

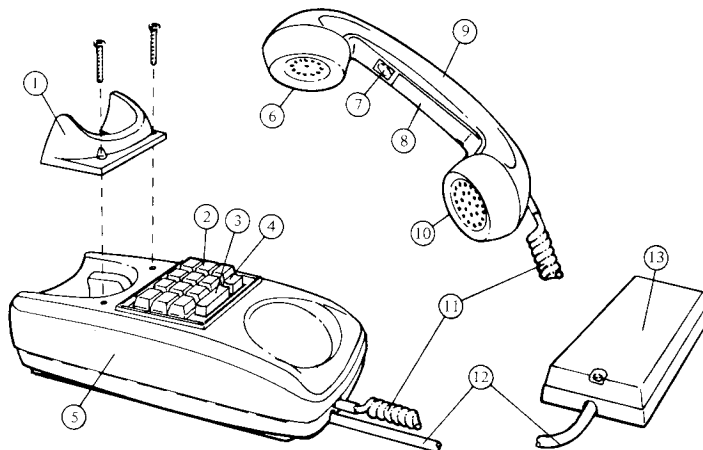
# TELEPHONE TYPE INTERCOM MULTI-CHANNEL SEMI PRIVATE SYSTEM

**MODELS: TB-6H** (*six-way*)

**TB-12H** (*twelve-way*)

**TB-24H** (*twenty-four way*)

## — INSTRUCTIONS —



### NAMES & FUNCTIONS

- |                                               |                 |                 |
|-----------------------------------------------|-----------------|-----------------|
| ① Receiver cradle for wall mounting, included | ⑥ Receiver      | ⑪ Coil cord     |
| ② Station selector buttons                    | ⑦ Paging button | ⑫ Terminal cord |
| ③ Call button (C)                             | ⑧ Directory     | ⑬ Terminal box  |
| ④ Expander button (A) (only in TB-24H)        | ⑨ Handset       |                 |
| ⑤ Case                                        | ⑩ Microphone    |                 |

### SPECIFICATIONS:

- \* Power source: DC 12 volt. Use PS-12A (PS-12C in North America) AC adaptor.  
If your system does not include door station or paging system, you may use PS-12S AC adaptor.
- \* Current consumption: 70 mA maximum per station.
- \* Calling: Push station selection. An electronic tone sounds, after the selected station button is depressed and the call button (C) is depressed.
- \* Paging: Use PB-1 paging adaptor in conjunction with standard paging amplifier and speakers.
- \* Wiring: USE PARALLEL CONDUCTORS, NOT TWISTED PAIRS.  
Up to 28 conductors may be required. Please refer to wiring diagram showing system that meets your requirements.

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

#### \* Operation;

1. DO NOT HOLD HOOK SWITCH DOWN WHILE PICKING UP HANDSET. THE CALL TONE SOUNDS THRU THE HANDSET RECEIVER ELEMENT AND COULD CAUSE HEARING DAMAGE.

#### \* Installation;

1. DO NOT CONNECT ANY TERMINAL ON ANY UNIT TO AC POWER LINES.
2. Be sure to remove plug of power supply from AC outlet before you open the unit or make wiring connections.
3. Avoid running the connecting wires thru doors, windows or between furniture, which may pinch and disconnect the wires.
4. The intercom equipment must be installed in as dry and dust-free environment as possible.

#### \* Maintenance;

1. Clean your intercom equipment with a soft cloth dampened with neutral household cleanser. Never use thinner nor benzine, etc.
2. Do not splash water on the door station by hose, etc.

**NEVER**

**NEVER**

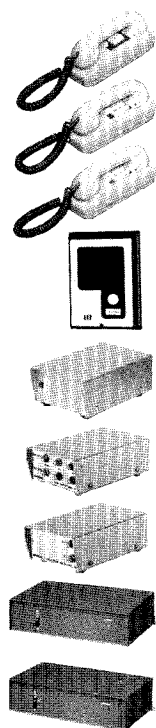

## FEATURES

- \* As many as 12 simultaneous conversations are possible with a 24 station system.
- \* Conference calls can selectively include up to 6 stations.
- \* 6-call master, 12-call master, and 24-call master can be intermixed to develop a system to meet your requirements.
- \* ECM (Electret condenser mic) provides excellent voice fidelity.
- \* Designed for either desk use or wall mounting. Terminal cord may be pulled out from either the top or the bottom of the phone.

## OPTIONS

- \* Door station IC-DC can be installed with adaptor DB-U. Maximum two door stations may be connected to a maximum of 12 phones.
- \* Any station can page thru connected conventional paging system using adaptor PB-1.
- \* Talkback paging is available thru conventional paging system when using adaptor PB-2 in conjunction with PB-1.
- \* A call tone may be annunciated by a separate buzzer or bell using the RY-AC relay.

## EQUIPMENT AVAILABLE FOR USE WITH YOUR TB-H PHONE INTERCOM SYSTEM



**TB-6H:** 6 call master station with paging button and door station capability.

**TB-12H:** 12 call master station with paging button and door station capability.

**TB-24H:** 24 call master station with paging button and door station capability.

**IC-DC:** Surface mount standard door station.

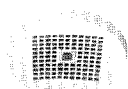
**DB-U:** Adaptor for door station. Requires between door station and TB-H phones.

**PB-1:** Paging adaptor. Connects all TB-H phones to a paging system and background music source.

**PB-2:** Paging adaptor with talkback. Must be used in conjunction with PB-1.

**PG-10A, PG-30A, PG-60A:** UL & CSA approved paging amplifier. 10W, 30W, 60W (available only in North America).

**PG-10B, PG-30B, PG-60B:** Standard paging amplifier. 10W, 30W, 60W.



**SP-3:** Paging speaker. Complete and ready to install including round flush mounting frame.



**NCH-2:** Noise-reduction handset. For field installation only.



**RY-SP:** Local speaker cutout relay.



**RY-AC:** Relay for operating external device such as additional calling buzzer or bell, door release, etc.



**EL-9S:** Electric door release. Requires separate transformer and RY-AC.



**PS-12C:** CSA & UL Listed power supply (available only in North America).



**PS-12A:** Power supply. Standard everywhere except North America.



**PS-12S:** Power supply. May be used in a TB-H system which does not include door station or paging system. (Not available in North America).



**PG-3:** 3-watt paging amplifier.

## INSTALLATION

Do not attempt to install your intercom system until you have read and thoroughly understood the installation procedure. Aiphone's warranty is void if system is installed in a manner other than described in this manual.

Lay out your system in advance. Determine the exact location of each station. We recommend a full complement of wire be installed, even though you may not initially be installing the maximum number of stations available to your system. This way, should you decide to add a station later, you can avoid running additional cables to existing stations.

## WIRING REQUIRED: USE PARALLEL CONDUCTORS, NOT TWISTED PAIRS.

- \* TB-6H: 10 Conductors maximum
- \* TB-12H: 16 Conductors maximum
- \* TB-24H: 28 Conductors maximum

Refer to the chart below and select the proper wire gauge to meet your requirements.

| AWG WIRE SIZE                                              | 24 AWG | 22 AWG | 20 AWG |
|------------------------------------------------------------|--------|--------|--------|
| MAXIMUM COMMUNICATION DISTANCE BETWEEN MOST DISTANT PHONES | 1200'  | 2000'  | 3000'  |
| MAXIMUM COMMUNICATION DISTANCE FROM PHONE TO DOOR STATION  | 300'   | 500'   | 700'   |

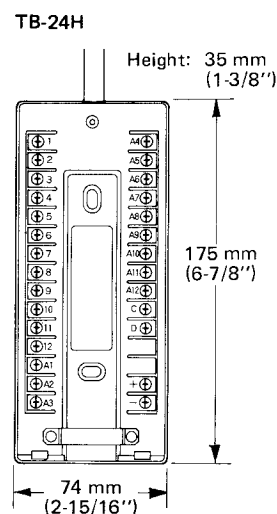
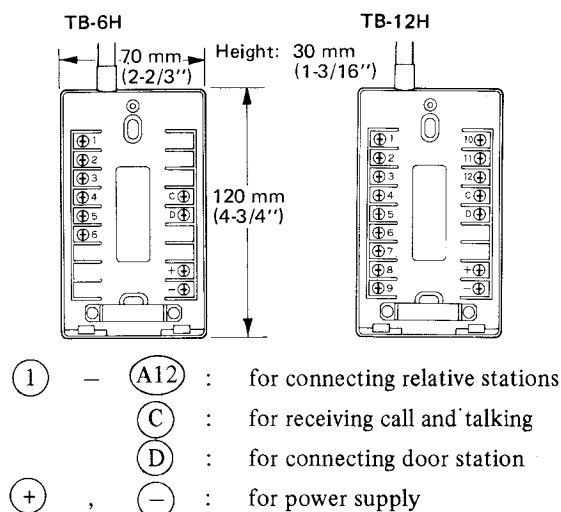
|                                                            |        |         |        |
|------------------------------------------------------------|--------|---------|--------|
| DIAMETER OF WIRE                                           | 0.5 mm | 0.65 mm | 0.8 mm |
| MAXIMUM COMMUNICATION DISTANCE BETWEEN MOST DISTANT PHONES | 400 m  | 650 m   | 1000 m |
| MAXIMUM COMMUNICATION DISTANCE FROM PHONE TO DOOR STATION  | 90 m   | 150 m   | 230 m  |

Begin your installation with station #1. A space is provided at the left of the diagram to write in your color code. Note the position of the C terminal at each station. Be sure you wire each station correctly.

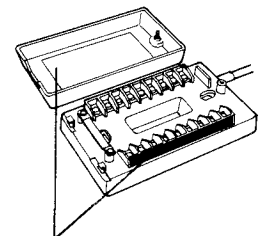
After installing your second station we recommend that the power supply be connected to the ⊕ and ⊖ terminal lines at a convenient location and that a test be made for calling and talking between each station. As each additional station is installed re-test between each station. Unplug power supply while making wiring connections.

To obtain the most efficiency from your power supply it is necessary to install the unit as near as possible to the center of your communications network.

## ACTUAL TB-H TERMINAL LOCATIONS



\* Please refer to the labels on the sides of terminal box and back of the cover.



TERMINAL IDENTIFICATIONS

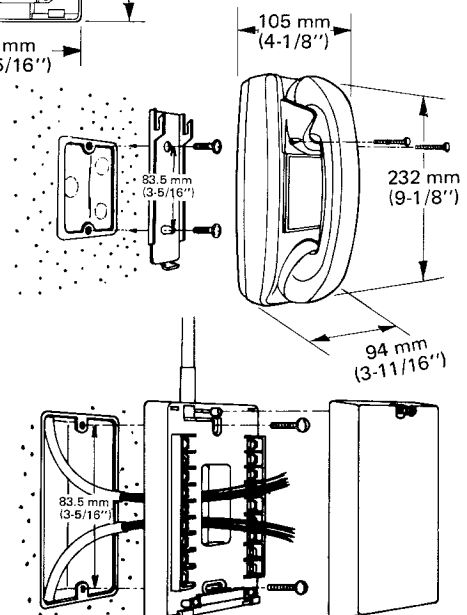
## INSTALLATION FOR WALL MOUNTING

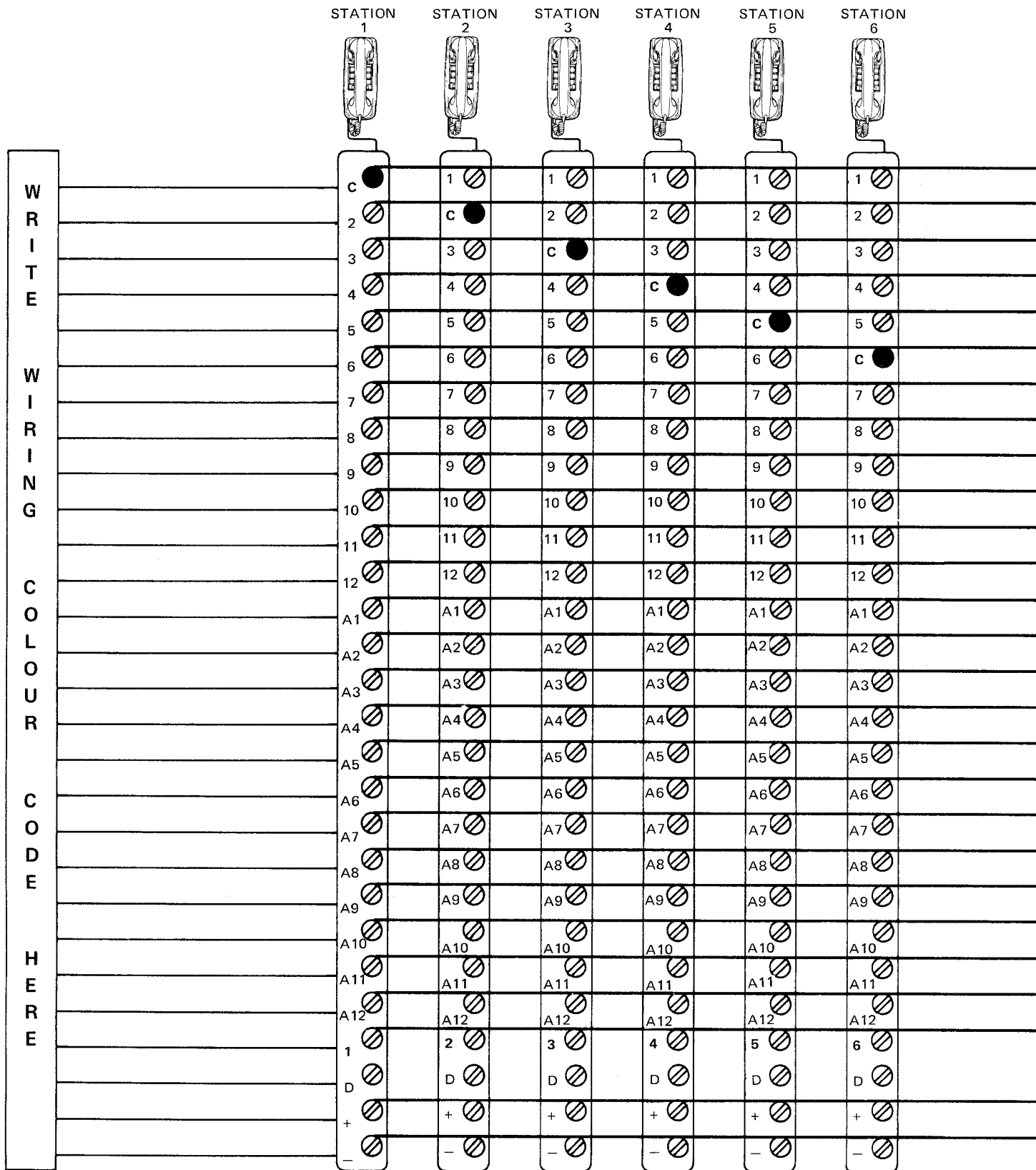
- 1) Attach the mounting bracket to wall or single gang plaster ring.
- 2) Attach handset cradle included as shown in illustration.

NOTE: Terminal cord may be pulled out from either top or bottom of the body, or straight back to plaster ring.

## INSTALLATION OF TERMINAL BOX

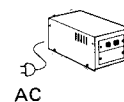
- 1) Remove screws and cover as shown.
- 2) Attach bottom case to wall or single gang box.
- 3) Replace cover after wiring.



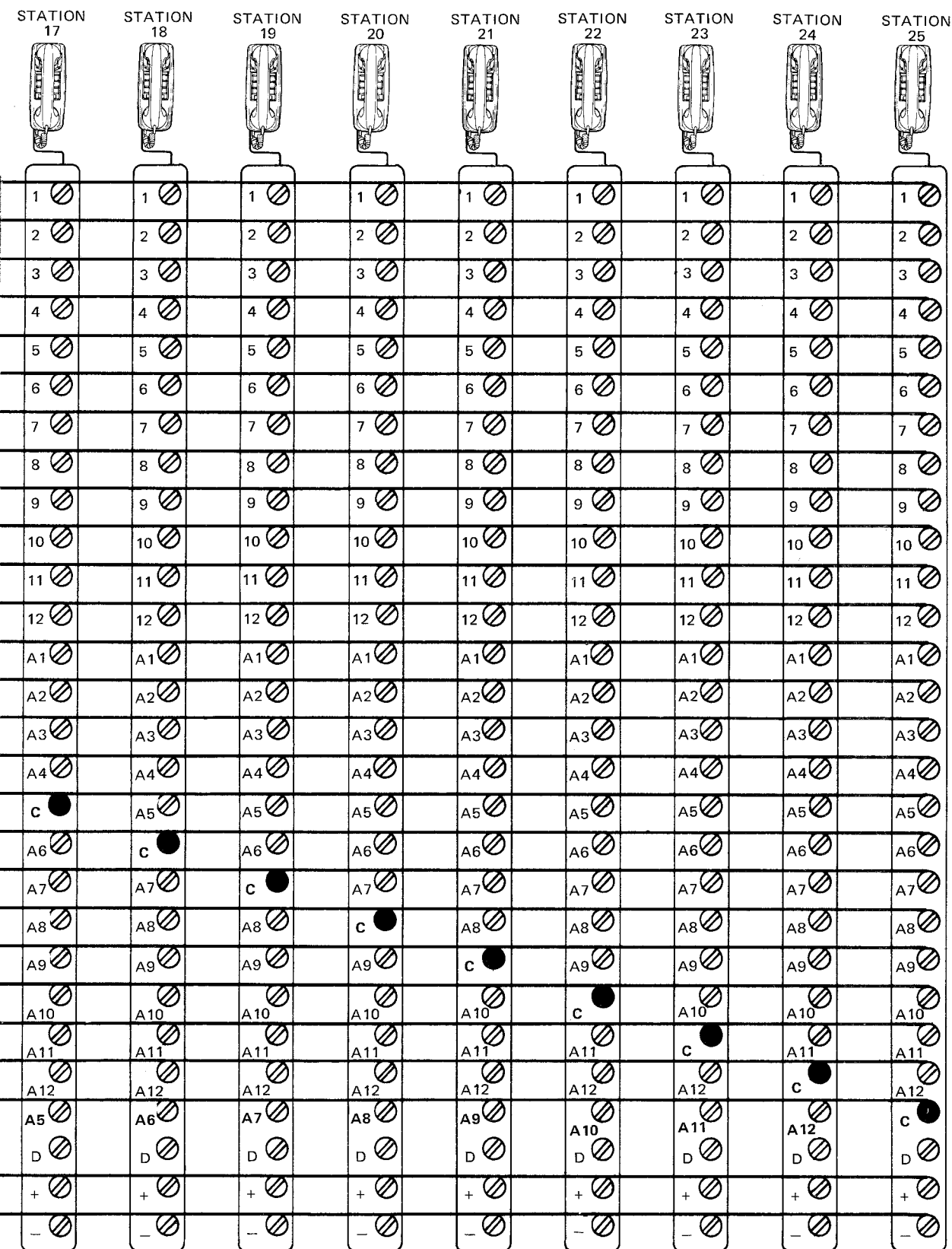


# TB-24H ALL MASTER SYSTEMS

| STATION 7 | STATION 8 | STATION 9 | STATION 10 | STATION 11 | STATION 12 | STATION 13 | STATION 14 | STATION 15 | STATION 16 |
|-----------|-----------|-----------|------------|------------|------------|------------|------------|------------|------------|
|           |           |           |            |            |            |            |            |            |            |
| 1         | 1         | 1         | 1          | 1          | 1          | 1          | 1          | 1          | 1          |
| 2         | 2         | 2         | 2          | 2          | 2          | 2          | 2          | 2          | 2          |
| 3         | 3         | 3         | 3          | 3          | 3          | 3          | 3          | 3          | 3          |
| 4         | 4         | 4         | 4          | 4          | 4          | 4          | 4          | 4          | 4          |
| 5         | 5         | 5         | 5          | 5          | 5          | 5          | 5          | 5          | 5          |
| 6         | 6         | 6         | 6          | 6          | 6          | 6          | 6          | 6          | 6          |
| C         | 7         | 7         | 7          | 7          | 7          | 7          | 7          | 7          | 7          |
| 8         | C         | 8         | 8          | 8          | 8          | 8          | 8          | 8          | 8          |
| 9         | 9         | C         | 9          | 9          | 9          | 9          | 9          | 9          | 9          |
| 10        | 10        | 10        | C          | 10         | 10         | 10         | 10         | 10         | 10         |
| 11        | 11        | 11        | 11         | C          | 11         | 11         | 11         | 11         | 11         |
| 12        | 12        | 12        | 12         | 12         | C          | 12         | 12         | 12         | 12         |
| A1        | A1        | A1        | A1         | A1         | A1         | C          | A1         | A1         | A1         |
| A2        | A2        | A2        | A2         | A2         | A2         | A2         | C          | A2         | A2         |
| A3        | A3        | A3        | A3         | A3         | A3         | A3         | A3         | C          | A3         |
| A4        | A4        | A4        | A4         | A4         | A4         | A4         | A4         | A4         | C          |
| A5        | A5        | A5        | A5         | A5         | A5         | A5         | A5         | A5         | A5         |
| A6        | A6        | A6        | A6         | A6         | A6         | A6         | A6         | A6         | A6         |
| A7        | A7        | A7        | A7         | A7         | A7         | A7         | A7         | A7         | A7         |
| A8        | A8        | A8        | A8         | A8         | A8         | A8         | A8         | A8         | A8         |
| A9        | A9        | A9        | A9         | A9         | A9         | A9         | A9         | A9         | A9         |
| A10       | A10       | A10       | A10        | A10        | A10        | A10        | A10        | A10        | A10        |
| A11       | A11       | A11       | A11        | A11        | A11        | A11        | A11        | A11        | A11        |
| A12       | A12       | A12       | A12        | A12        | A12        | A12        | A12        | A12        | A12        |
| 7         | 8         | 9         | 10         | 11         | 12         | A1         | A2         | A3         | A4         |
| D         | D         | D         | D          | D          | D          | D          | D          | D          | D          |
| +         | +         | +         | +          | +          | +          | +          | +          | +          | +          |
| -         | -         | -         | -          | -          | -          | -          | -          | -          | -          |



PS-12A or  
PS-12C  
Power Supply \* Place PS-12A (or 1



## VARIATIONS TO STANDARD INSTALLATIONS

Any combination of TB-H series phones and accessories shown on page 2 of this manual can be intermixed to develop a communication system to meet your requirements. Installation examples below show TB-6H as master station which may be replaced by either TB-12H or TB-24H.

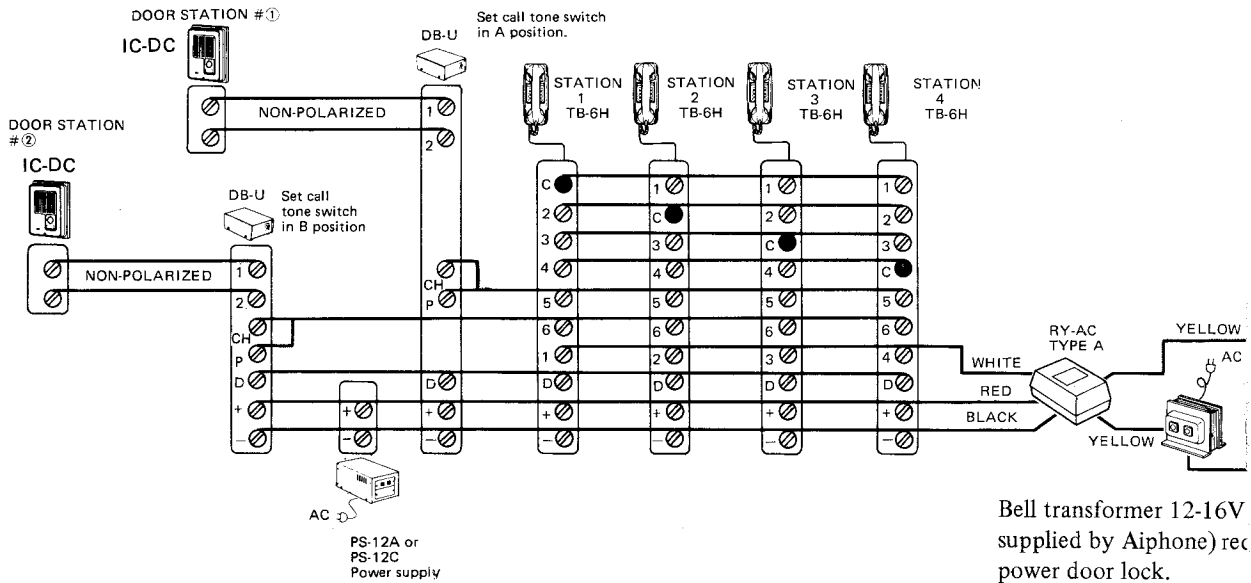
### EXAMPLE NO. 1: TB-H SYSTEM WITH DOOR STATION & ELECTRIC DOOR RELEASE

- Maximum of 2 door stations per system. Each door station may be connected to up to 12 masters.

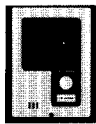
NOTE: (1) DB-U door station adaptor must be connected directly to PS-12A (or PS-12C) power supply.

(2) Be sure to install a jumper between terminals **CH** and **P** on DB-U.

In this example, button #5 allows conversation with door station #①, button #6 with door station #② and each station number button operates door release.



\* PLEASE SELECT THE MOST SUITABLE DOOR STATION FOR YOUR APPLICATION:



IC-DC



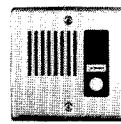
IC-NA



IC-RA



IC-KA



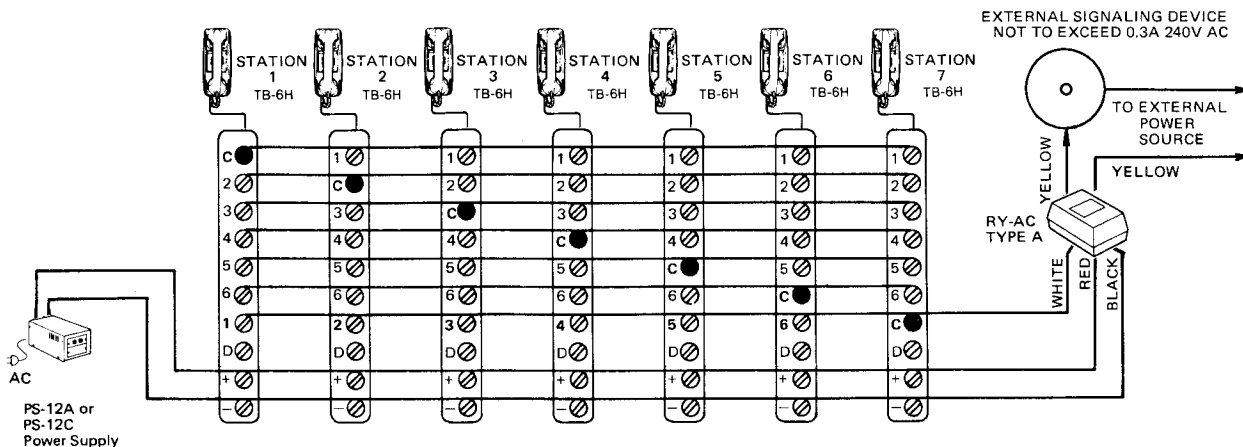
IC-JA



IC-FY

### EXAMPLE NO. 2: TB-H SYSTEM WITH EXTERNAL SIGNALING DEVICE

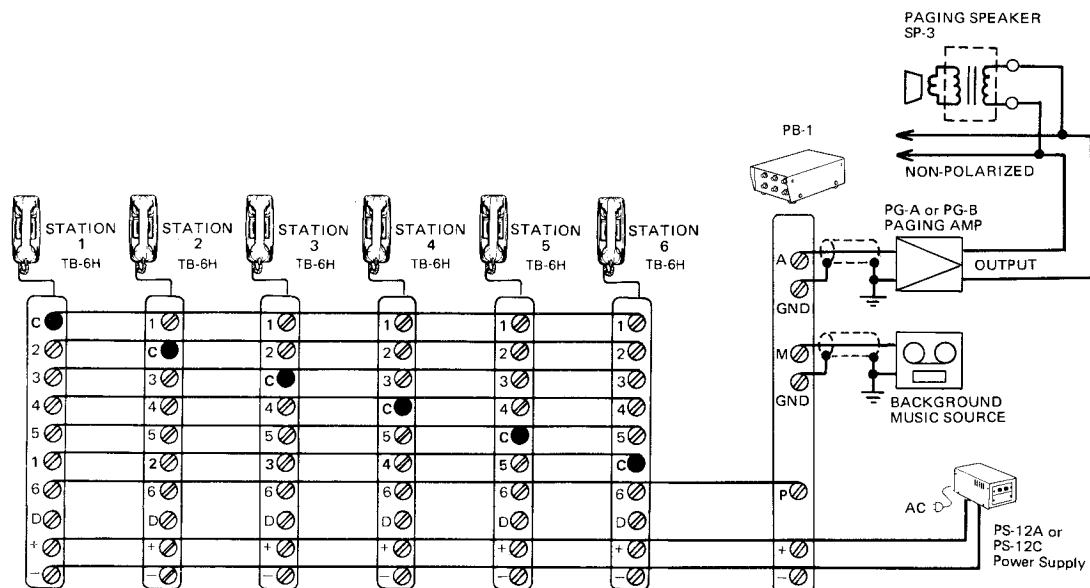
- 1) When a TB-H phone is located in very noisy area (station No. 7 in this example), an incoming call may be extended by external signaling device such as bell, light or buzzer using RY-AC.
- 2) External signaling device (not supplied by Aiphone) should not exceed 0.3A 240V AC or 1.0A 24V DC.



### EXAMPLE NO. 3: TB-H SYSTEM WITH PAGING (NO TALKBACK)

- 1) This example illustrates connection of TB-H system with single zone paging without talkback.
- 2) One phone must be deducted from the system for each paging block.
- 3) One PB-1, one paging amplifier and appropriate paging speakers are required for each paging block.
- 4) In this example button #6 on each phone operates paging.

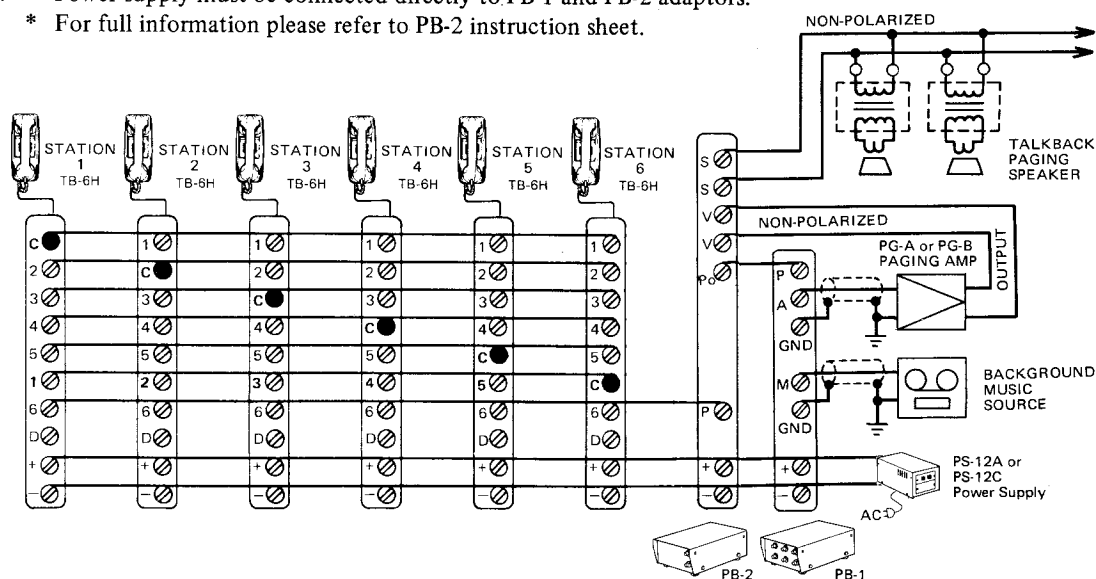
NOTE: \* Power supply must be connected directly PB-1 adaptor.  
 \* For full information please refer to PB-1 instruction sheet.



### EXAMPLE NO. 4: TB-H SYSTEM WITH TALKBACK PAGING

- 1) This example illustrates connection of TB-H system with single zone talkback paging.
- 2) One phone must be deducted from the system for each talkback paging block.
- 3) One PB-1, one PB-2, one paging amplifier with 70 or 100 volt line and output of less than 50 watt RMS and appropriate paging speakers are required for each talkback paging block.
- 4) In this example button #6 on each phone operates talkback paging.

NOTE: \* Power supply must be connected directly to PB-1 and PB-2 adaptors.  
 \* For full information please refer to PB-2 instruction sheet.



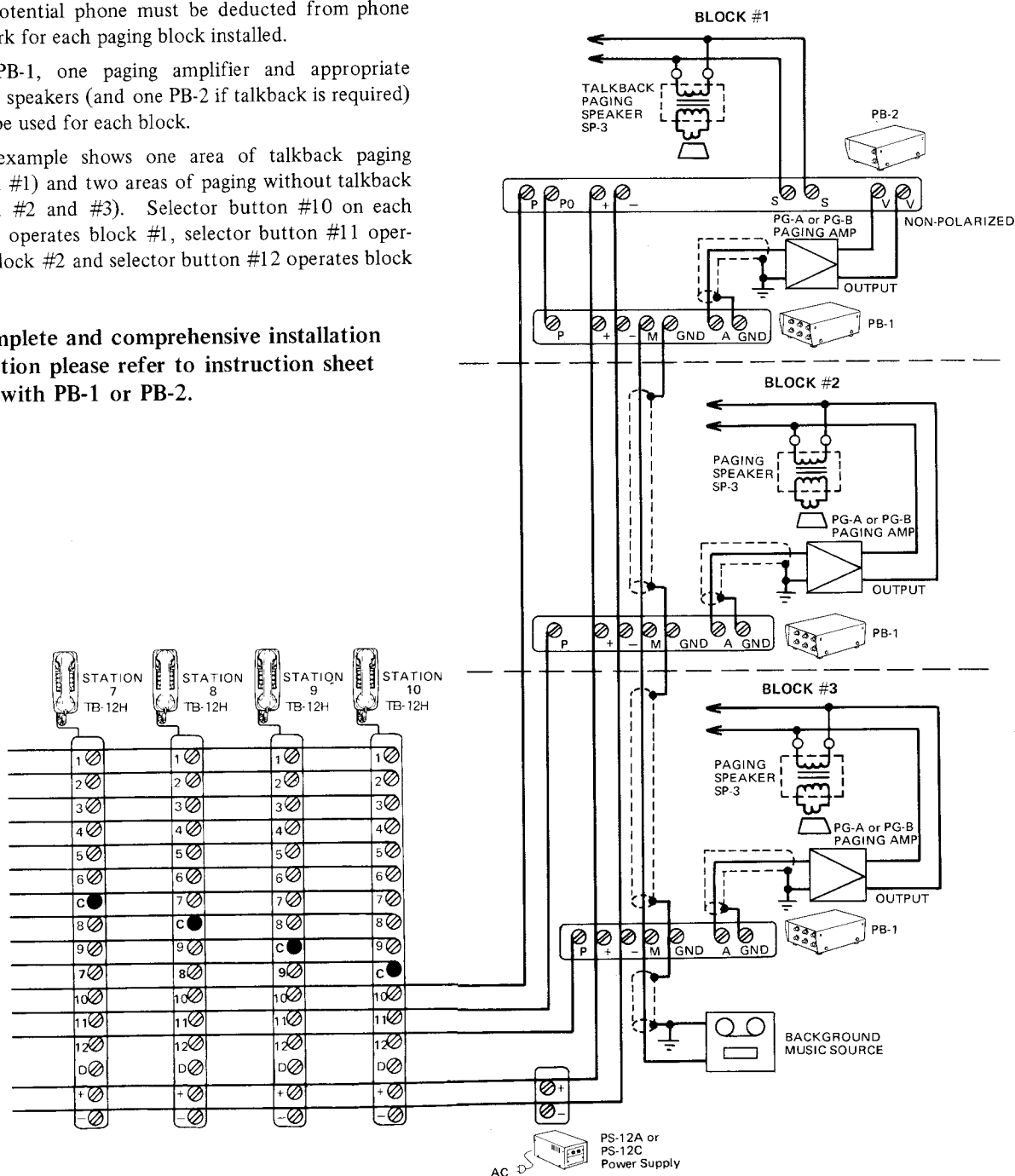
## EXAMPLE NO. 5: TB-H SYSTEM WITH MULTIPLE PAGING BLOCKS

THIS IS A MULTI-CHANNEL SYSTEM ALLOWING NOT ONLY MULTIPLE SEPARATE COMMUNICATIONS BETWEEN PHONE STATIONS BUT ALSO MULTIPLE SEPARATE PAGING OPERATIONS AT THE SAME TIME.

- 1) You may install paging blocks either with or without talkback as capability of your TB-H system allows.
- 2) One potential phone must be deducted from phone network for each paging block installed.
- 3) One PB-1, one paging amplifier and appropriate paging speakers (and one PB-2 if talkback is required) must be used for each block.

This example shows one area of talkback paging (block #1) and two areas of paging without talkback (block #2 and #3). Selector button #10 on each phone operates block #1, selector button #11 operates block #2 and selector button #12 operates block #3.

For complete and comprehensive installation information please refer to instruction sheet packed with PB-1 or PB-2.



\* Power supply must be connected directly to PB-1 and PB-2 adaptors.

## OPERATION

\* Calling:

Pick up the handset and depress the selector button, then the C button.

\* Receiving:

An incoming call is announced by an electronic tone. Pick up the handset and begin talking. When called from a door, pick up the handset, press the selector button corresponding to door station and begin talking.

NOTE: Do not press paging button while talking with other phone. When pressed it will cut phone communication.

\* Paging:

Pick up the handset and depress the selector button. Press the paging button on handset to page (and if PB-2 is installed, release to listen). Background music will automatically cut off during paging operation.

\* \* \*

We at AIPHONE are proud of our products. Our designers and engineers strive to bring you the finest in communication equipment. Each item has been carefully tested and inspected before leaving our factory. Properly installed and used, your Aiphone intercom system should give years of trouble-free service.

We are pleased to offer the following warranty:

### WARRANTY

Aiphone warrants its products to be free from defects of material and workmanship under normal use and service for a period of one year after delivery to the ultimate user and will repair free of charge or replace at no charge, should it become defective upon which examination shall disclose to be defective and under warranty. Aiphone reserves unto itself the sole right to make the final decision whether there is a defect in materials and/or workmanship; and whether or not the product is within the warranty.

This warranty shall not apply to any Aiphone product which has been subject to misuse, neglect, accident, or to use in violation of instructions furnished, nor extended to units which have been repaired or altered outside of the factory.

This warranty does not cover batteries or damage caused by batteries used in connection with the product.

This warranty covers bench repairs only, and any repairs must be made at the shop or place designated in writing by Aiphone. Aiphone will not be responsible for any costs incurred involving on site service calls.

Aiphone Co., Ltd., Nagoya, Japan  
Aiphone Corporation, Bellevue, Washington  
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INTERCOM SYSTEMS  
**AIPHONE**  
HOME, BUSINESS, INDUSTRY

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