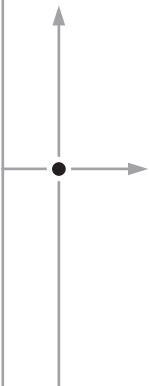GV grass valley

CameraMan
CONTROL CENTER

Installation and Operation Manual

L1201101 Rev B
1998

the most watched worldwide

Contacting Grass Valley

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Germany, Europe	+49 6150 104 782	+49 6150 104 223		

Grass Valley Web Site

The www.thomsongrassvalley.com web site offers the following:

Online User Documentation — Current versions of product catalogs, brochures, data sheets, ordering guides, planning guides, manuals, and release notes in .pdf format can be downloaded.

FAQ Database — Solutions to problems and troubleshooting efforts can be found by searching our Frequently Asked Questions (FAQ) database.

Software Downloads — Software updates, drivers, and patches can be downloaded.

Table Of Contents

CameraMan CONTROL Center™

The CameraMan CONTROL Center is your key to the ultimate in camera control. The CameraMan CONTROL Center is designed for use with CameraMan cameras. Use this manual in conjunction with the installation and operations manuals for your Cameraman 1-CCD or 3-CCD cameras.

Important Note

The CameraMan CONTROL Center is available in two versions: Composite video or S-video. It is also available with or without autoTRACK capability. The CONTROL Center is compatible only with:

- CameraMan Systems with software revision 6.0 or higher.
- PRM (Programmable Response Module) software revision 2.4 or higher.

To verify the software revision number, remove its ROM card per the instructions in the camera system's installation and operation manuals. The revision number is located on the label on each chip. For software upgrades or questions, please contact Product Support at (904) 596-3500.

Your CameraMan CONTROL Center should include these components:

- One CONTROL Center Control Unit
- One Control Unit Power Supply
- One CONTROL Center Switcher
- One Switcher Power Cord
- Two 25 ft (7.6 m) CameraMan Communication Cable (RS-485)
- One 25 ft (7.6 m) Serial Cable (RS-232; female to female)
- One 75-Ohm Terminator (Ext Ref)
- Four Self-sticking Rubber Pads
- One CONTROL Center Installation and Operations Manual

This manual covers the connection, configuration, and operation of your new CameraMan CONTROL Center. The CONTROL Center combines robotic camera control, audio/video switching, proven autoTRACK capabilities (in autoTRACK models), location presets, and virtual CCU control for up to eight cameras.

The CONTROL Center consists of a two-piece design: the CONTROL Center Control Unit connected via RS-232 to the CONTROL Center Switcher.

The CameraMan CONTROL Center can direct the storing and recalling of up to 99 presets (1-CCD camera) or 125 presets (3-CCD & 2112 cameras) and up to 15 autoTRACK views per camera. For precise, smooth camera control, the CONTROL Center offers variable-speed camera pan/tilt (1-CCD & 3-CCD) and variable-speed lens zooming (3-CCD & 2112) control through a joystick and two slider bar adjustments. The powerful backlit LCD display and function buttons allow you to adjust tracking views quickly, switch between audio/video devices, obtain pan/tilt position readouts, and adjust each camera's CCU settings (3-CCD only) on-the-fly without compromising the video.

You will see the following icons in this manual:

This icon alerts you to important instructions in the operation and maintenance of your CameraMan CONTROL Center.

This icon alerts you to tips or noteworthy suggestions in the operation, use, or maintenance of your CameraMan CONTROL Center.

This icon refers you to the General Pan/Tilt Camera installations and operations manual that came with your camera.

General Information

Important Identification Numbers

Before starting to assemble and to use your CameraMan CONTROL Center, please take a moment to find the Model and Serial number tag on your unit, and fill out the following information.

PARKERVISION™

MODEL # _____

SERIAL # _____

FCC ID # _____

Warning:

This is a Class A product. In a domestic environment this product may cause radio interference, in which case the user may be required to take adequate measures.

The terms Visibly Better, System II, IMAGE, WhisperDRIVE Plus, autoTRACK, MY TURN, and General Pan/Tilt Camera System are registered trademarks of Grass Valley in the United States of America.

The manufacturer reserves the right to change specifications and warranty at any time without notice or obligation.

No part of this manual may be copied or reproduced without express written consent of Grass Valley.

The following section describes important material and instructions regarding the installation and use.   t.

Please: • Read these instructions.   • Heed all warnings.
          • Keep these instructions.   • Follow all instructions.

Safety Notices

Instructions to the user:

1. Do not use this apparatus near water.
2. Clean only with a damp cloth.
3. Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding type plug has two blades and a third grounding prong. The wide blade or the third prong is provided for your safety. When the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
4. Unplug this apparatus during lightning storms or when unused for long periods of time.
5. Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as a power supply cord or plug being damaged, liquid being spilled or objects falling into the apparatus, the apparatus being exposed to rain or moisture, not operating normally, or being dropped.

Safety Warning Graphics

 The pictorial warnings placed on this equipment are for the user's protection. Please heed them.

Caution: Risk of Fire

For continued protection against risk of fire, replace only with same type T4A, 250 V~ fuse. Pictorial warnings of this type give the type and rating of the specified replacement fuse.
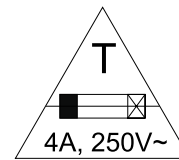
Caution: Risk of Electrical shock

Where high voltage may be present, the pictorial warning on the right is used. This indicates risk of electric shock. For your safety, DO NOT OPEN.

CameraMan CONTROL Center Components

The following information introduces you to each of the CONTROL Center components and their features.

CONTROL Center Control Unit: Standard Unit and autoTRACK Unit

The Control Unit is a unique multiple-camera control device combining pan/tilt, zoom, focus, Iris, CCU (3-CCD), autoTRACK (on autoTRACK-equipped models), and audio/video switch control.

Models with autoTRACK have autoTRACK view buttons located just above the numerical keypad. Standard Units have a nameplate in this position.

CONTROL Center Switcher

The Switcher provides switching capability from a maximum of eight audio/video sources to a maximum of four audio/video outputs. It provides eight genlock outputs for synchronizing the eight video sources. The genlock signal can be generated internally, or referenced to an external signal. The front panel has LED displays and adjustment pots for sync level and horizontal phase when an external reference source is connected to the Switcher. They are not used when the internal reference signal is being used.

CameraMan CONTROL Center Components

Power and Connection Accessories

- 25 ft (7.6 m) CameraMan Communication Cable (RS-485).

- 25 ft (7.6 m) Serial (RS-232 Female-Female) Cable.

- CONTROL Center Switcher power cord.

- US Power Supply: 120 VAC~, 60 Hz, 100 W, 18VDC ⎓ Power Supply with attached cords, or International Power Supply: 100-240 VAC~, 50/60 Hz, 2.0A, 20VDC ⎓ Power Supply.

- 75-Ohm terminator (Switcher Unit is shipped with this terminator connected to an External Reference BNC on the back panel)

Communication Cable

US Power Supply
(Control Unit)

International Power Supply
(Control Unit)

75 Ohm Terminator

RS-232 Cable

Switcher Power Cord
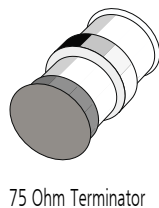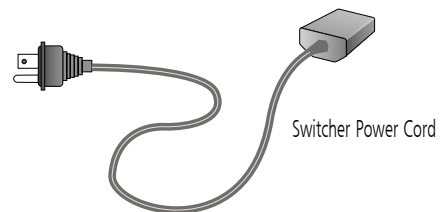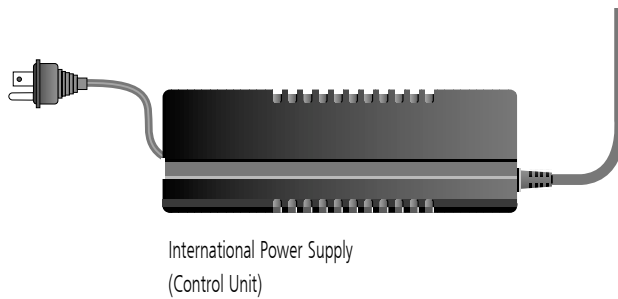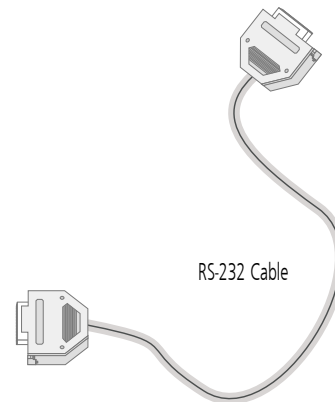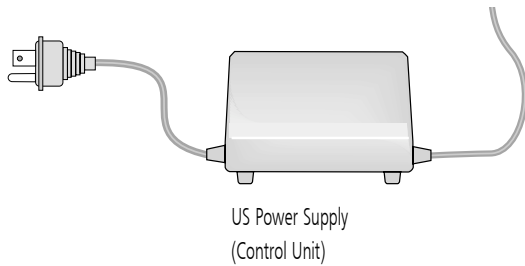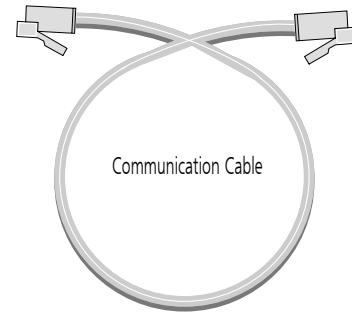
Rear Panel Controls and I/O Connections

Rear panel: CONTROL Center Control Unit

▼ **LCD Contrast Knob –** Used to increase or decrease the contrast on the CONTROL Center's LCD Display.

▼ **LCD Backlight Brightness Knob –** Used to increase or decrease the amount of light showing through the LCD Display.

▼ **RS-485 Ports –** Used to connect Control Unit to CameraMan cameras.

▼ **COM 1 –** RS-232 Jack (female) used to connect to a PC to update CONTROL Center software.

▼ **COM 2 –** RS-232 Jack (male) used to connect the Control Unit to the Switcher.

▼ **DC Power Jack –** Used to supply power to the Control Unit.

Rear Panel: CONTROL Center Switcher

CV Model
Composite video switcher with BNC inputs and outputs

SV Model
S-video switcher with mini-DIN inputs and outputs
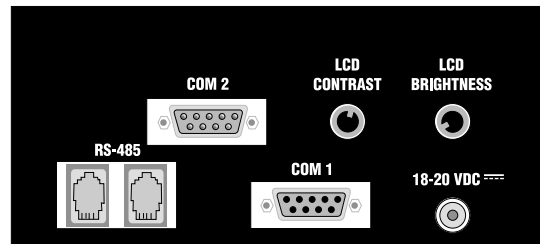
▼ **AC Power Cord Input –** Used to supply power to the Switcher.

▼ **On/Off Power Switch –** Used to turn switcher on and off.

▼ **Black Burst Outputs –** Eight BNC connectors used to connect to the genlock inputs of up to eight video devices.

▼ **External Reference Inputs –** BNC connectors used to connect to an external genlock source (when not used as a loop thru, open connector must be terminated with a 75 Ohm terminator.)

▼ **Control Unit Port –** Used to connect Switcher to CONTROL Unit.

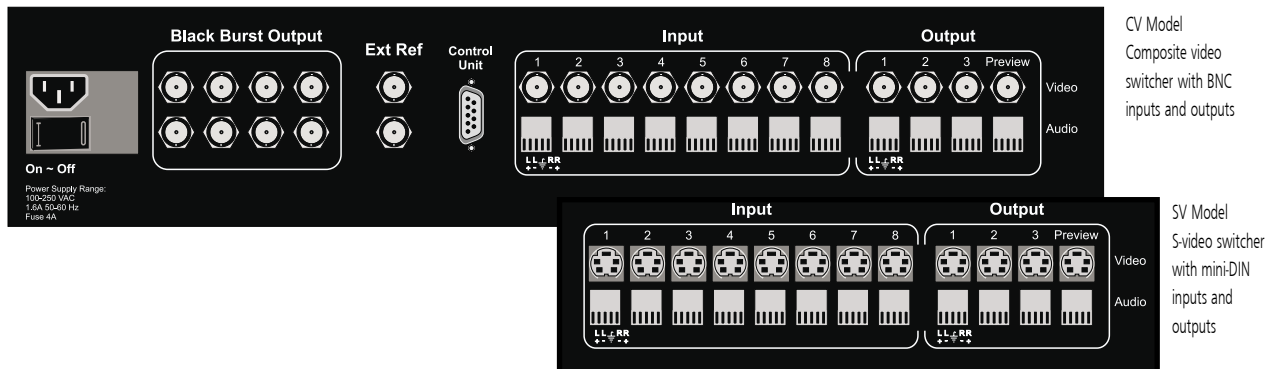▼ **Switch Inputs –** Video— Eight self-terminating BNC (top illustration) or S-video mini-DIN style (bottom illustration) connectors used to connect to various video input sources.
Audio **–** Eight five-position "Phoenix"-style connectors used to connect to various balanced/unbalanced audio input sources. Inputs can be switched independently or configured to follow their respective video inputs. (see page 10)

▼ **Switch Outputs –** Video— Three PROGRAM and one PREVIEW BNC (top) or S-video mini-DIN style (bottom) connections. The three program outputs can be independently selected or grouped together.
Audio **–** Three Program and one PREVIEW "Phoenix"-style connectors used to connect to various balanced/unbalanced audio output devices.

CONTROL Center Block Diagrams

The following block diagrams explain how the CameraMan CONTROL Center connects to your cameras, video, audio, and external synchronizing sources.

Video I/O Connections

Input/output video connections from the Switcher rear panel to one or more devices are made either by 75 Ohm coaxial cable terminated by BNC connectors(CV Model) or with S-video cable terminated by mini-DIN connectors(SV Model).

```
                    Video Output
                       Device
                          |
         CONTROL Center ----- CONTROL Center
           Switcher            Control Unit
        |      |     |      |
  CameraMan CameraMan CameraMan Other Video
   Cameras   Cameras   Cameras   Sources
```

```
   Audio Output
      Device
         |
 CONTROL Center ----- CONTROL Center
   Switcher            Control Unit
      |
   Audio  Audio
  Source Source
```
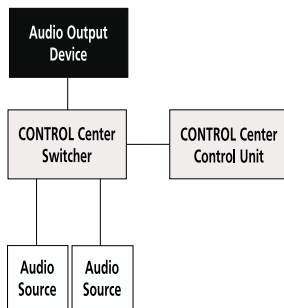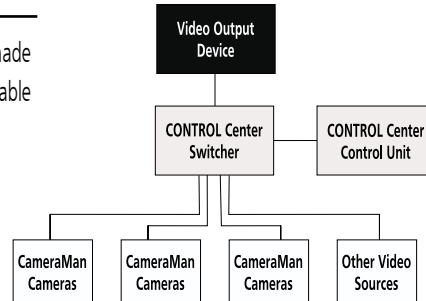
Audio I/O Connections

Audio connections to one or more audio sources use cables with "Phoenix"- type connectors at the Switcher.

Camera Control Connections

Camera Control connections from the Control Unit to CameraMan cameras use RS-485 communication cables terminated by modular handset plugs. RS-485 "T"- style connectors, or on some cameras, dual RS-485 ports, are used to daisy-chain up to 8 cameras into a network.

```
 CONTROL Center ----- CONTROL Center
   Switcher            Control Unit
        |      |      |
  CameraMan CameraMan CameraMan
   Cameras   Cameras   Cameras
```

```
 CONTROL Center   CONTROL Center     External
  Control Unit      Switcher ....... Reference
                       |
        |      |      |
  CameraMan CameraMan Other Video
   Cameras   Cameras   Sources
```
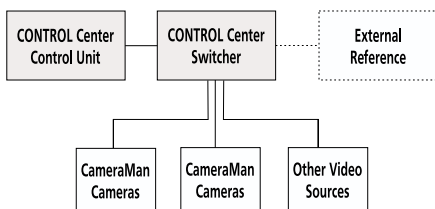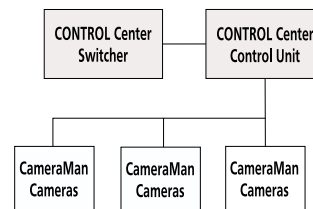
Synchronizing Connections

Genlock connections from the Switcher to input sources are made with 75 Ohm coaxial cable terminated by BNC connectors.

Installing Your CONTROL Center

Now that you are acquainted with your CONTROL Center's hardware components and features, you can install it using these procedures:

Control Unit and Switcher

1. Ensure that you have access to AC power near the Control Unit and the Switcher.

2. Choose where you want the Switcher to be located. Either:
    • Rack mount the Switcher using four screws (as shown).
    • Place the Switcher on a flat surface.

    For skid-protection, attach the self-sticking rubber feet.

3. Place the Control Unit where desired.

4. Connect the DC power plug of the Control Unit's power supply to the Control Unit's DC power port.

5. Connect the female end of the AC power cord to the Switcher's AC power port.

6. Connect one end of the Serial cable (RS-232) to COM-2 port on the Control Unit and the other end to the Control Unit port on the Switcher.
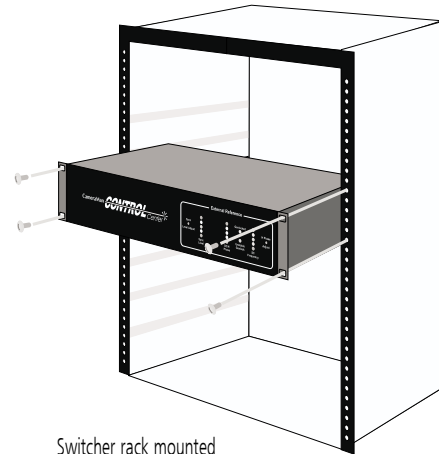
Switcher rack mounted using four screws (not provided).

AC Power from wall to switcher

RS-232 connection between control unit and switcher.

DC Power from control unit to wall
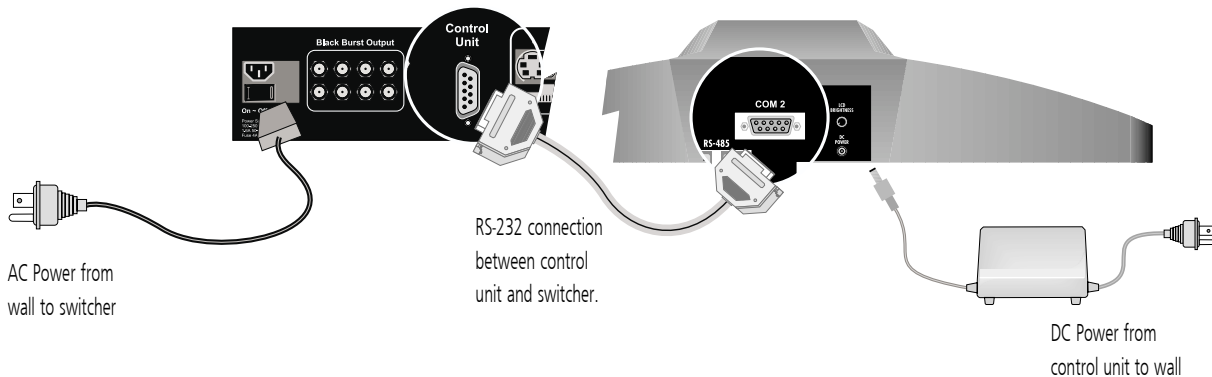
Depending on the model you purchased, your CameraMan CONTROL Center supports either Composite or S-Video. The system connects the same way for either video signal type. The following diagram shows a Composite (BNC) system:

Switcher Video Connections

CameraMan 3-CCD cameras have two composite (BNC) jacks. Use either one to connect to the switcher's video input. Connect up to eight cameras.

For S-Video systems, use the S-Video jack on the mini-docking station

Connect other video source to switcher's video input jacks.

Program

Preview

Connect monitors, broadcast video feeds, VTRs, etc. to the switcher's video outputs.

Connect your preview monitor to the Preview Output jack on the switcher.

Black Burst Output **Ext Ref** **Control Unit** **Input** **Output**
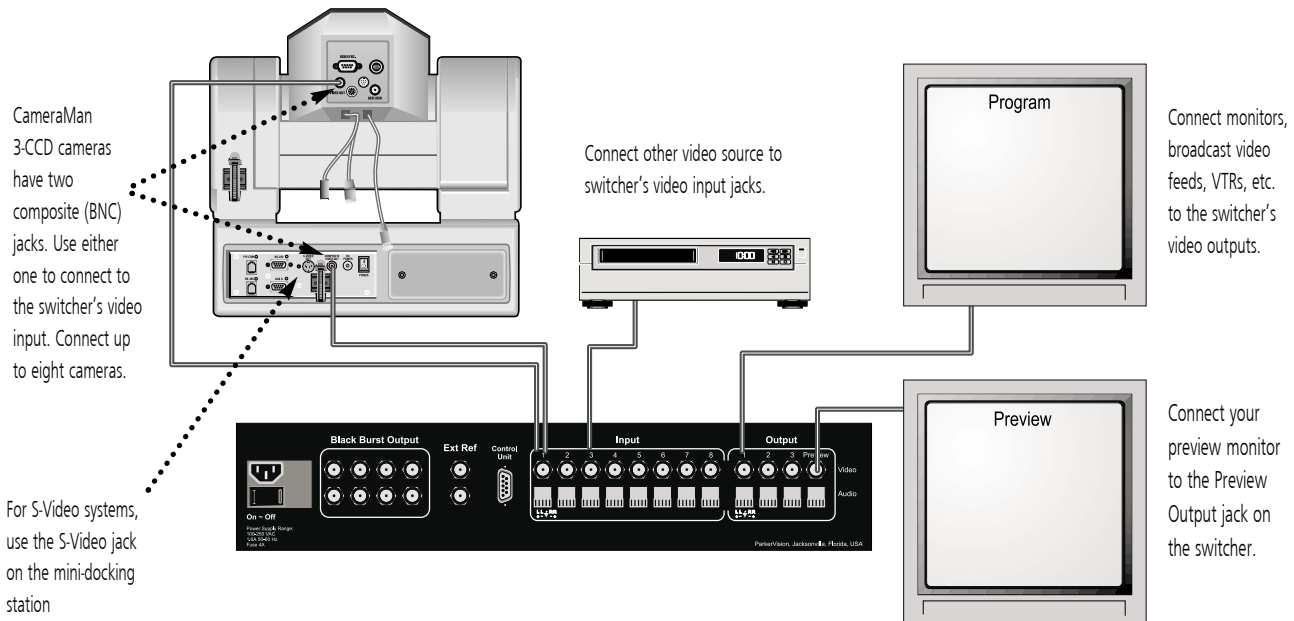
CameraMan Video Output to Switcher Inputs

1. Using cables with the appropriate BNC (composite) or mini-DIN (S-Video) connectors, connect the video output from Camera one to the Switcher video input one.

    ! 3-CCD CameraMan cameras have two BNC (composite) video out jacks: one located at the top on the back of the camera block, and the other on the mini docking station on the base unit. Either can be used to connect to the switcher. For S-Video, use the jack on the mini docking station.

2. Continue connecting CameraMan cameras in this fashion (Camera two video output to Switcher video input two, Camera three video ouput to Switcher video input three, etc.) until all CameraMan cameras have been connected.

    ! All CameraMan cameras must be addressed so that their camera number matches their video input number to the switcher (see page 23).

Connecting Other Video Sources to Switcher Inputs

1. Once all CameraMan cameras have been connected, the unused video inputs can be used for other video input devices (i.e. VTR's, document cameras, laser disc players, etc.)

2. Connect these devices using appropriate video cables.

Connecting Switcher Video Outputs

1. Using cables with the appropriate BNC (composite) or mini-DIN (S-Video) connectors, connect Switcher video outputs 1-3 to the desired output devices (i.e. broadcast video feed, program monitors, VTR's, etc.)

2. Using a cable with the appropriate BNC (composite) or mini-DIN (S-Video) connectors, connect the preview Switcher output to the preview monitor.

    ! Refer to page 19 for details on how these outputs operate.

Connecting Your Audio

Switcher Audio Connections

The Switcher audio inputs will accept either balanced or unbalanced audio (mono or stereo). Connect all inputs using the 5-position Phoenix connectors, according to the appropriate wiring diagram.

> **!** If using audio from a CameraMan Presenter camera, the audio must be connected to the same input number to which the video is connected.

> **💡** It is usually easier to unplug the connector, make the wiring connections, and then plug in the connector.

Switching Relationships

Any of the 8 audio inputs can be switched to any of the 4 audio outputs. However, when switching video, there is, by default, a direct one-to-one relationship between audio and video inputs (i.e. audio follows video). If desired, this relationship can be changed (refer to page 20).

> **💡** For best results, connect each input source's video and audio to the same input number on the switcher. Do the same for each output source.

The chart below is an example of how to connect a typical system with one Presenter camera, two General Pan/Tilt cameras, a VTR, and laser disc player used as video/audio inputs. In addition, two program monitors, a VTR, and a preview monitor are used as video/audio outputs.

Input Source		Video	Audio
Presenter Camera	. . . .	Input 1	Input 1
General P/T Camera	. . . .	Input 2	NA
General P/T Camera	. . . .	Input 3	NA
VTR	. . . .	Input 4	Input 4
Laser Disc	. . . .	Input 5	Input 5

Output Source		Video	Audio
Program Monitor 1	. . . .	Output 1	Output 1
Program Monitor 2	. . . .	Output 2	Output 2
VTR	. . . .	Output 3	Output 3
Preview Monitor	. . . .	Preview	Preview

STEREO Audio Wiring
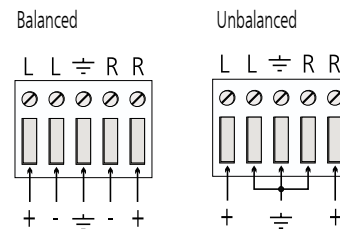
MONO Audio Wiring
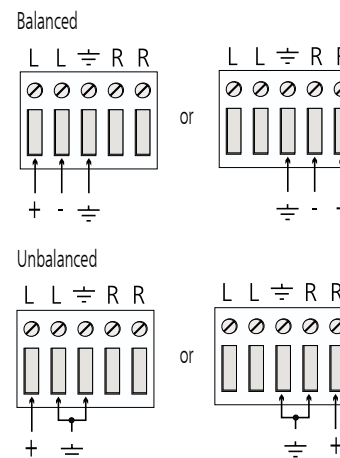
Genlock Connections – Internally Generated Reference Signals

The CONTROL Center contains an internal Black Burst generator in the Switcher Unit. Black Burst signals are output to 8 BNC connectors on the back panel of the Switcher. Devices connected to any of the Black Burst outputs can be synchronized (genlocked) to the internally-generated reference signal.

Connecting Sync Signals To CameraMan Cameras:

1. Using high-quality video coaxial cable (75 ohm), terminated with BNC connectors, connect the genlock input on each of the CameraMan cameras to one of the Black Burst outputs on the back panel of the Switcher.
2. If necessary, use the Control Unit to adjust the Horizontal (H) Phase and Sub-Carrier (SC) Phase of each camera to compensate for cable distance and other timing differences in the cameras (refer to page 40 for details).

Connecting Sync Signals To Other Video Sources:

1. Using high-quality video coaxial cable (75 ohm), terminated with BNC connectors, connect the genlock input on each of the video sources to one of the Black Burst outputs on the back panel of the Switcher.
2. If necessary, refer to the Owner's Manual for the device to which you are connecting to make timing adjustments.
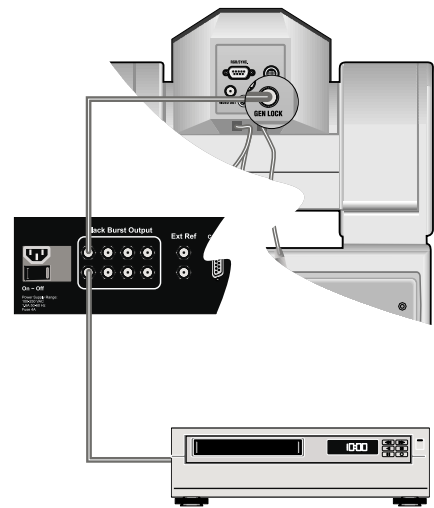
Connect up to eight cameras or other video sources to Black Burst outputs.

Genlock Connections – External Reference Signals

If an external reference signal is connected to the Switcher unit, the internal Black Burst generator will automatically use this signal as its reference. The adjustments and indicators on the front panel of the Switcher are used for making minor adjustments to the sync signal.

External Reference (Loop Thru) Input

When an external genlock source is connected to the Control Center Switcher it can be connected to either of the External Reference (Loop Thru) BNC connectors on the rear panel. If the loop thru capability is not going to be used (i.e. connecting another genlockable device to the remaining BNC) a 75 Ohm terminator must be connected to the remaining BNC. The inputs accept either Black Burst or video but the video content must not extend below -20 IRE.

To external Black Burst generator

75 Ohm Terminator
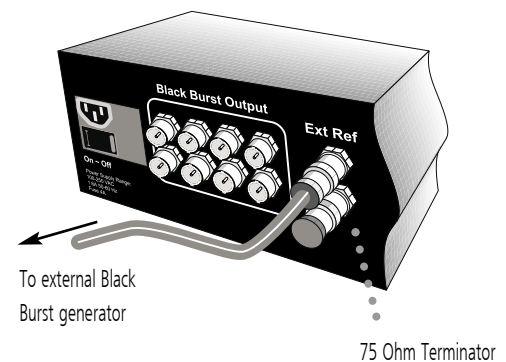
Connecting Genlock

Front Panel Indicators and Adjustments

When using an external genlock source, the Switcher front panel LEDs help diagnose any problems with genlocking. The LEDs provide information about the signal present at the External Reference (loop thru) input. This feature is useful when trying to sync the CONTROL Center and its associated devices to another sync source in a studio.

Sync-Level LEDs
- Green: proper level.
- Yellow: if either yellow is lit, then signal amplitude is out of tolerance.
- Red: amplitude too far from tolerance to achieve genlock. Unit will free run.

Sync-Level Adjust: Adjusts input signal until the green LED lights. Does not affect any output signal.

SC/H - Phase
- Green: all 3 green LEDs lit means input signal at Loop Thru meets RS-170A SC/H specifications.
- Yellow and Green: 1 yellow and 2 greens lit means input signal has an SC/H error of greater than 45 degrees.
- Center Green: if center green is not lit, then SC/H is beyond spec where Color Field One is ambiguous and field lock is impossible.

Frequency
- Center Green: lit means input signal is correct frequency
- Yellow: if either yellow is lit, then frequency does not meet RS-170A specs although unit may still genlock.
- Red: if either red is lit, then frequency is farther off spec and, if extremely off spec, then the Unstable red LED will light.

Unstable: If lit, then the internal oscillator frequency would need an order of 2Hz change (out of 3,579,545 Hz) within a single frame in order to maintain genlock with the incoming signal.

Genlocked: Lights green when unit achieves genlock.

Horizontal Phase Adjust: Adjusts the timing of the Black Burst output signal relative to the external reference input signal.

> **!** If the external reference loop thru connector is not being used, be sure to terminate the unused connector with a 75-ohm terminator (supplied).

External Reference panel

75 Ohm Terminator
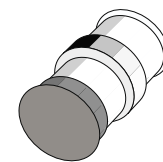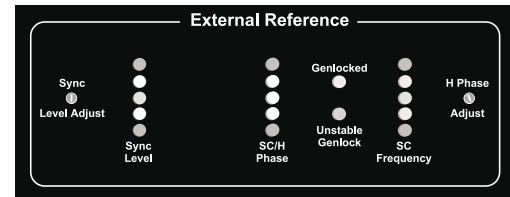
CameraMan CONTROL Center™

Connecting Your CameraMan Cameras

Camera Communications

The CONTROL Center communicates with CameraMan cameras through a CameraMan Communication RS-485 cable connected to an RS-485 out port on the Control Unit. A single camera is connected by plugging one end of the communication cable (each end has a modular handset plug) into the RS-485 port on the Control Unit and plugging the other end into the RS-485 port on the mini or main docking station of the camera. Multiple cameras are daisy-chained together using additional communication cables and T-connectors if a camera has only one RS-485 port or if the camera has two RS-485 ports, using additional cables and both ports.

Connecting to AC

The Power supply for the Control Unit and the AC cord for the Switcher were connected to their units in the first installation steps. At this point, connect the AC plugs of the Control Unit's power supply and the Switcher's power cord to AC outlets.

Do not power up until you have read the Power Up sequence in this manual.

After physically connecting all devices and before Power Up, refer to page 23, the CameraMan and CONTROL Center Setup section of this manual, for information concerning camera addresses and dip switch positions.

RS-485 from CONTROL Center to T-Connector

RS-485 from T-Connector to non-autoTRACK CameraMan

T-Connector

RS-485 from T-Connector to RS-485 IN port on Main Docking Station

37-pin connector from Main Docking Station to autoTRACK equipped CameraMan

RS-485 from RS-485 OUT port on Main Docking Station to up to 6 additional cameras daisy-chained together
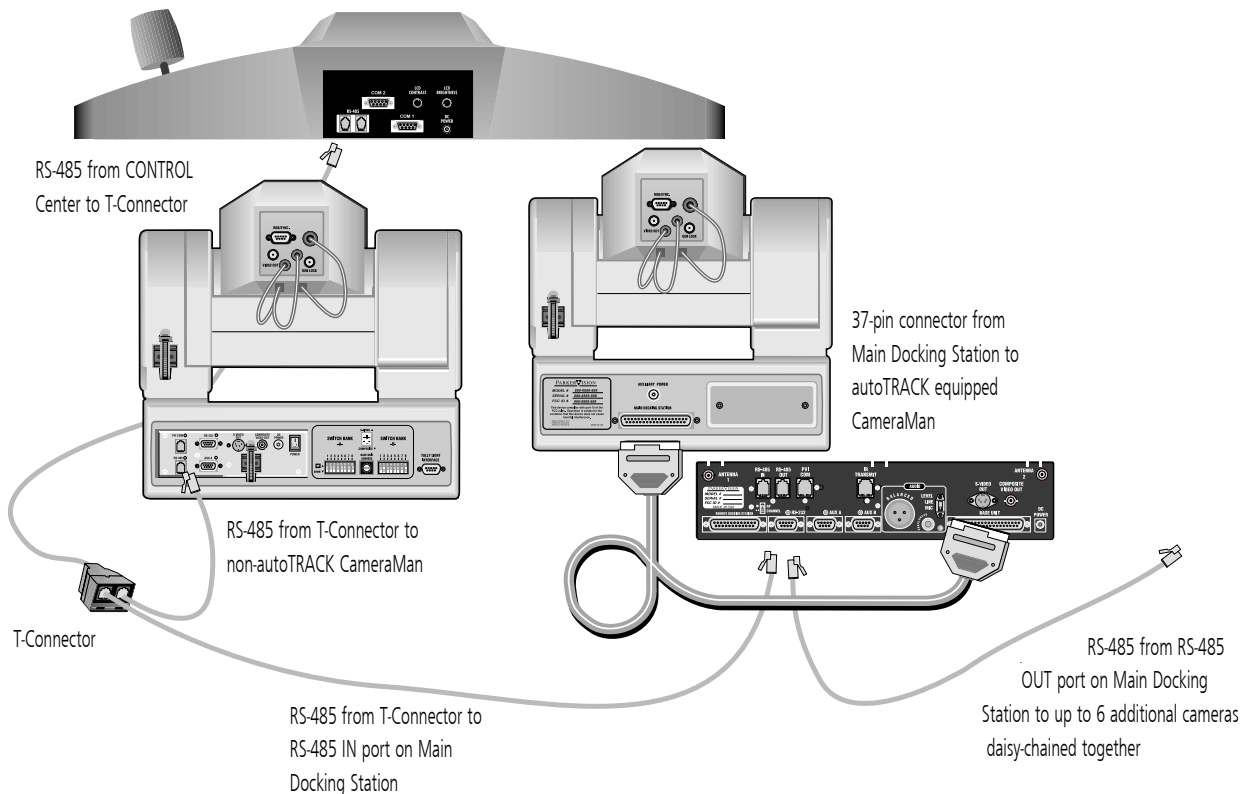
Knobs, Buttons, Slide Controls And Displays

Look at the top of your Camera Control Unit. It is divided into four sections: the knobs (left), the buttons (lower-middle), the slide controls and joystick (right), and the LCD display (upper-middle).

Left Side: Knobs and Buttons

▼ **Focus Control –** Used to manually adjust the focal point of the lens.

▼ **Power Switch –** Press to turn the CONTROL Center on and off. Red LED lights when power is ON.
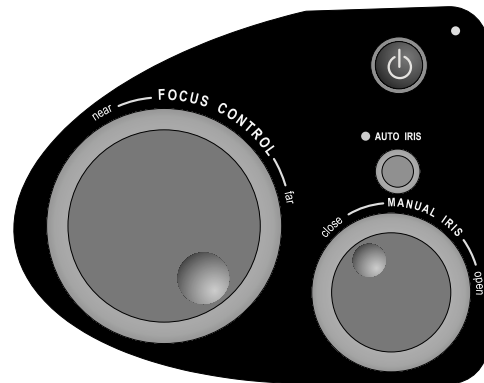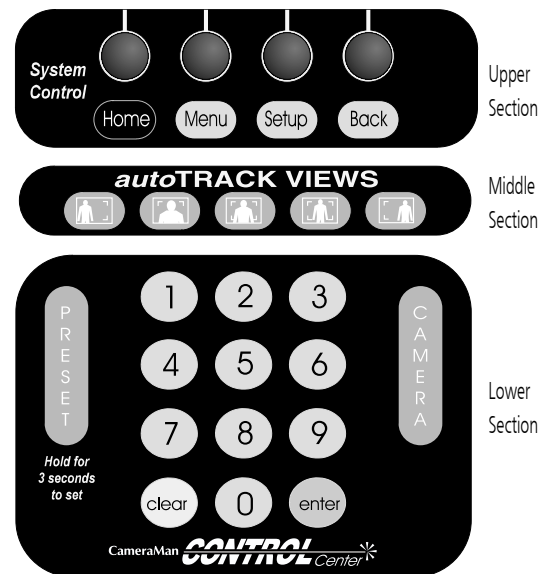
▼ **Auto Iris –** Press to turn on. The active (selected on Home screen) CameraMan camera will automatically adjust the IRIS and GAIN (IRIS only on 3-CCD cameras) to maintain a constant video level. The auto iris light illuminates when active.

▼ **Manual Iris –** Used to manually adjust the camera's IRIS to brighten and darken the video picture. Range: 0(closed) to 31 (3-CCD), 0 (closed) to 16 (1-CCD)

Middle: Buttons

▼ **Upper Section:** Function Command Buttons – Used for LCD screen navigation.
As menus are called up and displayed, the functions for that menu appear above the function command buttons. Activate the desired function by pressing the button. Under the function buttons are the menu access buttons:

  • **HOME** – Displays camera data and switching status.
  • **MENU** – Displays menus allowing you to change Camera settings.
  • **SETUP** – Displays menus enabling you to adjust Camera and CONTROL Center setup.
  • **BACK** – Displays the last menu you were viewing.

▼ **Middle Section:** autoTRACK Views – Used to store/recall 10 custom views and five preset autoTRACK Views: Left, Tight, Mid, Wide, and Right (autoTRACK model only).

▼ **Lower Section:** Numerical keypad – Used to store/recall location presets, select video/audio input/outputs, select a camera for control in a multi-camera network, and to Enter and Clear information found on the LCD display.

The knobs, buttons, and slide controls are used in conjunction with the LCD display screen of your CameraMan CONTROL Center. The screen provides menus for camera parameters, camera selection, and audio/video switching control. The LCD display shows status of devices and provides selections for action.

Right Side: Slide Controls and Joystick

▼ **Speed Control Slide Bars –** Manual adjustment of the maximum speed of the camera's pan/tilt motion, and lens (3-CCD and 2112) zoom motion. When the slide bar is at the down limit, the control is OFF.

▼ **Joystick (X–Y Control) –** Manual control of the camera's pan/tilt motion. This control is speed proportional.

▼ **Joystick (Rotational Control) –** Manual zoom control, in (clockwise) for tighter views, and out (counter-clockwise) for wider views. This control is speed proportional.

autoTRACK version only:

▼ **autoTRACK button –** Located on the top of the joystick, activates/deactivates the autoTRACK capability of an autoTRACK camera.

Standard CONTROL Center

autoTRACK CONTROL Center
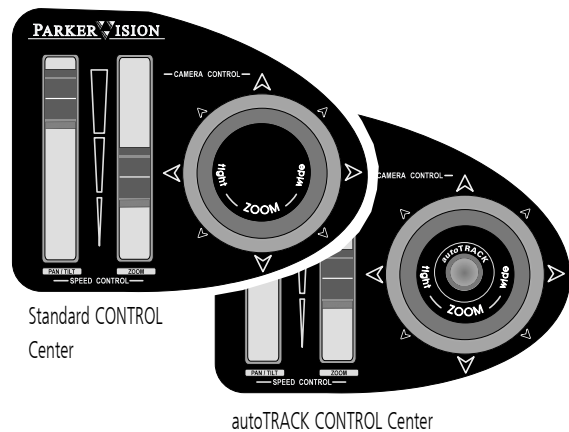
Control Unit LCD Display Features

The LCD screen, the four Function Command Buttons below it, and the four menu choice buttons: **Home**, **Menu**, **Setup**, and **Back**, all work with each other to provide information and to provide action options to the user.

▼ **Camera # and Menu Title Field**
Camera Control Mode: Numbers and words in this location identify the Camera Selected and the title (Home, Setup, etc.) for each menu display.
Video/Audio Switching Control Mode: Numbers and words in this location identify the Camera Selected and the title for each menu display.

▼ **Function Command Fields**
Camera Control Mode: Items in these locations correspond to the Function Command Buttons directly below them. The command fields change depending on the menu displayed.
Video/Audio Switching Control Mode: Items in these locations correspond to the Function Command Buttons directly below them. The information in the fields indicate the status of the video or audio inputs and outputs. The screen toggles between video and audio when you press the Enter key.
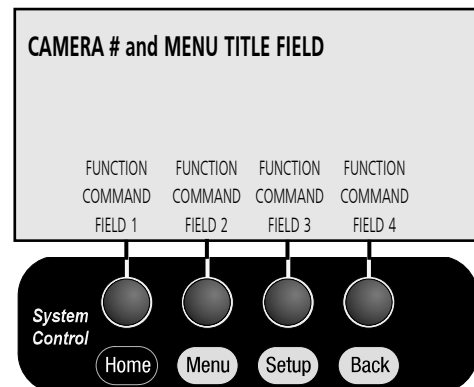
The initial menu on Power Up is always the Home menu. From the Home menu, you can access additional menus by pressing the Menu, Setup, or indicated Function Command Button. The screen information changes from menu to menu reflecting the menu's purpose. The fields over the Function Command Buttons also change from menu to menu offering additional options per menu.

CAMERA # and MENU TITLE FIELD

FUNCTION COMMAND FIELD 1   FUNCTION COMMAND FIELD 2   FUNCTION COMMAND FIELD 3   FUNCTION COMMAND FIELD 4

System Control

Home   Menu   Setup   Back

Powering Up - Home Menu Display

Now you are ready to begin using your CameraMan CONTROL Center by powering it up.

Power Up

! To prevent communication and polling errors, use the following sequence to power up your CameraMan CONTROL Center network:

1. Power on all devices except the CONTROL Center.
2. Power on the CONTROL Center Switcher.
3. Power on the Control Unit.

Do not move the joystick or any of the other controls on power up.

As soon as the Control Unit is powered on, it centers the joystick and begins polling the network and storing data about the devices in the network. Following the sequence of powering on all devices external to the Control Unit first, and then powering the Control Unit last, insures a functioning network before the polling routines begin.

Startup LCD Display

Startup Display, Polling

- Indicates that the CameraMan CONTROL Center is zeroing the joystick, polling the video network, and storing connection data.
- If there are hardware problems during the polling process, error messages indicating the problem will display.

Startup Display1

If necessary, adjust the **LCD CONTRAST** and **LCD BACKLIGHT** control knobs on the rear panel of the Control Unit to obtain the best LCD clarity.

Home LCD Menus

On completion of polling, a Home Menu is displayed. This menu displays the status of the input device (camera) selected before the last power down. If that device is still the same and is still connected, the parameters of that device (pan, tilt etc.) are displayed with their current values. If the device is either no longer part of the network or is not powered on, the parameter values for pan and tilt will be 0. If the device is present but set at default settings (0 degrees pan, etc.), then the parameter values display as 0.0.

System Control   Home   Menu   Setup   Back
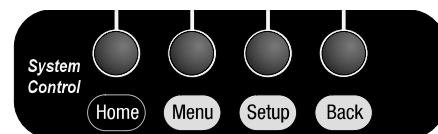
Home LCD Menu

CameraMan *CONTROL Center*

As you use the CONTROL Center to control a camera, a Home menu will be displayed. You can return to the Home menu from any other menu by pressing the Home button.

Home Menu Display

At the top-left of the LCD screen, the active device number (indicating camera 1, 2, etc.) is displayed next to the name of the menu.

In the center of the screen, the device parameters and values are displayed.

Parameters

- Pan: Indicates horizontal plane rotation relative to the camera's "0" point (the arrow indicated on the bottom of the camera).
- Tilt: Indicates the vertical plane rotation relative to horizontal (0.0 degrees).
- Zoom: Indicates the value of zoom setting.
- Focus: Indicates the value of the focus setting (1-CCD cameras will indicate AUTO).
- Camera: Indicates the active camera for CONTROL Center control (also shown in upper-left corner of LCD).
- Iris: Indicates the value of the iris setting.
- Gain: Indicates gain as determined by the "GAIN" control and Auto Iris control.
- Camera Type: Indicates the active camera (*, 1, 2, or 3).

At the bottom of the LCD screen is a graphic display of an open row of numbers above a row of numbered boxes. This graphic shows the current switching relationship between the video outputs 1, 2, and 3 (PVW output is not shown on the Home menu) and the inputs.

Each box relates to the number (output) above it and the Function Command Button below it. The output row 1, 2, 3 directly corresponds to the three same-numbered video outputs on the rear panel of the Switcher. Any number in the boxes (must be from 1 to 8) corresponds directly to the same-numbered video input on the rear panel of the Switcher.

Each column of numbers, an open number above a boxed number, describes a switched pair of input/outputs. **Example:** the open number 3 above a boxed 6 means that the signal from video device 6 has been routed (switched) to video output 3. This part of the Home menu aids in fast, on-the-fly switching when you do not wish to use the standard video switching display.

To the right of the input/output graphic is the phrase **More>**. This indicates that there is an additional screen to the menu which is accessed by a Function Command Button.
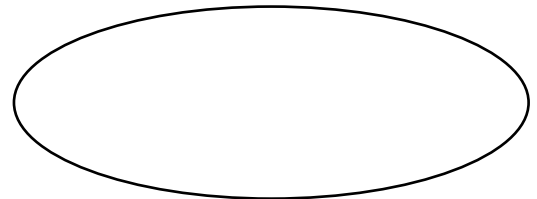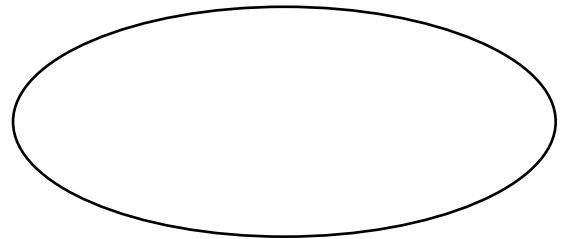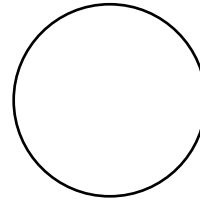
Video/Audio Selection Menu

Pressing the function command button under More> at the Home menu causes the Video/Audio selection screen to be displayed.

Video/Audio Selection Menu   *Display Path:* **Home > More**
....

At the top-left of the screen is the number of the currently selected (active) camera and the word Home. At the bottom of the screen are selections for the Function Command Buttons.

Video/Audio Selections
- Vid/Aud Switch: displays standard switching screen
- Vid/Aud Group: displays output grouping screen
- Tally Light: displays tally selection screen
- Top: returns to Home menu

To make a selection, press the Function Command Button for the desired screen.

Vid/Aud Switch Screen   *Display Path:* **Home > More > Vid/Aud Switch**
....

The top of the screen displays the active camera number and the screen name. There is an eye icon as a visual aid in recognizing this screen as the video switching screen, and the phrase **Press Enter to Switch Audio** to instruct you on how to access the audio switching screen.

At the bottom of the screen are two lines, one with PVW 1, 2, 3, and one with four numbered boxes. This is a graphic representation of input to output switching, each box corresponding to the numerical output above it and the function command button below it. PVW 1, 2, 3 directly correspond to the four video outputs on the rear panel of the Switcher.

Any number in the boxes directly corresponds to the same number video input on the rear panel of the Switcher.

Video and Audio Switching

Now that you are familiar with the components and features of your CameraMan CONTROL Center, you can begin using its video and audio switching capabilities.

Video Switching

Camera Switching (Preview video and Camera Control)
On the numerical keypad in the center of the Control unit:

1. Press the number which correlates to the appropriate input source jack on the rear panel of the switcher (i.e. press 1 for camera 1's video cable connected to jack 1, press 2 for camera 2's video cable connected to jack 2, etc.)
2. Press the Camera Button (located to the right of the numerical keypad).

When you switch by pressing a number and then the Camera Button, the video from the numbered source (1, 2, etc.) that you designated is automatically switched to the preview (PVW) output and displays on the preview monitor if one is connected. Preview switching always follows camera selection using a number and the Camera Button.

You also have physical control over the designated camera and can choose parameters for the camera using the Control Unit's joystick, slide bars, and buttons. Look at the screen, in the box under PVW, and you will see the input number you chose, confirming that switching has taken place. Look at the upper-left of the screen and you will see the camera number of the camera you are now controlling. Simultaneously pressing a number and the Camera button causes switching of the designated video input to the PVW video output and gives control of the designated camera.

Video-Only Switching (input source to any output and no Camera Control)
On the numerical keypad in the center of the Control Unit:

1. Press the number which correlates to the appropriate input source jack on the rear panel of the switcher (i.e. press 1 for a VTR's video cable connected to input jack 1, press 8 for a camera's video cable connected to input jack 8, etc.)
2. Look at the LCD screen and press the Function Command Button below the video output that you want to use (PVW, 1, 2, or 3). The video from the input source you designated is switched to the chosen output and will go to whatever device is connected to that output jack (monitor, VTR etc.).
3. Look at the boxes (PVW, 1, 2, 3) on the screen. In the box of the output you chose is the number of the input source you selected, confirming that switching has taken place. You have switched video signals only and if the source you selected is a camera different from the one indicated in the upper-left of the LCD screen, you do not have camera control.

After making any switch, look at the box under the output you designated and you will see the input source number is now displayed in the box. The input/output graphic display on the Standard switching screen and on the Home screen (does not show PVW) immediately shows you a status of which inputs and outputs are connected.

Video and Audio Switching

Audio Switching

At the Video/Audio switching screen, press Enter. The eye icon changes to an ear icon and the screen title changes from Video to Audio. At the bottom of the screen is a graphic representation of the audio outputs and inputs. PVW, 1, 2, and 3 at the top of the boxes represent the outputs, and the contents of the boxes represent the input that is currently switched to that specific output. If a 0 is in the box, then when you switch video you get automatic audio switching (audio follows video input/output).

To independently switch audio, you must have the Audio Switch screen displayed. On the numerical keypad:

1. Press the number of the audio input you want to switch, then look at the LCD screen.
2. Press the Function Command Button under the audio output (PVW, !, 2, 3) that you want the input to go to. The switch is made and the number of the selected input displays in the box under the selected output, verifying that switching has occurred.
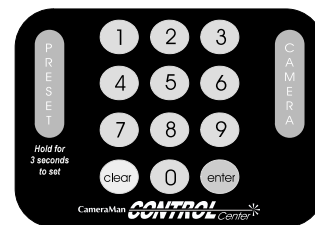
Vid/Aud Group   *Display Path:* **HOME > MORE > VID/AUD GROUP**

The grouping menu provides the capability of grouping the switcher outputs. For instance, output 1 grouped to output 3 means that any signal sent to either output, one or three, is also sent to the other output.

! The PVW output cannot be grouped.

To group any two or all three outputs:

1. Press the Function Command Button under the LCD screen that relates to that output. The box for that outlet will be shaded, showing that it has been selected.
2. When finished selecting, press **Enter** and a line will show on the screen connecting the output you have chosen to be grouped.

To ungroup outputs, press **Clear** while in the grouping mode.

Your CameraMan CONTROL Center comes equipped with a tally light controller, allowing your talent to know which camera is live at any given time.

Tally Light Control *(HOME > MORE > TALLY LIGHT)*

The Assign Tally Light menu provides the capability of choosing a video output where any CameraMan camera input that is switched to that output has it's tally light turned on automatically. Generally this output is either the broadcast output, or, in certain configurations, an output that has a VTR connected to it.

> Remember that outputs can be grouped. The broadcast output could be grouped to one of the other outputs, possibly for a VTR. In this manner, a single signal can be simultaneously broadcast and recorded.

To assign the tally light output:

1. Choose one of the three outputs (only one tally light output can be selected).

2. Press the Function Command Button for that output. The box for that output will be shaded, showing that it has been selected.

Any camera input switched to the selected tally output will have its tally light turned on and all other camera tally lights on the network will be off.

> If you choose **NONE**, then any tally light that is currently on will be turned off. It can then be turned back on by activating the contact closure input to the tally light box on that camera.

Additional Home Menu Displays
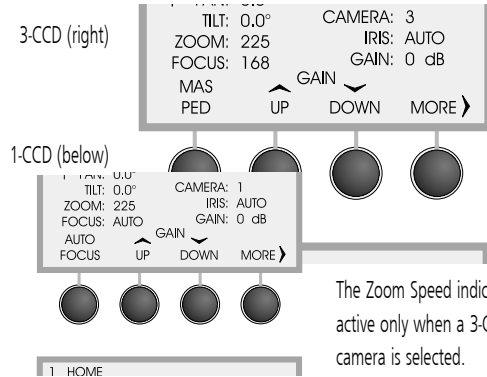
Home Menu Speed Display

At the Home menu, if the slider bars for pan/tilt and zoom (3-CCD) are moved, the speed display is presented.

Indicators
- Max Zoom Speed: Speed indicator for the zoom speed control (3-CCD only).
- Max Pan/Tilt Speed: Speed indicator for the pan/tilt speed control.

Function Command Buttons
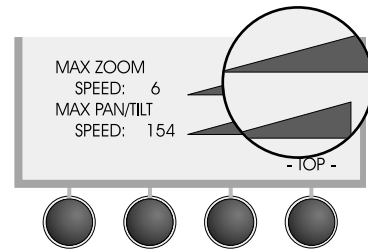- TOP: Returns to Home menu (Speed Display also times out in 5 seconds).

Special Camera State Home Menus

The Home menu display changes to reflect that various features are active or inactive (The autoTRACK and autoTRACK View Indicators are available only when an autoTRACK-equipped CONTROL Center is in use.).
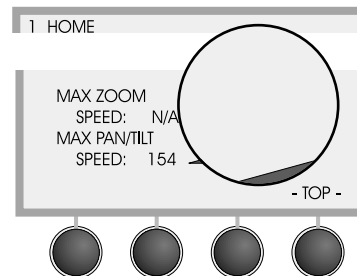
Preset Home menu: Indicates which Location Preset, if any, is active for the current camera, and displays when a new preset is keyed in.

autoTRACK Home menu: Indicates whether the CONTROL Center is currently in autoTRACK mode.
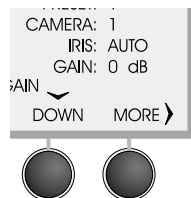
autoTRACK View Home menus: Show the appropriate autoTRACK View icon when autoTRACK is turned on and an autoTRACK View has been selected.

3-CCD (right)

TILT: 0.0°	CAMERA: 3
ZOOM: 225	IRIS: AUTO
FOCUS: 168	GAIN: 0 dB
MAS	GAIN
PED	UP DOWN MORE ›

1-CCD (below)

TILT: 0.0°	CAMERA: 1
ZOOM: 225	IRIS: AUTO
FOCUS: AUTO	GAIN: 0 dB
AUTO	GAIN
FOCUS	UP DOWN MORE ›

1 HOME

The Zoom Speed indicator is active only when a 3-CCD camera is selected.

MAX ZOOM
 SPEED: 6
MAX PAN/TILT
 SPEED: 154

- TOP -

Preset Home menu indicates which location preset is active.

1 HOME

MAX ZOOM
 SPEED: N/A
MAX PAN/TILT
 SPEED: 154

- TOP -

autotrack Home menu indicates when CONTROL Center is in autoTRACK mode.

CAMERA: 1
 IRIS: AUTO
 GAIN: 0 dB
GAIN
 DOWN   MORE ›

LEFT autoTRACK View   TIGHT autoTRACK View   MID autoTRACK View   WIDE autoTRACK View   RIGHT autoTRACK View

CameraMan CONTROL Center™

CameraMan and CONTROL Center Setup

After powering up your system, the next step is to set up the CONTROL Center to work with the cameras in your system.

Setting Up Multiple-Camera Systems: Addresses & dip switches

1. Set the BASE UNIT ADDRESS and dip switches on each camera in your network. The CameraMan CONTROL Center automatically numbers the CameraMan cameras in your network from 1 to 8. This corresponds to addresses 0–7 on the CameraMan base unit and to the video inputs on the Switcher. Therefore, set the base unit address of the cameras as follows:

Camera Number:	1	2	3	4	5	6	7	8
Camera Base Unit Address:	0	1	2	3	4	5	6	7

On the back-right side of the camera are two banks of dip switches. On the bank near the center of the camera, switch 7 and 8 must be in the UP position (towards the top of the camera).

For details on changing your CameraMan camera's base unit address, see the installation and operations manual that came with your CameraMan System.

2. Choose the camera you want to configure. On the numeric keypad:
   - Press the number of the camera you wish to configure (the LCD displays the camera selection screen).
   - Press **CAMERA** (the LCD verifies the camera selected).
   - Verify that the Home menu indicates the camera you selected.

3. Begin setting up each camera using the SETUP menus.

On the keypad, enter the camera number desired, then press the CAMERA button.

1

PRESS PRESET OR CAMERA
BUTTON WHEN DONE

1 HOME

Note the camera # selection and verification screens, and that the camera number shows on the indicator screen.

MAX ZOOM
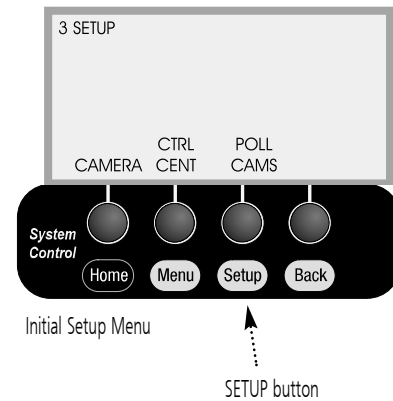SPEED: 6
MAX PAN/TILT
SPEED: 154

- TOP -

1 HOME
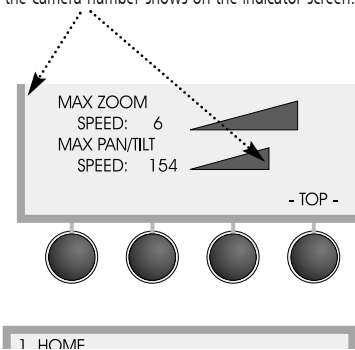
CameraMan Setup

The CameraMan SETUP Menus allow you to configure parameters for each camera in your network individually.
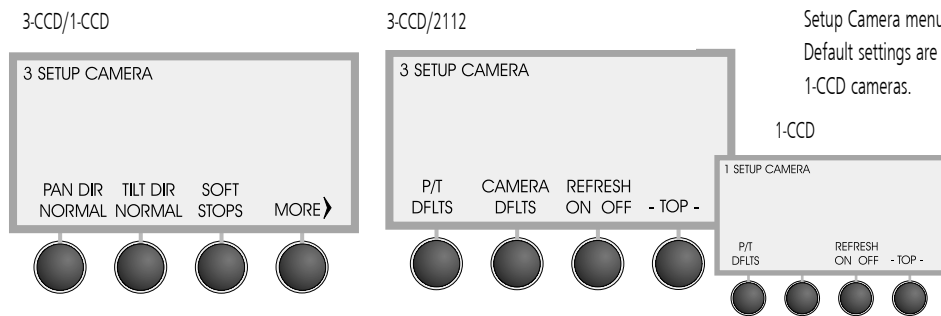
Setup Button Menu

Below the LCD screen and the Function Command Buttons are the **Home**, **Menu**, **Setup**, and **Back** buttons. The initial Setup menu appears when you press **SETUP**.

- **Camera:** Used to access the Setup Camera menus. Press the Function Command button to access this menu.
- **Ctrl Cent:** Used to access the CONTROL Center menus.
- **Poll Cams:** Polls the cameras on the network and displays ROM version information.


```
3 SETUP

                    CTRL    POLL
          CAMERA    CENT    CAMS
```

System Control   Home Menu Setup Back

Initial Setup Menu

SETUP button

Setup Camera Menus *(SETUP > CAMERA)*

The Camera Setup LCD menus enable you to adjust various camera parameters.
The Camera Default Setup feature is not available when working with 1-CCD cameras (except the 2112 camera).

3-CCD/1-CCD

```
3 SETUP CAMERA



PAN DIR  TILT DIR  SOFT
NORMAL   NORMAL    STOPS    MORE ›
```

3-CCD/2112

```
3 SETUP CAMERA



P/T      CAMERA    REFRESH
DFLTS    DFLTS     ON  OFF    - TOP -
```

Setup Camera menus: The Camera Default settings are not available for 1-CCD cameras.

1-CCD

```
1 SETUP CAMERA


P/T                 REFRESH
DFLTS               ON  OFF   - TOP -
```

Setup Camera Menus *(SETUP > CAMERA)*

Pan Dir [Normal/Reverse]: Used to orient the camera's pan direction relative to the view of the camera and subject. Default is **REVERSE**.
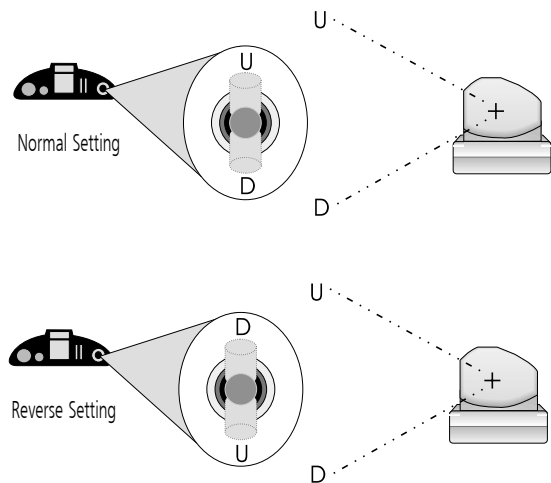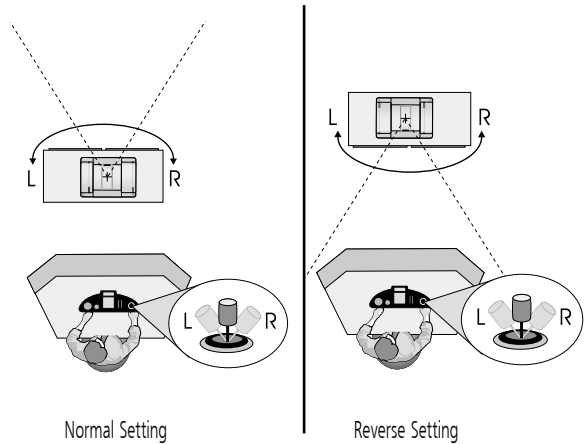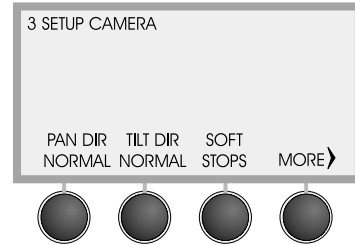
Understanding the PAN Motion
- In **NORMAL** mode, the camera's PAN motion is designed to operate as if you are behind the CameraMan, looking at your subject. **In this mode, the camera will pan in the direction that you move the joystick.**

- The **REVERSE** mode is designed to allow you to operate a camera that may be facing toward you. **In this mode, the camera will pan in the opposite direction tha you move the joystick.**

Tilt Dir [Normal/Reverse]: Used to orient the camera's tilt direction to the operator's preference. Default is **REVERSE**.

Understanding the TILT Motion
While the orientation of PAN motion is based more on your application need and the orientation of the controller to the camera, the TILT orientation is based more on the operator's preference.
- In **NORMAL** mode, the joystick's movement corresponds to the camera's motion. **Pushing forward on the joystick makes the camera tilt UP.**

- In **REVERSE** mode, the joystick's movement is opposite to the camera's motion. **Pushing forward on the joystick makes the camera tilt DOWN.**


```
3 SETUP CAMERA



PAN DIR   TILT DIR   SOFT
NORMAL    NORMAL     STOPS      MORE ❯
```


Normal Setting   Reverse Setting

Normal Setting

Reverse Setting

CameraMan Setup

Soft Stops Menu: Display Path: **SETUP > CAMERA > SOFT STOPS**

The soft stops menu enables you to set pan/tilt limits for the camera.

Indicators:

- The numbers in the center of the screen are the camera's current position relative to the zero point (straight ahead: 0° pan, 0° tilt).
- The second row of numbers indicates the current limits.

Function Control Buttons:

1. Using the joystick, pan the camera left and stop where you want to set the soft stop.
2. Press and hold the **LEFT** function control button until you hear a beep. (A confirmation window appears with ***CAMERA DATA SAVED***).
2. Do the same for **RIGHT**, **UP**, and **DOWN** soft stops.
3. If you need to change a soft stop, press **CLEAR** on the keypad, and then press the button for the soft stop you want to change. This erases that soft stop, enabling you to reset it following the above procedures.

Range: LEFT: -180° / RIGHT: +180° / UP: +25° / DOWN: -25°

Soft Stops Menu

Pan/Tilt Default Menu: Display Path: **SETUP > CAMERA > MORE > P/T DFLTS**

To restore the camera's Pan/Tilt orientation, location presets, soft stops, and factory preset autoTRACK Views:

1. Press **DEFAULT**.
2. Press **YES** to perform or **NO** to cancel the system reset (A confirmation window appears with ***CAMERA DATA SAVED***).

Pan/Tilt Default Menu and Confirm Displays

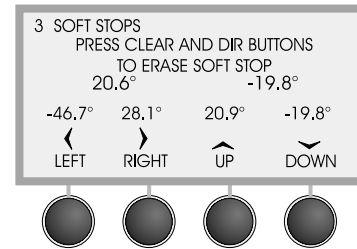**Camera Default Menu (3-CCD and 2112 only):**

Display Path: **SETUP > CAMERA > MORE >CAMERA DFLTS**

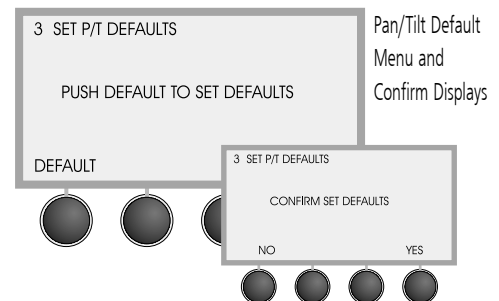To restore a 3-CCD or 2112 camera's factory CCU settings:

1. Press **DEFAULT**.
2. Press **YES** to perform or **NO** to cancel the system reset (A confirmation window appears with ***CTRL CENTER DATA SAVED***).
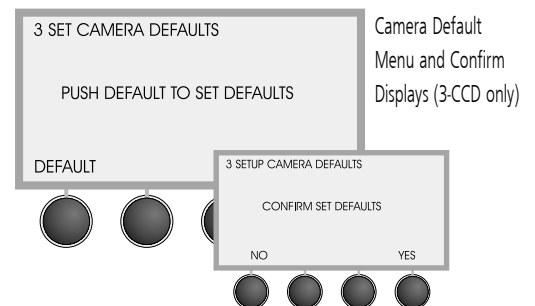
See Appendix D for system default details.

Camera Default Menu and Confirm Displays (3-CCD only)

CONTROL Center Setup

The CONTROL Center SETUP menus enable you to configure how the Control Center Control Unit communicates with your network of cameras.
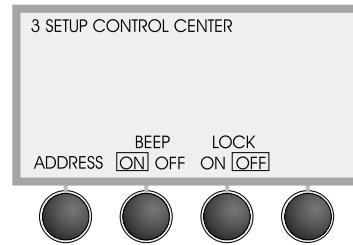
Setup CONTROL Center Menu *(SETUP > CTRL CENT)*

Address Menu: Display Path: **SETUP > CTRL CENT > ADDRESS**

The CONTROL Center requires a unique address. To set an address (range), key in the address number on the numeric keypad, then press **Enter**.

> ⚠ The Default address should work fine in most applications. If the address you type in is invalid or the CONTROL Center is locked, then an error screen appears.

```
3 SETUP CONTROL CENTER



                        BEEP      LOCK
           ADDRESS    ON  OFF   ON  OFF
```

Setup CONTROL Center Menu

Beep Setting: Display Path: **SETUP > CTRL CENT**

Press the function command button to turn the audible beep on or off. The beep occurs when location presets or autoTRACK views are being stored. Default is ON.

Lock Setting: Display Path: **SETUP > CTRL CENT**

Press the function command button to prevent setup changes and preset storage. This makes the CONTROL Center "read-only". Default is OFF.

Refresh: Display Path: **SETUP > CTRL CENT**

Press the function command button to toggle the LCD refresh on or off. When set to OFF, the Control Unit will not continually update its values, reducing the amount of communications to the camera. Default is ON.

Setup Poll Cams Menu *(SETUP > POLL CAMS)*

Press the function command button under Poll Cams and the system polls the network and displays ROM version information of the devices and their positions on the network.

> ⚠ Where you see ***NPD***, that means there is no camera recognized at this address.

```
3 POLL CAMERAS 1-8

     1: 15:5.3ta    5: *NPD*
     2: 15:5.2ta    6: *NPD*
     3: *NPD*       7: *NPD*
     4: 15:5.3ta    8: *NPD*
```

Setting Camera Movement Parameters

Location Presets, AutoTRACK, and AutoTRACK Views are CONTROL Center features that provide automated control over the camera's movement. This section explains how to use these features.

Location Presets

Location Presets enable you to quickly position and adjust the view of any camera on the network. Using CONTROL Center's numeric keypad and camera control features, you can store and recall pan/tilt position, zoom perspective, and iris (and focus, R/B Gain, R/B Paint, and Master Pedestal settings on 3-CCD cameras) for each Location Preset.

To store a Location Preset:

1. Select the desired camera (press the camera # on the numeric keypad, then press **CAMERA**).
2. Use the joystick and other controls to adjust the camera for the desired Pan, Tilt, Zoom, and Iris settings (also, focus, R/B Gain, R/B Paint, and Master Pedestal on 3-CCD cameras).
3. On the numeric keypad, key in the preset location number desired.
4. Press and hold **PRESET** for 3 seconds (listen for one beep).
5. Release **PRESET** (the LCD display shows ***CAMERA DATA SAVED***).

To recall a location preset:

1. Select the desired camera.
2. Key in the number of the preset desired.
3. Press and release **PRESET**.

> 💡 The invalid entry display appears if a camera number over 8, a location preset over 99 (1-CCD models), or a location preset over 125 (3-CCD models) is entered.
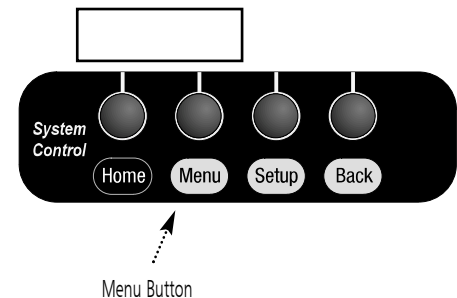
Location Preset Menus

1 HOME

Movement Controls on the Initial Menu Display

Menu Button - Preset Speed & autoTRACK

The initial Menu display appears when you press **MENU**. These menus enable you to adjust each selected camera's movement and video parameters. The initial display changes, depending on whether you are accessing a 1-CCD or a 3-CCD camera.

Movement Controls (1-CCD and 3-CCD cameras):

- **PRESET SPEED**: Displays the menu used to adjust the preset speed.
- **AUTO TRACK**: Gives you access to the autoTRACK menus (on autoTRACK models only).
- **CAMERA ADJUST** & **COLOR BARS**: Video controls for 3-CCD cameras only and are covered in the video parameter section.

System Control   Home   Menu   Setup   Back

Menu Button

CameraMan CONTROL Center™

Setting Camera Movement Parameters

Preset Speed LCD   Display Path: **MENU > PRESET SPEED**

- The Preset Speed menu enables you to set the maximum speed at which the camera moves from one location preset to another. Press the UP and DOWN function command buttons to increase and decrease the speed.
- Range: 10-100, step 10 (10 = slowest).

> ❗ Changing the preset speed affects the camera's operation with the Personal Locator/ Camera Control/Tracking System Keypads. Return the setting to 100 for normal operations with these keypads.

autoTRACK   Display Path: **MENU > AUTO TRACK**

The autoTRACK menus enable you to fine-tune your subject's position on-screen while the camera is in tracking mode.

Before making adjustments, read the information on pages 30-33 about the tracking equipment, autoTRACK Views, and tracking parameters you will find on these menus.

Using autoTRACK

autoTRACK-equipped CONTROL Centers enable you to use CameraMan's patented autoTRACK technology, so the camera automatically follows a subject around the room.

> 📷 For detailed information on using autoTRACK, refer to your Presenter, or Deluxe Camera System installations and operation manual.
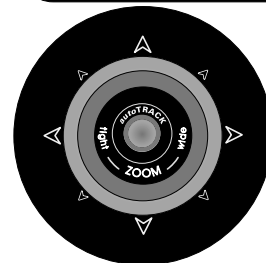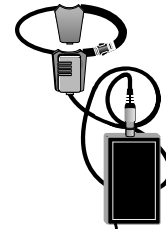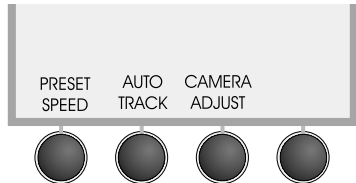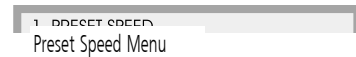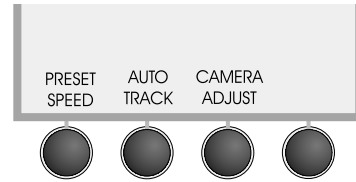
Before entering autoTRACK mode:
1. Ensure that the Main Docking Station is properly installed, and that your subject is wearing the Tracking Ring properly.
2. Turn the Tracking Ring Power Pack ON.

Entering autoTRACK mode:
There are two ways to enter autoTRACK:

1. **autoTRACK View** buttons put the camera into autoTRACK mode, recalling a view with preset zoom, focus, iris, window, subject position, and sensitivity settings.
2. **autoTRACK** button on top of the joystick puts the camera into autoTRACK mode without changing the current zoom perspective.

PRESET SPEED | AUTO TRACK | CAMERA ADJUST

Preset Speed Menu

autoTRACK VIEWS

To enter autoTRACK mode, press the button on top of the joystick controller (left) or one of the autoTRACK Views (above).

Setting Camera Movement Parameters

If you have an autoTRACK-equipped CameraMan CONTROL Center, it is capable of storing, and recalling, up to 15 autoTRACK Views. Five basic preset views: left, tight, mid, wide, and right are already programmed into the CONTROL Center. You can adjust these or create new Custom Views (see page 19).

autoTRACK Views

The five basic preset views enable you to change from a close head shot with the **TIGHT** autoTRACK View button to emphasize facial expressions to a full body shot just by pressing the **WIDE** autoTRACK View button. Presenters also can share the video screen with a flipchart or other key presentation areas with the **LEFT** or **RIGHT** autoTRACK View buttons. The **MID** autoTRACK View gives you a medium-range shot.

Each autoTRACK View stores and recalls changes in Window, Sensitivity, Subject Position, Zoom, Focus, and Iris. This provides you with the flexibility to customize each autoTRACK View to suit your needs.

To store an adjusted view in one of the five basic autoTRACK Views buttons:
1. Engage autoTRACK with the view button that is being changed.
2. Adjust the zoom, focus, iris, and gain to the desired new positions.
3. Adjust your Window, Subject position, and Sensitivity levels (if needed).
4. Press and hold the same autoTRACK view button for 3 seconds (listen for one beep).
5. Release the button.

> **!** After changing an autoTRACK View, the LCD Display will confirm that the data was saved.

Example of Five preset autoTRACK Views
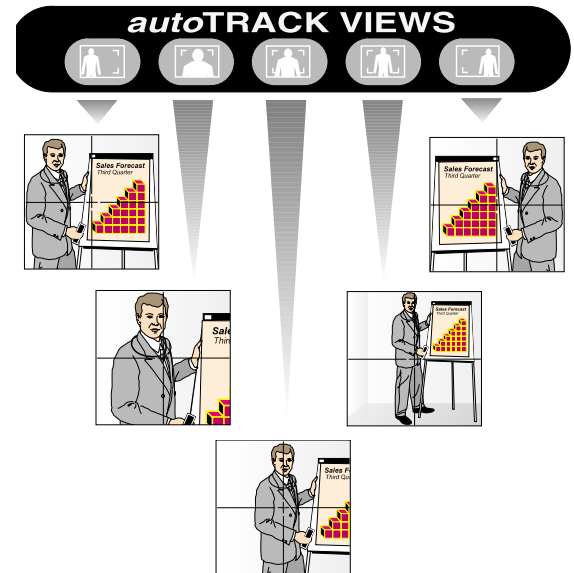
To recall one of the five basic autoTRACK Views:
1. Press and release the desired autoTRACK View button. The camera automatically switches to that view and engages autoTRACK.
2. Look at the display, which should now show an icon representing the autoTRACK view you're currently using.

> **💡** To deactivate tracking, simply press the autoTRACK button on top of the joystick or recall a location preset.

> **!** Once you are in autoTRACK mode, the pan/tilt functions of the joystick are disabled. You must press the autoTRACK button on top of the joystick to deactivate autoTRACK and return pan/tilt functionality to the joystick.

Setting Camera Movement Parameters

Tracking Adjustments

Terms and Definitions:

- An autoTRACK Window is an invisible area in which your subject can move without the camera following. If the person moves out of this defined area, the camera begins to follow them again. The window is measured by the number of degrees of PAN/TILT from the center of the window.

- The Window Reference is based on the center of your Pan/Tilt Window. It can be referenced to either the center of the screen –"Center Reference," or the person wearing the Tracking Ring Sensor –"Sensor Reference."

- The Subject Position refers to the subject's location as it appears on the screen. This is measured by the distance from the center of the screen. When the Subject moves outside the Pan/Tilt Window, the camera resumes tracking the presenter at the Subject Position offset.
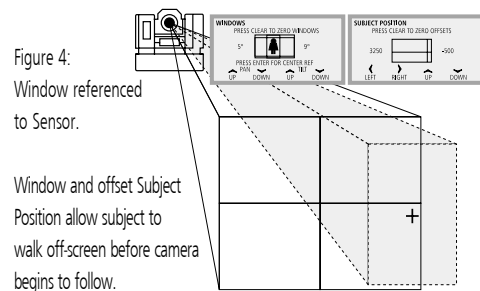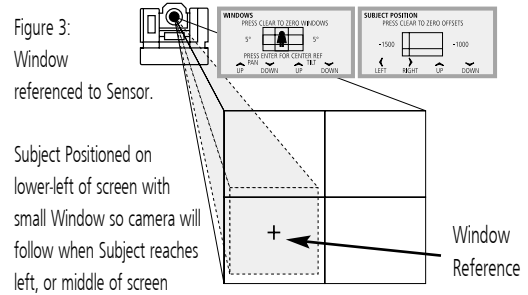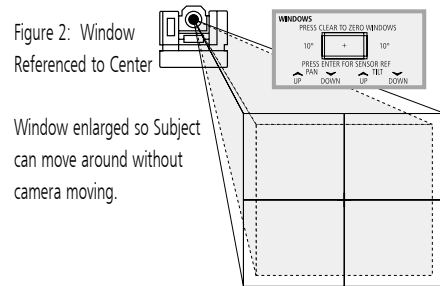
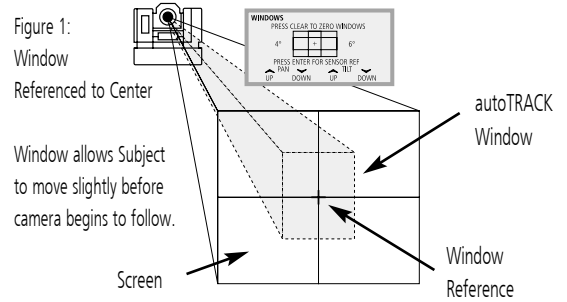- The Screen is the area visible on the monitor.

> **!** If your presenter can walk off the screen before the camera begins following, you may need to change the size of your Window or decrease the offset of the Subject Position (see Figure 4).

> **!** Zooming in and out impacts your Subject Position. Zooming in causes the subject to move toward the outer edge of the screen. Zooming out causes the subject to move towards the center of the screen.

Tips to Adjusting the Parameters:

While in autoTRACK mode, the Pan/Tilt capabilities of the joystick are disabled, but you can still zoom in and out. These tips can help you to keep your Subject from moving off the screen while zooming in and out in autoTRACK mode.

1. Determine the physical area (presentation space) you need your camera to cover.
2. Ask your Subject to wear the Tracking Ring Package, power it up, and stand within the presentation space at the point closest to the camera.
3. Press the autoTRACK button on top of the joystick to enable the camera's autoTRACKing functionality.
4. Zoom in on your subject.
5. Make your adjustments to the Window, Window Reference, Subject Position, and focus.
6. Ask your subject to walk around within the presentation area.
7. While the camera automatically follows the subject, zoom in and out to ensure that he/she does not go off the screen.

Figure 1: Window Referenced to Center

Window allows Subject to move slightly before camera begins to follow.

autoTRACK Window

Window Reference

Screen

Figure 2: Window Referenced to Center

Window enlarged so Subject can move around without camera moving.

Figure 3: Window referenced to Sensor.

Subject Positioned on lower-left of screen with small Window so camera will follow when Subject reaches left, or middle of screen

Window Reference

Figure 4: Window referenced to Sensor.

Window and offset Subject Position allow subject to walk off-screen before camera begins to follow.

Setting Camera Movement Parameters

The autoTRACK Menus enable you to fine-tune your Subject's position on-screen while the camera is in Tracking mode.

autoTRACK LCD Menus

Main autoTRACK Menu   *Display Path:* **MENU > AUTO TRACK**

- **WINDOW**: Selects the menu used to adjust the autoTRACK Window size.
- **SUBJECT POSITION**: Selects the menu used to adjust the Subject Position.
- **SENSITIVITY**: Selects the menu used to adjust the tracking Sensitivity.
- **CUSTOM VIEWS**: Used to store and recall 10 additional autoTRACK Views.

> ❗ If your CONTROL Center is not in autoTRACK mode, the "**TRACKING IS OFF**" message is displays.

autoTRACK Windows Menu   *Display Path:* **MENU > AUTOTRACK > WINDOW**

The Window adjustment sets the size of the window that autoTRACK uses to follow a presenter. A small window tracks the presenter's every move, while a larger window allows the presenter to move a greater distance before the camera reacts to the movement. The CONTROL Center defaults to the Sensor Reference.
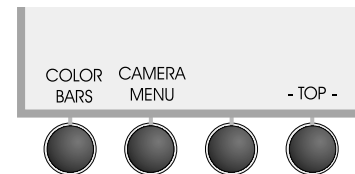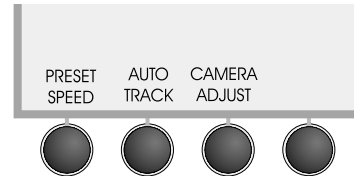
Sensor Reference

A Window with a Sensor Reference (depicted by the person figure in the box) uses the Tracking Ring Sensor as a reference point.

Center Reference

A Window with a Center Reference (depicted by a + in the box) uses the center of the screen as a reference point.

Making Adjustments
- **PAN UP/DOWN**: Adjusts the horizontal size of the window. Range: 0-12 degrees.
- **TILT UP/DOWN**: Adjusts the vertical size of the window. Range: 0-12 degrees.
- **Clear**: Resets the window size to zero.
- **Enter**: Toggles between Center and Sensor Reference Displays.
- **Default**: 0° PAN, 0° TILT.

autoTRACK Display when autoTRACK is ON (top) and when autoTRACK is OFF (bottom).

Sensor Referenced autoTRACK Window (above)

Center Referenced autoTRACK Window Menu (below).
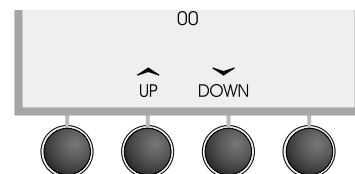
Subject Position Menu   *Display Path:* **MENU > AUTOTRACK > SUBJECT POSITION**

This menu enables you to offset the Centered or Sensor References relative to the center of the picture. The entire window can be shifted up or down and left or right.

- **Up**, **Down**, **Left**, and **Right Function Command Buttons**: Move the tracking window in the respective direction.
- **PAN Range**: +/- 4600 (approximately +/- 20°).
- **TILT Range**: +/- 2300 (approximately +/- 10°).
- The **CONTROL Center joystick** can also be used to make these adjustments.

Subject Position Menu

> Use caution when adjusting Pan/Tilt windows and Subject Position. It is possible to adjust the windows so that the presenter is off the screen.

Sensitivity Menu   *Display Path:* **MENU > AUTOTRACK > SENSITIVITY**

Used to adjust the speed with which the CameraMan returns the presenter to the Subject Position setting.

- **Up/Down Keys**: Adjust sensitivity up or down.
- **Range**: 10-120, in steps of 10 (10= slow).

Sensitivity Menu

Custom Views Menu   *Display Path:* **MENU > AUTOTRACK > CUSTOM VIEW**

Used to store or recall up to 10 autoTRACK views. These are separate, and in addition to the autoTRACK views stored in the buttons above the numeric keypad.

To store an additional Custom View:

1. Adjust zoom, focus, iris, gain, window, subject position, and sensitivity to the desired positions or settings.
2. Access the Custom Views menu.
3. Enter the number (1-10) of the Custom View to be stored.
4. Press and hold the **Recall/Store** function command button for 3 seconds. You will hear one beep.
5. Release the function command button (A confirmation displays ***CAMERA DATA SAVED***).

Custom Views Menu

To recall a Custom autoTRACK View:

1. Verify that the Tracking Ring Package is turned on.
2. Access the Custom Views menu.
3. Using the numeric keypad, select the number of the desired Custom View.
4. Press and release the **Recall/Store** function command button.

Setting Camera Video Parameters

Your Camera Control Unit's CCU functions give you the ability to fine-tune each 3-CCD camera's video. All of the following CCU adjustments are stored when a 3-CCD camera is used with CONTROL Center. So thereafter, whenever a 3-CCD camera is powered on and the Camera Control Unit selects that camera, then the camera is re-initialized to the stored settings.

Menu Button - Video Menus

The initial Menu display appears when you press **MENU**. These menus enable you to control each camera's movement and video. The initial display changes depending on whether you are accessing a 1-CCD or 3-CCD camera.

Video Controls (for 3-CCD cameras only):
- **CAMERA ADJUST**: Gives you access to the camera menus (ie- gain, paint, white balance) allowing you to change the settings while using the CONTROL Center.

! Preset Speed and autoTRACK are covered in the previous section (pages 29-33).

Video Controls on the Initial
Menu Display, 3-CCD only

Camera Adjust LCD Menus

Display Path: **MENU> CAMERA ADJUST**
- **MAS PED**: Displays Master Pedestal Menu (see page 30).
- **AUTO FOCUS**: Turns Auto Focus **ON** or **OFF** (2112 camera).
- **GAIN**: Pressing the **UP** or **DOWN** Function Command Button adjusts the camera's gain.
- **MORE**: Displays the next Camera Adjust menu (1).

Display Path: **MENU> CAMERA ADJUST (2112 Camera)**
- **GEN LOCK**: Turns the **GEN LOCK** function **ON** or **OFF**.
- **HORZ PHASE**: Displays the H-Phase Menu (see page 40).
- **SC FINE**: Displays the SC-Phase Menu (see page 40).
- **SHUTTER**: Displays the Shutter Menu for the 2112 Camera (see page 38).

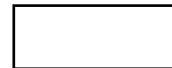*Display Path:* **MENU > CAMERA ADJUST > MORE**
- **DETAIL**: Selects the Detail Control menu (see page 29).
- **KNEE**: Used to adjust the Knee (see page 29).
- **WHITE BALANCE**: Selects the White Balance control menus (see page 29).
- **MORE**: Displays the next Camera Adjust Menu (2).

Display Path: **MENU > CAMERA ADJUST > MORE > MORE**
- **AE WIN**: Used to select the size of the Automatic Exposure Window (see page 31).
- **FLD/FRM**: Used to select between Field or Frame (see page 31).
- **SHUTTER**: Selects the Shutter Control Menus (see page 31-32).
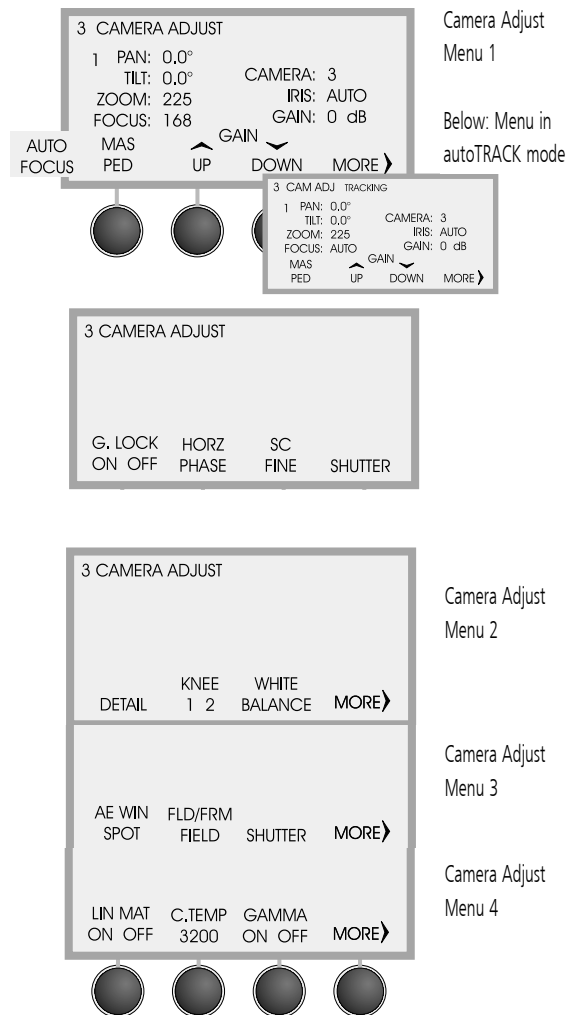- **MORE**: Displays the next Camera Adjust Menu (3).

Display Path: **MENU > CAMERA ADJUST > MORE > MORE > MORE**
- **LIN MAT**: Used to turn the Linear Matrix on and off (see page 33).
- **C. TEMP**: Used to select the color temperature (see page 33).
- **GAMMA**: Used to turn the Gamma on and off (see page 33).
- **MORE**: Displays the next Camera Adjust Menu (4).

Camera Adjust
Menu 1

Below: Menu in
autoTRACK mode

Camera Adjust
Menu 2

Camera Adjust
Menu 3

Camera Adjust
Menu 4

Display Path: ***MENU > CAMERA ADJUST > MORE > MORE > MORE > MORE***

- **G. SYNC**: Used to turn the the G Sync on and off (see page 33).
- **D-SUB**: Used to configure the DB-9 video out (see page 33).
- **SHADE**: Selects the Shade Control Menus (see page 34).
- **MORE**: Displays the next Camera Adjust Menu (5).

Display Path: ***MENU > CAMERA ADJUST > MORE > MORE > MORE > MORE > MORE***

- **H PHASE**: Selects the Horizontal Phase Control Menus (see page 34).
- **SC FINE**: Selects the Sub-Carrier Phase Fine adjustment Control Menus (see page 34).
- **TOP**: Returns to beginning Camera Adjust Menu (Base menu).
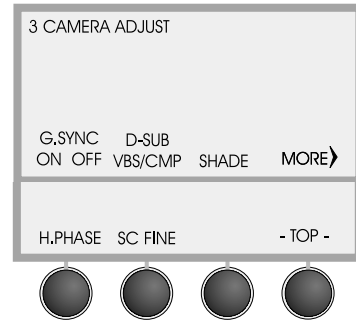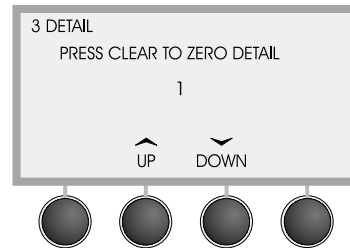
Camera Adjust
Menu 5

Camera Adjust
Menu 6

Camera Adjust Submenus

Detail Menu   *Display Path:* ***MENU > CAMERA ADJUST >MORE > DETAIL***

Increases and decreases the level of sharpness in the picture.

- **UP**: makes picture sharper
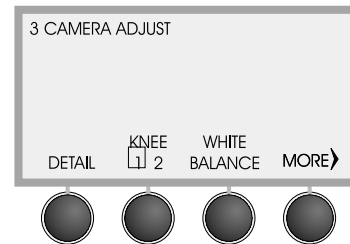- **DOWN**: makes picture softer
- **Range**: -99 to +99

Detail Menu

Knee Setting   *Display Path:* ***MENU > CAMERA ADJUST >MORE***

Selects the knee value (amount of peak white compression) for the camera.

- Select 1 for use in normal lighting (Press Function Button to toggle).
- Select 2 to shoot a bright object in a dark scene.

Knee Setting on
Camera Adjust
Menu

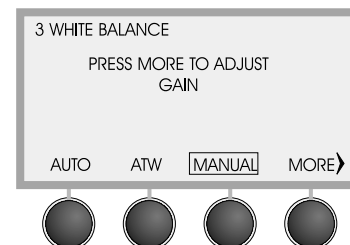***White Balance Menu*** *Display Path:* ***MENU > CAMERA ADJUST > MORE >WHITE BALANCE***

- **AUTO**: Used to set the camera's White Balance automatically in a fixed lighting condition. This must be reset if the lighting changes.
- **ATW**: Used to activate Auto Trace White, which will continually change the camera's White Balance as light temperatures change.
- **MANUAL**: Used to adjust the camera's White Balance manually.
- Press the **MORE** function command button to:
  1. Display the Red/Blue Paint menu when **AUTO** or **ATW** are selected.
  2. Display the Red/Blue Gain menu when **MANUAL** is selected.
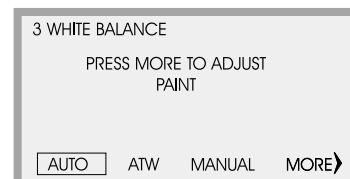
- Pressing MORE while in AUTO and ATW White Balance allows you to adjust the Red/Blue Paint.
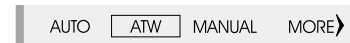
- MANUAL White Balance allows you to adjust the Red/Blue Gain.

Setting Camera Video Parameters

Red/Blue Paint Menu *(for AWB or ATW)*
 Display Path: **MENU > CAMERA ADJUST > MORE > WHITE BALANCE > AUTO or ATW > MORE**

Increases and decreases the red and blue levels in the video image to compensate for inadequate lighting or the subject's color characteristics.

- **RED UP** or **DOWN**: Used to adjust the Red Paint.
- **BLUE UP** or **DOWN**: Used to adjust the Blue Paint.
- **Range**: -7 to +7.
- **Clear**: Sets both Paint settings to zero.
- **Enter**: Toggles between Paint and Master Pedestal (see below).
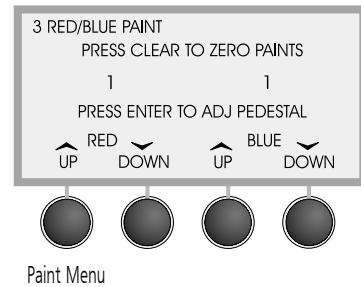
Red/Blue Gain Menu *(for Manual WB)*
 Display Path: **MENU > CAMERA ADJUST > MORE > WHITE BALANCE > MANUAL > MORE**

Increases and decreases the red and blue levels in the brightest area of the video image.

- **RED UP** or **DOWN**: Used to adjust the Red Gain.
- **BLUE UP** or **DOWN**: Used to adjust the Blue Gain.
- **Range**: -99 to +99.
- **Clear**: Sets both Gain settings to zero.
- **Enter**: Toggles between Gain and Master Pedestal menus.
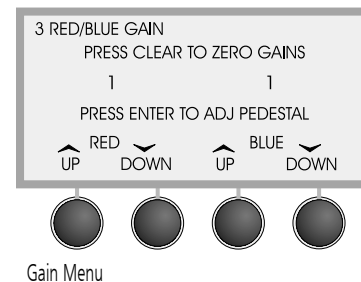
Master Pedestal Menu *Display Path 1:* **MENU > CAMERA ADJUST**
 Display Path 2: **MENU > CAMERA ADJUST >MORE > WHITE BALANCE > MORE > ENTER**

Lightens and Darkens the level of the black component of the video picture.

- **UP**: Lightens the level of the black component and decrease the overall picture contrast.
- **DOWN**: Darkens the level of the black component and increase the overall picture contrast.
- **Range**: -99 to +99.
- **P1** or **P2**: Recalls pedestal presets for the selected camera.
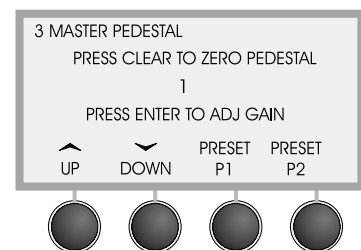
To store pedestal presets:

1. Adjust the Master pedestal using the **Up/Down** keys.
2. Press and hold **P1** or **P2** for 3 seconds (you will hear a beep).
3. Release the Preset key (A confirmation displays ***DIRECTOR DATA SAVED***).

To recall a preset:

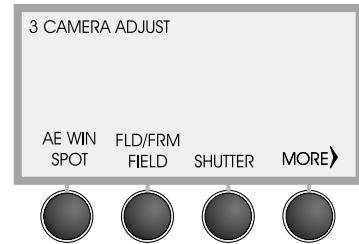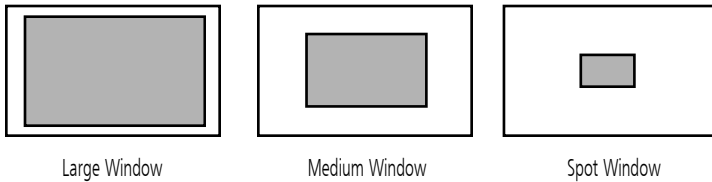1. Press and release the desired preset function command button.

Paint Menu

Gain Menu

Master Pedestal/Paint Menu

Master Pedestal/Gain Menu

AE Win Setting　　*Display Path:* ***MENU > CAMERA ADJUST > MORE > MORE > AE WIN***

The size of the Automatic Exposure Window dictates how much of the video frame is used in determining the AGC, CCD-Iris, and auto iris settings. Default: **Large**.

Large Window　　　　　　Medium Window　　　　　Spot Window

3 CAMERA ADJUST

AE WIN　FLD/FRM
SPOT　FIELD　SHUTTER　MORE❯

Camera Adjust
Menu 2

Fld/Frm Setting　　*Display Path:* ***MENU > CAMERA ADJUST > MORE > MORE FLD/FRM***

Use the Function Button to toggle between Field and Frame.

- **FIELD**: Used to eliminate blur when shooting fast moving objects. The CCD accumulates and outputs the charges, field-by-field, to give pictures showing a minimum of blur even when the subject is fast moving.
- **FRAME**: For producing pictures with the highest possible vertical resolution. The CCD accumulates and outputs the charges frame by frame.
- Default: **FIELD**.

> **!** If you are using a booster (see page 24), the FIELD/FRAME setting remains fixed on FRAME.

Shutter Menus　　*Display Path:* ***MENU > CAMERA ADJUST > MORE > MORE >SHUTTER***

The electronic shutter enables you to obtain blur-free pictures of fast-moving subjects and to produce good still images of subjects shot in poor lighting conditions. The Function Button steps through the option menus. Default mode: **OFF**.

OFF:　　Turns off the electronic shutter.

CCD-IRIS:　The CCD-Iris mode increases the shutter speed automatically when an excessive amount of light passes through the lens. This has the same effect as reducing the lens iris by six stops.
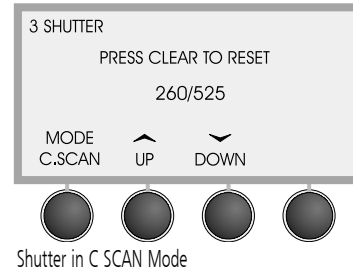
3 SHUTTER

OFF

MODE
OFF　　　　　MORE❯

3 SHUTTER

CCD IRIS
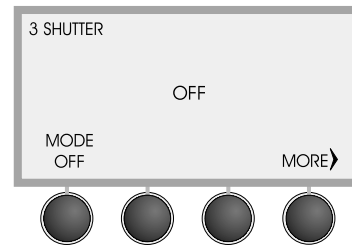
MODE
CCD IRIS

Shutter Menu in
OFF Mode (above)
and in CCD-IRIS
Mode (below)
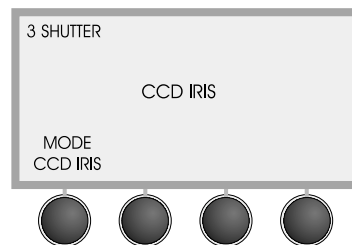
Setting Camera Video Parameters

C.SCAN : The C. Scan mode sets the shutter speed in units of 1 H (horizontal scanning time: 63.56μs). This setting can be used to reduce horizontal noise when shooting a computer screen.

- **UP** and **DOWN**: Used to change the shutter speed setting. Do this while observing the picture on a video monitor.
- **Range**: 1/525 H. – 260/525 H.
- Default: **260/525 H**.

Shutter in C SCAN Mode

STEP: The Step mode sets the shutter to one of the following eight speeds:
FL (flickerless), 1/125, 1/250, 1/500, 1/1000, 1/2000, 1/4000, and 1/10000 sec.

- **UP**: Increases the shutter speed.
- **DOWN**: Decreases the shutter speed.
- Default: **FL**.

Shutter in STEP Mode
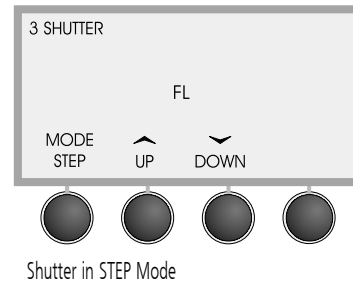
L EXP : The Long Exposure mode sets the shutter speed in units of 1 frame. This mode is useful for shooting a poorly-illuminated object in a dark place.

- Range: **Field mode**: 1-255 FRM (frames).
  Frame mode: 2-256 FRM (frames).
- **UP**: Increases increases the number of frames.
- **DOWN**: Decreases the number of frames.
- **MORE**: Displays Long Exposure Menu 2.
- **BOOSTER**: Lets you set the focus or color for subjects in poor lighting conditions by allowing 4 frames accumulation and gain adjustment. In such situations, turn booster ON, set the focus and color, and then turn it off. You can then shoot in long exposure mode.
- **W.EN**: This function lets you change the output from the RGB/SYNC connector on the rear panel. It is only enabled when the unit is in the **Long Exp** mode.
  - **Sync**: Outputs a composite sync signal. This is the normal setting.
  - **W.EN**: Outputs a WEN (timing) pulse. Use this function to synchronize a connected frame memory.

Shutter in L EXP Mode- menus 1 (top) and 2 (bottom)
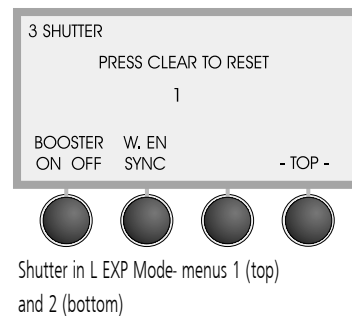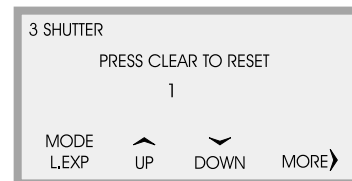
Shutter Menu (2112)   *Display Path:* ***MENU > CAMERA ADJUST >SHUTTER***

UP/DOWN: UP increases the shutter speed and DOWN decreses the shutter speed.

Lin Mat (Linear Matrix) Setting

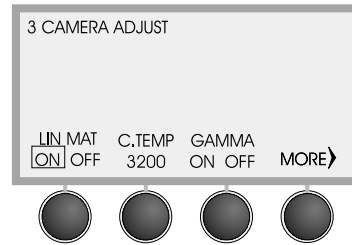*Display Path:* **MENU > CAMERA ADJUST > MORE > MORE > MORE**

The Linear Matrix setting processes images with a color matrix to produce natural colors.

- **ON**: Matrix processing is activated.
- **OFF**: Matrix processing is de-activated.
- Default: **ON**.

```
3 CAMERA ADJUST

LIN MAT    C.TEMP    GAMMA
ON  OFF     3200     ON  OFF    MORE❯
```
Camera Adjust
Menu 3

C. Temp (Color Temperature) Setting

Display Path: **MENU > CAMERA ADJUST > MORE > MORE >M ORE**

- **3200K**: For indoor shooting.
- **5600K**: For outdoor shooting.
- Default: **3200K**.

Gamma Setting

Display Path: **MENU > CAMERA ADJUST > MORE > MORE > MORE**

- **ON**: For normal use of the camera. The camera compensates the reproduction characteristics of the monitor CRT to produce natural tone images.
- **OFF**: The video signal is output linearly from the CCD without gamma compensation.
- Default: **ON**.

G Sync (Gen Lock) Setting

Display Path: **MENU > CAMERA ADJUST > MORE > MORE > MORE > MORE**

- **ON**: Adds sync to the G signal output from the RGB/SYNC connector of the camera.
- **OFF**: The sync is separate from the G signal output at the RGB/SYNC connector of the camera.
- Default: **ON**.
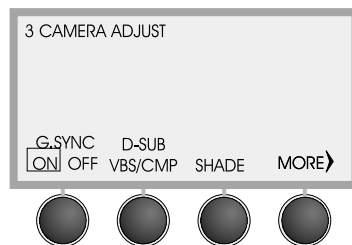
```
3 CAMERA ADJUST

G.SYNC    D-SUB
ON  OFF   VBS/CMP   SHADE    MORE❯
```
Camera Adjust
Menu 4

D-Sub Setting

Display Path: **MENU > CAMERA ADJUST > MORE > MORE > MORE > MORE**

- **VBS/CMP**: Changes the output of the RGB/SYNC connector on the camera to either VBS or Component output.
- **VBS/RGB**: Changes the output of the RGB/SYNC connector on the camera to either VBS or RGB output.
- **YC/CMP**: Changes the output of the RGB/SYNC connector on the camera to either Y/C (S-video) or Component output.
- **YC/RGB**: Changes the output of the RGB/SYNC connector on the camera to either Y/C (S-video) or RGB output.
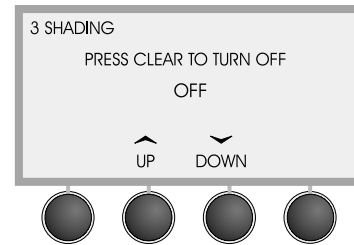
Setting Camera Video Parameters

Shading Menu

> *Display Path:* **MENU > CAMERA ADJUST > MORE > MORE > MORE > MORE > SHADE**

The Shading menu is used to compensate for uneven color shading throughout the screen. In most situations, this should be set to OFF.

- **UP** and **DOWN**: Used to adjust the level of shading.
- Default: **OFF**.

H. Phase Menu

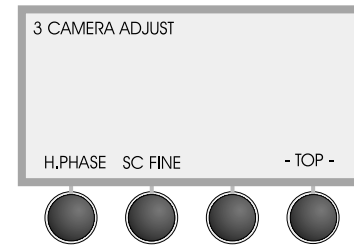> *Display Path:* **MENU > CAMERA ADJUST > MORE > MORE > MORE > MORE > MORE > H. PHASE**

When an external reference sync signal is connected to the GEN LOCK connector on the back of the camera, the camera operates at the frequency of that reference signal. The Horizontal Phase function can be used to perfectly synchronize the horizontal phase of the camera with the horizontal phase of the reference signal.

- **UP**: Used to increase the Horizontal Phase.
- **DOWN**: Used to decrease the Horizontal Phase.
- **RANGE**:-99 to +99.
- Default: **0**.

> ⚠ If there is not an external sync signal connected, this setting adjustment has no effect.
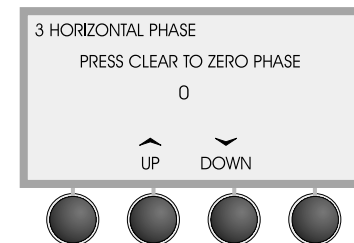
SC Phase Menu

> *Display Path:* **MENU > CAMERA ADJUST > MORE > MORE > MORE > MORE > MORE > SC FINE**

When gen locking the camera, use this function for fine adjustments to the Sub-Carrier Phase. Refer to your **3-CCD Camera Installation and Operations Manual** for information on how to make coarse adjustments to the Sub-Carrier Phase.

> ⚠ If there is not an external sync signal connected, this setting adjustment has no effect.

3 SHADING
PRESS CLEAR TO TURN OFF
OFF
UP   DOWN

Shading Menu

3 CAMERA ADJUST
H.PHASE   SC FINE   - TOP -

Camera Adjust Menu 5

3 HORIZONTAL PHASE
PRESS CLEAR TO ZERO PHASE
0
UP   DOWN

Horizontal Phase Menu

3 SC PHASE FINE ADJ
PRESS CLEAR TO ZERO ADJ
0
UP   DOWN
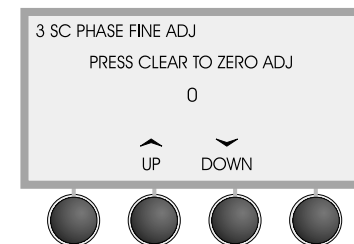
SC Phase Fine Menu

Should you have any problems with your CameraMan CONTROL Center, please refer to the following Troubleshooting section. If you still have questions, please contact your authorized reseller or call Product Support direct at (904) 596-3500.

Troubleshooting

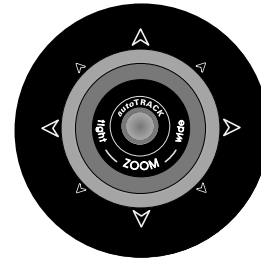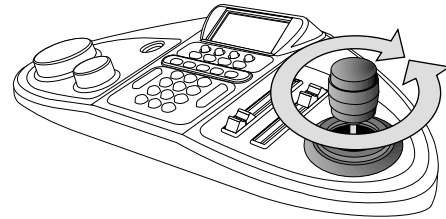**Problem:**   *The CONTROL Center will not power up.*

Solution: Verify that the:
- Power supply is plugged in and the Control power light is illuminated.
- Wall outlet is supplying the necessary voltage.
- You have the correct power supply to operate a CameraMan camera.

Problem: *The desired camera doesn't move, or moves sporadically when the Joystick is moved.*

Solution:
- Verify that the proper CameraMan camera is selected and the desired CameraMan's base unit address matches the CONTROL Center selection.

Camera Base Unit	CONTROL Center Camera
0	1
1	2
2	3
	etc.

- Verify that autoTRACK is turned OFF. If it is on, press the button atop the joystick to disable autoTRACK, allowing the joystick to begin controlling the camera's movement again.
- Verify that the pan/tilt speed slider controls are not set to the bottom.
- Check your soft stops. If they are set too close together, the camera will not move.
- Calibrate the Control Unit's joystick.
    1. Turn the Power off, then back on.
    2. Press **SETUP** immediately on the appearance of the opening screen.
    3. When the calibrate message appears, move the joystick through all of its possible pan/tilt positions several times and rotate the zoom control in each direction.
    4. After calibrating the joystick, push **Enter**. After camera polling, the display will return to the **Home** menu.
- Set Dip Switches 7 and 8 of Switch Bank A on the CameraMan base unit to the **UP** position. See your CameraMan's manual for instructions.
- Set Dip Switch 1 of Bank B to the **UP** position. See your CameraMan's manual for instructions.
- Verify that your CameraMan's Base Unit ROM is version 6.0 or higher.

Top view of joystick controller

1 HOME

3 ADDRESS

101

PRESS ENTER WHEN DONE
PRESS CLEAR TO RESTART
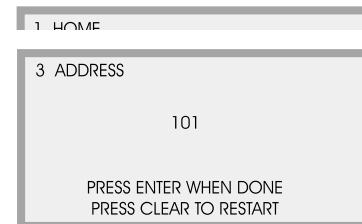
Appendix A: Troubleshooting

Problem: *The CONTROL Center doesn't beep when setting a location preset or autoTRACK View.*

Solution: Verify that the **Beep** function on the **Setup Director** menu is turned **ON**. If it is not, press the **Beep** function command button to turn it **ON**.

Problem: *CONTROL Center displays a "VIDEO SWITCH COMM ERROR."*

Solution: This means the CONTROL Center is not communicating properly with the selected camera.

- Check all the connection cables.
- Verify that the selected CameraMan is on your network.
- Verify that the CameraMan's DIP Switch 7 on Switch Bank A is UP (See the CameraMan operations manual for more details.).
- Verify that the ROM card in your CameraMan is the correct revision number.
- Verify that the base unit address is set properly (see page 8).

Problem: *CameraMan does not autoTRACK (autoTRACK version only).*

Solution:
- Verify that autoTRACK is turned **ON**. If not, press the **autoTRACK** button on top of the joystick to turn autoTRACK **ON**.
- Activate one of the autoTRACK Views by pressing one of the autoTRACK View buttons on the Control Unit.
- Check your soft stops. If they are set too close together, the camera will not move.

Problem: *Cannot change any camera settings or presets.*

Solution: The **LOCK** function in the **Setup** menu may be turned **ON**. If so, then press the **LOCK** function command button to turn it **OFF**.

Problem: *3-CCD menu is not present.*

Solution: Verify that the selected camera is a 3-CCD CameraMan model.

Problem: ***The camera allows me to walk off-screen before it begins following me.***

Solution: Your Pan/Tilt Window size may be too large, or Subject Position may be set too far left or right. Try the following:

- Resetting the **Pan/Tilt Window** size and **Subject Position** to zero (**0**).
- Making your **Pan/Tilt Window** size smaller.
- Zooming out to provide a wider view.
- Increasing the tracking sensitivity.
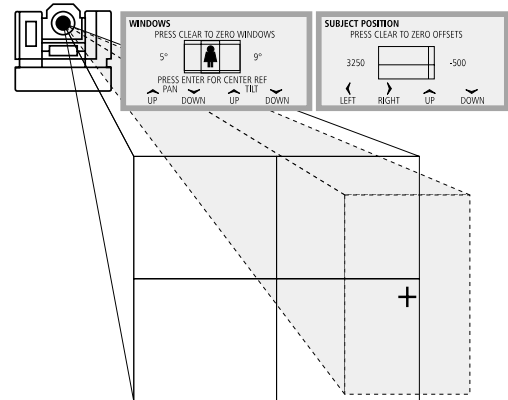
Problem: ***The camera moves faster in one direction than the other.***

Solution: Follow the directions on the page 41 to calibrate the joystick.

Problem: ***The Gen Lock's coarse sub-carrier (SC) adjustment jumps 180° out of phase when using the Control Unit.***

Solution::   SC coarse adjustment was set with the on-screen menus of the camera and needs to be changed.

1. Using Camera Control Keypad, enter the on-screen menus.
2. Ensure the coarse SC is set to 0° on both memories A and B.
3. Exit the on-screen menus.

If 180° phase shift is needed, set Dip Switch 2 of Switch Bank A on the back of the camera to the UP position.

Problem: ***Selecting a location preset does not recall a stored level of Paint or Gain on a 3-CCD camera.***

Solution: Paint corresponds with Auto White Balance (AWB). Gain corresponds with Manual White Balance.

- To recall a stored paint level, the camera must be in AWB.
- To recall a stored gain level, the camera must be in Manual White Balance.

Appendix B: Glossary and Specifications

Listed below are some key terms mentioned in this manual, as well as the specifications for the CONTROL Center. For the specifications on your 1-CCD or 3-CCD camera, see the specifications section of the installation and operations manual that came with the camera.

Specifications

CONTROL Center Control Unit:

Dimensions:.........................L: 18 in (45.72 cm)

H: 5.5 in (13.97 cm)

D: 8.5 in (21.59 cm)

Weight:...............................4.5 lbs (2.04 kg)

Display Type:.......................160x80 STN LCD with backlight

Display Dimensions:..............H:1.5 in (3.81 cm) W:3 in (7.62 cm)

AC Power:...........................US: 120 VAC~, 60Hz, 100W

INT: 100-240 VAC~, 50/60Hz, 100W

DC Power:...........................18-20 VDC ⎓

Temperature Range:.............32°- 100° F (0°-37.78° C)

Humidity Range:..................0-95% Non-condensing

RS-485 Ports:.......................In/Out

RS-485 Connector: ....Modular handset (4-conductor)

RS-485 Distance: ....2500' (762.2 m) Max

COM 1 (RS-232):.................DB9 Female

COM 1 Distance:.................50' (15.2 m) Max

COM 2 (RS-232): ....DB9 Male

COM 2 Distance:.................50' (15.2m) Max

CONTROL Center Switcher:

Dimensions:.........................**L:** 17.5 in (44.5 cm) **H:** 3.5 in (8.89 cm) **D:** 12.75 in (32.39 cm)

Weight:...............................13 lbs. (5.88 kg)

Power:................................100-250 VAC~, 1.6 Amps, 50-60 Hz

Temperature Range:.............32°- 100° F (0°-37.78° C)

Humidity Range:..................0-95% Non-condensing

Inputs:................................8– 75 Ohms, Composite (BNC) or Y/C (mini-DIN)

Outputs:.............................3 Program– 75 Ohms, Composite (BNC) or Y/C (mini-DIN)

1 Preview– 75 Ohms, Composite (BNC) or Y/C (mini-DIN)

8 Blackburst– 75 Ohms, BNC

Sync Input: ....1 looping– 75 Ohm, BNC

Video Performance:.............NTSC

75 Ohm impedance

55 MHz bandwidth

Audio Performance: ....Balanced Stereo

25K Ohm Input impedance/50K Ohm Output impedance

DC to 200 kHz bandwidth

Noise: less than .01% THD + N at line levels

19 dBm Headroom

"Phoenix"-type connectors

Glossary

CCU (Camera Control Unit) – A device, external to the camera, that adjusts video characteristics (detail, gains, pedestal, etc.).

Detail – Used to sharpen or soften a video image.

Gains – The level of the brightest areas of the video image. Gain may be expressed as separate components of red, blue, and green.

Knee – Video compression at the brightest parts of a picture. The knee is used to get as much detail as possible from very bright objects.

Linear Matrix – Color–correction circuitry used to adjust color without affecting white balance.

Master Pedestal – Adjusts the darkness level of the black parts of the image. Use this function to bring out details of heavily shaded areas.

Paint – Artificially coloring a video image to compensate for poor lighting or a subject's color characteristics. Also used to match the color of multiple cameras.

RS-485 – The protocol used by the CONTROL Center to communicate with the CameraMan camera.

Tracking Views – Presets, stored by the CameraMan, that enable you to change the presenter's position in the autoTRACK frame.

White Balance – Matching of the red, green, and blue picture components to achieve proper color hues.

Appendix C: Pinout Diagrams

You'll find the following pinout connections on the back of your CameraMan CONTROL Center. These diagrams are for your reference.

Pin	Signal
1	Ground
2	Signal A
3	Signal B
4	Ground
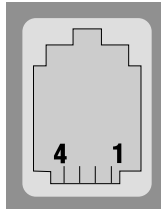
RS-485
Four position
Modular Handset

+ 18-20 VDC
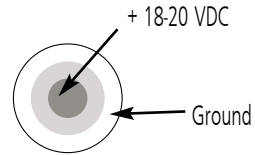
Ground

5.5mm DC ▭ Power
Connector

Pin	Signal
2	Transmit
3	Receive
5	Ground
1,4,6-9	Not Used
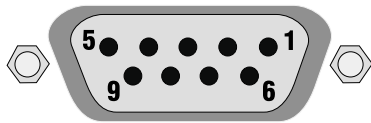
RS-232 Female D-9 Sub
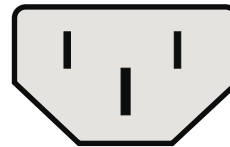
AC Power Connector

Pin	Signal
2	Transmit
3	Receive
5	Ground
1,4,6-9	Not Used

RS-232 Male D-9 Sub

Y

Y Ground

C
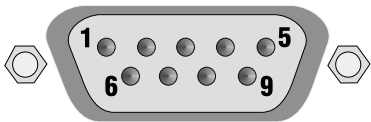
C Ground
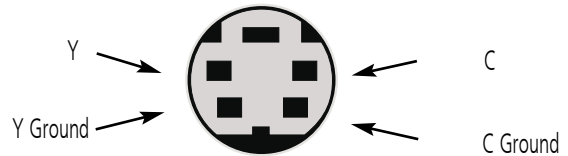
S-Video In and Out port
(S-Video models only)

Video (1Vp-p)

Ground
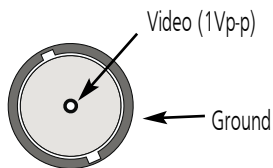
Composite Video
In and Out port
(composite video models only)

L L ⏚ R R
+ - ═ - +

"Phoenix"-style
audio connectors

Appendix D: Default Reset Settings

Your CameraMan CONTROL Center gives you the power to adjust various camera, autoTRACK, and location preset settings. Below you'll find the default settings, which take effect if you follow the instructions on page 7 to restore the defaults.

CameraMan Default Settings

System Lock/Unlock ....Unlocked
Tracking ....Off
Pan Direction.......................Normal
Tilt Direction........................Normal
Pan Soft Stops.....................+90° to -90°
Tilt Soft Stops.......................Cleared
Preset Speed 100
Gain ....AGC

Default Preset
Pan Position ....0°
Tilt Position ....0°
Zoom Position ....Wide
Iris..Auto

Preset 1
Pan Position ....0°
Tilt Position ....0°
Zoom Position ....Wide
Iris..Auto

Preset 2
Pan Position ....45°
Tilt Position ....-10°
Zoom Position ....Tight
Iris..Auto

Preset 3
Pan Position ....-45°
Tilt Position ....10°
Zoom Position ....Mid-range
Iris..Auto

! All other position presets remain unchanged.

autoTRACK Default Settings: 3-CCD (1-CCD)

Default Tracking View
Zoom Position. 0
Iris Position. . . . . Auto
Pan Subject Position 0
Tilt Subject Position 0
Pan autoTRACK™ Window . . . . . . 0°
Tilt autoTRACK™ Window . . . . 0°
Tracking Sensitivity 80

Wide Tracking View
Zoom Position. 130 (56)
Iris Position. . . . . Auto
Pan Subject Position 0
Tilt Subject Position 0
Pan autoTRACK™ Window . . . . . . 4° (3°)
Tilt autoTRACK™ Window . . . . 2°
Tracking Sensitivity 100 (70)

Left Tracking View
Zoom Position. 130 (56)
Iris Position. . . . . Auto
Pan Subject Position 1000 (2079)
Tilt Subject Position . . . . -231
Pan autoTRACK™ Window . . . . . . 6° (3°)
Tilt autoTRACK™ Window . . . . 2°
Tracking Sensitivity 80 (70)

Tight Tracking View
Zoom Position. 175 (156)
Iris Position. . . . . Auto
Pan Subject Position 0
Tilt Subject Position 0
Pan autoTRACK™ Window . . . . . . 0° (3°)
Tilt autoTRACK™ Window . . . . 2°
Tracking Sensitivity 110 (70)

Right Tracking View
Zoom Position. 130 (56)
Iris Position. . . . . Auto
Pan Subject Position . . . . -1000 (-2079)
Tilt Subject Position . . . . -231
Pan autoTRACK™ Window . . . . . . 6° (3°)
Tilt autoTRACK™ Window . . . . 2°
Tracking Sensitivity 80 (70)

Mid Tracking View
Zoom Position. 152 (106)
Iris Position. . . . . Auto
Pan Subject Position 0
Tilt Subject Position 0
Pan autoTRACK™ Window . . . . . . 2°
Tilt autoTRACK™ Window . . . . 2°
Tracking Sensitivity 100 (70)

Lock Mode

The following settings cannot be changed when the CONTROL Center is in the LOCKED mode.

1. All **SETUP** options except for the **LOCK** option itself.
2. All **MENU** options (the **MENU** selection is inaccessible).
3. All **POSITION PRESETS** and **TRACKING VIEWS**.

CameraMan CONTROL Center™

Appendix E: LCD Handling Precautions

Due to the delicate nature of the LCD screen on your CONTROL Center, please make note of the following handling precautions.

1. An LCD screen is a fragile item and should not be subjected to strong mechanical shocks.

2. Avoid applying pressure to the screen's surface. This will distort the glass and cause a change in color.

3. In the event of LCD breakage and fluid leakage:
    - Do not inhale, ingest or make contact with the skin. If contact is made, rinse immediately.
    - Contact Customer Support for maintenance/replacement assistance.

4. When cleaning the screen, use a soft damp cloth with a mild solvent, such as Isopropyl or Ethyl alcohol. DO NOT use water, ketone, or aromatic.

```
MAX ZOOM
    SPEED:    6
MAX PAN/TILT
    SPEED:   154

                      - TOP -
```

1. HOME

Notes