VB VIDEO ENTRY SECURITY SYSTEM
VIDEO ENTRANCE STATION
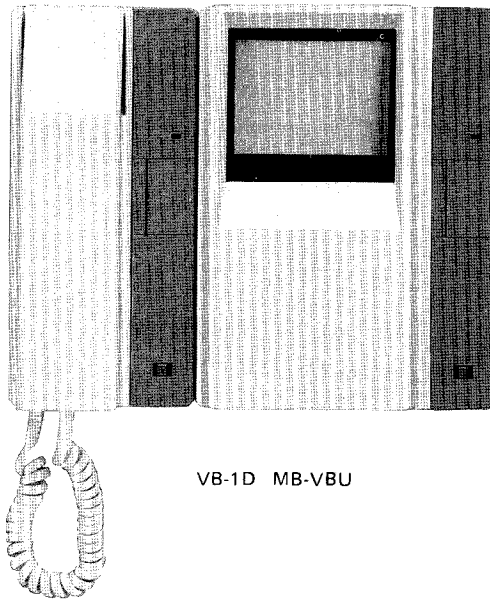### MODELS: VB-10DM *(Type A) (10-call)*
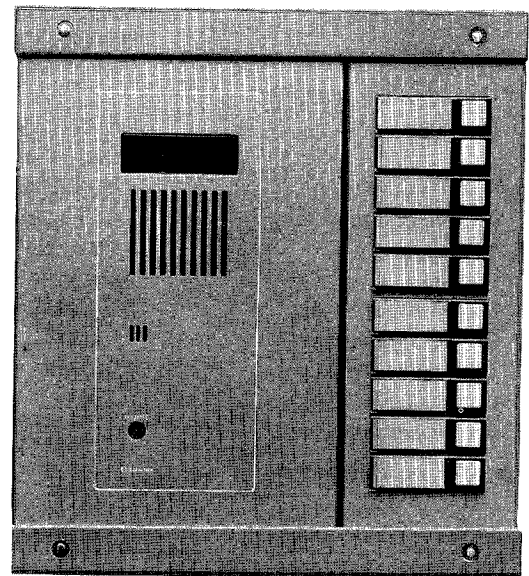### VB-5DM *(Type A) (5 -call)*
VB-DM *(Type A) (0 -call)*

VB SYSTEM IS A VIDEO ENTRY SECURITY SYSTEM, DESIGNED FOR USE IN CONDOMINIUMS, APARTMENT HOUSES, ETC.

— INSTALLATION MANUAL —

VB-1D MB-VBU

VB-10DM
(WITH VBK-A10 MOUNTED)

> All the information contained in this Manual is for VB-DM (Type A) with CCD camera.

SYSTEM FEATURES

1. Confirm a visitor visually at the entrance station before you answer by intercom station.
   . . . Picture comes on automatically when chime call tone sounds.
2. VB-DM Video Entrance station employs CCD (Charge-coupled device) camera, featuring;
   (1) the life of camera unit is almost permanent,
   (2) not damaged by strong light,
   (3) Clear picture by higher resolution,
   (4) Maintenance-free, as no replacement of vidicon is necessary, etc.
3. System can include maximum 2 video entrance stations and up to 60 room stations.
4. Modular type expansion call button panel to meet the required number of apartment calls.
5. Additional intercom/video monitor units can be installed in each apartment, if required.
6. Room station video monitor is easy-to-see 4-inch direct view, flat type.
7. Communication privacy is secured, eliminating possibility of interruption or monitoring by another apartment station.
8. Operates electric door release from any apartment station.
9. Single talk path . . . Occupied light illuminates when the other door station is in use.
10. Wiring by 5 common conductors plus 1 individual per apartment station. Either of three ways of coaxial cable connections may be applied, using video wiring adaptor.
11. Directory card can be illuminated from the back (one power supply is required for every 20 stations).

SPECIFICATIONS

VB-10DM, VB-5DM & VB-DM;
* Power source: DC 24V. Use PS-24N power supply for each entrance station.
* Current consumption: 1.4A maximum during operation (when calling).
* Contact capacity for door release: DC 24V, 2A. AC 16V, 2A
* Station expansion: Can be set up by three types of video entrance station;
VB-DM w/no call button, VB-5DM w/5 call buttons or
VB-10DM w/10 call button plus VB-10U,
10-call button add-on panel to up to 60 apartment stations.
Notes; Aiphone can supply VB-DM entrance station with exactly required number
of call buttons mounted.

VB-1D (Room intercom station), MB-VBU (Video monitor unit)
* Power source: DC 24V, supplied by VB-DM video entrance station.
* Calling: 4-stroke electronic chime when called by video entrance station.
* Wiring: One coaxial cable, five common plus one individual conductors between video
entrance and each apartment.
One coaxial cable plus 6 wires between rooms in one apartment.

VD-4 (Video wiring adaptor)
* Power source: DC 24V, supplied by a single PS-24N system power supply. If two or more VD-4
units are installed, they must be powered by a separate PS-24N power supply from
the VB-DM's.
* Current consumption: 100 mA maximum.
* Input: 2 channels.
* Output: 4 channels.
* Input/output level: 1.0-1.4V p-p.
* Output impedance: 75 ohm.
* Input impedance: 75 ohm or 10K ohm (by changeover switch).
* Gain: 0 dB.
* Frequency response: 50 Hz. to 6 MHz.

WIRING DISTANCE

	5C-2V 0.5 mm dia.	5C-2V 0.65 mm dia.	RG-59/U (22GA) 24 AWG	RG-59/U (20GA) 22 AWG
Between video entrance station & the farthest room station	(*) 90 m	(*) 150 m	(*) 300'	(*) 500'
		5C-2V 1.2 mm dia.		RG-59/U (20GA) 16 AWG
Between video entrance stations Nos. 1 and 2		50 m		170'

(*) The distance is secured only when wire on (+) terminal is doubled.

COAXIAL CABLE CONNECTION

● COAXIAL CABLE REQUIREMENTS;
Use 5C-2V or RG-59/U which must meet the following specifications;
* Both core and braided conductors must be of copper (not of copper-weld).
* Impedance : 75 ohm.
* Permitted closed loop DC resistance : 14 ohm.
* Permitted attenuation : 6 dB at 4 MHz.
* Cable sheath size should not exceed 7.4 mm (5/16").

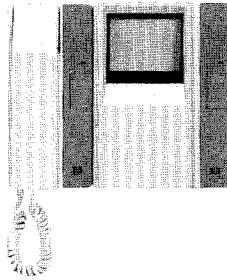● COAXIAL CABLE CONNECTION;
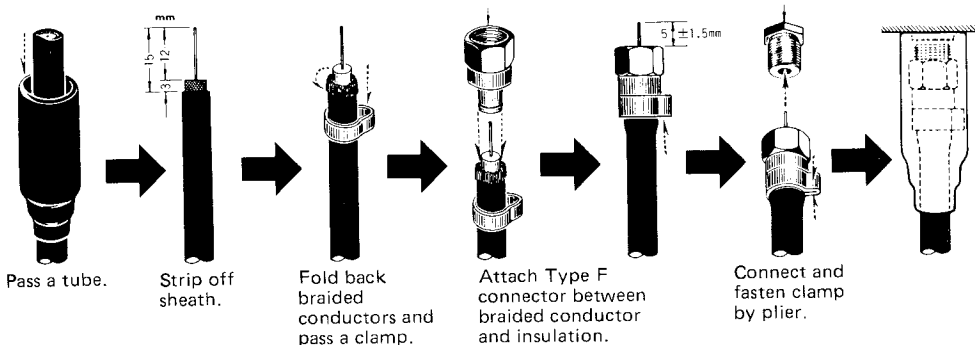
Attach the tube to the connector and put vinyl tape around cap and coaxial cable for more complete waterproof.

Pass a tube.   Strip off sheath.   Fold back braided conductors and pass a clamp.   Attach Type F connector between braided conductor and insulation.   Connect and fasten clamp by plier.

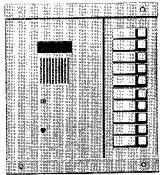# COMPONENTS AVAILABLE FOR USE WITH YOUR VB-DM SYSTEM

* Apartment station;

VB-1D (left):
Intercom unit with door release button. An additional unit can be installed in each apartment.

MB-VBU (right):
Video monitor unit. If required, an additional unit can be installed in each apartment.
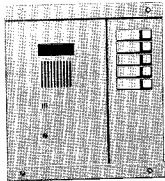
* Video entrance station;

VB-10DM:
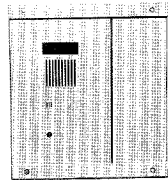10-call video entrance station with camera, illumination lamp, complete with built-in back box.

VB-10U:
Add-on 10-call button panel, Complete with built-in back box.

VB-5DM:
5-call video entrance station with camera, illumination lamp, complete with built-in back box.

* MOUNTING FRAMES;
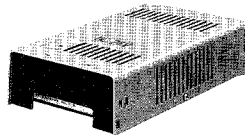**VBK-A10:** For 10-call entrance station.
VBK-A20: – DO –, for 20-call.
VBK-A30: – DO –, for 30-call.
VBK-A40: – DO –, for 40-call.
VBK-A50: – DO –, for 50-call.
VBK-A60: – DO –, for 60-call.

VB-DM:
O-call video entrance station with camera, illumination lamp, complete with built-in back box.

VD-4:
Video wiring adaptor with four video outputs.

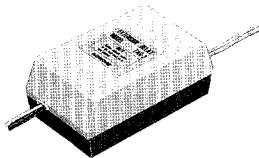NOTE: The mounting frame VBK-A10 is included in the above photoes.

PS-24N:
System power supply. DC24V, 2A. Additional power supply is required when system includes (1) two or more VD-4s and/or (2) two video entrance stations.

VB-SW:
Call button unit with directory card.

* Optional accessories:

MAW-B:
Relay for additional illumination lamp.
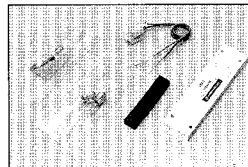
VBK-L:
Illumination plate for five directories, complete with pilot lamp (24V, 5W), screws and spacers.

MBW-A:
Built-in back box for VB-1D & MB-VBU parallel installation.

PS-12A or PS-12S:
Power supply for illumination. DC 12V.
PS-12C:
UL/CSA Approved power supply. DC 12V.

Notes: Aiphone can supply VB-DM with exactly required number of call button mounted.

SYSTEM LAYOUT EXAMPLES

(1) One-entrance system;

ENTRANCE   APARTMENTS

VB10DM

VB-1D/MB-VBU

PS-24N

AC

VB-10DM + 4 VB-10U
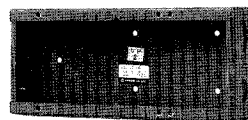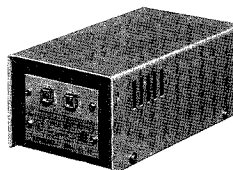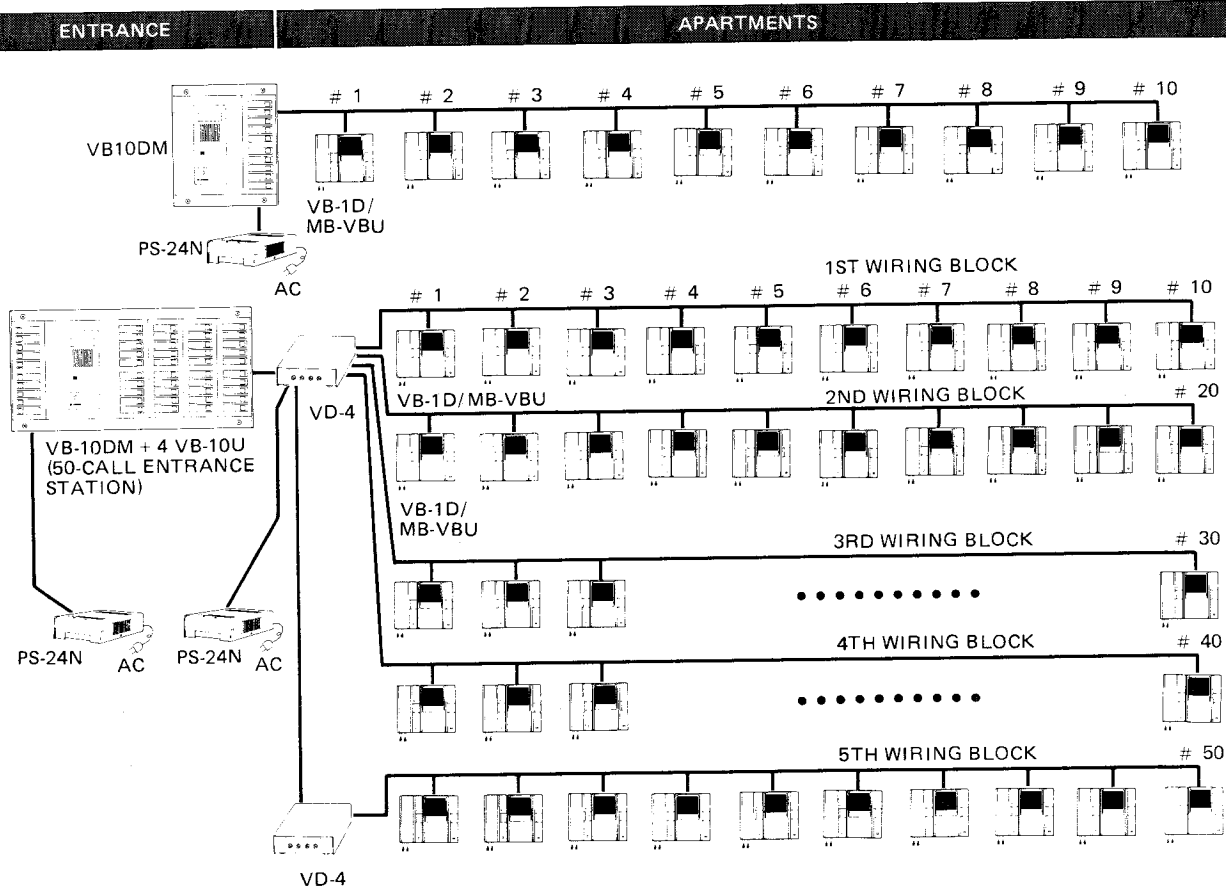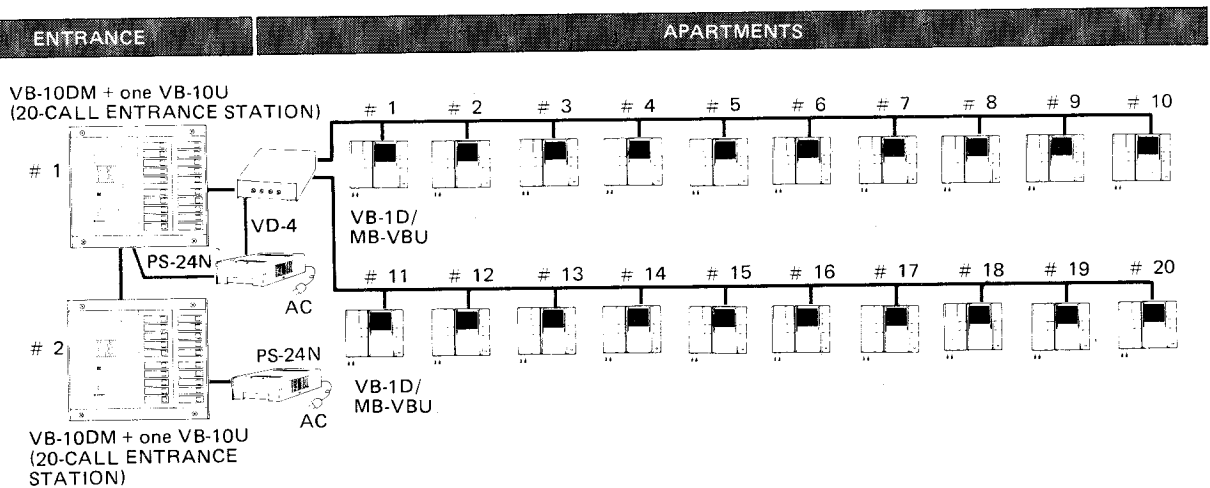(50-CALL ENTRANCE STATION)

PS-24N   AC   PS-24N   AC

VD-4

1ST WIRING BLOCK
1   # 2   # 3   # 4   # 5   # 6   # 7   # 8   # 9   # 10

VB-1D/MB-VBU   2ND WIRING BLOCK   # 20

VB-1D/MB-VBU

3RD WIRING BLOCK   # 30

4TH WIRING BLOCK   # 40

5TH WIRING BLOCK   # 50

VD-4

Notes: (1) Up to 10 apartment stations may be connected without using VD-4 video wiring adaptors.
(2) For a system with more than 10 apartment stations, use VD-4 adaptors with four video outputs, each of which can accomodate up to ten apartment stations. When two or more VD-4 are installed, those VD-4 units must be powered by a separate PS-24N power supply.

(2) Two-entrance system;

ENTRANCE   APARTMENTS

VB-10DM + one VB-10U
(20-CALL ENTRANCE STATION)

1

VD-4

PS-24N

AC

2

PS-24N

VB-1D/MB-VBU

AC

VB-10DM + one VB-10U
(20-CALL ENTRANCE STATION)

1   # 2   # 3   # 4   # 5   # 6   # 7   # 8   # 9   # 10

VB-1D/MB-VBU

11   # 12   # 13   # 14   # 15   # 16   # 17   # 18   # 19   # 20

VB-1D/MB-VBU
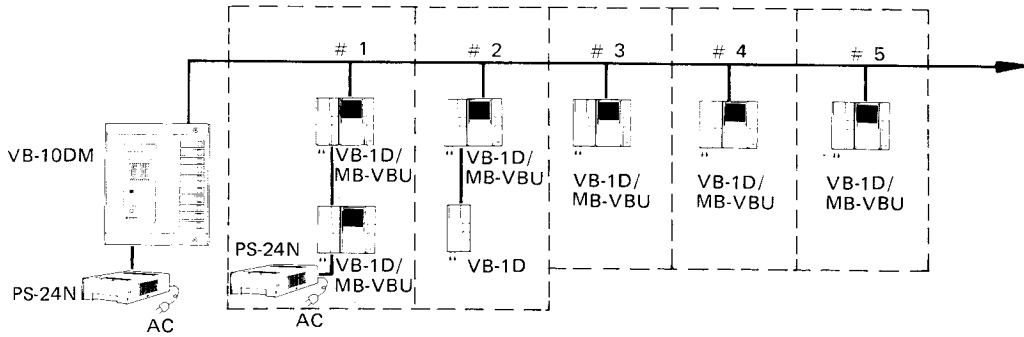
Notes: For a system with two video entrance stations, it is not necessary to run cable from each entrance station to apartment stations, but to run cable from first to second door station. Each video entrance station must be powered by a separate PS-24N power supply.

(3) Optional additions;

1. Two intercom/video monitors per apartment;

Notes: 1. As shown, an apartment, if required, may have two units each VB-1D intercom and MB-VBU video monitors (Room #1) or two units VB-1D and one MB-VBU (Room #2).
2. MB-VBU video monitor must be used always with VB-1D intercom.
3. Calling and communication are not available between VB-1D intercoms (Rooms #1, 2).
4. Additional power supply PS-24N is required for any apartment with two MB-VBU video monitors installed (Room #1).

2. Lamp for illuminating directory cards from the back;
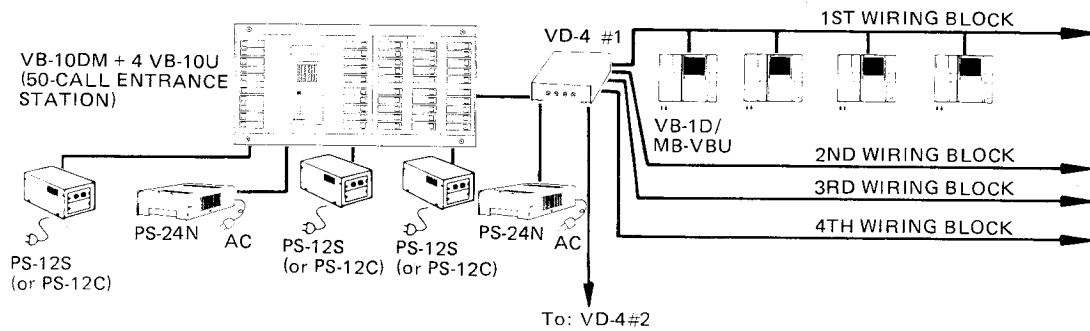
Notes: An additional lamp illuminates up to 20 directory cards, using a PS-12S (or PS-12C) power supply. For details, refer to the Page 20 of this manual.

3. Door release at each entrance;
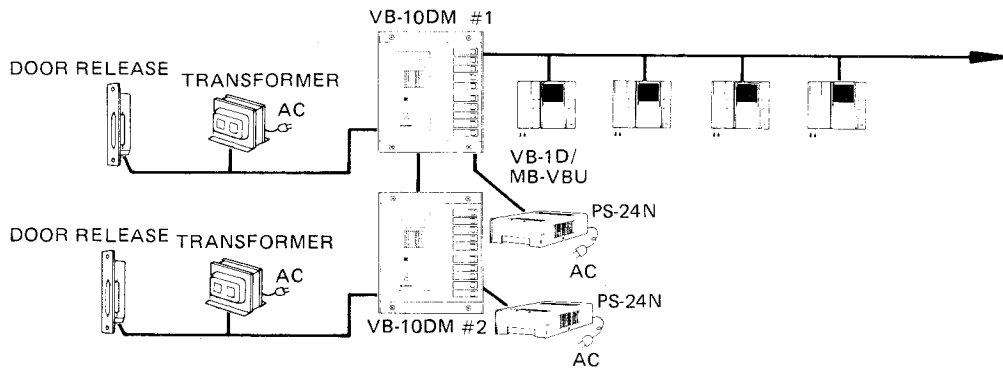
Notes: Each entrance may have door release, powered by a separate transformer. Door release activation is only valid at a communicating door station.

NAMES AND FUNCTIONS
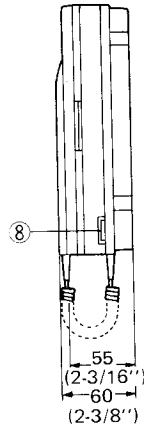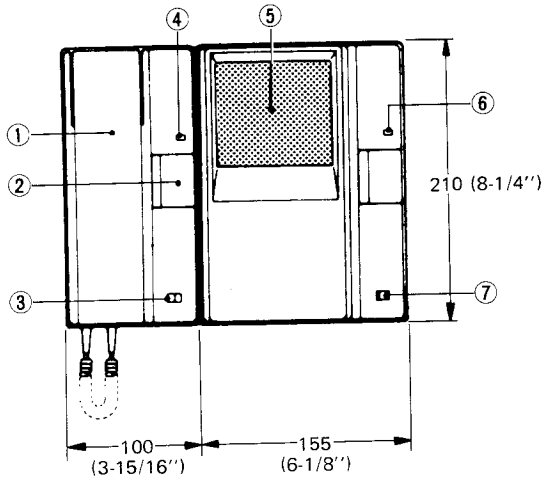
VB-1D, MB-VBU;
1. Handset
2. Door release button
3. Call tone volume switch
4. Visitor call light
5. Video monitor
6. In-use light
7. Contrast control (3-level)
8. Brightness control
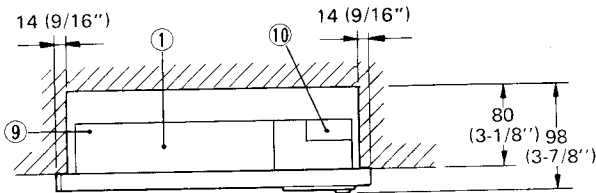
VB-10DM;
1. CCD camera unit
2. CCD camera ON indicator LED (green)
3. Speaker
4. Microphone
5. Occupied LED (red)
6. Frame (VBK-A10)
7. Directory card
8. CALL button
9. Built-in back box
10. Terminal section
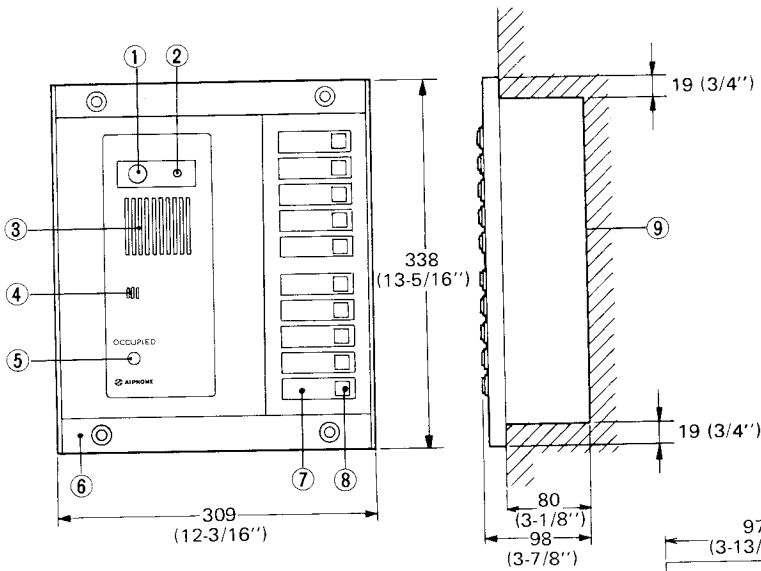
VB-10U;
1. CALL button (VB-SW unit S)

PS-24N;
1. Power on light
2. Terminal cover
3. DC output terminals & GND terminal
4. AC cord & plug.
5. Mounting bracket

NAMES AND FUNCTIONS

14 (9/16") 14 (9/16")

80 (3-1/8") 98 (3-7/8")

19 (3/4")

338 (13-5/16")

19 (3/4")

80 (3-1/8") 98 (3-7/8")

525 (20-5/8")
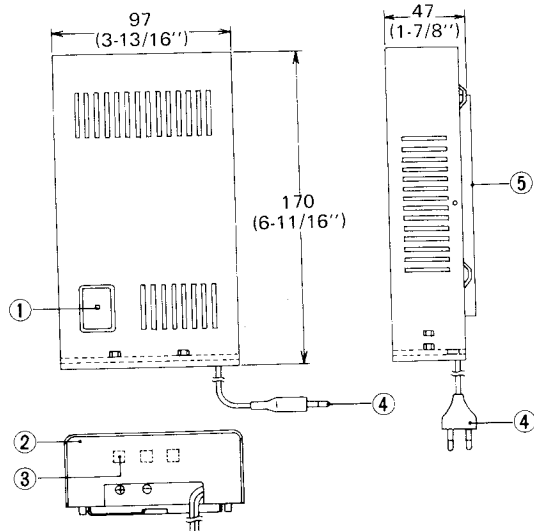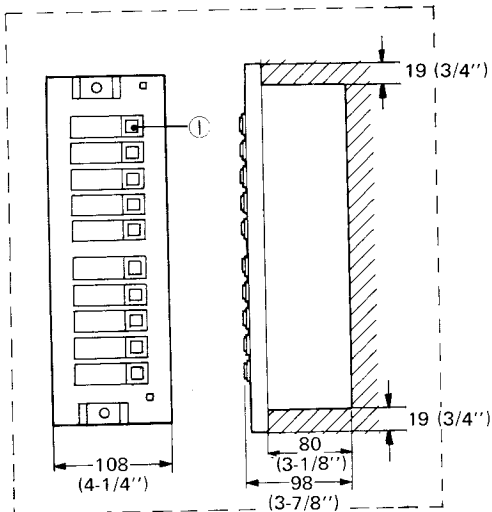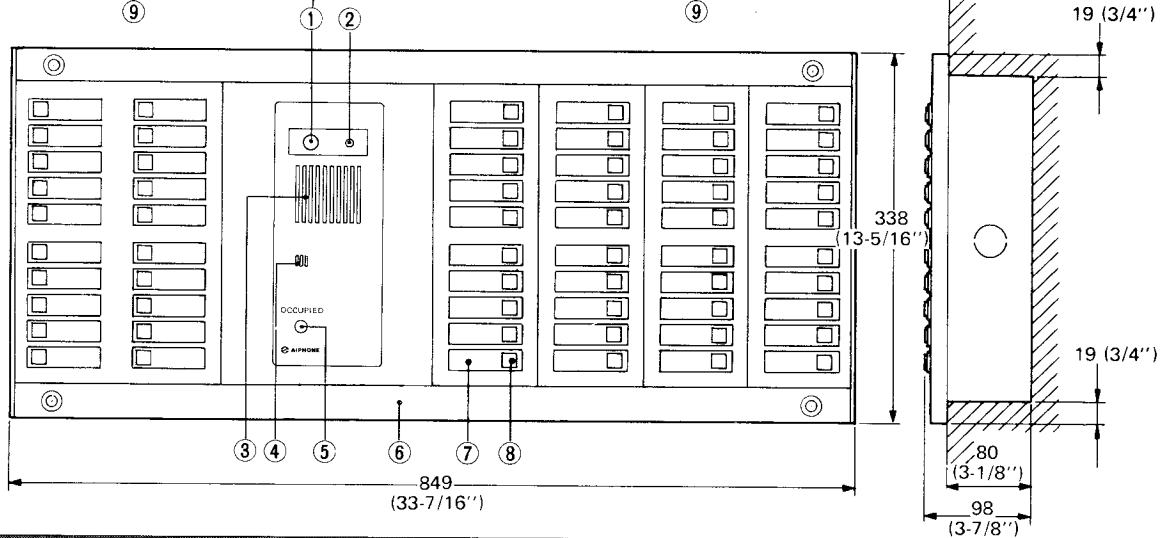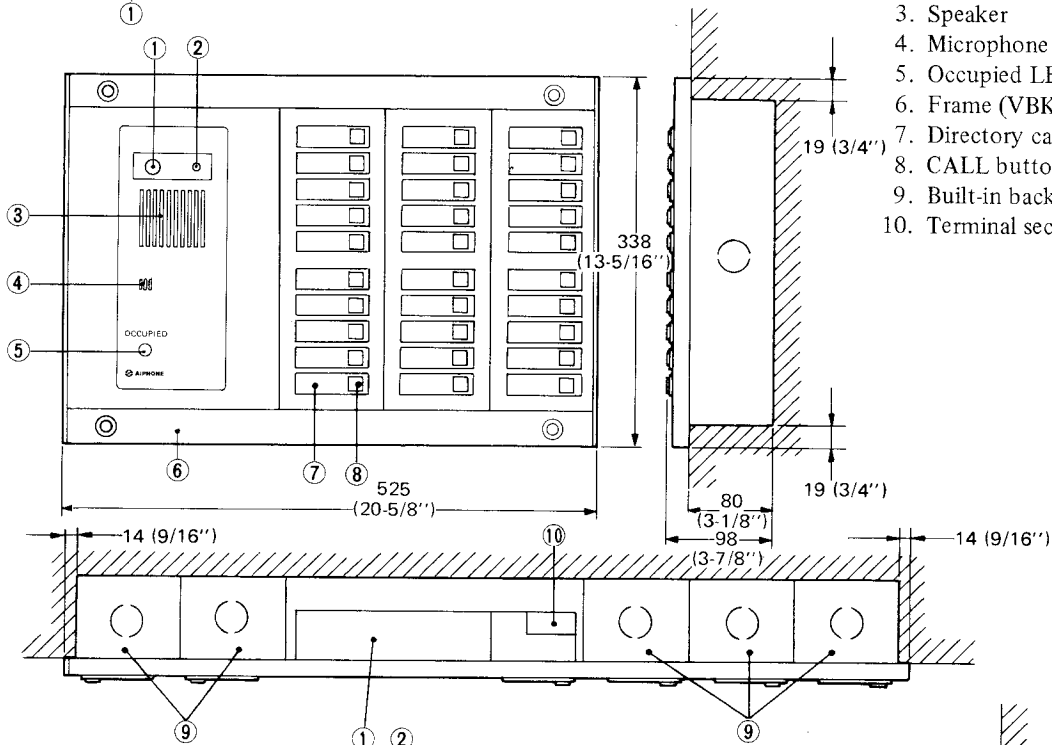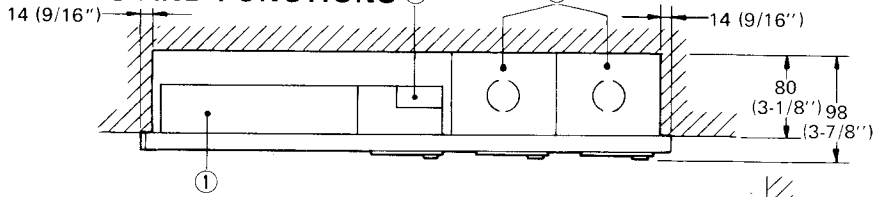
VB-30DM & VB-60DM;
1. CCD camera
2. CCD camera ON indicotor LED (green)
3. Speaker
4. Microphone
5. Occupied LED (red)
6. Frame (VBK-n)
7. Directory card
8. CALL button
9. Built-in back box
10. Terminal section

14 (9/16") 14 (9/16")

19 (3/4")

338 (13-5/16")

19 (3/4")

80 (3-1/8") 98 (3-7/8")

849 (33-7/16")

MODEL	HEIGHT	WIDTH	DEPTH	RECESSED PART
ROOM STATION	210 mm	255 mm	60 mm	—
(VB-1D & MB-VBU)	8-1/4"	10-1/16"	2-3/8"	—
VIDEO ENTRANCE STATION 10-CALL		309 mm		
(VB-10DM)		12-3/16"		
– DO –, 20-CALL		417 mm		
(VB-10DM & ONE VB-10U)		16-3/8"		
– DO –, 30-CALL		525 mm		
(VB-10DM & TWO VB-10U)	338 mm	20-5/8"	98 mm	80 mm
– DO –, 40-CALL	13-5/16"	633 mm	3-7/8"	3-1/8"
(VB-10DM & THREE VB-10U)		24-7/8"		
– DO –, 50-CALL		741 mm		
(VB-10DM & FOUR VB-10U)		29-1/8"		
– DO –, 60-CALL		849 mm		
(VB-10DM & FIVE VB-10U)		33-7/16"		

VB SYSTEM EQUIPMENT REQUIREMENTS

The following VB System Design Table shows the mix and quantity of VB One-entrance video entry security system, when VD-4 is used for every 10 apartment stations.

SYSTEM COMPONENTS	STATION CAPACITY						
	5 calls	10 calls	20 calls	30 calls	40 calls	50 calls	60 calls
*Video entrance station;							
VB-DM, no call.	—	—	—	—	—	—	—
VB-5DM, 5 calls.	1	—	—	—	—	—	—
VB-10DM, 10 calls.	—	1	1	1	1	1	1
*Add-on call button panel;							
VB-10U	—	—	1	2	3	4	5
*Mounting frame for entrance station;							
VBK-A10, for 10-call station	1	1	—	—	—	—	—
VBK-A20, for 20-call station	—	—	1	—	—	—	—
VBK-A30, for 30-call station	—	—	—	1	—	—	—
VBK-A40, for 40-call station	—	—	—	—	1	—	—
VBK-A50, for 50-call station	—	—	—	—	—	1	—
VBK-A60, for 60-call station	—	—	—	—	—	—	1
*Apartment station;							
VB-1D, Intercom unit	5	10	20	30	40	50	60
MB-VBU, Video monitor unit	5	10	20	30	40	50	60
MBW-A, Built-in back box for VB-1D/MB-VBU mounting	(5)	(10)	(20)	(30)	(40)	(50)	(60)
*Video wiring adaptor;							
VD-4	—	—	1	1	1	2	2
*Power supply;							
PS-24N	1	1	1	1	1	2	2
*Options;							
VBK-L, Illumination plate	1	2	4	6	8	10	12
PS-12S or PS-12A (or PS-12C), Power supply for VBK-L	1	1	1	2	2	3	3
Door release	1	1	1	1	1	1	1

Notes: (1) VB-DM unit is available with the exact number of call buttons, if required.
   (2) Each apartment may own 2 units each VB-1D intercom and MB-VBU video monitor units.
   (3) Up to two video entrance stations can be installed. Each door station must be powered by a separate PS-24N power supply.
   Door release can be installed for each video entrance station.
   (4) If two or more VD-4 units are required, an additional PS-24N power supply is required for those VD-4 units.
   (5) For coaxial cable, specify the type 5C-2V or RG-59/U, the core and braided conductors of which are made of copper (See Page 2).

BEFORE YOU INSTALL AND OPERATE THE EQUIPMENT
— Prohibitions and precautions —

NEVER

1. Operation;
   DO NOT HOLD HOOK SWITCH DOWN WHILE PICKING UP HANDSET. THE CHIME TONE SOUNDS THROUGH THE HANDSET RECEIVER ELEMENT AND COULD CAUSE HEARING DAMAGE.

2. Installation;
   (1) DO NOT OPEN THE BACK COVER OF VIDEO MONITOR, WHITHOUT FIRST REMOVING PLUG OF PS-24N POWER SUPPLY FROM AC OUTLET. The high voltage is loaded on the monitor unit inside.
   (2) DO NOT CONNECT ANY TERMINAL ON THE INTERCOM/VIDEO MONITOR TO AC POWER LINES.
   (3) Avoid running coaxial cable/wires thru doors, windows or between furniture, which may pinch connecting wires.
   (4) Handle video monitor unit with utmost care. The built-in monitor unit, if dropped or struck, can be damaged.

3. Installation location requirements;
   *VB-1D/MB-VBU room station;
   (1) Avoid to install VB-1D/MB-VBU room station in a place where it is exposed to; direct sunlight, air conditioning heat, frost, high temperature, vapor, water, dust, iron dust, chemicals, etc.
   (2) Determine VB-1D/MB-VBU installation height so that the center of the video monitor would be at the standard eye level: adults' average height minus 10 cm (4″).

   Adult's average height minus 10 cm (14″)
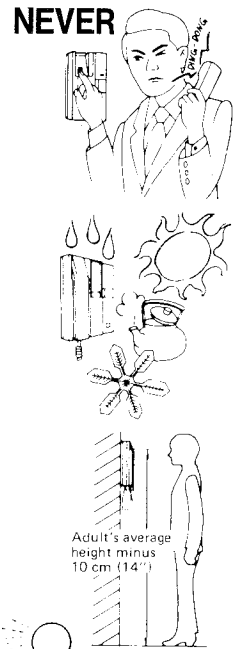
   *VB-DM video entrance station;
   (1) The location of the video entrance station should not be exposed to;
       — direct sunlight,
       — a strong light source such as mercury street lamps, porch or gate lights,
       — direct rain or snow.
   (2) Please decide most suitable height of VB-DM video entrance station, taking the adults' average height in consideration. It is suggested that the center of a camera lens come at a height of adults' average height minus 10 cm (4″).

   NEVER

   Approx. 35.5 cm (1′·2″)

   Adult's average height minus 10 cm (4″)

   50 cm (1′-7·11/16″)

   Approx. 49 cm (1′-7·5/16″)

   (3) If the sunlight or other strong light source is behind the person standing at the door station, and there is not illuminating lamp spotlighting the face, the face will appear dark on the video monitor. This situation can occur when buildings create shadows on entry areas. A separate illumination light may be necessary. The Aiphone Relay Unit MAW-B is available, to turn on an external light when the visitor presses the call button on the video entrance station.

   NEVER   **YES**
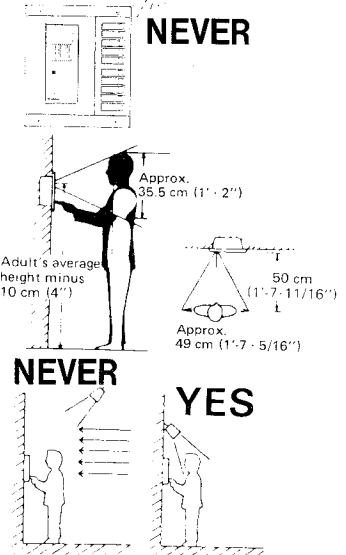
SURFACE MOUNTING, USING MBW-A BACK BOX

MBW-A built-in back box is available for VB-1D & MB-VBU parallel installation. On MBW-A box, nine knock-out holes are provided for cable inlet.

Open a hole of W: 215 mm x H: 95 mm (W: 8-1/2″ x H: 3-3/4″), securing depth of 40 mm (1-9/16″) in the wall.
Locate MBW-A box in the wall, with V-cut side in upper position, so that A line should cross vertically with the floor.
Attach the mounting bracket to MBW-A first.
After wiring, attach VB-1D onto the bracket.
Attach the MB-VBU chassis on the MBW-A, connect coaxial cable and wires for intercom, and reattach connectors.
Replace the front panel to the chassis.
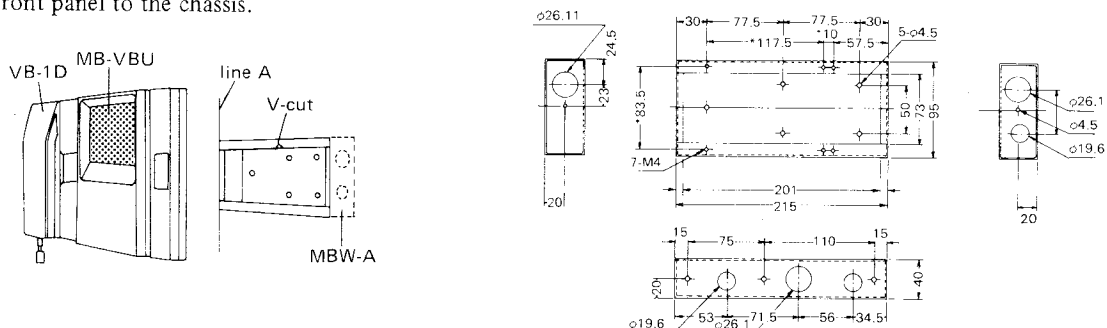
SURFACE MOUNTING, USING GANG BOXES
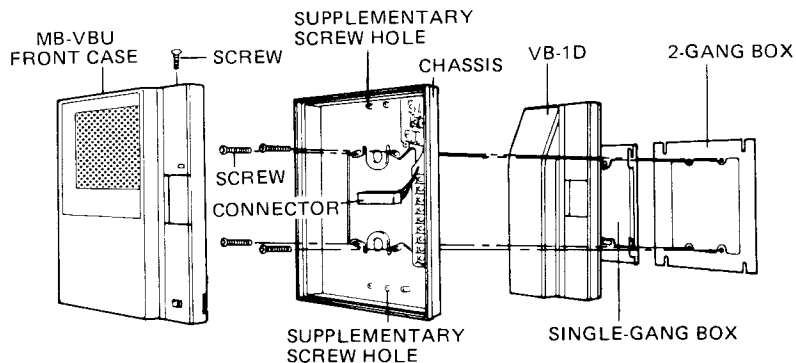
1. Before mounting MB-VBU monitor unit, attach VB-1D unit onto the bracket.
2. To mount MB-VBU unit, remove a screw on top of the case, and separate front case from the chassis. Remove the connector.
3. Attach the chassis onto the 2-gang box with the supplied screws.
4. If MB-VBU unit can not be fitted with VB-1D, attach the chassis directly to wall with the supplied wood screws, after fixing the chassis at the most adequate point of three supplementary screw holes.
5. Connect coaxial cable and wires for communication, and reattach connectors.
6. Replace the front panel to the chassis.

VB-1D AND MB-VBU MOUNTING LOCATION

The MB-VBU video monitor unit mounts onto the 2-gang box, and VB-1D intercom mounts onto the single-gang box. As shown, locate the two gang boxes so that the interval between center of two boxes is measured 127.5 mm (5"), which secures mounting two units neatly. OR Aiphone can supply MBW-A built-in back box for VB-1D/MB-VBU parallel installation.

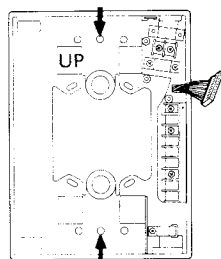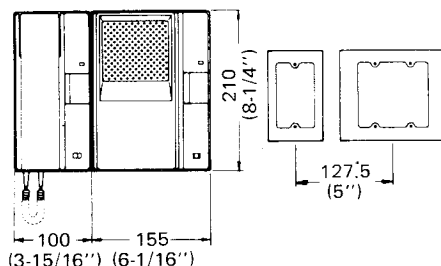On MB-VBU chassis, six supplementary screw holes are provided to fix the monitor unit at the most adequate point on the wall directly.

SURFACE MOUNTING TO WALL
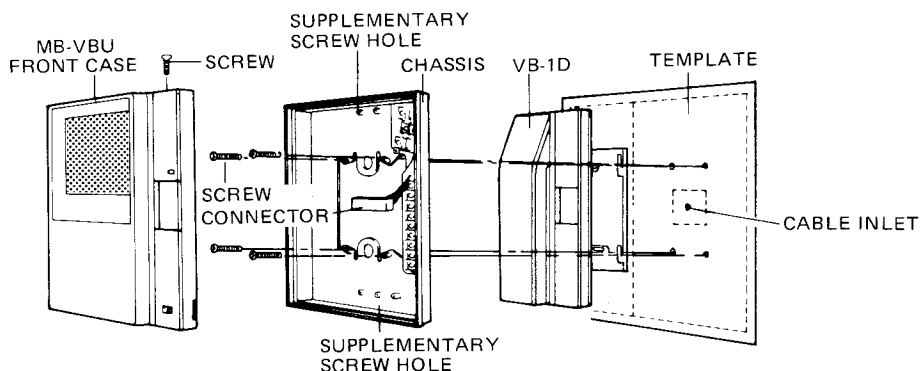
1. Attach a template provided to the wall and decide the mounting points of screws for both VB-1D and MB-VBU.
2. First, attach VB-1D unit to the wall.
3. To mount MB-VBU, remove a screw on top of the case, and separate front case from the chassis, and remove connector.
4. Attach the chassis onto the concrete wall with the supplied anchor bolts, or if onto the plaster board, with the board fastener also supplied.
5. Connect coaxial cable and wires for intercom, and reattach connectors.
6. Replace the front panel to the chassis.

ENTRANCE STATION BACK BOX INSTALLATION

1. Assemblying back boxes;

Attach a back box(es) of additional call button unit to the VB-DM back box with supplied four screws.
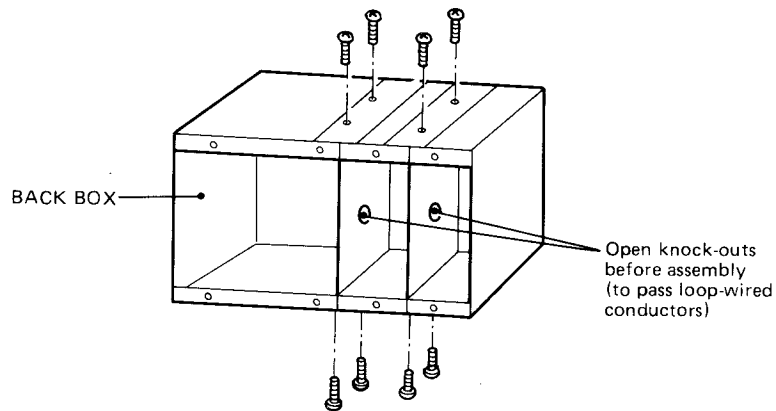
Notes: (1) Open a knock-out(s) necessary to pass conductors before assemblying the back boxes.
       (2) It is suggested that the back box of additional call button unit should be attached in such a manner that;
            a. up to three back box(es) are attached to the right of the VB-10DM back box.
            b. the 4th and 5th back boxes are attached to the left of the VB-10DM back box,
                so that a visitor can operate, standing in front of the camera.

2. Opening a hole in the wall;

According to the type of door station to be installed, open a hole of adequate size as specified in a table below;

	Height	Width	Depth
VB-10DM	300 mm (11-13/16")	281 mm (11-1/16")	80 mm (3-1/8")
VB-10DM + one VB-10U	300 mm (11-13/16")	389 mm (15-5/16")	80 mm (3-1/8")
VB-10DM + two VB-10U	300 mm (11-13/16")	497 mm (19-9/16")	80 mm (3-1/8")
VB-10DM + three VB-10U	300 mm (11-13/16")	605 mm (23-13/16")	80 mm (3-1/8")
VB-10DM + four VB-10U	300 mm (11-13/16")	713 mm (28-1/16")	80 mm (3-1/8")
VB-10DM + five VB-10U	300 mm (11-13/16")	821 mm (32-5/16")	80 mm (3-1/8")

3. Installing the vertical frames;

Mount a vertical frame to each side of the door station panel, either VB-10DM's or VB-10U's.

VERTICAL FRAME

VB-10DM
FRONT PANEL

VB-10U UNIT
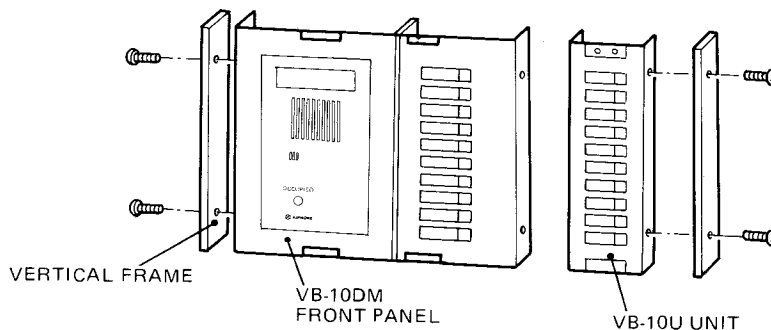
4. Mounting VB-DM panel;

Attach two connectors (blue) located inside the VB-10DM back box, to the connectors (blue) of VB-10U.
Make wiring on call button terminals and on terminal section, which appears when removing VB-10DM call button panel.
There is no need to remove VB-10DM front panel for wiring.
Mount the VB-10DM unit on the back box.
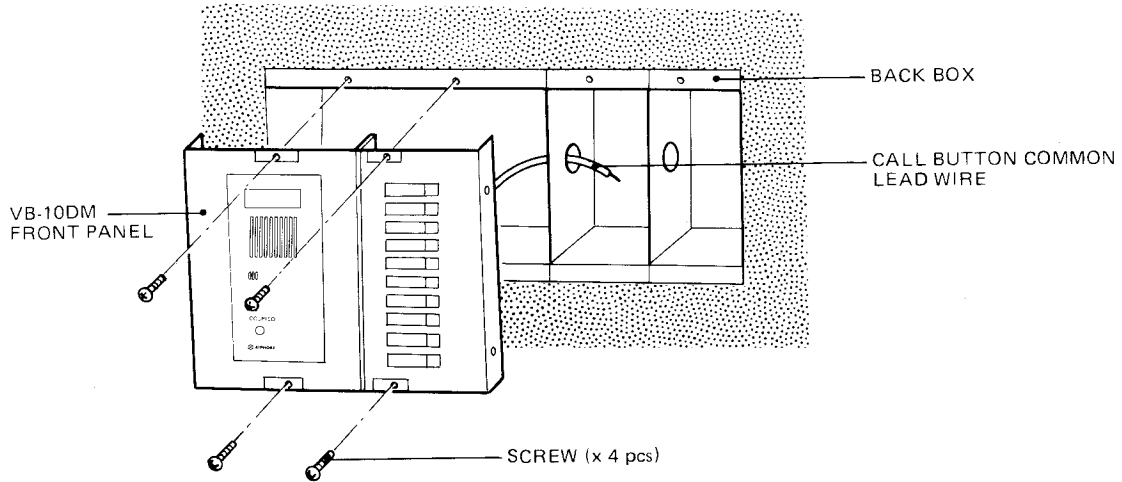
5. Mounting VB-10U unit;

After wiring on VB-10U call button terminals and common lead wires (blue), mount the VB-10U unit to the back box with the supplied 2 screws, in such a manner that there would not be any space left between the VB-10DM and VB-10U units.
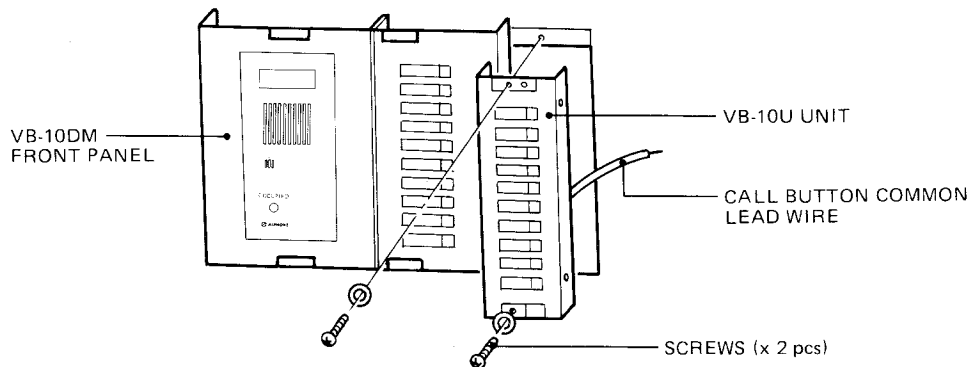
6. Attaching the horizontal frames;

Attach a horizontal frame to each upper and lower end of VB-10DM and VB-10U units, with the special screws provided, using the driver also provided.
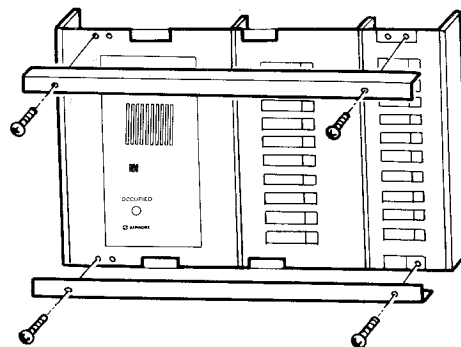
Note: Horizontal frame length is different according to the station capacity of video entrance station. So, select the proper frames for your installation.

ACTUAL TERMINAL LOCATION

VB-1D & MB-VBU

UP

SHORTING
CONNECTOR
(for impedance-
matching)

MB-VBU CHASSIS
INSIDE VIEW

MB-VBU BODY BACK VIEW

VB-1D BACK VIEW
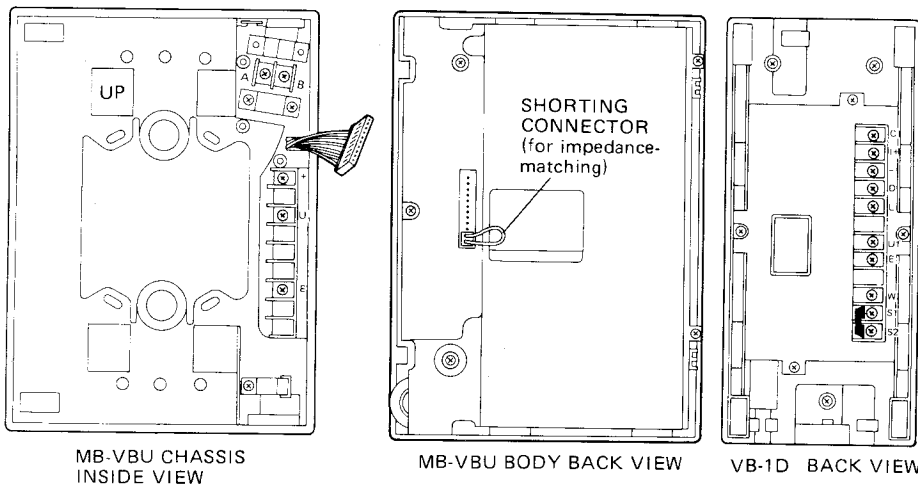
VB-1D:
C   to : No. trerminal of VB-DM
I + to : I + terminal of VB-DM
–   to : – terminal of VB-DM
D   to : D terminal of VB-DM
L   to : L terminal of VB-DM
U1 to : U1 terminal of MB-VBU
E   to : E terminal of MB-VBU
W   : Remains unused. Must be connected to
        W of additional VB-1D,
        if installed.
S1-S2 Shorting link is attached between S1 S2.
        *Must remain attached when only one
         VB-1D is used in apartment.
        *Must be removed at each VB-1D, when
         two VB-1D are used in an apartment.

MB-VBU:
+   to : + terminal of VB-DM
U1 to : U1 terminal of VB-1D
E   to : E terminal of VB-1D

VB-10DM

MODEL/
LOT LABEL

COAXIAL
CABLE
TERMINAL

COMMON LINE
FOR CALLING

CCD CAMERA

LED
(green)

UP

BLUE LEAD WIRE
(to: VB-10U BLUE
lead wire)

COAXIAL
CABLE
TERMINAL

LED
(red)   MIC.   SPEAKER

MOUNTING FRAME INSIDE VIEW

UP
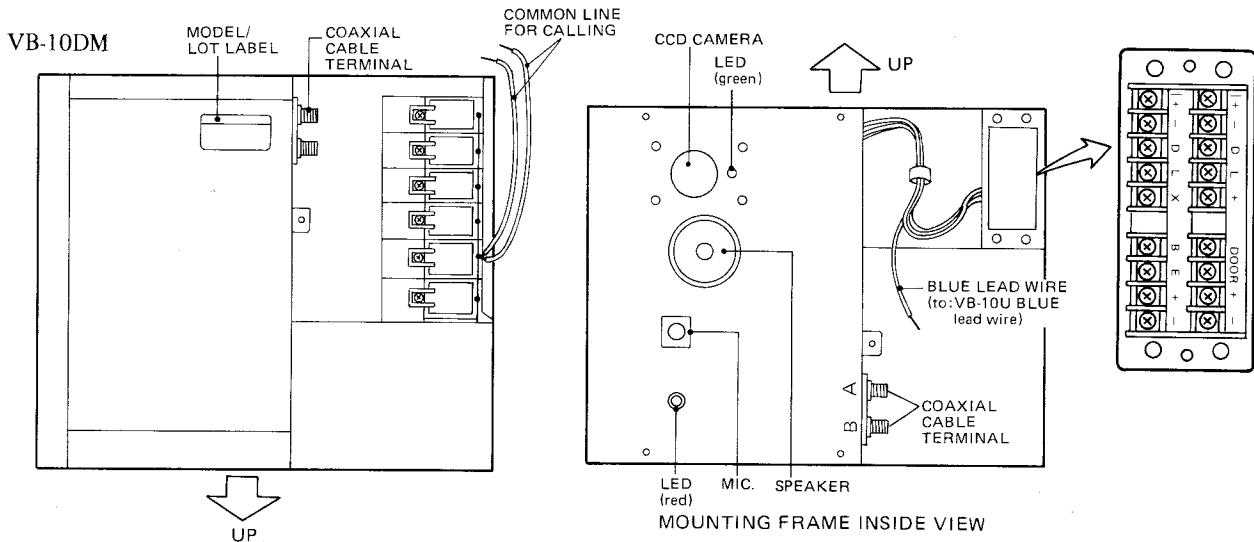
VB-10DM INSIDE VIEW

(*) Station number terminals
    (on back of VB-SW unit S) : for calling
    + , – : for power supply
    L : for door release
    D : for communication

B , E : for control of additional
        illumination lamp

DOOR : two dry make contacts for
       door release

X , E : for occupied light (at the
        other door station)

VD-4

VIDEO OUT
OUT 1 OUT 2 OUT 3 OUT 4

FRONT VIEW

Impedance matching switch

VIDEO IN   75Ω ◄►HIGH

VIDEO IN
IN A   IN B

+   –

BACK VIEW
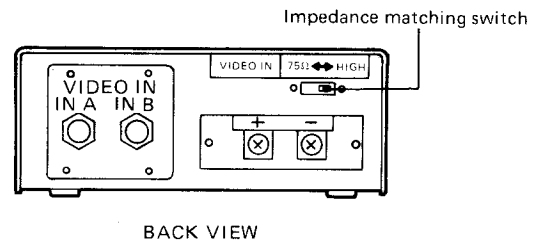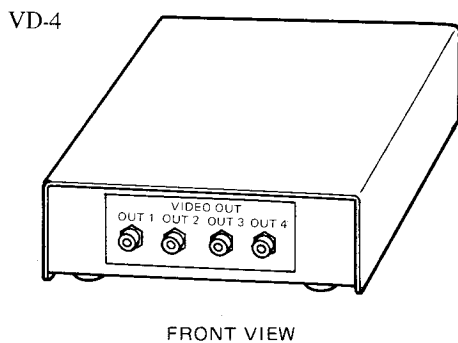
OUT : Video output terminals

IN A   IN B : Video input terminals

+ , – : for power supply, DC24V

WIRING COAXIAL CABLE

There are three methods of wiring coaxial cable as illustrated below, any of which may be applied according to your installational convenience.

METHOD #1
This illustrates that coaxial cable is wired from one room station to another without any VD-4 video wiring adaptor, applicable for a system of up to 10 apartment room stations.
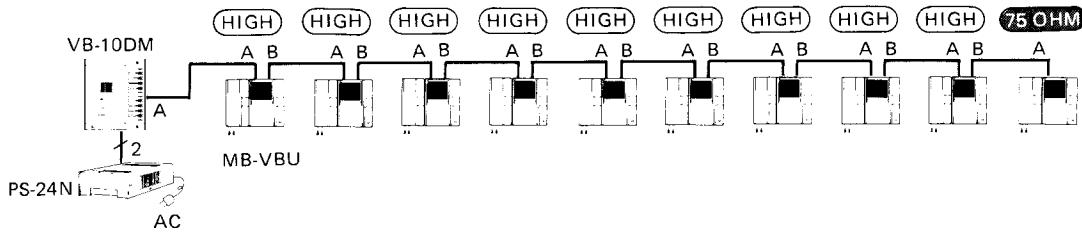
METHOD #2
VD-4 video wiring adaptor is required for a system of more than 10 apartment room stations.
VD-4 has four video output terminals, from which up to four coaxial cable runs can be distributed separately.
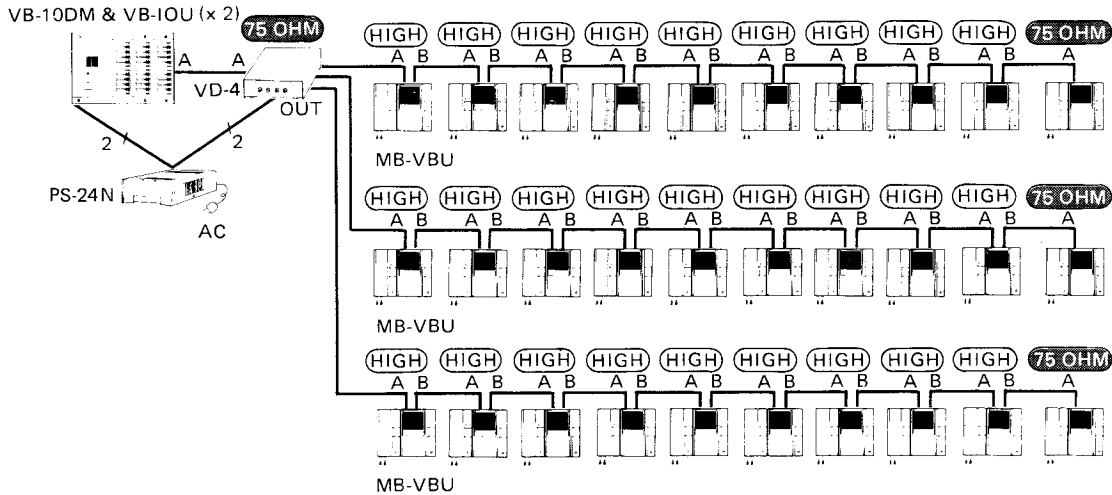
METHOD #3
In this method, MB-VBU video monitor units are connected to each output of VD-4. One MB-VBU, if goes defective, will not affect the rest of the system. VD-4 units must be powered by a separate power supply.
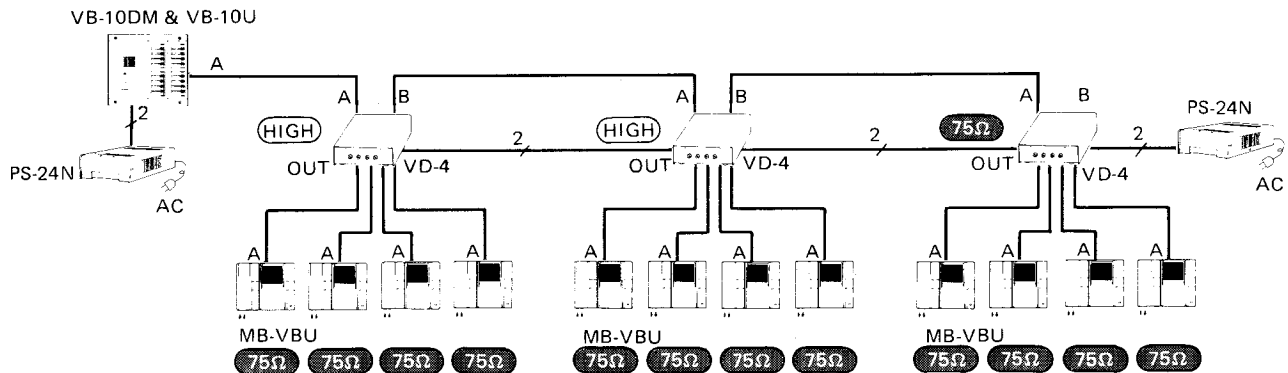
WIRING DIAGRAM #1

This diagram illustrates VB one-entrance system with ten apartment room stations (VB-1D/MB-VBU) following coaxial cable connection Method # 1.

Impedance-matching must be set to;
75 OHM at the farthest MB-VBU
(shorting connector remains attached)
to; HIGH at all the other MB-VBU
(shorting connectors must be removed)

Shorting link must remain attached
at all VB-1D intercom stations.
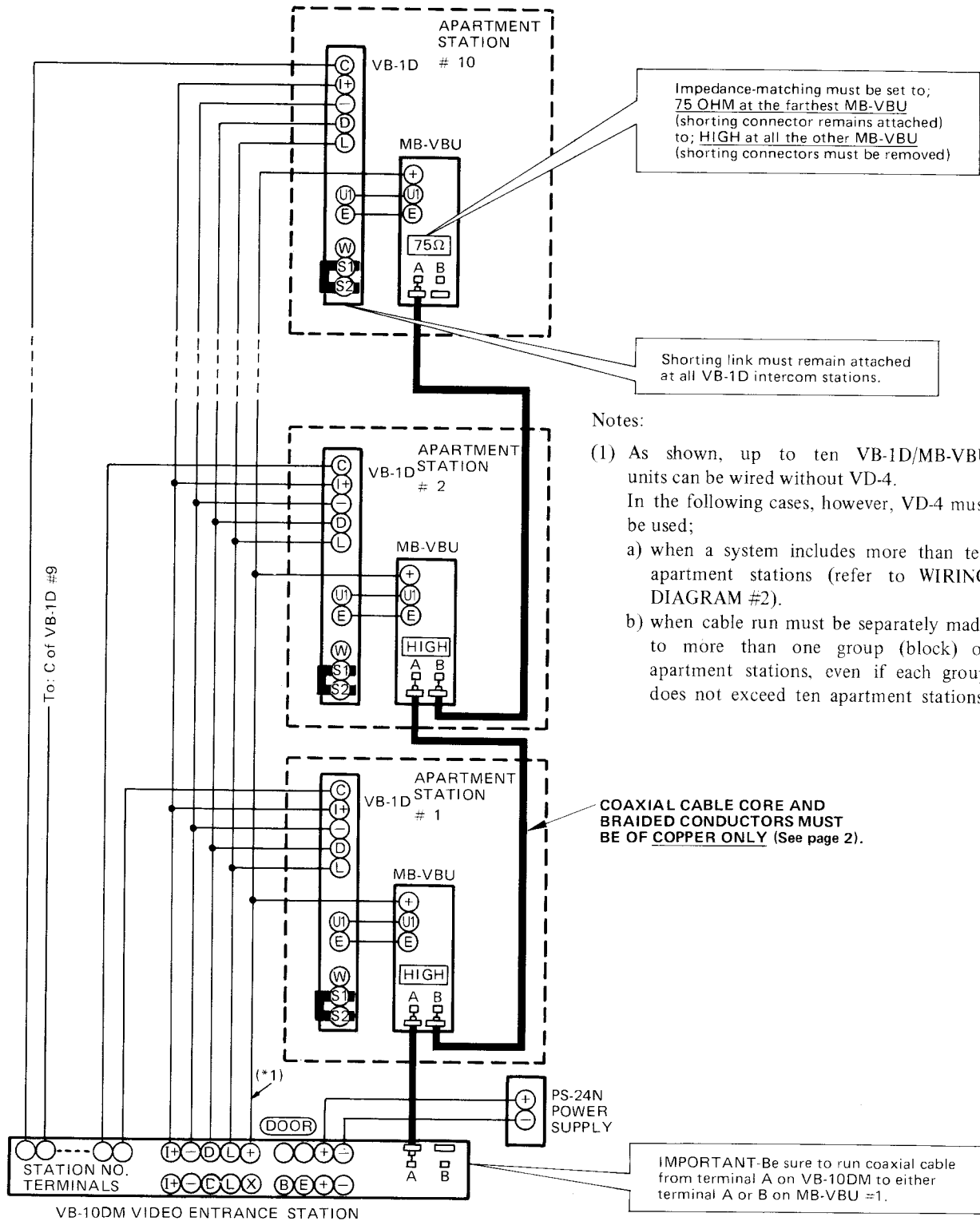
Notes:

(1) As shown, up to ten VB-1D/MB-VBU units can be wired without VD-4.
In the following cases, however, VD-4 must be used;
a) when a system includes more than ten apartment stations (refer to WIRING DIAGRAM #2).
b) when cable run must be separately made to more than one group (block) of apartment stations, even if each group does not exceed ten apartment stations.

COAXIAL CABLE CORE AND
BRAIDED CONDUCTORS MUST
BE OF COPPER ONLY (See page 2).

IMPORTANT-Be sure to run coaxial cable
from terminal A on VB-10DM to either
terminal A or B on MB-VBU #1.

(*1): When a distance between VB-10DM and the farthest VB-1D station would exceed 100 m (330'),
please double connecting wire 0.65 mm dia. (22 AWG) only on (+) terminal.

WIRING DIAGRAM ≠2

This diagram illustrates VB system wiring using VD-4 video wiring adaptor, which may be applied for a system of more than 10 apartment stations. VD-4 has four video outputs to distribute video signal to up to four groups (blocks) of not more than ten apartment MB-VBU stations.

APARTMENT STATION NO. ⑩

VB-1D

MB-VBU

75Ω

COAXIAL CABLE CORE AND BRAIDED CONDUCTORS MUST BE OF COPPER ONLY (See page 2).

Impedance-matching must be set to;
75 OHM at the farthest MB-VBU
(shorting connector remains attached)
to; HIGH at all the other MB-VBU
(shorting connectors must be removed)

APARTMENT STATION NO. ②

MB-VBU

HIGH

Shorting link must remain attached at all VB-1D intercom stations.

APARTMENT STATION NO. ①

VB-1D

MB-VBU

HIGH

Be sure to run coaxial cable from terminal A on VB-10DM to either terminal A or B on VD-4.

VD-4 VIDEO WIRING ADAPTOR

(*1)

75Ω

TO: 2ND BLOCK
TO: 3RD BLOCK
TO: 4TH BLOCK

One VD-4 can be powered by a single PS-24N power supply for entire system.

STATION NO. TERMINALS

VB-10DM VIDEO ENTRANCE STATION (w/VB-10U)

PS-24N POWER SUPPLY

(*1): When a distance between VB-10DM and the farthest VB-1D station would exceed 100 m (330'),
please double connecting wire 0.65 mm dia. (22 AWG) only on (+) terminal.

WIRING DIAGRAM #3

This diagram shows coaxial cable connection Method #3, in which every MB-VBU intercom station is connected to video output terminals of VD-4.

MB-VBU

VB-1D

APARTMENT STATION #9

75 OHM

VD-4

MB-VBU #10
MB-VBU #11
MB-VBU #12

MB-VBU

VB-1D

APARTMENT STATION #5

HIGH

VD-4

MB-VBU #6
MB-VBU #7
MB-VBU #8

In this wiring method, impedance-matching shorting connector may remain attached for 75 OHM position at all MB-VBU monitors.

MB-VBU

VB-1D

APARTMENT STATION #4

Shorting link must remain attached at all VB-1D intercom station.

MB-VBU

VB-1D

APARTMENT STATION #3

MB-VBU

VB-1D

APARTMENT STATION #2

COAXIAL CABLE CORE AND BRAIDED CONDUCTORS MUST BE OF COPPER ONLY (See page 2).

MB-VBU

VB-1D

APARTMENT STATION #1

TO: C of VB-1D #12
TO: C of VB-1D #11
TO: C of VB-1D #10

TO: C of VB-1D #8
TO: C of VB-1D #7
TO: C of VB-1D #6

(*1)

HIGH

VD-4

(*1): When a distance between VB-10DM and the farthest VB-1D station would exceed 100 m (330'), please double connecting wire 0.65 mm dia. (22 AWG) only on (+) terminal.
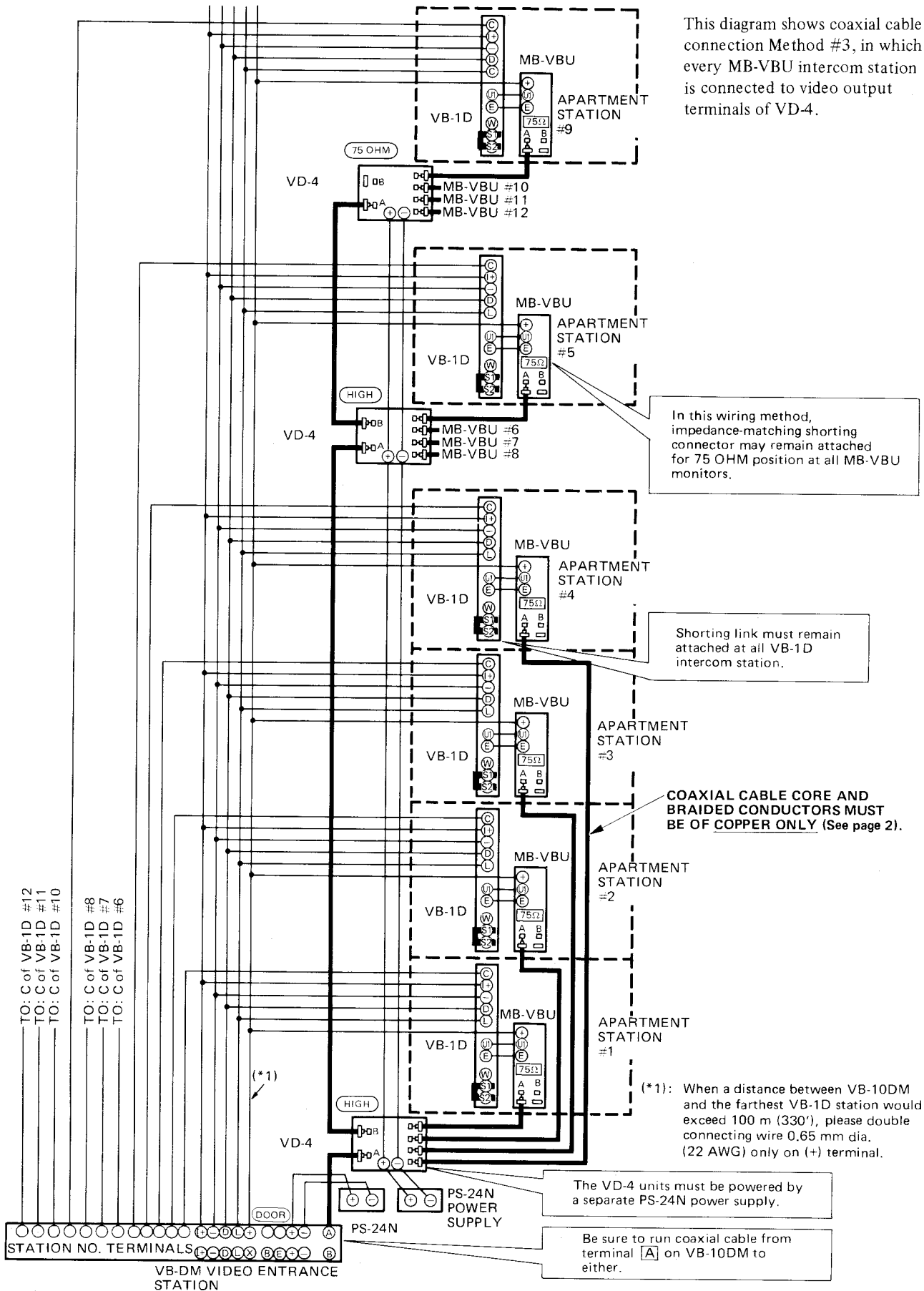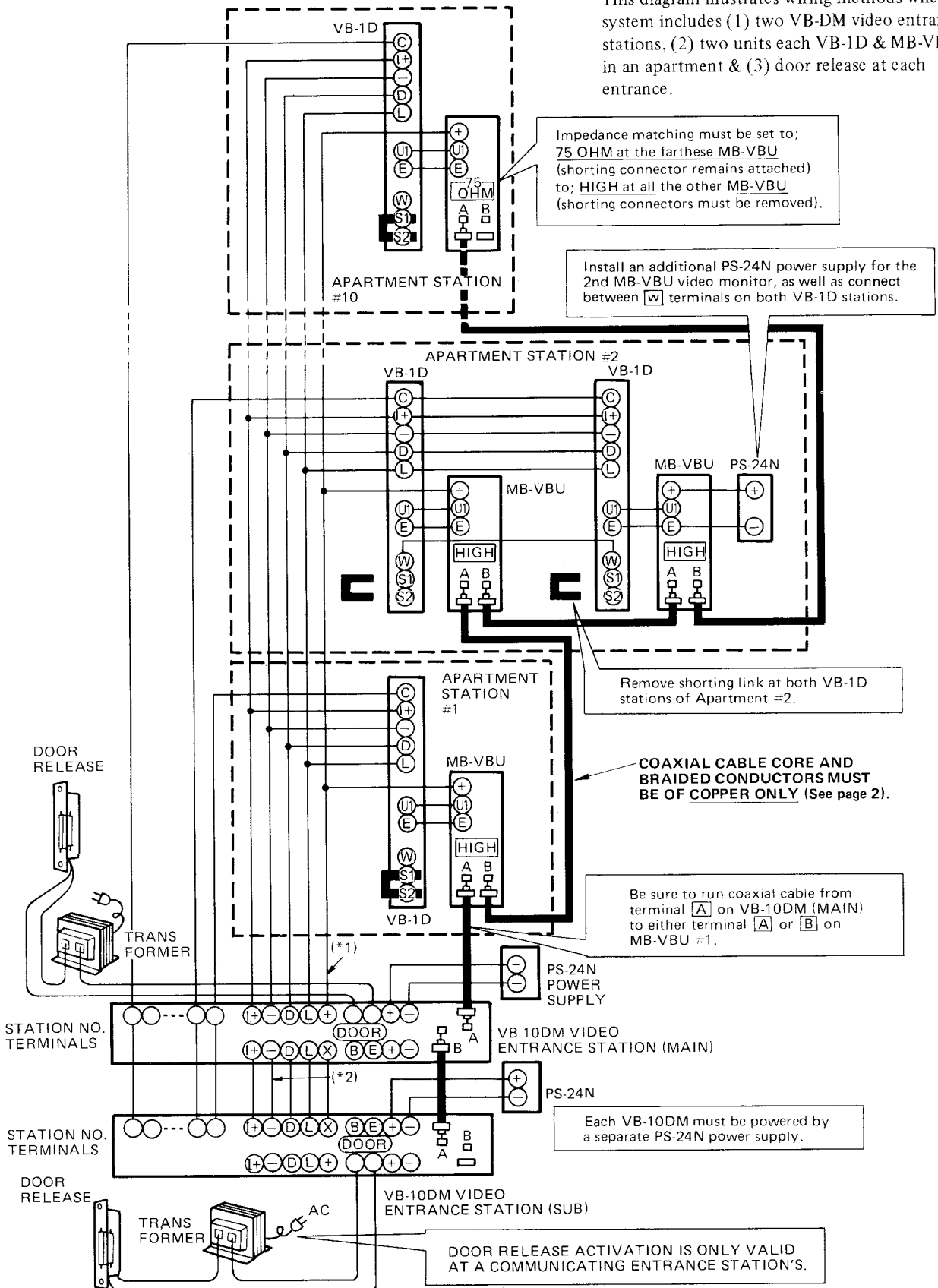
PS-24N POWER SUPPLY

DOOR

PS-24N

STATION NO. TERMINALS

VB-DM VIDEO ENTRANCE STATION

The VD-4 units must be powered by a separate PS-24N power supply.

Be sure to run coaxial cable from terminal A on VB-10DM to either.

WIRING DIAGRAM #4

This diagram illustrates wiring methods when system includes (1) two VB-DM video entrance stations, (2) two units each VB-1D & MB-VBU in an apartment & (3) door release at each entrance.

VB-1D

APARTMENT STATION #10

Impedance matching must be set to; 75 OHM at the farthese MB-VBU (shorting connector remains attached) to; HIGH at all the other MB-VBU (shorting connectors must be removed).

Install an additional PS-24N power supply for the 2nd MB-VBU video monitor, as well as connect between W terminals on both VB-1D stations.

APARTMENT STATION #2

VB-1D   VB-1D

MB-VBU   PS-24N

MB-VBU

APARTMENT STATION #1

Remove shorting link at both VB-1D stations of Apartment #2.

MB-VBU

COAXIAL CABLE CORE AND BRAIDED CONDUCTORS MUST BE OF COPPER ONLY (See page 2).

VB-1D

DOOR RELEASE

TRANS FORMER

Be sure to run coaxial cable from terminal A on VB-10DM (MAIN) to either terminal A or B on MB-VBU #1.

PS-24N POWER SUPPLY

STATION NO. TERMINALS

VB-10DM VIDEO ENTRANCE STATION (MAIN)

PS-24N

Each VB-10DM must be powered by a separate PS-24N power supply.

STATION NO. TERMINALS

DOOR RELEASE

TRANS FORMER   AC

VB-10DM VIDEO ENTRANCE STATION (SUB)

DOOR RELEASE ACTIVATION IS ONLY VALID AT A COMMUNICATING ENTRANCE STATION'S.

(*1): When a distance between main/sub VB-10DM and the farthest VB-1D station would exceed 100 m (330'), please double connecting wire 0.65 mm dia. (22 AWG) only on (+) terminal.

(*2): The distance between main & sub entrance station should not exceed 50 m (170'), using 1.2 mm dia. (16 AWG) wires.

CONNECTING MAW-B RELAY BOX

When VB-10DM video entrance station must be installed in a place where a caller is strongly backlighted, it is suggested that a gate light or an additional light should be installed in conjunction with MAW-B relay box to illuminate a caller from the front.
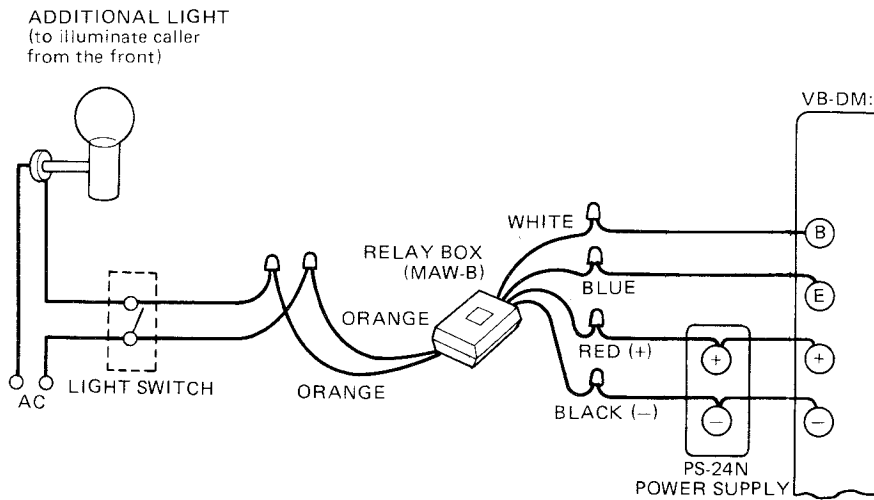

* SPECIFICATIONS
* Power source: DC 24V. Supplied by PS-24N power supply.
* Power consumption: 2.5W maximum.
                         0.5W in standby mode.
* Relay contact capacity: Use incandescent lamps for general lighting service of less than 100W.
* Wiring: 2 wires (polarized) between MAW-B and VB-10DM video entrance station.
                         2 wires (polarized) between MAW-B and PS-24N power supply.
* Wiring distance: Up to 80 m (26') with 0.65 mm dia. (22 AWG) wires between MAW-B and PS-24N.

ILLUMINATION PLATE INSTALLATION

VBK-L is an illumination plate, complete with 2 pcs Pilot lamps (24V, 5W), 2 pcs Spacers, 4 pcs screws and one weather-stripping. The illumination plate can be attached on back of each five call buttons mounted on VB-5/10DM and/or VB-10U. One power supply PS-12S or PS-12A (or PS-12C in N. America) is required for up to 20 call button directories illumination.

1) Remove all the directory cards and its covers.
2) Remove all the blinds, white plastic ones attached on back of the call button units.
3) Locate an illumination plate as shown. Observe carefully that two plates' sides with white reflectors face with each other, so that sufficient reflection can be secured inside the directory cards.
4) Attach the plate and lamp holder using a spacer with the supplied two screws.
5) Attach the weather-stripping provided to prevent light dispersion.
6) Connect wires from lamp holders to the terminals + − of PS-12S or PS-12A (or PS-12C) power supply.
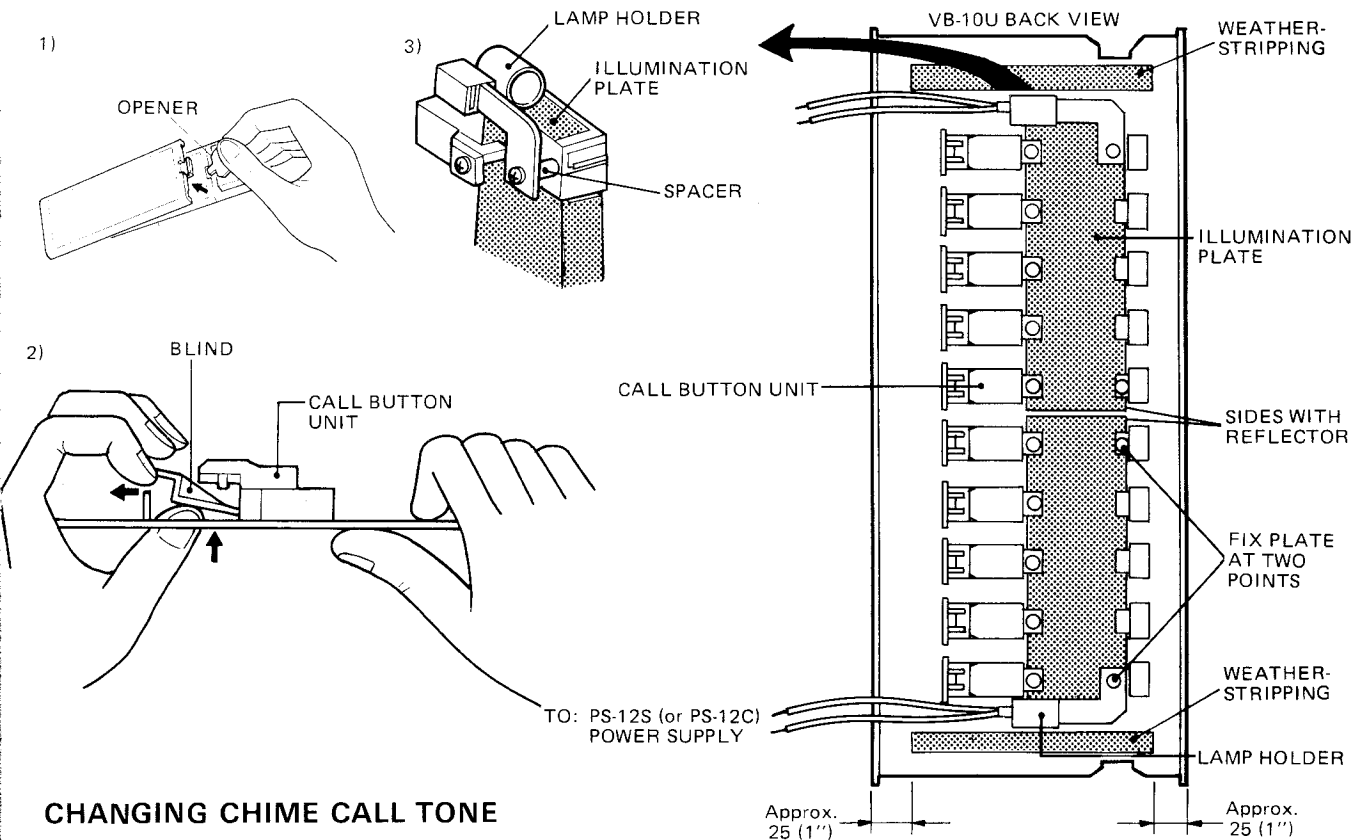
CHANGING CHIME CALL TONE

VB-DM video entrance station is pre-set for transmitting 4-stroke chime tone when leaving factory. As explained below, call tone can be changed to 2-stroke, so that any apartment station can distinguish which entrance station is calling.

To set for 2-stroke chime tone;

1) Remove plug of PS-24N power supply from AC outlet.
2) Remove an aluminum alloy panel, unscrewing at four points.
3) Remove four screws on the camera unit cover, which will separate the PC board section from the chassis.
4) As shown, remove shorting connector and reattach to the left and middle pins.
5) Remount the camera unit cover to the chassis.