Electronic Modular Switching System
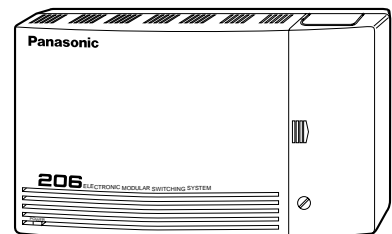
Panasonic

INSTALLATION MANUAL

Please read this manual before connecting the Electronic Modular Switching System.

MODEL
KX-T206E

Thank you for purchasing the Panasonic Model KX-T206E, Electronic Modular Switching System.

System Component

	Model No.	Description
Service Unit	KX-T206E	Electronic Modular Switching System
Telephone	KX-T7130E KX-T7020E KX-T7050E	Proprietary telephone with display Proprietary telephone Proprietary telephone
Optional Equipment	KX-T20691E KX-T30865E	DISA/FAX Detect Card Doorphone

Notes

- In this Installation Manual, the suffix "E" of each model number is omitted.
- A proprietary telephone is abbreviated as "PT".
- A single line telephone is abbreviated as "SLT".

APPROVED for connection to telecommunication systems specified in the instructions for use subject to the conditions set out in them.

504100

The serial number of this product may be found on the label affixed to the bottom of the unit. You should note the serial number of this unit in the space provided and retain this book as a permanent record of your purchase to aid in identification in the event of theft.

MODEL NO.: **KX-T206E** _____

SERIAL NO.: _____

For future reference

DATE OF PURCHASE _____

NAME OF DEALER _____

DEALER'S ADDRESS _____

Important Information

FOR YOUR SAFETY PLEASE READ THE FOLLOWING TEXT CAREFULLY.

This appliance is supplied with a moulded three pin mains plug for your safety and convenience.
A 5 amp fuse is fitted in this plug.
Should the fuse need to be replaced please ensure that the replacement fuse has a rating of
5 amps and that it is approved by ASTA or BSI to BS1362.

Check for the ASTA mark ◇ or the BSI mark ♡ on the body of the fuse.

If the plug contains a removable fuse cover you must ensure that it is refitted when the fuse is
replaced.
If you lose the fuse cover the plug must not be used until a replacement cover is obtained.
A replacement fuse cover can be purchased from your local Panasonic Dealer.

IF THE FITTED MOULDED PLUG IS UNSUITABLE FOR THE SOCKET OUTLET IN
YOUR HOME THEN THE FUSE SHOULD BE REMOVED AND THE PLUG CUT OFF
AND DISPOSED OF SAFELY.
THERE IS A DANGER OF SEVERE ELECTRICAL SHOCK IF THE CUT OFF PLUG IS
INSERTED INTO ANY 13 AMP SOCKET.

If a new plug is to be fitted please observe the wiring code as shown below.
If in any doubt please consult a qualified electrician.

WARNING : THIS APPLIANCE MUST BE EARTHED.

IMPORTANT : The wires in this mains leads are coloured in accordance with the following
code:

|	
Green-and-yellow:	Earth
Blue:	Neutral
Brown:	Live

As the colours of the wires in the mains lead of this appliance may not correspond with the
coloured markings identifying the terminals in your plug, proceed as follows.

The wire which is coloured GREEN-AND-YELLOW must be connected to the terminal in the
plug which is marked with the letter E or by the safety earth symbol ⏚ or coloured GREEN or
GREEN-AND-YELLOW.

The wire which is coloured BLUE must be connected to the terminal in the plug which is
marked with the letter N or coloured BLACK.

The wire which is coloured BROWN must be connected to the terminal in the plug which is
marked with the letter L or coloured RED.

How to replace the fuse : Open the-fuse compartment with a screwdriver and replace the fuse
and fuse cover.
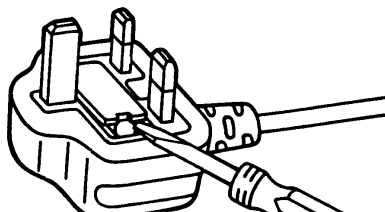
Important Information

This equipment should be used on PSTN lines requiring 2-wire Loop calling unguarded clearing with Loop Disconnect or DTMF address signalling.
The equipment must be connected to direct extension lines and a payphone should not be connected as an extension.

Operation in Power Failure
In the event of a power failure, CO2 is connected to extension 22 automatically.
• Set the Dialling Mode (Tone or Pulse) of your telephone, according to the CO line.
• 999 and 112 can be dialled on the apparatus for the purpose of making outgoing calls to the BT emergency (999) and (112) service.

Satisfactory performance can not be guaranteed for every allowed combination of host and subsidiary apparatus.

999 and 112 can be dialled on the apparatus after accessing the CO line for the purpose of making outgoing calls to the BT emergency (999) and (112) service.

During dialling, this apparatus may tinkle the bells of other telephones using the same line. This is not a fault and we advise you not to call Fault Repair Service.

'Prevention of access by user. This apparatus is intended to be accessible only to authorized personnel. This apparatus must be installed in a locked room or similar environment, such that user access is prevented. Failure to prevent such user access will invalidate any approval given to this apparatus.'

Caution:
Do not push the PAUSE button more than twice following the initial access digit (or digits). Failure to comply with this requirement may result in unsatisfactory operation.

Notice:
This PBX should only be used on B•T lines on which specific BT services or facilities are provided.

CAUTION

Danger of explosion if battery is incorrectly replaced.

**Replace only with the same or equivalent type
recommended by the manufacturer.
Dispose of used batteries according
to the manufacturer's instructions.**

Precaution

- Keep the unit away from heating appliances and electrical noise generating devices such as fluorescent lamps, motors and television. These noise sources can interfere with the performance of the Electronic Modular Switching System.

- This unit should be kept free of dust, moisture, high temperature (more than 40˚C/104˚F) and vibration, and should not be exposed to direct sunlight.

- Never attempt to insert wires, pins, etc. into the vents or other holes of this unit.

- If there is any trouble, disconnect the unit from the telephone line. Plug the telephone directly to the telephone line. If the telephone operates properly, do not reconnect the unit to the line until the trouble has been repaired. If the telephone does not operate properly, chances are that the trouble is in the telephone system, and not in the unit.

- Do not use benzine, thinner, or the like, or any abrasive powder to clean the cabinet. Wipe it with a soft cloth.

WARNING

THIS UNIT MAY ONLY BE INSTALLED AND SERVICED BY QUALIFIED SERVICE PERSONNEL.

WHEN A FAILURE OCCURS WHICH RESULTS IN THE INTERNAL PARTS BECOMING ACCESSIBLE, DISCONNECT THE POWER SUPPLY CORD IMMEDIATELY AND RETURN THIS UNIT TO YOUR DEALER.

DISCONNECT THE TELECOM CONNECTION BEFORE DISCONNECTING THE POWER CONNECTION PRIOR TO RELOCATING THE EQUIPMENT, AND RECONNECT THE POWER FIRST.

THIS UNIT IS EQUIPPED WITH AN EARTHING CONTACT PLUG. FOR SAFETY REASONS THIS PLUG MUST ONLY BE CONNECTED TO AN EARTHING CONTACT SOCKET WHICH HAS BEEN INSTALLED ACCORDING TO REGULATIONS.

THE POWER SOCKET WALL OUTLET SHOULD BE LOCATED NEAR THIS EQUIPMENT AND BE EASILY ACCESSIBLE.

TO PREVENT FIRE OR SHOCK HAZARD, DO NOT EXPOSE THIS PRODUCT TO RAIN OR ANY TYPE OF MOISTURE.

CE
73/23/EEC
89/336/EEC
92/31/EEC
93/68/EEC

Table of Contents

Specifications

General Descriptions

1. Capacity .... CO line   2
                                          Extension   6

2. Control Method .... Stored Program CPU: 8 bits CPU
                                           Control ROM: 64 KB, Control RAM: 8 KB

3. Switching Method .... Space Division CMOS Crosspoint Switch

4. Power Supplies .... Primary   AC 110–240 V, 50/60 Hz
                                           Secondary   Circuit Volt: +5V, +15 V, +30 V
                                           Power Failure   CO 2 assigned to extension 22

5. Dialling   Outward   Dial Pulse   10 PPS
                                                    Tone Dial
                                            Internal   Dial Pulse   10 PPS, 20 PPS
                                                    Tone Dial
                                            Mode Conversion   DP-DTMF, DTMF-DP

6. Connector .... CO   4-pin connector
                                           Extension   4-pin connector
                                           Doorphone   4-pin connector

7. EXT Connection .... Cable   1 pair wire (single line telephone)
                                                             2 pair wire (proprietary telephone)

8. Intercom paths .... 2 (including the doorphone path)

Characteristics

1. Station Loop Limit .... Proprietary telephone   40 ohms
                                           Single line telephone   600 ohms including set
                                            Doorphone   20 ohms

2. Minimum Leak Resistance .... 15000 ohms

3. Maximum Number of Station
   Instruments per line .... 1 (proprietary telephone) or 3 (single line telephone)

4. Ring Voltage .... 90 Vrms at 25 Hz depends on Ringing Load

5. Primary Power .... AC 110–240 V, 50/60 Hz, 0.5 A maximum

6. Central Office Loop Limit .... 1600 ohms maximum

7. Environmental Requirements ... 0–40°C, 10%–90% (Humidity)

Before Installation

Please read the following notes concerning installation and connection before installing the system.

Safety Installation Instructions

When installing telephone wiring, basic safety precautions should always be followed to reduce the risk of fire, electric shock and injury to persons, including the following:

1. Never install telephone wiring during a lightning storm.
2. Never install telephone jacks in wet locations unless the jack is specifically designed for wet locations.
3. Never touch uninsulated telephone wires or terminals unless the telephone line has been disconnected at the network interface.
4. Use caution when installing or modifying telephone lines.

Installation Precautions

This set is exclusively made for wall mounting only. Avoid installing in the following places. (Doing so may result in malfunction, noise, or discoloration.)

1. In direct sunlight and hot, cold, or humid places. (Temperature range: 0˚C-40˚C/32˚F-104˚F)
2. Sulfuric gases produced in areas where there are thermal springs, etc. may damage the equipment or contacts.
3. Places in which shocks or vibrations are frequent or strong.
4. Dusty places, or places where water or oil may come into contact with the unit.
5. Near high-frequency generating devices such as sewing machines or electric welders.
6. On or near computers, telexes, or other office equipment, as well as microwave ovens or air conditioners. (It is preferable not to install in the same room with the above equipment.)
7. Install at least 1.8 m (6 feet) from radios and televisions. (both the main unit and a proprietary telephone)
8. Do not obstruct area around the main unit (for reasons of maintenance and inspection – be especially careful to allow space for cooling above and at the sides of the main unit).

Wiring Precautions

Make sure to keep the following instructions when wiring.

1. Do not wire the telephone cable in parallel with an AC power source, computer, telex, etc. If the cables are run near those wires, shield the cables with metal tubing or use shielded cables and ground the shields.
2. If cables are run on the floor, use protectors or the like to protect the wires where they may be stepped on. Avoid wiring under carpets.
3. Avoid using the same power supply outlet for computers, telexes, and other office equipment. Otherwise, the KX-T206's system operation may be interrupted by the induction noise from such equipment.
4. Please use one pair telephone wire for extension connection of (telephone) equipment such as standard telephones, answering machines, etc., except proprietary telephones (KX-T7130, KX-T7020, KX-T7050, etc.).
5. The AC cord must be plugged off during wiring. After all the wirings are completed, plug the AC cord into an AC outlet.
6. Mis-wiring may cause the system to operate improperly.
7. If an extension does not operate properly, disconnect the telephone from the extension line and then connect again, or plug off the AC cord of the system and then on again.
8. The KX-T206 is equipped with a 3-wire grounding type plug. 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 purpose of the grounding-type plug.
9. Use twisted pair cable for CO line connection.
10. CO lines should be installed with lightning protectors. For details, see pages 17 and 18.

Unpacking

- Main Unit .... one
- AC Cord .... one
- Screw and Washer .... three
- 4-pin Plug .... eight

Name and Location

Overview of the Main Unit

AC Inlet

Power Indicator
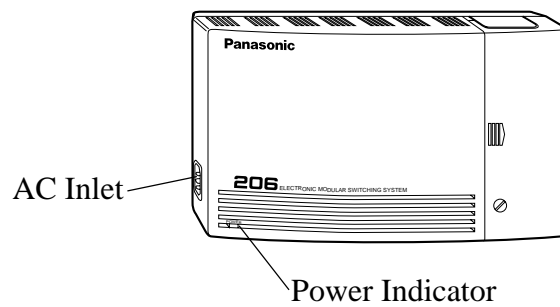
Inside View of the Main Unit

Door Opener Connector

Cable Holders

Extension 4-pin Jacks

CO 4-pin Jack

Doorphone Jack

Ground Terminal
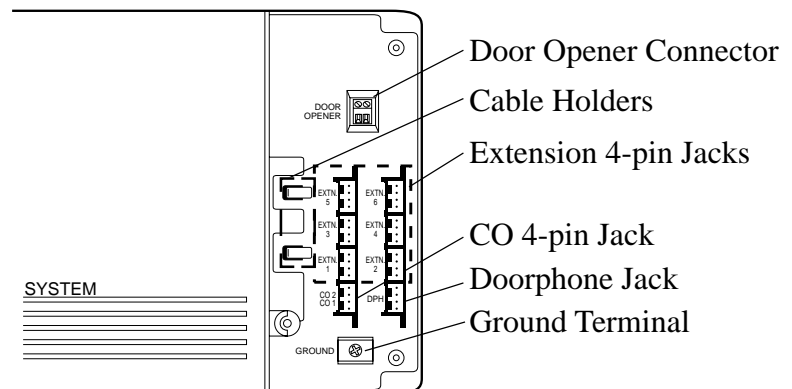
Notes
- Doorphone Jack and Door Opener Connector are at SELV.
- CO Line 4-pin Jack and Extension 4-pin Jacks are at TNV.

Wall Mounting

1. Place the templet (on page 39) on the wall to
   mark the three screw positions.
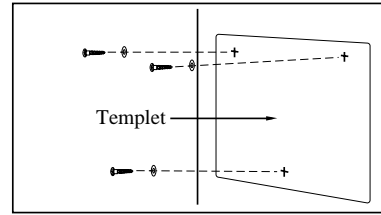
2. Install the three screws and washers (included)
   into the wall.

3. Hook the main unit on the screw heads.
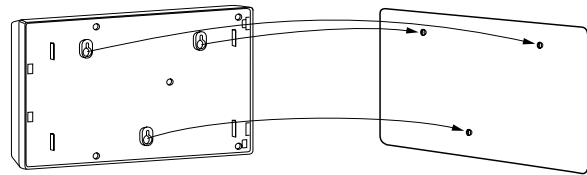
Opening Front Cover
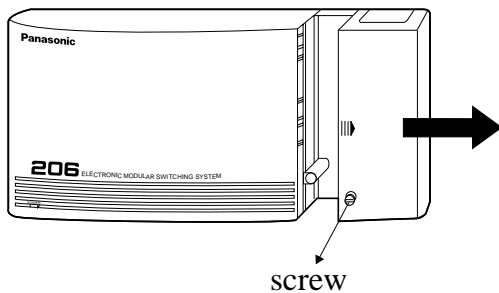
1. Loosen the screw.

2. Slide the cover in the direction of the
   arrow while pressing the marked
   position.

screw

Frame Ground Connection
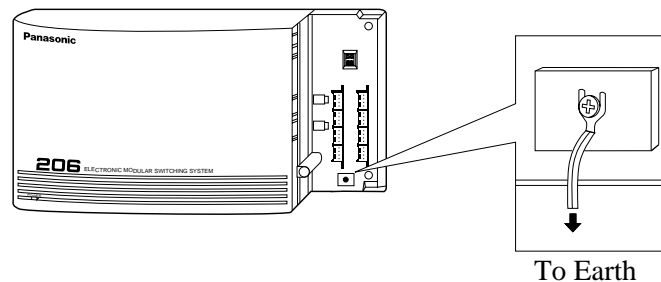
To Earth

IMPORTANT!!!
Connect the frame of the main unit to earth.

System Connection Diagram

to CO1 and CO2

2 CO Lines

Doorphone KX-T30865

Door Opener

Doorphone

6 Extensions

(two pair)

(one pair)

Single Line Telephone

KX-T7130

(two pair)

(one pair)

Cordless Phone

KX-T7050

(two pair)

(one pair)

Telephone Answering
Machine with Facsimile

KX-T7020
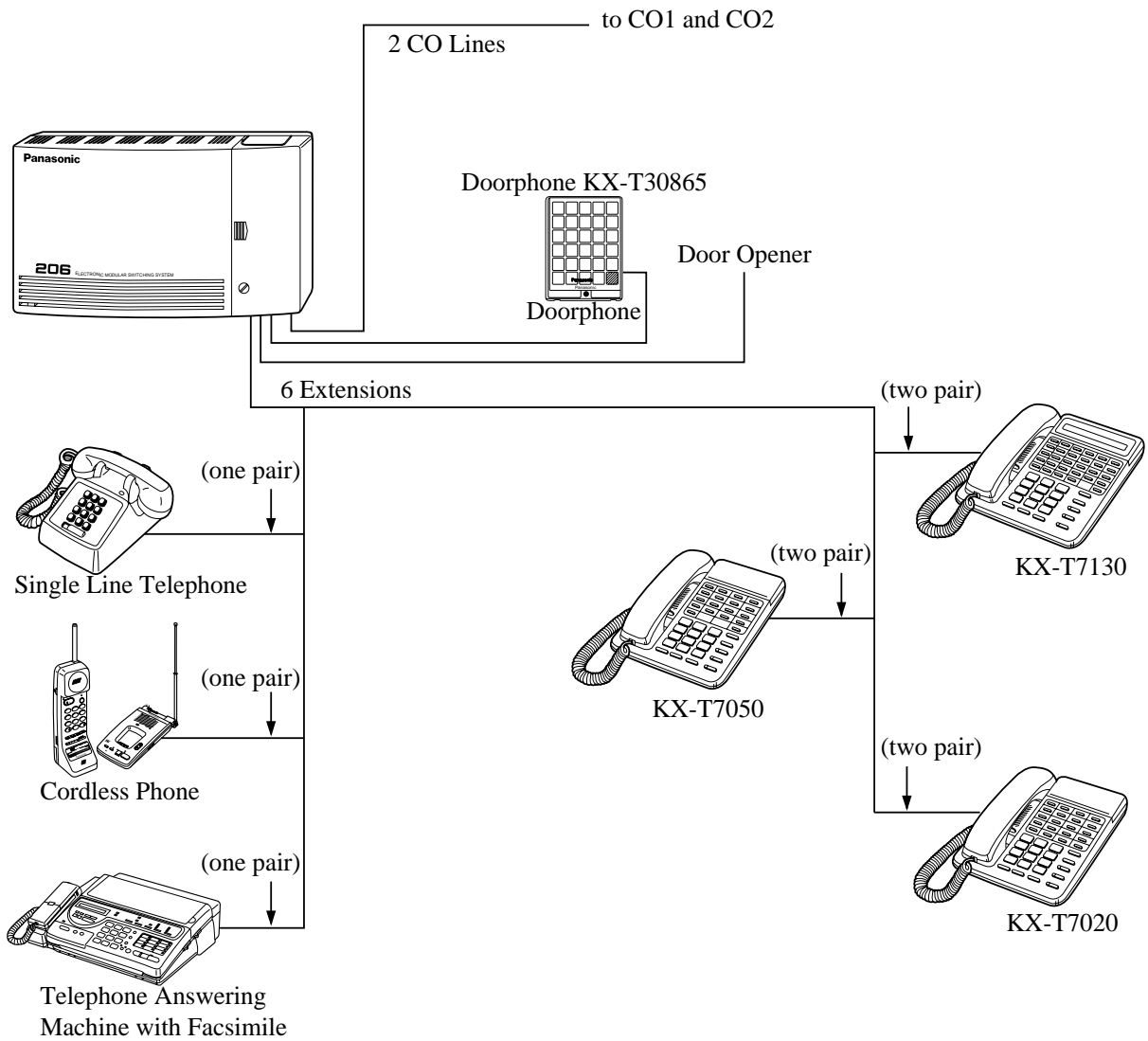
CO Line Connection

Wire Specification

The wire specifications are as follows:

Wire	Solid wire
Diameter of conductor	ø 0.4 – ø 0.65mm
Diameter with coating	ø 0.66 – ø 1.05mm

Connection

Use a 4-pin plug (included) to connect CO lines.
A single plug is able to connect two CO lines. Use twisted pair cable.

1. Lift the transparent part.
2. Insert the required telephone wires into the holes of the plug.
   Then press the transparent part back into the black part.

Note: Do not strip the wires.
Insert the wires all the way into the plug.
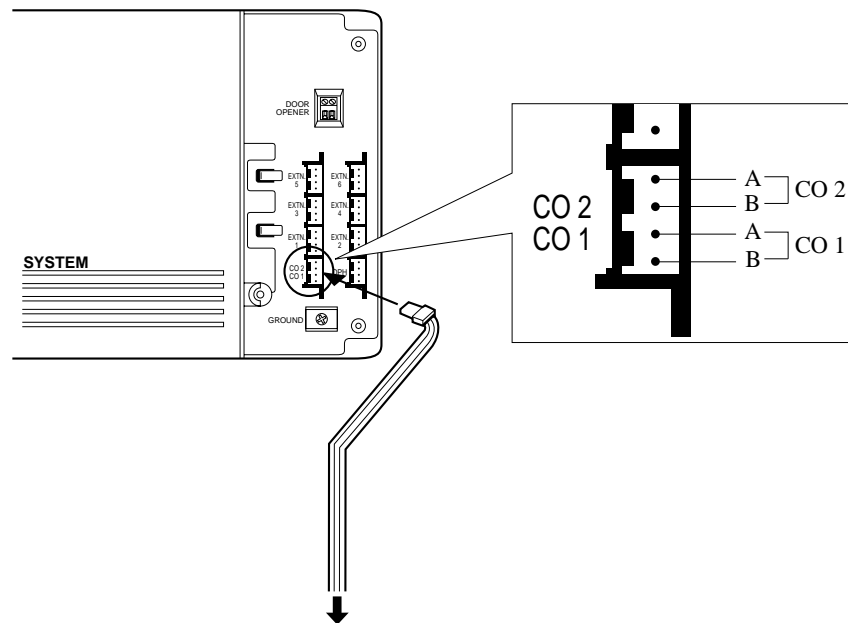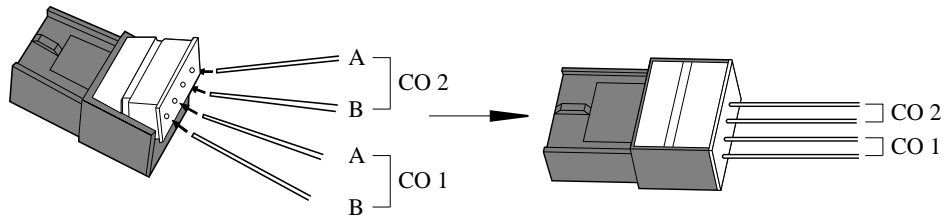
To Modular Jacks from
the Central Office

Note
• You can use cable holders to fix the wires.

Extension Connection

Wire Specification   The wire specifications are as follows:

Wire	Solid wire
Diameter of conductor	ø 0.4 – ø 0.65 mm
Diameter with coating	ø 0.66 – ø 1.05 mm

Connection   Use a 4-pin plug (included) to connect extension lines.
There are 6 plugs to connect extensions to EXTN. 1 through EXTN. 6 jacks.

1. Lift the transparent part.
2. Insert the required telephone wires into the holes of the plug.
   Then press the transparent part back into the black part.

Note: Do not strip the wires.
Insert the wires all the way into the plug.

For a proprietary telephone   For single line telephones

To extensions
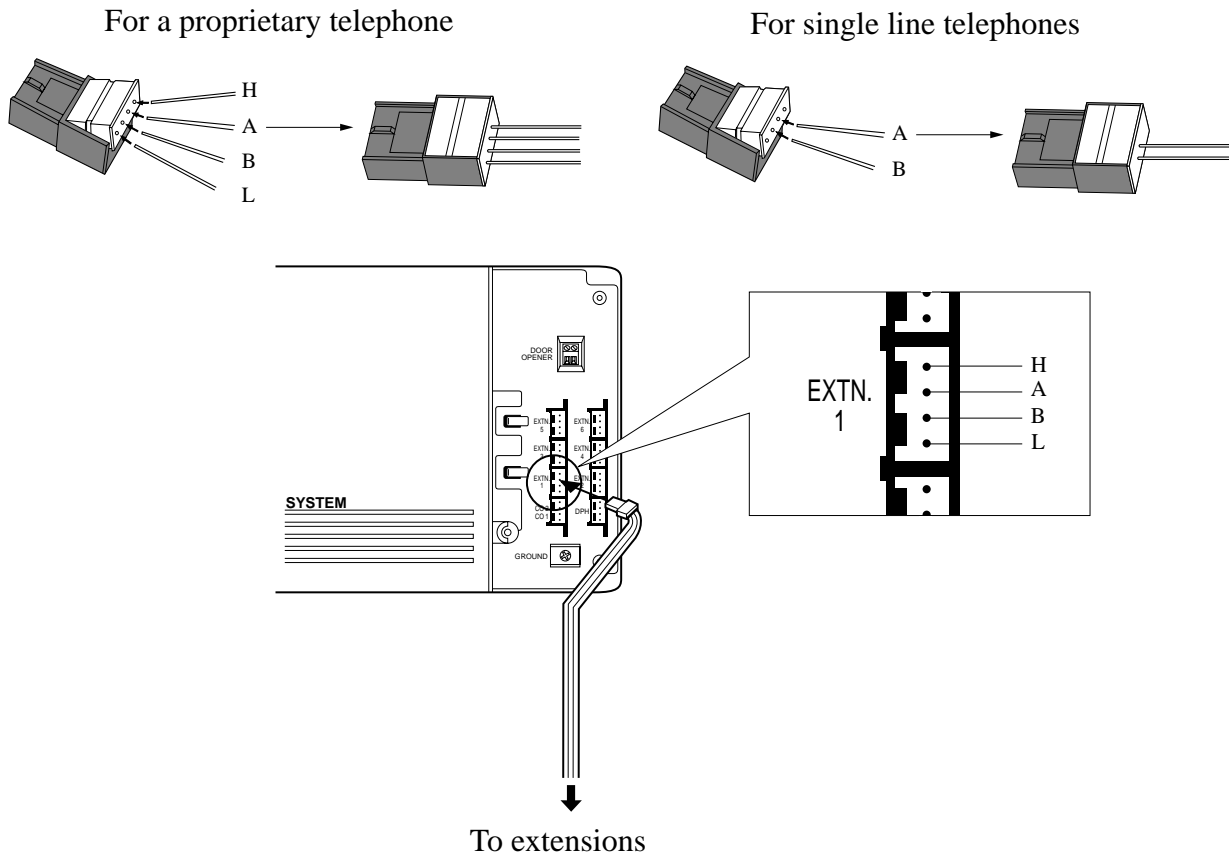
Notes
- A facsimile must be connected to EXTN.6 jack if an optional DISA/FAX Detect card (KX-T20691) is installed. See page 16 to install the card. System programming is also required. The "#12 Fax Connection" program should be assigned as "ENABLE". See page 25. The "#24 Call Incoming Mode Selection" program should be assigned as "DISA". See page 28.
- The EXTN.1 through EXTN.6 jacks correspond to extension numbers 21 through 26 respectively.
- You can use cable holders to fix the wires.

Paralleled Telephone Connection

Any single line telephone can be connected in parallel with a proprietary telephone.
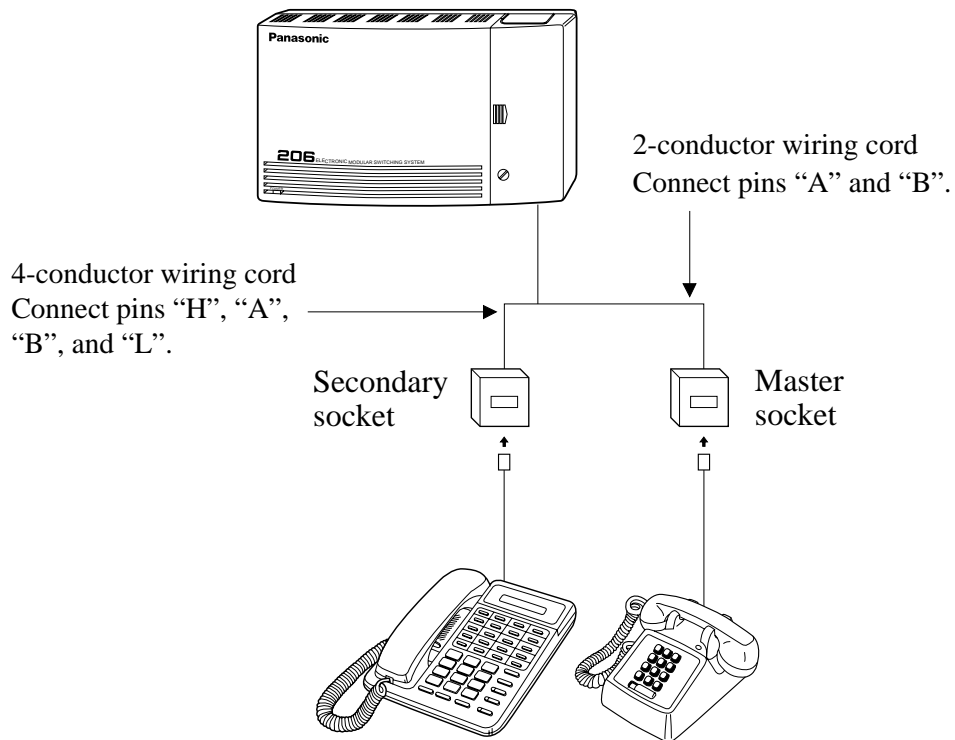
Notes
• The following features are not available for SLT connected in parallel:
    Call Splitting
    External Feature Access
    Conference

Installation of Optional Card and Unit

Doorphone (KX-T30865) Connection

DPH

A
B

2-conductor wiring cord

KX-T30865
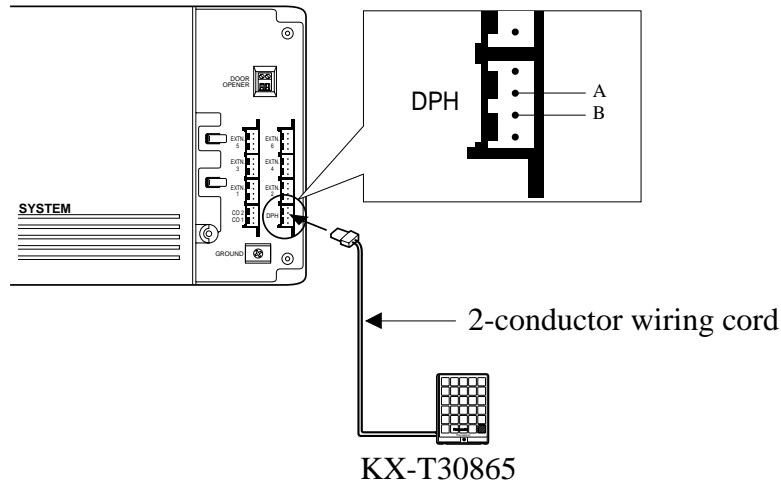
Notes
- The doorphone adaptor is not required for KX-T206.
- To avoid howling, you must assign all extensions as "DISABLE" in the "#06/#76 Doorphone Assignment (Day/Night)" program when you do not connect a doorphone.
- If howling occurs while using the doorphone feature, check the wiring.
- You can use cable holders to fix the wires.

Door Opener Connection

A user-supplied door opener can be connected to the system.

1. Loosen the screws.
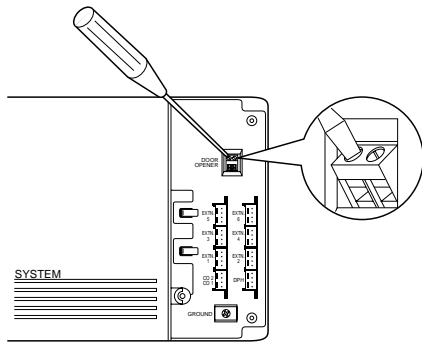
2. Insert the wires coming from the door opener into holes and tighten the screws.

DOOR OPENER

To the door opener

3. Wind and fix the cables of the door opener round the upper cable holder.
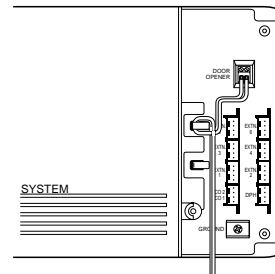
Notes
- For wiring, it is recommended to use UL1015 twisted wire or the equivalent.
- The wire should be between 1.2 and 2.4 mm in diameter including the coating.

D=1.2–2.4 mm
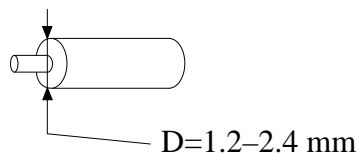
- Set the door opener paired with the doorphone.

Installation of Optional Card and Unit

DISA Card (KX-T20691) Connection

1. Disconnect the AC cord from the system.

2. Loosen the screws and remove the cover.

3. Attach the DISA card to the marked connectors.
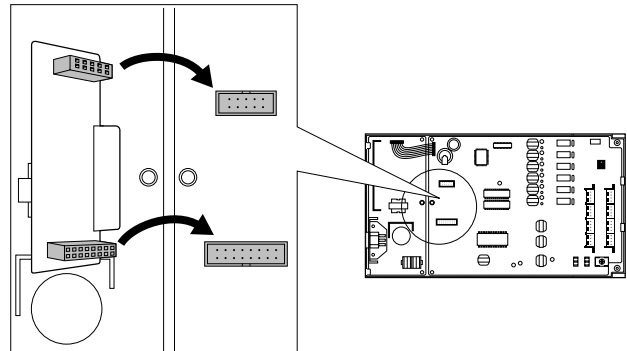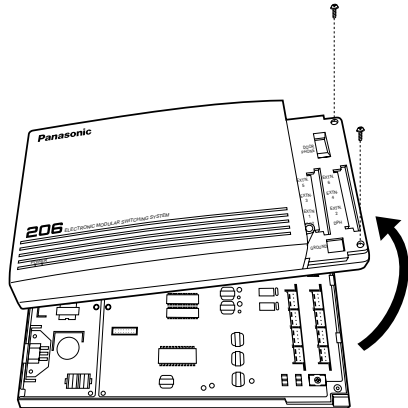
4. Replace the cover and secure the screws.

5. Connect the AC cord again.

The DISA feature allows an outside caller to have direct access to intercom calls. System programming is required. See "#10 OGM Recording" on page 24 and "#24 Call Incoming Mode Selection" on page 28.

Keep the following conditions in mind:

- When a caller enters the second digit of an extension number (1 through 6) during the message, he/she can reach the extension directly.
- If the call is not received, the assigned extensions will ring. See "#04/#74 CO1 Ringing Assignment (Day/Night), "#05/#75 CO2 Ringing Assignment (Day/Night)" on page 22 and "#60 DISA Ringing Time" on page 29.
- If the caller enters 0, the assigned extensions can receive his/her call. See "#04/#74 CO1 Ringing Assignment (Day/Night), "#05/#75 CO2 Ringing Assignment (Day/Night)" on page 22.
- If the caller enters 7, 8 or 9, or enters nothing, extension 21 will receive his/her call.
- Any calls from a rotary phone will be received by extension 21.

Installation of Lightning Protectors

Overview

A lightning protector is a device to be installed on a CO line to prevent a dangerous surge from entering the building and damaging equipment.
A dangerous surge can occur if a telephone line comes in contact with a power line. Trouble due to lightning surges have been showing a steady increase with the development of electronic equipment.
In many countries, there are regulations requiring the installation of a lightning protector.
A lightning strike to a telephone cable which is 10 m above ground can be as high as 200,000 volts.
This system should be installed with lightning protectors.
In addition, grounding (connection to earth ground) is very important for the protection of the system.

Installation

CO — Lightning Protectors — CO — Main Distribution Frame — CO — Main Unit

EXTN

EXTN — SLT

EXTN — PT

Earth Terminal

Frame Earth

Earth
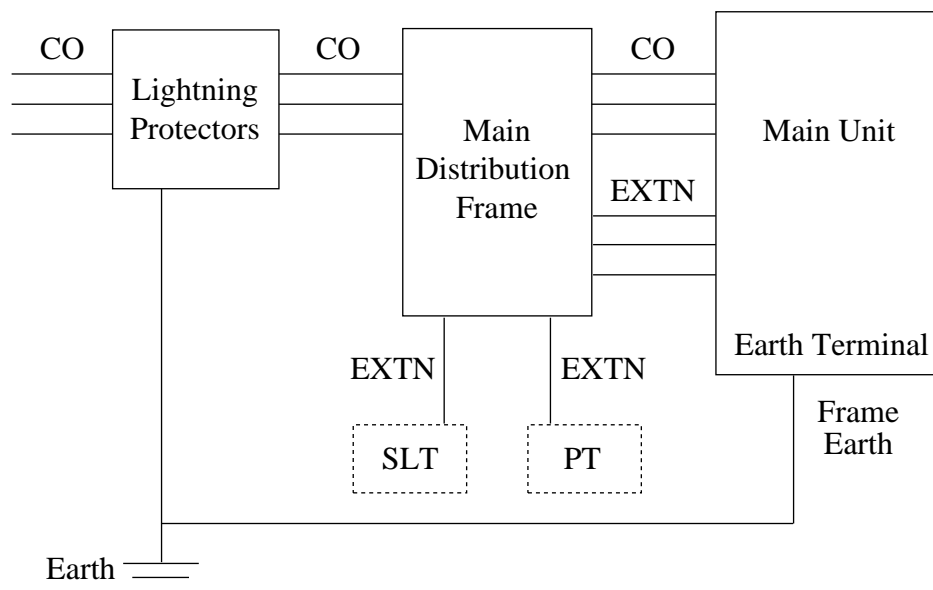
Installation of Lightning Protectors

Outside

(Main Building)

Protectors

CO

(Another Building)

CO

Main Distribution Frame

CO

Main Unit

EXTN

EXTN

EXTN

EXTN

Lightning Protector

SLT PT

TEL

TEL

Earth
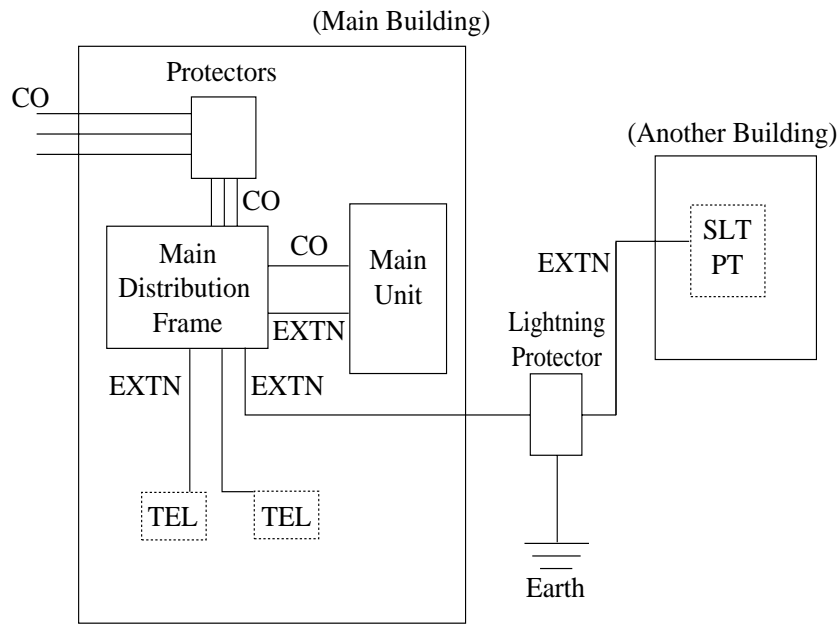
Notice

If you install an extension outside of the main building, the following precautions are recommended:

(1) Install the extension wire underground.

(2) Use a conduit to protect the wire.

Note

• The lightning protector for an extension is different from that for CO.

Installation of an Earth Rod

Lightning Protector

CO

Earth Wire

Main Unit

(Underground)
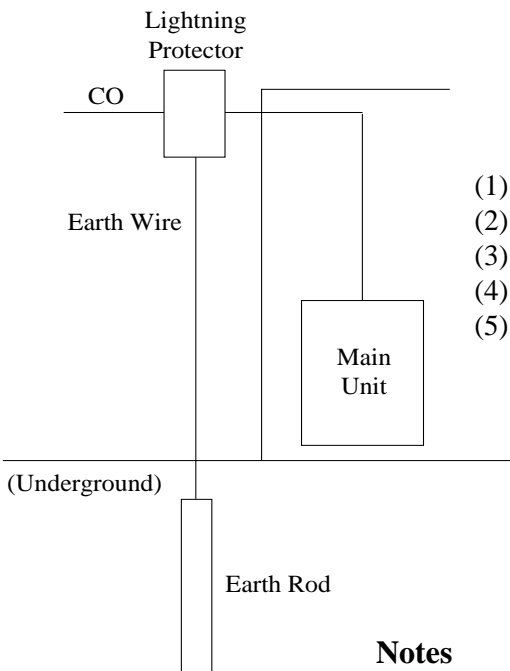
Earth Rod

(1) Installation location of the earth rod ...... Near the protector
(2) Check obstructions .... None
(3) Composition of the earth rod .... Metal
(4) Depth of the earth rod .... More than 50 cm
(5) Size of the earth wire .... Thickness is greater than 1.6 mm

Notes

• The above figures are recommendations only.
• The length of earth rod and the required depth depend on the composition of the soil.

Power Failure Transfer

In the event of a power failure, CO_2 is connected to extension 22 automatically.

Note
* The system programmed data is protected by the factory provided lithium battery.

Starting the System

Plug the AC power cord into the system and an AC outlet.
* The power indicator of the system will light.

General Programming Instructions

Default Setting   This system has a default factory setting. If any of the programming needs to be changed, you can change the setting by system programming.

Required Telephone Set   You can use any of the following telephones for system programming:
• Proprietary Telephone (PT): KX-T7130, KX-T7020, KX-T7050

• Single Line Telephone (SLT): tone type

All telephones (except KX-T7130) do not have display panels, so you cannot check the setting you have made. Therefore, please use KX-T7130 to check the programming.

Extensions Used for Programming   System programming can only be performed from extension 21.

To Check the Programmed Data   Use KX-T7130. When you check the assignment, set the MEMORY switch on PT to "PROGRAM".
Enter "#" and the program address.
You cannot check programs #60, #62, #63, #65, #67, #84 and #85, as they are not displayed on the display panel.

Before Programming   To enter the system programming mode:

[Off-hook] 6 2 0 6 2 0 6 #

After Programming   To exit the system programming mode:

[Off-hook] 6 2 0 6 #

System Programming

System Speed Dialling Number Set

Description
Used to program System Speed Dial numbers. These numbers are available to all extension users. There are 40 numbers from 00 through 39.

Condition
- A maximum of 32 digit numbers can be stored.
- You must store an automatic line access code (9 or 0), or an individual line code (81 or 82) first. The automatic line access code is assigned in "#52 CO Line Access Number Selection".
- If you store a pause, press ✳.

Input Format

     # 0 0 **[AA] [Phone No.]**   #

Explanation
- [AA]=Speed dial number: 00 through 39
- Phone number: 32 digits max.

Default
Not stored

Dial Type Selection

Description
Assigns the Dial Type (tone or pulse) to CO line.

Input Format

     # 0 1 **[A] [B]**

Explanation
- [A]= 1: CO1/ 2: CO2
- [B]= 0: PULSE/ 1: TONE

Default
Both COs– 1: TONE

Outgoing Permitted CO1 Assignment (Day/Night)

Description
Determines the extensions which can have access to CO line 1 in both day and night modes. The extension users can make outgoing CO calls if their extensions are assigned as "ENABLE".

Input Format

     #   0 2 **(for day)** / 7 2 **(for night)** **[A] [B]**

Explanation
- [A]= 1 through 6 (corresponding to extension no. 21 through 26)
- [B]= 0: DISABLE/ 1: ENABLE

Default
All extensions– 1: ENABLE

System Programming

Outgoing Permitted CO2 Assignment (Day/Night)

Description

Determines the extensions which can have access to CO line 2 in both day and night modes. The extension users can make outgoing CO calls if their extensions are assigned as "ENABLE".

Input Format

0 3 (for day) / 7 3 (for night) **[A] [B]**

Explanation

- [A]= 1 through 6 (corresponding to extension no. 21 through 26)
- [B]= 0: DISABLE/ 1: ENABLE

Default   All extensions– 1: ENABLE

CO1 Ringing Assignment (Day/Night)

Description

Assigns the extensions which will ring when a call from CO line 1 is received in both day and modes.

Input Format

0 4 (for day) / 7 4 (for night) **[A] [B]**

Explanation

- [A]= 1 through 6 (corresponding to extension no. 21 through 26)
- [B]= 0: DISABLE (not ring)/ 1: ENABLE (ring)

Default   extension 21–1: ENABLE   other extensions– 0: DISABLE

CO2 Ringing Assignment (Day/Night)

Description

Assigns the extensions which will ring when a call from CO line 2 is received in both day and modes.

Input Format

0 5 (for day) / 7 5 (for night) **[A] [B]**

Explanation

- [A]= 1 through 6 (corresponding to extension no. 21 through 26)
- [B]= 0: DISABLE (not ring)/ 1: ENABLE (ring)

Default   extension 21–1: ENABLE   other extensions– 0: DISABLE

System Programming

Doorphone Assignment (Day/Night)

Description
Assigns the extensions which will ring when a doorphone call is received and enables to call the doorphone in both day and night modes.

Condition
- All extensions must be assigned as "0: DISABLE", if you do not connect a doorphone to the system.

Input Format

0 6 (for day) / 7 6 (for night) [A] [B]

Explanation
- [A]= 1 through 6 (corresponding to extension no. 21 through 26)
- [B]= 0: DISABLE/ 1: ENABLE

Default
extension 21–1: ENABLE   other extensions– 0: DISABLE

Toll Restriction (TRS) – Class Assignment (Day/Night)

Description
Assigns a Toll Restriction Class to each extension in both day and night modes. The Toll Restriction feature can prohibit certain extension users from placing unauthorized toll calls. The following four classes are available:

Class	Restricted calls
CLASS 1	None
CLASS 2	Numbers programmed in "#08 Denied code (Class 2, 3) "
CLASS 3	Numbers programmed in "#08 Denied code (Class 2, 3) and "#09 Denied code (Class 3)"
CLASS 4	All CO calls

Condition
- Emergency call numbers "112" and "999" are excepted from toll restriction.

Input Format

0 7 (for day) / 7 7 (for night) [A] [B]

Explanation
- [A]= 1 through 6 (corresponding to extension no. 21 through 26)
- [B]= 1: CLASS 1/ 2: CLASS 2/ 3: CLASS 3/ 4: CLASS 4

Default
All extensions– 1: CLASS 1

System Programming

TRS Denied Code (CLASS 2, 3)

Description

    Allows you to specify the numbers which are toll-restricted for TRS Class 2 and Class 3.

Condition

- The character "⋇" can be any number.

Input Format

                        ⌗ 0 8 **[A] [Denied code No.]** ⌗

Explanation

- [A]= Code No.: 0 through 9 1 digit
- Denied code number: 7 digits, ⋇

Default   All codes– Not stored

TRS Denied Code (CLASS 3)

Description

    Allows you to specify the numbers which are toll-restricted for TRS Class 3.

Condition

- The character "⋇" can be any number.

Input Format

                        ⌗ 0 9 **[A] [Denied code No.]** ⌗

Explanation

- [A]= Code No.: 0 through 9 1 digit
- Denied code number: 7 digits, ⋇

Default   All codes– Not stored

OGM Recording

Description

    Used to record an outgoing message for Direct Inward System Access (DISA).

Condition

- The recording time is a maximum of 16 seconds.
- If you perform programming with a PT, the message "RECORDING" will be displayed on its panel.
- If the DISA/FAX Detect card is not installed, you will hear a reorder tone and the program is finished.

    Message example: "This is AAA company. Please enter 1 for Mr. AA, 2 for Mr. BB ....
                  6 for Ms. FF. Thank you."

Input Format

                    ⌗ 1 0 **(Record your message)**

System Programming

OGM Play

Description
Confirms the outgoing message recorded in the OGM Recording program.

Condition
- If you perform programming with a PT, the message "PLAYBACK" will be displayed on its panel.

Input Format

1 1

Fax Connection

Description
Allows the system to detect the CNG tone from a facsimile. If it is set to "ENABLE", extension 26 will receive fax transmission data.

Condition
- The optional DISA/FAX Detect card (KX-T20691) should be installed.
- The "#24 Call Incoming Mode Selection" program should be assigned as "DISA".
- Extension 26 should be assigned as "DISABLE" in the "#04/#74 CO1 Ringing Assignment (Day/Night)", "#05/#75 CO2 Ringing Assignment (Day/Night)" and "#06/#76 Doorphone Assignment (Day/Night)" programs.

Input Format

1 2 [A]

Explanation
- [A]= 0: DISABLE (not detect)/ 1: ENABLE (detect)

Default   0: DISABLE

CO1 Delayed Ringing Assignment

Description
Assigns delayed ringing to extensions when a call from CO line 1 is received.

Condition
- The number of delayed rings is assigned by the "#15 Delayed Ringing Count Selection" program.
- This feature is not available for the calls sent by the DISA feature.

Input Format

1 3 [A] [B]

Explanation
- [A]= 1 through 6 (corresponding to extension no. 21 through 26)
- [B]= 0: DISABLE (not delayed)/ 1: ENABLE (delayed)

Default   All extensions– 0: DISABLE

System Programming

CO2 Delayed Ringing Assignment

Description

Assigns delayed ringing to extensions when a call from CO line 2 is received.

Condition
- The number of delayed rings is assigned by the "#15 Delayed Ringing Count Selection" program.
- This feature is not available for the calls sent by the DISA feature.

Input Format

⧉ ① ④ **[A] [B]**

Explanation
- [A]= 1 through 6 (corresponding to extension no. 21 through 26)
- [B]= 0: DISABLE (not delayed)/ 1: ENABLE (delayed)

Default　　All extensions– 0: DISABLE

Delayed Ringing Count Selection

Description

Assigns the number of delayed rings that will be sent to the assigned extensions from the CO lines.

Input Format

⧉ ① ⑤ **[A]**

Explanation
- [A]= 1: After 1 ring/ 2: After 2 rings/ 3: After 3 rings/ 4: After 4 rings

Default　　2: After 2 rings

TRS Excepted Code

Description

Assigns the numbers which are exceptions to the toll restriction. You can store a maximum of 30 codes.

Condition
- The character "✶" can be any number.

Input Format

⧉ ① ⑥ **[A] [Excepted code No.]**

Explanation
- [A]= Code No.: 00 through 29　2 digits
- Excepted code number: 7 digits, ✶

Default　　All codes– Not stored

System Programming

Door Opener Assignment

Description

    Assigns each extension to have access to door opener or not.

Input Format

⊞ 6 1 **[A] [B]**

Explanation

- [A]= 1 through 6 (corresponding to extension no. 21 through 26)
- [B]= 0: DISABLE/ 1: ENABLE

Default   All extensions– 1: ENABLE

Day/Night Switching Mode

Description

    Assigns automatic or manual day/night mode.

Condition

- If automatic switching mode is assigned, day/night mode is switched at the time programmed in "#71 Day/Night Starting Time".

Input Format

⊞ 7 0 **[A]**

Explanation

- [A]= 0: Manual/ 1: Automatic

Default   0: Manual

Day/Night Starting Time

Description

    Sets the starting time when automatic day/night mode is programmed in the "#70 Day/Night Switching Mode" program.

Input Format

⊞ 7 1 **[A] [BB] [CC] [D]**

Explanation

- [A]= 1: Day start time / 2: Night start time
- [BB]= Hour: 01-12
- [CC]=Minute: 00-59
- [D]=0: AM / 1: PM

Default   Day– 9:00 AM   Night–5:30 PM

System Data Clear

Description

    Allows the system to re-initialize the system-programmed data. The features mentioned in "Station Feature Clear" are also re-initialized. See page 11 of the User Manual. When all the programmed data is cleared, the system will restart with the default setting.

Input Format

⊞ 9 9

System Programming

Other Programs

• **Host PBX Access Code Assignment**

Assigns a Host PBX access code to make an outside call, if the system is installed behind the host PBX. A pause is automatically inserted after the access code and the toll restriction feature applies to the number after the code.
Input Format: **#21 [A] [code] #**
• [A]=1: CO1/ 2: CO2
• [code] = 2 digits max. (Default : Not stored)

• **Hookswitch Flash Time Assignment**

Sets the time to send the flash signal to each CO line.
Input Format: **#22 [A] [B]**
• [A]=1: CO1/ 2: CO2
• [B]=0: 80 ms/ 1: 100 ms (default)/ 2: 160 ms/
    3: 300 ms/ 4: 600 ms / 5: 900 ms /
    6: 1200 ms

• **CO Pulse Selection**

Assigns to send the pulse to CO line during a conversation with an outside party when the "#01 Dial Type Selection" program is assigned as "Pulse".
Input Format: **#23 [A]**
• [A]=0: DISABLE/ 1: ENABLE (default)

• **Call Incoming Mode Selection**

Assigns whether to use the DISA feature or not. This program is available when the DISA/FAX Detect card is installed.
Input Format: **#24 [A] [B]**
• [A]=1: CO1/ 2: CO2
• [B]=0: NORMAL (default)/ 1: DISA

• **Bell Off Detection**

Sets the time between one bell signal detection and the next signal from a Central Office.
Input Format: **#25 [A]**
• [A]=1: 6 SEC/ 2: 3 SEC (default)

• **Intercom Alerting Assignment**

Assigns the intercom alerting mode to each extension when an intercom call reaches.
Input Format: **#30 [A] [B]**
• [A]=1 through 6 (corresponding to extension
    no. 21 through 26)
• [B]=0: TONE (default)/ 1: VOICE

• **Paralleled Telephone Connection**

Assigns whether each extension will be connected in parallel with a single line telephone or not.
Input Format: **#31 [A] [B]**
• [A]=1 through 6 (corresponding to extension
    no. 21 through 26)
• [B]=0: DISABLE (default)/ 1: ENABLE

• **Tone Waiting Time After OGM**

Sets the time between sending an outgoing message and sending the ringback tone.
Input Format: **#40 [A]**
• [A]=0: 0 SEC/ 1: 5 SEC (default)/ 2: 10 SEC/
    3: 15 SEC

• **Hold Recall Time**

Assigns the length of the hold recall timer and transfer recall timer. The hold recall timer is used to alert an extension that a call has been held for an extended period of time. The transfer recall timer is used to alert an extension that a transferred call has not been answered for an extended period of time.
Input Format: **#50 [A]**
• [A]=0: 30 SEC (default)/ 1: 1 MIN / 2: 2 MIN/
    3: 3 MIN/ 4: 4 MIN/ 5: DISABLE

• **Hold Mode Selection for SLT**

Assigns the method to put a call on hold with SLTs.
Input Format: **#51 [A]**
• [A]=1: MODE 1 (hooking) (default)
    2: MODE 2 (hooking and dial 6)

• **CO Line Access Number Selection**

Selects the automatic line access number.
Input Format: **#52 [A]**
• [A]=1: 9 (default)/ 2: 0

• **Conference Tone**

Assigns whether or not to delete the conference tone. You hear the tone when the conference or the executive busy override feature begins and finishes.
Input Format: **#53 [A]**
• [A]=0: DISABLE/ 1: ENABLE (default)

• **Music on Hold Use**

Selects whether or not to use internal music as the music on hold.
Input Format: #54 [A]
• [A]=1: MODE 1 (NO MUSIC) (default)/
    2: MODE 2 (MUSIC)

Other Programs (continued)

• **DISA Ringing Time Assignment**
Sets the time to forward a call sent by the DISA feature to other extensions. If the call is not answered by the designated extension within the programmed time, the call is forwarded to extensions which are not assigned as "DIS-ABLE" in the #04/#74 CO1 Ringing Assignment (Day/Night) and #05/#75 CO2 Ringing Assignment (Day/Night). If "DISABLE" is selected in this program, the telephone at the designated extension rings for 60 seconds and the call is not forwarded.
Input Format: **#60 [A]**
• [A]=0: DISABLE / 1: 10 SEC/
　　2: 20 SEC (default)/ 3: 35 SEC

• **Toll Restriction Code Check**

Assigns whether " $\times$ " or "#" is to be checked or not when a user dials them in the Toll Restriction code.
Input Format: **#62 [A]**
• [A]=0: DISABLE/ 1: ENABLE (default)

• **CO Indicator Assignment**
Assigns whether an incoming CO call indicates or not on the CO button. Also it allows an extension user to answer the call by pressing the CO button when "DISABLE" is selected in the #04/#74 "CO1 Ringing Assignment" or the #05/#75 "CO2 Ringing Assignment" program.
Input Format: **#63 [A]**
• [A]=0: DISABLE (The indicator lights red and
　　　　a user cannot answer the
　　　　call.)
　1: ENABLE (The indicator is flashing and
　　　　a user can answer the call.)
　　　　(default)

• **Hookswitch Flash Time Range Assignment**
Sets the hookswitch flash time range.
Input Format: **#65 [A]**
• [A]=1: 80–1000ms / 2: 80–150ms
　　3: 50–150ms (default)

• **Door Opener Access Time**
Assigns the length of the Door Opener time. The door is unlocked for the assigned time.
Input Format: **#67 [A]**
• [A]= 1: 1 sec/ 2: 2 sec/ 3: 3 sec/ 4: 4 sec/
　　5: 5 sec (default) / 6: 6 sec/ 7: 7 sec /
　　8: 8 sec

Note
• You cannot check the assignments of the programs, #60, #62, #63, #65 and #67 by setting the MEMORY switch to "PROGRAM", and entering "#" and the program address.

System Programming

Least Cost Routing (LCR) Programs
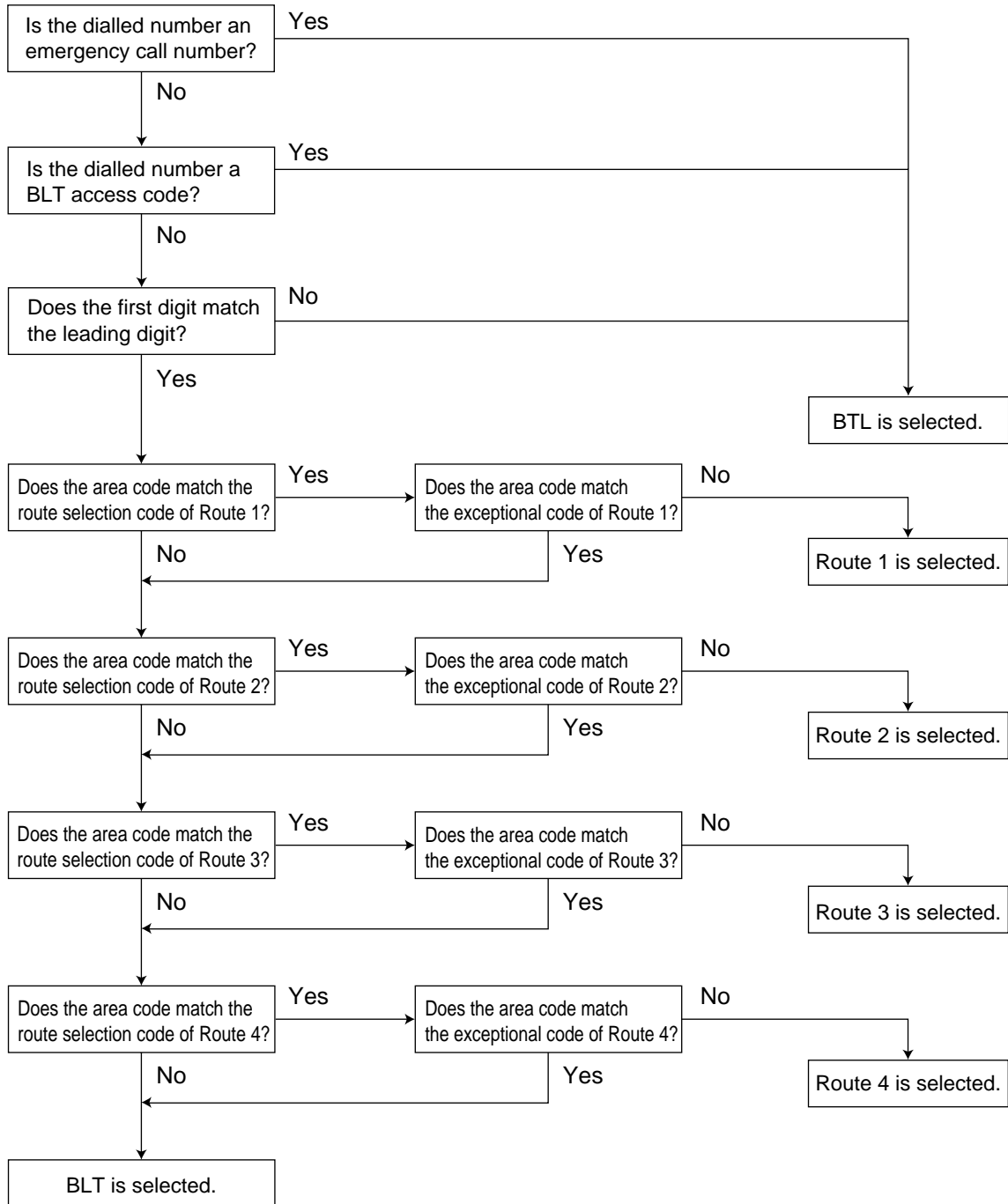
Least Cost Routing (LCR) is a system programmable feature that automatically selects the least expensive route available at the time a long distance call is made.
It is not necessary to dial the access code of the least expensive carrier.
You must assign the programs on the next page to activate the LCR feature.

The following chart shows the procedure of LCR feature.

LCR Sequence chart

System Programming

Least Cost Routing (LCR) Programs (continued)

- **LCR Mode**

  Allows you to turn on or off the Least Cost Routing (LCR) mode. LCR, if enabled, selects the least expensive route to be used for a CO call.
  Input Format: **#80 [A] [B]**
  - [A]=1: CO1/ 2: CO2
  - [B]=0: DISABLE (default)/ 1: ENABLE

- **LCR Carrier Code**

  Assigns each carrier's access code used for the LCR feature.
  Input Format: **#81 [A] [code] #**
  - [A]=Route No.: 1 through 4
  - [code] =10 digits max.
    (Default : all routes – 131)

- **LCR Modify Mode**

  Assigns whether to change the numbers after the carrier code to the TONE mode or not when "#01 Dial Type Selection" program is assigned as "Pulse".
  Input Format: **#82 [A] [B]**
  - [A]=Route No.: 1 through 4
  - [B]=0: PULSE/1: TONE (default)

- **LCR Route Selection Code**

  Assigns area codes (except the leading digit) which is selected by the LCR feature for each route. You can store a maximum of 40 codes for each route.
  Input Format: **#83 [A] [BB] [code] #**
  - [A]= Route No.: 1 through 4
  - [BB]= Code No.: 00 through 39
  - [code]=6 digits max.
    (Default: Not stored)

- **LCR Password Set**

  Assigns a password to register an authorization code. The password is not displayed on the display panel during setting.
  Input Format: **#84 [old password] [new password]**
  - [Password]=4 digits max. (default: 1234)

- **LCR Authorization Code Set**

  Registers an authorization code applied to each CO line and each route. The authorization codes are not displayed on the display panel during setting.
  Input Format: **#85 [password] [A] [B] [code]**
  - [password]=enter the password set by # 84 program
  - [A]=Route No.: 1 through 4
  - [B]=1: CO1/ 2: CO2
  - [code]=20 digits max.
    (Default: both CO lines, all routes – not stored)

- **LCR Itemized Bill Code**

  Assigns whether to register the itemized bill code (extension number 21 through 26) to each CO line or not. This code is used for dividing a bill to a CO line.
  Input Format: **#86 [A] [B]**
  - [A]=1: CO1/ 2: CO2
  - [B]=0: DISABLE (default)/ 1: ENABLE

- **BTL Access Code**

  Stores the BTL (British Telecom Line) access code. When this code is dialled, the BTL is always selected even if the LCR feature is enabled.
  Input Format: **#87 [code] #**
  - [code]=4 digits max. (default: 121)

- **LCR Route Exceptional Code**

  Assigns dialling numbers that are excepted from LCR routing plans of the specified carrier. You can store a maximum of 20 codes for each route.
  Input Format: **#88 [A] [B] [code] #**
  - [A]=Route No.: 1 through 4
  - [B]=Area code No.: 00 through 19
  - [code]= 6 digits max.
    (Default: all routes – not stored)

- **LCR Leading Digit Entry**

  Registers Leading digits of an area code to judge whether to select a route for the LCR feature. When the first digit of the dialled number matches with the registered number, it is considered a long distance call and proceeds to the LCR procedure.
  Input Format: **#89 [code] #**
  - [code]=2 digits max. (default: 0)

Conditions
- To clear the LCR route selection code, press #83 [A] [BB] #
- To clear the LCR authorization code, press #85 [password] [A] [B] #
- To clear the BTL access code, press #87#.
- To clear the LCR route exceptional code, press #88 [A] [B] #

\<Tone\>

Confirmation Tone 1

Confirmation Tone 2

Confirmation Tone 3
(Conference Tone)

Dial Tone 1

Dial Tone 2

Busy Tone

Reorder Tone

Ringback Tone

Do Not Disturb (DND)
Tone

Hold Alarm

Call Waiting Tone

1 sec

15 sec

Tone / Ring Tone

Intercom Calls /
Intercom Hold Recall

CO Calls /
CO Hold Recall

Doorphone Calls

1 sec
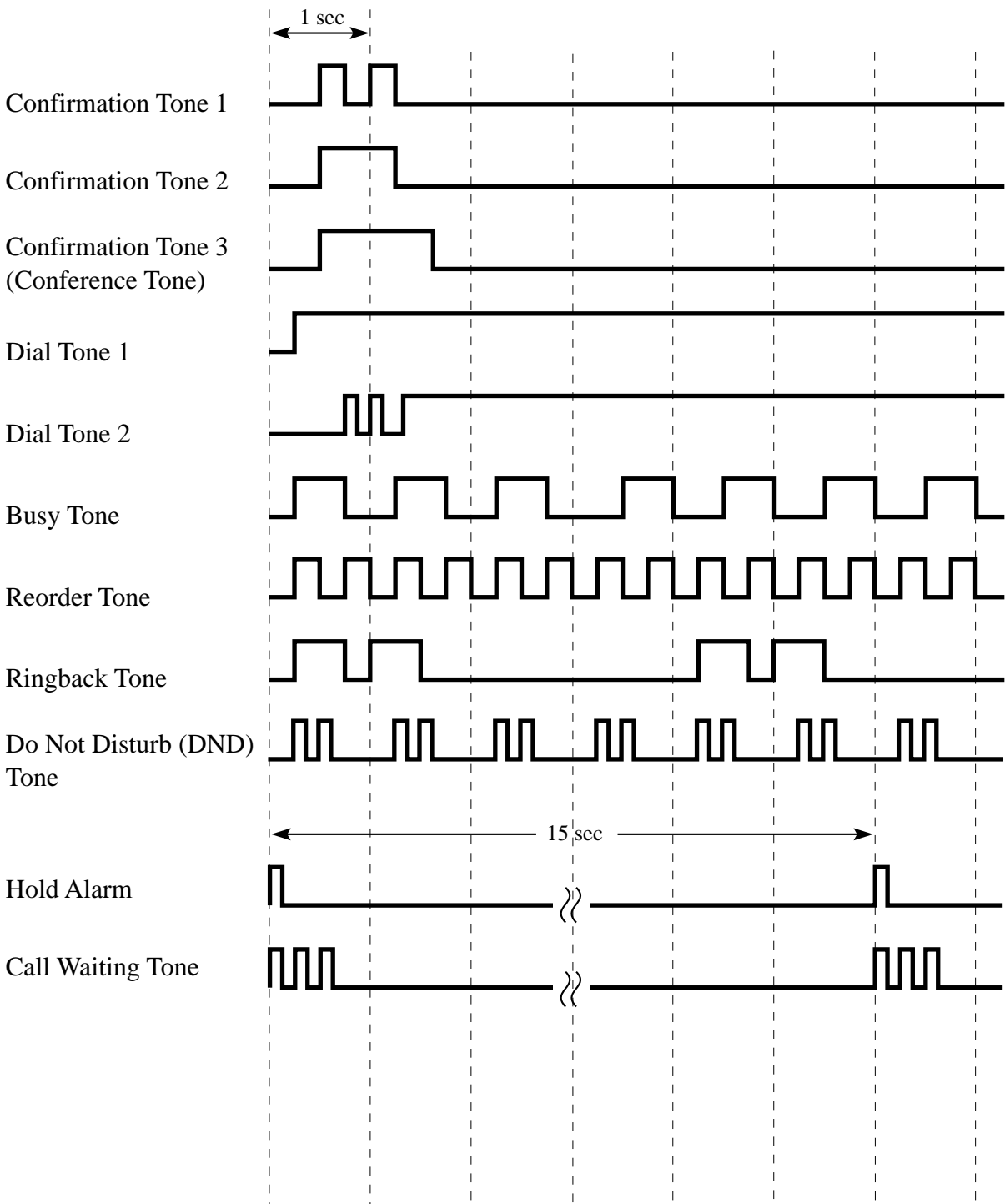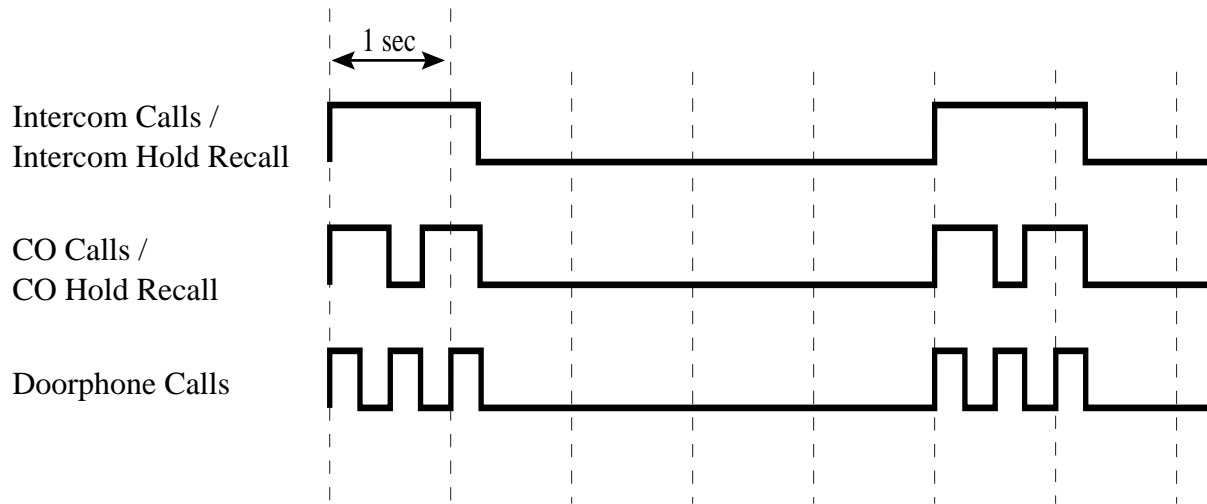
NOTE
- The dial tone 2 is heard during the system programming mode and when the following features are set:
    Do Not Disturb
    Call Pickup Deny
    Call Forwarding
    Data Line Security

Programming Tables

[#00] System Speed Dialling Number Set

No.	Name	Phone No. (32 digits max.)
00		
01		
02		
03		
04		
05		
06		
07		
08		
09		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		
21		
22		
23		
24		
25		
26		
27		
28		
29		
30		
31		
32		
33		
34		
35		
36		
37		
38		
39		

Programming Tables

[#01] Dial Type Selection

	Default	CO1	CO2
0: PULSE			
1: TONE	✓		

[#12] Fax Connection

	Default	Selection
0: DISABLE	✓	
1: ENABLE		

[#02] Outgoing Permitted CO 1 Assignment (Day)

	Default	Ext.21	Ext.22	Ext.23	Ext.24	Ext.25	Ext.26
0: DISABLE							
1: ENABLE	✓						

[#72] Outgoing Permitted CO 1 Assignment (Night)

	Default	Ext.21	Ext.22	Ext.23	Ext.24	Ext.25	Ext.26
0: DISABLE							
1: ENABLE	✓						

[#03] Outgoing Permitted CO 2 Assignment (Day)

	Default	Ext.21	Ext.22	Ext.23	Ext.24	Ext.25	Ext.26
0: DISABLE							
1: ENABLE	✓						

[#73] Outgoing Permitted CO 2 Assignment (Night)

	Default	Ext.21	Ext.22	Ext.23	Ext.24	Ext.25	Ext.26
0: DISABLE							
1: ENABLE	✓						

[#04] CO 1 Ringing Assignment (Day)

	Default	Ext.21	Default	Ext.22	Ext.23	Ext.24	Ext.25	Ext.26
0: DISABLE			✓					
1: ENABLE	✓							

[#74] CO 1 Ringing Assignment (Night)

	Default	Ext.21	Default	Ext.22	Ext.23	Ext.24	Ext.25	Ext.26
0: DISABLE			✓					
1: ENABLE	✓							

[#05] CO 2 Ringing Assignment (Day)

	Default	Ext.21	Default	Ext.22	Ext.23	Ext.24	Ext.25	Ext.26
0: DISABLE			✓					
1: ENABLE	✓							

[#75] CO 2 Ringing Assignment (Night)

	Default	Ext.21	Default	Ext.22	Ext.23	Ext.24	Ext.25	Ext.26
0: DISABLE			✓					
1: ENABLE	✓							

[#06] Doorphone Assignment (Day)

	Default	Ext.21	Default	Ext.22	Ext.23	Ext.24	Ext.25	Ext.26
0: DISABLE			✓					
1: ENABLE	✓							

[#76] Doorphone Assignment (Night)

	Default	Ext.21	Default	Ext.22	Ext.23	Ext.24	Ext.25	Ext.26
0: DISABLE			✓					
1: ENABLE	✓							

[#07] Toll Restriction (TRS) – Class Assignment (Day)

	Default	Ext.21	Ext.22	Ext.23	Ext.24	Ext.25	Ext.26
1: CLASS 1	✓						
2: CLASS 2							
3: CLASS 3							
4: CLASS 4							

[#77] Toll Restriction (TRS) – Class Assignment (Night)

	Default	Ext.21	Ext.22	Ext.23	Ext.24	Ext.25	Ext.26
1: CLASS 1	✓						
2: CLASS 2							
3: CLASS 3							
4: CLASS 4							

[#08] TRS Denied Code (CLASS 2, 3)

Code	Number (7 digits)
0	
1	
2	
3	
4	
5	
6	
7	
8	
9	

[#09] TRS Denied Code (CLASS 3)

Code	Number (7 digits)
0	
1	
2	
3	
4	
5	
6	
7	
8	
9	

[#13] CO 1 Delayed Ringing Assignment

	Default	Ext.21	Ext.22	Ext.23	Ext.24	Ext.25	Ext.26
0: DISABLE	✓						
1: ENABLE							

[#14] CO 2 Delayed Ringing Assignment

	Default	Ext.21	Ext.22	Ext.23	Ext.24	Ext.25	Ext.26
0: DISABLE	✓						
1: ENABLE							

[#15] Delayed Ringing Count Selection

	Default	Selection
1: 1 RING		
2: 2 RINGS	✓	
3: 3 RINGS		
4: 4 RINGS		

[#16] TRS Excepted Code

Code	Number (7 digits)	Code	Number (7 digits)	Code	Number (7 digits)	Code	Number (7 digits)	Code	Number (7 digits)	Code	Number (7 digits)
00		05		10		15		20		25	
01		06		11		16		21		26	
02		07		12		17		22		27	
03		08		13		18		23		28	
04		09		14		19		24		29	

Programming Tables

[#61] Door Opener Assignment

	Default	Ext.21	Ext.22	Ext.23	Ext.24	Ext.25	Ext.26
0: DISABLE							
1: ENABLE	✓						

[#70] Day/Night Switching Mode

	Default	Selection
0: MANUAL	✓	
1: AUTO		

[#71] Day/Night Starting Time

	Default	Selection
1: DAY	9:00AM	
2: NIGHT	5:30PM	

[#83] LCR Route Selection Code

Route 1		Route 2		Route 3		Route 4	
No.	Code (6 digits max.)	No.	Code (6 digits max.)	No.	Code (6 digits max.)	No.	Code (6 digits max.)
00		00		00		00	
01		01		01		01	
02		02		02		02	
03		03		03		03	
04		04		04		04	
05		05		05		05	
06		06		06		06	
07		07		07		07	
08		08		08		08	
09		09		09		09	
10		10		10		10	
11		11		11		11	
12		12		12		12	
13		13		13		13	
14		14		14		14	
15		15		15		15	
16		16		16		16	
17		17		17		17	
18		18		18		18	
19		19		19		19	
20		20		20		20	
21		21		21		21	
22		22		22		22	
23		23		23		23	
24		24		24		24	
25		25		25		25	
26		26		26		26	
27		27		27		27	
28		28		28		28	
29		29		29		29	
30		30		30		30	
31		31		31		31	
32		32		32		32	
33		33		33		33	
34		34		34		34	
35		35		35		35	
36		36		36		36	
37		37		37		37	
38		38		38		38	
39		39		39		39	

Programming Tables

[#88] LCR Route Exceptional Code

Route 1		Route 2		Route 3		Route 4	
No.	Code (6 digits max.)	No.	Code (6 digits max.)	No.	Code (6 digits max.)	No.	Code (6 digits max.)
00		00		00		00	
01		01		01		01	
02		02		02		02	
03		03		03		03	
04		04		04		04	
05		05		05		05	
06		06		06		06	
07		07		07		07	
08		08		08		08	
09		09		09		09	
10		10		10		10	
11		11		11		11	
12		12		12		12	
13		13		13		13	
14		14		14		14	
15		15		15		15	
16		16		16		16	
17		17		17		17	
18		18		18		18	
19		19		19		19	

Templet

Up

71 mm

77 mm

Install a screw here

Install a screw here

106 mm

Install a screw here
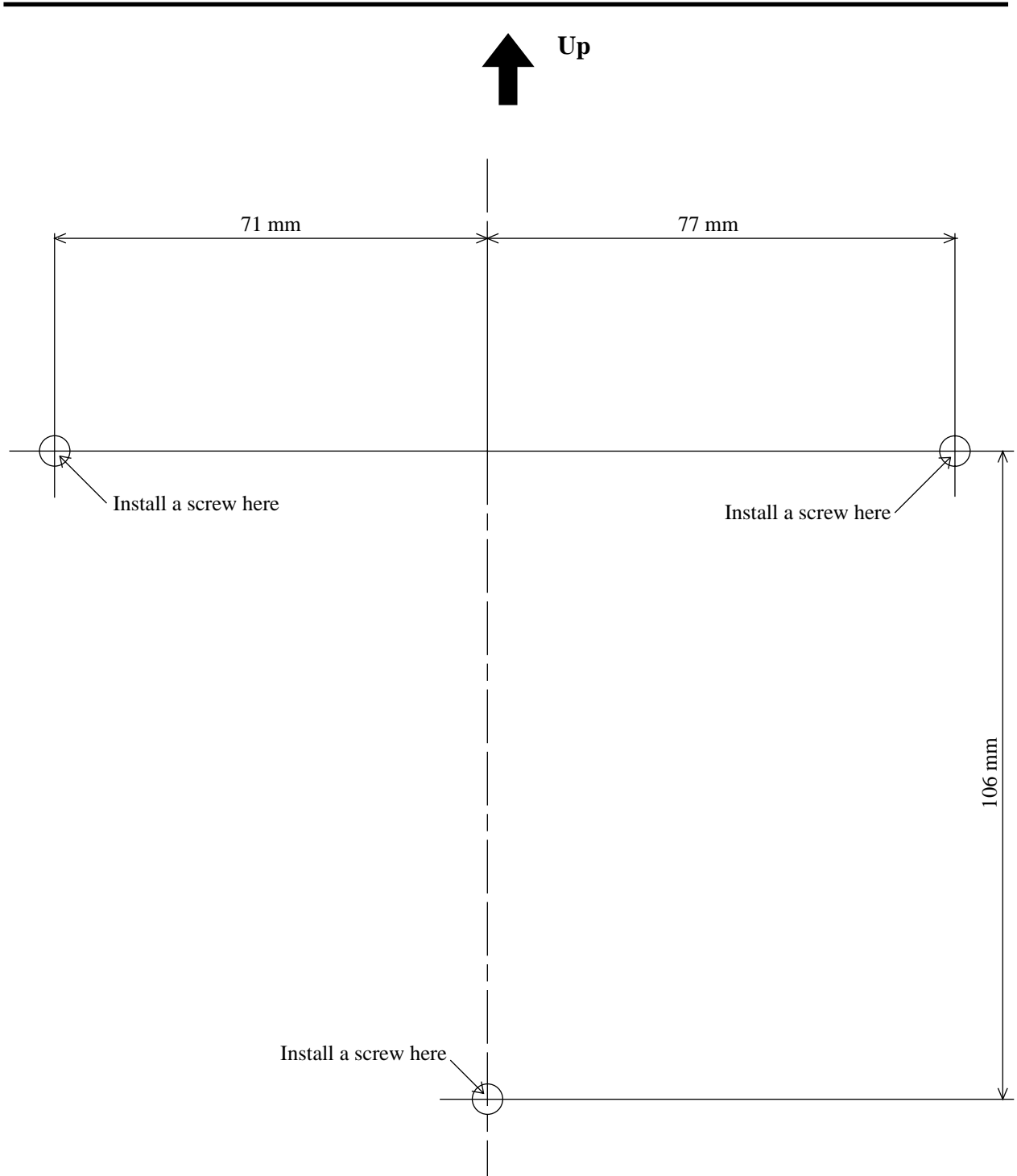
- Copy the templet and place it on the wall.