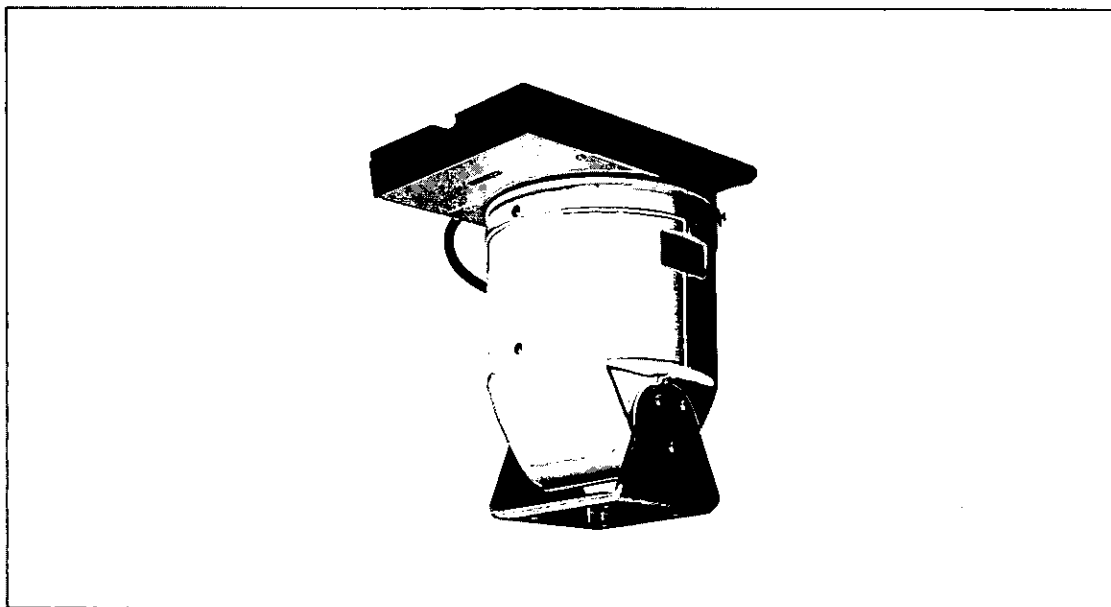


# Operating Instructions

Indoor Pan/Tilt  
WV-7230D



**Panasonic**<sup>®</sup>

Before attempting to connect or operate this product, please read these instructions completely.

# CONTENTS

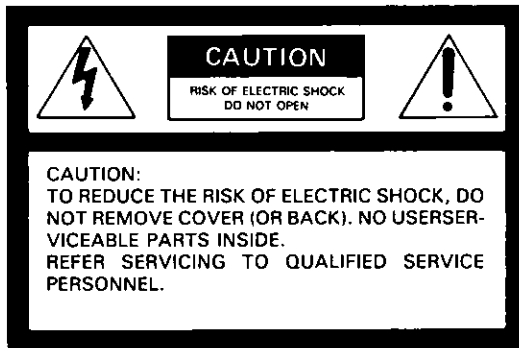
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## INTRODUCTION

The WV-7230D Pan/Tilt with the WV-CU254 System Controller and WV-RC100 Indoor Receiver allows remote control of camera panning and tilting. The Pan/Tilt can be ceiling mounted or bracket mounted to any flat surface. The camera can be panned through a total of 340°, and can be tilted through a total of 90° (45° above or below the center position). Panning speed is 7°/sec., tilting speed is 4°/sec.

## PRECAUTIONS

1. Do not attempt to disassemble this unit. There are no user serviceable parts inside. Refer servicing to qualified service personnel.
2. Use this unit within its rating.
  - (a) Designed for indoor use.  
Ambient temperature: 14°F - 122°F (-10°C - +50°C)
  - (b) Avoid using this unit when humidity is above 90%.
3. Do not use this unit in the place which has a high percentage steam or oil.
4. Select a flat location which can support the entire weight (panning head, camera, camera housing).
5. The input power source must be 24V<sup>+10%</sup><sub>-20%</sub> (19.2 - 26.4V) AC 60 Hz for WV-7230B. (Supplied by Indoor Receiver WV-RC)
6. Use only a low voltage camera (24V AC).
7. Every necessary procedures with regard to install this product should be made by qualified Service Personnel or System Installers.



The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.



The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

For U.S.A.

**Warning:**  
This equipment generates and uses radio frequency energy and if not installed and used properly, i.e., in strict accordance with the instruction manual, may cause harmful interference to radio communications. It has been tested and found to comply with the limits for a Class A computing device pursuant to Subpart J of Part 15 of FCC Rules, which are designed to provide reasonable protection against such interference when operated in a commercial environment.

For CANADA

This digital apparatus does not exceed the Class A limits for radio noise emissions from digital apparatus set out in the Radio Interference Regulations of the Canadian Department of Communications.

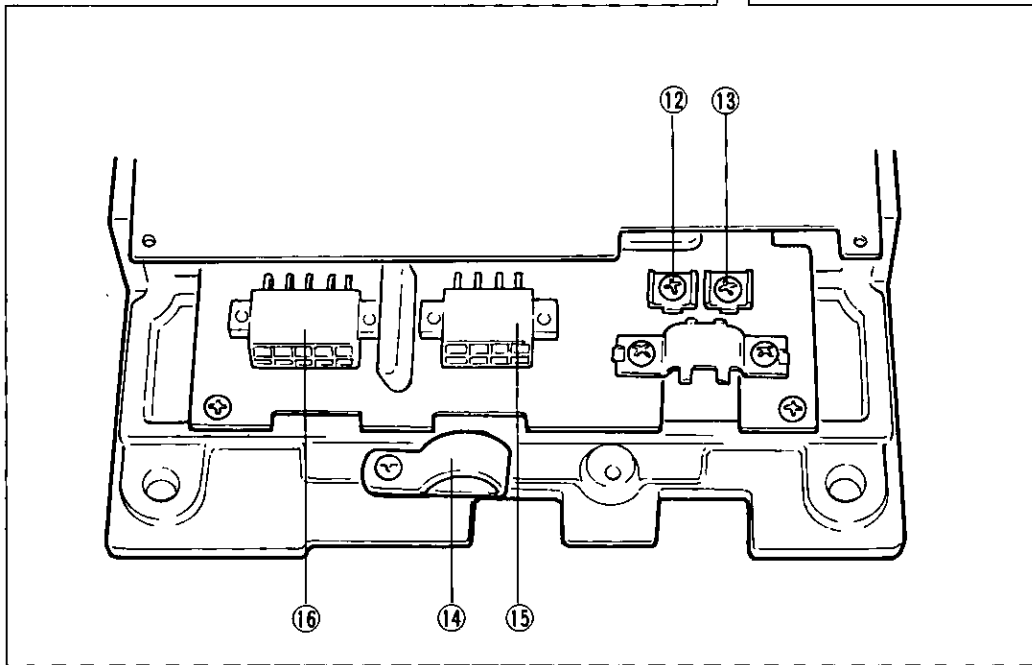
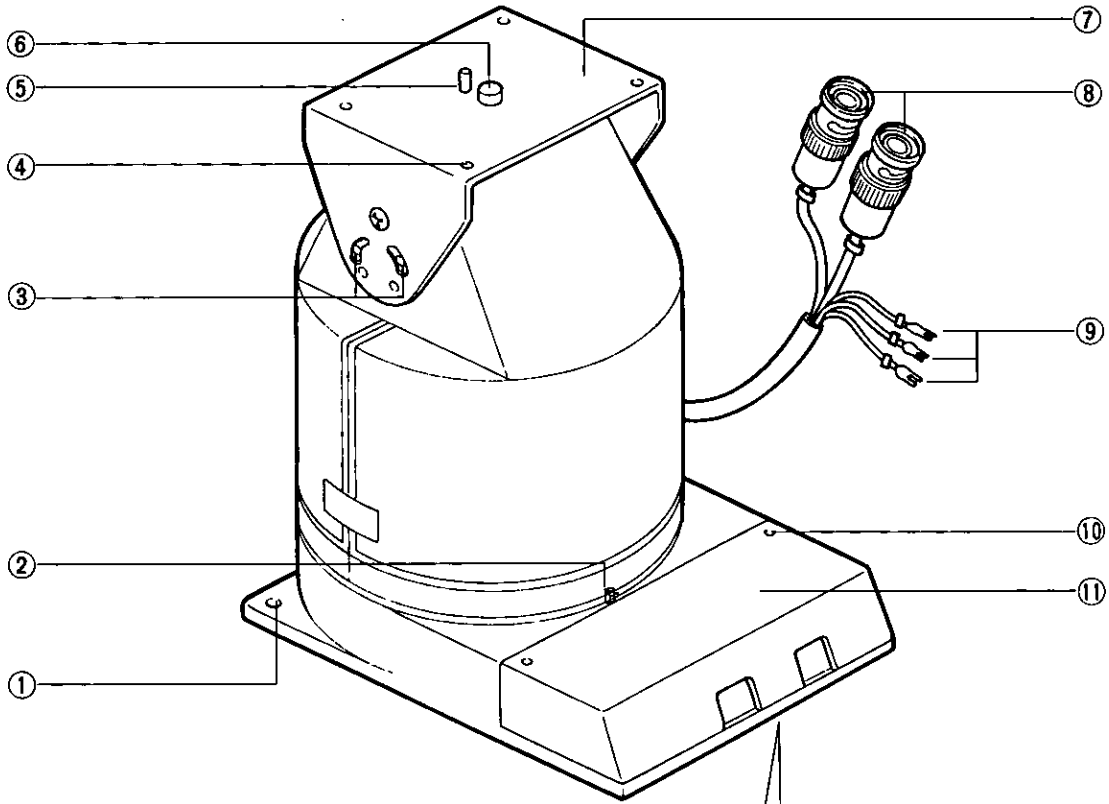
The serial number of this product may be found on the bottom of the unit. You should note the serial number of this unit in the space provided and retain this book as a permanent record of your purchase to aid identification in the event of theft.

Model No. \_\_\_\_\_

Serial No. \_\_\_\_\_

**WARNING:**  
TO PREVENT FIRE OR SHOCK HAZARD, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE.

# MAJOR OPERATING CONTROLS AND THEIR FUNCTIONS \_\_\_\_\_



**(1) Mounting Holes**

4-5/16" (4-φ8)

**(2) Pan Limit Stops**

Adjustable panning angle: 10° - 340°

**(3) Tilt Limit Stops**

Adjustable tilting angle:

Up: 0° - 45°, Down: 0° - 45°

**(4) Camera Housing Mounting Holes**

4-φ3/16" (4-φ5)

**(5) Camera Guide Pin**

**(6) Camera Mounting Screw**

Standard Photographic Pan/Tilt head Screw (U 1/4"-20UNC)

**(7) Mounting Plate**

**(8) Camera Cables**

Those connectors are connected with the Video Output and Gen Lock Input of the camera.

**(9) Camera Power Cables**

**(10) Cover Screws**

**(11) Cover**

**(12) Video Output Terminal (VIDEO)**

This terminal is connected with the video input of the Receiver WV-RC100.

**(13) External Sync Input Terminal (EXT SYNC)**

This terminal is connected with the external sync generator.

**(14) Cable Clamp**

**(15) Control Connector - 1 (8 pins)**

8	7	6	5
4	3	2	1

- 1: Camera
- 2: No Connection
- 3: No Connection
- 4: No Connection
- 5: AC Common
- 6: AC Common
- 7: AC Common
- 8: Ground

**(16) Control Connector - 2 (10 pins)**

10	9	8	7	6
5	4	3	2	1

- 1: LEFT
- 2: RIGHT
- 3: Up
- 4: Down
- 5: No Connection
- 6: No Connection
- 7: DC Common
- 8: Iris Control
- 9: Focus Control
- 10: Zoom Control

# PRECAUTIONS ON INSTALLATION

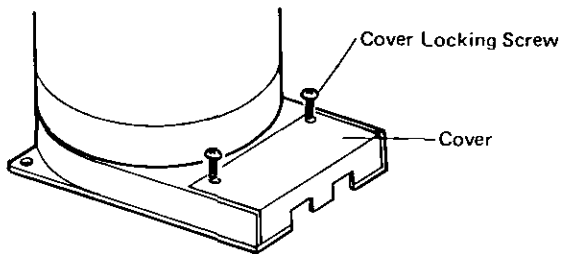
- This pan/tilt unit Model WV-7230D is designed for indoor use. Avoid mounting it outdoors under the eaves or any other place where rain or moisture could be a problem.
- If the panning unit is mounted upside down as shown below, the image on the monitor TV will also be upside down. Therefore, remove the camera mounting plate from the top of the camera and attach it to the bottom of the camera.
- A camera with various lenses and a camera housing (Model WV-7110, 7120D and 7130D) can be used. Select a location where the total weight is sufficiently supported and firmly fix the units onto plywood, gypsum board, plaster board or concrete. Install the panning head before mounting the camera on it.
- Mount on a flat surface - flat ceiling or mounting bracket Model WV-7030.
- Avoid a location which is susceptible to vibration, such as close to a motor or ventilation fan.

# INSTALLATION

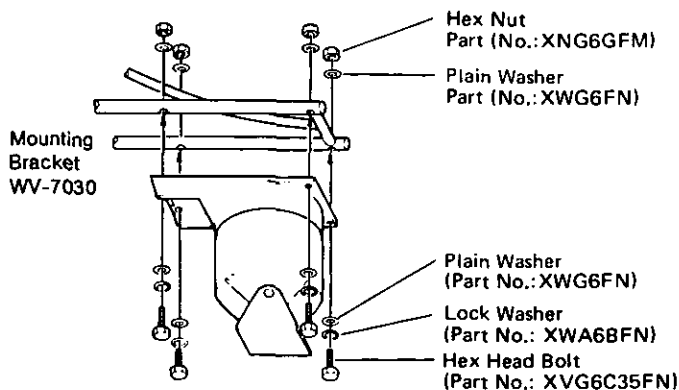
## CAUTION:

The following installation should be made by qualified service personnel or system installers.

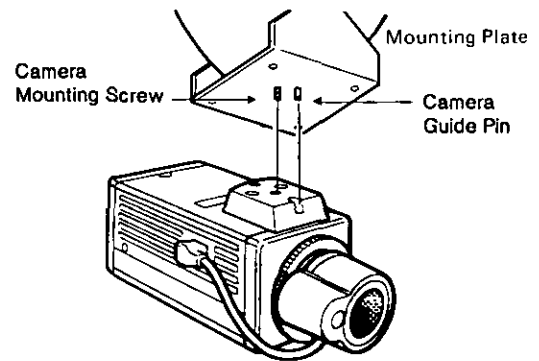
1. Retighten the Cover Locking Screws and remove the Cover.



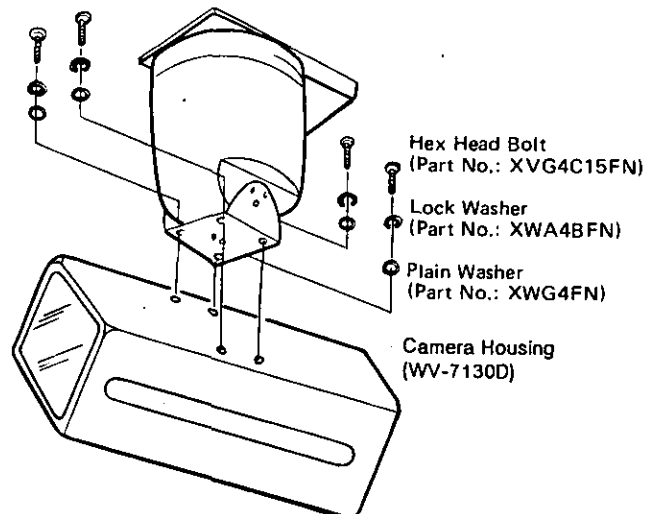
2. When mounting directly to a flat ceiling:
  - Make four holes for mounting the Pan/Tilt Head. (Screws are not provided)
  - Holes in the head are 5/8" (8 mm).
3. When using on the mounting bracket (WV-7030)
  - Use four hex head bolts, plain washers, lockwashers and hex nuts (provided with the WV-7030) as shown below.
  - After wiring, replace the cover.



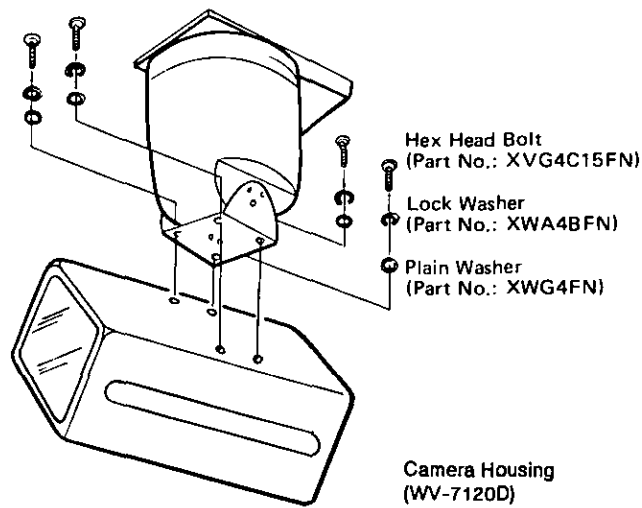
4. Mount the low voltage camera on the Mounting Plate. If mounting the zoom lens, use with the Zoom Lens fixing plate WV-Q02 or WV-Q03.



5. Mounting a camera housing (WV-7130D) on the Mounting Plate.
  - Use four hex head bolts (3/16", M4), plain washers and lockwashers (provided with the WV-7230D) as shown below.



6. Mounting a camera housing (WV-7120D) on the Mounting Plate.
- Use four hex head bolts (3/16", M4), plain washers and lockwashers (provided with the WV-7230D) as shown below.



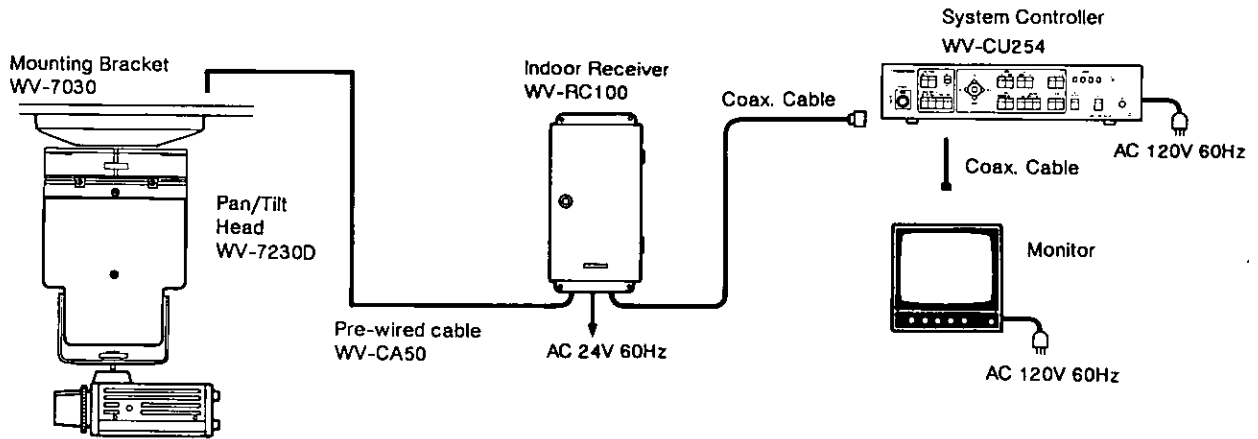
## APPLICABLE CAMERAS, LENSES AND HOUSINGS

A. The recommended combination of the Panasonic camera, lens and housings to WV-7230D is shown in the following table.

Housing		Not Used		WV-7110		WV-7120D		WV-7130D	
		for 1/2"	for 2/3"	for 1/2"	for 2/3"	for 1/2"	for 2/3"	for 1/2"	for 2/3"
Camera	Lens	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed
	2/3" Tube	WV-1414		○				○	
WV-1464			○				○		○
WV-1504			○				○		○
WV-1554			○				○		○
2/3" CCD	WV-CD134		○		×		×		○
	WV-CD24		○		○		○		○
	WV-BD404		○		○		○		○
1/2" CCD	WV-BL204	○	○	○	×	○	○	○	○
	WV-CL304	○	○	○	×	○	○	○	○
	WV-BL604	○	○	○	×	○	×	○	○
	WV-CL704	○	○	○	×	○	○	○	○

○ Possible  
× Impossible

# TYPICAL SYSTEM CONNECTIONS



## CONNECTIONS

### CAUTION:

- The following connection should be made by qualified service personnel or system installers.
- Make all connections with the power turned OFF.
- Avoid shorting the terminals, as this may blow a fuse.

If the installation is to be upside-down, the Pan Left-Right and Tilt Up-Down directions will be reversed. This must be considered when the wiring is done.

In this case, replace 1 and 2 pins of CN1 and CN2.

If the Pre-wired Cable WV-CA50 is used, replace them using with MOLEX brand tool 57031-6000.

### A. Wiring for Pan/Tilt and Motorized Zoom, Focus, Iris Control

		Control Voltage	Control Current
ZOOM	TELE	-6V DC	Less than 100 mA
	WIDE	+6V DC	
FOCUS	NEAR	-6V DC	
	FAR	+6V DC	
IRIS	OPEN	-6V DC	
	CLOSE	+6V DC	

When using a camera with motorized zoom, focus and iris, these connections should be made.

**Note:** Lens control cable should be approx. 39" to allow sufficient room for Pan.Tilt.

### B. The Video and Exit Sync. Terminal Board.

#### 1. Wiring precautions:

- Do not bend coaxial cable into a curve who radius is smaller than 10 times diameter.
- Never staple the cable - not even with circul staples.
- Never crush or pinch the cable.

All these will change the impedance of the cable and cause poor picture quality.

#### 2. Use the following conditions Cable.

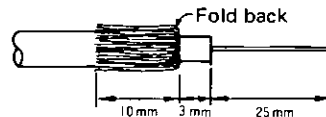
Impedance: 75Ω

Diameter: φ8 mm or less

Example: RG - 59/U (BELDEN 9259)

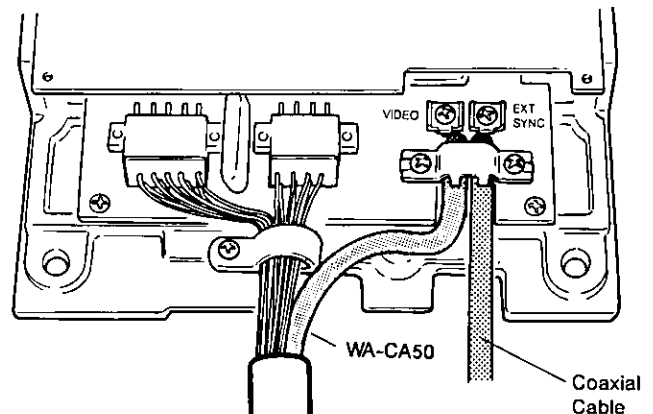
#### 3. Wiring:

- Prepare coaxial cable as shown as below.



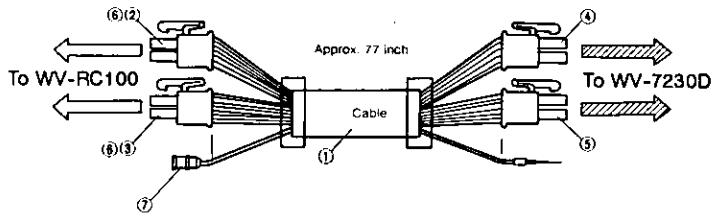
- Connect as follows.

- 1 Clamp the coaxial cable with Cable Clamp.
- 2 Fold back the shield.
- 3 Connect the inner conductor.



**C. Wiring with the Connection Cable (WV-CA50)**

The appearance and cord length is shown in the drawing.



- The parts name of WV-CA50 is shown in the following.

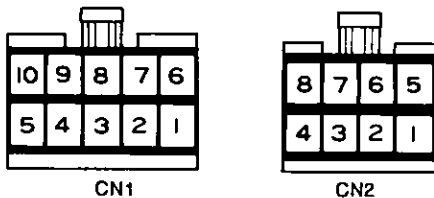
No.	Parts name
1	18 wires cable
2	14P housing
3	12P housing
4	10P housing
5	8P housing
6	Contact
7	BNC connector

**D. In case of using the accessory connectors (MX5557P08 and MX5557P10)**

Select a multi-conductor cable which meets FR-1 rating with 11 or 13 wires cables for WV-7230D. 12 wires cable is used to extend the cable length. Connect the 11 or 13 wires cable to the following positions of the accessory connectors.

CN Pin No. WV-7230D	Usage of Terminal	Power Source
CN1-1	LEFT	24V AC
CN1-2	RIGHT	
CN1-3	UP	
CN1-4	Down	
CN2-1	24V AC Camera	24V AC Common ±6V DC Common ±6V DC
CN2-5(6)(7)	AC Common	
CN1-7	DC COMMON	
CN1-8	Iris Control	
CN1-9	Focus Control	
CN1-10	Zoom Control	
CN2-8	Camera Ground	

- If 13 wires cable are available for WV-7230D, connect the remained 2 wires to the ( ) position.



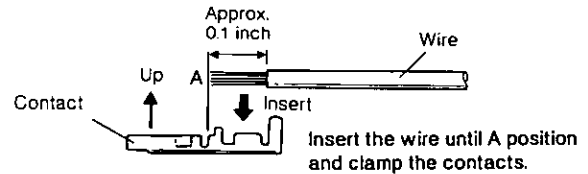
The accessory connectors view from wiring side.

The wire gauge can be determined by the chart below.

- The system should be operated by 24V AC and the power consumption should have less than 11W for the camera.

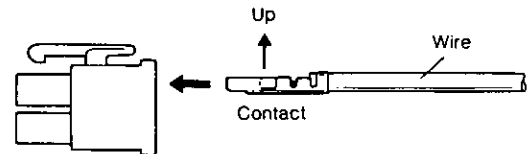
Model		WV-7230D		
Copper wire gauge AWG No.		Cable length		
AWG size	Impedance (Ω/km)		11	13
#24	77.9	ft	30	65
		m	10	15
#22	50.4	ft	50	100
		m	15	30
#20	32.3	ft	80	155
		m	20	45
#18	19.9	ft	130	250
		m	40	70

- Cable assembly:**  
Strip back the cable jacket approx. 0.1 inch and separate the individual conductors.



Prepare the individual conductors for clamping. If clamping, use MOLEX brand tool part number 57027-5000 (for UL-Style Cable UL1015 or 57026-5000 (for UL-Style cable UL1007).

After clamping the contacts, push them into the proper holes in the connector housing until they snap in place.



**CAUTIONS:**

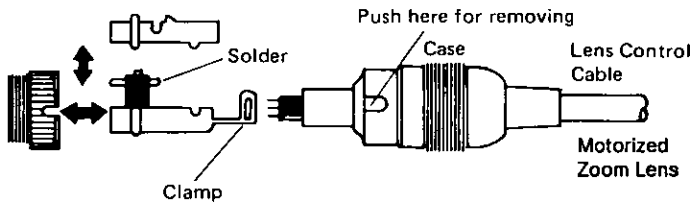
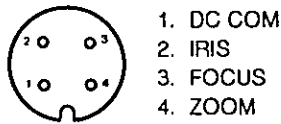
- Shrinking the cable-entry seal is a one-time procedure. DO NOT shrink the cable-entry seal until it has been ascertained that the unit is functioning.
- CONNECT THIS TO 24V AC CLASS 2 POWER SUPPLY ONLY.

**Caution:** To prevent fire or shock hazard, the UL listed wire VW-1, style 1007 should be used for the cable for 24V AC Input Terminals.



### Zoom Control Connector

The control connector of the motorized zoom lens should be a 4-pin connector, Hirschman type Mas 4100. If it is not, substitute the existing connector with the Mas 4100 supplied, according to the following diagram:

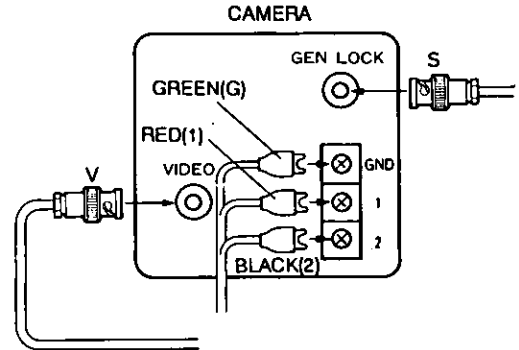


### Camera Power Cable

Connect the spade lug connectors to the 24V AC Power Terminal Strip of the lowvoltage camera, according to the diagram.

### Camera Cable

Connect the Camera Cable to the video output connector of the lowvoltage camera.



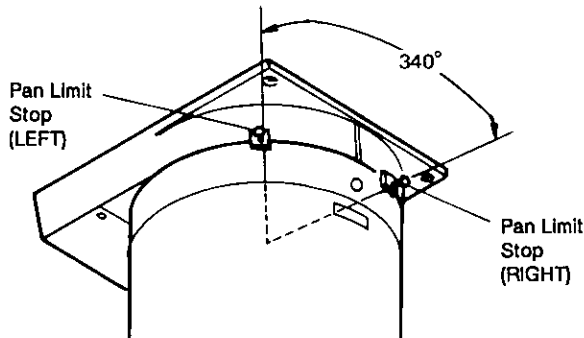
## ADJUSTMENTS

### CAUTION:

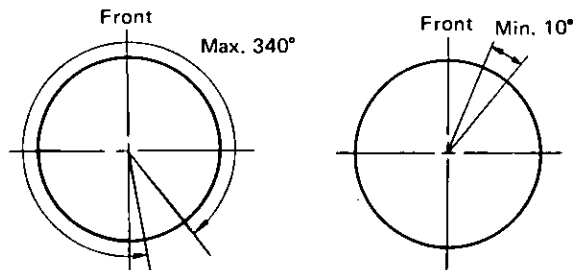
The following adjustments should be made by qualified service personnel or system installers.

After the cable is assembled and the unit is connected, plug the Remote Control Unit into a 120V AC source and proceed as follows.

#### A. Panning Angle

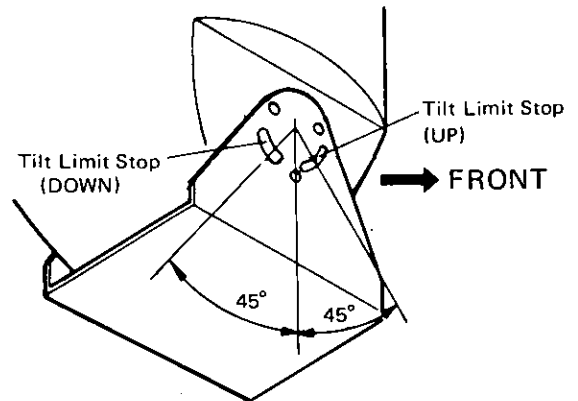


1. Loosen the Pan Limit Stops.
2. Press on the ON/OFF Switch ON to energize the unit, then rotate Pan/Tilt Head using the joystick Pan/Tilt Control unit the desired right pan limit is reached.
3. Locate the right pan limit stop and move until it contacts limit switch inside the Pan/Tilt Head. Move stop additional slight amount until a "click" is heard indicating opening of limit switch. Lock the stop in place.
4. Rotate the Pan/tilt Head to the desired left limit position. Adjust the left pan limit stop as was done for the right limit stop.

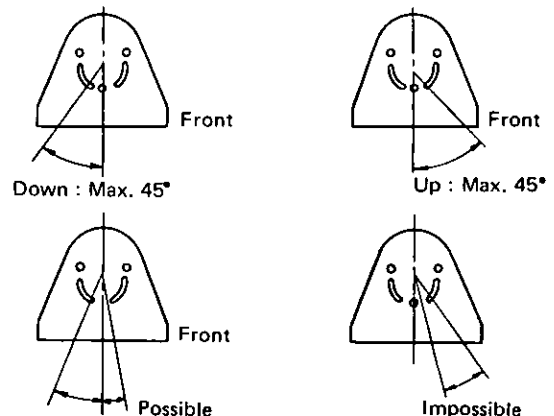


5. With both limit stops in place, pan to both stop positions and recheck for exact positioning of limit stops. Tighten both stops securely.

#### B. Tilting Angle



1. Loosen the recessed two Tilt Limit Stops and rotate Pan/Tilt Control until desired upward limit is reached.
2. Move the upward limit stop toward the bottom of the slot until a "click" can be heard. Tighten screw.
3. Adjust the downward limit stop the same way.
4. Lock the limit stops securely in place after checking for exact positioning.



## SPECIFICATIONS

---

System controller:	WV-CU254 (Optional)
Indoor Receiver:	WV-RC100 (Optional)
Mountable housing:	WV-7130D, 7110, 7120D (Optional)
Power Consumption:	Approx. 30W Max.
Panning:	Automatic or Manual (Selectable)
Panning angle:	10° - 340° (Adjustable)
Tilting speed:	Approx. 4°/sec
Tilting angle:	Up: approx. 45°, Down: Approx. 45°
Load weight:	Less than 17-1/2 lbs (8 kg)
Operating ambient temperature:	14°F - 122°F (-10°C - +50°C)
Dimensions (inch; Approx.):	6-7/16"(W) x 10"(H) x 8-1/8"(D) [163(W) x 252(H) x 226(D) mm]
Weight:	Approx. 14.5 lbs (6.5 kg)

## STANDARD ACCESSORIES

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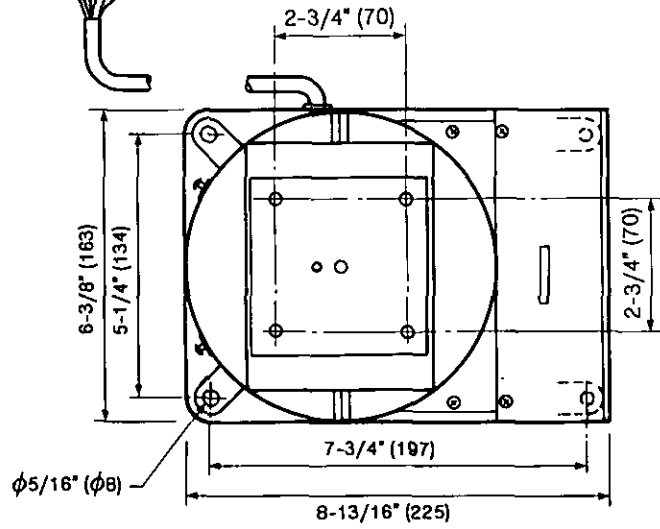
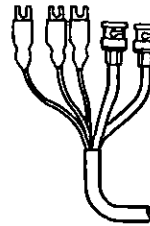
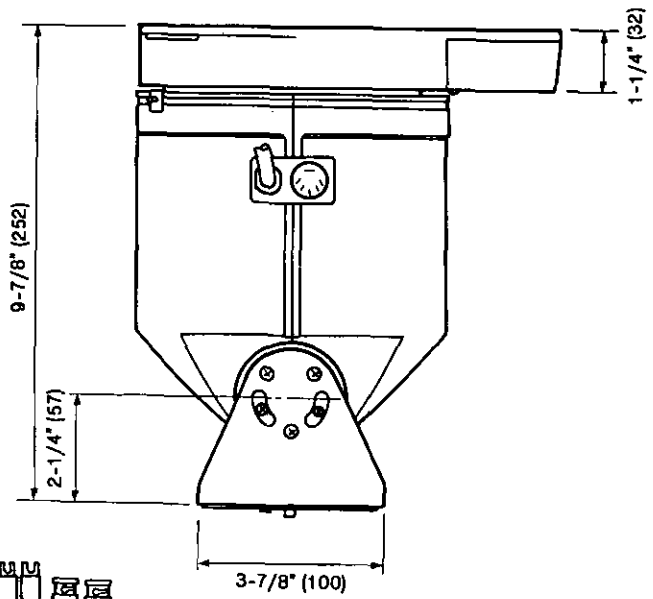
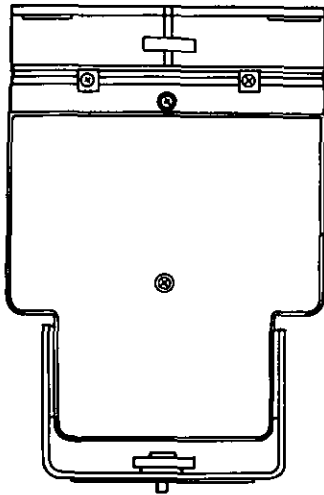
Mounting screws for camera housing	
[Part No.: WVG4C15MF] .....	6pcs.
Plane washer	
[Part No.: WEG4FN] .....	6pcs.
Lock washer	
[Part No.: XWA4BFN] .....	6pcs.
4pin connector for Zoom Lens	
[Part No.: YWMAS4100] .....	1pc.
Connector	
[Part No.: MX5557P10] .....	1pc.
MX5557P06] .....	1pc.

## OPTIONAL ACCESSORIES

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Pre-wired Cable .....	WV-CA50
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# OUTLINE DRAWING



# Panasonic

Communications & Systems Company

Panasonic Communications & Systems Company  
Division of Matsushita Electric Corporation of America

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## CLOSED CIRCUIT VIDEO EQUIPMENT DIVISION

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