**XX137-67-00**

# Installation & Operation Manual

# ROUGHNECK™

**V910V5 IMPACT-RESISTANT DOME CAMERAS WITH POE**

**Vicon Industries Inc. does not warrant that the functions contained in this equipment will meet your requirements or that the operation will be entirely error free or perform precisely as described in the documentation. This system has not been designed to be used in life-critical situations and must not be used for this purpose.**

FC CE

VICON

**VICON**

Dear Valued Customer:

Thank you for selecting Vicon systems and products for your video needs.

Since Vicon's beginning in 1967, our only business has been the design, engineering, and production of the highest quality video systems and equipment for use in a wide variety of security, safety, control, surveillance, and communication applications.

We stand behind the quality and dependability of every product with an industry leading Beneficial Use warranty.

If you are not satisfied with a Vicon product or service, I would like to know. Your complete satisfaction is the mission of every Vicon employee.

Sincerely,

Kenneth M. Darby
President

# FCC Notice

## WARNING

This equipment generates and uses radio frequency energy and if not installed and used properly, that is, in strict accordance with the manufacturer's instruction, may cause interference to radio and television reception. It has been type tested and found to comply with the limits for a Class A computing device in accordance with the specification in subpart B of part 15 of the FCC rules, which are designed to provide reasonable protection against such interference in a commercial installation. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause interference to radio and television reception, which can be determined by turning equipment off and on, the user is encouraged to try and correct the interference by one or more of the following measures:

- Reorient the receiving antenna.
- Relocate the equipment with respect to the receiver.
- Relocate the equipment away from the receiver.
- Plug the equipment into a different electrical outlet so that the equipment and receiver are on different branch circuits.

If necessary, the user should consult the dealer or an experienced radio/television technician for additional suggestions.

The user may find the following booklet prepared by the Federal Communications Commission helpful:

"Interference Handbook, Bulletin CIB-2"

This booklet is available from the U.S. Government Printing Office, Superintendent of Documents, Mailstop SSOP, Washington, D.C. 20402-9328, ISBN 0-16-045542-1.

⚠**Warning:** *Power must be removed from this unit before removing circuit modules or ribbon cables.*

⚠**Caution:** *This unit contains circuit cards with integrated circuit devices that can be damaged by static discharge. Take all necessary precautions to prevent static discharge*

# Important Safeguards - Outdoor Use

## GRAPHIC SYMBOL EXPLANATION

The lightening bolt symbol alerts the user to the presence of dangerous voltage that may present the risk of electric shock.
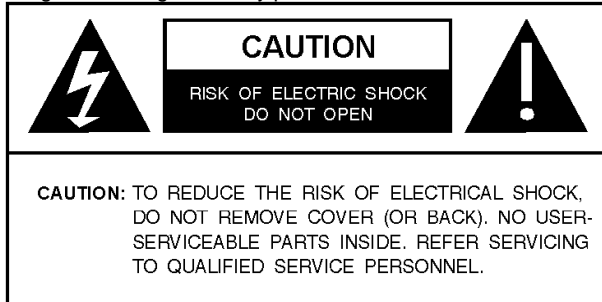


The exclamation point symbol alerts the user to the presence of important operating and maintenance instructions.

**1. Read Instructions -** Read all safety and operating instructions before the product is operated.

**2. Retain Instructions -** Retain all safety and operating instructions for future reference.

**3. Heed Warnings -** Pay attention to all product warnings.

**4. Follow Instructions -** Follow all operating instructions.

**5. Cleaning -(Do not use caustic, abrasive or aerosol cleaners)**

a) For units that CAN BE DISCONNECTED from the power source, use a damp cloth for cleaning.
b) For units that CANNOT BE DISCONNECTED from the power source, use a damp cloth for cleaning and do not allow moisture or liquids to enter vents.

**6. Attachments -** Use only UL Listed Vicon recommended attachments to prevent unit damage and personal injury.

**7. Water and Moisture -** Use only products designed for outdoor environments where they will be exposed to water or moisture.

**8. Accessories -** Do not place the unit on an unstable surface to avoid falling. Use only UL Listed Vicon recommended mounting accessories.

**9. Ventilation -** Do not block ventilating slots and openings as they ensure reliable operation. Do not place the unit near a heat source or into an enclosure unless recommended by Vicon.

**10. Power Sources -** The product should only be operated from the recommended power source. Use only a UL Class 2 indoor/dry or Class 3 outdoor/wet power supply.

**11. Grounding -** Only products equipped with a 3-prong grounded plug should be inserted into a grounded power outlet. Contact an electrician to replace an obsolete outlet. Do not force a plug into a non-grounded outlet.

**12. Power Cord Protection -** Power supply cords should not be routed in trafficked areas or in tight spaces where they will be pinched or used to bear weight. Allow some slack in the cord where it enters the unit.

**13. Outdoor Cable Grounding -** Use only grounded outdoor cables to protect against voltage surges and static charges. Section 810 of the National Electrical Code, ANSI/NFPA 70-1984, provides information on proper grounding of the lead-in wire to an antenna discharge unit, size of grounding conductors and the requirements of grounding electrodes.

**14. Lightning -** Disconnect the product from its power source and cable system when possible to prevent damage due to lightning and power-line surges.

**15. Power Lines -** Do not locate outside cables over power or utility lines where they can fall and make direct contact. Contact with power lines can be fatal.

**16. Overloading -** Do not overload wall outlets and extension cords to prevent risk of fire and electric shock.

**17. Object and Liquid Entry -** Never probe through, or spill liquid into, enclosure openings to prevent risk of fire or electric shock.

**18. Servicing -** Refer all servicing to qualified service personnel.

**19. Damage Requiring Service -** Obtain service when:

a) The power-supply cord or plug is damaged.
b) Objects have fallen or liquid has been spilled into the product.
c) The product is not designed for outdoor use and has been exposed to water or moisture.
d) The product does not operate per the operating instructions. Perform Vicon recommended adjustments, modifications and troubleshooting only to avoid unit damage and personal injury.
e) The product has been dropped.
f) The product shows a significant change in performance.

**20. Replacement Parts -** Use only Vicon specified replacement parts or an approved equivalent to prevent unit damage and injury.

**21. Safety Check -** Request safety checks to be performed following repair or maintenance to verify proper operation.

**22. ESD Precaution -** Take all normal electrostatic discharge precautions to avoid component damage during installation and operation.

**23. For 230 VAC Devices Only -** When the disconnect device is not incorporated in the equipment or when the plug on the power supply is intended to serve as the disconnect device, follow the guidelines below:
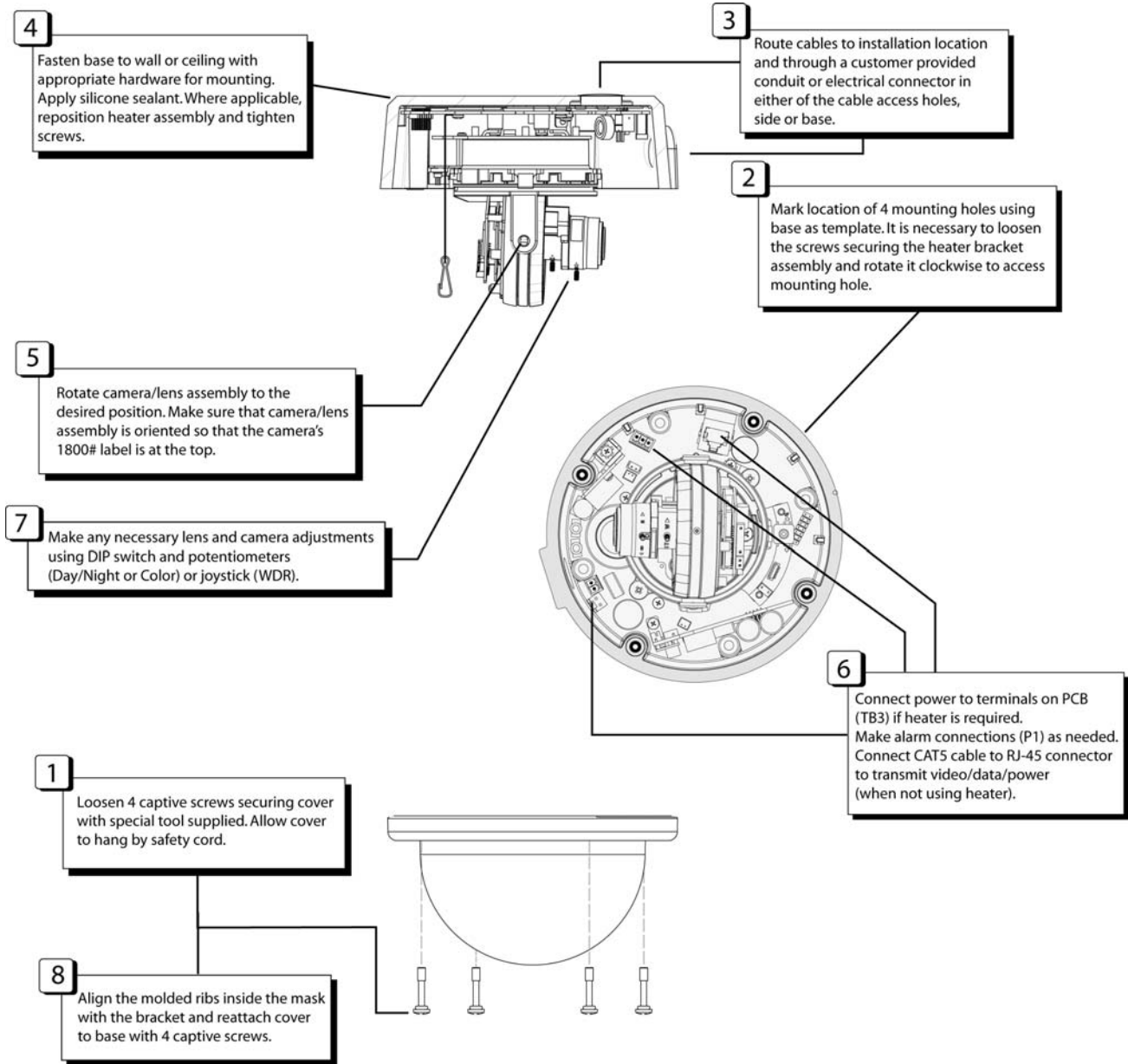
a) For permanently connected 230 VAC units, a readily accessible disconnect device must be incorporated into the site wiring.
b) For 230 VAC units with a plug, the outlet must be installed near the unit and be easily accessible.

# Contents

# Quick Installation

For complete detailed instructions on how to install the V910, read the Installation section.

**4** Fasten base to wall or ceiling with appropriate hardware for mounting. Apply silicone sealant. Where applicable, reposition heater assembly and tighten screws.

**3** Route cables to installation location and through a customer provided conduit or electrical connector in either of the cable access holes, side or base.

**2** Mark location of 4 mounting holes using base as template. It is necessary to loosen the screws securing the heater bracket assembly and rotate it clockwise to access mounting hole.

**5** Rotate camera/lens assembly to the desired position. Make sure that camera/lens assembly is oriented so that the camera's 1800# label is at the top.

**7** Make any necessary lens and camera adjustments using DIP switch and potentiometers (Day/Night or Color) or joystick (WDR).

**6** Connect power to terminals on PCB (TB3) if heater is required. Make alarm connections (P1) as needed. Connect CAT5 cable to RJ-45 connector to transmit video/data/power (when not using heater).

**1** Loosen 4 captive screws securing cover with special tool supplied. Allow cover to hang by safety cord.

**8** Align the molded ribs inside the mask with the bracket and reattach cover to base with 4 captive screws.

**Installation Diagram**

# Introduction

The information in this manual covers the installation, operation, and maintenance of the Roughneck™ V910 Series of Impact-Resistant Dome Cameras with PoE. These units should only be installed by a qualified technician using common hand tools and approved materials and wiring methods in accordance with the national Electrical Code ANSI/NFPA 70, state and local wiring codes. All interconnecting equipment or accessories must be UL listed. Any mention in this manual of alarm inputs/outputs have not been evaluated by UL to be used for burglar alarm functionality. When installing this equipment, use only a UL Listed Class 2 indoor/dry or Class 3 outdoor/wet rated power supply. Read this manual through completely before attempting installation.

The Roughneck V910 Series of Impact-Resistant Dome Cameras with PoE (Power over Ethernet) offers high-security cameras in a compact domed housing. They are for indoor/outdoor applications and have permanent mold construction and a high-impact polycarbonate plastic dome. These camera packages are designed to handle the toughest environments, including correctional facilities, warehouses and loading docks. They include "O"-ring sealing and a heater (requires 24 VAC) to allow operation in low temperature and in all weather conditions. Tamper-resistant screws make the units resistant to vandalism.

The base of the unit screws directly to a wall or ceiling. The camera mounting brackets offer adjustment to any view required. The camera position is adjustable horizontally and vertically. The V910 series has an integral high-resolution color camera or day/night camera, including a model with Wide Dynamic Range (WDR), all with a 3.3-12 mm varifocal autoiris lens. The camera can be powered through the Ethernet connection (PoE); when using PoE, a PoE device, such as the NETSWITCHPOE-24, is required. For those installation requiring the heater, both the heater and camera are powered by a 24 VAC input; the camera includes an isolated power input. The varifocal lens allows for lens adjustment capability and autoiris adjustment.

The Roughneck V910 IP Camera Dome is a powerful IP video source for a complete digital video management system based on ViconNet Version 5 software. It is fully compatible with all ViconNet® systems and is remotely managed and controlled from ViconNet workstations and Kollector™ Elite recorders. It can deliver up to 30 fps (25 fps PAL) divided across the local camera input at a total nominal bandwidth of 1.7 Mbps at Q5 (360 x 244 pixels).

Equipped with a 10/100 Mbps LAN connection on the PC board, the camera allows direct plug-in to a network switch. Images received from the IP camera and the other external cameras connected to its external inputs can be displayed, recorded or archived like any other ViconNet video component using the ViconNet management software.

The V910 Camera Dome has 4 levels of video resolution; 4 CIF, 2 CIF, CIF and HCIF with 2 levels of compression; Normal (optimized) MPEG-4 and Full (JPEG). These comprise 8 selectable quality levels.

ViconNet utilizes an MD5 video authentication algorithm which is based on a 128-bit message used to identify data integrity. Viewing authenticated video can be configured from the software. In addition, the IP camera dome supports museum search, motion detection, alarm reporting, macros, audio input and alarm configuration through the ViconNet software interface.

The Roughneck V910 Dome Camera series meets FCC requirements for a Class A device.

**Table 1**
**Models, Product Codes and Descriptions**

| Model | Product Code | Description | Power (W) PoE | Power (W) Nom./Max* | Current Rating (A) Nom./Max. |
|---|---|---|---|---|---|
| V910A-IP5/ V910A-IP5C | 9208-75/ 9208-76 | Indoor/Outdoor; 1/3-in. high-resolution color camera with 3.3 - 12 mm varifocal autoiris lens; PoE or 24 VAC capability; isolated power input; heater; ViconNet (ver. 4) (LAN) video/data transmission. NTSC/PAL. | 7.5 W | 14.5/18.5 | 0.60/0.64 |
| V910A-DN-IP5/ V910A-DN-IP5C | 9209-75/ 9209-76 | Indoor/Outdoor; 1/3-in. day/night color camera with 3.3 - 12 mm varifocal autoiris lens; PoE or 24 VAC capability; isolated power input; heater; ViconNet (ver. 4) (LAN) video/data transmission. NTSC/PAL. | 7.5 W | 14.5/18.5 | 0.60/0.64 |
| V910A-WDR-IP5 / V910A-WDR-IP5C | 9210-75/ 9210-76 | Indoor/Outdoor; 1/3-in. Pixim® high-resolution day/night color camera with wide dynamic range (WDR) with 3.3 - 12 mm varifocal autoiris lens; PoE or 24 VAC capability; isolated power input; heater; ViconNet (ver. 4) (LAN) video/data transmission. NTSC/PAL. | 7.5 W | 14.5/18.5 | 0.60/0.64 |

*Note: Nominal power and current levels are calculated @ 24.0 VAC input line voltage. Includes heater.
Maximum power and current levels are calculated @ 29.0 VAC input line voltage. Includes heater.*

# Installation

## Unpacking and Inspection

All Vicon equipment is tested and inspected before leaving the factory. It is the carrier's responsibility to deliver the equipment in the same condition as it left the factory.

### Inspection for Visible Damage

Immediately inspect the cartons upon delivery. Make a note of any visible damage on all copies of the carrier's freight bill.

Make sure the carrier's agent (the person making the delivery) signs the note on all copies of the bill. If the agent does not have claim forms, contact the carrier's office.

### Inspection for Concealed Damage

As soon as possible after delivery, unpack the unit and inspect it for concealed damage. Do not discard the carton or packing materials. If the unit is damaged, contact the carrier immediately and request forms for filing a damage claim. Make arrangements for a representative of the carrier to inspect the damaged equipment.

If the equipment must be returned for repair, follow the Shipping Instructions at the end of this manual.

## Roughneck V910 Dome Components

The Roughneck V910 units consist of a base (which includes the camera mounting bracket with the camera/lens assembly) and a cover with a smoked dome. Refer to Figure 1.

**Base/Camera Mounting Bracket**
The base of the unit is constructed of die-cast aluminum. The base is mounted directly to the wall or ceiling. Two cable access holes are provided. A safety cord is provided to connect the cover to the base. The camera mounting bracket is attached to the base; the camera is factory-installed. The camera/lens position can be manually adjusted. A heater is factory-installed inside the base. for units installed in environments that require it.

**Cover/Dome**
The cover of the unit is constructed of die-cast aluminum. It has a 4.7 in. (119 mm) diameter dome constructed of smoked polycarbonate plastic. A mask with a slotted opening is included to help conceal the camera. The cover is secured to the base with four tamperproof captive screws; a special tool is supplied to loosen the screws. A safety cord is provided to anchor the cover/dome to the base. Refer to the Maintenance section of this manual for instructions on the care and handling of the dome.
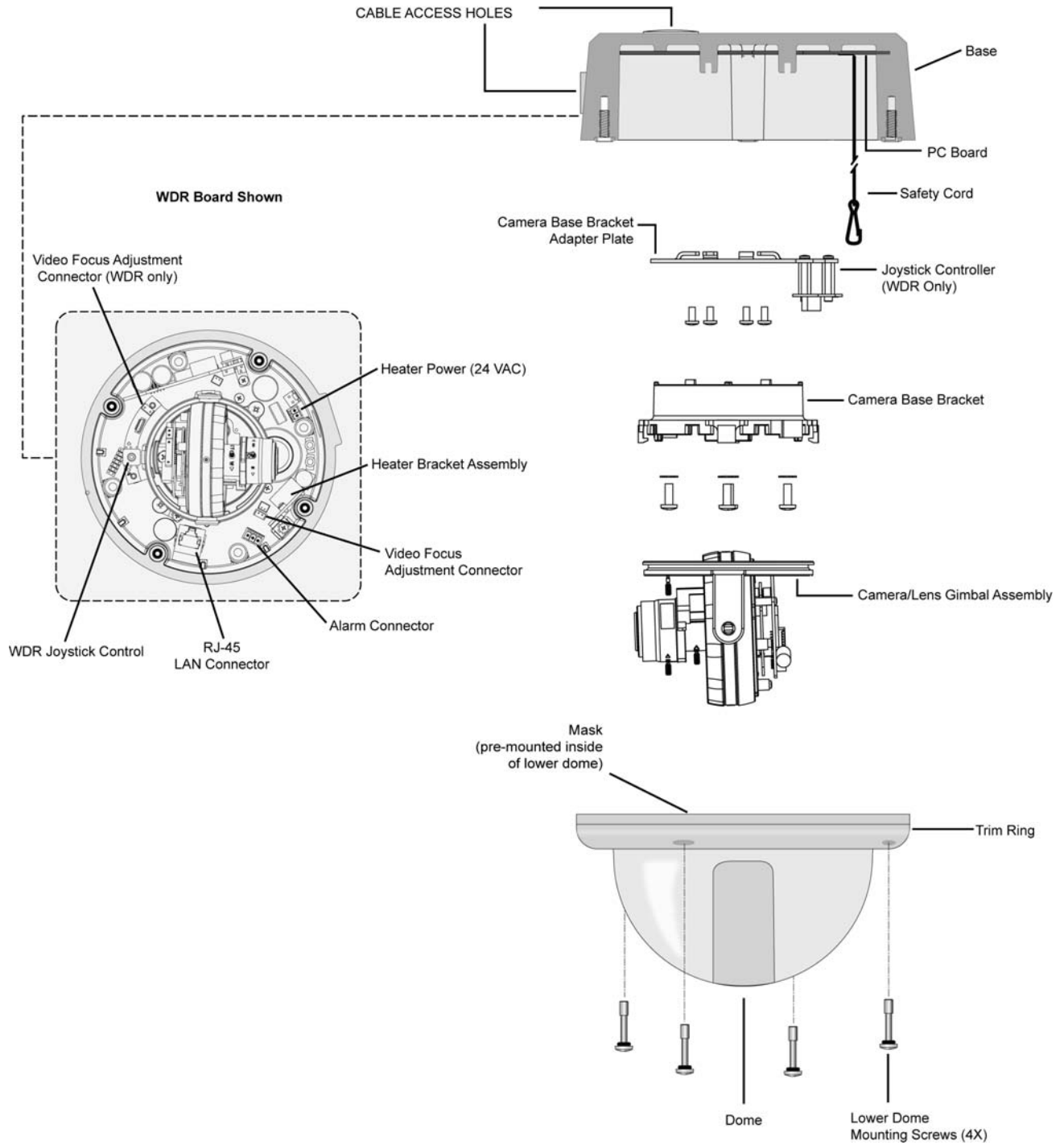
# IMPORTANT NOTE - (for IP models only)!

Each IP camera board has a unique MAC (media access control) address. This information is essential in the camera configuration process described in the ViconNet Configuration Section. Before starting installation, make a record of this address and the location where the dome is installed. The MAC address label is located on the inner wall of the camera housing, as shown in the illustration below. There will also be a sticker in the CD jewel case that will include the MAC address and password for that specific camera (the password can be a combination of numbers and letters up to 8 characters long).

MAC address label

000668190079
V:1.28.25.2
V:1.0.3.7
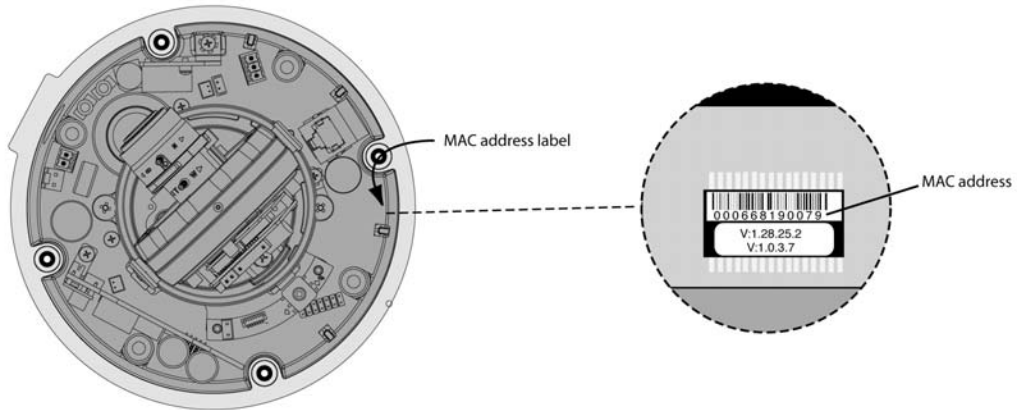
MAC address

Make all entries to the log below and retain for future reference

| MAC Address | Password | Camera Location |
|---|---|---|
| Example: 00-06-68-19-00-79 | 4765D274 | *first floor- lobby doors* |
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**Figure 1**
**Exploded View**

# Accessory Kit

There is an accessory kit included with the Roughneck V910. The table below lists the contents.

| Description | Quantity |
|---|---|
| Tamperproof driver bit, ¼ hex T-15 (to remove tamperproof screws) | 1 |
| Pipe sealant tape (to seal pipe fitting to housing) | 1 |
| Lug (for grounding) | 1 |
| Screws (for some appropriate installations) | 4 |
| Vent plug (for outdoor installations) | 1 |
| Terminal block, 2-pin (24 VAC heater power) | 1 |
| Terminal block, 3-pin, for alarm | 1 |
| Video focus adjustment cable (for connection to portable/local monitor) | 1 |
| Tool for set screw roll adjustment | 1 |
| ViconNet CD | 1 |

# Mounting the Unit

Select a location for the installation of the V910 camera. Be sure the area around the selected location is clear of obstacles (such as steel beams, headers, pipes, electrical wiring, etc.) which would interfere with the mounting of the camera and that the location can support the weight of the unit [the V910 unit weighs 4 lb (1.8 kg)]. Video and power cables must be routed to the installation location.

The V910 mounts directly to a ceiling or wall. The base has four mounting holes, and two cable access holes are provided. As a mounting alternative, the mounting holes align with a standard 4 x 4 electrical box, and the unit may be mounted to that. Refer to Figure 2. To mount the V910, follow the steps below.

⚠️**Caution:** *Do not attach these units to drywall surfaces and do not install mounting screws into the end grain of wood.*

1. Loosen the four captive screws securing the cover to the base with the special tool supplied in the accessory kit. The cover remains attached to the base by a safety cord. Allow the cover to hang.

2. Using the base as a template, mark the location of the four mounting holes [0.203 in. (5.2 mm) diameter]. See Figure 2.
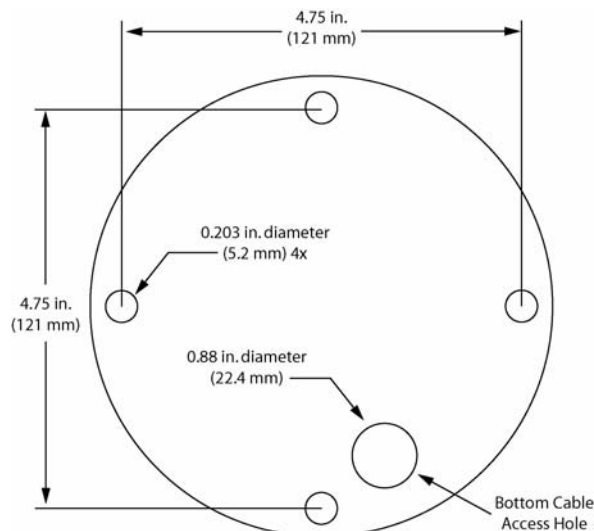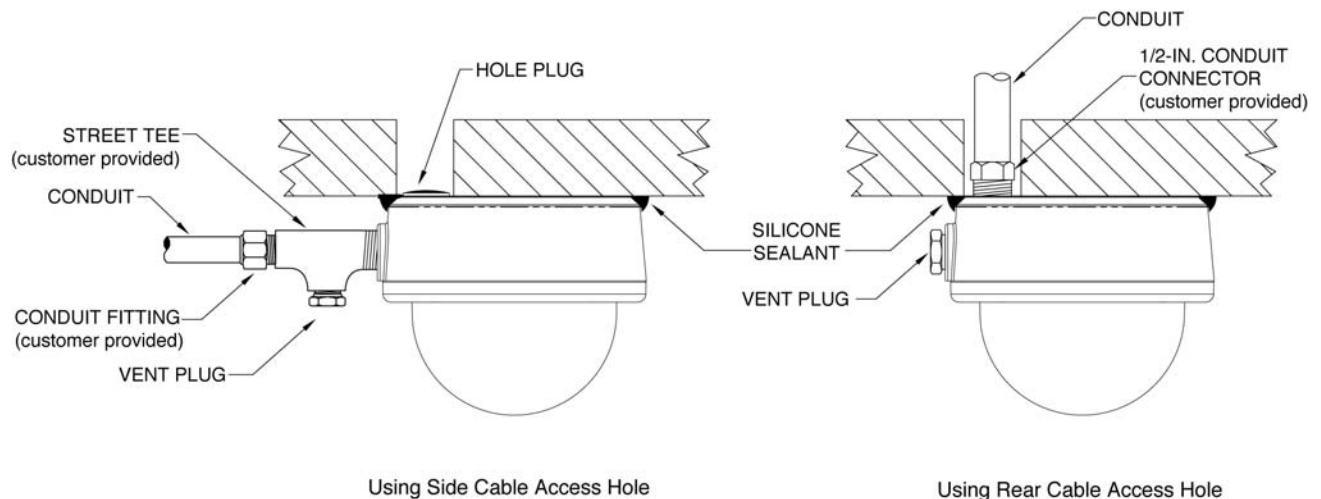


**Figure 2**
**Mounting Hole Pattern**

3. There are two (2) cable access holes provided. Drill a hole in the wall or ceiling and route video and power cables to the selected location and through one of the cable access holes. A 1/2-inch connection (customer-supplied connector) is provided on the side of the base; the rear port is sized to accept a 1/2-in. (customer-provided) connector. A conduit or electrical connector (screw-type) can be used in this threaded hole. See Figures 1 and 2 for hole locations. Apply the provided sealant tape around the threads of the conduit pipe.

4. If it is desirable to use the rear cable access hole, remove the black hole plug it is shipped with and route the conduit through the hole. Remove the plug from the side cable access hole and insert the vent plug provided. If the side cable access hole is used, remove the plug it is shipped with and insert a Street Tee (customer provided) into the cable access hole. Route the conduit through the top hole and insert the vent plug provided into the bottom hole. Refer to Figure 3 for installation options.

> **NOTE:** *Failure to thoroughly coat threads will result in moisture entering the housing and eventual failure of the unit.*

> **Note:** *For **outdoor installations,** Vicon recommends that the vent plug should only be used if fogging conditions exist. Additionally, if the side cable access hole is used, the base must be mounted so the hole is pointed directly downward.*
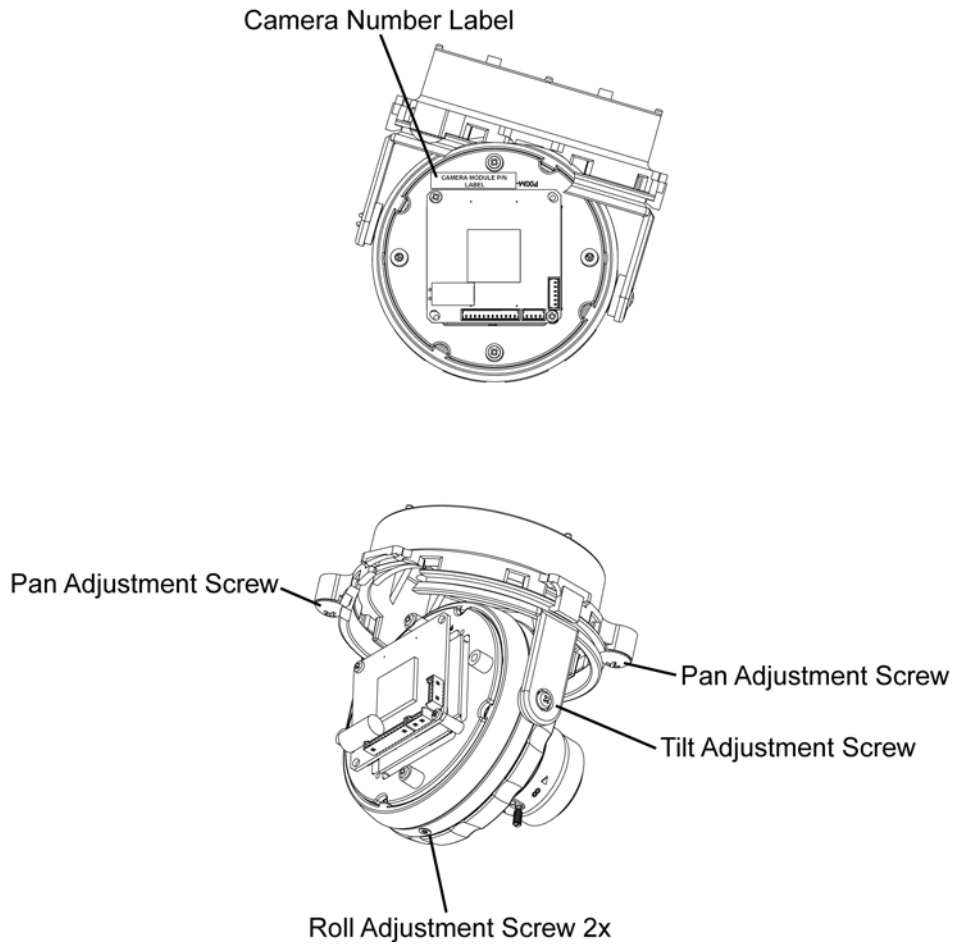


**Figure 3**
**Installation Options**

5. Fasten the base to the wall or ceiling with the appropriate hardware for the mounting surface, lag bolts and sleeve for cement surfaces or machine screws for other surfaces. A nylon washer is provided at each mounting hole for environmental sealing. If the rear cable access is used, be sure that holes are aligned correctly so the cable is routed to allow a flush installation of the base. As a mounting alternative, align the mounting holes with a 4 x 4 electrical box and fasten the base to the box with machine screws.

> **Note:** *To assure a watertight seal, apply silicone sealant around the area where the base meets the wall or ceiling. Vicon recommends Dow Corning® 737 neutral cure sealant or equivalent.*

6. The camera/lens assembly can be adjusted to the desired position. Refer to Figure 4. ***Do not move the camera/lens assembly by holding onto the lens.*** For pan adjustment, loosen the two (2) screws on either side of the camera base bracket; for tilt adjustment, loosen the screw on the camera/lens assembly. For roll adjustment (turns camera position top/bottom), loosen the two set screws on the camera/lens assembly and rotate unit to desired position. Be sure to tighten screws after all adjustments. The varifocal lens can be manually adjusted for focus (near/far) and zoom (telephoto/wide). There is a potentiometer for adjustment for autoiris on the day/night and color cameras; the WDR camera has adjustment available from an OSD menu. Detailed instructions follow. When making adjustments, be sure

that the lens does not hit the dome. There is a label with the camera "1800" number on the camera/lens assembly; this marks the TOP of the camera. Make sure the camera/lens is installed so that the label is on the top for proper video display. Refer to Figure 7.

Camera Number Label

Pan Adjustment Screw

Pan Adjustment Screw

Tilt Adjustment Screw

Roll Adjustment Screw 2x

**Figure 4**
**Camera Position Adjustments**

# Cable Connections

Power, video, alarm, audio and IP connections are made to the printed circuit board (PC board). Refer to Figure 5 when performing these connections. Refer to the Cable Recommendations in the Reference section.

The V910 PoE models provide support for direct network connection to Kollector Elite Digital Video Recorders and ViconNet Workstations via ViconNet version 5 software. The PC board allows direct plug-in to a system network hub, switch or router. Video from the camera is available to all network recorders and workstations for live view and recording. Video is digitized and made available through the LAN connection. An RJ-45 connector (J7) is provided on the board for connection to the LAN with a CAT5 cable. This connection is also used for power (PoE). Refer to Figure 5 and the Table for connections on the ViconNet board.

Alarm input signals are carried on individually-shielded twisted-pair cable sets. There is a 3-pin alarm connector (P1) on the PC board. Refer to the Twisted-Pair Cable Recommendations in the Reference section.

Alarm inputs are driven by a dry contact type switch. These signals are connected to terminal block P1. For example, a door switch can activate an alarm when connected to an alarm input. As a guideline (under normal conditions), the cable should be 22 AWG for a 1000 foot (305 m) distance.

Additionally, there are two jacks provided for audio, J3 (MIC) for Audio IN and J6 (SPK) for Audio OUT. At this time, J6 is not available.

Connector P2 is a video out connection for the video focus adjustment cable to connect to a portable/local monitor. There is an alternate connector on the camera PC board (day/night and color) or joystick control (WDR). Refer to Figures 7 and 9, respectively. Either connector can be used. The cable assembly is provided in the accessory kit for connection.
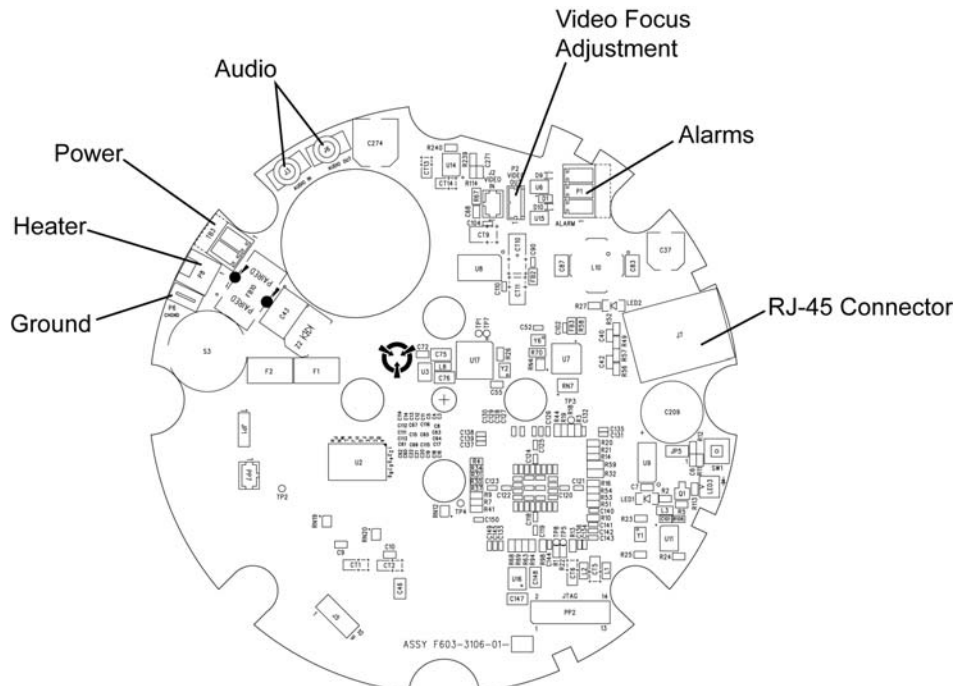


**Figure 5**
**PC Board Connectors**

| CONNECTOR/PIN NUMBER | CONNECTOR TYPE | CONNECTOR/PIN LABEL | SIGNAL NAME |
|---|---|---|---|
|  | TERMINAL BLOCK | POWER (TB3) |  |
| TB3-1 |  | H | Hot |
| TB3-2 |  | N | Neutral |
|  | TERMINAL BLOCK | ALARM (P1) |  |
| P1-1 |  | ALARM OUT | Alarm output |
| P1-2 |  | GND | Ground |
| P1-3 |  | ALARM IN | Alarm input |
|  | RJ-45 | LAN (J7) |  |
| J7-1 |  | TX + | Transmit + |
| J7-2 |  | TX - | Transmit - |
| J7-3 |  | RX + | Receive + |
| J7-4 |  | POE POWER | PoE Power |
| J7-5 |  | POE POWER | PoE Power |
| J7-6 |  | RX - | Receive - |
| J7-7 |  | POE POWER | PoE Power |
| J7-8 |  | POE POWER | PoE Power |
|  | 1/8-IN. PHONO | AUDIO |  |
| J3 |  | MIC | Audio In |
| J6 |  | SPK | Audio Out - N/A |

**Wiring Connections**

# Dome Power Connections

*Note: Vicon systems and components, like most electronic equipment, require a clean, stable power source. Voltage irregularities such as surges, drops, and interruptions can affect the operation of your equipment and, in severe cases, damage certain components.*

Power (24 VAC) is connected through a two-position terminal connector on the PC board (TB3). Refer to Table 2 for the input power connections. This is only for installations requiring heater power.

*Note: Use only a UL Listed Class 2 indoor/dry or Class 3 outdoor/wet rated power supply.*

1. Locate the power cable terminal on the PC board (removable terminal block).

2. Strip approximately 1 in. (25 mm) of insulation off power cables. Then strip off approximately 0.25 in. (6 mm) of insulation off each individual wire. Refer to Figure 6. Connect the wire into the terminal block. Repeat for each connection. Refer to Table 2.

3. Connect the terminal block onto the board connector.

The dome accepts 24 VAC for installations requiring the heater, for heater and camera power.
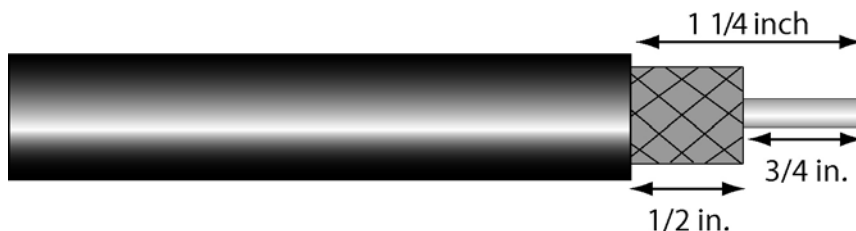


**Figure 6**
**Cable Preparation**

**Table 2**
**Dome Power Connections**

| Pin Number | Function |
|---|---|
| 1 | 24 VAC |
| 2 | 24 VAC Return |

> **Note:** *A grounding tab (P6) is provided on the PC board for those installations requiring a ground. The use of the ground tab to earth ground is necessary to provide protection to the camera. A Faston (lug) is provided in the accessory kit.*

# Heater Connections

The V910 has a heater in the base for those installations requiring it. Refer to Figure 1. The unit is delivered with the heater connection made to the connector (P8) on the PC board. The heater requires 24 VAC. Refer to Figure 5.

# Camera/Lens Adjustments

After all cabling is complete, the camera and lens can be adjusted. The switch settings that follow refer to the color and day/night versions. The day/night WDR camera is adjusted using a joystick control. Those instructions follow.

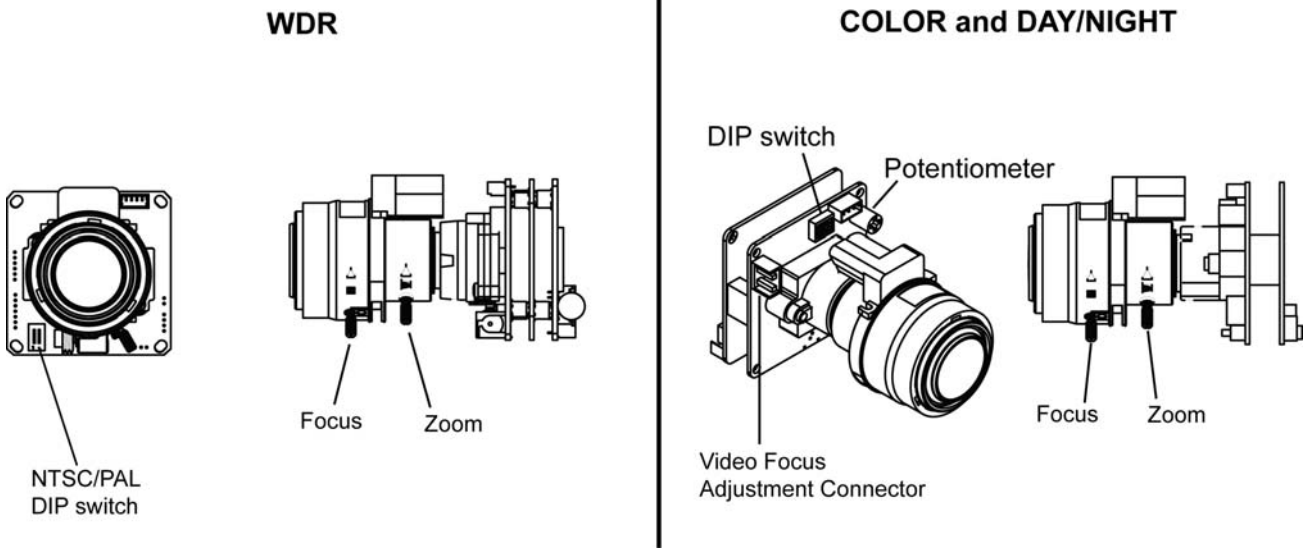## Switch Settings (Color and Day/Night Versions only)

There is a DIP switch on the camera board that allows the selection of: AE/ME (iris setting); ATW/AWB (white balance setting); AGC (Automatic Gain Control ON or OFF); and BLC (Backlight Compensation ON or OFF). The default settings on all cameras are: ME, ATW, AGC ON and BLC ON. ME setting is for DC autoiris and AE setting is for fixed iris (all the cameras in this series have autoiris). Refer to Figures 7 and 8 for the location and setting of the switches. The DIP Switch is oriented as shown in Figure 8. The ON position is noted on the camera board. To obtain the sharpest picture possible, the iris adjustment should be made from a "full bright" setting down to an acceptable video level. This assures that the internal AGC of the camera is not operational. See Table 3 for camera and lens specifications.

## Lens/Autoiris Adjustment

The lens can be manually adjusted for focus and zoom. On the lens, focus [Near↔∞ (Far)] is the front ring and the zoom (Telephoto↔Wide) is the back ring. Two video focus adjustment connectors are provided for use with a portable/local monitor (cable provided in accessory kit) for making adjustment. One is on the PC board on all the cameras. On the day/night and color cameras, a second connector is on the camera board; for the WDR camera, a second connector is on the joystick control. Either connector can be used. Refer to Figures 5, 7 and 9. To make these adjustments, loosen the Zoom and Focus lever screws and turn the ring. When adjustment is complete, retighten the screws. Focusing the lens may be impacted by the smoked lower dome. After the camera/lens assembly is positioned as required, use the focus ring to adjust the lens to the sharpest focus. Position the lower dome and check the focus. If it is acceptable, proceed to Final Installation. If the lens is now out of focus, note the orientation of the dome (position on the 4 screws), as this must remain constant throughout this procedure. Readjust the focus ring so the image is slightly out of focus and position the lower dome in the same orientation as before. Repeat this procedure as necessary until the lens is focused properly with the dome in position. Then proceed to Final Installation.

> **Note:** *When adjusting the focus, it is recommended that the iris be completely open (a dark condition, either at night or using a filter) so that the depth of field does not influence the adjustment.*

On autoiris lenses, iris adjustment may be required if the picture appears dark or grainy or has poor color. There is a potentiometer on the day/night and color camera board to adjust the autoiris (for WDR cameras, this adjustment is made from the OSD menu). Refer to Figure 7. Turning the potentiometer opens and closes the iris to regulate light extremes. Turning the potentiometer clockwise opens the iris wider, allowing more light.

**WDR**

Focus    Zoom

NTSC/PAL
DIP switch

**COLOR and DAY/NIGHT**

DIP switch    Potentiometer

Focus    Zoom

Video Focus
Adjustment Connector

**Figure 7**
**Camera/Lens Adjustments**



BLC    ME    ATW    AGC

ON

1    2    3    4

AE    AWC

**Figure 8**
**Default DIP Switch Settings for the Color and Day/Night Cameras Only**

# WDR Camera Adjustments

The adjustments for the WDR camera are done via an OSD menu using a joystick on the WDR board. Refer to Figure 9. The camera must be connected to a portable (local) monitor to use the menu system. Use the cable included in the accessory kit. Also note that the WDR version has a 2-position DIP switch on the camera board to set NTSC or PAL. This is factory set. If it is necessary to change this setting, set switch 1 to ON for NTSC and OFF for PAL. Switch 2 has no function. Refer to Figure 7.

Pressing the joystick down (Center) accesses the menu mode and confirms settings. Moving the joystick up or down chooses the desired menu selection (UP direction is marked). Moving the joystick to the right or left chooses the desired menu feature adjustment.

Push the Center key for 3 seconds to access the Main menu. From there, using the joystick, select the feature to be programmed, Setup ID, Lens, WDR, WB Control, AGC, Low Light, Sync, Day/Night or Exit.

## Setup ID
The camera ID can be set to display on the monitor (ON) or not display on the monitor (OFF, default). The camera ID is a user selectable title for the camera that is up to 12 characters. If display option is ON, the ID can be set to display on either the top or bottom of the screen in the left, right or center position (default is up/left).

## Lens
Select whether the lens on the camera is manual or autoiris (DC, default). For DC lenses, the DC level can be adjusted from 20 to -42 to control the brightness of the image (default is -18). (Note: all cameras in this series have autoiris lenses).

## WDR

The Wide Dynamic Range (WDR) level can be adjusted from 20 to -20 (default is -2). The Exposure Level can be set for from 18 to -18 (default is 0).

## WB Control

The White Balance can be controlled by:
> ATW (default): The camera automatically controls the white balance in any environment
> AWB: One time automatic adjustment for a specific environment. When the environment changes, this setting must be adjusted. Select AWB and push the joystick to enter menu to adjust the setting for the particular environment. Hold the joystick to lock this white balance setting.
> Manual: User can adjust the colors by increasing or decreasing the WB level from 2500K to 9500 K (default is 4500K).

## AGC
Automatic Gain Control (AGC) can be set ON (default), to activate the feature to adjust the AGC level from 0 to 36 dB (default is 32), or OFF, to deactivate the automatic gain feature, level 43 to -34 (default is 0).

## Low Light
The user can control image brightness by adjusting the shutter speed. Select:
> Slow Shutter (default): AGC level from 28 to 42 (default is 42), Max Field, for shutter to open X2, X4, X8, X16, X32 (default X2).
> B&W SS: Black-and-white slow shutter.
> Gain: Makes the picture brighter.

## Sync
User can select Internal (default) for internal synchronization or Line Lock for phase adjustment (from 0 to 620) to prevent picture roll when switching between cameras in multiple camera installations. **The Line Lock feature is not available on this series of cameras.**

---

## Day/Night
The user can select how the day/night function is set for changing from color to black-and-white:

AUTO (default): Color → BW Level 20 to 35 (default is 32); BW → Color level 0 to 10 (default is 5).
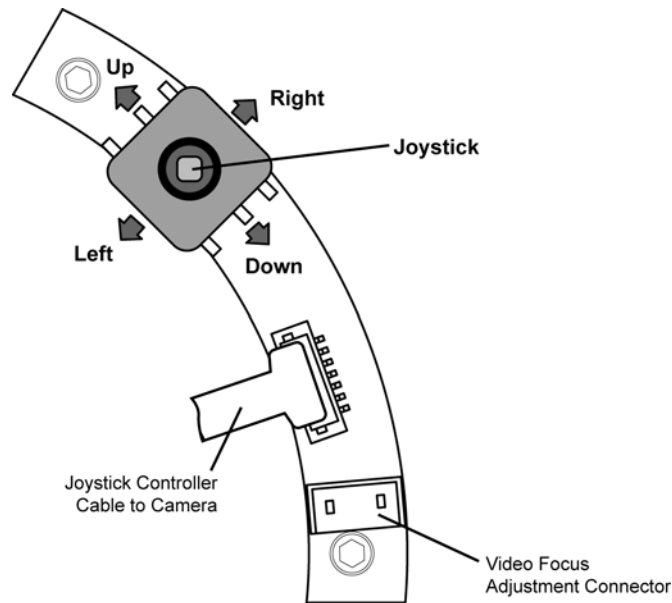Color
BW

## Exit Menu
When selecting Exit, the user can:

EXIT NO CHANGES: Exits the menu system without making any changes
SAVE NEW AND EXIT: Save all changes made before exiting the menu system
RESTORE FACTORY SETTINGS: Revert all settings back to factory defaults
SW REV: Version information



**Figure 9**
**WDR Board Adjustments**

# Final Installation
After all cable connections are made, test the camera/lens to see if any further adjustments are necessary. Align the viewing slot in the mask with the camera/lens assembly. Reattach the cover to the base by aligning the four captive screws with the holes in the base. Any alignment of holes and screws is acceptable. The cover can be rotated 90° by aligning the screws/holes differently.

# Configuring ViconNet
The following information is provided for installing ViconNet for the V910 IP dome. The V910 IP camera dome is shipped with one CD that contains the ViconNet version 5 software needed to setup your IP system, including the application setup, the camera firmware and setup software (VNSetup). Be sure the ViconNet Workstation meets the minimum requirements, is running the ViconNet application (version 5) (VNSetup) and has the proper PTZ camera driver. The VNSetup is found on the included CD under software, IP Camera Setup. Refer to appropriate ViconNet documentation.

**Network Considerations**
The V910 Camera Dome can be connected to any ViconNet network (Version 5 software). Kollector Elite Recorders and ViconNet Workstations can be used for live viewing and recording of network-streamed video. A network can be as simple as a single V910 connected to a ViconNet Workstation or can be complex with the addition of several networks interconnected via WAN.

When adding a V910 IP Camera to the ViconNet network, the following items must be considered:

- The number of cameras on a switch with respect to switch capabilities and system bandwidth mapping.
- Bandwidth limitations on ports connected to workstations (using 100 or 1000 Mbps).
- Workstation capabilities such as processing speed, disk write speed and display card strength.
- Storage size and location types including local Workstation recording, attached SCSI RAID and integrated NAS/SAN devices.

The default parameters on the IP dome are:

| **Factory Defaults** | **Network Defaults** |
|---|---|
| IP address: [10.10.10.1] | IP address: [1.1.1.2] |
| Nucleus IP address: [1.1.1.1] | Nucleus IP address: [1.1.1.1] |
| Net Mask address: [255.255.255.0] | Net Mask address: [255.255.255.0] |
| Gateway address: [0.0.0.0] | Gateway address: [1.1.1.1] |

On first startup, the camera will attempt to establish connection to the Nucleus with the default address (1.1.1.1). Connecting it to an active Nucleus is done through the VNSetup utility.

*Note: When connecting to ViconNet application version 5, the number of **concurrent** users viewing video from the same device cannot **exceed 10 users**.*

**Groups and Users Restrictions**
ViconNet allows creating Multiple Groups and Users in order to limit the rights to different levels. For more information on how to create Users and Groups, refer to the latest revision of ViconNet manual XX113.

Although the ViconNet software does not limit the number of Groups and Users that can be created, the Roughneck V910 Camera Dome has Users and Groups limitations. For ViconNet version 5, the dome can support the first 20 Groups (including Administrators and Guests) and the first 100 Users.

## Configuring the Network Settings

*Note: Before starting, make sure that VNSetup is installed on the configuring PC\workstation. Installation is done using the CD included.*

There are two ways to change the IP dome network settings:
- Activating the camera for the first time: via VNSetup application.
- Connecting the camera to an active Nucleus: via ViconNet application (connection to same Nucleus as the camera is necessary).

*Note: In order to install firmware, the PC and camera must be on the same IP network.*

### Using the VNSetup Utility

VNSetup consists of several TABs. Each TAB provides different functionalities.

*Note: Once the IP Camera Setup is run the first time, a shortcut is placed on the desktop for future use.*

1. Make sure the MAC address and password of the camera is available. Use MAC Address log provided.
2. Verify that the camera is physically connected to the configuring workstation via the network.

## Setup TAB

In the Setup TAB, 3 fields are defined. The *Upgrade files* field indicates the installation upgrade directory. The *Log files* field allows the user the ability to put a copy of log files in a predefined directory. *Password management* selects a directory to save all password files. (By default, the setup files will be installed to C:\VUG.) In *Password file status*, the number of passwords stored is displayed. *Load a list of passwords* is intended for very large sites only. Contact Technical Support to use this feature.
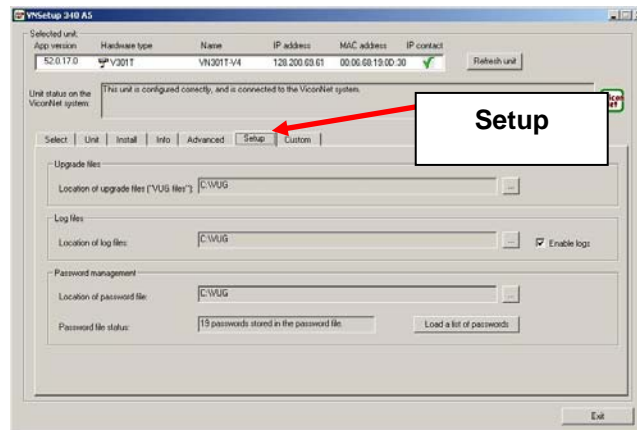


## Select TAB

The Select TAB allows the user to select the relevant IP Unit in order to change its settings or to upgrade its version.

1. From the *Unit selection* list, select the relevant IP product. In case of multiple sites, it is advised to use the filter under the *Unit Type* field. Click on any column tab to sort names by that definition in ascending or descending order.

2. Once the desired unit has been selected, notice the icon, indicating a password protected unit. In order to change the selected unit's settings on the local PC that is running the VNSetup, a unique password must be entered. The screen will display how many units there are and how many of those are password protected (locked). A remote unit, as in systems using network routers and VLANS (virtual LANs), will not display in the Unit selection list. If you want to select a remote unit, manually enter the IP address in the *IP address of remote unit* field and click *Find remote unit*. The remote unit is added to the list.

3. Password authentication
   There are two authentication options. You can either authenticate a specific unit, by entering its password, or use a Nucleus authentication, allowing you access to all units in the network.

   3.1. Unit authentication - On the *Unit password* field, enter the unit password and press the *Add password* button. Once approved, notice that the icon has disappeared and the user may proceed to next phase. The password will be saved on this unit.

3.2. Nucleus authentication - On the *Nucleus admin login* field, enter a valid Nucleus IP address and password and press the *Login* button. Once approved, notice that the icon has disappeared from **all** the units currently connected to the selected Nucleus and the user may proceed to next phase.

4. Press the *Select* button on the lower section of the screen.

*Note: You MUST click the Select button to add the unit to the list; verify that it is added to the list.*

5. The selected unit appears on the *Selected unit* section on the top of the screen and settings can be changed.
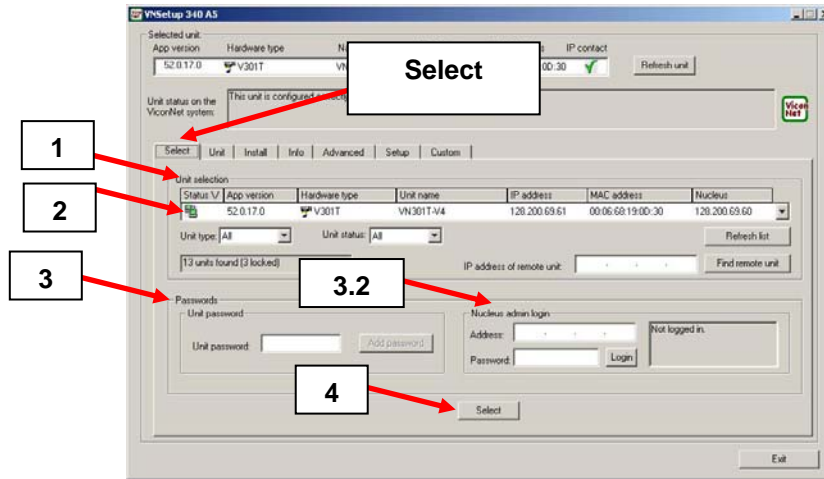


## Unit TAB

The Unit TAB allows the user to change the following settings: Unit name, Nucleus IP address, IP address, Net mask, Gateway, DNS, DHCP, Time Zone, daylight saving time, Local time, Local date, and Debug level, on a scale of 0-4, where 4 is most information.

**Note:** *The* Apply *button must be pressed for changes to take effect.*

**Note:** *Verify all IP addressing parameters with your IT administrator.*

**Note:** *In order for the DHCP option to work properly, verify that the server **does not expire** the IP address licensed to the camera. (Camera should always receive the same IP address from the DHCP server.)*
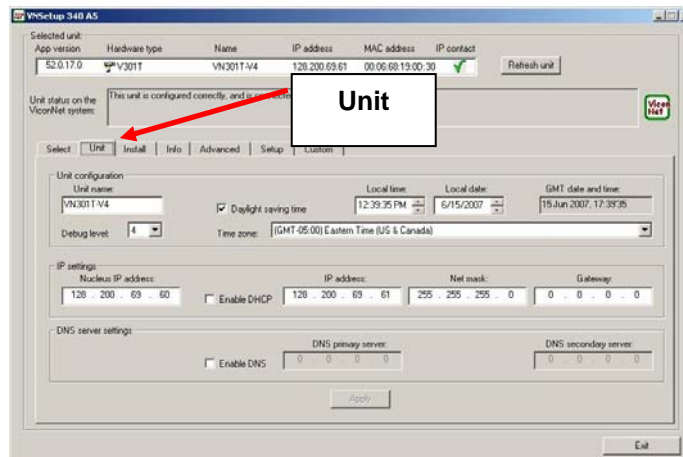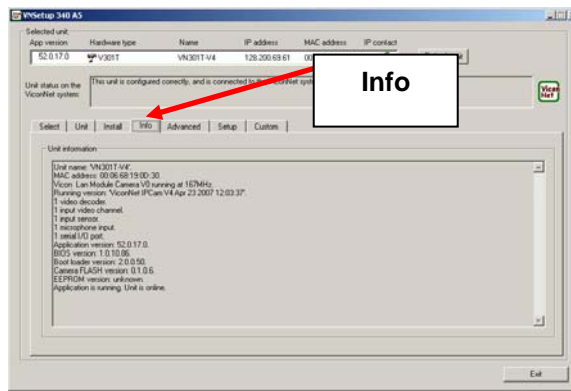
## Install TAB

The Install TAB allows the user to install/upgrade newer versions. Choose the correct version and click Install to send to the selected unit.
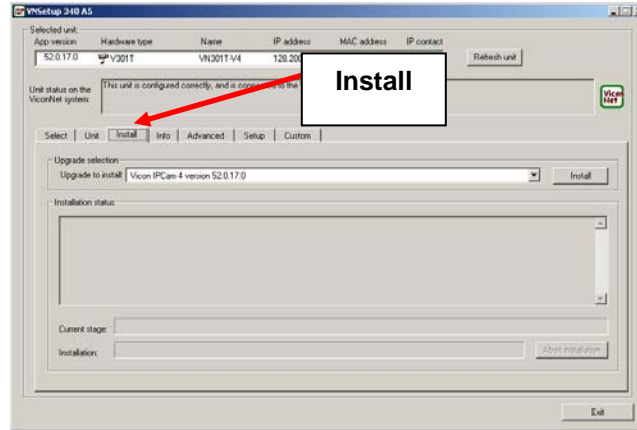


## Info Tab

The Info TAB displays the selected IP product general information/

## Advanced TAB

The Advanced TAB functionalities allow the user to handle unexpected events on a specific remote unit when they occur.

When a problem occurs, the user can choose to *Unjam unit* to restart the unit's firmware, *Restart unit* to restart the hardware, *Net defaults* to return the initial network settings and *Factory defaults* to return to the initial configuration.

The *Main app starting mode, Application start status* may be Unknown, Application loaded successfully or Loading of application is disabled. The *Disable load* button allows the pausing of the application load in case of software issues while still permitting communication via VNSetup; the *Enable load* button resumes the application load.

## Custom TAB

The Custom TAB allows setup of the VOX settings. The VOX mechanism allows setting the IP device so that it will not transmit audio if the level it too low (i.e., an empty room). This conserves storage and allows recording only true sound, not background noise or silence.
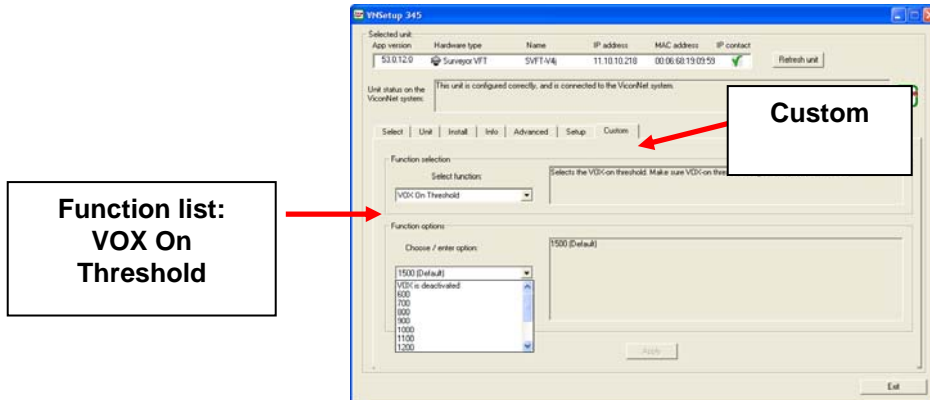


The VOX menu has three function options that are selected from the drop down function list:

*VOX On Threshold* – Defines the audio level at which the input turns ON. At this level, audio is captured and sent from the device. Default setting is 1500. This setting also allows the VOX mechanism to be deactivated, having audio ON all the time.

*VOX Off Threshold* – Defines the audio level at which the input shuts OFF. Default setting is 1200.
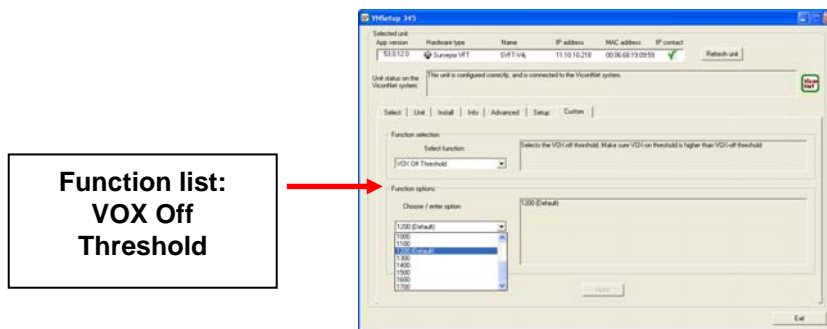


*VOX Silence Period* – Defines the time between reaching VOX OFF level and the actual audio turns off. Default setting is 5000 ms.
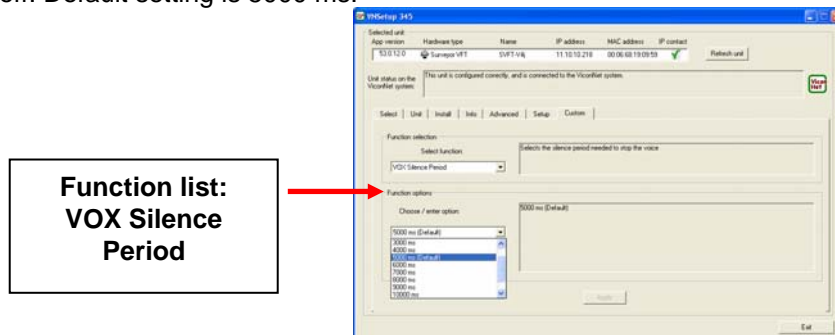
## ViconNet Configuration

After the camera dome has been setup with the proper IP address, configuration features from a remote workstation, server or recorder are available as follows.

- A network settings screen is used to modify the camera dome's IP parameters. This allows great flexibility in network setup.

*Note: This setup can be performed from any VN-WS/VN-NVR workstation connected to the IP dome and to the Nucleus or from a Kollector Elite.*

1. Verify that the camera is connected to the network, that it is active and that it is configured to use the same Nucleus.
2. From the workstation desktop, run the ViconNet application.
3. After logging in, open the site setup selection window.
4. Select the IP dome camera setup.
5. Open the *Network Setup and Site Name* setup window. *Network Settings* window will display. See Figure below.
6. Change the required parameters and click OK. (See your IT administrator for specific network parameters.) Application of the camera will restart.



**Network Settings Window**

- An Authorization screen is used to establish authority levels, by user group. Functions such as PTZ and video view, record and playback can be set for authority level.
- A priority screen is used to establish video quality and FPS levels.

# ViconNet (IP/LAN) Version Operation

The following functions are supported by the ViconNet system through a workstation, recorder or server.

1. System macros can be configured to view and record the dome's video. In addition, within macros, alarms can be sent and remote macros triggered.
2. An alarm can be triggered upon video motion detection and video loss. This alarm can be sent remotely to other networked units.
3. PTZ control can be performed from any networked workstation, recorder or server. Authorization for PTZ can be assigned to specific operator levels.

**Refer to the most recent version of the ViconNet workstation manual XX113 for complete information on operation. A copy of the manual can be found on the CD included.**

# Operation

When power is applied to the camera, the Roughneck V910 views the selected scene.

# Maintenance

The Roughneck V910 Impact-Resistant Cameras require no scheduled maintenance except for the occasional cleaning of the lower dome.

## Care and Cleaning of Lower Dome

The inside surface of the smoked (gray-tinted) dome is easily scratched. Take the following precautions to maintain the dome's surface.

1.  Always handle the dome by the flange and avoid touching the inside surface.

2.  If dust or other contaminants accumulate in the dome's interior, they should be removed with clean dry air pressure (compressed air cans).

3.  If spots, streaks or stains appear on the interior or exterior, they can be removed with a solution of 50% isopropyl alcohol and 50% water using a microwave-safe (aluminum free) paper towel. Dry with clean, dry pressurized air.

4.  Scratches or surface blemishes on the exterior or interior may be removed with a nonabrasive wax using a soft cleaning cloth. Either liquid or spray cleaner/wax suitable for fine furniture is acceptable.

⚠️**Caution:** *Excessive pressure or rubbing on the dome's surface can cause permanent scratches that may render the dome unusable.*

5.  Clean all surfaces with any soft cleaning cloth and a solution of Ivory soap as a cleaning agent.

⚠️**Caution:** *For warranty protection, implement this instruction exactly as stated.*

# Shipping Instructions

Use the following procedure when returning a unit to the factory:

1.  Call or write Vicon for a Return Authorization (R.A.) at one of the locations listed below. Record the name of the Vicon employee who issued the R.A.

    Vicon Industries Inc.
    89 Arkay Drive
    Hauppauge, NY  11788
    Phone: 631-952-CCTV (2288); Toll-Free: 1-800-645-9116; Fax: 631-951-CCTV (2288)

    For service or returns from countries in Europe, contact:

    Vicon Industries Ltd
    Brunel Way
    Fareham, PO15 5TX
    United Kingdom
    Phone: +44 (0) 1489 566300; Fax: +44 (0) 1489 566322

2.  Attach a sheet of paper to the unit with the following information:

    a.  Name and address of the company returning the unit

    b.  Name of the Vicon employee who issued the R.A.

    c.  R. A. number

    d.  Brief description of the installation

    e.  Complete description of the problem and circumstances under which it occurs

    f.  Unit's original date of purchase, if still under warranty

3.  Pack the unit carefully. Use the original shipping carton or its equivalent for maximum protection.

4.  Mark the R.A. number on the outside of the carton on the shipping label.

# Reference

## Coaxial Cable Recommendations

**⚠️ Caution:** *Careful selection of proper cable is essential to obtain the best performance from this equipment. Vicon assumes no responsibility for poor performance when cables other than those recommended, or equivalent, are installed. In all cases, coaxial cable impedance should be 75 ohms.*

### Materials

Use only a pure copper center conductor. Do not use a copper-plated steel or aluminum center conductor, as they will result in poor quality video. Solid-core bare copper conductor is the best type, where flexing and bending will be minimal. If severe bending and flexing is required for installation, use a stranded center conductor. Never exceed the manufacturer's minimum bend radius specification. Use cellular (foam) polyethylene dielectric except where heavy moisture exists. For moisture conditions, use solid polyethylene dielectric cable with a heavy exterior insulation. The shield must be copper braid providing 95% or better coverage.

### Cable Types

The cable types listed below are the most common 75-ohm types used. They vary in size (diameter), dielectric type and net DC resistance. The larger cable results in a lower DC resistance and better video quality, with increased difficulty in handling and installation. Let the required picture quality and cable distance provide a guide in choosing the best cable type. For cables other than the approved Vicon types below, contact the manufacturers listed below. Note that "BC" refers to bare copper and "TC" refers to tinned copper.

### Recommended Coaxial Cable Types

| Cable Type | Belden Type No. | Alpha Type No. | West Penn Type No. | Type Center Conductor | Type Shield and % Coverage | DC Resistance ohms/1000 ft (km) |
|---|---|---|---|---|---|---|
| RG-11/U | 8213 | 9847 | 811,4811 | 14 Solid BC | BC braid (95%) | 2.6 (8.5) |
| RG-6/U | 9248 | 9804C | 806,4806 | 18 Solid BC | Foil + 61% TC braid (100%) | 7.5 (24.6) |
| RG-59/U | 8281* | ---- | 815 | 20 Solid BC | 2 TC braids (96%) | 9.9 (32.5) |
| RG-59/U | 9259 | 9803 | 816 | 22 Stranded BC | BC braid (95%) | 15.0 (49) |
| RG-59/U | 9659 | ---- | ---- | 22 Stranded BC | BC braid (95%) | 15.0 (49) |

*Requires special BNC-M connector due to 0.305 nominal O.D.

| | | |
|---|---|---|
| Belden Inc. | http://www.belden.com/ | (800) 235-3361 |
| Alpha Wire Company | http://www.alphawire.com/ | (800)-52 ALPHA (522-5742) |
| West Penn Wire | http://www.westpenn-cdt.com/ | (800)-245-4964 |

### Picture Quality vs. Cable Length

| Picture Quality | Maximum Cable Run** ft (m) | | |
|---|---|---|---|
| | **RG-59/U** | **RG-6/U** | **RG-11/U** |
| Usable picture | 1100 (350) | 1500 (450) | 2400 (750) |
| Clean picture | 820 (250) | 1000 (300) | 1600 (500) |
| Best picture | 400 (120) | 530 (160) | 820 (250) |

*\*\* For longer cable runs, use a Vicon Video Amplifier to obtain a suitable picture.*

# Network Cable

> ⚠️ **Caution:** *Careful selection of proper cable is essential to obtain the best performance. Vicon assumes no responsibility for poor performance when cables other than the recommended types, or equivalent, are used.*

## *Materials*

Use pure copper stranded conductors to obtain a low DC resistance. The preferred insulation and cable jacket is Polyvinyl chloride (PVC). It has better electrical characteristics than Polyethylene and resists flames, sunlight and most solvents, but is more vulnerable to moisture.

## *Cable Types*

The most commonly used cable types are CAT5, CAT5e and CAT6. These category cables are best suited for Ethernet network applications.

Choose a Belden cable type by referring to the characteristics listed below. The Table below should be used as a guideline when cables other than Belden are used. Materials and construction must follow the guidelines above.

| CABLE TYPE | WIRE SIZE (AWG) | INSULATION MATERIAL | JACKET MATERIAL | CATEGORY | BANDWIDTH (MHz) | MAXIMUM DISTANCE (ft/m) | NUMBER OF TWISTED PAIRS |
|---|---|---|---|---|---|---|---|
| Belden 1624P | 24 | Fluorinated Ethylene Propylene | Low Smoke PVC | 5 | 100 | 246/75 | 4 |
| Belden 1583A | 24 | Polyolefin | PVC | 5e | 100 | 328/100 | 4 |
| Belden 1585A | 24 | Fluorinated Ethylene Propylene | PVC | 5e | 100 | 328/100 | 4 |

Belden Inc.         http://www.belden.com/         (800) 235-3361

**Table**
**Recommended Network Cable Types**

# Twisted-Pair Cable

⚠️ **Caution:** *Careful selection of proper cable is essential to obtain the best performance. Vicon assumes no responsibility for poor performance when cables other than the recommended types, or equivalent, are used.*

## Materials

Use a pure copper stranded conductor with or without a tin-plating to obtain a low DC resistance. Do not use cable with either steel or aluminum stranded conductor because they do not transfer signals effectively for long distances. The preferred insulation and cable jacket is Polyvinyl chloride (PVC). It has better electrical characteristics than polyethylene and resists flames, sunlight and most solvents, but is more vulnerable to moisture.

## Cable Types

The most commonly used cable types are dual individually-shielded, twisted pair in a single jacket. This configuration is the most convenient for RS-422/ RS485 applications. Single individually-shielded, twisted pair is also a suitable cable.

Choose a Belden cable type by referring to the characteristics and maximum distances listed below. The maximum distance for the most reliable digital control refers to the distance between the CPU/Keypad and the Camera Dome Assembly. The characteristics of the cables in Table 6 should be used as a guideline when cables other than Belden are used. Materials and construction must follow the guidelines above.

| CABLE TYPE | WIRE SIZE (AWG) | INSULATION MATERIAL | JACKET MATERIAL | DISTANCE ft (m) max. | NUMBER OF TWISTED PAIRS |
|---|---|---|---|---|---|
| Belden 9406 | 22 | PVC | PVC | 5000 (1500) | 2 |
| Belden 9402 | 20 | PVC | PVC | 5000 (1500) | 2 |
| Belden 8723 | 22 | Polypropylene | PVC | 8000 (2400) | 2 |
| Belden 8162 | 24 | Datalene[1] | PVC | 15000 (4600) | 2 |
| Belden 9729 | 24 | Datalene[1] | PVC | 15000 (4600) | 2 |
| Belden 9182 | 22 | Datalene[1] | PVC | 25000 (7600) | 1 |

[1]Datalene is a Registered Trademark of Belden.
Belden Inc.          http://www.belden.com/          (800) 235-3361

**Recommended Individually-Shielded, Twisted-Pair Cable Types**

# Technical Information

**ELECTRICAL**

**Input Voltage:**
PoE or 24 VAC ±20% (when heater power is required), isolated input. Use only a UL Listed Class 2 indoor/dry or Class 3 outdoor/wet rated power supply.

**Power Consumption:**
PoE: 7.5 W.
14.5 W nominal; 18.5 W max., including heater*.

**Current Rating:**
0.60 A nominal; 0.64 A max., including heater*.

**Maximum Operating Distance (Nominal, including Heater):**

| Voltage | Wire Gauge ft (m) | | | | |
|---------|-----|-----|-----|-----|-----|
| | **20** | **18** | **16** | **14** | **12** |
| 24 VAC | 321 (98) | 512 (156) | 815 (248) | 1292 (394) | 2058 (627) |

**Heat Equivalent:**
0.8 btu/min (0.2 kg-cal/min) nominal;
1.05 btu/min (0.27 kg-cal/min) max., including heater.
Note: These figures represent the conversion of 100% of the electrical energy to heat. Actual percentage of heat generated will be less and will vary from product to product. These figures are provided as an aid in determining the extent of cooling required for an installation.

**Connectors:**
Power (heater): 2-pin connector.
Heater: 2-pin connector (factory installed).
Video/Data/Power (PoE): RJ-45.
Alarms: 3-pin screw terminal.
Audio: 1/8-in. phono jacks.

**Video Output Impedance:**
75 ohms.

**Scanning System:**
EIA/NTSC: 525 lines, 60 fields/sec.
CCIR/PAL: 625 lines, 50 fields/sec.

**Radio Frequency Emission Rating:**
FCC Class A.

**Camera/Lens Specifications:**
Refer to Table 3.
Day/Night Camera Operation: In Night mode with the IR filter removed, the CCD can respond to IR light sources at 720 – 850 nm.

*Note: Nominal power and current levels are calculated @ 24.0 VAC input line voltage.*
*Maximum power and current levels are calculated @ 29.0 VAC input line voltage.*

**VICONNET (IP)**

**Communication Software:** ViconNet Digital Management System.

**LAN Interface:** 100 Mbps, TCP/IP Unicast.

**Number of Video Channels:** 1, over LAN connection.

**Video Formats Supported:** NTSC and PAL, model dependant.

**Video Transmission Rate:** 1 channel @30 frames per second (25 fps, PAL) maximum.

**Number of Simultaneous Video Streams:** Maximum of 10 viewing/recording streams per camera.

**Video Transmission Resolution:** 480 horizontal TV lines maximum at 720 x 488 pixel pallet (864 x 586, PAL).

**Video Quality:** ViconNet software quality 1-8, selectable on a 4-position bar with 2 compression level settings in resolutions 720 x 488 (864 x 586 PAL), 720 x 244 (864 x 293, PAL), 360 x 244 (432 x 293, PAL), 360 x 122 (432 x 146, PAL).

**Audio:** 1 line-level microphone input; 0 dbm output, 32 KHz bandwidth, 600 ohm impedance and 2 V RMS (1 V p-p) output dynamic type.

**Alarm:** 4 in, NO/NC (through V910 inputs).

**Video Bandwidth:** 1.7 Mbps (per video stream), nom.

**SOFTWARE OPERATION (ViconNet)**

**Network Setup:** Standard network protocol type using IP addressing scheme and separate PC application software.

**Site Authorization:** Camera can be setup using remote recorder or workstation GUI. Permissions can be assigned for macro create & edit, alarm setup, Authentication, Reports and System Status. Supports up to 20 Groups and 100 Users.

**Macro Create & Edit:** System macros can be configured to use the camera's video. In addition, within macros, alarms can be sent and remote macros run.

**Alarm Setup:** An alarm can be triggered on video motion detection and loss. The alarm can be sent to remote units.

**Authentication:** The video from the camera can be set to view the Authentication status symbol (A) on the displayed video.

**Picture Quality and FPS Priority:** Camera video can be setup to prioritize recorded picture quality and video FPS. Priority can be assigned to user/macro recording for highest requested video quality or Master user control.

**OPERATIONAL**

**Tilt and Horizontal**
**Adjustment:**        3 axis adjustment, pan, tilt and roll.

**MECHANICAL**

**Application:**        Indoor/outdoor.

**Mounting:**        Ceiling or wall. Accessories available for pendant or in-ceiling installations.

**Dimensions:**        Height: 5.1 in. (130 mm).
Total Diameter: 6.1 in. (155 mm).
Dome Diameter: 4.7 in. (119 mm).

**Weight:**        Approximately 4 lb (1.8 kg).

**Construction:**        Base/Cover: die-cast aluminum.
Dome: injection-molded polycarbonate plastic.

**Finish:**        Base/Cover: painted light beige.
Dome: smoked.

**ENVIRONMENTAL**

**Housing:**        Evaluated to UL standard 50 with an environmental rating of 4X.

**Operating Temperature**
**Range:**        -22 to 140° F (-30 to 60° C).

**Operating Humidity:**        Up to 95% relative, noncondensing.

**Storage Temperature**
**Range:**        -40 to 150° F (-40 to 65° C).

**Storage Humidity:**        Up to 90% relative, noncondensing.

**Wind Load:**        Heavy rain or snow driven by winds up to 80 mph.
(Not evaluated by UL)

**Table 3**
**Camera Specifications**

| Model | Image Device | Color/ Mono | Resolution | Sensitivity | Camera Features | Electronic Iris | Signal-to-Noise Ratio |
|---|---|---|---|---|---|---|---|
| | | | (TV lines) | fc (lux) | | (sec) | |
| V910A-IP4/ V910A-IP4C | 1/3" CCD, 2:1 interlace, NTSC/PAL | Color | 550 | 0.03 (0.3) at 30 IRE, f/1.2 | AGC, BLC, ATW/AWB, AE/ME DIP switch selectable | NTSC: 1/60–1/100,000 PAL: 1/50 – 1/100,000 | >48 dB (AGC off) |
| V910A-DN-IP4 / V910A-DN-IP4C | 1/3" CCD, 2:1 interlace, NTSC/PAL | Color/ Day/Night | Color: 550 Mono: 580 | Color: 0.03 (0.3) B&W: 0.004 (0.04) at 30 IRE, f/1.2 | AGC, BLC, ATW/AWB, AE/ME DIP switch selectable | NTSC: 1/60–1/100,000 PAL: 1/50 – 1/100,000 | >48 dB (AGC off) |
| V910A-WDR-IP4 / V910A-WDR-IP4C | 1/3" CMOS, progressive, NTSC/PAL | Color Day/Night WDR | 540 | 0.008 (0.08) at 30 IRE, f/1.2 (DSS ON) | AGC, WDR, ATW/AWB, AE/ME, Low Light, Day/Night OSD selection | NTSC: 1/60–1/100,000 PAL: 1/50 – 1/100,000 | >48 dB |

## Lens Specifications

| Model | Focal Length | Field-of-View | |
|---|---|---|---|
| | (mm) | Horizontal | Vertical |
| V910A--IP4/C V910A-DN-IP4/C V910A-WDR-IP4/C | 3.3 - 12 varifocal with autoiris | 83.9° -.23.91° | 61.9°- 17.93° |

## Vicon Standard Equipment Warranty

Vicon Industries Inc. (the "Company") warrants your equipment to be free from defects in material and workmanship under Normal Use from the date of original retail purchase for a period of three years, with the following exceptions:

1. VCRs, all models: Labor and video heads warranted for 120 days from date of original retail purchase. All other parts warranted for one year from date of original retail purchase.
2. Video monitor CRT (cathode ray tube) and LCD monitors, all models: One year from date of original retail purchase.
3. Uninterruptible Power Supplies: Two years from date of original retail purchase.
4. VDR-304, VDR-308 and VDR-316 Recorder Series: One year from date of original retail purchase.
5. V5616MUX: One year from date of original retail purchase.
6. S10-CH: 18 months from date of original retail purchase.
7. Normal Use excludes prolonged use of lens and pan-and-tilt motors, gear heads, and gears due to continuous use of "autopan" or "tour" modes of operation. Such continuous operation is outside the scope of this warranty.
8. Vicon Security Management Systems (SMS) All Models: All hardware is warranted for two years from date of original retail purchase.

Date of retail purchase is the date original end-user takes possession of the equipment, or, at the sole discretion of the Company, the date the equipment first becomes operational by the original end-user.

The sole remedy under this Warranty is that defective equipment be repaired or (at the Company's option) replaced, at Company repair centers, provided the equipment has been authorized for return by the Company, and the return shipment is prepaid in accordance with policy.

The Company will not be obligated to repair or replace equipment showing abuse or damage, or to parts which in the judgment of the Company are not defective, or any equipment which may have been tampered with, altered, misused, or been subject to unauthorized repair.

**Software supplied either separately or in hardware is furnished on an "As Is" basis. Vicon does not warrant that such software shall be error (bug) free. Software support via telephone, if provided at no cost, may be discontinued at any time without notice at Vicon's sole discretion. Vicon reserves the right to make changes to its software in any of its products at any time and without notice.**

**This Warranty is in lieu of all other conditions and warranties express or implied as to the Goods, including any warranty of merchantability or fitness and the remedy specified in this Warranty is in lieu of all other remedies available to the Purchaser.**

No one is authorized to assume any liability on behalf of the Company, or impose any obligations on it in connection with the sale of any Goods, other than that which is specified above. In no event will the Company be liable for indirect, special, incidental, consequential, or other damages, whether arising from interrupted equipment operation, loss of data, replacement of equipment or software, costs or repairs undertaken by the Purchaser, or other causes.

This warranty applies to all sales made by the Company or its dealers and shall be governed by the laws of New York State without regard to its conflict of laws principles. This Warranty shall be enforceable against the Company only in the courts located in the State of New York.

The form of this Warranty is effective December 8, 2008.

**THE TERMS OF THIS WARRANTY APPLY ONLY TO SALES MADE WHILE THIS WARRANTY IS IN EFFECT. THIS WARRANTY SHALL BE OF NO EFFECT IF AT THE TIME OF SALE A DIFFERENT WARRANTY IS POSTED ON THE COMPANY'S WEBSITE, *WWW.VICON-CCTV.COM*. IN THAT EVENT, THE TERMS OF THE POSTED WARRANTY SHALL APPLY EXCLUSIVELY.**

**Vicon Part Number: 8006-9010-03-06   Rev 1208**

# Notes

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