The plastic tie should have a width of 1.6 to 2.5mm, with a head that does not exceed 5.2mm.

For heat protection, polyurethane-impregnated braided fiberglass can be used. As with the option above, either the micro-band or a miniature plastic cable tie (same dimensions as above) can be used to secure the braid to the backshell.

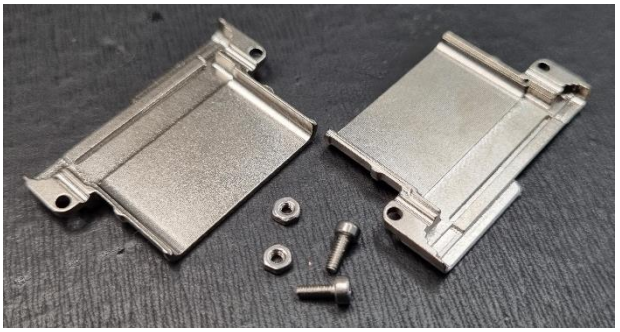
If you would like Harwin to offer a full cable assembly service, please contact us on technical@harwin.com with your full requirements and volumes.

SECTION 2 – GECKO-MT CABLE BACKSHELLS

INTRODUCTION

This instruction sheet is designed to demonstrate the assembly of metal backshells available for Gecko-MT Male and Female crimp connectors or cable assemblies. This document will provide details on adding the jackscrews and braid for a complete cable assembly solution.

G125-964F1-XX-XX-XX



G125-96400-XX-XX-XX

Applicable Backshell products

G125-964F1-XX-XX-XX – Gecko-MT metal backshell kit for Female connectors or Male connectors with reverse fixings. Supplied with screw-loks.
G125-96400-XX-XX-XX – Gecko-MT metal backshell kit for Male connectors

Applicable Connector products

The metal backshells can be fitted to the following Gecko-MT housings and cable assemblies:

G125-2249600-XX-XX-XX – Gecko-MT Female crimp housings, no screw-loks
G125-3249600-XX-XX-XX – Gecko-MT Male crimp housings, no screw-loks
G125-32496M1-XX-XX-XX – Gecko-MT Male crimp housings fitted with internally threaded screw-loks.
G125-FXXXXXXXX-XX-XXXXF0 – Gecko-MT Female double ended, no screw-loks
G125-FXXXXXXXX-XX-XXXXM0 – Gecko-MT Female to Male double ended, no screw-loks
G125-FXXXXXXXX-XX-XXXXM1 – Gecko-MT Female to Male double ended, no screw-loks on the Female
G125-MXXXXXXXX-XX-XXXXM1 – Gecko-MT Male double ended
G125-MXXXXXXXX-XX-XXXXM0 – Gecko-MT Male double ended, no screw-loks

PREPARATION

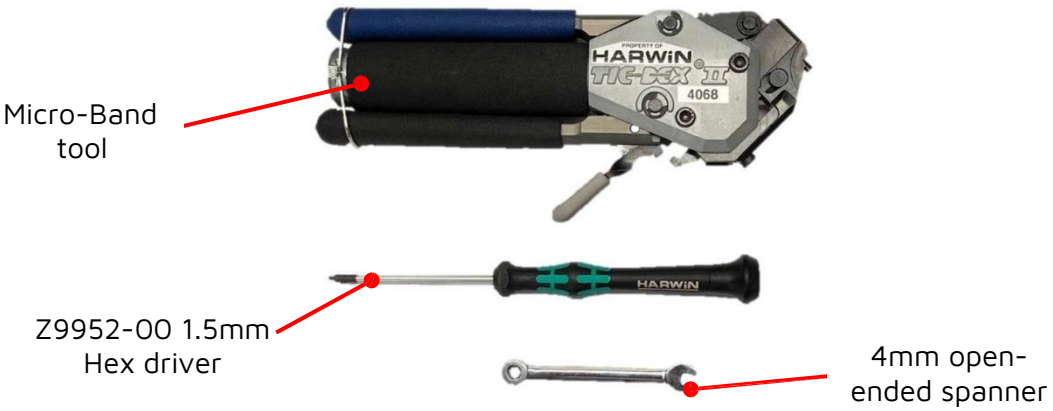
Please consult the "Applicable Backshell products" to confirm the correct backshell kit is selected for the required connector gender. This instruction sheet uses assembly of G125-224F1-06-08-00 to a ready-made cable assembly **G125-FC108050-06-0150F0** as an example.

Additional Tooling and Products

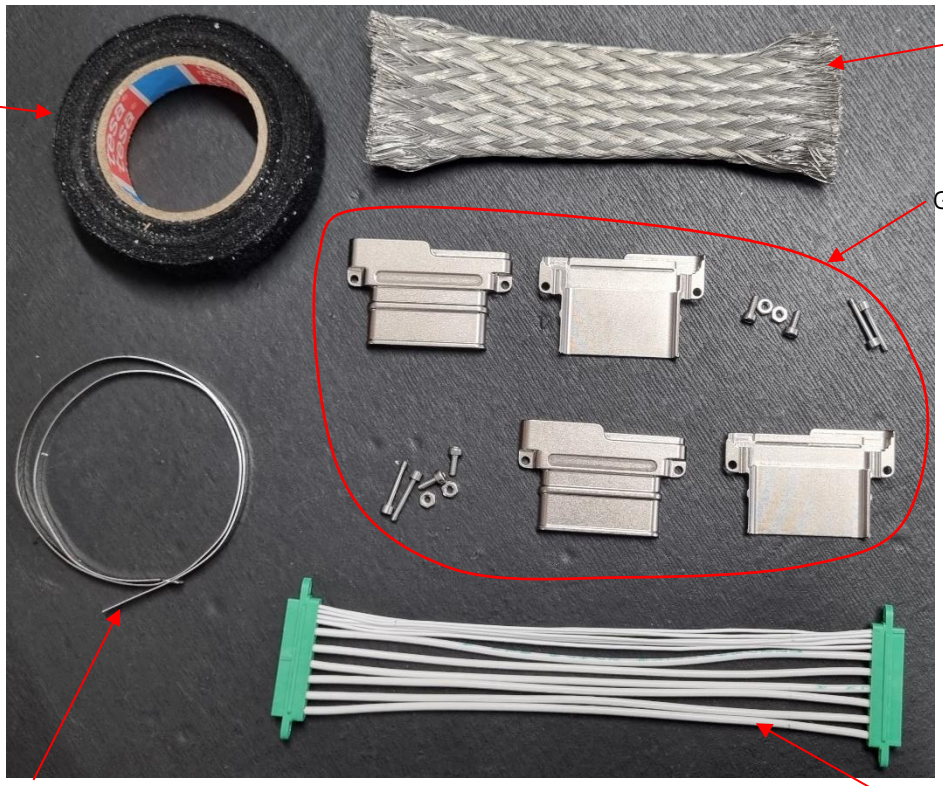
The cable assembly should be manufactured before adding the backshell. If you are manufacturing your own custom cable assembly, you will need the Z125-900 crimp tool with Z125-901 positioner and the Z125-903 crimp tool with Z125-904 positioner, plus the assembly tooling Z125-902 and Z125-905 for the contacts - see IS-37, IS-38, IS-44 and IS-47, for full details.

For assembling the backshell, we recommend the additional tooling:

- Z9952-00, or Z9950-00 with a ¼" screwdriver handle.
- BAND-IT Tie-Dex II A30199 Micro Band tool (to fix the Micro-band if you are adding braid) – this tool is not sold by Harwin.
- 4mm open-ended spanner– this tool is not sold by Harwin.



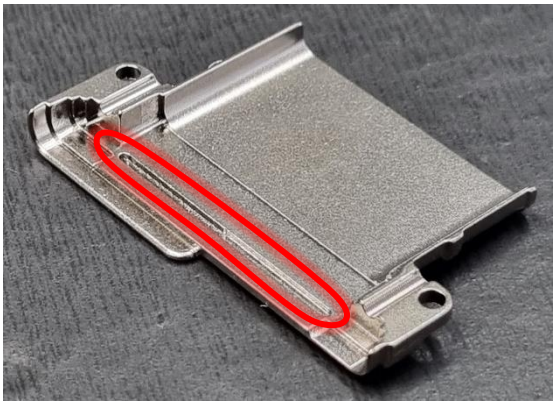
ASSEMBLY METHOD



The instructions also cover the copper braid being assembled, which provides EMC shielding, wear prevention and cable management.

1. Take one half of the Gecko backshell and lay flat as shown on a clean working surface.

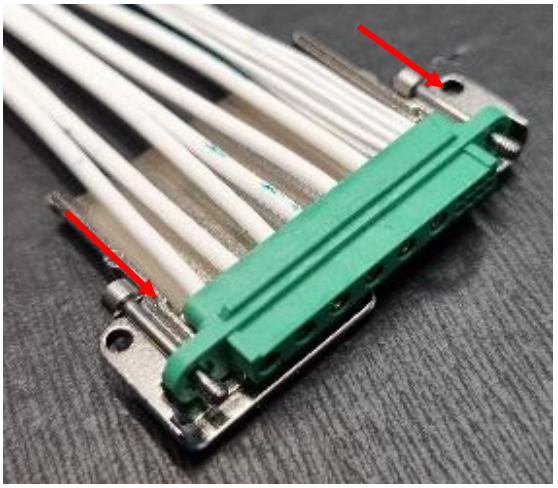
   Note: Pay attention to the slot highlighted in red as this is important in step 2.



2. Place the cable assembly into the backshell.

   Note: Ensure the ledge highlighted in red sits into the slot shown in step 1. There is one on each side of the connector body.

3. If the connector has no existing hardware, insert both jackscrews supplied in the kit from the rear of the connector and lay into the groove in the backshell as shown.



4. Place the second backshell over the assembly. Ensure the ledge sits into the slot in the same way as step 2 and press the backshells together.

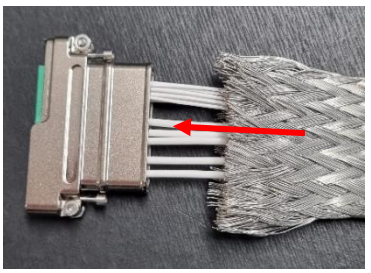
5. Take one of the M2 hex socket screws and one of the M2 nuts and lock the two backshell halves together, tightening loosely by hand.

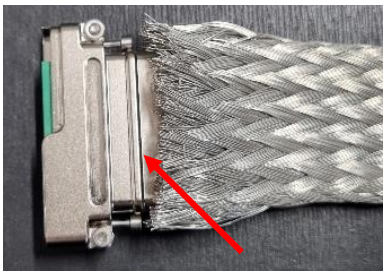
6. Secure the M2 hexagonal nut with the 4mm open-ended spanner, using Z9950-00 or Z9952-00 to tighten the M2 hex socket screw to 18Ncm-23Ncm.

7. Turn connector over and repeat steps 5 & 6.

Adding Braid (if required)

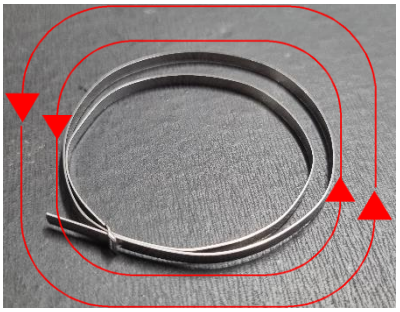
1. Feed braiding over the wire and push up to the second ridge on the cable exit of the backshell as shown.



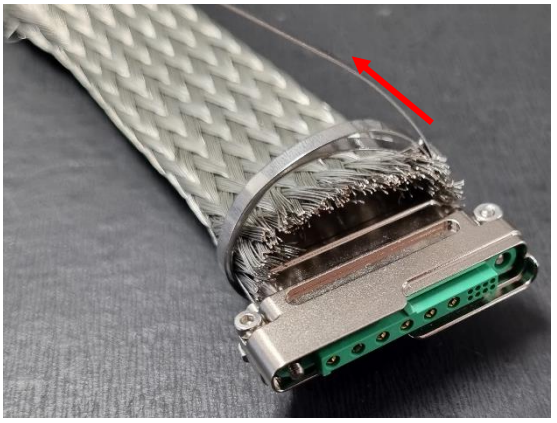


2. The micro-band is supplied straight. It must be coiled up around the cable assembly as shown.

   Note: Micro-band end must pass through the buckle **twice.**

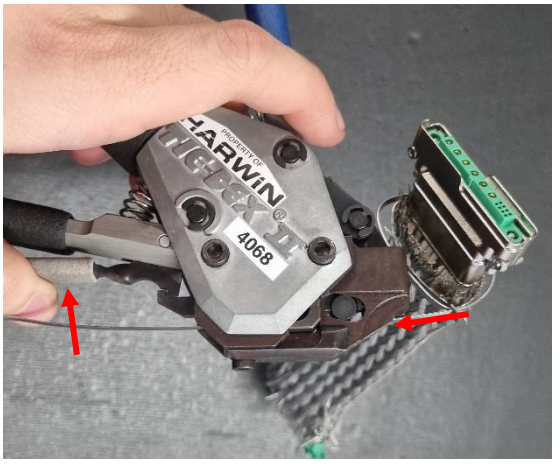


3. Pull end of the band through the buckle and remove slack.



4. Open tool by flipping the retaining straps out of the way.

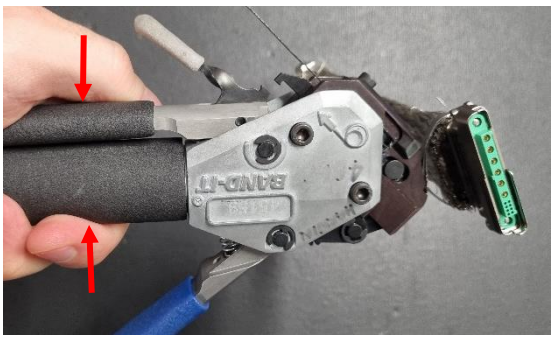
5. Depress the short finger toggle to allow the micro-band tail to pass through the tool. Once inserted to the full depth (buckle touches tool) then release the short grey lever.



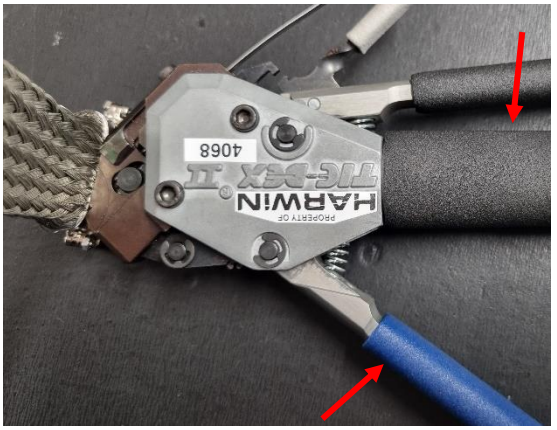
6. Position the buckle of the micro-band in the center of the two ridges of the backshell cable exit.

   Note: Rotate the buckle of the band-it tie to be **centrally** orientated on the longest side of the backshell as shown. This is important to achieve uniform clamping of braid.

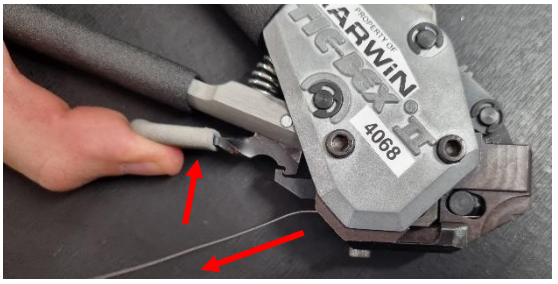
7. Once the micro-band is correctly positioned, squeeze the two black handles together and release. Repeat until the smaller handle will not return and remains locked.



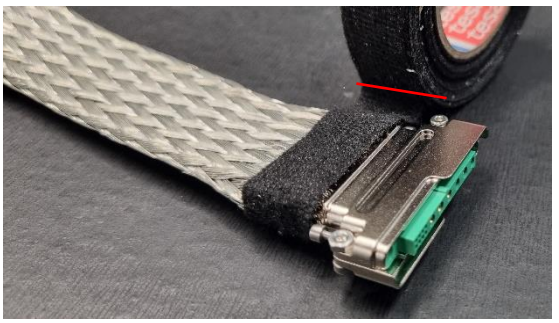
8. To trim off the micro-band and complete the assembly process, squeeze the blue handle and the surplus tie will be trimmed off.



9. Remove the excess from the tool by pressing on the small grey handle and pull out the tail of the micro-band from the rear of the tool.



10. Use the Tesa tape to cover over the band-it tie making one full rotation then cut the rest of the reel off.



OTHER ASSEMBLY OPTIONS

The Gecko metal backshell range is expected to be used with metal braid, for EMC/RFI purposes. However, it is also possible to use polymer and glass-fiber braid types, depending on the desired result and application.

For full EMC/RFI shielding, Harwin recommends nickel-coated copper braid, using a Micro- band to secure it on the backshell.

For mechanical protection such as strain relief and abrasion protection, lightweight polymer braid can be used. Either a micro-band can be used to secure it to the backshell, or a miniature plastic cable tie can also be used. The plastic tie should have a width of 1.6 to 2.5mm, with a head that does not exceed 5.2mm.

For heat protection, polyurethane-impregnated braided fiberglass can be used. As with the option above, either the micro-band or a miniature plastic cable tie (same dimensions as above) can be used to secure the braid to the backshell.

If you would like Harwin to offer a full cable assembly service, please contact us on technical@harwin.com with your full requirements and volumes.

SECTION 3 – GECKO-MT PCB BACKSHELLS

INTRODUCTION

This instruction sheet is designed to demonstrate the assemble of metal backshells available for Gecko-MT Male horizontal PCB mounted connectors. This document will provide details on adding the jackscrews and braid for a complete cable assembly solution.

G125-97002-XX-XX-00

Applicable Backshell products

G125-96800-XX-XX-XX – Gecko-MT metal backshell kit for Male connectors
G125-96900-XX-XX-XX – Gecko-MT metal backshell kit for Male rear panel mount connectors

Applicable Connector products

The metal backshells can be fitted to the following Gecko-MT housings:

G125-MH1XXM4-XXAD000P – Gecko-MT male horizontal throughboard connector screw-lok board mount

PREPARATION

Please consult the "Applicable Backshell products" to confirm the correct backshell kit is selected for the required connector gender. This instruction sheet uses connector of G125-MH104M4-02AD000P.

Additional Tooling

For assembling the backshell, we recommend the additional tooling:

- 4mm open ended spanner
- 1.5mm Hex driver

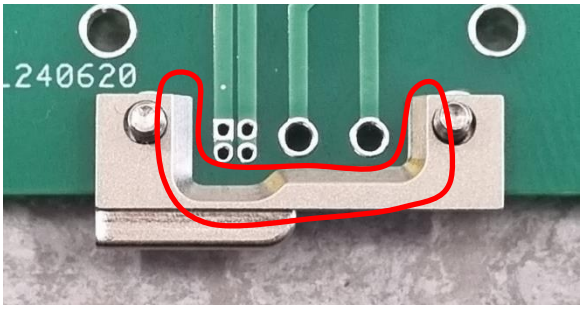
ASSEMBLY METHOD

Connector:
G125-MH104M4-02AD000P

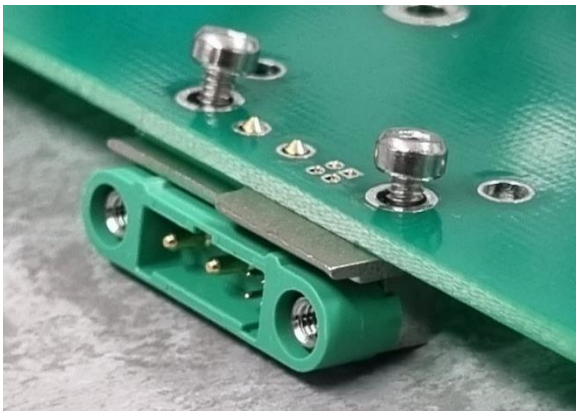
Backshell kit:
G125-96900-02-04-00

1. Take the PCB and insert the two screws in from the underside of the board.

2. Place the base plate on the board with the screws inserted through the holes in the base plate, ensuring that the flat face is against the PCB and the chamfer is facing up.



3. Add the connector by inserting the power and signal pins into their respective holes and flip over PCB to insert the screws into the connector hardware.



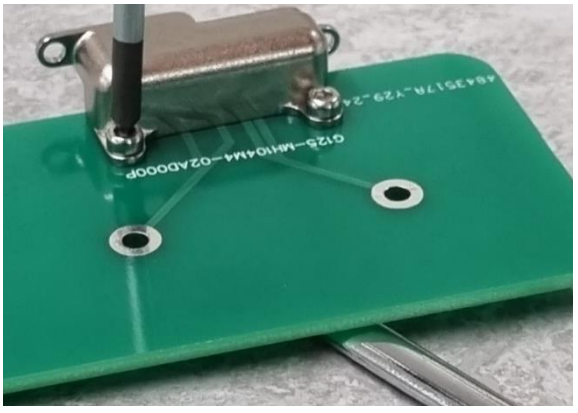
4. Loosely tighten the screws by hand to attach the connector and base plate to the board.

5. Slot the backshell body over the top of the connector and line up the screw holes with the holes in the PCB.

6. Insert two retaining screws through the backshell and PCB.

7. Turn over the board to add a nut to each of the retaining screws and finger tighten to attach the backshell body to the board.

8. Ensure both backshell compants are square to the connector then tighten the retaining screws and nuts using the 1.5mm hex driver and 4mm open ended spanner respectively.



9. Secure the connector to the board using the hex driver.