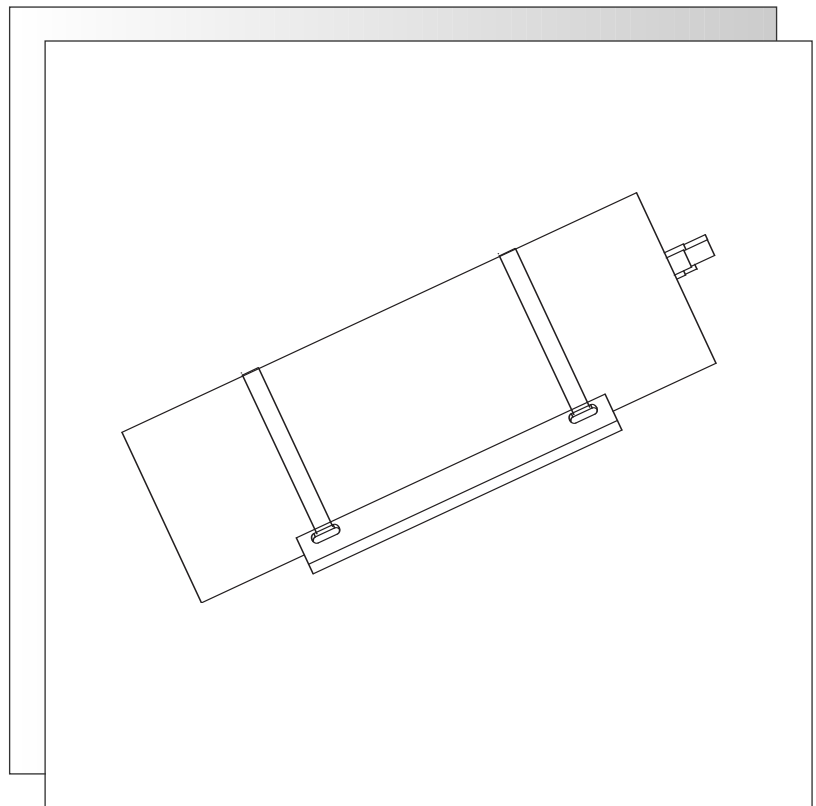
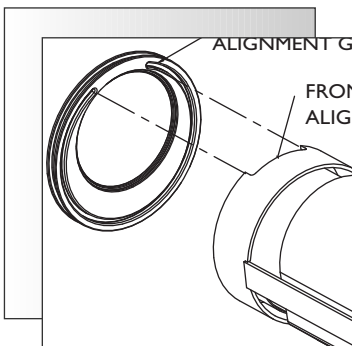
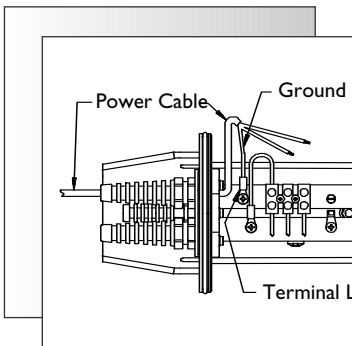
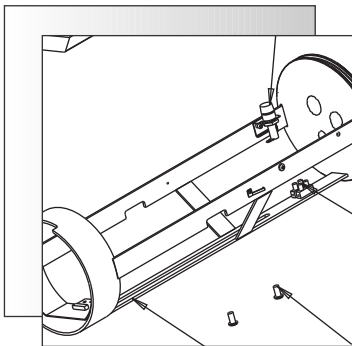
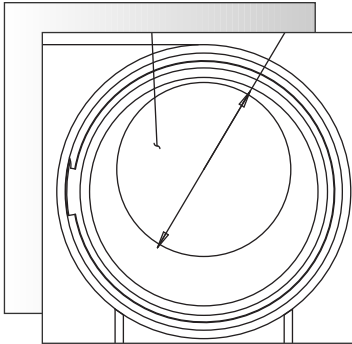




CBC (AMERICA) Corp.

## EXTRA LARGE OUTDOOR HOUSINGS





**H-5BA**


**INSTALLATION AND OPERATING INSTRUCTIONS**


## Important Safeguards


1. **Read, Follow, and Retain Instructions** - All safety and operating instructions should be read and followed before operating the unit. Retain instructions for future reference.
2. **Heed Warnings** - Adhere to all warnings on the unit and in the operating instructions.
3. **Attachments** - Attachments not recommended by the product manufacturer should not be used, as they may cause hazards.
4. **Installation Cautions** - Do not place this unit on an unstable stand, tripod, bracket, or mount. The unit may fall, causing serious injury to a person and serious damage to the unit. Use only manufacturer-recommended accessories, or those sold with the product. Mount the unit per the manufacturer's instructions. Appliance and cart combination should be moved with care. Quick stops, excessive force, or uneven surfaces may cause the appliance and cart combination to overturn.
5. **Cleaning** - Unplug the unit from the outlet before cleaning. Follow any instructions provided with the unit. Generally, using a damp cloth for cleaning is sufficient. Do not use liquid cleaners or aerosol cleaners.
6. **Servicing** - Do not attempt to service this unit yourself. Opening or removing covers may expose you to dangerous voltage or other hazards. Refer all servicing to qualified service personnel.
7. **Damage Requiring Service** - Unplug the unit from the main AC power source and refer servicing to qualified service personnel under the following conditions:
  - When the power supply cord or plug is damaged.
  - If liquid has been spilled or an object has fallen into the unit.
  - If the unit has been exposed to water and/or inclement weather (rain, snow, etc.).
  - If the unit does not operate normally, when following the operating instructions. Adjust only those controls specified in the operating instructions. Improper adjustment of other controls may result in damage, and require extensive work by a qualified technician to restore the unit to normal operation.
  - If the unit has been dropped or the cabinet damaged.
  - If the unit exhibits a distinct change in performance, this indicates that service is needed.
8. **Replacement Parts** - When replacement parts are required, the service technician should use replacement parts specified by the manufacturer or that have the same characteristics as the original part. Unauthorized substitutions may result in fire, electrical shock or other hazards.
9. **Safety Check** - Upon completion of servicing or repairs to the unit, ask the service technician to perform safety checks to ensure proper operating condition.
10. **Power Sources** - Operate the unit only from the type of power source indicated on the label. If unsure of the type of power supply to use, contact your dealer or local power company.
  - For units intended to operate from battery power, refer to the operating instructions.
  - For units intended to operate **with External Power Supplies**, use only the recommended approved power supplies.
  - For units intended to operate with a limited power source, this power source must comply with EN60950. Substitutions may damage the unit or cause fire or shock.
  - For units intended to operate at 24VAC, normal input voltage is **24VAC**. Voltage applied to the unit's power input should not exceed 30VAC. User-supplied wiring, from the 24VAC supply to unit, must be in compliance with electrical codes (Class 2 power levels). Do not ground the 24VAC supply at the terminals or at the unit's power supply terminals.
11. **Coax Grounding** - If an outside cable system is connected to the unit, ensure that the cable system is grounded. U.S.A. models only - Section 810 of the National Electrical Code, ANSI/NFPA No.70, provides information regarding proper grounding of the mount and supporting structure, grounding of the coax to a discharge unit, size of grounding conductors, location of discharge unit, connection to grounding electrodes, and requirements for the grounding electrode.
12. **Grounding or Polarization** - This unit may be equipped with a polarized alternating current line plug (a plug with one blade wider than the other). This safety feature allows the plug to fit into the power outlet in only one way. If unable to insert the plug fully into the outlet, try reversing the plug. If the plug still fails to fit, contact an electrician to arrange replacement of the obsolete outlet. Do not defeat the safety purpose of the polarized plug. Alternately, this unit may be equipped with a 3-wire grounding plug (a plug with a third pin, for grounding). This safety feature allows the plug to fit into a grounding power outlet only. If unable to insert the plug into the outlet, contact an electrician to arrange replacement of the obsolete outlet. Do not defeat the safety purpose of the grounding plug.
13. **Lightning** - For added protection during a lightning storm, or when this unit is left unattended and unused for long periods of time, unplug the unit from the wall outlet and disconnect the cable system. This will prevent damage to the unit due to lightning and power line surges


## SAFETY PRECAUTIONS

	<b>CAUTION</b> RISK OF ELECTRIC SHOCK. DO NOT OPEN!	
<b>CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER (OR BACK). NO USER SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.</b>		

	This symbol indicates the presence of uninsulated “dangerous voltage” within the product’s enclosure. This may constitute a risk of electric shock.
---	---

	The user should consult the operating and maintenance (servicing) instructions in the literature accompanying the appliance.
---	--

	Attention: Installation should be performed by qualified service personnel only in accordance with the National Electrical Code or applicable local codes.
---	--

	Power Disconnect. Units with or without ON-OFF switches have power supplied to the unit whenever the power cord is inserted into the power source; however, the unit is operational only when the ON-OFF switch is in the ON position. The power cord is the main power disconnect for all units.
---	---

## CABLE REQUIREMENTS

Lens Control Cable	
Cable Type	Jacketed Multiconductor Cable
Cable Size	Outside diameter between 4.3mm and 11.9mm (0.170in. and 0.470in.)
Cable Shape	Round
Shield	Overall shielding
Conductors	Stranded 20 to 16 AWG wire
No. of Conductors	4 and 8
Conductor Insulation	Color coded
Sources	Belden 9552 Belden 9554

Video Transmission (Coaxial)	
Cable Type	RG-59/U (Runs < 1000ft) RG-11/U (Runs < 2000ft)
Cable Size	Outside diameter between 4.6mm and 7.9mm (0.181in. and 0.312in.)
Cable Shape	Round
Shield	≥ 93% Braided Copper Shield
Center Conductor	Stranded Copper Center
DC Resistance	≥ 15Ω/1000ft (RG-59/U) ≥ 6Ω/1000ft (RG-11/U)
Cable Impedance	75Ω
Agency Rating	UL
Environmental	Outdoor rated
Temperature Rating	≥ 80 °C (176 °F)
Sources	Belden 9259 Belden 9238

Input Power Cord - North American	
Cable Type	SJTOW-A Rated
Cable Size	Outside diameter between 4.3mm and 11.9mm (0.170in. and 0.470in.)
Cable Shape	Round
Conductors	3 conductor version and 2 conductor version
Agency Rating	UL/C.S.A., UL VW-1
Environmental	Outdoor rated
Temperature Rating	105 °C
Voltage Rating	300 V
Sources	Belden 19506 Belden 19509 Northwire 573939

Input Power Cord - European	
Cable Type	H05RN-F3G0.75 and H05RN-F3G1.00
Cable Size	Outside diameter between 4.3mm and 11.9mm (0.170in. and 0.470in.)
Cable Shape	Round
Conductors	3 conductor version and 2 conductor version
Agency Rating	VDE
Environmental	Outdoor rated
Sources	Olflex 1600252 Olflex 1600253

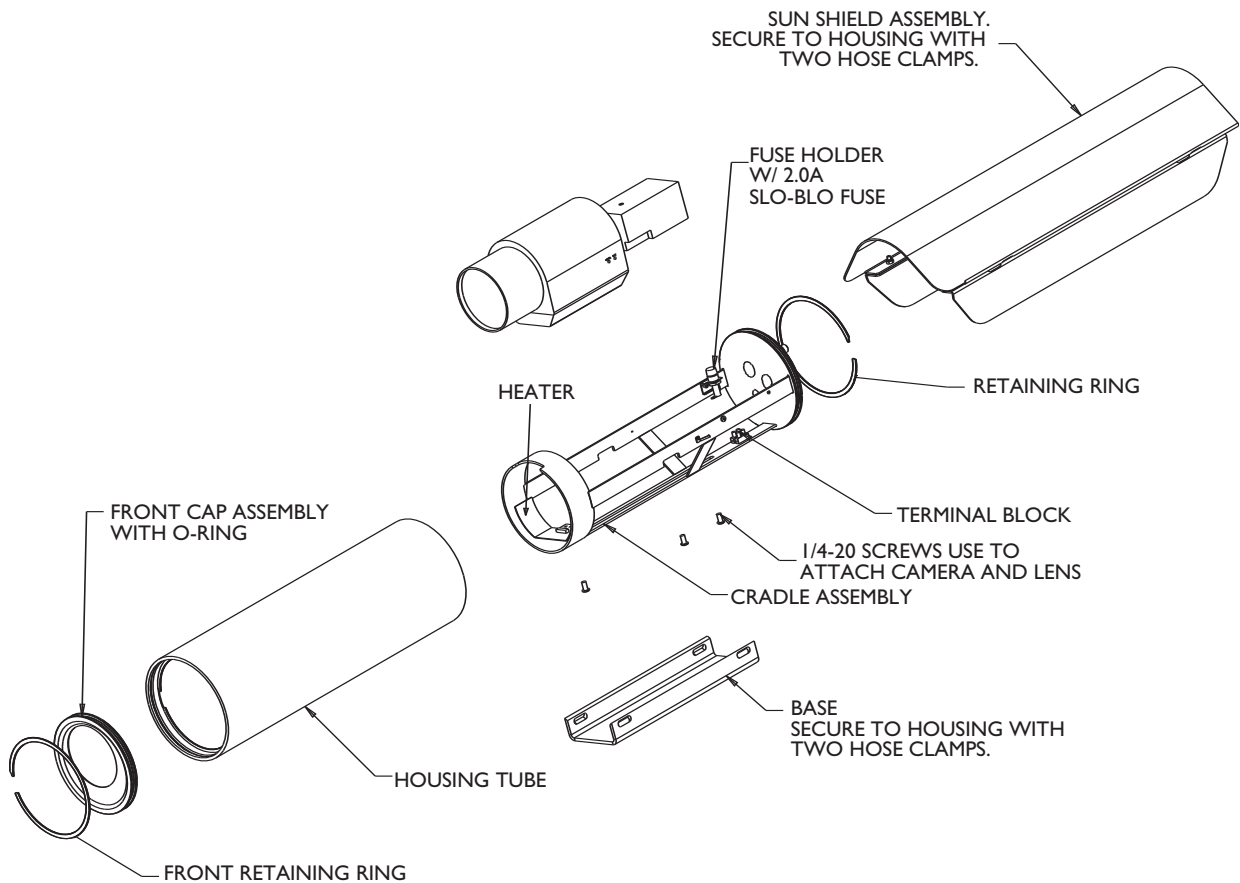


FIGURE 1 Housing Assembly Exploded View

## 1 UNPACKING

This electronic equipment should be unpacked and handled carefully.

If an item appears to have been damaged in shipment, replace it properly in its carton and notify the shipper. If any items are missing, notify CBC. The shipping carton is the safest container in which the unit may be transported. Save it for possible future use.

## 2 SERVICE

If the unit ever needs repair service, the customer should contact CBC for return authorization and shipping instructions.

## 3 CARE AND MAINTENANCE

There are no moving parts in this unit. Regularly scheduled maintenance will help prolong the operational life of this unit. Clean the viewing window as needed with a mild, nonabrasive detergent in water and a soft cloth.

## 4 DESCRIPTION

The H-5BA environmental housings are attractive aluminum enclosures designed for outdoor CCD camera installations.

## 5 INSTALLATION

This installation should be made by a qualified service person and conform to all local codes.

Do Not Exceed 30VAC Input on 24VAC models. Operation above 30VAC violates low voltage operation (Class 2 Specifications). Normal operation is 24VAC.

### 5.1 Tools Required

- Flat blade screwdriver

## 5.2 Disassembly

1. Using a flat head screwdriver remove the sunshield from the housing by loosening the hose clamps on each strap and gently lifting the sunshield off the housing tube. Be careful not to scratch the housing with the straps. Set sunshield aside. See *FIGURE 2*.



*FIGURE 2 Removing the Sunshield*

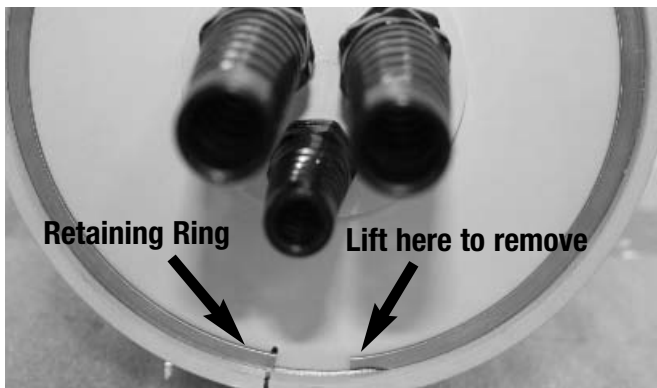
2. Set the housing on end, front window side down.

⚠ Make sure that the surface is clean and will not scratch the viewing window.



*FIGURE 3 Prepare to remove the Cradle Assembly*

3. Remove the Cradle Assembly by first removing the metal retaining ring on the connection end. Using the flat head screwdriver, gently lift the retaining ring at the opening and pry forward and lift up. The ring will lift slightly. Remove the ring from the housing and set aside for replacement when re-assembling the housing. See *FIGURES 1 and 4* for locations of retaining ring.



*FIGURE 4 Remove Retaining Ring*

4. Using the flathead screwdriver gently insert it into the slot in the endcap and gently pry up. The cradle will pop up and can be pulled completely out of the housing tube. Gently slide the Cradle Assembly out of the housing and set aside the housing.



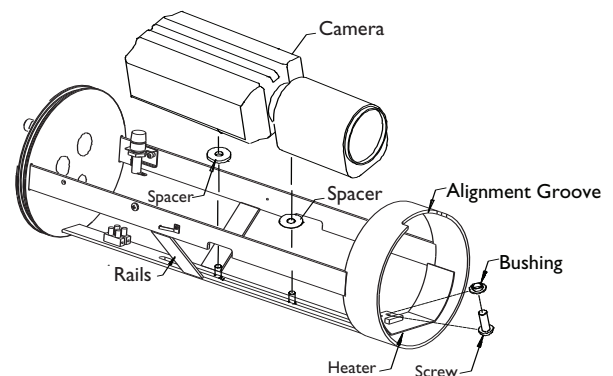
*FIGURE 5 Lift Cradle Assembly*



*FIGURE 6 Cradle Assembly Removed*

## 5.3 Camera/Lens Installation

1. Place the camera/lens combination onto the cradle rail assembly.



*FIGURE 7 Camera/Lens Installation*

2. Position the camera/lens so that the lens is positioned over the heater but not past it. See *FIGURE 7* for heater location. The camera/lens combination will determine the screws and spacers that will be needed. Secure the camera and lens to the rail assembly with 1/4-20 BHC screws, nylon bushings, and plastic

spacers. Place the nylon bushings over the screws and slide both between the rails through the cut-out section. Slide the spacer over the screw so it is positioned in-between the rails and the camera. Use appropriate spacers for the camera being installed. See *FIGURE 7*.

## 5.4 Camera/Lens Wiring



**WARNING:** Only use the cables specified under *Cable Requirements* for wiring of all cameras and lenses.

### 5.4.1 Liquid-Tight Fittings

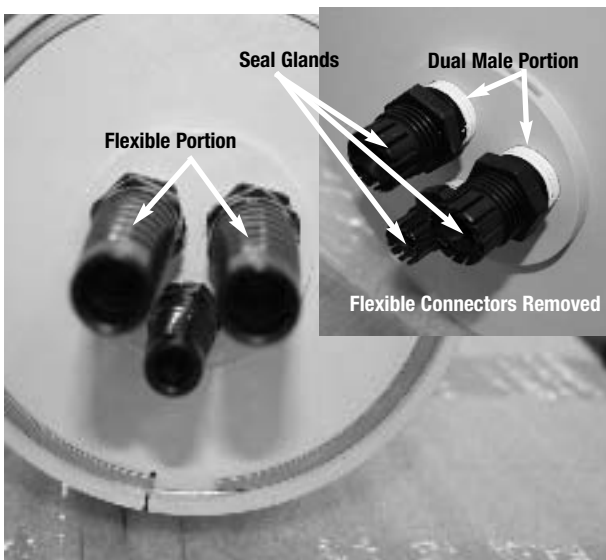
The dual-male threaded portion of the two 1/2in. NPT and one 3/8in. NPT liquid-tight fittings are preinstalled in the rear of the base assembly. If possible, do not remove or loosen these parts. They have been installed to a specified torque to prevent water damage. The small 3/8in. NPT fitting will accept cables with diameters from 4.6mm (0.181in.) to 7.9mm (0.31in.). The two large 1/2in. NPT fittings will accept cables with diameters from 4.3mm (0.170in.) to 11.9mm (0.470in.). See *FIGURE 8*.



Be sure to securely tighten all fittings to ensure a liquid-tight seal. Not doing so could damage the camera, the housing, or both.



If a sealant will be used, be sure it is a neutral cure type. Sealants that release acetic acid may harm camera electronics.



*FIGURE 8* Liquid-tight Fitting Assembly

## 5.5 Plug Insertion

If no lens control or feed-through wiring will be used, install the 3/8in. NPT plug provided. Remove the liquid-tight fitting and insert the plug in the small bottom center 3/8in. NPT hole. Use a 8mm or a 5/16in. hex wrench to tighten securely. Failure to do so will result in water damage to all electronic parts.

### 5.5.1 Supply Power Connections

Any camera installed in the housing must be of the same voltage type as the housing. The integral heater/defogger also requires the same voltage as the housing. These housings do not contain step down or isolation transformers.

Power connection into the housings is to be supplied through a minimum type UL Standard *SJ* cord acceptable for outdoor use. Installation must conform to applicable NEC and local codes. Use the **Recommended Maximum Cable Lengths** chart below for proper wire size selection.

#### Recommended Maximum Cable Lengths

Wire Size		Distance	
mm <sup>2</sup>	AWG	meters	feet
0.5	22	10	30
0.5	20	15	50
1	18	25	80
1.5	16	40	120
2.5	14	70	210

1. Use the liquid-tight fitting on the left of the housing to route the power supply cord into the housing.
2. Allow enough cord for connection to the terminal block; approximately, 130mm (5in.). Strip no less than 6mm (0.24in.) and no more than 8mm (0.31in.) of insulation away from the wires making sure not to nick the wires.
3. Connect both the line, neutral and ground wires of the power cord to the terminal block. Make sure the line and neutral wires are connected to the correct positions on the terminal block that are across from the appropriate colored wire. See *FIGURE 9*.

**Note:** This housing is equipped with a 2.0A Slo-Blo Fuse. See *FIGURE 1* for location.

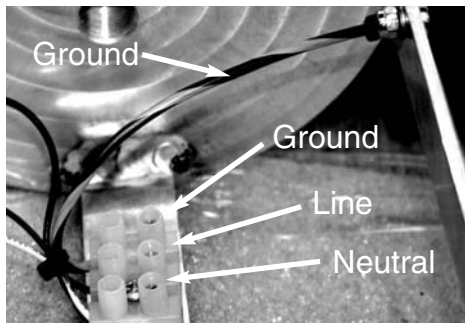



FIGURE 9 Securing the Ground, Line and Neutral

4. Pull any excess cord through the liquid-tight fitting and tighten the flex fitting to 8.5N-m to 9.0N-m (75in. lb to 80in. lb). This torque rating is approximately 1 to 1 1/2 turns past the point that the fitting starts to grip the cord. Failure to do so will result in water damage to all electronic parts. Use a tie wrap (included) to provide strain relief on the power cord at the exit point (inside the unit).

 Securely tighten all fittings to ensure a liquid-tight seal. Not doing so could damage the camera, the housing, or both.

### 5.5.2 Camera Power Connections

**Installing a 24 volt camera** into the housing simply requires the two black and white flying leads be attached to the camera's terminal block. See FIGURES 10 and 11.



FIGURE 10 Flying Leads

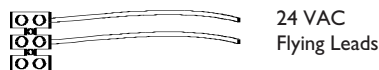


FIGURE 11 Camera Connections

## 5.6 Video Coax Connection



**WARNING:** Only use the cables specified under *Cable Requirements* for wiring of the video coax connection.

If lens control will be used:

1. Install the long flexible portion of the small liquid-tight fitting on the video coax cable and pull the cable through the small fitting on the rear end of the base assembly. The fitting will accept cables with diameters from 4.6mm (0.181in.) to 7.9mm (0.312in.). See FIGURE 12.
2. Attach a BNC connector to the coax and connect it to the camera. Pull any excess cable through the liquid-tight fitting and tighten the flex fitting to 4.0N-m to 4.5N-m (35in. lb to 40in. lb). This torque rating is approximately 1 to 1 1/2 turns past the point that the fitting starts to grip the cable. Failure to do so will result in water damage to all electronic parts. Use a tie wrap (included) to provide strain relief on the video cable at the exit point (inside the unit).



Be sure to securely tighten all fittings to ensure a liquid-tight seal. Not doing so could damage the camera, the housing, or both.

If no lens control will be used:

1. Install the long flexible portion of a large liquid-tight fitting on the video coax cable and pull the cable through the large right fitting on the rear end of the base assembly. Refer to FIGURES 12 and 13.
2. Attach a BNC connector to the coax and connect it to the camera. Pull any excess cable through the liquid tight fitting and tighten the flex fitting to 8.5N-m to 9.0N-m (75in. lb to 80in. lb). This torque rating is approximately 1 to 1 1/2 turns past the point that the fitting starts to grip the wire. Failure to do so will result in water damage to all electronic parts. Use a tie wrap (included) to provide strain relief on the video cable at the exit point (inside the unit).



Be sure to securely tighten all fittings to ensure a liquid-tight seal. Not doing so could damage the camera, the housing, or both.

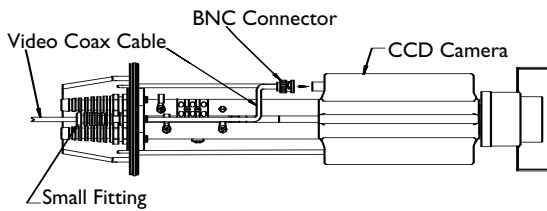


FIGURE 12 Video Coax Connection

### 5.7 Lens Wiring



**WARNING:** Only use the cables specified under *INSTALLATION, Cable Requirements* for wiring of the lens.

**For installing the zoom lens,** insert the lens control cable with installed flexible fitting in through the fitting on the right rear of the base assembly. Attach the lens wiring to the lens mating connector and connect it to the lens. If mating connector is not available, connect directly to the lens cable. Pull any excess cable through the liquid-tight fitting and tighten the flex fitting to 8.5N-m to 9.0N-m (75in. lb to 80in. lb). This torque rating is approximately 1 to 1 1/2 turns past finger-tight, depending on the size of the wire. Failure to do so will result in water damage to all electronic parts. Use a tie wrap (included) to provide strain relief on the lens control cable at the exit point (inside the unit). See FIGURE 13.

**NOTE:** See specification on the lens cord for correct plug connection.



Be sure to securely tighten all fittings to ensure a liquid-tight seal. Not doing so could damage the camera, the housing, or both.

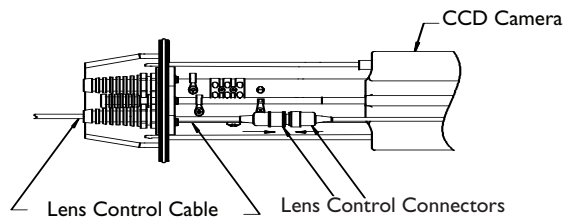


FIGURE 13 Lens Control Cable Wiring

**If using a pan/tilt with a feed-through cable,** insert the camera/lens function cable in through the right fitting at the rear of the cradle. Wire the functions as described above, or as needed.

### 5.8 Camera/Lens Adjustment

Before final assembly of the cover over the rest of housing, verify camera and lens operation. Adjust camera/lens as necessary. See individual camera instructions.

### 5.9 Attaching the Mounting Base

1. Loosen the two hose clamps with stainless steel straps from the housing tube. Remove the base with the hose clamps intact. The base assembly has three clearance holes for mounting. Attach the housing base to an appropriate mount or pan/tilt. Use the instructions provided with the mount or pan/tilt.

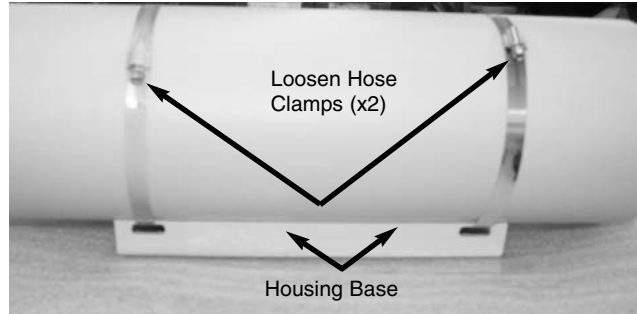


FIGURE 14 Remove Base from Housing Tube

### 5.10 Replace the Cradle Assembly

1. To replace the cradle assembly into the housing tube remove the front retaining ring from the front cap assembly window. Using a flat head screwdriver gently lift the retaining ring at the opening and pry forward and lift up, the ring will lift slightly, remove the ring from the housing and set aside for replacement when reassembling the housing. See FIGURES 1 and 15 for locations.

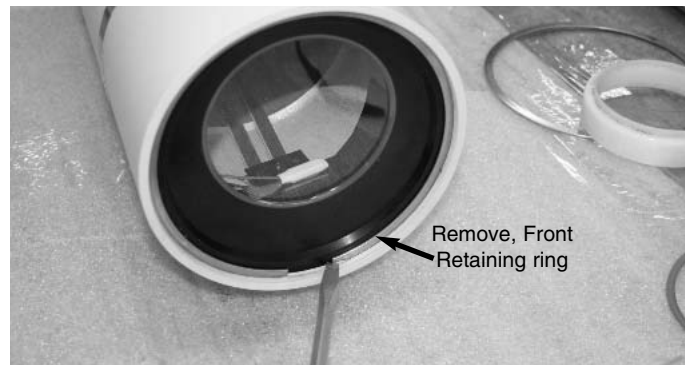


FIGURE 15 Remove front Retaining Ring



2. Remove the front cap assembly by gently pulling the cap out of the housing or if necessary pushing the cap from the inside to release.



FIGURE 16 Remove Front Cap Assembly

3. Slide the Cradle Assembly back into the Housing Tube.
4. Align the Cradle Assembly with the Front Cap. The Cradle Assembly has an alignment notch that fits snugly into the Front Cap alignment groove and must be fitted as shown in FIGURE 17 for the housing to close securely.

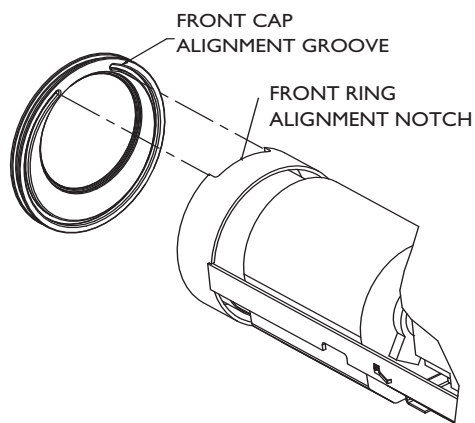


FIGURE 17 Alignment of Cradle Assembly with Front Cap Assembly

5. Push the Cradle Assembly and Front Cap together until the Rear Cap is recessed into the housing.

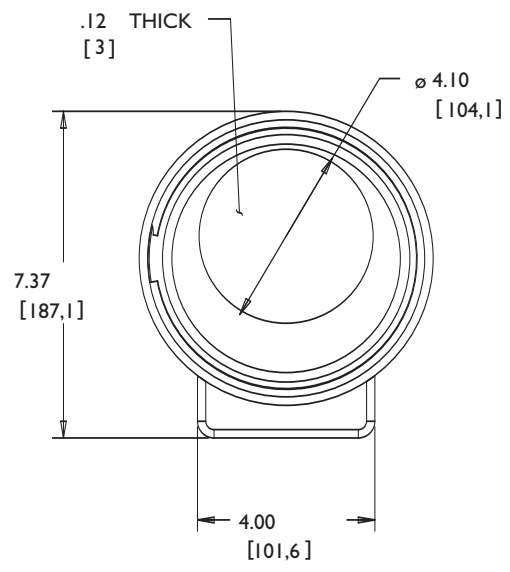
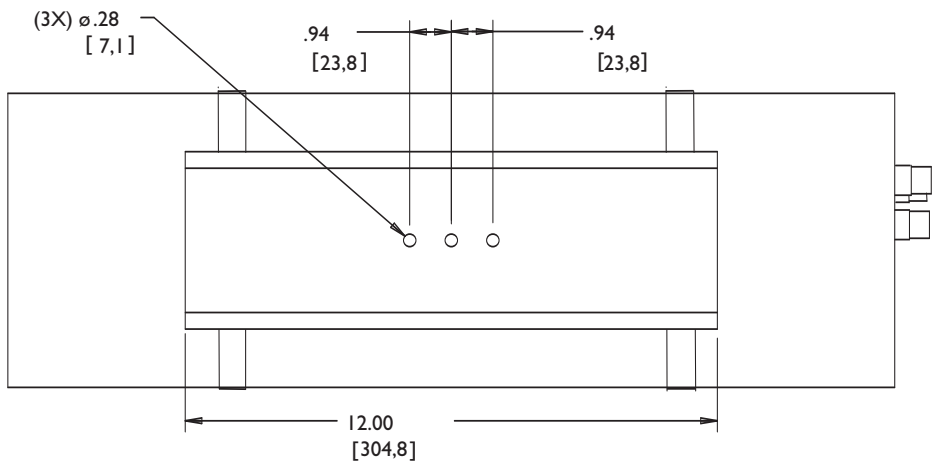
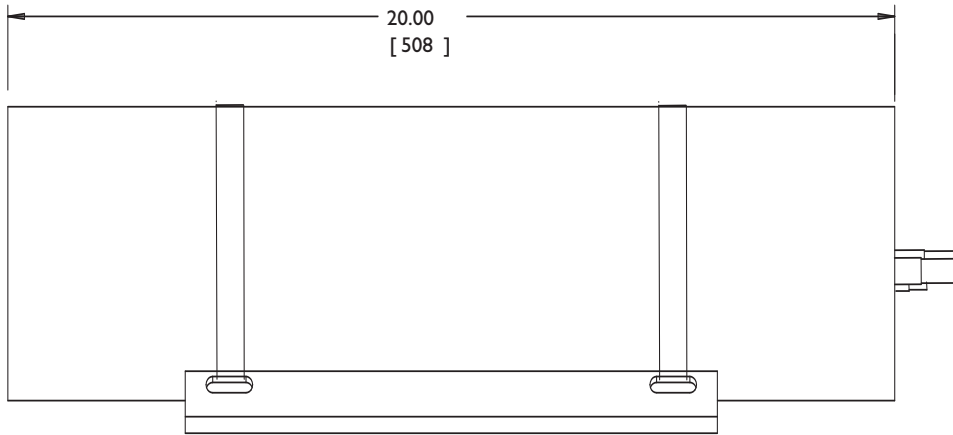


FIGURE 18 Replace Front Cap.

6. Replace the Retaining Ring onto the Front Cap.
7. Replace the Retaining Ring on the Rear Cap.

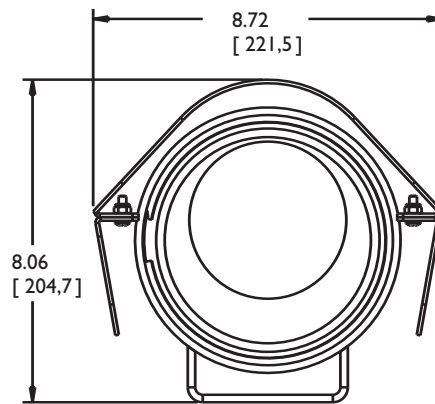
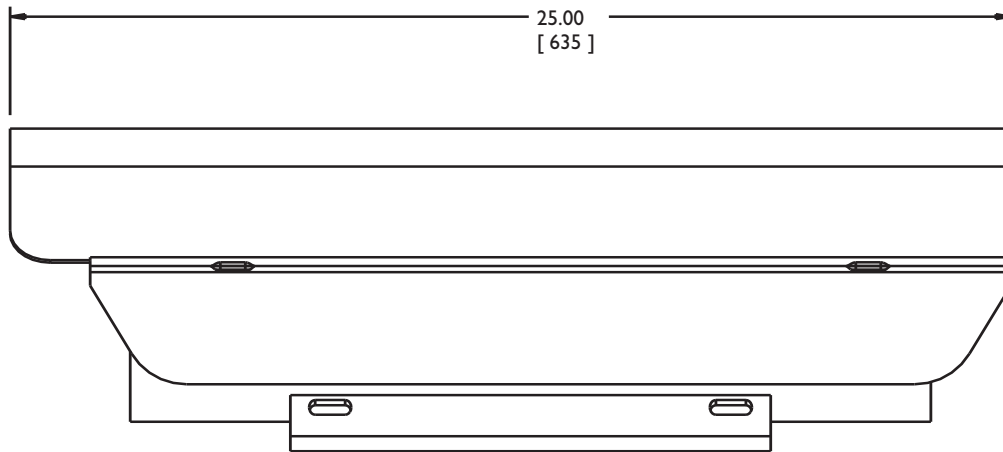
8. Position the Housing Tube onto the already attached base, (see Section 5.9) and secure with the 2 hose clamps.
9. Replace the Sunshield on the housing and secure with the two hose clamps.
10. Power the Unit.

# Dimensional Outlines



DIMENSIONS ARE  
IN [mm]

# Dimensional Outline Housing with Sunshield





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100 0177 001 CBC  
Printed in U.S.A.