

**TOSHIBA**

**INSTRUCTION MANUAL**

**CCD COLOR CAMERA**

**IK-VR01A**

Please read this manual thoroughly before use, and keep it handy for future reference.

Record in space provided below the Model No. and the Serial No. as found on the label on the bottom of this unit.

Model. No. IK-VR01A Serial No. \_\_\_\_\_

Retain this information for future reference.

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### **Important safeguards**

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## IMPORTANT SAFEGUARDS

### 1. Read Instructions

All the safety and operating instructions should be read before the product is operated.

### 2. Retain Instructions

The safety instructions and instruction manual should be retained for future reference.

### 3. Heed Warnings

All warnings on the product and in the instruction manual should be adhered to.

### 4. Follow Instructions

All operating and use instructions should be followed.

### 5. Cleaning

Disconnect this video product from the power supply before cleaning.

### 6. Attachments

Do not use attachments not recommended by the video product manufacturer as they may cause hazards.

### 7. Water and Moisture

Do not use this video product near water-for example, near a bath tub, wash bowl, kitchen sink, or laundry tub, in a wet basement, or near a swimming pool and the like.

### 8. Accessories

Do not place this video product on an unstable cart, stand, tripod, bracket or table. The video product may fall, causing serious injury to a child or adult, and serious damage to the product. Use only with stand, tripod, bracket, or table recommended by the manufacturer, or sold with the video product. Any mounting of the product should follow the manufacturer's instructions, and should use a mounting accessory recommended by the manufacturer.

### 9. Ventilation

This video product should never be placed near or over a radiator or heat register. This video product should not be placed in a built-in installation such as a bookcase or rack unless proper ventilation is provided or the manufacturer's instructions have been adhered to.

### 10. Power Sources

This video product should be operated only from the type of power source indicated on the marking label. If you are not sure of the type of power supply to your location, consult your product dealer.

### 11. Power-Cord Protection

Power-Supply cords should be routed so that they are not likely to be walked on or pinched by items placed upon or against them, paying particular attention to cords at plugs, screws and the point where they exit from the product.

### 12. Installation

This video product should be installed on a firm and solid part of the ceiling or wall. If installed on a soft and weak place, the camera unit may fall. A person under it may be injured and things under it may be damaged.

### 13. Lightning

For added protection for this video product during a lightning storm, or when it is left unattended and unused for long periods of time, unplug it from the wall outlet and disconnect the power supply and cable system. This will prevent damage to the video product due to lightning and power-line surges. However, if there is thunder or lightning now, do not touch the unit and any connected cable. This will for you not to receive the electric shock by the surge of thunder.

### 14. Overloading

Do not overload power supply and extension cords as this can result in a risk of fire or electric shock.

### 15. Object and Liquid Entry

Never push objects of any kind into this video product through openings as they may touch dangerous voltage points or short-out parts that could result in a fire or electrical shock. Never spill liquid of kind on the video product.

### 16. Servicing

Do not attempt to service this video product yourself as opening or removing covers may expose you to dangerous voltage or other hazards. Refer all servicing to qualified service personnel.

### 17. Damage Requiring service

Disconnect this video product from the power supply and refer servicing to qualified service personnel under the following conditions.

- When the power-supply cord or plug is damaged.
- If liquid has been spilled, or objects have fallen into the video product.
- If the video product has been exposed to rain or water.
- If the video product does not operate normally by following the operating instructions in the instruction manual. Adjust only those controls that are covered by the instruction manual as an improper adjustment of other controls may result in damage and will often require extensive work by a qualified technician to restore the video product to its normal operation.
- If the video product has been dropped or the cabinet has been damaged.
- When the video product exhibits a distinct change in performance-this indicates a need for service.

### 18. Replacement Parts

When replacement parts are required, be sure the service technician has used replacement parts specified by the manufacturer with the same characteristics as the original part. Unauthorized substitutions may result in fire, electric shock or other hazards.

### 19. Safety Check

Upon completion of any service or repairs to this video product, ask the service technician to perform safety checks to determine that the video product is in proper operating condition.



- The CAUTION label, shown on the left, is attached on the camera.

CAUTION TO REDUCE THE RISK OF ELECTRIC SHOCK.  
DO NOT REMOVE COVER (OR BACK).  
NO USER SERVICEABLE PARTS INSIDE.  
REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.



The lightening 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.

**WARNING :**

TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE.

**CAUTION :**

CONNECT 24V AC UL LISTED CLASS 2 POWER SUPPLY.

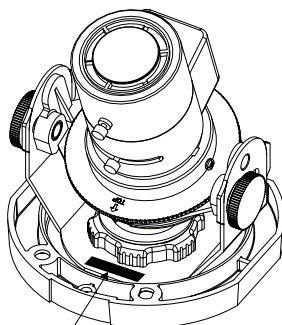
**FIELD INSTALLATION :**

WORDED : "THIS INSTALLATION SHOULD BE MADE BY A QUALIFIED SERVICE PERSON AND SHOULD CONFORM TO ALL LOCAL CODES."

**FCC NOTICE**

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

**USER-INSTALLER CAUTION :** Your authority to operate this FCC verified equipment could be voided if you make changes or modifications not expressly approved by the party.



Serial No Label

The serial No. label is located here.

## 1. FEATURES & DESCRIPTION

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IK-VR01A has the following features:

- (1) Flush/Surface mount.
- (2) IP66 Standard for dust and water resistance.
- (3) Built in vari-focal lens with auto-iris  
Focal length 3.0~8.0mm.
- (4) Incorporated 1/3" type CCD image sensor gives high resolution and excellent sensitivity  
480 lines horizontal resolution  
0.4 lx minimum illumination with tint dome cover
- (5) 50dB Signal-To Noise Ratio
- (6) Power supply- AC24V or DC12V - This camera automatically detects the power.
- (7) BLC, AGC, and Line-Lock (AC24V)

## 2. CAUTIONS

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- (1) Avoid touching the lens glass with your fingers. If necessary, use a soft cloth moistened with alcohol to wipe off any dust.
- (2) Avoid aiming the camera at the sun.
- (3) Avoid shooting the camera at intense light. Intense light such as a spotlight may cause a bloom or smear. A vertical stripe may appear on the screen.  
However, this is not a malfunction.
- (4) Install the camera away from video noise. If cables are wired near electric lighting wires or a TV set, noise may appear in images. In this event, relocate cables or reinstall equipment.

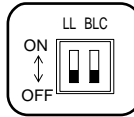
## 3. COMPONENTS

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- |   |        |
|---|--------|
| (1) Camera (with Tint Dome Cover installed) | 1 pc.  |
| (2) Accessories                             |        |
| (a) Mounting Base                           | 1 pc.  |
| (b) Bracket                                 | 1 pc.  |
| (c) Screw A                                 | 3 pcs. |
| (d) Screw B                                 | 3 pcs. |
| (e) Clear Dome Cover                        | 1 pc.  |
| (f) Special Hexangular Wrench               | 1 pc.  |
| (g) Monitor Out Harness Wire                | 1 pc.  |
| (h) Power Connector                         | 1 pc.  |
| (i) Instruction Manual                      | 1 pc.  |

## 4. PART NAMES & FUNCTIONS

### Mode Setting Switch



BLC (Backlight Compensation Switch)  
With the switch on, it adjusts the backlight automatically to obtain the best possible image.  
LL  
Sets camera synchronization to line lock with the switch on. Available only with AC24V.

### Lens Iris ADJ

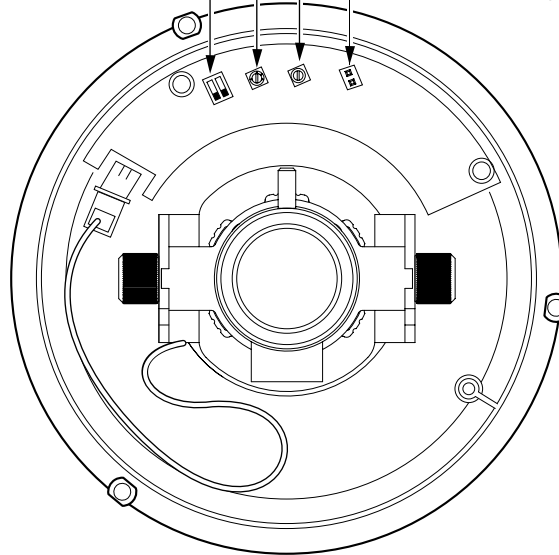
Counterclockwise: The picture becomes darker.  
Clockwise: The picture becomes brighter.  
"Optimum Value" is at default setting.

### Line Lock Phase ADJ

Adjusts the phase of the line lock.

### Monitor Out Connector

Connect with the supplied monitor out harness wire. Used to adjust the angle of view when installing the camera.



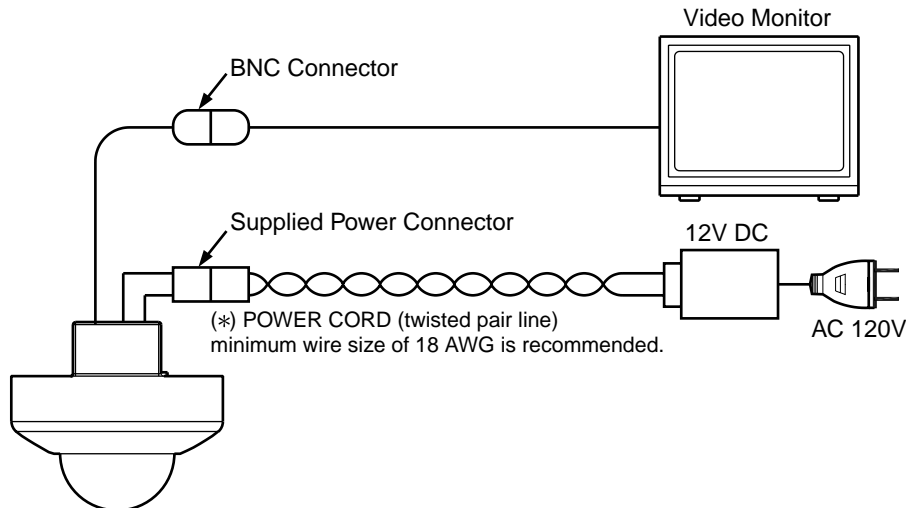
## 5. CONNECTIONS AND OPERATIONS

### Notes on connecting

- Power plugs to connected equipment must be disconnected before installation.
- A 75-ohm coaxial cable (3C-2V or 5C-2V) is required for standard connection.
- For details of wiring and operation of equipment to be connected, refer to their operation manuals.
- Coaxial cables for video signals and the power cord are not supplied with the camera.

Refer to the operations manuals of connected equipment for detailed wiring and overall operation instructions.

### 5-1 Basic connection single system configuration



24V AC UL Listed Class 2 power supply / 12V DC power supply

CAUTION : Never input 24V AC and 12V DC at the same time.

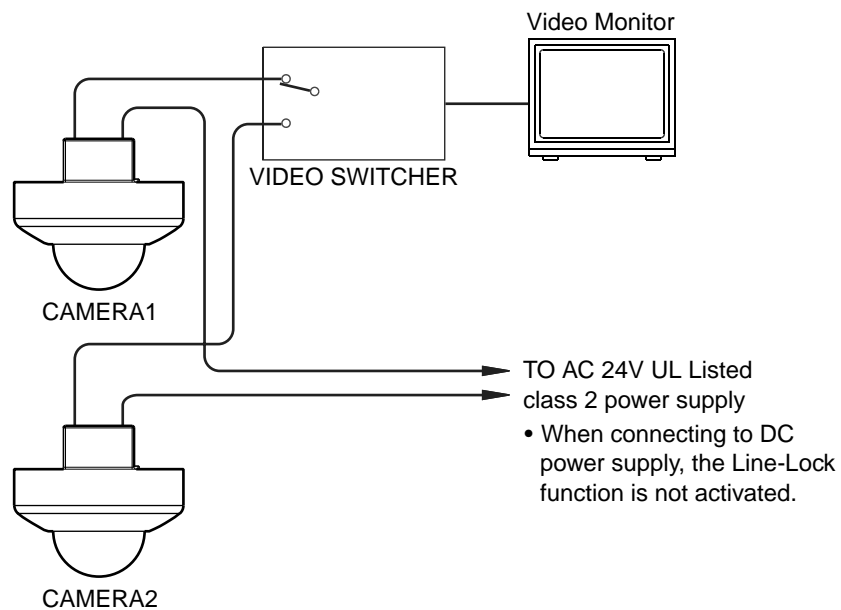
In case of DC12V, connect "+12" to red cable and "GND" to black cable.

### Do not overload power supply

Since this camera uses 24V AC UL Listed Class 2 power supply or 12V DC power supply, it should be connected to a power supply that allows for at least 5w consumption. Because the IK-VR01A uses a mechanism, a sufficient power supply with adequate current specifications is required.

## 5-2 Line-Lock Control

- Matching the vertical synchronization with the power frequency is called the Line-Lock.
- This function is activated when the LL of Mode Setting Switch is on.
- When two or more cameras are switched by the video switcher for viewing by a monitor TV, the vertical sync. phase can be locked with the power frequency, and a stable vertical sync. is obtained without being disturbed at the time of switching.



### Note :

- The camera is synchronized to the power frequency of  $60\pm 1\text{Hz}$  covering a normal fluctuation of the power frequency. However, the camera may not cover a large fluctuation caused from the power generated by an engine generator, etc.
- It takes about 10 seconds or more until a stable synchronization is obtained after the power is turned on. This is normal, because several seconds are required to stabilize the camera against power noise.
- Refer to "7. LINE-LOCK PHASE" for adjustment.

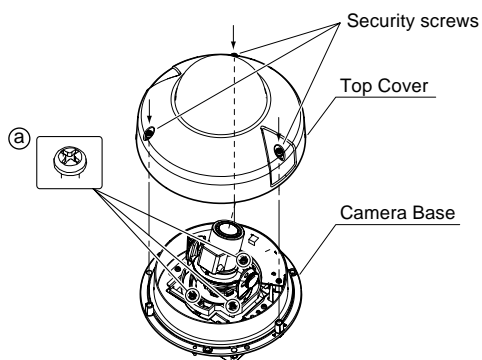
## 6. INSTALLATIONS

- Connect the cable of the camera and the cable from the designated power supply with respective connectors.
- Screws for fixing the camera and mounting base to the ceiling or wall are not supplied with the unit. Use appropriate screws.

### Note :

- The weight (camera body only) is about 1.3kg. The camera unit including the mounting base and the bracket weighs 2.1kg.
- When installing to surfaces of other materials, use the screws to fix it firmly.

### 6-1 Adjust the Angle of View

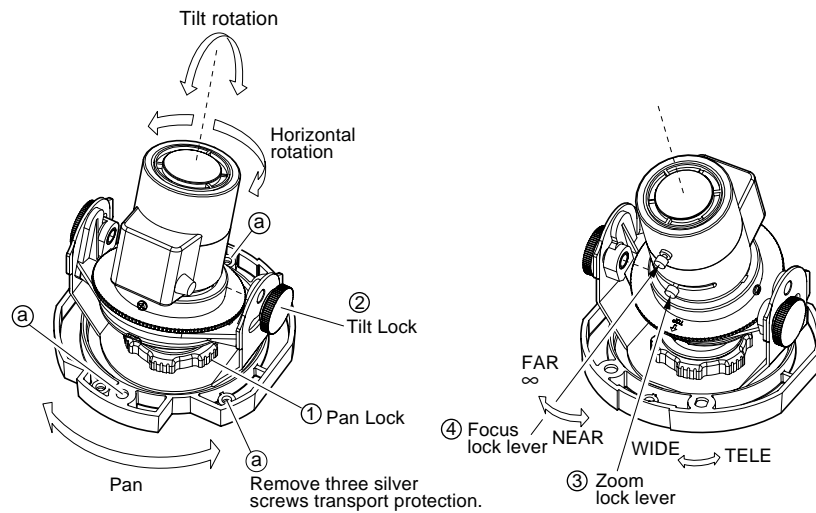


- (1) Loosen the three security screws by the supplied special hexangular wrench and remove the top cover.

#### Important Notice :

Be sure to remove three silver screws ③ immediately after removing the top cover. The screws are used to temporarily fix the top cover for transportation.





(a) Transport Protection Screws (silver)

- (2) The lens direction in pan direction can be adjusted by turning pan lock ① counterclockwise to unfasten it without moving the lens. After adjustment, turn pan lock ① clockwise to fasten it.

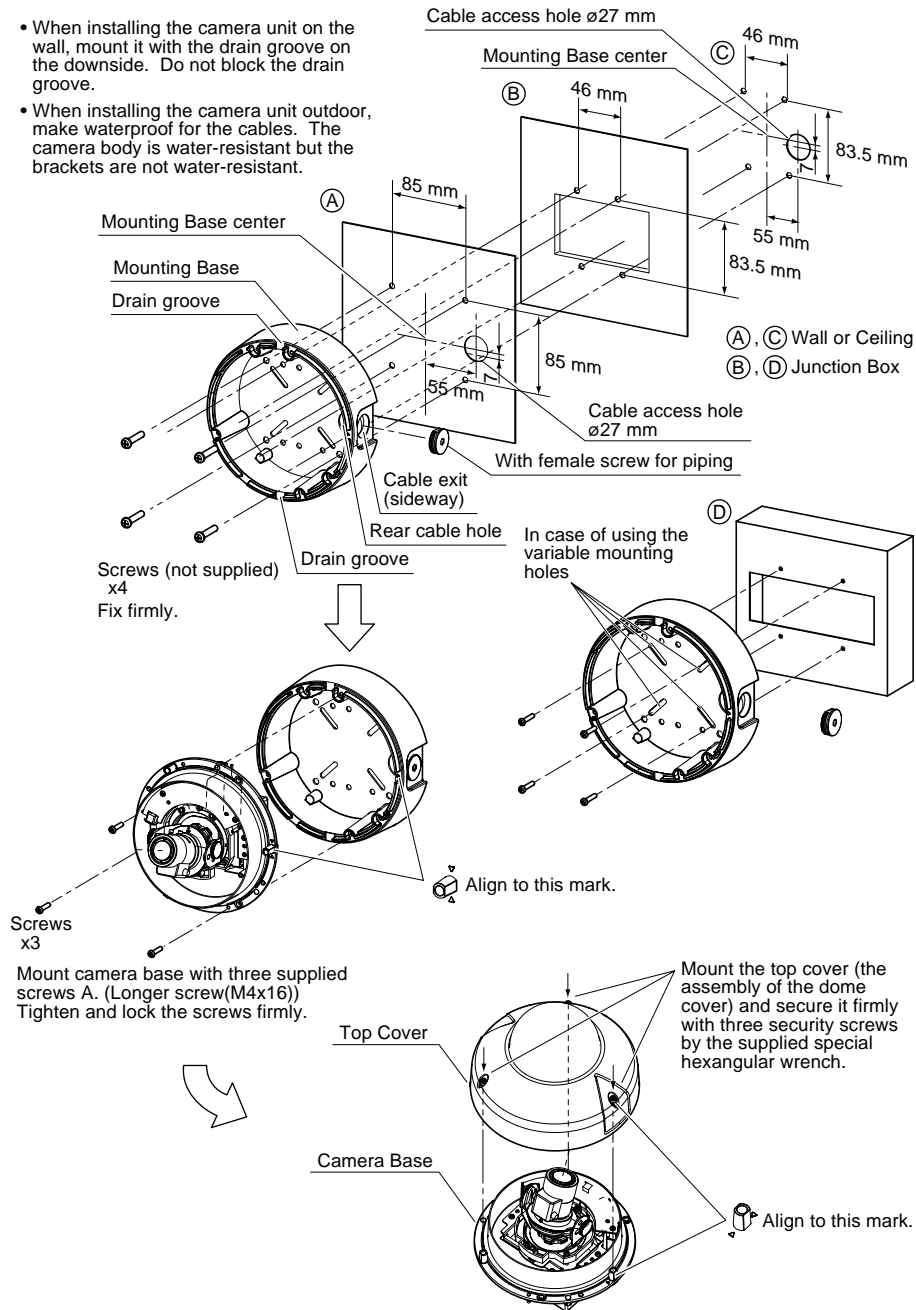
**Note :**

- Do not turn the lens over 360°. Otherwise the inner connector may be broken and the image may not appear.
- (3) The lens tilt angle can be adjusted by loosening the tilt lock ②. After adjusting, tighten the tilt lock ②.
- (4) Adjust the zoom position by loosening the zoom lock lever ③. After adjusting, tighten the zoom lock lever ③.
- (5) Adjust the focus by loosening the focus lock lever ④. After adjusting, tighten the focus lock lever ④.
- (6) Repeat the adjustments from step (1) to step (5) till the optimum image appears.

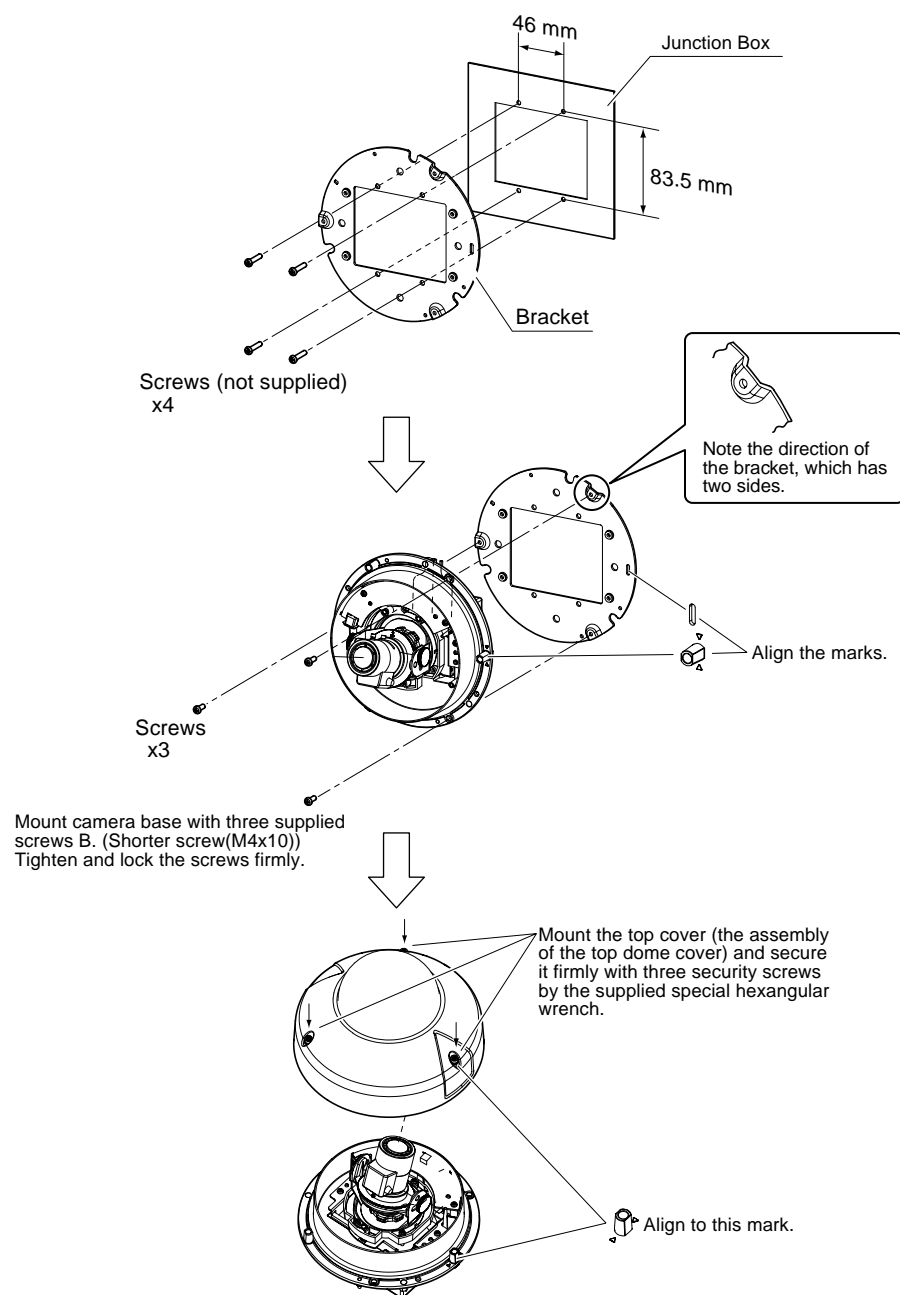
## 6-2 Installing the Camera Unit

### 6-2-1 Installation to Wall or Ceiling with Mounting Base (Surface Mount Installation)

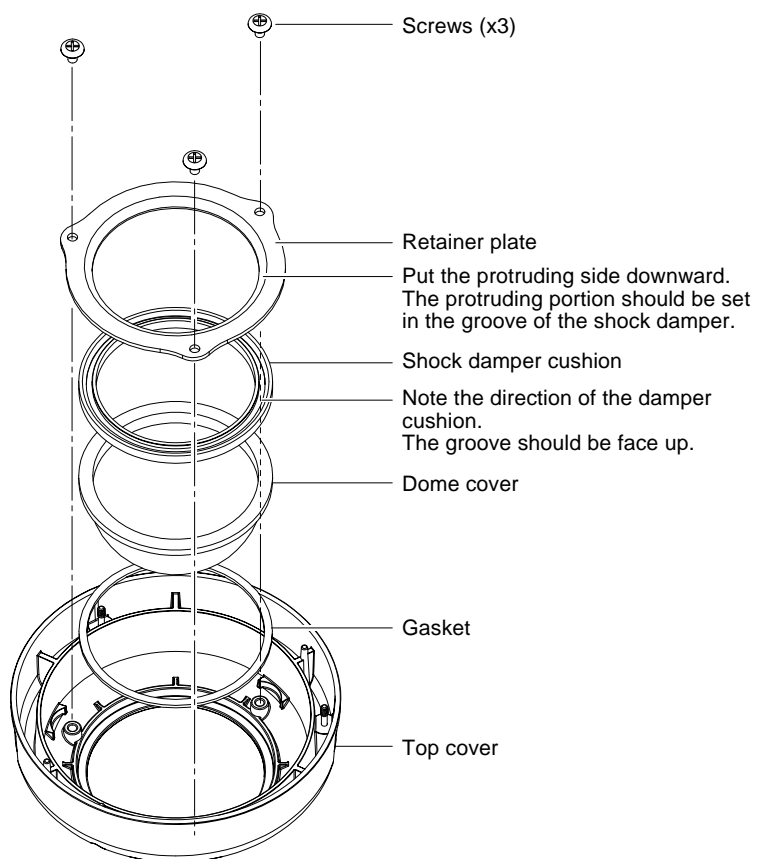
- When installing the camera unit on the wall, mount it with the drain groove on the downside. Do not block the drain groove.
- When installing the camera unit outdoor, make waterproof for the cables. The camera body is water-resistant but the brackets are not water-resistant.



## 6-2-2 Installation to Junction Box with Bracket (Flush Mount Installation)



### 6-2-3 Change of Dome Cover



#### Dome replacement

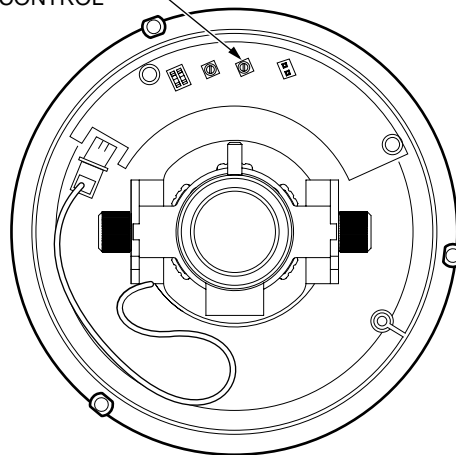
When the dome cover is damaged or to be replaced by a transparent cover, call your distributor or sales person. Firmly tighten three mounting screws. Take care not to let dirt or foreign object enter between the parts.

## 7. LINE LOCK PHASE

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When a video switcher switches two or more cameras, the picture may fluctuate on the video monitor due to the different AC line phase of each camera. In this case, adjust the V PHASE controller to get a stable image.

Line Lock V PHASE CONTROL



## 8. NOTE ON USE AND INSTALLATION

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- **Do not aim the camera at the sun**  
Do not aim the camera at the sun or point it at sun even if you are not shooting.
- **Do not shoot intense light**  
Intense light such as a spotlight may cause a bloom or smear. A vertical stripe may appear on the screen. However, this is not a malfunction.
- **Treat the camera with care**  
Do not drop the camera or subject it to strong shock of vibration. Otherwise, the camera may malfunction.
- **Never touch internal parts**  
Do not touch the internal parts of the camera other than the parts specified. Otherwise, the camera may malfunction.
- **Do not splash water on the camera**  
Install the camera where the camera can be kept dry. If the camera gets wet, turn off the power and contact your dealer.
- **Check the ambient temperature and humidity**  
Avoid using the camera where the temperature is hotter or colder than specified. Otherwise, the quality of images may deteriorate or internal parts may be affected. Special care is required to use the camera at high temperature and humidity.
- **Should you notice any trouble**  
If any trouble occurs while you are using the camera, turn off the power and contact your dealer. If you continue to use the camera when there is something wrong with it, the trouble may much worse and an unpredictable accident may occur.

## 9. IN CASE OF PROBLEMS

| Condition  | Check Points  |
|--|---|
| No image   | <ul style="list-style-type: none"><li>• Are the camera and connected equipment turned on?</li><li>• Are cables connected correctly?</li></ul>   |
| Unnatural color                                  | <ul style="list-style-type: none"><li>• Is the monitor TV adjusted correctly?</li><li>• Is the lighting too weak?</li></ul>   |
| The image is out of focus.<br>The image is dark. | <ul style="list-style-type: none"><li>• Is the lens focus adjusted?</li><li>• Is the lens or cover dirty?</li><li>• Are there any large barrier or bright illumination near the camera?</li><li>• Is the lens iris adjustment volume correctly set?</li></ul> |

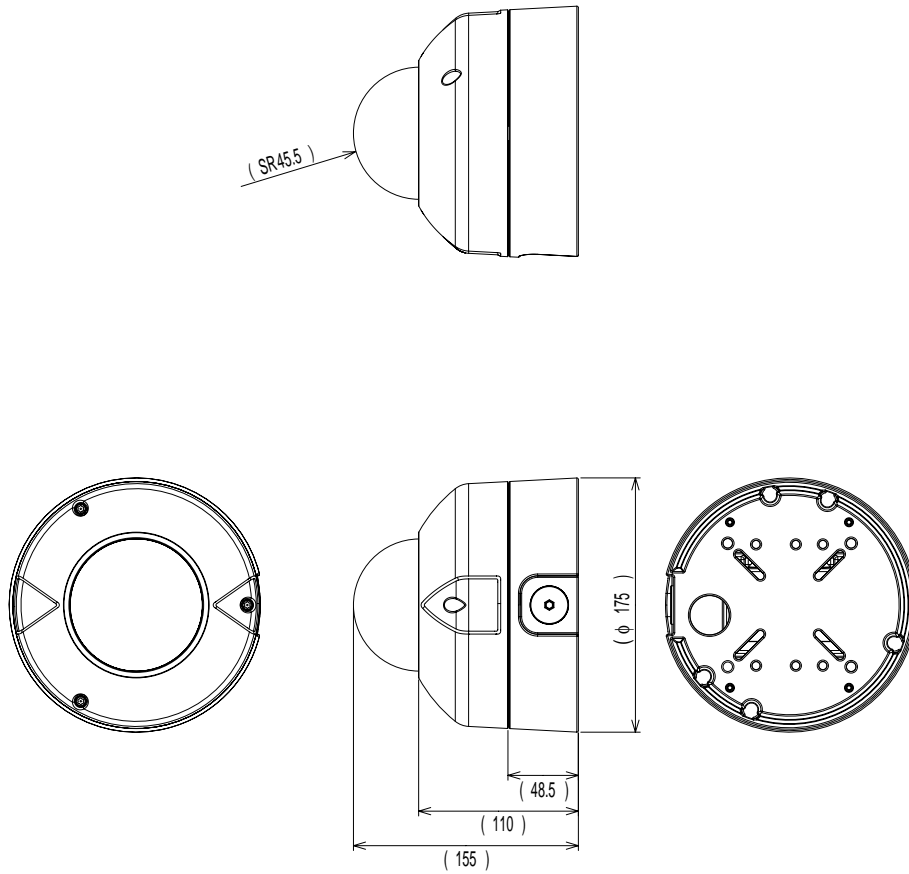
## 10. SPECIFICATIONS

|                                     |   |
|-------------------------------------|---|
| 1. Image System                     |   |
| Image Device                        | 1/3" IT CCD   |
| Pixel Elements                      | 771 (H) x 492 (V)   |
| 2. Electrical                       |   |
| TV System                           | 2:1 Interlace, 15.734KHz Horizontal, 59.94Hz Vertical   |
| Horizontal Resolution               | 480 TV lines  |
| S/N Ratio                           | 50dB (TYP. White 100%, Weight On, SC TRAP ON)   |
| Minimum Illumination                | 0.2 lux (More than 10% of image output, Clear dome cover)<br>0.4 lux (More than 10% of image output, Tint dome cover) |
| Auto Gain Control (AGC)             | Average AGC (24dB)  |
| Iris Control Mode                   | Auto Iris Lens  |
| White Balance                       | Auto  |
| White Balance Range                 | 2500°K ~ 10000°K  |
| Line lock Vertical phase adjustment | Provided (VR : range 300deg)  |
| Gamma compensation                  | 0.45  |
| Backlight Compensation (BLC)        | On / Off (DIP-SW)   |
| Video Output Signal                 | VBS (1.0Vp-p, 75ohm unbalance, BNC)   |
| Synchronization System              | Internal for DC or Linelock for AC  |
| 3. Mechanical                       |   |
| Weight                              | Camera : 1.3kg, Mounting Base : 0.6kg,<br>Bracket : 0.2kg   |
| Dimension                           | Camera : 170mm (D) x 150mm (H)<br>with Mounting Base : 175mm (D) x 155mm (H)  |
| 4. Optical                          |   |
| Built-in Lens                       | Vari-focus Lens<br>f=3.0 ~ 8.0mm, F1.0 (Wide) /F1.45 (Tele) : Auto Iris   |
| View Angle                          | Wide : 117.3° (D), 90.8° (H), 66.6° (V)<br>Tele : 45.2° (D), 36.2° (H), 27.0° (V)                                     |
| Focus Length                        | 0.2m ~ ∞  |
| 5. Power                            |   |
| Input Voltage                       | DC12V or AC24V  |
| Power Consumption                   | 3.0W  |
| 6. Environmental                    |   |
| Operating Temperature               | -10°C~50°C 90%RH max  |
| Storage Temperature                 | -20°C~60°C 70%RH max  |
| Water proof:IP66                    |   |
| 7. Regulation                       |   |
| Safety                              | UL2044  |
| Dust and Water Resistance           | IP66  |
| Emission                            | FCC Class A / DOC ClassA  |

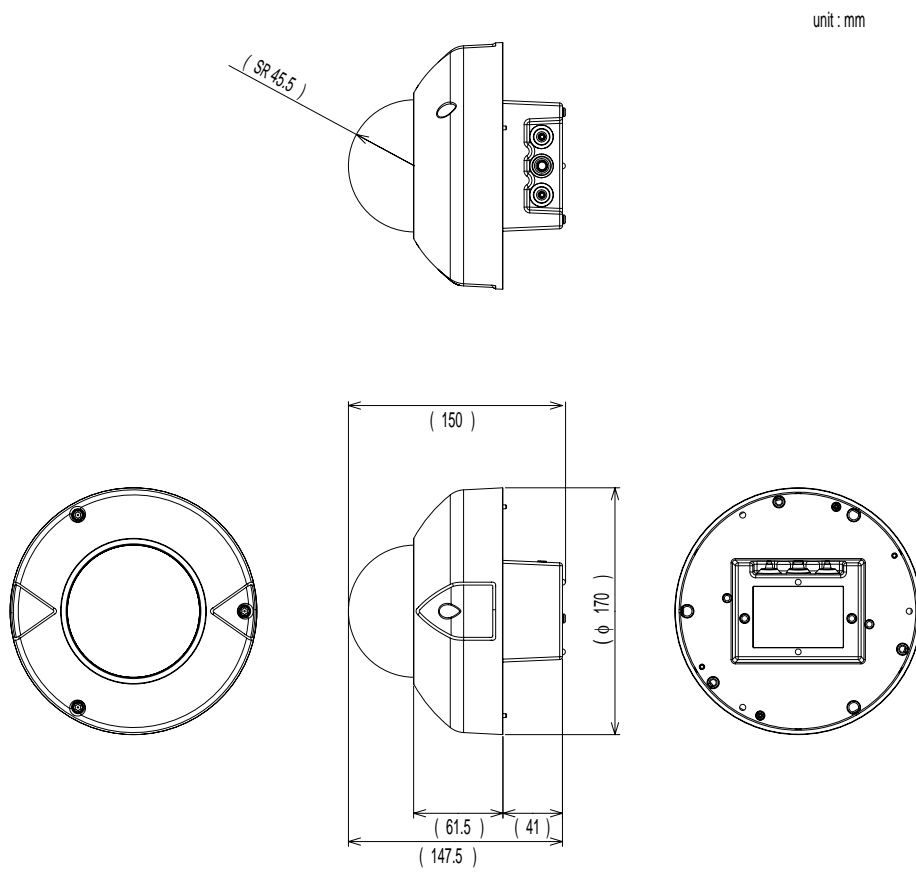
Design and specifications are subject to change without notice.

## 11. EXTERIOR VIEW

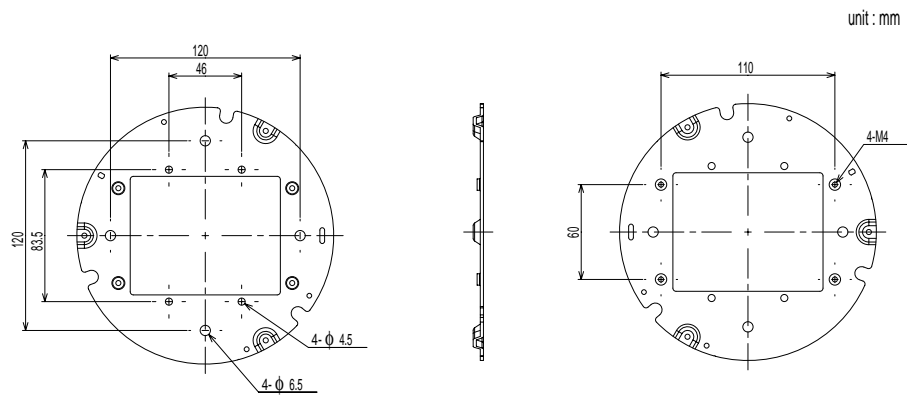
unit : mm



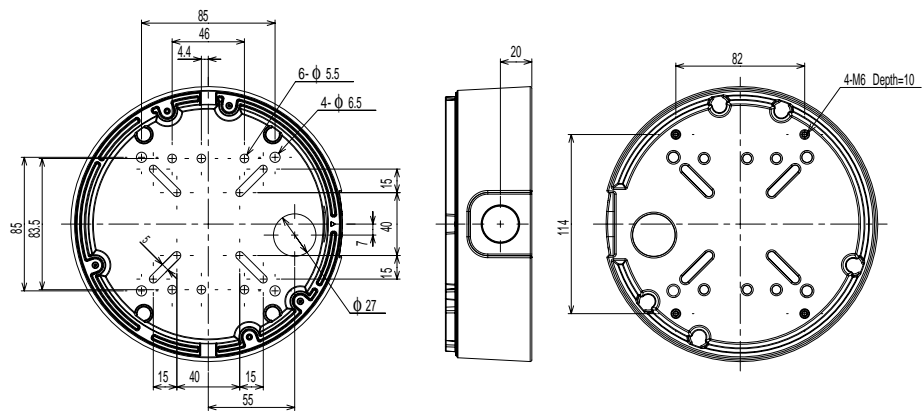




## ■ Bracket



## ■ Mounting Base



## LIMITED WARRANTY CCD SECURITY CAMERA

The Imaging Systems Division of Toshiba America Information Systems, Inc. ( "ISD" ) makes the following limited warranties with regard to this CCD Camera ( "Product" ). These limited warranties extend to the Original End-User ( "You[r]" ).

**Three (3) Years Limited Warranty of Labor and Parts** ISD warrants that this Product will perform in accordance with specifications for a period of three (3) years from the date of purchase by the Original End-User. During this three (3) years period, ISD will repair or replace the Product, if it does not perform as warranted. In order to take advantage of this Limited Warranty, You must: (a) deliver the Product to an ISD Authorized Service Provider ( "ASP" ); and (b) pay all transportation and insurance charges for shipment of the Product to the ASP. ISD reserves the right to substitute factory refurbished parts in place of those in need of repair.

**Instruction Manual (Owner's Manual):** You should read the Instruction Manual (Owner's Manual) thoroughly before operating this Product. Before seeking warranty service, you should check the troubleshooting guide in the Instruction Manual (Owner's Manual) and follow the instructions to correct the problem.

**How to Obtain Warranty Service Step-by-step Procedures:** To obtain warranty service, You should:

1. Contact Toshiba at (877) 855-1349 for operation or installation assistance. (877) 855-1FIX
2. Contact an ASP for warranty service within thirty (30) days after the Product fails to comply with specifications.
3. Arrange for shipment of the Product to a Toshiba Authorized Service Provider.
4. Securely pack the Product in the original carton and external shipping pack, include a letter explaining the problem with a copy of the bill of sale or proof of purchase.
5. Prepay all transportation and insurance costs.

**Questions?** If you have any questions, please check our web site at <http://www.toshiba.com/taisisd/security/>

**Your Responsibilities:** This Limited Warranty is subject to the following conditions:

1. You must provide the bill of sale or proof of purchase at the time that warranty service is required.
2. You must notify an ASP within thirty (30) days after you discover that the product does not perform in accordance with specifications during the Limited Warranty period.
3. All Warranty Service of this product must be by an ISD Authorized Service Provider.
4. You must pack the Product in its original carton using the original packing material, then insert the original carton containing the Product into another carton with additional packing material before shipping the Product to an ASP.

### DISCLAIMERS:

ALL OTHER EXPRESS OR IMPLIED WARRANTIES ON THIS PRODUCT, INCLUDING THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, ARE HEREBY DISCLAIMED. SOME STATES DO NOT ALLOW THE EXCLUSION OF IMPLIED WARRANTIES OR LIMITATIONS ON HOW LONG AN IMPLIED WARRANTY LASTS, SO THE ABOVE LIMITATIONS MAY NOT APPLY TO YOU.

IF THIS PRODUCT IS NOT IN GOOD WORKING ORDER AS WARRANTED ABOVE, YOUR SOLE AND EXCLUSIVE REMEDY SHALL BE THE REPAIR OR REPLACEMENT OF THE PRODUCT. IN NO EVENT WILL ISD OR ITS PARENT COMPANY OR ANY ASP BE LIABLE TO YOU OR ANY THIRD PARTY FOR ANY DAMAGES IN EXCESS OF THE PURCHASE PRICE OF THE PRODUCT. THIS LIMITATION APPLIES TO DAMAGES OF ANY KIND, INCLUDING ANY DIRECT OR INDIRECT DAMAGES, LOST PROFITS, LOST SAVINGS OR OTHER SPECIAL, INCIDENTAL, EXEMPLARY OR CONSEQUENTIAL DAMAGES, WHETHER FOR BREACH OF CONTRACT, TORT OR OTHERWISE, OR WHETHER ARISING OUT OF THE USE OF OR INABILITY TO USE SUCH PRODUCT, EVEN IF TAIS, ITS PARENT COMPANY, OR AN ASP HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES OR OF ANY CLAIM BY ANY OTHER PARTY. SOME STATES DO NOT ALLOW THE EXCLUSION OR LIMITATION OF INCIDENTAL OR CONSEQUENTIAL DAMAGES FOR SOME PRODUCTS, SO THE ABOVE LIMITATIONS OR EXCLUSIONS MAY NOT APPLY TO YOU.

THIS WARRANTY GIVES YOU SPECIFIC LEGAL RIGHTS, AND YOU MAY ALSO HAVE OTHER RIGHTS WHICH MAY VARY FROM STATE TO STATE.

THIS LIMITED WARRANTY SHALL BE VOID IF THE PRODUCT OR PARTS HAVE BEEN SUBJECTED TO MISUSE, ABUSE, ACCIDENT, IMPROPER INSTALLATION, IMPROPER MAINTENANCE, OR USE IN VIOLATION OF ISD'S WRITTEN INSTRUCTIONS, OR WHERE THE PRODUCT HAS BEEN ALTERED OR MODIFIED WITHOUT ISD'S PRIOR AUTHORIZATION, OR UPON THE REMOVAL OR ALTERATION OF ISD'S FACTORY SERIAL NUMBER. LABOR SERVICE CHARGES FOR PRODUCT INSTALLATION, SET UP AND ADJUSTMENT OF CONTROLS ARE NOT COVERED BY THIS LIMITED WARRANTY.

No person, agent, distributor, dealer, authorized service provider, or company is authorized to change, modify, or extend the terms of this Limited Warranty in any manner whatsoever. The time within which an action must be commenced to enforce any obligation of ISD arising under this Limited Warranty or under any statute, or law of the United States or any state thereof, is hereby limited to three (3) years from the date You discovered should have discovered the problem. This limitation does not apply to implied warranties arising under state law. Some states do not permit limitation of the time within which You may bring an action beyond the limits provided by state law, so the above provision may not apply to You. This Limited Warranty gives You specific legal rights and You may also have other rights which vary from state to state.

**TOSHIBA AMERICA INFORMATION SYSTEMS, INC.**  
Imaging Systems Division

# TOSHIBA