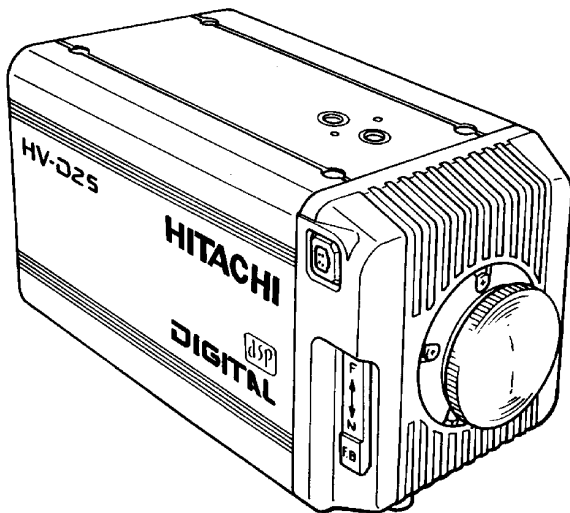


3-CCD Color Camera

MODEL HV-D25

OPERATION MANUAL



Please read this operation manual carefully for proper operation, and keep it for future reference.

Note: The model and serial numbers of your product are important for you to keep for your convenience and protection. These numbers appear on the nameplate located on the bottom of the product. Please record these numbers in the spaces provided below, and retain this manual for future reference.

Model No. _____

Serial No. _____

Hitachi Denshi, Ltd.

IMPORTANT SAFETY INSTRUCTIONS

1. Read Instructions

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

2. Retain Instructions

The safety and operating instructions should be retained for future reference.

3. Heed Warnings

All warnings on the product and the operating instructions should be adhered to.

4. Follow Instructions

All operating and use instructions should be followed.

5. Cleaning

Unplug this product from the wall outlet before cleaning. Do not use liquid cleaners or aerosol cleaners. Use a damp cloth for cleaning.

6. Attachments

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

7. Water and Moisture

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

9. Moving

A product and cart combination should be moved with care.

Quick stops, excessive force, and uneven surfaces may cause the product and cart combination to overturn.

10. Ventilation

Slots and openings in the cabinet are provided for ventilation and to ensure reliable operation of the product and to protect it from overheating, and these openings must not be blocked or covered.

The openings should never be blocked by placing the product on a bed, sofa, rug, or other similar surface. This 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.

11. Power Sources

This 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 home, consult your product dealer or local power company. For products intended to operate from battery power, or other sources, refer to the operating instructions.

12. Grounding or Polarization

This product is equipped with a three-wire grounding-type plug a plug having a third (grounding) pin. This plug will only fit into a grounding-type power outlet. This is a safety feature. If you are unable to insert the plug into the outlet, contact your electrician to replace your obsolete outlet. Do not defeat the safety purpose of the grounding-type plug.

13. Power-Cord Protection

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

14. Lightning

For added protection for this product during a lightning storm, or when it is left unattended and unused for long periods of time, unplug it from the wall outlet. This will prevent damage to the product due to lightning and power-line surges.

15. Overloading

Do not overload wall outlets, extension cords or integral convenience receptacles as this can result in a risk of fire or electric shock.

16. Object and Liquid Entry

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

17. Inflammable and Explosive Substance

Avoid using this product where there are gases, and also where there are inflammable and explosive substances in the immediate vicinity.

18. Heavy Shock or Vibration

When carrying this product around, do not subject the product to heavy shock or vibration.

19. Servicing

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

20. Damage Requiring Service

Unplug this product from the wall outlet 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 product.
- If the product has been exposed to rain or water.
- If the product does not operate normally by following the operating instructions. Adjust only those controls that are covered by the operating instructions as an improper adjustment of other controls may result in damage and will often require extensive work by a qualified technician to restore the product to its normal operation.
- If the product has been dropped or damaged in any way.
- When the product exhibits a distinct change in performance-this indicates a need for service.

21. Replacement Parts

When replacement parts are required, be sure the service technician has used replacement parts specified by the manufacturer or have the same characteristics as the original part.

Unauthorized substitutions may result in fire, electric shock, or other hazards.

22. Safety Check

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

23. Wall or Ceiling Mounting

The product should be mounted to a wall or ceiling only as recommended by the manufacturer.

24. Heat

The product should be situated away from heat sources such as radiators, heat registers, stoves, or other products (including

amplifiers) that produce heat.

1. Alle Anweisungen lesen.

Vor Betrieb des Erzeugnisses sollten alle Sicherheits- und Bedienungsanleitungen gelesen werden.

2. Die Anweisungen aufbewahren.

Die Sicherheits- und Bedienungsanleitungen sollten fünftigen Bezug aufbewahrt werden.

3. Warnungen beachten.

Die Warnungen auf dem Erzeugnis und in den Bedienungsanleitungen sollten beachtet werden.

4. Anweisungen befolgen.

Alle Bedienungsanleitung- und

Verwendungsanweisungen sollten befolgt werden.

5. Reinigung

Den Stecker des Geräts vor Reinigung aus der Steckdose ziehen. Keine flüssigen Reinigungsmittel oder Aerosolreiniger verwenden. Zum Reinigen einen feuchten Lappen verwenden.

6. Zubehör

Nur vom-Hersteller des Erzeugnisses empfohlenes Zubehör verwenden, da es sonst zu Störungen kommen kann.

7. Wasser und Feuchtigkeit

Dieses Erzeugnis nicht in der Nähe von Wasser verwenden - z.B. in der Nähe einer Badewanne, eines Waschbeckens, einer Küchenspüle, eines Waschzubers, in einem nassen Keller, in der Nähe eines Schwimmbeckens usw.

8. Aufstellung

Das Erzeugnis nicht auf einen instabilen Wagen, Stand, Dreifuß, Träger oder Tisch stellen.

Das Erzeugnis kann sonst herunterfallen und ein Kind oder einen Erwachsenen schwer verletzen.

Außerdem kann das Gerät schwer beschädigt werden. Nur mit einem Wagen, Stand, Dreifuß, Träger oder Tisch verwenden, der vom Hersteller empfohlen oder mit dem Erzeugnis verkauft worden ist. Für jegliche Anbringung sollten die Anweisungen des Herstellers befolgt werden, und das vom Hersteller empfohlene Anbringungszubehör sollte verwendet werden.

9. Eine Kombination von Erzeugnis und Wagen sollte vorsichtig bewegt werden.

Schneller Halt, übermäßige Krafteinwirkung und unebene Oberflächen können Umkippen der Kombination von Erzeugnis und Wagen verursachen.

10. Ventilation

Schlitze und Öffnungen im Gehäuse dienen der Ventilation. Sie sind für zuverlässigen Betrieb des Gerätes und Schutz vor Überhitzung erforderlich und dürfen nicht blockiert oder abgedeckt werden.

Die Öffnungen sollten niemals dadurch blockiert werden, daß, das Gerät auf ein Bett, ein Sofa, einen Teppich oder eine ähnliche Oberfläche gestellt wird.

Das Gerät sollte nur dann in Einbauinstallation wie in einem Bücherschrank oder einem Gestell verwendet werden, wenn angemessene Ventilation vorgesehen ist bzw. Die Anweisungen des Herstellers befolgt worden sind.

11. Stromversorgung

Dieses Erzeugnis sollte nur an der auf dem Typenschild angegebenen Stromversorgungsart betrieben werden. Wenn Sie nicht sicher sind, was für eine Stromversorgung Sie haben, so wenden Sie sich bitte an Ihren Erzeugnishändler oder an das lokale Elektrizitätswerk. Beziehen Sie sich für Batteriebetrieb oder andere Stromquellen vorgesehene Erzeugnisse bitte auf die Bedienungsanleitungen.

12. Erdung oder Polarisierung

Dieses Erzeugnis ist mit einem Schutzkontaktstecker mit drei Leitern ausgerüstet, mit einem Erdungskontakt. Dieser Stecker paßt nur in ein schuko-Steckdose. Dies ist eine Sicherheitsmaßnahme. Wenn Sie den Stecker nicht in die Steckdose stecken können, so wenden Sie sich bitte an ihren Elektriker, damit er die veraltete Schutz des Schutzkontaktsteckers unwirksam.

13. Netzkabelschutz

Netzkabel sollten so verlegt werden, daß möglichst nicht darauf getreten wird und daß sie nicht eingeklemmt werden, mit besonderer Beachtung der Kabel an Stackern, Verlängerungskabeln und dem Austritt des Kabels aus dem Erzeugnis.

14. Blitzschlag

Für zusätzlichen Schutz des Erzeugnisses während eines Gewitters oder bei Nichtverwendung für lange Zeit den Stecker aus der Steckdose ziehen. Dies verhindert Beschädigung durch Blitzschlag und Netzspannungsstöße.

15. Überlastung

Wandsteckdosen, Verlängerungskabel und eingebaute Bequemlichkeitssteckdosen nicht überlasten, da dies Feuer oder elektrischen Schlag verursachen kann.

16. Eindringen von Fremdkörpern und Flüssigkeit

Niemals Objekte irgendwelcher Art durch die Öffnungen in das Gerät schieben, da diese unter hoher Spannung stehende Teile berühren oder kurzschließen können, wodurch es zu Feuer oder elektrischem Schlag kommen kann. Niemals Flüssigkeiten irgendwelcher Art auf das Erzeugnis verschütten.

17. Entflammare und explosive Substanzen

Vermeiden Sie Verwendung dieses Erzeugnisses an Orten mit Gasen bzw. entflammaren oder explosiven Substanzen in der direkten Umgebung.

18. Starke stöße oder Vibrationen

Setzen Sie das Erzeugnis beim Transport nicht starken Stößen oder Vibrationen aus.

19. Wartung

Versuchen Sie nicht, dieses Erzeugnis Selbst zu warten, da Sie sich durch Öffnen bzw. Entfernen von Abdeckungen hohen Spannungen und sonstigen Gefährdungen aussetzen können.

Beziehen Sie sich für jegliche Wartung auf qualifiziertes Wartungspersonal.

20. Beschädigung, die Wartung erfordert

Ziehen Sie den Stecker dieses Erzeugnisses aus der Steckdose und wenden Sie sich an qualifiziertes Wartungspersonal, wenn eine der folgenden Bedingungen vorliegt:

- a. Wenn das Netzkabel oder der Stecker beschädigt ist.
- b. Bei Eindringen von Flüssigkeit oder Fremdkörpern in das Gerät.
- c. Wenn das Erzeugnis Regen oder Wasser ausgesetzt worden ist.
- d. Wenn das Erzeugnis bei Befolgen der Bedienungsanleitungen nicht normal funktioniert.

Nur die Regelelemente verstellen, die in den Bedienungsanleitungen behandelt werden, da unangemessene Einstellung anderer Regelelemente Beschädigung verursachen kann und oft beträchtliche Arbeit durch einen qualifizierten Techniker erfordert, um das Erzeugnis wieder, zu normalem Betrieb zurückzubringen.

- e. Wenn das Erzeugnis fallen gelassen oder beschädigt worden ist.
- f. Wenn das Erzeugnis eine klare Änderung in der Leistung zeigt-dies weist darauf hin, daß Wartung erforderlich ist.

21. Ersatzteile

Wenn Ersatzteile erforderlich sind, darauf achten, daß der Wartungstechniker nur die vom Hersteller festgelegten Ersatzteile oder Teile mit den gleichen Charakteristiken wie die ursprünglichen Teile verwendet. Unautorisierte Ersatzteile können Feuer, elektrischen Schlag oder sonstige Gefährdungen verursachen.

22. Sicherheitsprüfung

Bitten Sie den Wartungstechniker nach der Vollendung von Wartung oder Reparaturarbeiten an diesem Erzeugnis um die Durchführung von Sicherheitsprüfungen, um zu bestimmen, daß das Erzeugnis im angemessenen Betriebszustand ist.

23. Anbringung an der Wand oder an der Decke

Das Erzeugnis sollte nur entsprechend den Empfehlungen des Herstellers an einer Wand oder an der Decke angebracht werden.

24. Wärme

Das Erzeugnis sollte fern von Wärmequellen wie Radiatoren, Heizwiderständen, Öfen und anderen Wärme erzeugenden Erzeugnissen (einschließlich Verstärkern) aufgestellt werden.

1. Lire les instructions

Lire toutes les instructions de sécurité et de fonctionnement avant de faire fonctionner l'appareil.

2. Conserver ces instructions

Conserver les instructions de sécurité et de fonctionnement à des fins de référence ultérieure.

3. Tenir compte des avertissements

Tous les avertissements qui figurent sur l'appareil et dans le mode d'emploi devront être respectés.

4. Observer les instructions

Observer toutes les instructions de fonctionnement et d'utilisation.

5. Nettoyage

Avant de procéder au nettoyage, débrancher l'appareil de la prise secteur. Ne pas utiliser de produits de nettoyage liquides ou en aérosol.

Nettoyer l'appareil avec un chiffon humide.

6. Fixations

Ne pas utiliser de fixations non recommandées par le fabricant de l'appareil car elles pourraient être source de danger.

7. Eau et humidité

Ne pas utiliser l'appareil à proximité d'eau-par exemple près d'une baignoire, d'un lavabo, d'un évier ou d'un bac à lessive, dans un sous-sol humide, ou près d'une piscine, etc.

8. Accessoires

Ne pas placer l'appareil sur un chariot, un socle, un pied, un support ou une table instables. L'appareil pourrait tomber, blessant grièvement des enfants ou des adultes, et étant sérieusement endommagé.

Utiliser exclusivement le chariot, le socle, le pied, le support ou la table recommandés par le fabricant, ou vendus avec l'appareil. Pour tout montage de l'appareil, respecter les instructions du fabricant, et utiliser à cette fin l'accessoire de montage recommandé par le fabricant.

9. L'appareil monté sur son chariot devra être déplacé avec précaution.

Des arrêts brusques, une force excessive et des surfaces irrégulières pourraient provoquer le renversement de l'ensemble appareil-chariot.

10. Ventilation

Les fentes et les ouvertures du coffret sont prévues pour la ventilation ainsi que pour garantir un fonctionnement en toute sécurité de l'appareil et le protéger de toute surchauffe, et ces ouvertures ne devront donc être ni obstruées ni recouvertes.

Ne jamais obstruer les ouvertures en plaçant l'appareil sur un lit, un sofa, un tapis ou toute surface similaire. Ne jamais placer l'appareil dans un support confiné, par exemple une bibliothèque ou une étagère, sans ventilation suffisante ou sans respecter les instructions du fabricant.

11. Sources d'alimentation

L'appareil devra être alimenté exclusivement sur le type d'alimentation indiqué sur l'étiquette signalétique. Si l'on n'est pas sûr du type d'alimentation du local, consulter le revendeur de l'appareil ou la compagnie d'électricité locale. Pour les appareils qui fonctionnent sur batterie ou sur d'autres sources, voir le mode d'emploi.

12. Mise à la terre ou polarisation

L'appareil est doté d'une fiche trifilaire avec mise à la terre, dont la troisième broche assure la mise à la terre. Cette fiche ne rentrera que dans les prises trifilaires de mise à la terre. Ceci est une mesure de sécurité. Si la fiche ne rentre pas dans la prise, faire remplacer la prise défectueuse par un électricien.

Ne pas rendre vaine la mesure de sécurité assurée par cette prise avec mise à la terre.

13. Protection du cordon d'alimentation

Acheminer les cordons d'alimentation de façon qu'on ne risque pas de marcher dessus ou de les coincer sous un objet placé dessus ou contre eux.

Faire particulièrement attention aux fiches des cordons, à la proximité des prises, et à l'endroit où ils ressortent de l'appareil.

14. Foudre

Pour renforcer la protection de l'appareil pendant un orage, ou si l'on s'en éloigne ou qu'on reste longtemps sans l'utiliser, le débrancher de la source d'alimentation. Ceci permettra d'éviter tout dommage de l'appareil dû à la foudre et aux surtensions de ligne.

15. Surcharge

Ne pas surcharger les prises, rallonges et prises multiples car cela pourrait entraîner un risque de feu ou de choc électrique.

16. Pénétration d'objets et de liquides

Ne jamais enfoncer d'objets d'aucune sorte dans les ouvertures de l'appareil car ils pourraient toucher des points de tension dangereuse ou court-circuiter des pièces, ce qui pourrait provoquer un feu ou un choc électrique. Ne jamais renverser de liquide d'aucune sorte sur l'appareil.

17. Substances inflammables et explosives

Eviter d'utiliser l'appareil en présence de gaz, ainsi qu'à proximité immédiate de substances inflammables et explosives.

18. Chocs ou vibrations violents

Lorsqu'on transporte l'appareil, ne pas le soumettre à des chocs ou des vibrations violents.

19. Réparations

Ne pas tenter de réparer l'appareil soi-même car le fait d'ouvrir ou de retirer les caches risque d'exposer l'utilisateur à des tensions dangereuses notamment. Confier toute réparation à un personnel qualifié.

20. Dommages nécessitant réparations

Débrancher l'appareil de la source d'alimentation et confier les réparations à un personnel qualifié dans les cas suivants:

- Lorsque le cordon d'alimentation ou sa fiche sont endommagés
- Si du liquide s'est renversé sur l'appareil ou que des objets sont tombés dedans
- Si l'appareil a été exposé à la pluie ou à l'eau.
- Si l'appareil ne fonctionne pas normalement lorsqu'on observe les instructions d'utilisation.

Ne régler que les commandes couvertes par le mode d'emploi ; en effet, un réglage incorrect des autres commandes pourrait entraîner des dommages et nécessiteront souvent des travaux de réparation coûteux par un technicien qualifié pour remettre l'appareil en état de marche.

e. Si l'appareil est tombé ou qu'il a été endommagé.

f. Si l'appareil affiche une nette modification de ses performances, cela signifie qu'il a besoin d'être réparé.

21. Pièces de rechange

Si l'on a besoin de pièces de rechange, veiller à ce que le technicien de réparation utilise exclusivement les pièces de rechange spécifiées par le fabricant ou des pièces ayant les mêmes caractéristiques que les pièces d'origine. Les pièces de rechange non autorisées risquent de provoquer un feu, un choc électrique et autres dangers.

22. Vérification de sécurité

Après tout travail d'entretien ou de réparation de l'appareil, demander au technicien de réparation d'effectuer les vérifications de sécurité pour s'assurer que l'appareil est en bon état de marche.

23. Montage au mur ou au plafond

L'appareil ne pourra être monté au mur ou au plafond que de la manière recommandée par le fabricant.

24. Chaleur

Eloigner l'appareil des sources de chaleur, telles que radiateurs, appareils de chauffage, cuisinières, et de tout produit engendrant de la chaleur (y compris les amplificateurs).

IMPORTANT NOTICE

For USA

These products have 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 product 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.

WARNING

Changes or modifications not expressly approved by Hitachi Denshi responsible for compliance could void the user's authority to operate the equipment.

For Canada

This product does not exceed the class A/class B limits for radio noise emissions from digital apparatus as set out in the radio interference regulations.

Le présent appareil n'émet pas de bruits radioélectriques dépassant les limites applicables aux appareils numériques de classe A prescrites dans le règlement sur le brouillage radioélectrique édicté par le ministère des communications du Canada.

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Standard composition

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* Part code

Overview

The HV-D25 is a 3 CCD color camera featuring advanced picture quality and high stability. Each 1/2-inch CCD has 410,000 (470,000 PAL) picture elements (pixels), while the circuits from processor to encoder are organized onto a single semiconductor chip. The precision C mount prism optics provide physical compatibility with a broad selection of general and special purpose lenses.

The exclusive 13-bit digital processor and flexible picture quality compensating functions result from extensive experience in the fields of broadcast and industrial color cameras. Top level engineering gives this camera performance quality unmatched in previous analog cameras.

Features

- C mount
The C mount has become a de facto standard among industrial cameras. Together with the built-in flangeback adjustment mechanism, the camera can accept both off-the-shelf lenses and sophisticated special-purpose optical systems.
- Unitized signal processor
The entire circuit from processor to encoder is organized into a single high density (0.5 μ m precision) LSI chip that conserves both space and power. Moreover, the 10 bit A/D converter and 13 bit signal processor provide high signal to noise ratio and wide dynamic range.
- High resolution
Precision matching of the 1/2-inch 410,000 pixel (470,000 PAL) CCDs with microlenses, plus digital double speed luminance signal processing achieve a horizontal resolution of 800 TV lines (luminance channel).

- Digital processing enables wide array of functions

Desired hue and tint can be adjusted with 6-vector independently variable masking. Even at wide dynamic range, auto-knee and dynamic chroma can provide superbly colored images.

The versatile detail compensating functions allow optimum contour compensation to match the scene.

- Intelligent automatic level control (ALC)

Digital light metering of either the overall image or an iris gate with variable size and position, computer chip driven automatic gain control (AGC), lens iris and auto electronic shutter (AES) provide comprehensive control with respect to a wide variation in light. The ALC level setting is also variable.

- Three application files

Different setting data according to the application and scene can be stored in 3 application files.

- Bi-directional data communication

The camera can be connected to a personal computer via RS-232C for two-way data communications to provide finely detailed camera control. An identification (ID) code can be assigned to each camera in a system and allow remotely controlling multiple cameras from a single computer.

Notes to users

Important safety notes

- Use this camera with a 12 VDC power supply.
- Observe that flammable objects, water or metal do not enter the camera interior. These may lead to failure or accident.
- Do not modify the camera or use the camera with external covers removed. These may cause failure, void any warranties and pose a safety hazard.
- Stop using the camera at the approach of an electrical storm (thunder audible). Protect the camera from rain if using it outdoors.
- In event the camera shows any abnormality, switch off the camera and disconnect the power cord. Contact a Hitachi Denshi service representative.

Operating considerations

- Power supply

Check that the supplied voltage is between 10.5 and 17 VDC. Inadequate voltage can affect color fidelity and cause noise, while voltage over 17 V can damage the camera.

- Connectors

Confirm the power is off before connecting or disconnecting a signal cable. Grasp connectors by the body, not the attached wires.

● Lens

The correct lens is important for deriving optimum performance from the camera. Consult a Hitachi Denshi dealer for a selection of fine lenses according to the application.

● Installation and storage sites

The following types of environment can impair performance, lead to damage, pose safety hazards and shorten the useful life of the camera. Select the sites for installing the storing the camera carefully.

- Direct sunlight, rain or snow
- Flammable or corrosive gasses
- Very hot or cold (beyond -10 to 45 operating, -20 to 60 storage)
- Humid or dusty
- Exposed to vibration or shock
- Strong electrical or magnetic fields
- Exceptionally strong light

Continuous operation

In situations where the camera is used continuously for long periods of time, the ambient temperature should be kept below 40 in order to avoid accelerated deterioration of internal parts and to derive maximum long-term reliability.

Cleaning

- A photographers blower or lens brush can be used for clearing dust from the lens and optical filters.
- Wipe dust from the case with a soft dry cloth. If soiling is severe, moisten the cloth with a solution of neutral detergent. Afterwards, wipe the cover with a dry cloth.
- Do not use petroleum distillates, alcohol or spray type cleaners.

Transportation

Remove the lens (install lens mount cap) and other attachments. Pack the camera carefully in its original or equivalent container. Use ample cushioning to protect the camera from physical shock.

CCD properties

The following phenomena are inherent to a charge coupled device imaging element and do not indicate malfunction.

1) Smear and blooming

Vertical bands are visible when a strong light enters the scene. Adjust the camera aiming direction carefully to avoid strong direct or reflected light.

2) Fixed pattern noise

High ambient temperature can cause fixed pattern noise to appear throughout the scene.

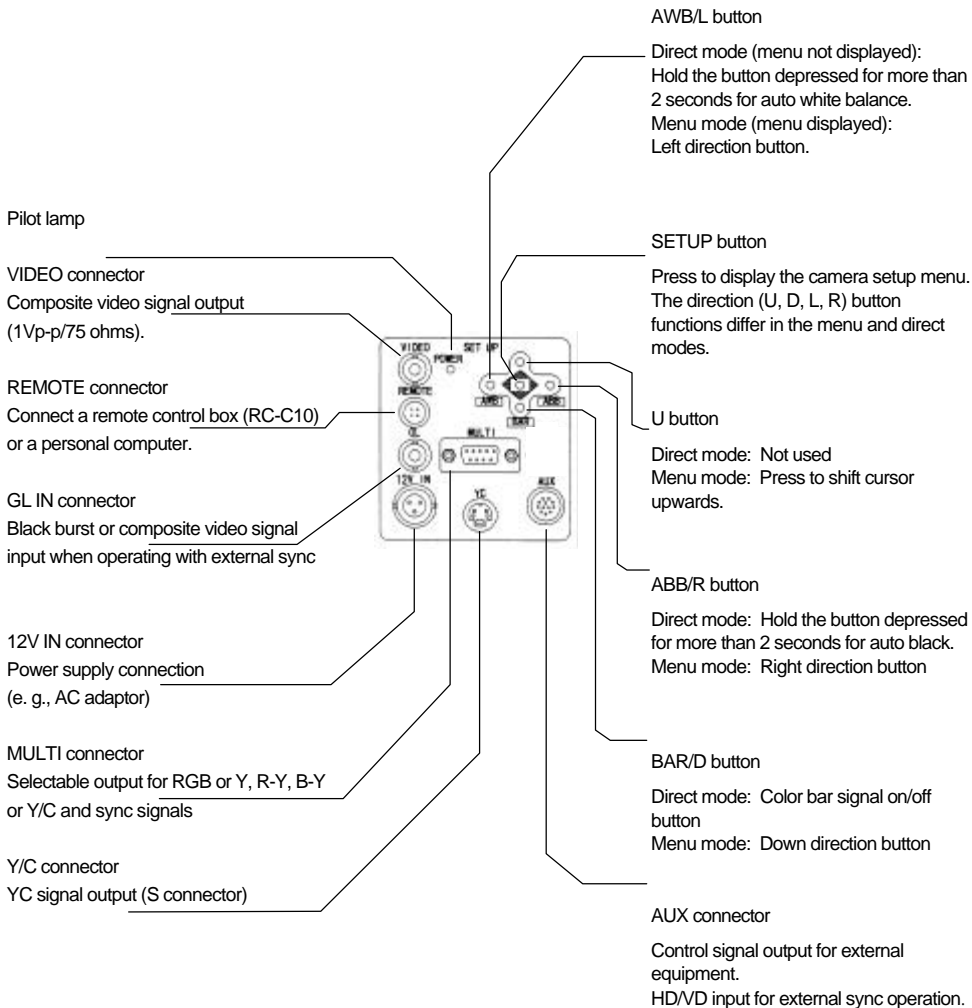
3) Moire

Interaction between patterns can produce an additional "phantom" pattern to appear. The CCD picture elements (pixels) are arranged in a pattern, which can interact with a pattern in the scene (e.g., a performer wearing a finely striped necktie) to result in a Moire pattern. The effect should be considered when selecting costumes, props and other scene elements.

4) Ghosting

Strong direct or reflected light near an object of interest can cause ghosting of the object to appear in the picture. The effect is more obtrusive with certain iris settings and lens types. Select the scene layout and camera pointing direction carefully in order to avoid this effect.

Rear panel facilities

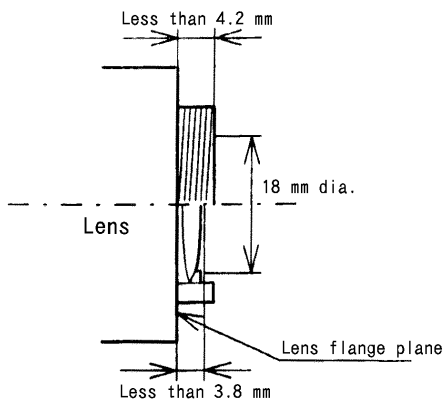


For details of each connector, refer to the description of connectors (p. 34).

Note when choosing the lens

The figure indicates the limiting dimensions of the lens mounting structure. Use care, since an improper lens fitting can damage both the lens and the camera.

- 1) The C mount threads must be less than 4.2 mm from the flange plane.
- 2) An 18 mm diameter segment of the lens optical axis center must be less than 3.8 mm from the flange plane.



Lens selection

1) Optical characteristics

The proper lens is vital for obtaining full performance from the camera. The exit pupil distance is particularly important for a 3 CCD type camera. If too short, vertical color shading can appear in the picture.

Also, as the lens iris approaches fully open, problems such as loss of resolution, shading and flare (overall image "white-out") can detract from picture quality. When using in applications that call for open iris, the following lenses are recommended. If another lens is contemplated, check the performance beforehand.

Maker	Lens type	Rating
Cosmicar	H20ZAME-R	7.5 - 75 mm F1.2
	C10ZBME-R	10.5 - 105 mm F1.4
Fujinon	S10×8DB-SNDS21	8 - 80 mm F1.6
Canon	J7×10BCMAS	10 - 70 mm F2.1

2) Auto iris lens

Main types are Video (with self contained iris amplifier) and DC (DC voltage applied to open lens iris) and manual over-ride (e.g., Cosmicar). Lenses without self-contained iris amplifier are not compatible.

Camera settings differ according to the auto iris lens type (see page 23).

Note:

The HV-D25 uses lens connector wiring prescribed by the EIAJ (Electronic Industries Association of Japan). Refer to page 48

Flangeback adjustment

If focus cannot be adjusted after replacing the lens or at the telephoto and wide angle extremes of a zoom lens, the flangeback can be adjusted. Open the lens iris and adjust as described below.

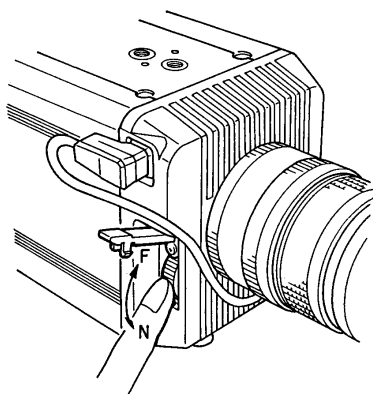
Fixed focus lens

Set the lens focus ring to infinity and pickup an image more than 20 meters distant. While observing the picture, adjust the focus by turning the flangeback ring in the F or N direction.

Zoom lens

- 1) Set the lens to telephoto and pickup an image more than 3 meters distant. Turn the focus ring to adjust the focus.
- 2) Set the lens to wide angle and while using care not to disturb the focus ring, turn the flangeback ring to adjust the focus.

Repeat the above steps until focus is obtained at both the telephoto and wide angle ends.



Video signal type lens adjustment

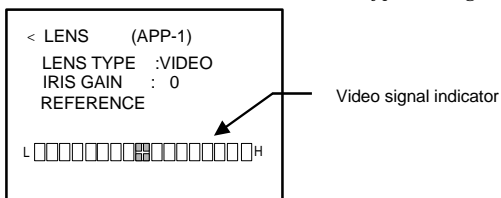
Adjustment is required after replacing the lens or if using the camera for the first time.

1) Preparation

- (1) Release the AGC mode (set the main menu Gain to Normal, High or Max).
- (2) If the light source has a flicker component (e.g., fluorescent or mercury lighting), change the electronic shutter mode (Sub-menu 1 Shutter or Variable) to reduce the flicker.
- (3) Adjust the white balance.

2) Adjustment

Hold the U button depressed and press Setup for about 2 seconds to display the Special Set menu. Change to the Lens screen and check the Lens Type setting. If DC, change this to Video.



Video mode menu screen

- (1) Set the lens ALC control fully toward the average (Av) position.
- (2) If auto iris hunting occurs, reduce the Iris Gain setting.
- (3) Adjust the lens level control to highlight the central marker of the video signal level indicator.
- (4) If the camera video signal detection level is optimum the + marker is highlighted. If larger than optimum the right of + is highlighted and if lower the left is highlighted.

3) Lens adjustment difficult or impossible

- (5) Video signal level indication unstable
- (6) Unstable indication can occur if the light source has flicker component e. g., fluorescent or mercury lighting , change the electronic shutter mode (Sub- menu 1 shutter or Variable) to reduce the flicker.
- (7) Lens Level control fully at Hi, but auto iris inoperative Reduce the Iris Gain setting.
- (8) Lens Level control fully at Low, but auto iris inoperative Increase the Iris Gain setting.
- (9) Auto iris operates, but scene is dark. Even if lens Level control is adjusted the mark to the left of the + mark is highlighted.
- (10) Boost the gain. Set main menu Gain to High or Max and Sub-menu Gain High to 1 10 dB or Gain Max to 11 20 dB in order to raise the sensitivity.

Note:

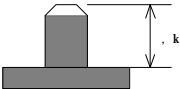
The video signal level indicator sensitivity is high in order to increase lens adjustment accuracy. Operate the lens Level control slowly.

Camera mounting

The camera is provided with threaded screw holes at the top and bottom. These allow mounting to either a tripod or a mounting bracket.

Screw type

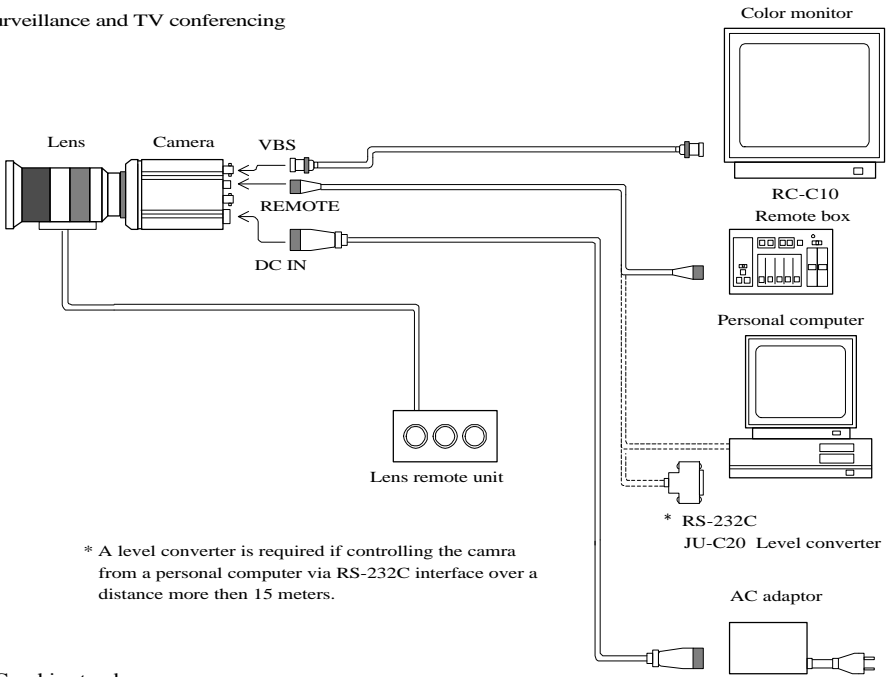
U 1/4-20
Length: 4.5 to 6 mm



Screws longer than 6 mm can cause internal damage, while less than 5 mm prevents secure fastening and risks dropping to cause damage and injury.

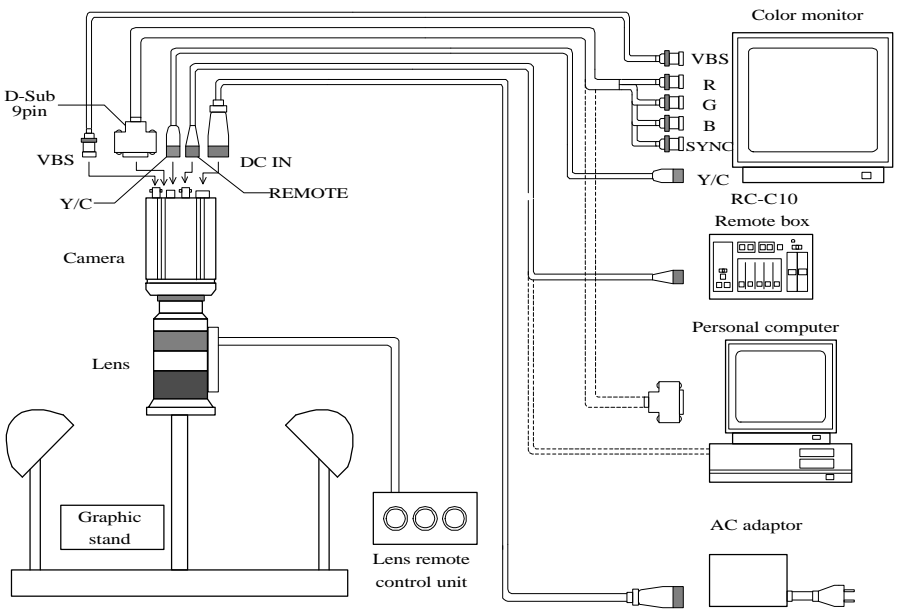
System examples

Surveillance and TV conferencing

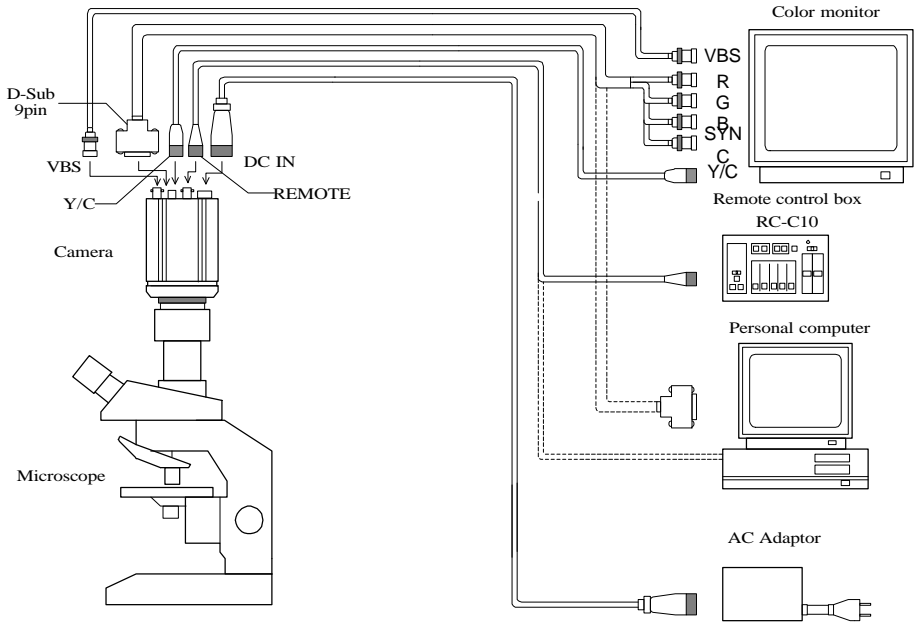


* A level converter is required if controlling the camera from a personal computer via RS-232C interface over a distance more than 15 meters.

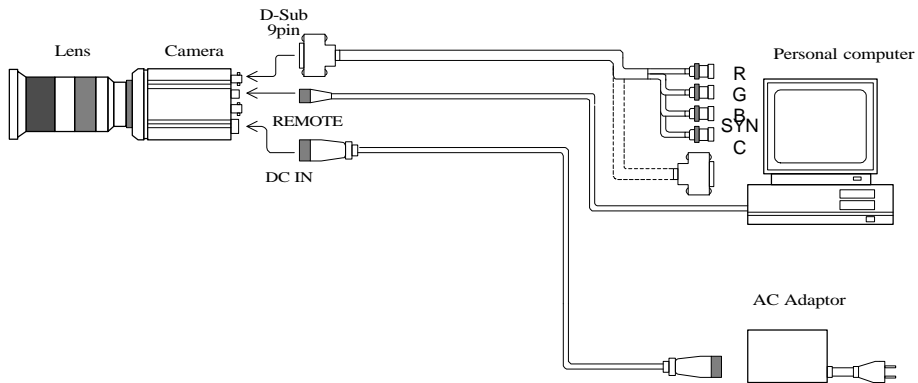
Graphic stand camera



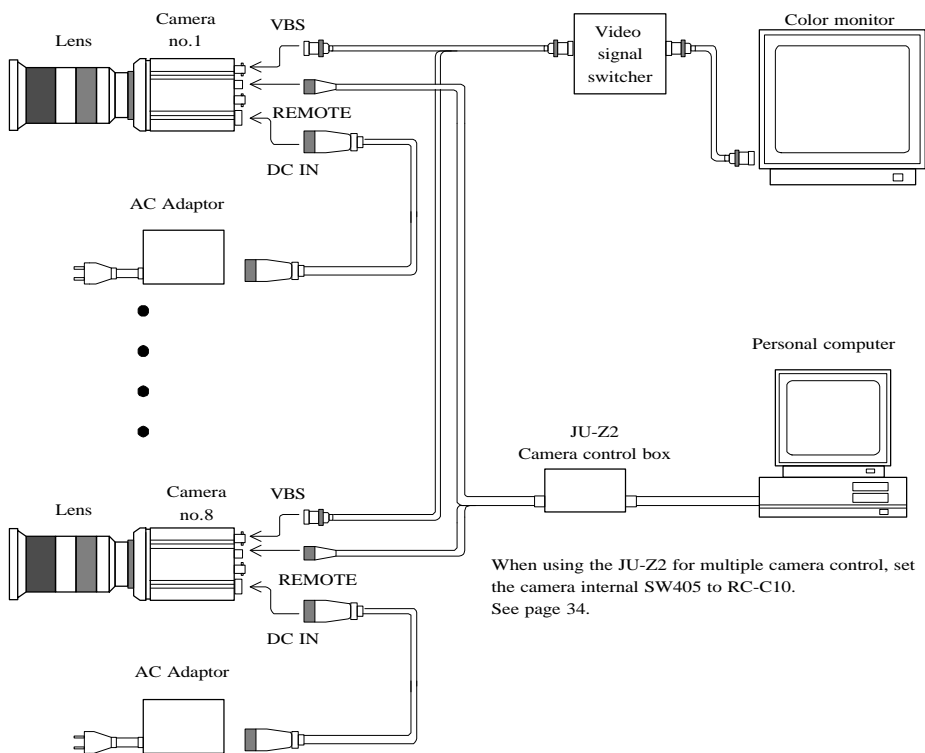
Microscope system



Computer image processing



Multi-camera computer control



When using the JU-Z2 for multiple camera control, set the camera internal SW405 to RC-C10. See page 34.

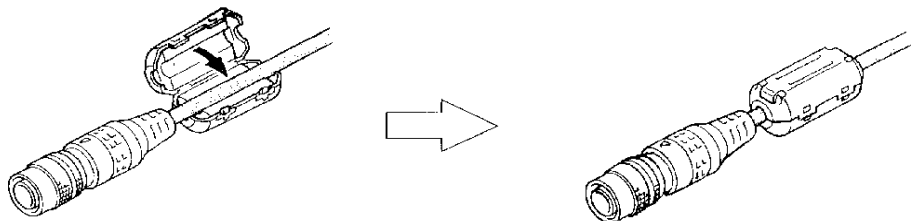
Notes When Using Cables

- AUX Cable

Use double shielded type cable.

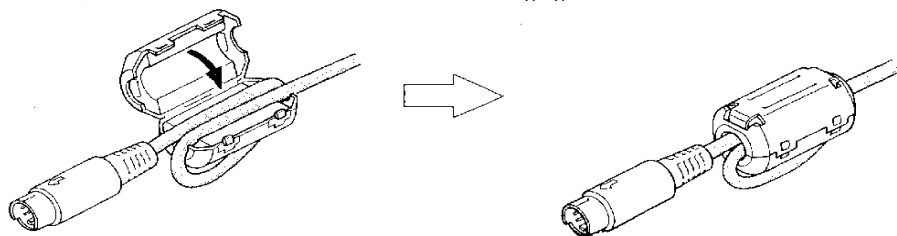
- RC Cable

As shown in the following figure, install clamp filter (ZCAT 2035-0530 : TDK) at camera end .



Y/C Cable

Use after winding a cable around a clamp filter (NTSC: ZCAT2035-0930 TDK) (PAL: ZCAT2436-1330 TDK) once at camera end as shown in the following figure.



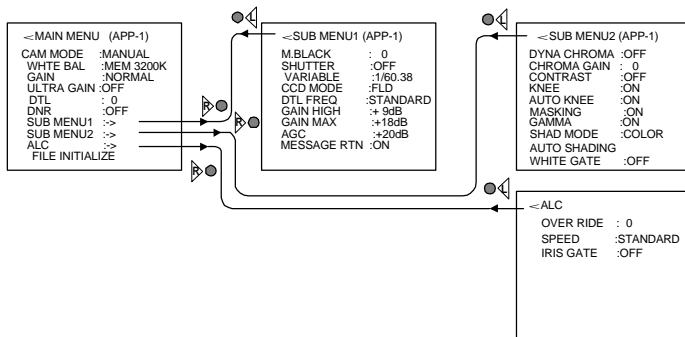
1. Menu Structure

For settings in the camera, the MAIN and SPECIAL menus are available.

1-1 MAIN Menu Structure

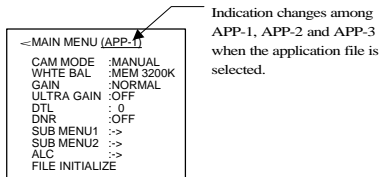
Press the SEUTP button and MAIN MENU appears on the screen to indicate the main menu mode. Again press the SETUP button to extinguish the menu and enter the direct mode. There are a main function setup menu and three sub-menus, which are arranged hierarchically as shown below. On the MAIN menu, bring the cursor to SUB MENU 1, SUB MENU 2 or ALC and press the R button, and the desired subsidiary menu will come up. To return to the MAIN menu from the SUB menu 1, SUB menu 2 or ALC, bring the cursor to the top line (title line of SUB MENU 1, SUB MENU 2 or ALC) and press the L button.

On each menu screen, bring the cursor to any desired item using the U or D button. For mode change/data setting, use the L or R button.



At the first line of the main menu, press the R and L buttons to select the application file.

The indication changes to show the selected file.

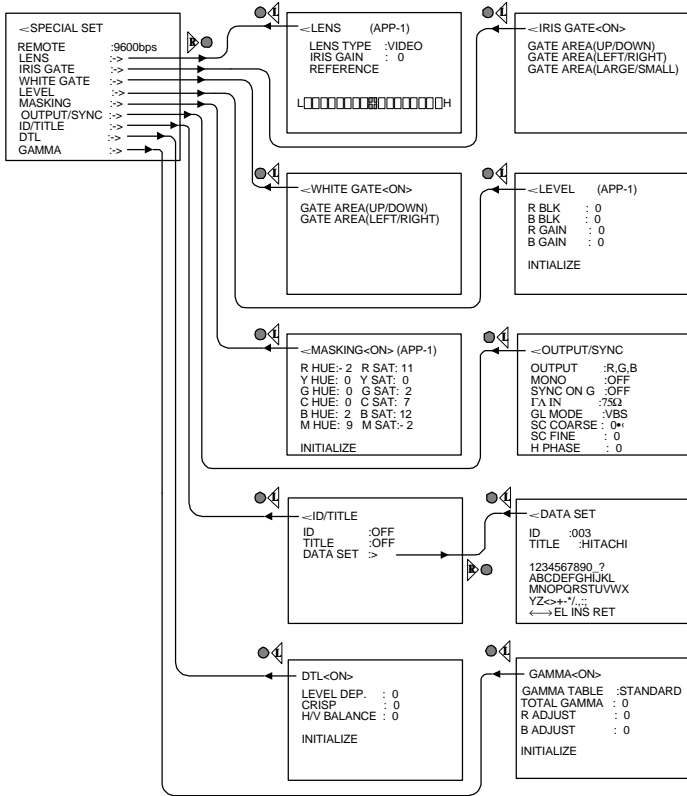


Refer to Page 31 for a detailed description of the application file.

1-2 SPECIAL Menu Structure

To select the SPECIAL SET mode, press the SETUP button for 2 seconds while holding down the U button. Thus, the SPECIAL SET menu can be displayed. To return to the DIRECT mode, press the SETUP button again. The SPECIAL SET menu indicates a list of items, and each special items subsidiary menus are available. These menus are arranged hierarchically as shown below. On the SPECIAL SET menu, most items have '-'>' mark at the right side. For these items, press the R button, and the relevant item setup menu will come up. To return to the SPECIAL SET menu, bring the cursor to the top line (title line of each subsidiary menu) and press the L button.

On each menu screen, bring the cursor to any desired item using the U or D button. For mode change/data setting, use the L or R button.



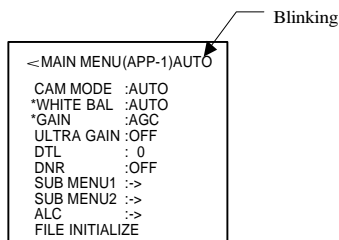
2. MAIN MENU

CAM MODE: Camera mode

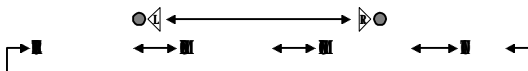
- **MANUAL** : Nearly all function modes can be set. Use for detailed settings.
- **AUTO** : Video level and white balance are automatic and a standard picture can be observed without detailed settings.

Asterisk (*) indicates a fixed setting and the cursor jumps to the next item. The Auto indication flashes when a function is related to the auto mode. At the Lens menu, the shutter mode changes according to the Lens Type setting.

Menu	Function and Mode
MAIN MENU	WHITE BAL :AUTO
	GAIN :AGC
SUB MENU 1	SHUTTER :AES
	VARIABLE :Not settable
	CCD MODE :FLD
	GAIN HIGH :Not settable
	GAIN MAX :Not settable
SUB MENU 2	KNEE :ON
	AUTO KNEE :ON
	GAMMA :ON
LENS	LENS TYPE :Not settable
	(LENS TYPE :VIDEO)
	REFERENCE :Not settable
LEVEL	R BLK :Not effective
	B BLK :Not effective
	R GAIN :Not effective
	B GAIN :Not effective



2) WHITE BAL: White balance mode



PRST 3200K: The white balance condition is optimized at a color temperature of 3200K.

MEM 3200K: White balance is automatically adjusted by the direct mode AWB button. Use in the color temperature range from halogen to fluorescent lighting.

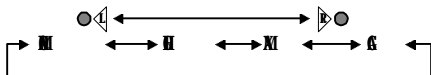
MEM5600K: White balance is automatically adjusted by the direct mode AWB button. Use in the high color temperature range from xenon to mercury lighting.

AUTO: The white balance condition is set through realtime auto white balancing (automatic tracking).

Note: If selecting MEM 3200K and MEM 5600K, set to the direct mode (extinguish the menu) and press the AWB button for auto white balance adjustment.

In the Auto CAM mode, white balance is fixed at AUTO.

3) GAIN:Gain mode

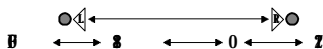


- **NORMAL:** The gain level is set to 0 dB.
- **HIGH:** The gain level is set to a value specified at GAIN HIGH on the SUB menu 1.
- **MAX:** The gain level is set to a value specified at GAIN MAX on the SUB menu 1.
- **AGC:** An increase in gain is controlled automatically. The upper limit of gain to be increased corresponds to a value specified at AGC on the SUB menu 2. In the Auto CAM mode, gain is fixed at AGC.

4) ULTRA GAIN:ULTRA GAIN ON/OFF

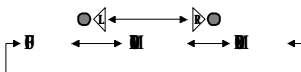
The on setting increases the sensitivity about 12 dB (but there is some loss of resolution).

5) DTL:DTL level setup



The DTL level can be set to OFF or in a range of -128 to 127. The degree of contour correction increases in the positive value setting, and it decreases in the negative value setting. For zero (0) setting, hold down both the L and R buttons for approx. two seconds. However, if setting is OFF, 0 is not set over if the buttons are pressed.

6) DNR:Digital noise reduction mode



OFF, MODE 1 or MODE 2 is selectable. In MODE 2, noise becomes lower than that in MODE 1 but a feel of image resolution becomes lower slightly.

8) SUB MENU 1:The SUB menu 1 is brought up.

9) SUB MENU 2:The SUB menu 2 is brought up.

10) ALC:The ALC is brought up.

10) FILE INITIALIZE>Returns main menu items of application file to factory settings.

Simultaneously press the L and R buttons for about 2 seconds to initialize the selected application file. The Special menu items are not initialized.

3. SUB MENU 1

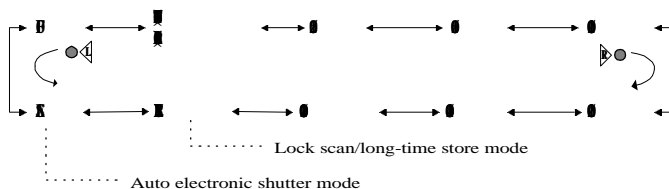
1) M BLACK:Master black level setting

The master black level can be set in a range of -128 to 127. Pressing the R button increases a set value to make the black level higher, and pressing the L button decreases a set value to make the black level lower. For zero (0) setting, hold down both the L and R buttons for approx. two seconds.

2) SHUTTER:Electronic shutter mode

The electronic shutter setting is changed over as shown below. When VARIABLE is selected, a shutter speed specified at VARIABLE is used in operation.

In the Auto camera mode, if the Lens Type is set to DC, the shutter mode defaults to AES. If Lens Type is set to Video, default is to Off



(Note):1. If the Lens Type is Video, the AES mode cannot be used. If using a manual iris lens, set the Lens Type to DC and the Iris Mode to Manual in order to use AES.

If the iris opening is proportional to the DC voltage (with manual over-ride), set the Lens Type to DC and the Iris Mode to Auto.

2. In the AES mode, the CCD operates in FLD mode even if set to FRM.

3) VARIABLE:Variable electronic shutter speed setting



- 8 1/30 1/25:PAL :Long-time store mode

The camera delivers intermittent video signal output. So, to view continuous images, it is required to use the video memory. A clear image can be attained even if the subject is illuminated with a faint light source. As the store time increases, the degree of after-image becomes higher.

(Note) With an increase in store time, the degree of characteristic pattern noise, white scratch, etc. of the CCD image sensor will become higher.

- 1/60.38 (1/50.31: PAL) 1/251.5 (1/253.8: PAL):Lock scan mode

When an image of a subject display screen having a different scan frequency is taken, a bright or dark horizontal bar appears to roll up or down the screen.

When the shutter speed is Variable, operation is at the speed selected by the Variable setting (see below). In the Auto CAM mode, the shutter is set to AES.

The shutter speed can be adjusted to where the horizontal bars are minimized in the display.

(Note) If the display screen scanning frequency is less than 60Hz (50Hz PAL), the rolling horizontal bars cannot be stopped. Not settable in the Auto CAM mode.

4)CCD MODE:CCD store mode changeover

- **FLD:** The field store mode operation is performed (for ordinary purpose of application).
- **FRM:**Frame store mode operation is performed. The vertical resolution can be increased but the degree of after-image becomes slightly higher. It is therefore recommended to use the FRM function when taking a still image.

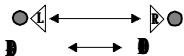
(Note) When the shutter mode is AES, even if set to frame, the camera operates in the field mode. In the Auto CAM mode, The CCD mode is set to FLD.

5)DTL FREQ:DTL amplifying frequency changeover.



- **LOW:**The lower band frequency is amplified.
- **STANDARD:**The standard amplification is performed.
- **HIGH:**The high band frequency is amplified. Finer contour correction is carried out.

6) GAIN HIGH:Gain setting in GAIN HIGH mode (At the time of AGC:OFF mode)



The gain level can be set in a range of +1 to +10 dB.

Cannot be set in the Auto CAM MODE.

7) GAIN MAX:Gain setting in GAIN MAX mode (At the time of AGC:OFF mode)

The gain level can be set in a range of +11 to +20 dB.

Cannot be set in the Auto CAM MODE.

8) AGC:Upper gain limit setting in AGC mode (At the time of AGC:ON mode)

The upper limit of gain increase in AGC operation can be set in a range of +6 to +20 dB.

9) MESSAGE RTN:Message display ON/OFF

- **ON :**A message indicating the result of AWB/ABB execution in the DIRECT mode is displayed.
- **OFF:**A message indicating the result of AWB/ABB execution in the DIRECT mode is not displayed.

4. SUB MENU 2

1) DYNA CHROMA:Dynamic chroma ON/OFF

With knee on, setting the dynamic chroma on improves coloration in bright portions of the scene.

2) CHROMA GAIN:Level setting in chroma signal

The chroma signal level can be set in the range of -128 to +127. Respectively press the R button to increase and the L button to decrease the chroma signal level. Set the level to 0 by simultaneously pressing both L and R buttons for about 2 seconds.

3) CONTRAST:Contrast OFF/NORMAL/HIGH

Contrast can be set in two steps of Normal and High.

HIGH enhances the contrast more than NORMAL.

4) KNEE:KNEE ON/OFF

The on setting provides natural gradation in bright portions.

Knee is fixed to on in the Auto CAM mode.

5) AUTO KNEE:AUTO KNEE ON/OFF

At the on setting, gradation in bright components is automatically optimized even with scene changes.

6) MASKING:Masking ON/OFF

At the on setting, the overall screen gradation is set by the Special Set Masking menu.

Standard setting is on.

7) GAMMA:Gamma ON/OFF

Gamma on/off setting. In the Auto CAM mode, gamma is fixed at on.

8) SHAD MODE:Auto shading compensation mode

Color: Auto shading compensation acts to minimize vertical color shading.

Luminance: Compensation acts to equalize individual R, G and B video signal level components in the picture vertical.

9) AUTO SHADING:Automatic shading correction is carried out.

Pressing the R button performs automatic shading correction. For details, refer to 'How to Attain Better Images' (p. 33).

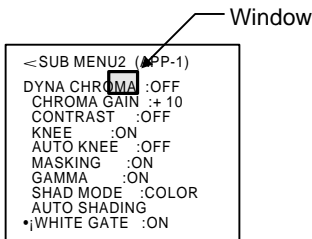
10) WHITE GATE:White gate ON/OFF

ON: In realtime auto white balance operation or execution of memory auto white balance, a video signal appearing in the window on screen is detected for white balancing.

In the MENU mode, the window is presented over the video signal. For the setting procedure, refer to 'WHITE GATE Menu of SPECIAL SET Menu' (p. 25).

Even under WHITE GATE:ON condition, the window disappears when the cursor is moved to another item. In the DIRECT mode, the window does not appear but white balance control is conducted by the white gate function.

OFF: A video signal of the entire image is detected for carrying out white balance control. The window does not appear.



5. ALC

1) OVER RIDE:Auto iris level setting

The auto iris level can be set in a range of -128 to +127. Pressing the R button increases a value of auto iris level to open the lens iris more. Pressing the L button decreases it to close the lens iris more. For zero (0) setting, hold down both the L and R button for approx. two seconds.

2) Speed:Set AGC and AES operating rate.



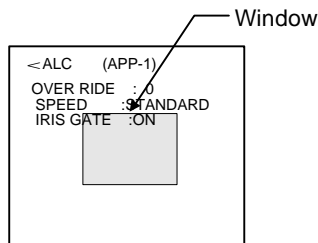
Settings are Slow, Standard and Fast.

3) IRIS GATE:Iris gate ON/OFF

- ON:**A video signal appearing in the window on screen is detected for AGC and lens/auto electronic shutter ALC control. In the MENU mode, the window is presented over the video signal. For the setting procedure, refer to 'IRIS GATE Menu' of 'SPECIAL SET Menu' (p. 25).

Even under IRIS GATE:ON condition, the window disappears when the cursor is moved to another item. In the DIRECT mode, the window does not appear but ALC control is conducted by the iris gate function.

- OFF:**A video signal of the entire image is detected for carrying out ALC control. The window does not appear

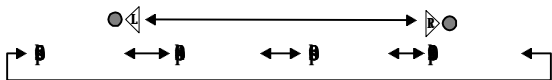


6. SPECIAL SET

1) REMOTE: Remote control baud rate setting

For baud rate setting, use the L and R buttons.

(Note) When setting a baud rate, do not connect the communication cable with the REMOTE terminal.



- 62500bps: Select this baud rate when using the RC-C10 remote control box. In this case, be sure to also set the RC-C10 baud rate to 62500 bps. Refer to the RC-C10 operating instructions.
- 19200bps, 9600bps, 4800bps: Select any one of these baud rates when controlling the camera from a personal computer through RS-232C interfacing. For details, refer to 'Function Selection by Internal Switch Setting'. Contact us for details of the control procedure using a personal computer. Technical documents including protocol data will be supplied.

2) LENS: Change to LENS menu.

3) IRIS GATE: Change to IRIS GATE menu.

4) WHITE GATE: Change to WHITE GATE menu.

5) LEVEL: Change to LEVEL menu.

6) MASKING: Change to Masking menu.

7) OUTPUT/SYNC: Change to OUTPUT/SYNC menu.

8) ID/TITLE: Change to ID/TITLE menu.

9) DTL: Change to DTL menu.

10) GAMMA: Change to GAMMA menu.

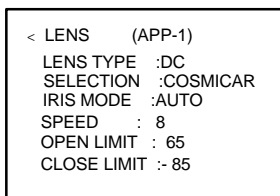
7. LENS

Menu for setting the lens functions

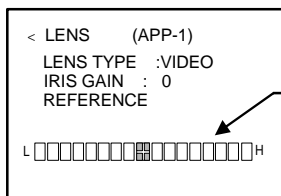
1) LENS Type: Sets type of auto iris.

- DC :Iris opens in proportion to a DC control voltage. Also set to DC when not using an automatic iris.
 - Video: Lens iris is controlled by the video signal.
- (Note) Auto electronic shutter (AES) cannot be used in the Video mode.

The menu screen changes according to the Lens Type setting.



DC mode menu screen



Video signal level indicator

Video mode menu screen

2) SELECTION: Sets iris control voltage (Lens Type is DC mode).

- Cosmucar: Control voltage is 1.5 to 5.5 V (e.g., Cosmucar with manual over-ride).
- Others: Control voltage is 2.5 to 7.5 V.

3) IRIS MODE:Sets lens iris mode (Lens Type is DC mode).

- Auto: Setting for using auto iris.

(Note) Be sure to set the Open Limit and Close Limit when using the camera for the first time or after replacing the lens.

- Manual: Setting for manual iris and special optics, e.g., microscope.

(Note) Be sure to set the Iris Mode when combining AGC and AES.

4) SPEED: Sets auto iris speed (Lens Type is DC mode).

Set in a range of 1 to 15 where hunting is not produced. Press R to increase and L to decrease the setting. Hold button depressed for continuous change. Simultaneously press R and L for about 2 seconds to set to 8.

5) OPEN Limit: (Lens Type is DC mode.)

Set to where the camera recognizes the iris is fully open. Observe the iris and adjust in the range from Close Limit +1 to 127 to precisely where the iris is fully open. Press R to increase and L to decrease the setting. Press the L and R buttons simultaneously for about 2 seconds to set to 65 for Cosmucar or 127 for Others.

Since picture quality deteriorates as the iris approaches fully open, Open Limit can be set to where this does not occur.

(Notes)

1. Before this adjustment, set Gain to Normal and Shutter to Off. Return the previous settings after adjusting.
2. Open Limit needs to be set properly for normal AGC coupled operation.

6) CLOSE Limit: (Lens Type is DC mode.)

Observe the iris and adjust to precisely the largest value (smallest diameter). The setting range is from -128 to Close Limit -1. Press R to increase and L to decrease the setting. Press L and R buttons simultaneously for about 2 seconds to set to -85 for Cosmimar or to -65 for Others.

Notes:

- 1 Before this adjustment, set Gain to Normal and Shutter to Off. Return the previous settings after adjusting.
- 2 Close Limit needs to be set properly for normal AES coupled operation.

7) IRIS GAIN: Iris control voltage gain adjustment (Lens Type is Video mode).

Adjustment is required when replacing a Video type lens or if using the camera for the first time. The setting range is from -10 to 10. Press R to increase and L to decrease the setting. Simultaneously press the L and R buttons for about 2 seconds to set to 0.

Next adjust the lens Level control to highlight the central marker of the video signal level indicator.

If auto iris does not operate even at the Hi or Low extremes of the Level setting, adjust the Iris Gain setting.

8) REFERENCE: (Lens Type is Video mode.)

Adjustment is required when replacing a Video type lens or if using the camera for the first time. Adjust the lens Level control to highlight the central marker of the video signal level indicator. This is not necessary if the Iris Gain has already been adjusted.

While the auto iris is functioning (neither fully open nor fully closed), press R to flash the Setting characters. Adjustment is complete when the flashing ceases.

Notes:

- 1 Before adjusting Iris Gain and Reference, be sure to set the Gain to Normal, High or Max, and Over-ride to 0. Adjustment is incorrect in the AGC mode. After adjusting, return the previous settings.
- 2 Reference needs to be set properly for normal AGC coupled operation.

8. IRIS GATE

This menu screen allows you to make iris gate (window) settings.

- 1) GATE AREA <UP/DOWN>:The window can be shifted up/down.

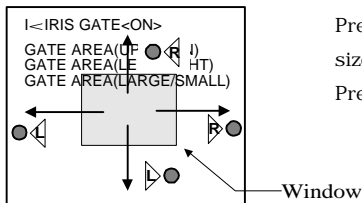
To shift the window up, press the R button. To shift it down, press the L button.

- 2) GATE AREA<LEFT/RIGHT>:The window can be shifted left/right.

To shift the window rightward, press the R button. To shift it leftward, press the L button.

- 3) GATE AREA<LARGE/SMALL>:The size of the window can be adjusted.

Using the L or R button, you can select one of four window sizes.



Press R button to increase size.

Press L button to decrease

9. WHITE GATE

Sets the area (window) position for use as white balance control data. Adjust the window to a white or grey monochrome portion of the screen. Setting operation is the same as Iris Gate.

- 1) GATE AREA<UP/DOWN>:The window can be shifted up/down.

To shift the window up, press the R button. To shift it down, press the L button.

- 2) GATE AREA<LEFT/RIGHT>:The window can be shifted left/right.

To shift the window rightward, press the R button. To shift it leftward, press the L button.

10 LEVEL

This menu screen allows you to set up a black level and gain of R/B video signal.

- 1) R BLK: R black level setting

The allowable setting range is -128 to 127.

Pressing the R button increases a numeric value to make the R video signal black level higher. Pressing the L button decreases a numeric value to lower the R video signal black level. For 0 (zero) setting, hold down both the L and R buttons for approx. two seconds.

- 2) B BLK: B black level setting

The allowable setting range is -128 to 127.

Pressing the R button increases a numeric value to make the B video signal black level higher. Pressing the L button decreases a numeric value to lower the B video signal black level. For 0 (zero) setting, hold down both the L and R buttons for approx. two seconds.

3) R GAIN: R gain level setting

The allowable setting range is -128 to 127.

Pressing the R button increases a numeric value to make the R video signal gain higher. Pressing the L button decreases a numeric value to lower the R video signal gain. For 0 (zero) setting, hold down both the L and R buttons for approx. two seconds.

4) B GAIN: B gain level setting

The allowable setting range is -128 to 127.

Pressing the R button increases a numeric value to make the B video signal gain higher. Pressing the L button decreases a numeric value to lower the B video signal gain. For 0 (zero) setting, hold down both the L and R buttons for approx. two seconds.

(Note) CAM MODE: In case of AUTO, numeric values of R BLK, B BLK, R GAIN and B GAIN become ineffective.

WHITE BAL: In case of AUTO, numeric values of R GAIN and B GAIN become ineffective.

5) INITIALIZE

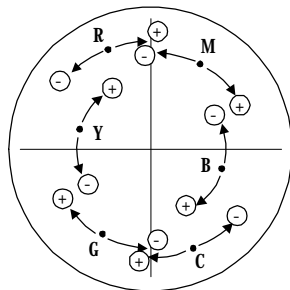
Red and blue gain and Red and blue black settings are initialized for each application. Simultaneously press the L and R buttons for about 2 seconds to return the selected files to the factory settings. See Page 25 for the factory settings of each application file.

11. MASKING

Menu for setting the masking.

- 1) R HUE: Change red color phase
- 2) Y HUE: Change yellow color phase
- 3) G HUE: Change green color phase
- 4) C HUE: Change cyan color phase
- 5) B HUE: Change blue color phase
- 6) M HUE: Change magenta color phase

The above items can be set in the range of -32 to +31. Respectively press the R button to increase and the L button to decrease the vector color hue as indicated in the figure. Each item can be set to 0 by simultaneously pressing the L and R buttons for about 2 seconds.



- 7) R SAT: Increase red color level
- 8) Y SAT: Increase yellow color level
- 9) G SAT: Increase green color level
- 10) C SAT: Increase cyan color level
- 11) B SAT: Increase blue color level
- 12) M SAT: Increase magenta color level

The above items can be set in the range of -32 to +31. Respectively press the R button to increase and the L button to decrease the color level. Each item can be set to 0 by simultaneously pressing the L and R buttons for about 2 seconds.

139 INITIALIZE: Mask settings are initialized to factory values for each application file. Simultaneously press the L and R buttons for about 2 seconds to return the selected files to the factory settings. See Page 25 for the factory settings of each application file.

12 OUTPUT/SYNC

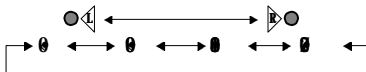
On this menu screen, you can make signal changeover for output to the D-SUB connector and phase adjustment for external synchronization.

1) OUTPUT:Output mode changeover



- R, G, B: The R, G and B video signals are output to the D-SUB connector.
 - Y, R-Y, B-Y: The Y, R-Y and B-Y signals are output to the D-SUB connector.
 - Y/C: The Y/C signal is output to the D-SUB connector. It can be delivered simultaneously with the Y/C signal output from the Y/C connector (S terminal).
- 2) MONO: Monochrome (black and white) ON/OFF for the video output signal from the VIDEO connector
Set to ON for monochrome. Setting ineffective during color bar.
- 3) SYNC ON G: G video signal synchronization ON/OFF (In the R/G/B mode only)
When output is RGB with Sync on and G on, Sync is added to the G video signal.
- 4) GL IN: Impedance changeover of input to the GL IN connector.
HIGH: The high impedance level is provided.
75Ω: An impedance of 75 ohms is provided.
(Note) When power to the camera is turned off, the high impedance level is provided. So, do not use this function in a system where power is turned off for the camera unit only.
- 5) GL MODE:
- VBS: The VBS signal or BBS (black burst) signal is input as an external synchronizing signal.
 - HD/VD: The HD/VD signal is input as an external synchronizing signal.
(Note) During external sync with HD and VD signals, be sure to use either RGB or Y, B-Y, R-Y output signals. Although VBS and Y/C output signals are also produced, these cannot be used as normal output signals.

6) SC.COARSE:Coarse adjustment of subcarrier phase



Using the L or R button, select one of the following phases; 0°, 90°, 180° and 270°.

7) SC.FINE:Fine adjustment of subcarrier phase

The allowable setting range is -128 to 127.

There is no direct relationship between a numeric value and a degree of phase. If the relevant range is exceeded, the SC COARSE setting is updated automatically to permit continuous adjustment.

8) H.PHASE:Adjustment of horizontal synchronization phase

The allowable setting range is -128 to 127.

13 ID/TITLE

ID and title display position and data setting menu.

1) ID: ID display position setting

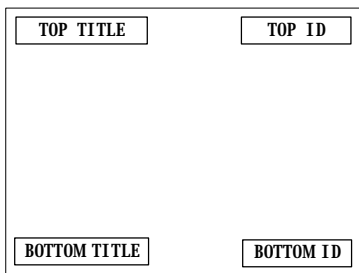
Once an ID is assigned, it becomes possible to control a particular camera unit remotely from a personal computer according to its ID. That is, multiple camera units can be remote-controlled individually from one personal computer.

At this function item, specify whether the ID is displayed on screen or not. In case that the ID is displayed on screen, specify its display position also.

OFF:Not displayed.

TOP:Displayed at the upper right corner of screen.

BOTTOM:Displayed at the lower right corner of screen.



ID/TITLE Display Position

2) At this function item, specify whether the TITLE is displayed on screen or not. In case that the TITLE is displayed on screen, specify its display position also.

- OFF: Not displayed.
- TOP: Displayed at the upper left corner of screen.
- BOTTOM: Displayed at the lower left corner of screen.

2) DATA SET:The DATA SET screen comes up.

ID: Enter an ID code consisting of three characters.

Alphanumeric upper-case characters and a space character are permitted.

TITLE: Enter a TITLE consisting of up to 12 characters.

Alphanumeric upper-case characters, special symbols and a space character are permitted.

(Note) The symbol "

<ID/TITLE Setup Procedure>

- 1 With the cursor located at DATA SET, press the D button. The cursor moves to the ID data set position and the first character flashes.
- 2 Using the L, R, U and D buttons, select an input character.
- 3 Press the SET UP button, and the selected character will be entered. (The cursor will then move to the next character position.)
- 4 In the same manner, repeat the above steps and to enter an ID code and TITLE.
- 5 On completion of character input, bring the cursor to RET using the L, R, U or D button. Then, press the SET UP button.
The cursor is returned to DATA SET.
- 6 To quit the SPECIAL SET mode, press the SET UP button.

← :Flashing shifts one character toward the left.

→ :Flashing shifts one character toward the right.

DEL: Flashing character is deleted, and the subsequent character string is shifted left.

INS : A space is inserted at the flashing character position, and the subsequent character string is shifted right.

RET: The cursor is returned to DATA SET.

14. DTL

Menu for setting detail parameters

1) LEVEL DEP: Dependent level setting

Detail amount, and noise, can be reduced in scene dark components.

Setting range is -128 to +127. Press the R button to increase the value, reduce the detail amount and expand the video signal level range. Press L button to decrease the value and reduce the range. Set to 0 by simultaneously pressing the L and R buttons for about 2 seconds.

2) CRISP: Crispness level setting

Reduces noise when DTL setting is in the range of -128 to 127. However, at high settings, some loss of sharpness occurs in detailed scene components. Setting range is -128 to +127. Press the R button to increase the value and the detail noise. Press the L button to decrease the value and reduce detail noise. Set to 0 by simultaneously pressing the L and R buttons for about 2 seconds.

3) H/V BALANCE: Balance setting for horizontal and vertical detail amount

Setting range is -128 to +127. Press the R button to increase the value and reduce the H DTL amount. Press the L button to decrease the value and reduce the V DTL amount. Set to 0 by simultaneously pressing the L and R buttons for about 2 seconds.

- 4) INITIALIZE: Return each item to factory settings by simultaneously pressing the L and R buttons for about 2 seconds.

15. GAMMA

Menu for setting the gamma parameters. If dark component contrast is inadequate, adjusting the gamma parameters allows detailed adjustment of the Sub-menu 2 Contrast (Off, Normal, High).

1) GAMMA TABLE: Sets gamma rising slope.

Low: Dark component gradation reduced.

Standard: Standard setting

High: Dark component gradation increased.

2) TOTAL GAMMA: Sets total (R, G and B) gamma point

Setting range is from -128 to 127. Press R to raise and L to lower RGB video signal gamma point.

Simultaneously press the L and R buttons for about 2 seconds to set to 0.

3) R ADJUST: Sets red gamma point.

Setting range is from -128 to 127. Press R to raise and L to lower red video signal gamma point.

Simultaneously press the L and R buttons for about 2 seconds to set to 0.

4) B ADJUST: Sets blue gamma point.

Setting range is from -128 to 127. Press R to raise and L to lower blue video signal gamma point.

Simultaneously press the L and R buttons for about 2 seconds to set to 0.

5) INITIALIZE: Returns items to factory settings.

Simultaneously press the L and R buttons for about 2 seconds to return the factory settings.

Application Files (APP-1,APP-2,APP-3)

Camera setting data can be stored in three application files. These enable optimizing the camera for specific scene and lighting conditions, then storing the setting data in memory for quick recall at the appropriate time.

The application files have been set at the factory as follows.

APP-1: Standard type camera settings

APP-2: General purpose surveillance and TV conferencing

APP-3: Microscope settings. Particularly the masking is suitable for good color reproduction with a light source of about 5000 K combined with a 9200 K color monitor.

Select the file according to the application. If the settings are changed for finer control, the setting data can be stored in each file.

1. Items saved to application files

The following items can be saved to each file. The factory data are shown.

Menu item	Application file		
	APP-1	APP-2	APP-3
MAIN MENU			
WHITE BAL	MEM 3200K	MEM 3200K	MEM 3200K
GAIN	NORMAL	NORMAL	NORMAL
DTL	0	25	0
DNR	OFF	OFF	OFF
SUB MENU 1			
M.BLACK	0	0	0
SHUTTER	OFF	OFF	AES
DTL FREQ	STANDA RD	STANDA RD	HIGH
SUB MENU 2			
DYNA CHROMA	OFF	ON	OFF
CHROMA GAIN	0	25	0
AUTO KNEE	ON	ON	ON
MASKING	ON	ON	ON
SHAD MODE	COLOR	COLOR	LUMINAN CE
LENS			
LENS TYPE	VIDEO	VIDEO	DC
IRIS MODE	AUTO	AUTO	MANUAL

Menu item	Application file		
	APP-1	APP-2	APP-3
LEVEL			
R GAIN	0	0	0
B GAIN	0	0	0
MASKING			
R HUE	4	4	-8
Y HUE	-2	-2	-5
G HUE	-6	-6	-3
C HUE	-4	-4	0
B HUE	4	4	10
M HUE	16	16	-14
R SAT	-1	-1	-4
Y SAT	-3	-3	5
G SAT	9	9	-1
C SAT	14	14	12
B SAT	8	8	-16
M SAT	-6	-6	-6

2. Common file settings

The settings of these items apply to all files. They cannot be set differently for each file. The table indicates the factory settings.

Menu item	Setting data
MAIN MENU	
CAM MODE	MANUAL
ULTRA GAIN	OFF
SUB MENU 1	
VARIABLE	NTSC:1/60.3 8 PAL :1/50.31
CCD MODE	FLD
GAIN HIGH	+9dB
GAIN MAX	+18dB
AGC	+20dB
MESSAGE RTN	ON
SUB MENU 2	
CONTRAST	OFF
KNEE	ON
GAMMA	ON
AUTO SHADING	Adjustment data
WHITE GATE	OFF
ALC	
OVER RIDE	0
SPEED	STANDARD
IRIS GATE	OFF

Menu item	Setting data
SEPECIAL SET	
REMOTE	62500bps
LENS	
SELECTION	COSMICAR
SPEED	8
OPEN LIMIT	65
CLOSE LIMIT	-85
IRIS GAIN	0
IRIS GATE	
UP/DOWN	CENTER
LEFT/RIGHT	CENTER
LARGE/SMALL	MIN SMALL
WHITE GATE	
UP/DOWN	CENTER
LEFT/RIGHT	CENTER
LEVEL	
R BLK	0
B BLK	0

Menu item	Setting data
OUTPUT/SYNC	
OUTPUT	R,G,B
MONO	OFF
SYNC ON G	OFF
GL IN	75
GL MODE	VBS
SC COARSE	0°
SC FINE	0
H PHASE	0
ID/TITLE	
ID	OFF
TITLE	OFF
ID DATA	(Blank)
TITLE DATA	(Blank)
DTL	
LEVEL DEP.	0
CRISP	0
H/V BALANCE	0
GAMMA	
GAMMA TABLE	STANDARD
TOTAL GAMMA	0
R ADJUST	0
B ADJUST	0

Black Balance Adjustment

Adjust black balance to provide proper color tone at a dark part of video image. In the following cases, be sure to carry out black balance adjustment.

- When using the camera first after purchasing it.
- When using the camera after it has been unused for a long time.
- When the camera operating environment is changed (e.g., when the ambient temperature varies significantly).

Under normal condition, it is not required to make black balance adjustment at power-on.

1. In the Direct mode, hold the ABB button pressed for about 2 seconds for automatic black balance adjustment. With MESSAGE RTN:ON, AUTO BLACK appears. At the end of successful adjustment AUTO BLACK:OK appears.

- (Notes)
- 1) When the lens having the auto iris function is used, the iris is closed automatically during adjustment. Sometimes occurs when adjusted with the lens iris in the manual mode (lens iris switch set to M). Open the iris for better exposure.
 - 2) In combinational use with the manual iris lens or microscope, a full-black screen image is provided from the CCD image sensor during adjustment. When picturing after adjustment, a white screen image appears momentarily. This phenomenon is not a symptom of trouble, however.
 - 3) In case that the manual iris lens is used, do not attempt auto black balance adjustment while taking an image of subject having extremely high luminance such as the sun. This may deteriorate black balance accuracy.

2. If black balance adjustment cannot be made, any one of the following messages will appear. Take a proper procedure according to the error message, and then try black balance adjustment again.

Error message	Procedure
AUTO BLACK:NG CHANGE TO CAM TRY AGAIN	<ul style="list-style-type: none"> • Turn off the color bar.
AUTO BLACK:NG IRIS NOT CLOSE TRY AGAIN	<ul style="list-style-type: none"> • Close the lens iris. • Avoid taking an image of subject having high luminance such as the sun, or decrease illumination on the microscope.
AUTO BLACK:NG ???	<ul style="list-style-type: none"> • Carry out ABB again. If this message appears in repeated attempts, it is necessary to inspect the inside of the camera. In this case, notify your local Hitachi Denshi sales agent or Hitachi Denshi service office

White Balance Adjustment

Carry out white balance adjustment when the illumination condition (color temperature) is changed.

Adjust the white balance when using the camera for the first time or after replacing the lens.

1. In the MENU mode, set up WHITE BAL: MEM 3200K or MEM 5600K.
2. Turn off the MENU screen to select the DIRECT mode.
3. Provide a proper aperture value of lens using the auto iris function or manually.
4. Put an white object in the subject image, and zoom it up.
5. Hold the AWB button pressed for about 2 seconds for automatic white balance adjustment. With MESSAGE RTN:ON, AUTO WHITE appears. At the end of successful adjustment AUTO WHITE:OK appears.

Note:

If adjusted under a light source that has a flicker component, such as fluorescent or mercury, the white balance accuracy can be impaired. Change the electronic shutter mode (Sub-menu 1 Shutter or Variable) setting to reduce flicker before engaging the auto white balance adjustment.

6. If white balance adjustment cannot be made, any of the following messages will appear. Take a proper procedure according to the error message, and then try white balance adjustment again.

Error message	Procedure
AUTO WHITE:NG CHANGE TO CAM TRY AGAIN	<ul style="list-style-type: none">• Turn off the color bar.
AUTO WHITE:NG CHANGE TO MEMORY MODE TRY AGAIN	<ul style="list-style-type: none">• Set up WHITE BAL:MEM 3200K or MEM 5600K.
AUTO WHITE:NG LOW LIGHT TRY AGAIN	<ul style="list-style-type: none">• White balance cannot be made due to insufficient illumination.• Increase the intensity of illumination, turn lens iris toward open direction, or increase the gain to provide a proper video level.• Press the AWB switch again.
AUTO WHITE:NG HIGH LIGHT TRY AGAIN	<ul style="list-style-type: none">• White balance cannot be made due to excess illumination.• Increase the intensity of illumination, turn lens iris toward closed direction, or increase the gain to provide a proper video level.• Press the AWB switch again.
AUTO WHITE:NG C.TEMP HIGH TRY AGAIN	<ul style="list-style-type: none">• The color temperature is too high, making it impossible to reach the optimum value in adjustment. (If there is no problem in practical application, use the camera under the current condition.)• Add a filter to the lens or illumination to decrease the color temperature.
AUTO WHITE:NG C.TEMP LOW TRY AGAIN	<ul style="list-style-type: none">• The color temperature is too low, making it impossible to reach the optimum value. (If there is no problem in practical application, use the camera under the current condition.)• Add a filter to the lens or illumination to increase the color temperature.

<p>AUTO WHITE:NG C. TEMP HIGH CHANGE TO MEM 5600K TRY AGAIN</p>	<ul style="list-style-type: none"> • Color temperature too high for optimum adjustment. • Set WHITE BAL to MEM 5600 K mode.
<p>AUTO WHITE:NG C. TEMP LOW CHANGE TO MEM 3200K TRY AGAIN</p>	<ul style="list-style-type: none"> • Color temperature too low for optimum adjustment. • Set WHITE BAL to MEM 3200 K mode.
<p>AUTO WHITE:NG LONG SHUTTER MODE CHANGE SHUTTER MODE TRY AGAIN</p>	<ul style="list-style-type: none"> • Release the long shutter mode.
<p>CAM MODE:AUTO CHANGE TO MANUAL</p>	<ul style="list-style-type: none"> • Set camera mode to manual.

Realtime Auto White

The camera detects a white part in the image by itself, and its internal microcomputer automatically adjusts white balance in realtime. Use this function in case that the color temperature varies with time (e.g., from morning to day to night).

1. In the MENU mode, set up WHITE BAL:AUTO.

(Note 1) If the color temperature of the scene being taken is changed abruptly (when the camera is oriented from indoor side to outdoor side), the image may become bluish or reddish momentarily. This phenomenon is not a symptom of trouble, however. Immediately after it, the optimum white balance condition is set.

(Note 2) If adjusted under a light source that has a flicker component, such as fluorescent or mercury, the white balance accuracy can be impaired. Change the electronic shutter mode (Sub-menu 1 Shutter or Variable) setting to reduce flicker before engaging the auto white balance adjustment.

Where the camera is mounted fixedly and the orientation and image-taking range of the camera remain unchanged, it is advisable to use the white gate function in combination for attaining higher accuracy in white balance.

1. In the MENU mode, set up WHITE GATE:ON.

2. Using the WHITE GATE menu in the MENU mode, bring the display window to a monochrome part (white or gray part) in the image.

For details of the WHITE GATE function, refer to p. 18. Be sure to set the WHITE GATE window to a white or gray part in the image. Do not set it to a colored part.

Auto Shading Correction

Color shading may occur in the vertical direction on screen due to any characteristic of lens. This camera is equipped with a function for correcting color shading automatically.

1. Provide a proper aperture value of lens using the auto iris function or manually.

2. Take an white image fully on screen. At this step, take care so that uneven brightness will not occur in the vertical direction.

3. In the DIRECT mode, press the AWB button. White balance is adjusted automatically.

4. In the MENU mode, carry out AUTO SHADING. Thus, color shading in the image is corrected automatically.

(Note 1) When using the camera for the first time or after replacing the lens, just be sure above instructions.

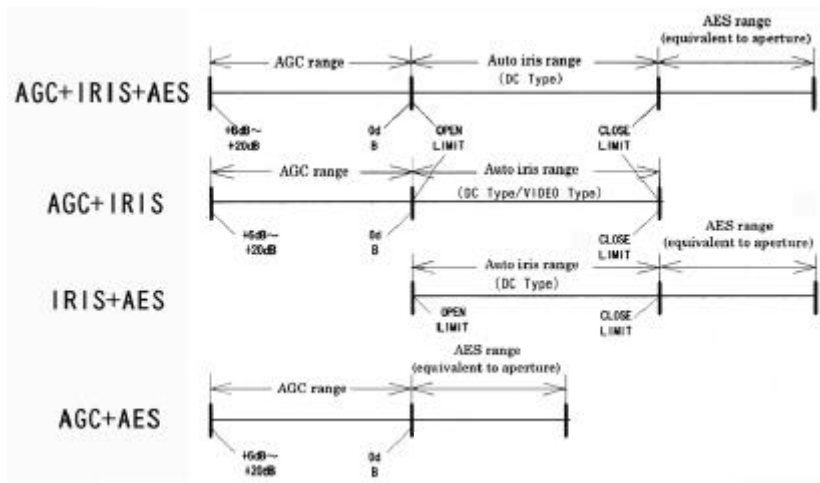
(Note 2) If adjusted under a light source that has a flicker component, such as fluorescent or mercury, the white balance accuracy can be impaired. Change the electronic shutter mode (Sub-menu 1 Shutter or Variable) setting to reduce flicker before engaging the auto white balance adjustment.

ALC

In combination of GAIN:AGC, SHUTTER:AES and AUTO IRIS, the following four kinds of ALC (auto level control) can be performed. This feature ensures stable video signal output according to a wide-range change in illumination.

Note:

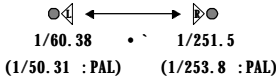
- 1 AES cannot be combined with a Video type lens.
- 2 When not using an auto iris lens, at the Lens menu, set Lens Type to DC and Iris Mode to Manual.



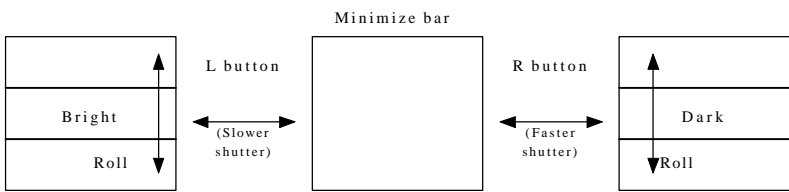
Lock scan mode shutter speed setting

1 Press the Setup button and open the main menu, then open Sub menu 1. Set the cursor to SHUTTER by pressing D, select the VARIABLE position with the L-R buttons, again press D to shift to the variable items.

2 Press the L and R buttons to set the shutter speed in the range indicated below. Set the desired shutter speed.



When picking up e.g., a computer screen having a different scanning frequency, bright or dark horizontal bars roll vertically across the screen (see figure). The shutter speed can be adjusted to minimize this effect in most cases.



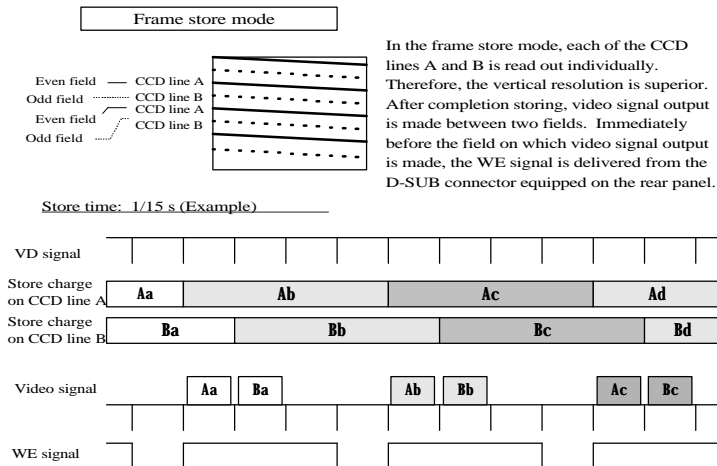
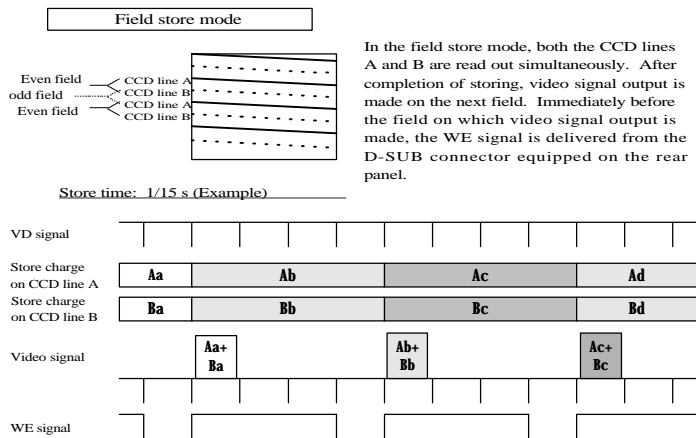
Notes

1. Each pressing of the L or R button changes the shutter speed by 1 H. Hold the button depressed for continuous change.
2. If the display scanning frequency is below 60 Hz, the rolling horizontal bar cannot be stopped.
3. Raising the shutter speed improves resolution of moving objects, but loses sensitivity to the extent auxiliary lighting may be needed for outdoor scenes. Also, vertical smear increases with higher shutter speeds due to the physical properties of CCD cameras.

Long-Time Store Mode

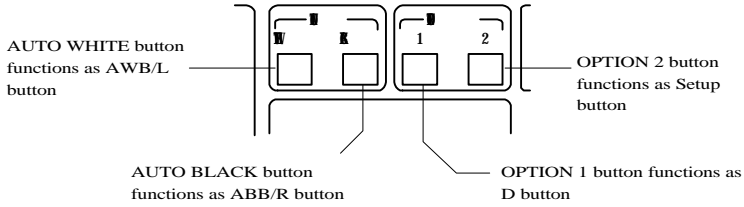
In case that illumination on the subject is insufficient, just increasing the gain of the camera may cause an increase in noise, resulting in an unclear image. In such a situation, it is advisable to select the long-time store mode using the external memory. Thereby, the image can be brighter and clearer according to the stored amount of image. This camera is provided with two kinds of image store functions (CCD MODE:FLD/FRM in SUB MENU 1). When one of these image store functions is used, video signal output is delivered from the camera with the timing shown below.

Since the degree of after-image increases for a moving subject because of image storing, it is recommended to use the image store function when taking a still picture or scene.

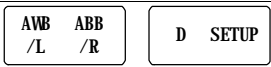


Connection to RC-C10 remote control box

The HV-D25 camera can be remotely controlled from the RC-C10 remote control box. Adjustments and operations not provided on the RC-C10 panel can be set from the HV-D25 camera menu. RC-C10 buttons corresponding to the menu screen are Option 1, Option 2, Auto White and Auto Black.



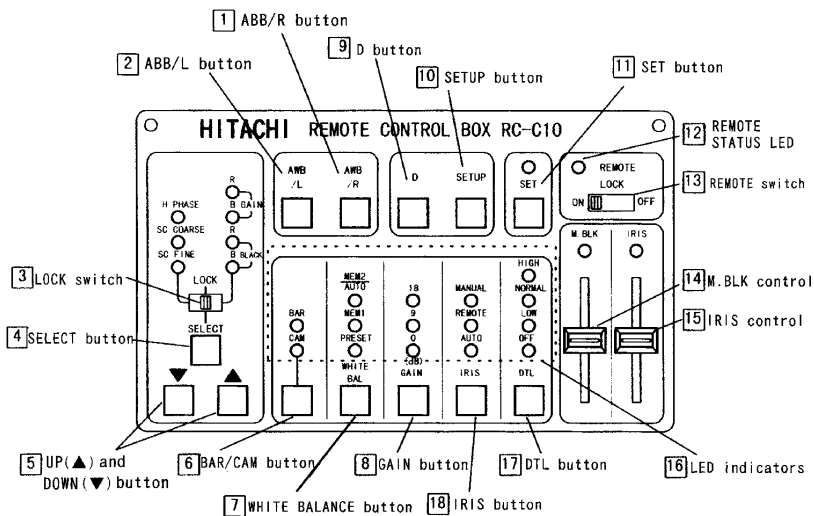
Labels indicating these functions are provided as accessories. Apply the labels to the camera buttons for convenience in operation. The remainder of these Instructions assume the labels have been applied.



Before connecting the remote control box, set the camera as follows.

1. SW405: Set camera internal switch SW405 to RC-C10. The factory setting is RC-C10. See page47.
2. Camera coms rate: At the Special Set menu (see page15), set Remote: 62500 bps (page22). The factory setting is 62500 bps.

1. RC-C10 panel facilities



1 ABB/R (auto black balance/right) button

Direct mode :Black balance is adjusted automatically.

Menu mode :Execute or change function data.

2 AWB/L (auto white balance/left) button

Direct mode :White balance is adjusted automatically.

Menu mode :Execute or change function data.

3 Lock switch

Left position :Genlock (GL) adjustment

Right position :R/B gain and R/B black fine adjustment

Center position:Adjustments inoperative.

4 Select button

Lock switch Id **3** :Use together with the up/down butto **5** to select the following adjustments.

- H phase (horizontal phase)
- SC coarse (subcarrier coarse)
- SC fine (subcarrier fine)

Lock switch:right: **3** Use together with the up/down buttons **5** to select the following adjustments.

- R gain
- B gain
- R black
- B black

5 Up () and down () buttons

Use together with the Lock switch **3** and Select button **5** to select the required adjustment (corresponding LED lights).

6 BAR/CAM button

Selects the camera output signal.

- BAR: Color bar signal output
- CAM: Camera video signal output

7 White BAL button

Selects the white balance mode.

- Auto: Real-time automatic tracking white balance
- MEM: In the menu mode, press AWB/L **2** for automatic white balance adjustment.
- Preset: Optimum white balance at 3200 K color temperature

8 Gain button

Selects camera sensitivity mode.

- 18 dB: Maximum (+11 to +20 dB). In the menu mode, at the Sub menu 1 screen, set the Gain Max.
- 9 dB: High (+1 to +10 dB). In the menu mode, at the Sub menu 1 screen, set the Gain High.
- 0 dB: Normal mode

9 (Option 1) button

Direct mode :Not used

Menu mode :Shift the cursor downward to select items from the displayed menu screen.

10 Setup (Option 2) button

Camera setting menu display button. Operations of buttons ABB/R **1**, AWB/L **2** and I **9** differ when the menu is displayed (menu mode) and not displayed (direct mode).

11 Set button

When pressed, control data are stored and the LED lights for about 1 second.

● Notes:

- 1 Be sure to press the **Set** button in order to save the setting data before switching off power. Otherwise the data are lost and old data are returned at power on. Also, the old data are deleted by pressing the **Set** button.
- 2 The **Set** button operation differs between the **RC-C10** and **RC-C10(R1)**. The **RC-C10** stores the panel adjustment and operation data. In addition, the **RC-C10 (R1)** stores the menu mode data, while these are also stored by the HV-D15 camera.

12 Remote status LED

13 Remote switch

- On (LED **12** red) :The **RC-C10** can be operated for normal camera control.
- Lock (LED **12** green) :**RC-C10** functions are inhibited, but control data are sent to the camera.
- Off (LED **12** green) :Control data are not sent from **RC-C10** and control is from the camera operation itself.

14 f. BLK control

Master black control

15 Iris control

Adjusts the lens iris.

LENS TYPE:DC

- **Auto** :**Over-ride** adjustable (about 2 f-stops)
- **Remote** :Adjustable from fully closed to fully open
- **Manual** :**Iris** cannot be adjusted from the **RC-C10**.
- **AGC** and **AES** operation **over-ride** can be adjusted.

LENS TYPE:VIDEO

- **Auto** :**Over-ride** adjustable (about 2 f-stops)
- **Remote** :Iris cannot be adjusted from the RC-C10.
- **Manual**:**Over-ride** adjustable (about 2 f-stops)

16 LED indicators

Light according to selected mode.

17 DTL button

sets the camera **detail** amount. Settings are **Off**, **Low**, **Normal** and **High**. **Ordinarily set to Normal**.

18 Iris button

Selects the lens **iris** mode. Selectable modes are **Auto**, **Remote** and **Manual**.

Refer to the **RC-C10 Operation Manual** for adjustment and operation.

2. Menuscreen Operation

Menu screen customizing

Camera settings other than the **RC-C10** panel can be customized at the **Main** and **Special set** menu screens.

2-1. Main menu screen

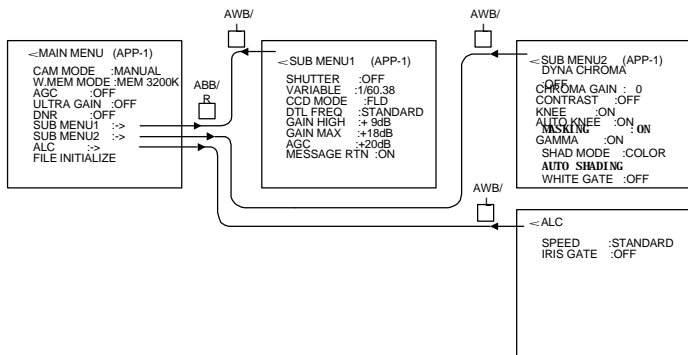
Press the **Setup** button **10** to produce the **menu** mode and display the **main menu** screen. Again press the **Setup** button **10** to extinguish the menu screen and produce the Direct mode. The menu contains 3 submenus for setting the major functions, which are organized as indicated below.

At the **main menu**, set the cursor to **submenu 1**, **submenu 2** or **ALC** and press the **ABB/R** button

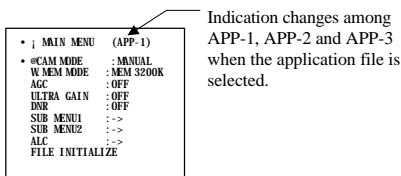
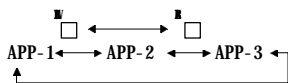
1 to shift to the lower menu. To return to the main menu, set the cursor to the top title line of the lower menu and press the **AWB/L** button **2**.

Press the **D** button **9** to shift the cursor to a menu item to be changed, then press the **AWB/L** and **ABB/R** buttons

2 1 to change the mode setting or data.



Change the application file by setting the cursor to the title line of the **main menu**, then press the **ABB/R** and **AWB/L** button **1 2** to change and display the selected file.

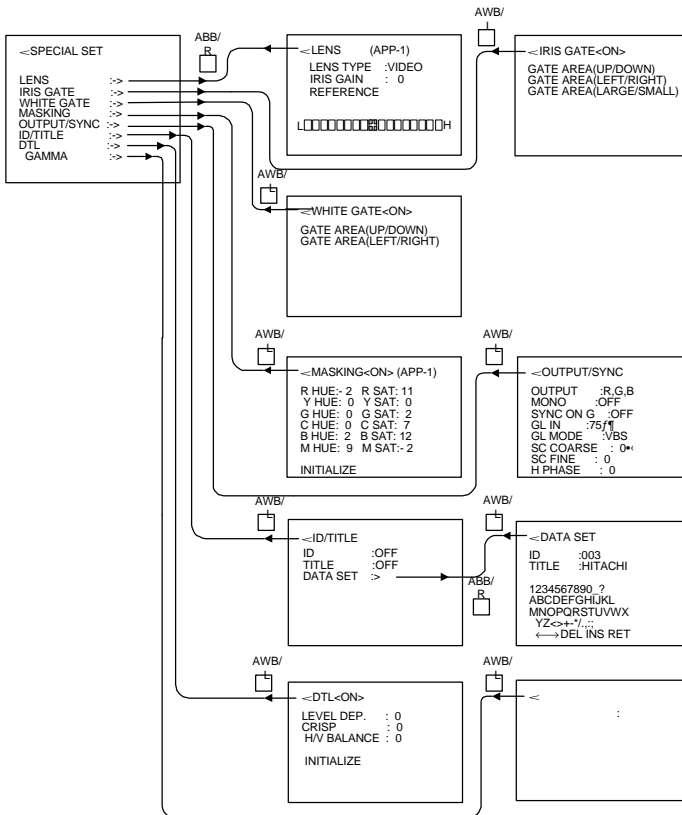


2-2. Special menu screen

Hold button **D** **9** depressed and press the **Setup** button **10** for 2 seconds to display the **Special set** menu and produce the **menu** mode. To return to the direct mode, again press the **Setup** button to **10** to extinguish the menu.

At **Special Set** menu items indicated by **->**, press the **ABB/R** button **1** to shift to the submenu for setting the item. Press button **9** **D** to shift the cursor to the submenu item to be changed, then press **AWB/L** or **ABB/R** **2** , **1** to change the mode or data.

Return to the **Special Set** menu by setting the cursor to the top title line and pressing **AWB/L** **2**



3.Application files (APP-1, APP-2 and APP-3)

The application files can be changed during remote control from the **RC-C10**. The **HV-D25** camera is preset at the factory according to the application.

- **APP-1:**Standard camera settings
- **APP-3:**General surveillance, TV conference
- **APP-3:**Microscope setting. Masking is set for optimum color reproduction at color temperatures of **5000 K** light source and **9200 K** color monitor.

Select the appropriate file for the application. To store setting details, press the **Set** button **11** of the **RC-C10(R1)** to save the setting data for each file.

3-1. Items stored in applications files

Items that can be stored in the respective files are indicated below. The data shown are for the factory settings. Notice there are some differences during local control of the **HV-D25** camera.

Menu items	Application files		
	APP-1	APP-2	APP-3
MAIN MENU			
W.MEM MODE	MEM 3200K	MEM 3200K	MEM 3200K
AGC	OFF	OFF	OFF
DNR	OFF	OFF	OFF
SUB MENU 1			
SHUTTER	OFF	OFF	AES
DTL FREQ	STANDARD	STANDARD	HIGH
SUB MENU 2			
DYNA CHROMA	OFF	ON	OFF
CHROMA GAIN	0	25	0
AUTO KNEE	ON	ON	ON
MASKING	ON	ON	ON
SHAD MODE	COLOR	COLOR	LUMINANCE
LENS			
LENS TYPE	VIDEO	VIDEO	DC

Menu items	Application files		
	APP-1	APP-2	APP-3
MASKING			
R HUE	4	4	-8
Y HUE	-2	-2	-5
G HUE	-6	-6	-3
C HUE	-4	-4	0
B HUE	4	4	10
M HUE	16	16	-14
R SAT	-1	-1	-4
Y SAT	-3	-3	5
G SAT	9	9	-1
C SAT	14	14	12
B SAT	8	8	-16
M SAT	-6	-6	-6

3-2.Items stored in common file

Common file settings are indicated below. Different settings for these items cannot be stored in the application files. The indicated data are for the factory settings. Notice there are some differences during local control of the **HV-D25** camera.

Menu items	Setting data
MAIN MENU	
CAM MODE	MANUAL
ULTRA GAIN	OFF
SUB MENU 1	
VARIABLE	NTSC:1/60.38 PAL :1/50.31
CCD MODE	FLD
GAIN HIGH	+9dB
GAIN MAX	+18dB
AGC	+20dB
MESSAGE RTN	ON
SUB MENU 2	
CONTRAST	OFF
KNEE	ON
GAMMA	ON
AUTO SHADING	Execute data
WHITE GATE	OFF
ALC	
SPEED	STANDARD
IRIS GATE	OFF
LENS	
SELECTION	COSMICAR
SPEED	8
OPEN LIMIT	65
CLOSE LIMIT	-85
IRIS GAIN	0

Menu items	Setting data
IRIS GATE	
UP/DOWN	CENTER
LEFT/RIGHT	CENTER
LARGE/SMALL	MIN SMALL
WHITE GATE	
UP/DOWN	CENTER
LEFT/RIGHT	CENTER
OUTPUT/SYNC	
OUTPUT	R,G,B
MONO	OFF
SYNC ON G	OFF
GL IN	75
GL MODE	VBS
DTL	
LEVEL DEP.	0
CRISP	0
H/V BALANCE	0
ID/TITLE	
ID	OFF
TITLE	OFF
ID DATA	Vacant
TITLE DATA	Vacant
GAMMA	
GAMMA TABLE	STANDARD
TOTAL GAMMA	0
R ADJUST	0
B ADJUST	0

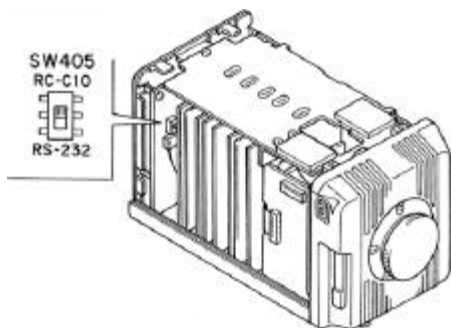
RC-C10 panel items
BAR/CAM
White balance mode
Gain mode
Iris mode
DTL mode
M.BLK
IRIS
R GAIN
B GAIN
R BLACK
B BLACK
H PHASE
SC COARSE
SC FINE

SW405

For connection with the remote control box RC-C10, set SW405 to the RC-C10 position.

For connection with the personal computer, set SW405 to the RS-232C position.

At shipment from factory, SW405 is set at the RC-C10 position.



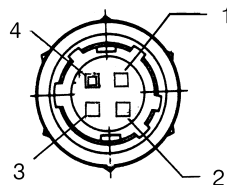
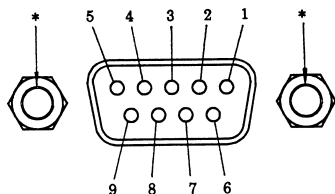
Connectors

MULTI connector (SDEB-9S)

Pin No.	Signal designation
1	GND
2	WE
3	R/R-Y/C output
4	G/Y output
5	B/B-Y output
6	VBS output
7	SYNC output
8	HD output
9	VD output

REMOTE connector (HR10A-7R-4S)

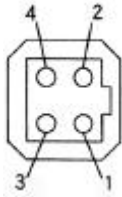
Pin No.	Signal designation
1	+12V output
2	RXD/SD input
3	TXD/SD output
4	GND



Use M2.6 plug retaining screws.

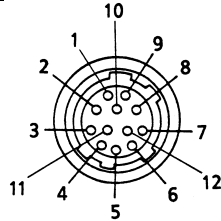
LENS connector

Pin No.	Signal
1	+12V
2	NC
3	Control
4	GND



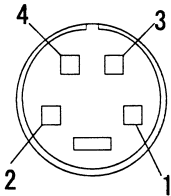
AUX connector (HR10A-10R-12PB)

Pin No.	Signal designation
1	GND
2	NC
3	EXT CONT 1
4	EXT CONT 2
5	GND
6	HD input
7	VD input
8	EXT CONT 3
9	EXT CONT 4
10	GND
11	NC
12	GND



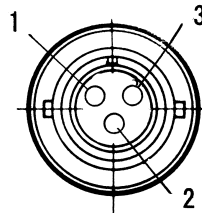
Y/C connector (TCS-7547-01-401)

Pin No.	Signal designation
1	Y GND
2	C GND
3	Y output
4	C output



12V-IN connector (RM12BRD-3PH)

Pin No.	Signal designation
	+12V input
	GND
	NC



Specifications

(1) Color system	NTSC,PAL
(2) Optical system	1/2-inch F1.6 prism
(3) Imaging system	RGB 3-chip
(4) Imaging device	1/2-inch interline CCD (with microlenses)
Total pixels	NTSC: 811 (H) × 508 (V) PAL : 795 (H) × 596 (V)
Effective pixels	NTSC: 768 (H) × 494 (V) PAL : 752 (H) × 582 (V)
Effective image area	6.45 (H) × 4.84 (V) mm 6.47 (H) × 4.83 (V) mm
(5) Encoder system	R-Y/B-Y
(6) Sync system	Internal/external (Automatic changeover VBS/BBS or HD/VD. However, the GL MODE needs to be switched.)
(7) Horizontal resolution	800 TV lines (Y signal center, Y OUT and DTL off)
(8) Signal to noise ratio	NTSC 63 dB typ(DNR:ON),60 dB typ(DNR:OFF) PAL 61 dB typ(DNR:ON),58 dB typ(DNR:OFF) (Y OUT, =1, DTL off, Gain 0 dB)
(9) Standard sensitivity	2000 lx, F8
(10) Minimum illumination	1.5 lx (50 IRE, F1.6, Gain +20 dB, ULTRA GAIN ON)
(11) Gamma correction	0.35 to 1.0 (on/off selectable)
(12) Picture distortion	Total: 0 % (not including lens characteristics)
(13) Registration	Total: 0.05 % (not including lens characteristics)
(14) Vertical contour correction	2 H
(15) Lens mount	C mount (flangeback: 17.526 mm in air)
(16) Sensitivity selection	AGC (0 to +20 dB), Norm/High/Max (3 positions)
(17) Detail control	DTL level and frequency
(18) Ultra gain function	Approx. 12 dB increase by selecting CCD readout (some loss of horizontal resolution)

(19) CCD drive functions	
Preset	1/100 (1/60 PAL), 1/250, 1/500, 1/1,000, 1/2,000, 1/4,000, 1/10,000 second
Lockscan	NTSC: 1/60.38 to 1/251.5 second (1 H steps) PAL : 1/50.31 to 1/253.8 second (1 H steps)
AES	Off to approx. 1/1,000 second (up to equivalent of 4 F stops, continuously variable in 1 H steps)
Long integration	Selectable field/frame integration NTSC: 1/30 to approx. 8 seconds (1 frame steps) PAL : 1/25 to approx. 8 seconds (1 frame steps) (External picture memory required for continuous picture.)
Frame readout	(Image lag response deteriorates)
(20) Color bar	NTSC: SMPTE PAL : Full
(21) Power supply voltage	12 V rated Use a DC power supply with risetime after power on of less than 0.5 second. Stable operation is ensured with DC power supply of 10.5 to 17 V. No ripple and noise shall occur.
(22) Power consumption	Approx. 8.2 W (camera head only) Current for lens is less than 300 mA.
(23) Dimensions	80 (W) × 85 (H) × 138 (D) mm
(24) Mass	Approx. 950 g (excluding lens)
(25) Ambient temperature (operating)	-10°C to 45 °C
(26) Ambient temperature (storage)	-20°C to 60°C
(27) Humidity	(Operating) 40 to 90%
(28) Humidity	(Storage) 30 to 90%

1. Input signal

(1) Genlock input

VBS 1.0 Vp-p \pm 3 dB or black burst, 75 Ω or high impedance (BNC)

(Sync 0.3 \pm 0.1 Vp-p, burst 0.3 \pm 0.1 Vp-p)

HD/VD TTL level (AUX connector) and 4.0 +0,-1Vp-p

(2) Serial data (4 pin connector)

1.5 Vp-p \pm 3 dB, high impedance (in connection with RC-C10)

RS-232C level (in connection with personal computer)

(Note) Set internal switch according to connected equipment.

2. Output signal ratings

(1) Composite video (BNC, D-sub connector)

VBS 1.0 Vp-p, 75

(2) Y/C (D-sub, Y/C connectors)

Y : 1.0 Vp-p, 75

C : 0.28 Vp-p (burst), 75 (NTSC),

0.3 Vp-p (burst), 75 (PAL)

(3) Component (D-sub connector)

Y : 1.0 Vp-p, 75

R-Y: 0.525 Vp-p, 75

B-Y: 0.525 Vp-p, 75

(4) RGB (D-sub connector)

R : 0.7 Vp-p, 75

G : 0.7 Vp-p, 75

B : 0.7 Vp-p, 75

(Note) Menu settings select the D-sub connector output for Y/C, component or RGB.

(5) Sync (D-sub connector)

HD : 2 Vp-p, 75

VD : 2 Vp-p, 75

SYNC: 2 Vp-p, 75

(6) Serial data (4 pin connector)

1.5 Vp-p/ Low (in connection with RC-C10)

RS-232C level (in connection personal computer)

(Note) Set internal switch according to connected equipment.

(7) External control

EXT CONT 1: 2.5 Vdc to 7.5 Vdc, 1 k

EXT CONT 2: 2.5 Vdc to 7.5 Vdc, 1 k

EXT CONT 3: 0 Vdc to 5 Vdc, 1 k

EXT CONT 4: 0 Vdc to 5 Vdc, 1 k

(8) Lens iris control

COSMICAR : 1.5 Vdc (close) to 5.5 Vdc (Open)

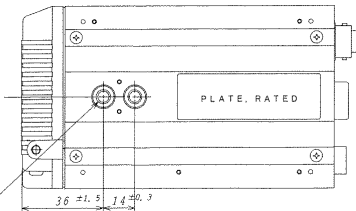
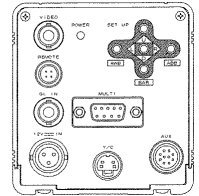
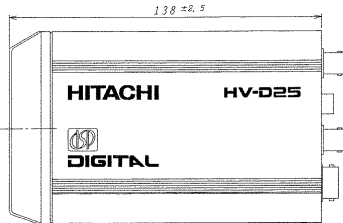
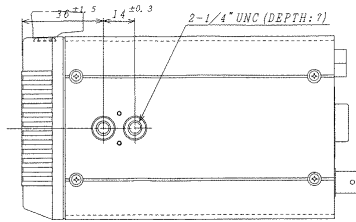
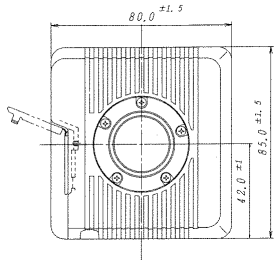
OTHERS : 2.5 Vdc (Close) to 7.5 Vdc (Open)

Major accessories

Camera control box, RC-C10

Camera Junction box, JU-Z2

RS-232C level converter JU-C20



$2-1/4'' \text{ UNC (DEPTH: 7)}$

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