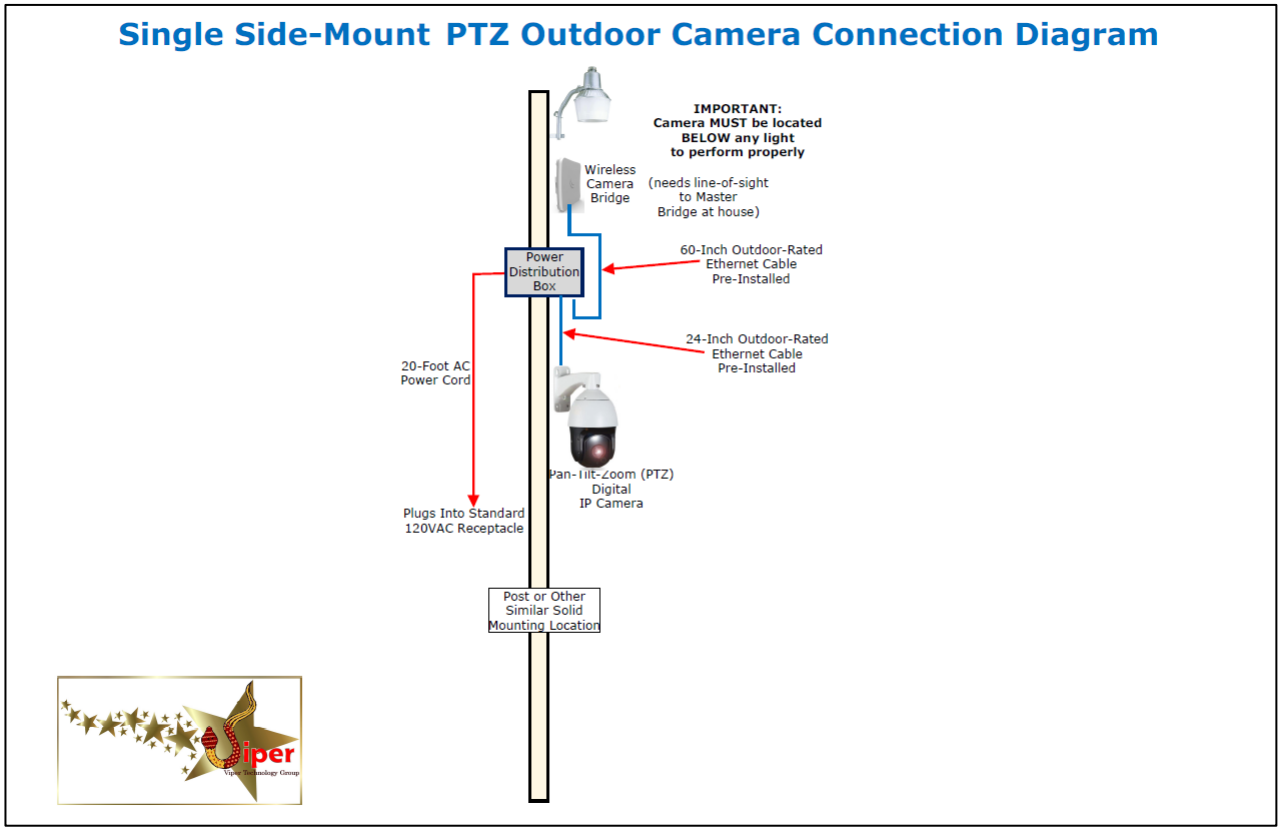
VIPER VCAM SERIES IP CAMERAS

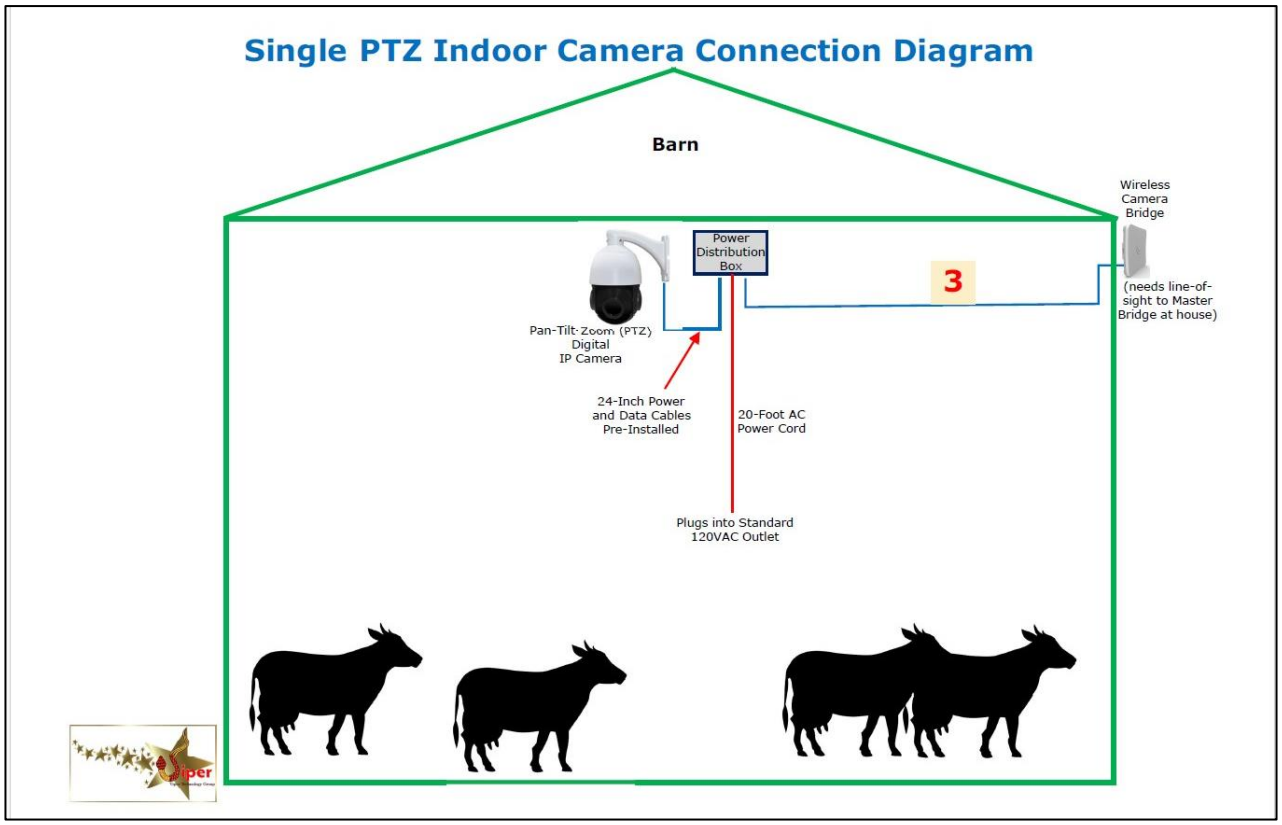
Installing a Single PTZ Camera

No matter how many cameras, distribution boxes, or bridges you have in your system, the following rules apply:

- Each camera must connect to a Power Distribution Box – this provides power and data communications to and from the camera(s).
- Each Power Distribution Box must connect to a Wireless Camera Bridge – this provides data communication between the Power Distribution Box and the Master Bridge and other equipment installed at your house.
- All Power Distribution Boxes have a power cord – this power cord must be connected to a standard 110-volt standard receptacle. ** A good-quality power filter or UPS battery backup is STRONGLY recommended, but only in cases where the temperature doe not fall below -10C. Otherwise a good-quality surge bar is recommended.
- A CATCBL-RJ-CG outdoor-rated cable is used to connect most cameras to a Power Distribution Box. These cables are available in lengths from 10’ to 150’. This cable is sometimes integral and pre-installed into the Power Distribution Box.
- A CATCBL-RJ-CG outdoor-rated cable is used to a Camera Bridge to a Power Distribution Box. These cables are available in lengths from 10’ to 150’. This cable is sometimes integral and pre-installed into the Power Distribution Box.

Here are two typical connection diagrams for a single PTZ (pan-tilt-zoom) camera:



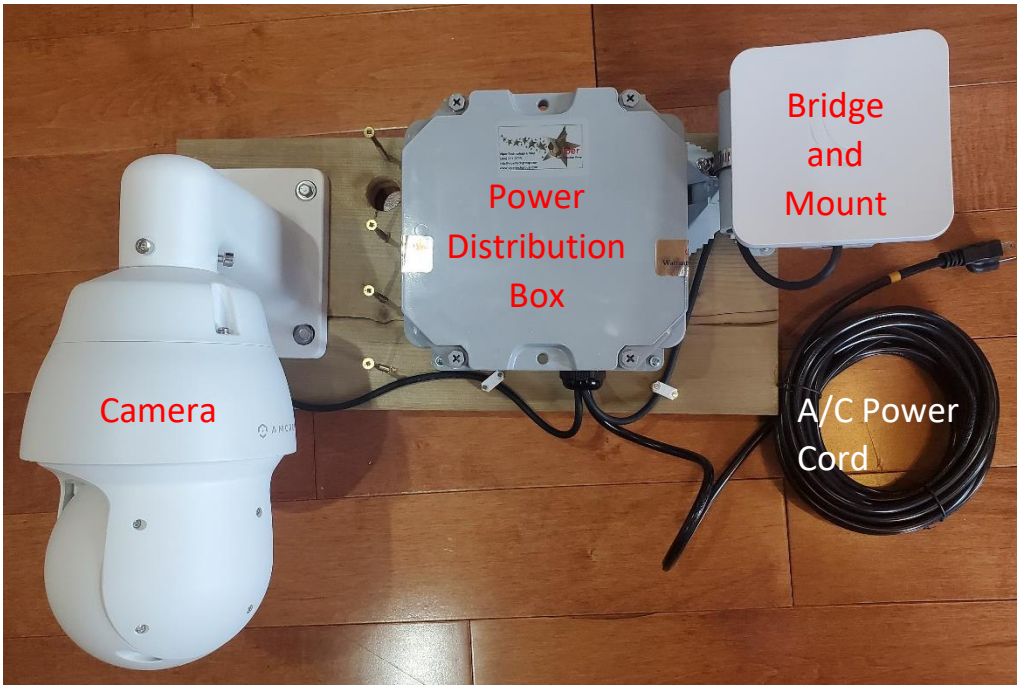


Installing a Single PTZ Camera

You will require a solid mounting location for these cameras, which can be fairly heavy and can shake if located outside during high winds if not mounted solid. A metal pole (even drill stem) has been shown to be unsuitable to mounting a camera.

1. Determine a suitable location for your camera and Power Distribution Box. On a single-camera system, we recommend the Power Distribution Box be located within a foot or two of the camera. Keep in mind you also will need a wire run from the Power Distribution Box to the Camera Bridge.

2. Here's a trick for installing a large PTZ camera on a post: the three main components for the large PTZ camera when mounted to a post or building are normally installed within a few feet (or inches) of each other. We use a 20-inch treated 2x10 or 2x8 piece of lumber. We attach the camera, power distribution box, and wireless bridge with mount to this piece of lumber and make the wire connections. We will have drilled a 1-inch or larger hole through the piece of lumber before we mount the components; this allows us to "hang" the entire assembly on a lag bolt drilled into the post or building. This saves a lot of running up and down a ladder installing individual components. A few long deck screws or lag bolts to secure the assembly to the post is all you need.



It is CRITICAL on Large (6-inch) PTZ Cameras that the Ethernet cable connection be CAREFULLY tucked inside the camera arm/mount to keep it away from the elements

Neatly coil up any extra cable and zip-tie or wire-tie it to the mount or board so it doesn't get beat up by the wind. Ensure the cable exits out the BOTTOM of the wireless bridge, not the top or side.

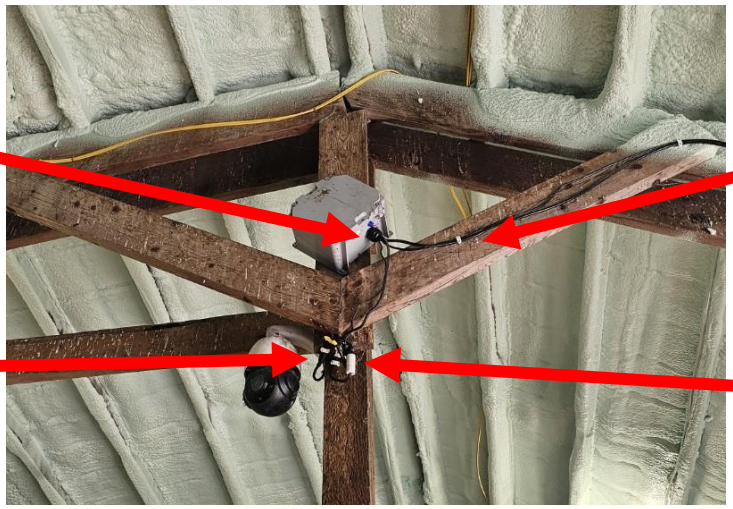
3. Mount the Power Distribution Box using the included four ¼" hex-head screws. Be sure to mount the box so the connections and power cord are downward to prevent water infiltration.

DO NOT attempt to open the Power Distribution Box. This contains high voltage components as well as delicate communication components. Breaking of one or both tamper-evident seals **will void the warranty.**

The camera and wireless bridge will connect to the Power Distribution Box, so it is best to install it first, especially when midi or large cameras will be connected. These larger cameras hide the connection between the Power Distribution Box and the camera inside the camera's mount.

Here is a good example of a single, large PTZ camera installed on a light post:

And one of a small PTZ camera installed inside a barn, *installed by a customer*:



4. Feed the camera's wire harness through the mount:

Small PTZ Camera with Convertible Mount

Large PTZ Camera with Side Mount

5. On our VCAM wide angle barn and security cameras, the mount is convertible, so it can be configured as a side mount for mounting to a wall or rafter, or as a pendant mount for installing to a horizontal surface (ceiling):

Side Mount

Pendant Mount

6. On our Midi and Large PTZ cameras, a hex wrench is included with your camera. Use it to tighten up the 3 machine screws, starting with the middle one (this screw threads into a hole in the camera to lock it in place).

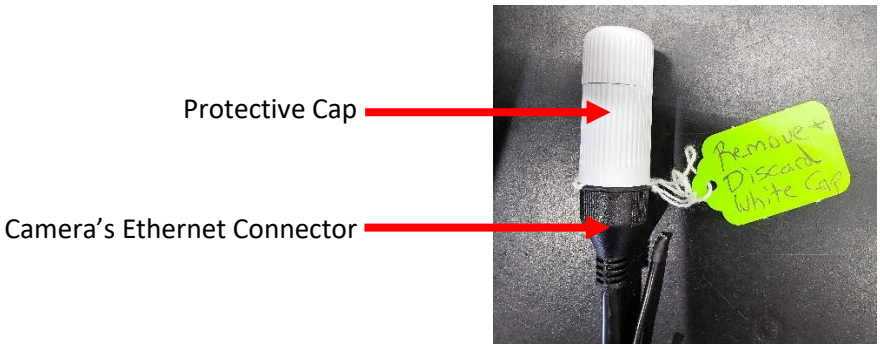
7. Attach the emergency cable.

8. Power Distribution Box (shown below with the optional audio pick-up installed).

All Power Distribution Boxes MUST be oriented so the cables exit the BOTTOM of the box. This ensures water cannot infiltrate and damage sensitive electronic components inside the box.

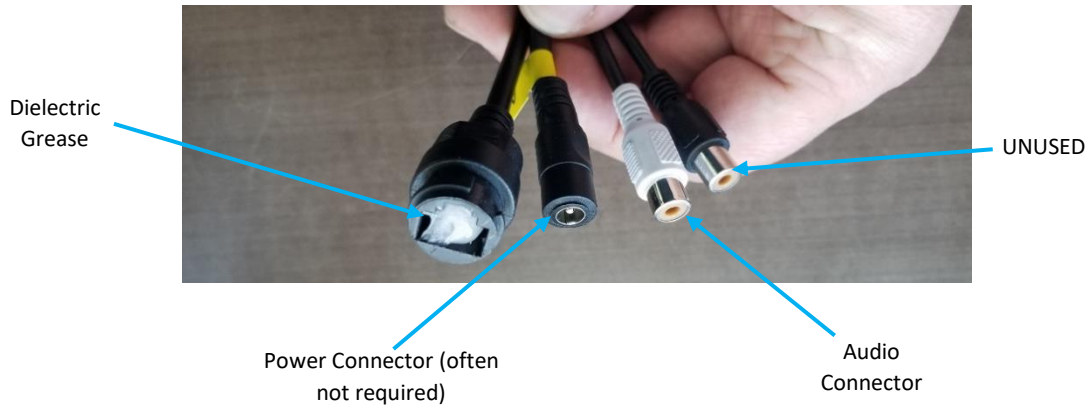
Your warranty will be VOIDED if moisture has gotten into the Power Distribution Box!

9. Your camera's female Ethernet (data + power) port may be capped to help prevent dirt from getting into the port filled with grease. DO NOT remove this cap until you are ready to connect the data cable from the Power Distribution Box to the camera's female Ethernet port.



To remove the cap, simply twist counter-clockwise to unlock, and pull off. Discard the cap.

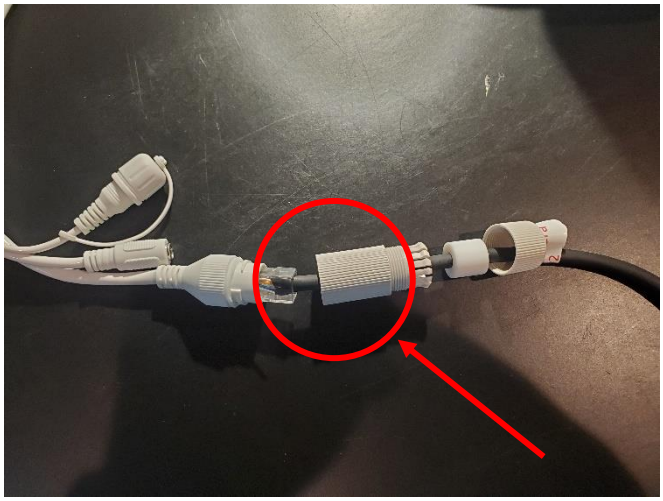
10. Note the camera's connections (may differ by model). The camera's female data port (Ethernet port) connection may have dielectric grease in it. **DO NOT** remove this grease; it is there to protect this sensitive connection against moisture.



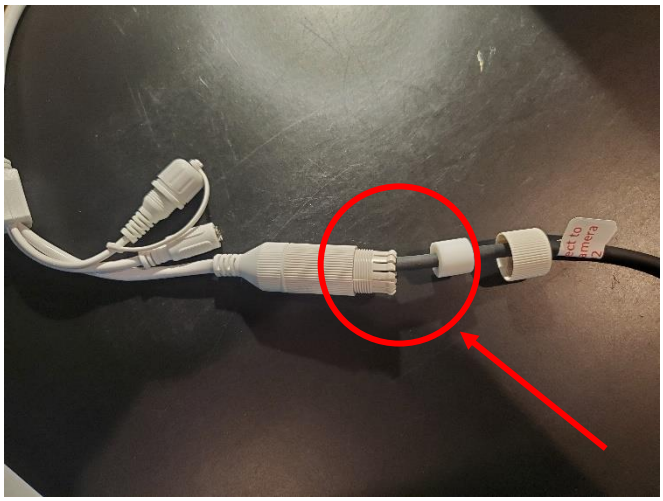
It is extremely important that connections between your camera and the network cable coming from the Power Distribution Box be made carefully, securely and correctly. Failure to do so can expose the connections to moisture and worse, may literally "strangle" the data flow through the cable. **Your warranty will be voided if moisture is present in the connections.**

Here is the correct way to make your connections:

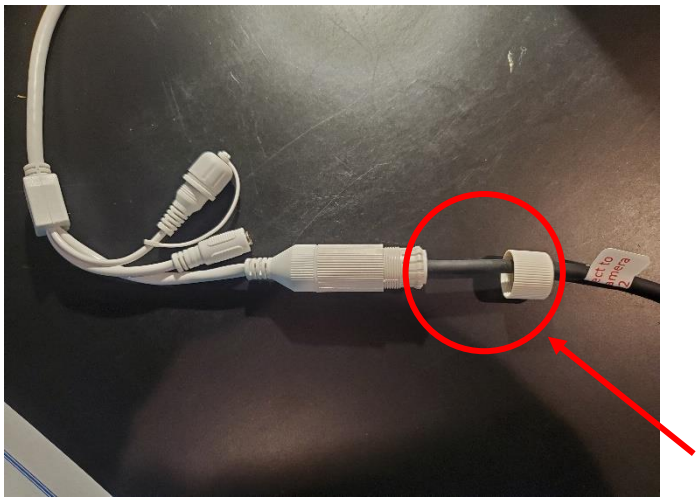
I. Securely snap the male end of the network ("Ethernet") cable into the female end of the cable attached to the camera. If there is dielectric grease in the female connector, do not remote it – it may take slightly more effort to push the male end into the female end with dielectric grease present. Make sure the connection is solid by gently pulling on the cable to make sure it doesn't pull out.



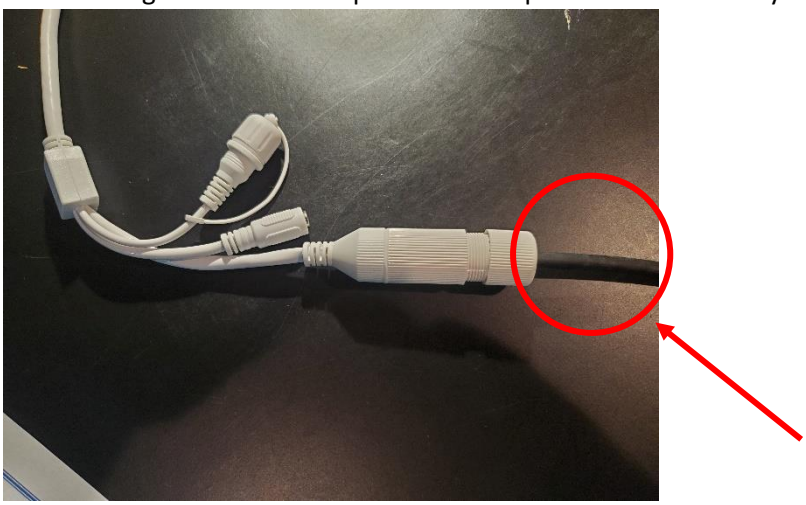
II. Attach the main body of the weatherproof gland to the camera's female connector. There should be a small rubber o-ring on the camera connector to seal against the body. Twist approximately 1/8 of a turn to lock the body onto the camera connector.



III. Slide the rubber seal carefully into the body of the weatherproof gland, being careful not to damage any of the delicate plastic “fingers” that will surround the rubber seal.

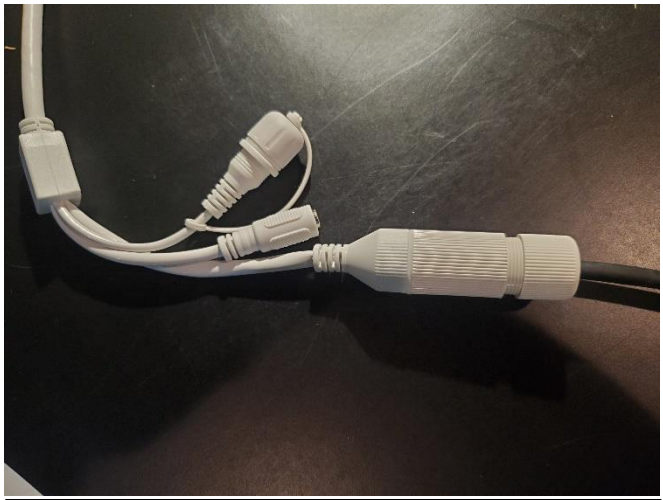


IV. Slide the cap of the weatherproof gland over the fingers of the gland body, making sure not to break or damage the fingers. All the fingers should end up inside the cap if installed correctly.

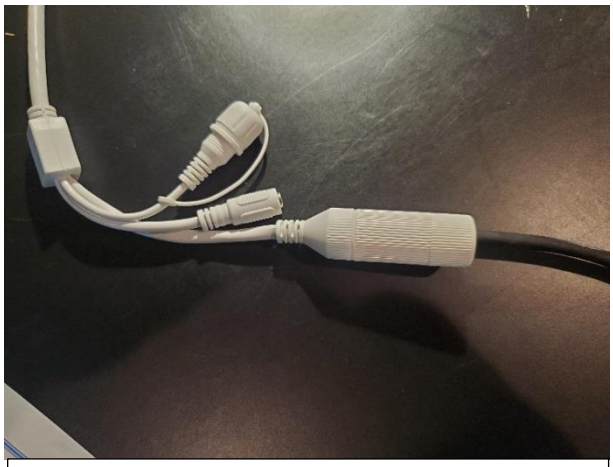


Over-tightening the cap of the weatherproof gland can cause many issues, including intermittent connection problems and failure for the camera to produce an image. The next step MUST be done correctly, or the performance of your system WILL be compromised.

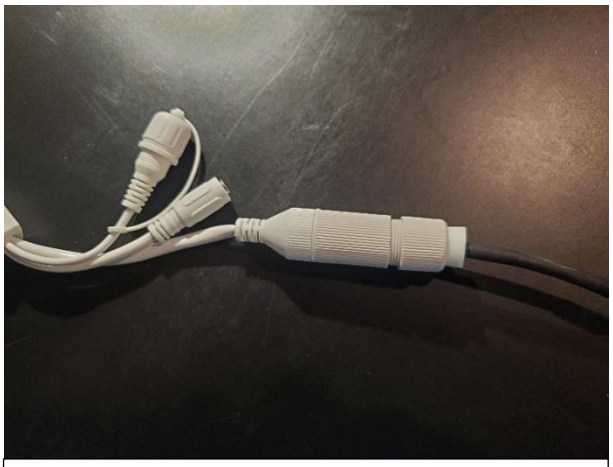
V. Tighten the cap of the weatherproof gland half- to a full-turn, but NO MORE. The cable should be snug inside the rubber seal. **The rubber seal MUST NOT be squeezed out of the cap.**



Correct



TOO TIGHT!



RUBBER SEAL SQUEEZED OUT!

11. On large and midi PTZ cameras (5- and 6-inch models, 16x, 25x, 32x, 45x zoom), the connection MUST be CAREFULLY tucked inside the camera's arm/mount. Be careful to NOT kink the cabling – bend or coil the wires up carefully.

12. On small PTZ cameras (4-inch and Mini models), the connections are left outside the camera. Connect the data cable and power cable (if equipped) as per instructions on the previous pages and orient so any water running down the wire(s) will not seep into the connector . Be sure to wrap the power connection (if required) with electrical tape (or rubber tape if you have) to prevent water infiltration.

13. Mount the camera using the four included lag screws. Make sure the cables hang down through the machined recess in the base to prevent them from getting pinched between the mount and the mounting surface.

BE CAREFUL not to over-tighten the bolts, especially when mounting to a wood pole. Over-tightening may cause the camera mounting base to crack and **will void the warranty.**

14. Decide on the location of the wireless Camera Bridge. The Camera Bridge must be installed outside of a building, and must point towards the wireless Master Bridge.

The Master Bridge and all Camera Bridges MUST be installed so the cable connecting to it exits DOWNWARD. Mounting the bridges so the cable exits sideways or up will result in your system functioning poorly or not at all

15. Run a CATCBL-RJ-RJ outdoor-rated data cable from the Power Distribution Box to the Camera Bridge location, leaving 12" to 18" of extra cable at the bridge location. Coil up any extra cable neatly.

    *** Most single PTZ Power Distribution Boxes already have the CATCBL-RJ-RJ cable installed into the box.

16. Assemble the wireless Camera Bridge to its mount:
    a. Install screw clamp (included with bridge – DO NOT use the screw clamp included with the mount as it is too large).
    ** Make sure screw clamp is installed through one of the two side slots – the bottom of the bridge where the wire connects MUST be to the bottom when the bridge is installed.

    b. Run the screw clamp through the slot in the QuickMount, again making sure the bottom of the bridge is oriented down.

c. Tighten the clamp, but leave it loose enough so it can be adjusted for alignment.

17. Mount the wireless Camera Bridge and mount assembly using the included four ¼" hex-head screws.

18. Tighten the clamp snugly, making sure the wireless Camera Bridge's flat face faces the wireless Master Bridge. Refer to next page for complete system diagrams.

19. Connect the CATCBL-RJ-CG data cable from the Power Distribution Box to the bridge. Make sure it snaps in firmly. Close the cover – it will snap shut to keep out the elements. Refer to Master Bridge installation for connection diagrams.

20. Coil up any extra cable and attach it to the mount or building securely using the included tie straps.

Be sure to leave a little slack in the cable before it enters into the bridge – if not, when the wire shrinks due to cold weather, it could disconnect the cable from the bridge.

Wireless Camera Bridge mounted on outside of a new barn

21. Power on the camera: plug the power cord of the camera's Power Distribution Box into a grounded outlet. If the power quality is questionable, we highly recommend installing a high-quality power filter between the outlet and the Power Distribution Box to ensure clean steady power to your expensive electronic equipment.

The Trip Lite UltraBlok will provide solid power protection and some filtering to protect your expensive and sensitive camera equipment.