Installation Instructions

Weatherproofing Kit for Connectors and Antennas

Introduction

The application of sealing materials to antenna cable connections protects them from weather conditions. These include moisture penetration and loosening of connections from vibrations caused by strong winds.

The manufacturer recommends weatherproofing these connections according to the following procedures. Standard weatherproofing tapes both butyl and plastic electrical tapes, are applied to the following:

- Main feeder cable-to-jumper cable connection
- Jumper cable-to-antenna connection

Become thoroughly familiar with and apply the Installation Tips given here.

Description

The use of this kit provides an additional moisture seal for cable connections. It also prevents loosening of connections from vibration or other external stresses which would eventually allow moisture penetration. The sealed connection is suitable for typical exposed and buried cable applications.

The kit can be used for one or more connections depending on the configuration and cable type as follows:

Connection type	Cable diameter	Connections per kit
2-1/4" to 1/2"	2-1/4" to 1/2" (57mm to 13mm)	2
1-5/8" to 1/2"	1-5/8" to 1/2" (41mm to 13mm)	2
1-1/4" to 1/2"	1-1/4" to 1/2" (32mm to 13mm)	2
7/8" to 1/2"	7/8" to 1/2" (22mm to 13mm)	4
1/2" to 1/2"	1/2" to 1/2" (13mm to 13mm)	12
7/8" to Device	7/8" to 1/2" (22mm to 13mm)	12
1/2" to Device	1/2" to 1/2" (13mm to 13mm)	12

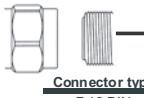
Installation Tips

- When applied, the tape must be above 32°F (0°C) to ensure adhesion. Keep tape warm by carrying in coat pockets.
- Do not stretch the tape. Apply only enough tension to provide a smooth wrap.
- Smooth each wrapped layer with your hands to ensure full adhesion.
- Do not pull the tape to tear it - always cut it. Pulled tape eventually unravels, decreasing protection.
- Add extra final layers of tape in warmer climates where there will be long exposure to damaging ultra violet (UV) rays. Two or three extra layers of tape will provide additional UV protection.
- On vertical runs, the last wrap of 3/4" tape should be wrapped from the bottom to the top. This provides a shingle effect.
- Ensure vent or drain holes at the bottom of the antenna or device are not covered with weatherproofing tape.
- When wrapping tape, overlap the tape to half-width as shown

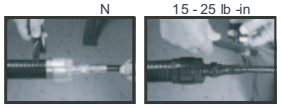
Feeder Cable to Jumper Cable Connection

1 Tighten the connection with a torque wrench to the proper torque value to ensure that correct internal seals and surface contacts are made.


Tape overlap


Connector coupling

Connector type	Torque
7-16 DIN	18 - 22 lb -ft
N	15 - 25 lb -in


Plastic tape wrap

2 Prepare the cable by removing any cable markers and drying the cable and connectors. Starting at 2" (51mm) from the feeder connector, wrap the connection with a layer of 3/4" (19mm) plastic tape. Overlap the tape to half-width and extend the wrapping 2" (51mm) beyond the jumper connector or plastic strain relief of a jumper.

NOTE: *Do not remove the jumper strain relief.*

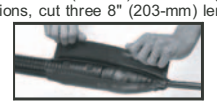

Rubber tape fill

3 Cut the rubber tape into three 12" (305mm) lengths for 2-1/4" (57mm), 1-5/8" (41mm), and 1-1/4" (32mm) to ½" (13mm) connections.

For 7/8" (22mm) to ½" (13mm) connections, cut three 4" (102mm) lengths of tape.

Form a tapered surface by starting with two tapes that are folded to half-width and finishing with one full-width tape.

4 Cut the rubber tape into three 12" (305-mm) lengths for 2-1/4" (57-mm), 1-5/8" (41-mm), and 1-1/4" (32-mm) to 1/2" (13-mm) connections. For 7/8" (22-mm) to 1/2" (13-mm) connections, cut three 8" (203-mm) lengths of tape. For 1/2" (13-mm) to 1/2" (13-mm) connections, cut three 8" (203-mm) lengths of tape.


Rubber tape wrap

Lay the three rubber tapes around the entire connection so that they overlap. Pull the tape as needed for overlap. Press the tapes together along the overlaps.


End of 2" plastic tape wrap


Start of 3/4" plastic tape wrap

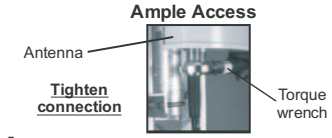
5 Wrap the connection with a layer of the 2" (51mm) tape and then three continuous layers the 3/4" (19mm) plastic tape. Overlap each tape to half-width and extend the wrapping 2" (51mm) beyond the previous tape.

Jumper Cable to Antenna Connection

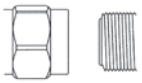
Due to the variability in design of base station antennas at the point of connector interface, special attention must be given to the application of weatherproofing materials. The following illustrations demonstrate the recommendations of the manufacturer in cases where there is ample access to the connection and where access is restricted.

2

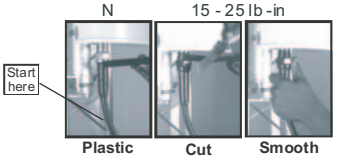
Ample Access



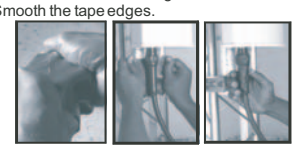
1 Tighten the connection with a torque wrench to the proper torque value to ensure that correct internal seals and surface contacts are made.


Connector coupling

Connector type	Torque
7-16 DIN	18 - 22 lb -ft
N	15 - 25 lb -in



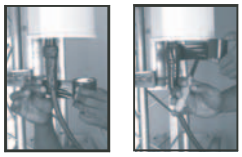
2 Wrap the connection with a layer of 3/4" (19mm) plastic tape, starting at 1" (25mm) from the connector or plastic strain relief of a jumper. Overlap the tape to half-width and extend the wrapping to the flange of the antenna connector. Avoid making creases or wrinkles. Smooth the tape edges.



3 Cut a 5" (125mm) length of rubber tape. Expand the width of the tape by stretching it so that it will wrap completely around the connector and cable. Wrap the tape around the cable connector and the cable. Press the tape edges together so that there are no gaps. Press the tape against the connection and cable. The tape should extend 1" (25mm) beyond the plastic tape on the jumper.

3

4 Start wrapping a layer of 2" (50mm) plastic tape 1" (25mm) below the rubber tape, overlapping at half width. Finish the wrap at the flange of the antenna connector and cut the tape. Repeat this process for second layer.


Plastic wrap

Cut

5 Start wrapping three layers of 3/4" (19mm) plastic tape 1" (25mm) below the previous 2" (50mm) wrap, overlapping at half width.


Plastic wrap

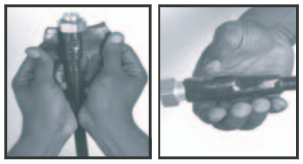
Cut

Restricted Access

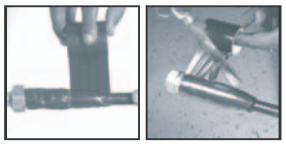
Where access to the antenna connector and jumper cable will be restricted for taping, most of the jumper cable must be prepared before it is connected.


Plastic wrap

1 Wrap the cable and connector body with a layer of 3/4" (19mm) plastic tape, starting at 1" (25mm) from the connector body. Overlap the tape to half-width. *Do not tape the connector clamping nut.* Avoid making creases or wrinkles. Smooth the tape edges.


Rubber wrap

2 Cut a 3-1/2" (90mm) length of rubber tape. Expand the width of the tape by stretching it so that it will wrap completely around the connector body and cable. Wrap the tape around the cable connector body and the cable. *Do not tape the connector clamping nut.* Press the tape edges together so that there are no gaps. Press the tape against the connector body and cable. The tape should extend 1" (25mm) beyond the plastic tape on the jumper.

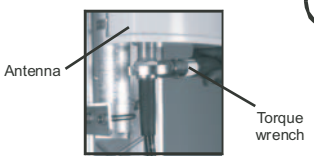

Plastic wrap

3 Start wrapping a layer of 2" (50mm) plastic tape 1" (25mm) beyond the rubber tape, overlapping at half width. Finish the wrap at the connector clamping nut and cut the tape. Repeat this process for a second layer.

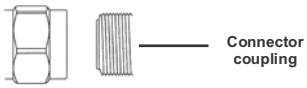

Plastic wrap

4 Start wrapping a layer of 3/4" (19mm) plastic tape 1" (25mm) beyond the 2" (50mm) tape, overlapping at half width. Finish the wrap at the connector clamping nut and cut the tape. Repeat this process for a second layer and a third layer.

4



Tighten connection


Connector coupling

Connector type	Torque
7-16 DIN	18 - 22 lb -ft
N	15 - 25 lb -in

5 Connect the jumper cable to the antenna connector. Tighten the connection with a torque wrench to the proper torque value to ensure that correct internal seals and surface contacts are made.


Hold roll and push tape


Apply tape in strips


Uncoil tape from pencil

6 Start wrapping three layers of 3/4" (19mm) plastic tape 1" (25mm) at the connector clamping nut, overlapping at half width. The tape should extend 1" (25mm) beyond the cable connector clamping nut.

The tape can be applied in one or more strips if necessary. A strip can be coiled onto an applicator such as a pencil. Apply only enough tension to get good adhesion and keep the tape smooth.


Rubber wrap

7 Cut a 2" (50mm) length of rubber tape. Expand the width of the tape by stretching it so that it will wrap completely around the connector body and clamping nut. Wrap the tape around the cable connector. Press the tape edges together so that there are no gaps. Press the tape against the connector body.


Apply wide tape


Apply narrow tape


Completed Wrapping

8 Wrap two layers of 2" (50mm) plastic tape and then three layers of 3/4" (19mm) plastic tape to complete the wrapping. Start each wrap 1" (25mm) from the previous wrap.

Note: When removing the weatherproofing from connections, take precautions to not cut through the jacket of the coaxial cable. If the jacket is cut, the rewrapping should start at the point of the exposed copper outer conductor.

Weatherproofing Kit Components

Description

3/4" X 66' black plastic tape
2" X 20' black plastic tape
Butyl rubber tape