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# ***TECHNICAL INFORMATION***

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**SUBJECT:** Corrected repair program

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**MODEL:** GA645 i / GA645W i [Ref. No. 5]

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June 8, 1999

## **DESCRIPTION:**

A bug has been found in the flash adjustment of the currently used Repair Program **Ver. 1.01E**. The revised program **Ver.1.02E** is forwarded.

The above mentioned bug erroneously entered into the flash adjustment when the program was revised to the currently used Repair Program **Ver.1.01E**.

When the flash is adjusted with the Repair Program **Ver.1.01E**, "ERROR" will be displayed, and flash cannot be adjusted.

Destroy the Repair Program **Ver.1.01E**.

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# ***TECHNICAL INFORMATION***

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**SUBJECT :** Revised repair program

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**MODEL :** GA645i / GA645Wi [Ref No. 4]

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February 26, 1999

## **DESCRIPTION :**

A bug was found in the program used for writing after replacing the main FPCB.  
Revised program is forwarded.

The new program is **Ver. 1.01E**.

Destroy the former program **Ver. 1.00E**.

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# **TECHNICAL INFORMATION**

**SUBJECT :** Additional instructions

**MODEL :** **GA645 i** [Ref No. 1] / **GA645 Wi** [Ref No. 1]

September 25, 1997

## **DESCRIPTION :**

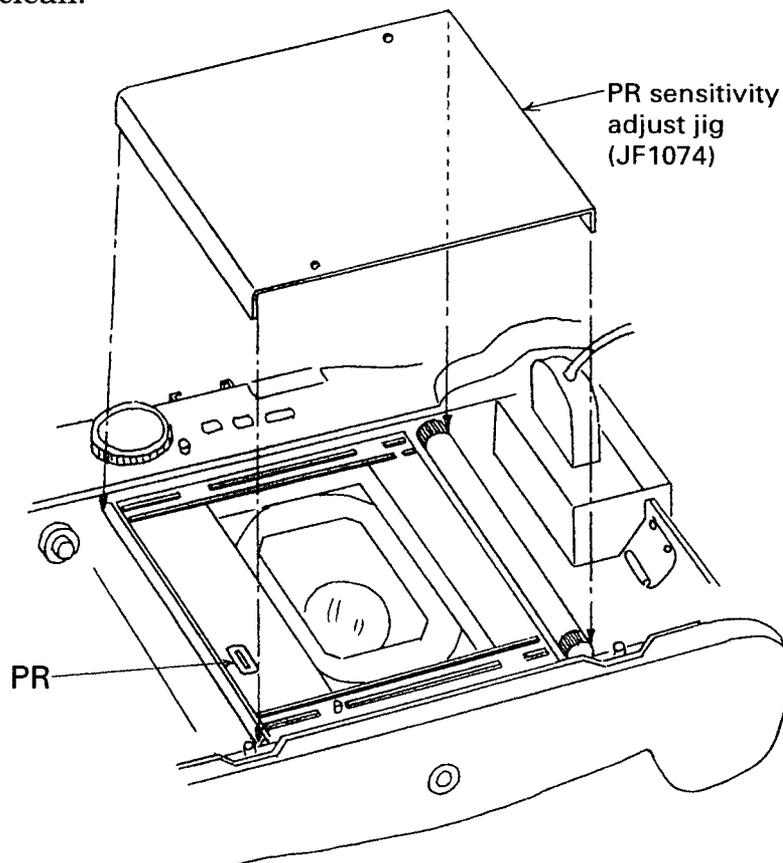
The PR sensitivity adjust jig (JF1074) is shown in page 106 of the Service Manual. This Technical Information provides additional instructions for handling of the PR sensitivity adjust jig.

### **Method of installation**

- (1) Install the jig on the aperture portion as if covering the aperture portion with the jig.
- (2) Hold the jig down firmly until it stops.

#### **NOTE :**

Be careful not to touch the interior (reflector surface) to keep the interior always clean.



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# TECHNICAL INFORMATION

**SUBJECT :** GA645 series REPAIR PROGRAM MANUAL SUPPLEMENT (1ST EDITION)

**MODEL :** GA645, GA645 W, GA645 i, GA645 Wi [Ref No. 1]

January 20, 1998

## DESCRIPTION :

This supplement adds detailed descriptions of the repair program operation manual considered necessary. Follow it in main manual order.

**1) Main menu**  
(Page --- 1)

GA645 Professional Repair Program [Ver 1.0xE] for xxxxx  
Copyright (C) 1995 by Fuji Photo Film Co., Ltd.

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< Main Menu >

[1] Focus Adjustment : Start Focus Adjustment program.  
 [2] Brightness/temp. measurement : Start brightness/temp. measurement program.  
 [3] AE Adjustment : Start AE Adjustment program.  
 [4] BC Adjustment : Start BC Adjustment program.  
 [5] AF Adjustment : Start AF Adjustment program.  
 [6] Flash Adjustment : Start Flash Adjustment program.  
 [7] Adjustment end : Program end.

Input number please. ===>

**2) Focus adjustment-1**  
(Page --- 2)

GA645 Professional Repair Program [Ver 1.0xE] for xxxxx  
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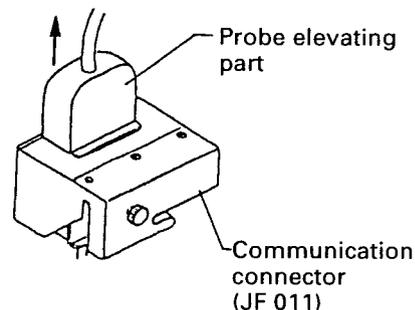
<< Focus Adjustment >>

- Note 1. ----> \* Use constant voltage power supply (5.60V).
- Note 2. ----> \* Open camera back and connect communication connector.
- Note 3. ----> \* Set camera switch ON.
- Note 4. ----> \* Set micrometer position to 14.95mm.
- Note 5. ----> \* Set collimator scale to 0.00mm.
- Note 6. ----> \* Hit RET key to start focus adjustment.
- Note 7. ----> \* Press camera shutter release within 5 seconds after hitting RET key.

Note 1. Use a constant voltage power supply having a current capacity of 3A or more (ideally, 5A).

Reason - - - To detect voltage drops at high load during BC adjustment, etc.

Note 2. When connecting and disconnecting the communication connector (JF011), always raise the elevating part of the probe to the top in advance.



Note 3. Set the camera main switch to the P (Program) position.

Note 4. Set the collimator objective lens exactly to the 0 position.

Note 5. If the shutter release is pressed within 5 seconds after the RET key is pressed, the camera will respond by clearing the display shown below. If the display is not cleared, press the shutter release again. Perform the same operation for the same item hereinafter.

\* Checking communications.  
\* Press shutter release!

## 2) Focus adjustment-2

(Page --- 3)

Note. ----->

\* Micrometer value input please. == =>

Note. Rating:  $14.95 \pm 0.03$  (When numeric input is repeated, this rating is satisfied.)

## 2) Focus adjustment-3

(Page --- 4)

Note. ----->

\* Adjustment ended.  
\* Set camera switch OFF.  
\* Hit RET key to return to menu.

Note. Don't forget to set the camera switch to OFF at this time. If the camera switch is not set to OFF, the camera may not respond even if the switch is set to OFF at the next step.

In this case, perform power ON reset by setting the constant voltage power supply from OFF to ON.

This operation is the same hereinafter.

3) **Brightness/temp. measurement adjustment-2**

(Page --- 6)

Note. ----->

\* Enter room temperature [degree C]. ===>

Note. Input the room temperature [degree C] up to one decimal position.

3) **Brightness/temp. measurement adjustment-3**

(Page --- 7)

Note 1 to 3. ----->

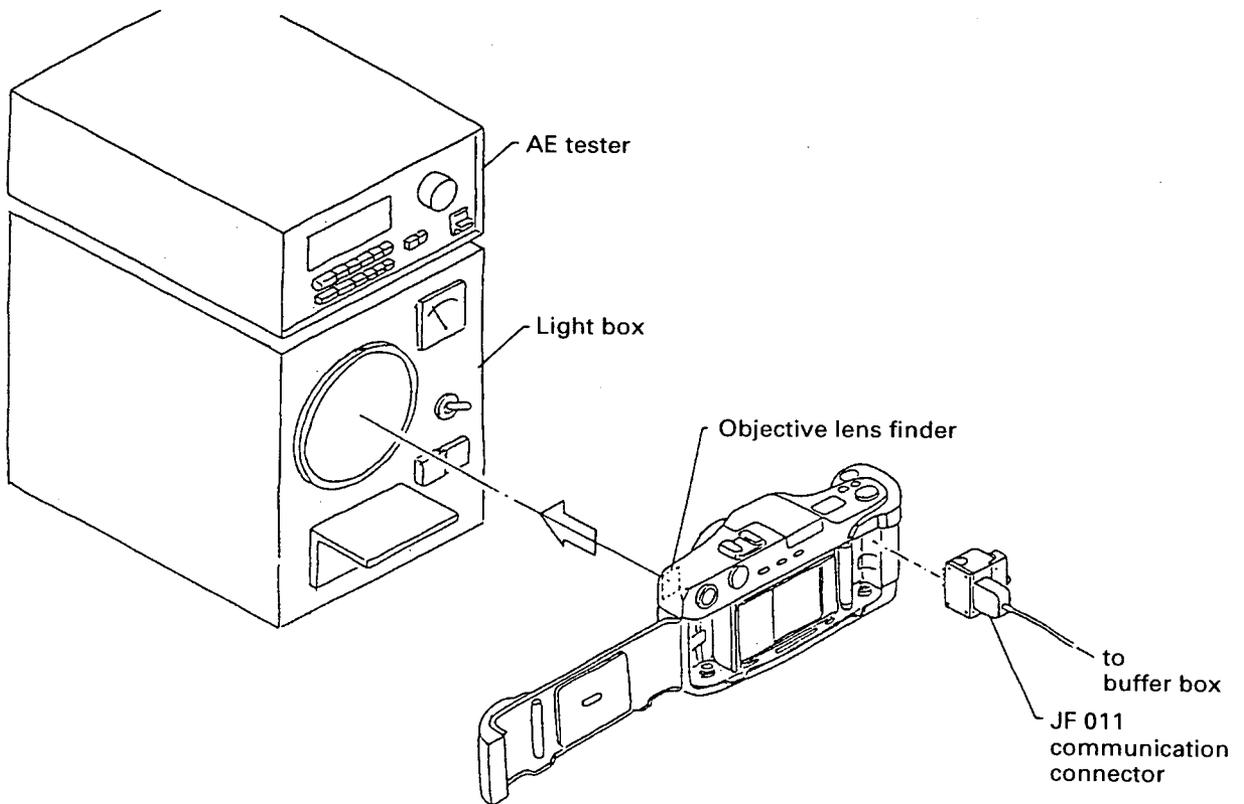
< LV setting >

\* Set brightness box to (LV8).  
 \* Check brightness box, then hit RET key.

Note 1. During brightness measurement, bring the camera toward the light box with the objective lens finder aligned with the center of the bright surface.

Note 2. During LV8 (low brightness) measurement, cover with a light shielding cloth, etc., or make the room dark, so that outside light does impinge on the bright surface.  
 This also applies to AE adjustment low brightness measurement described later.

Note 3. The light box brightness must also be controlled. (Allowable range:  $\pm 0.3EV$ )



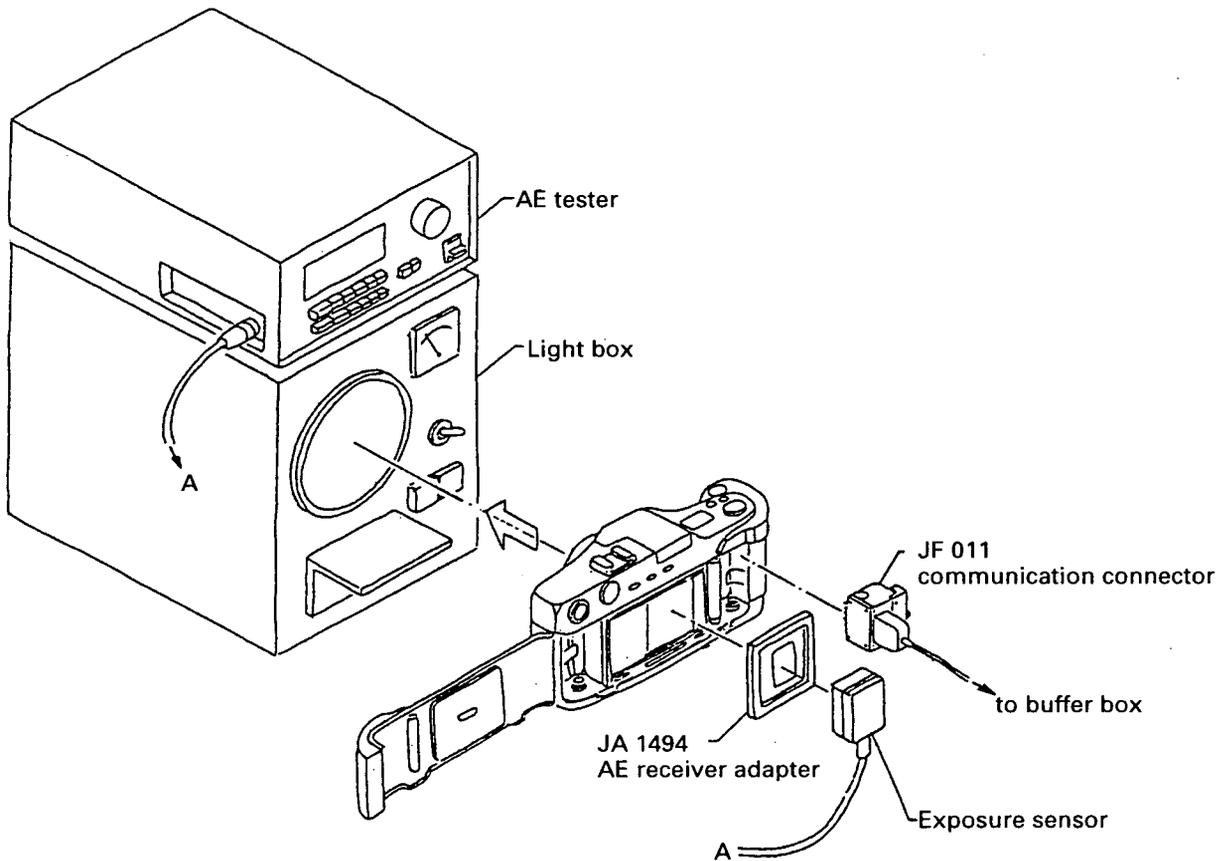
#### 4) AE adjustment-1

(Page --- 10)

Note. ----->

- \* Use constant voltage power supply (5.60V).
- \* Open camera back and connect communication connector.
- \* Set camera switch ON.
- \* Set AE tester to (ISO 100).
- \* Mount AE photocell to camera.
- \* Hit RET key to start AE adjustment.
- \* Press camera shutter release within 5 seconds after hitting RET key.

Note. Align the camera lens to the center of the bright surface. In this case, brightness measurement of the light receiving element in the finder is irrelevant.



#### 4) AE adjustment-2

(Page --- 11)

Note. ----->

- \* EV tester value input please. =====>

Note. Input three EV values and compute and write the average value.  
The rating at this time is within  $\pm 0.15EV$ .  
Therefore, since accurate light box brightness and AE tester exposure are important in this measurement, periodically perform brightness and exposure management.

4) AE adjustment-4

(Page --- 13)

Note 1. ----->

< LV setting >

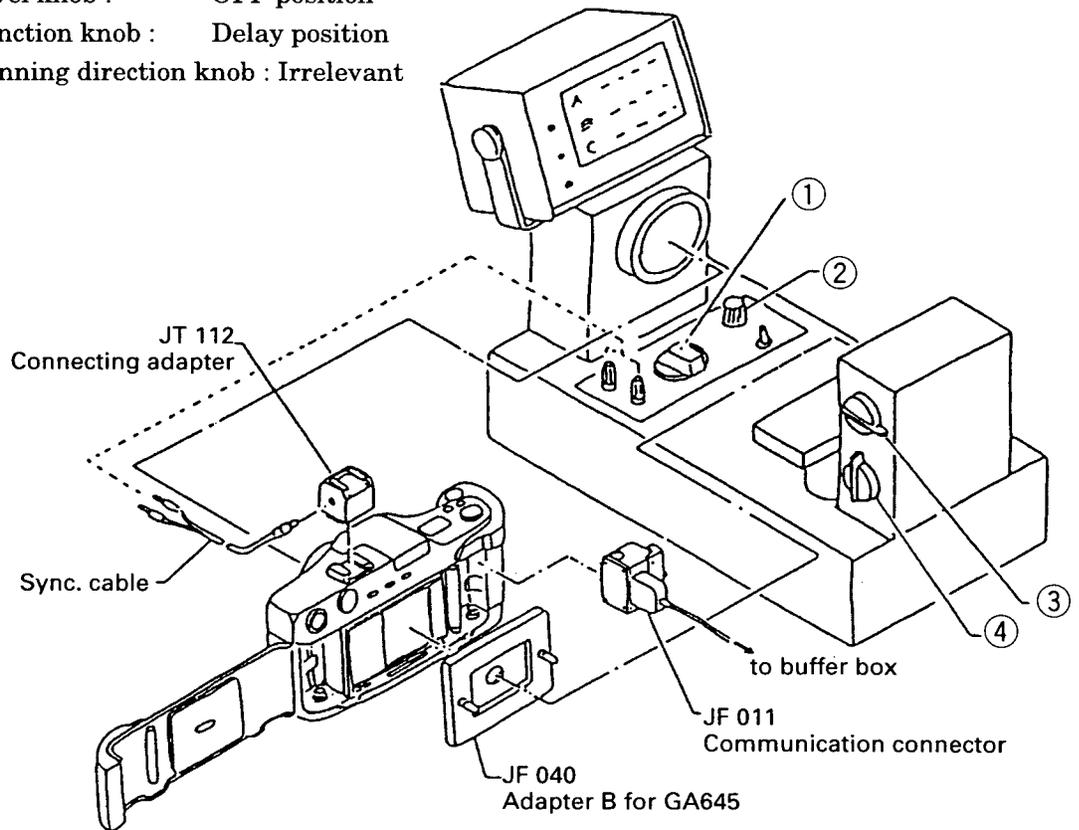
- \* Set brightness box to (LV14).
- \* Install hot shoe adapter to camera.
- \* Set so that time from shutter open to synchro signal can be measured.
- \* Check brightness box, then hit RET key.

Note 1. This brightness value is the setting when a multimeter was used. When a multimeter was not used, use a shutter tester that measures the lens shutter synchro timing.

Example --- Kyoritsu Shutter Tester (FL-400)

<Measurement conditions>

- ① Sensitivity knob : Measure at minimum sensitivity position that operates the count; that is, the lower value.
- ② Level knob : OFF position
- ③ Function knob : Delay position
- ④ Running direction knob : Irrelevant



Note 2. ----->

\* Enter synchro timing [ms]. ===>

Note 2. The synchro timing measurement conditions are shutter speed: 1/700 second, F:22 by command from the PC. Input the synchro timing three times and write the average value. If the average value is not  $+0.6\text{ms} \pm 0.058$ , an error will be generated.

6) AF adjustment-1

(Active AF)

(Page --- 18)

Note. ----->

- \* Use constant voltage power supply (5.60V).
- \* Open camera back and connect communication connector.
- \* Set camera switch ON.
- \* Make camera level.
- \* Hit RET key to start AF adjustment.
- \* Press camera shutter release within 5 seconds after hitting RET key.

Note. Install the level (JT 111) to the camera accessory shoe and keep the camera level.

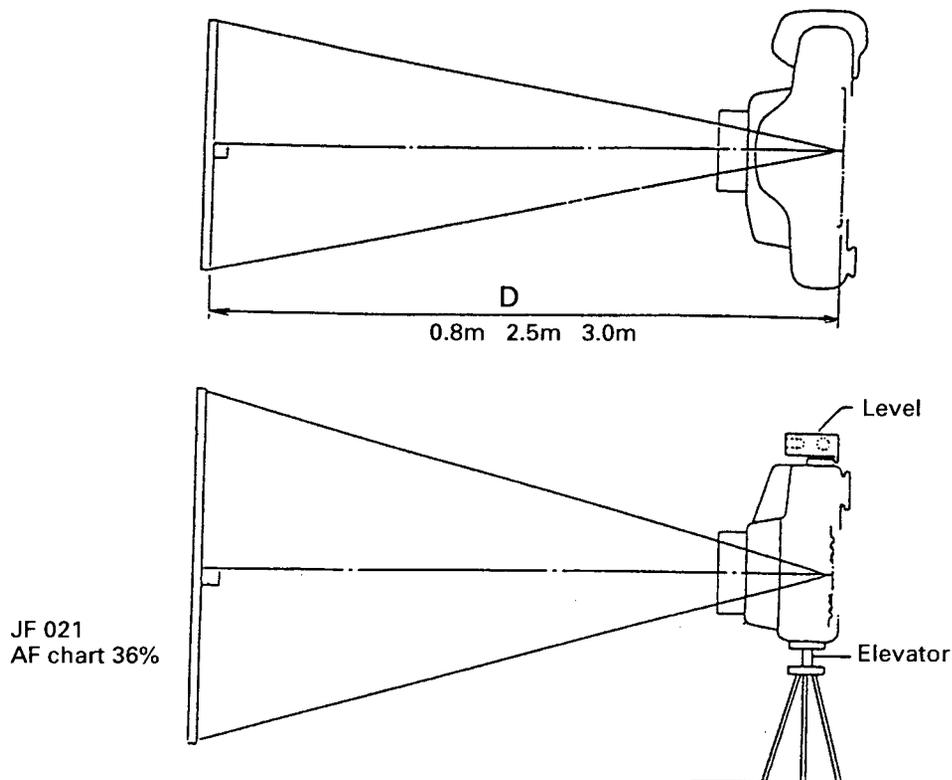
6) AF adjustment-2

(Page --- 19)

Note. ----->

- < Active gray chart setting >
- \* Set chart and camera distance to (0.8m).
  - \* Use (36%) chart.
  - \* Check chart, then hit RET key.

Note. After setting the camera and AF chart 36 (JF-012) as shown in the figure below, perform tripod elevator and tripod head turn direction fine adjustment and align the finder target mark to about the center of the AF chart. This method also applies to 2.5m ranging described later.



6) AF adjustment-4

(Passive AF)

(Page --- 21)

Note 1. ----->

Note 2. ----->

< Passive pattern chart setting >

- \* Set chart and camera distance to (3.0m).
- \* Use (3m) chart.
- \* Align center of passive window and pattern chart line.
- \* Check chart, then hit RET key.

Note 1. Set the passive AF chart type A (JT-115) 3m in front of the camera.

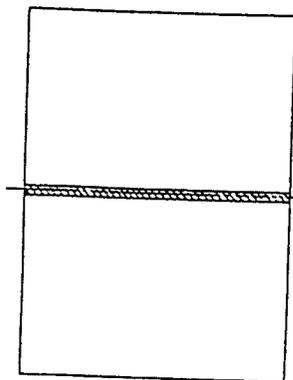
Note 2. After making the camera level (level), align the center of the passive AF window and the center of the chart using the tripod elevator.

Note 2-1 Regarding the camera position relative to the chart, the criteria is good for the horizontal direction, but measure the dimensions and set the height as much as possible. In this case, ignore the finder parallax. When an error is generated in this state, repeat fine adjustment with the tripod elevator.

Note 2-2 Normal room lighting is OK for illuminating the chart. However, be sure that the surface of the chart is uniformly illuminated.

Note 2-3 The operations above also apply 1m and 3.2m ranging.

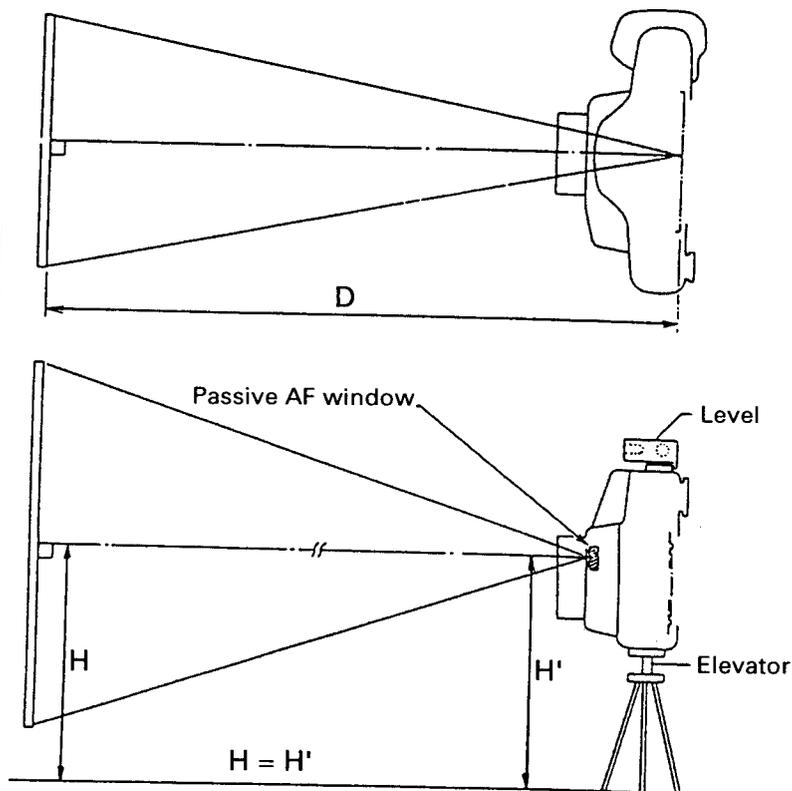
AF chart type	D	1m	3m	3.2m
A (size : 297 X 420)	○			
B (size : 420 X 594)			○	○



Passive AF chart

JT 115 Type A (size : 297 X 420)

JT 116 Type B (size : 420 X 594)



### 7) Flash adjustment-1

(Page --- 25)

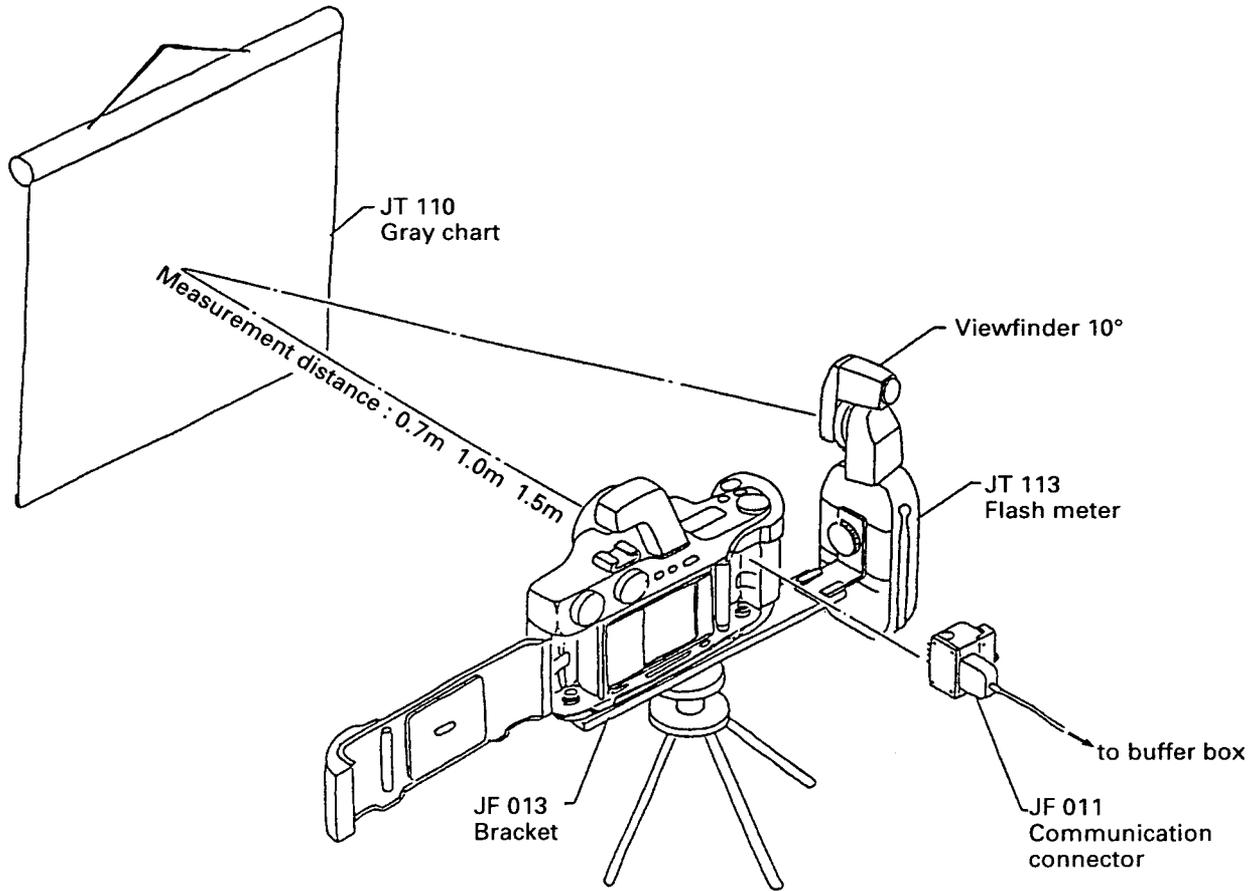
Note 1 and 2. ----->

- \* Use constant voltage power supply (5.60V).
- \* Open camera back and connect communication connector.
- \* Set camera switch ON.
- \* Set flash meter.
- \* Pop-up flash.
- \* Hit RET key to start flash adjustment.
- \* Press camera shutter release within 5 seconds after hitting RET key.

Note 1. Install viewfinder 10° to the flash meter.

Note 2. For the measurement method, refer to the flash measurement basic drawing shown below.

In this case, align the optical axis of the camera and the viewfinder target with the approximate center of the gray chart. The flash meter can be at the right or left side of the counter, as long as this condition is satisfied.



7) Flash adjustment-2

(Page --- 26)

Note 1. ---->

\* Adjustment at LV7 and less.

Note 2. ---->

\* Enter flash meter correction value [AV]. ===>

Note 1. Measure using a flash meter.

Mode: Shutter priority AMBI EV display (light receiving bulb used)

ISO: 100

TIME: Irrelevant

First confirm that the ambient light is LV7 (EV7) or less.

This value is the lowest value allowed considering various conditions and a darker place is desirable.

Note 2. AV: Normally input 0.

- ① The value considering the gray chart (JT110) reflectivity variations, etc. must be input as this correction value. However, input 0 for the present.
- ② As an example, for a FNYC/NJ gray chart, [-0.6] had to be input as the correction value.
- ③ The correction value measurement method and computation method will be communicated.
- ④ REPAIR PROGRAM GA645 (W) Ver. 1.11 distributed this time allows input of a minus correction value. REPAIR PROGRAM GA645 (W) Ver. 1.10 distributed previously does not allow input of a minus correction value.
- ⑤ REPAIR PROGRAM GA645 i (W i) Ver. 1.00 allowed input of a minus correction value from the beginning.

### 7) Flash adjustment-3

(Page --- 27)

Note. ----->

\* Enter flash meter value. ===>

#### Note. Flash meter value F No input method

- ① When F No is 10 or less, always input the fraction following the decimal point.
  - For example, for F2.8, input the fraction following 2.8.
  - For F8, input the fraction as 8.0.
- ② When F No is 11 or more, insert a decimal point between F No and the fraction and input the fraction.

#### Entry Example

F No. display	→	Enter
2.8 2	→	2.82
8.0 4	→	8.04
1 1 5	→	11.5