DekaFlex® Connectors

DEKAFLEX® MC-HL CONNECTOR INSTALLATION GUIDE
FOR HAZARDOUS LOCATIONS

INTRODUCTION

Dekoron's DekaFlex® armored cables are a revolution in the armored cable industry and feature a unique, tightly-corrugated stainless steel armor which provides excellent protection for the cable without sacrificing flexibility. Due to the unique design of the armor, Dekoron's DekaFlex® Connectors are must be used to ensure a proper installation. These connectors are specially designed to interface with the DekaFlex® armor, and are installed differently than traditional armored cable connectors. DekaFlex® Connectors are fully UL certified and available in both water-tight and full Class I, Division 1 Hazardous Location versions to better suit various applications.

These connectors are designed to interface with the unique design of the DekaFlex® armor, and are installed differently than traditional armored cable connectors. This process is not complicated, but it is recommended that this guide be read through fully prior to attempting any installation to ensure that the installation is successful and trouble-free. If you need further assistance, do not hesitate to call your Dekoron representative.

For ease of installation, Dekoron supplies pre-packaged connector kits. Additionally, Dekoron supplies a reusable sealant applicator gun which makes sealant application simple, fast, and clean.

PRE-INSTALLATION PREP

Prior to any connector installation, the cable should be installed in the appropriate location and enough length should be left to allow for termination. Unlike many other armored cables, DekaFlex® cables do not require additional loops to be added to facilitate future reterminations; however, an additional length of cable should be allotted for the termination process.

The end of the cable should be wiped clean using a clean rag or cloth. Dirt, oil, or other contaminates could prevent the cable from being sealed thoroughly in the connector, which could result in an unsafe installation. Additionally, if any damage has occurred to the end of the cable during the cable's installation, the damaged section should be removed prior to connector installation.

Once wiped clean, the cable's outer jacket should be marked at the desired location of the cable connector. Both the length of the connector itself and the additional length of cable core needed should be taken into consideration when making this mark. Dekoron recommends a MINIMUM of 6 inches [15 cm] of cable core extend past the end of the connector to facilitate connector installation and sealing. After connector installation, the cable core can be trimmed further, if needed, to suit the application.

RECOMMENDED TOOLS

Dekoron recommends the use of the following tools for the termination of DekaFlex® cables:

- 2x Wrenches in the Applicable Size *(See Connector Information Table)*
- Tubing Cutters with a 1/2 Inch (or Larger) Diameter Cutting Wheel
- Razor Knife
- 3/8 Inch Flat-Head Screw Driver
- Sealant Applicator Gun
- Electrical Tape
- Wire Cutters
- Wire Strippers

Suitable alternatives to these tools are acceptable, so long as they do not cause damage to the cable and allow for a secure connector installation.

WARNING

DekaFlex® cable is extremely flexible, very strong, and highly resistant to fatigue. As such, DekaFlex® cables are not easily deformed. Unlike most other armored cables, DekaFlex® cable will try to return to a straight position when it is able to. Take care when bending, installing, and uninstalling DekaFlex® cables, as the cable could spring back once it is no longer secured.

It is possible to prevent some of this spring back by over-bending the cable, so as long as the bending radius of the cable is not exceeded when doing so.

Dekoron Wire & Cable, LLC
1300 Industrial Rd, Mt. Pleasant, Texas, USA
903.572.3475 – www.dekoroncable.com

HUB INSTALLATION

With the connector still assembled, the hub should be installed in the enclosure. Insert the hub into the enclosure and tighten it by hand.

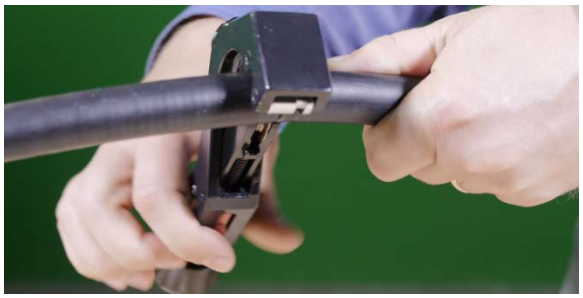
Once the hub is hand-tight, use a wrench placed around the connector barrel nut to tighten the hub to the enclosure. When the hub is tight, place a second wrench around the hub nut and loosen it.

DO NOT EXCEED 1500 IN·LBS OF TORQUE.

Once loose, the connector's barrel can be removed from the hub and the installation process can continue.

DEKAFLEX® ARMOR REMOVAL

After determining and marking the required length of conductors needed inside the enclosure and taking into account the length of the connector (See Connector Information Table), a tubing cutter with a 1/2 inch diameter cutting wheel (or larger) should be used to cut through the outer jacket and DekaFlex® armor. Using a smaller cutting wheel can cause the outer jacket to deform, which can cause sealing issues later. Slowly tighten the tubing cutter's cutting wheel until the jacket and armor is cut-through completely.



Once cut, the DekaFlex® armor can be removed, exposing the cable's core. Be careful not to cut too deeply, as this could result in damage to the core.

OUTER JACKET REMOVAL

In order for the connector to interface fully with the DekaFlex® armor, a portion of the outer jacket should be removed. Using a cutting tool such as tubing cutters or a razor knife, remove the appropriate length of outer jacket. (See Connector Information Table)

While removing the outer jacket, if too much armor was exposed, simply cut away a small portion of the armor to correct the issue. If too little was exposed, remove more of the outer jacket. Removing an excessive length of the outer jacket is not recommended and should be avoided. Failure to remove the correct amount of outer jacket could result in a poor-fitting connector and faulty installation.

INNER JACKET REMOVAL

To prevent gasses from passing through or along the length of the cable in an emergency situation, the conductors need to be sealed off fully.

Remove all but 1/2 inch [1.3cm], measured from the end of the armor, of the cable core's jacket and binders. This will allow the sealant to be injected into the spaces between the cable's components, blocking the flow of gasses in an emergency.

To keep the conductors bunched and aid with conductor installation, wrap the loose ends of the conductors in electrical tape.

GROMMET INSTALLATION

Remove the sealing grommet and sealing grommet nut from the connector's barrel then slide them over the cable core and DekaFlex® armor, onto the cable's outer jacket. Make sure to slide the nut on first, in the correct orientation, and then the sealing grommet itself.

The nut and grommet should be slid about 2 inches [5 cm] past the end of the DekaFlex® armor so that they will not interfere with the connector's barrel. The seal may be snug, but should not require excessive effort to slide onto and along the outer jacket. Take care not to damage the outer jacket during this step.

CONNECTOR INSTALLATION

It is now time to install the main barrel of the connector. The connector's unique internal scroll design is designed to thread onto the DekaFlex® armor, similar to a nut being installed on a bolt. Begin by sliding the connector over the cable's core.

Once reaching the exposed armor, rotate the connector by hand while applying gentle pressure. Continue rotating the connector in this manner until it is hand tight.

WHEN INSTALLING 3/4" OR 1" CONNECTORS, TIGHTEN THE CONNECTOR ONE ADDITIONAL TURN.

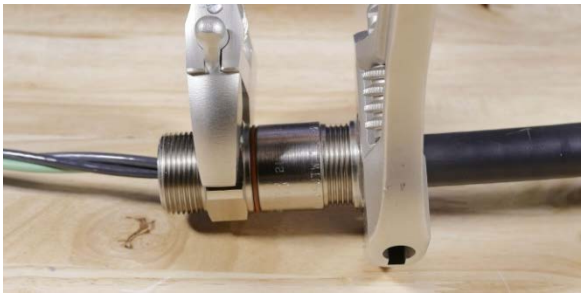
If the connector fails to tighten, remove it completely, confirm the length of exposed armor is correct, and reinstall the connector's barrel again. If the connector will still not tighten, remove the currently exposed section of armor. Measure and remove the appropriate length of the cable's outer jacket as well as the cable's inner jacket. Once completed, attempt the install the connector's barrel once again. Due to the eccentric nature of the connector's scroll, it may be advantageous to offset the alignment of the armor and connector to get the connector started on the armor.

Do not proceed if the connector's barrel is loose.

CONNECTOR ASSEMBLY

After ensuring that the end of the connector's barrel is fully in contact with the outer jacket, the connector is ready to be sealed to the outer jacket. Move the sealing grommet into contact with the connector's barrel followed by the grommet nut. Tighten the grommet nut until it is hand-tight.

Now the connector can be tightened using a wrench. Make sure any rotation is limited to the grommet nut, and not the connector's barrel. Rotating the barrel could loosen the connector from the armor, resulting in a weak connection or faulty seal.



The hex-shaped portion of the connector's barrel is the ideal place to hold the barrel and prevent it from rotating while the nut is tightened. If needed, the inspection port plugs can be removed using a flat-head screw driver to allow a wrench to be used at this location without any interference.

DO NOT EXCEED 1000 IN·LBS OF TORQUE.

An excessive amount of torque is not required for the grommet to seal. Over tightening should be avoided.

The connector should now be fully secured to the armor and the cable's outer jacket. If for some reason

the connector is not secure, repeat the prior steps and attempt the installation process again.

Do not proceed if the connector is loose.

SEALANT PREPARATION

DekaFlex® connectors can be filled with sealant from either the end of the barrel or via the inspection ports. A damming fiber is provided with each connector to allow for the sealing of the connector via the inspection ports. This allows the sealant to be applied even if the connector is not held in a vertical orientation.

The following step can be omitted if the connector is to be filled with sealant from the end of the barrel, rather than through the inspection ports.

Once the connector is assembled, weave the damming fiber between the conductors and wedge it into the connector's barrel using a non-metallic object.

The damming fiber will prevent the sealant from flowing into the enclosure and will lessen the amount of sealant needed to fully seal the connector.

SEALANT APPLICATION

To fully seal the connector and prevent gasses from traveling through the cable in an emergency situation, the connector's barrel is filled with sealant. This sealant can be injected via either the end of the connector's barrel or the inspection ports.

Prepare the sealant applicator gun by installing the sealant tube and removing the protective cover from the end of the tube. Gently squeeze the applicator gun's trigger until both compounds flow evenly from the end of the tubes. When both compounds flow evenly, the self-mixing applicator tip can be installed.

If sealant is to be applied via the inspection ports, they should be removed at this point by using a flat-head screw driver. Make sure the damming fiber has been installed prior to injecting any sealant.

Now, place the self-mixing applicator tip in the inspection port or the end of the barrel and inject the sealant into the connector until the cavity is filled.

Allow a few seconds for the sealant to fill the voids in the cable, and add more sealant as needed. Once completely filled, the inspection port covers should be replaced if they were previously removed.

The sealant will fully cure in approximately 24 hours.

Note that the sealant may be applied after the connector is fully installed, in any orientation, without disconnecting the cable, if the inspection ports are used to apply the sealant.

HUB ASSEMBLY

The cable is now ready to be attached to the hub and enclosure. Begin by threading the conductors through the hub and into the enclosure.

Hand-tighten the hub nut to the connector. Make sure that the nut is rotated during this process, and not the connector's barrel. Rotating the barrel may cause stress in the cable.

Once the nut is hand tight, place a wrench on the hub nut and the barrel nut. Fully tighten the hub nut to the connector in this fashion.

Again, insure that the connector's barrel is not rotated. All rotation should be made at the hub nut itself. This is done to ensure that the cable is not stressed.

DO NOT EXCEED 1500 IN·LBS OF TORQUE.

INSPECTION & REMOVAL

Once installed, the connector's sealant application can be inspected without being removed or disconnected. Simply remove the inspection port covers to do so.

If the cable needs to be disconnected for any reason, the conductors should be disconnected and the hub nut should be loosened using a wrench. There is no need to loosen the grommet nut to disconnect the connector from the enclosure. Be sure to limit any rotation to the hub nut itself, rather than the grommet nut or the connector's barrel.

Remember, DekaFlex® cable is extremely flexible, very strong, and highly resistant to fatigue. As such, DekaFlex® cables are not easily deformed. Unlike most other armored cables, DekaFlex® cable will try to return to a straight position when it is able to. Take care when bending, installing, and uninstalling DekaFlex® cables, as the cable could spring back once it is no longer secured, causing injury or equipment damage.

It is possible to prevent some of this spring back by over-bending the cable, so as long as the bending radius of the cable is not exceeded when doing so.

CONNECTOR INFORMATION

	WTUPC DK 038-050 NB	WTUPC DK 050-075 NB	WTUPC DK 075-100 NB	WTUPC DK 100-125 NB
Cable Diameter, Max [in]	0.71	0.86	1.15	1.44
Connector Diameter [in]	1.50	1.75	2.35	2.50
Connector Length [in]	5.25	5.5	6.25	6.5
Connector Nut Size [in]	1	1–1/2	2	2–1/4
Connector Weight [lbs]	1.22	1.58	3.19	3.72
Core Diameter, Max [in]	0.408	0.516	0.766	0.986
Fitting Trade Size [in]	1/2	3/4	1	1–1/4
Fitting Torque [in·lbs]	300	500	700	1000
Fitting Thread Length [in]	0.78	0.78	0.99	1.01
Fitting Nut Torque [in·lbs]	300	500	700	1000
Grommet Nut Torque [in·lbs]	300	500	700	700
Jacket Removal Length [in]	1	1	1.25	1.25
Sealant Needed [oz]	0.4	0.6	1.1	1.7

DekaFlex CONNECTORS

Manufactured Exclusively By

American Connectors

For Dekoron Wire & Cable, LLC