## TOA EXES-6000 INTERCOM SYSTEM

Central Processing Unit for Single Exchange System or Tie-line System

## CP-66

INSTALLATION HAND BOOK


Z1TOA Toa Electric Co., Ltd.

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This manual forms part of the Installation Manual for TOA INTERCOM SYSTEM EXES-6000.
You may add the CP-66 to your TOA INTERCOM SYSTEM EXES-6000, according to your specific needs, to obtain various other functions. Correct operation of these additional functions is not performed by simply connecting the additional equipmets
/devices. Provision of such additional function requires the following:
(1) Connection of the additional equipment, as required.
(2) Selection of functions which satisfy your needs and setting up these functions in the respective equipment.
There are certain minimum installation requirements to be met even through you may not need many additional functions or additional equipment, It is still necessary to read "2. Initial CP-66 Set Up. When you may use only some of the additional functions or equipments, it is not necessary to read instructions on unrequired functions. Make sure, however, that careful study of the necessary parts of this bookets should be done before proceeding further.

## PART 1. TIE-LINE SYSTEM - TIE-LINE CONNECTION OF THE EXCHANGES

## 1. Functions of the Central Processing Unit CP-66 and Tie-line Interface Unit TI-62

To make communications between exchanges possible in the EXES6000 system, the CP-66 and the Tie-line Interface Unit TI-62 are required in addition to the exchange.
The TI-62 is the interface unit for transmitting and receiving audio signals and dial data signals between the exchanges.
After receiving dial signals from the station, the CP-66 transmits the dial data signals to the TI-62 and instructs it to make calls to the other exchange. The CP-66 also receives the dial data signals from the other exchange through the TI-62 and calls the station which is instructed to call by the other exchange.
Overall functions of the system using the Tie-line function are determined by programming made in the CP-66.

2. Number of stations, paging zones and links

| Composition of exchange |  | I Maximum number of links within one's own exchange | Number of links between Tie-lined exchanges | $\left\lvert\, \begin{gathered} \text { Number } \\ \text { of } \\ \text { exchanges } \end{gathered}\right.$ | Maximum number of paging zones | Maximum number of stations in each exchange |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Without paging |  |  |  | With paging |
| (1) Without Tie-line | EX-610 |  | 12 | - | 1 | All station calls +7zones | 56 | 48 |
|  | EX-620 | 16 | - | 1 | All station calls <br> + 7 zones | 120 | 112 |
|  | EX-630 | 16 | - | 1 | All station calls <br> +31 zones | 256 | 256 |
| (2) 2 exchanges Tie-lined | EX-610 | $12^{* 1}$ | 8 | 2 | All station calls <br> +14 zones $^{* 4}$ | 112 | 96 |
|  | EX-620 | 16*1 | 8 | 2 | All station calls <br> +14 zones $^{* 4}$ | 240 | 224 |
|  | EX-630 | 16*1 | $16^{* 2}$ | 2 | All station calls <br> +30 zones $^{* 4}$ | 512 | 512 |
| (3) Tie-lined 3 exchanges | EX-610 | 12* ${ }^{\text {¹ }}$ | 4 per Tie line | 3 | All stations calls <br> +21 zones $^{* 4}$ | 168 | 144 |
|  | EX-620 | $16^{* 1}$ | 4 per Tie line | 3 | All stations calls +21 zones ${ }^{* 4}$ | 360 | 336 |
|  | EX-630 | 16*1 | 8 per Tie line ${ }^{* 3}$ | 3 | All stations calls +45 zones $^{* 4}$ | 768 | 768 |

*1 The links within one's own exchange are used for communication between Tie-line exchanges.
*2 One (8 links) or two Tie-line units (TI-62) are required per exchange.
*3 Two Tie-line units (TI-62) are required per exchange.
*4 All-station paging is equivalent to all-zone paging in exchanges connected by Tie-lines
*5 Mixed Tie- line of EX-610/620/630 is also available.
3. Numbering schedule for station and paging zones
(1) Standard plan (when personal Nos. are provided)

| Type of exchange | System | Numbering for stations |  | Numbering for paging zonesPaging zones/exchange |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Without paging | With paging |  |  |
|  |  |  |  | All station calls | Zones |
| EX-1 (Single) | EX-610 | 200~263 | 200~255(247)*1 | 00 | 01~07(15)*1 |
|  | EX-620 | 200~327 | 200~319(311) ${ }^{* 1}$ |  | 01~07(15)* ${ }^{\text {1 }}$ |
|  | EX-630 | 200~455 | 200~455 |  | 01~07(31)*1 |
| AEX-2A/EX-3A | EX-610 | 200~247, 256~263 | 200~247 |  | 01~07 |
|  | EX-620 | 200~311,320~327 | 200~311 |  | 01~07 |
|  | EX-630 | 200~455 | 200~455 |  | 01~15 |
| BEX-2B/EX-3B | EX-610 | 470~517, 526~533 | 470~517 |  | 08~14(16~22)*2 |
|  | EX-620 | 470~581, 590~597 | 470~581 |  | 08~14(16~22)*2 |
|  | EX-630 | 470~725 | 470~725 |  | 16~30 |
| C | EX-610 | 740~787, 796~803 | 740~787 |  | 15~21(31~37)*2 |
|  | EX-620 | 740~851,860~867 | 740~851 |  | 15~21(31~37)** ${ }^{\text {2 }}$ |
| EX-3C | EX-630 | 740~995 | 740~995 |  | 31~45 |

*1 When the following are specified in the pager dialing operation; $\cdot \boldsymbol{\theta} \boldsymbol{\otimes} \times$
*2 When the Tie-line system consists of either the EX-610 and EX-630, or the EX-620 and EX-630.
(2) When no personal Nos. are provided

| Type of exchange | System | Numbering for stations |  | Numbering for paging zones <br> Paging zones/exchange |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Without paging | With paging |  |  |
|  |  |  |  | All station calls | Zones |
| EX-1 (Single) | EX-610 | 100~163 | 100~155(147)*' | 00 | 01~07(15)*1 |
|  | EX-620 | 100~227 | 100~219(211)*1 |  | 01~07(15)** |
|  | EX-630 | 100~355 | 100~355 |  | 01~07(31)** |
| AEX-2A/EX-3A | EX-610 | 100~147, 156~163 | 100~47 |  | 01~07 |
|  | EX-620 | 100~211,220~227 | 100~211 |  | 01~07 |
|  | EX-630 | 100~355 | 100~355 |  | 01~15 |
| B <br> EX-2B/EX-3B | EX-610 | 400~447, 456~463 | 400~447 |  | 08~14(16~22)*2 |
|  | EX-620 | 400~511,520~527 | 400~511 |  | 08~14(16~22)*2 |
|  | EX-630 | 400~655 | 400~655 |  | 16~30 |
| C | EX-610 | 700~747, 756~763 | 700~747 |  | 15~21(31~37)*2 |
|  | EX-620 | 700~811,820~827 | 700~811 |  | 15~21(31~37)*2 |
| EX-3C | EX-630 | 700~955 | 700~955 |  | 31~45 |

*1 When the following are specified in the pager dialing operation; $\boldsymbol{\theta} \boldsymbol{x}$
*2 When the Tie-line system consists of either the EX-610 and EX-630, or the EX-620 and EX-630.

- Each exchange can be connected by means of a cable with diameter of 0.65 mm ( 25.6 mils.) for distance of up to 2km (5600 ft).
- Regarding the tieline links which are not used, turn off the DIP switch of each unused tieline link inside the Tie-line UnitTI-62.
- Connect "T" line ( 2 wires) of the 4 wires of each link to "R" line ( 2 wires) of the other exchange.
- The 2 wires of the "T" line and "R" line have no polarity.

If the BX-620 is used, its terminals No. 1 and 2 are for the "R" line and No. 3 and 4 are for the "T" line.

Exchange "A"


Exchange "B"

## 1. Wiring for tie-line connection of 2 exchanges



Note 1. Any combination of tie-line links between exchanges "A" and "B" is possible.
Note 2. Mount only one Tie-line Interface unit when the number of tie-line links is within 8.
2. Wiring for tie-line connection of 3 exchanges


Note 1. TI-62 (T11) (connector J 11 ) is the left-hand unit and TI-62 (TI2) (connector J12) is the righthand unit, when viewed from the front.
Note 2. Be sure to connect connector $\operatorname{TI} 1(\mathrm{~J} 11)$ to TI 2 U 12$)$ between the exchanges. Connection of TI1 (J11) to $\mathrm{TI} 1(\mathrm{~J} 11)$ or $\mathrm{TI} 2(\mathrm{~J} 12)$ to $\mathrm{TI} 2(\mathrm{~J} 12)$ will lead to failure of proper operation of the system.
3. DIP Switch selection

1. Set DIP switches of each CP to E1, E2, and E3 to determine the type of exchange (EX-1, EX-2A/28, EX-3A/3B/3C).
(See "4. CP-66 DIP switches for Function Selection"P14.)
2. If some tie-line links are left idle, set the corresponding DIP switch(es) to OFF.

DIP Switch


LINK No.

5. The Example of connection of three EX-630 exchanges

$\underset{E X-630}{\text { Exchange }}$ B"


Terminal
$B X-620$



$\begin{aligned} & \text { Termina } \\ & \mathrm{BX}-620\end{aligned}$
Termina
$B X-620$
$\underset{\text { EX- } 630}{\text { "Exchange }} \mathrm{C} "$


The cables between the exchanges ( 4 wires $\times 8$ links)


## PART 2. OPERATING OF CP UNT AND NO. 200 PROGRAMMING 1. PRECAUTIONS FOR INSTALLATION OF CP-66

Please read following instructions carefully to ensure proper operation of the CP-66

1. Be careful about damage by static electricity as the CP-66 incorporates CMOS IC's. Do not touch components and connectors.
2. Turn off the AC power switch when you take out or insert the CP-66 unit, or any other unit.
3. Always insert the CP-66 unit into the "CP" slot. Otherwise, there is a danger that the unit will be damaged.
4. Make sure mini-jumper for battery back-up is always placed in ON position each time it is used.
5. Incorrect setting of function select switches may lead to incorrect performance.
6. Even if you do not need programming functions, be sure to carry out initial programming and registration at station No. 200 when you install the new unit. Otherwise, some other functions may not work properly.
7. The Ni-Cd battery GB50-3FA1 is capable of saving important memory registration data even at times of power failure.
To keep the battery fully charged, do not cut the power off for long hours during the first 8 days after new installation. The CP-66 unit is capable of maintaining the programmed data for the period of 4 weeks after fully charged even in the event of long hours of power failure.
(About 4 weeks $\left(25^{\circ} \mathrm{C}\right)$, About 8 days $\left(40^{\circ} \mathrm{C}\right)$ )
8. We suggest you replace the soldered button batteryGB50-3FA1 (115-42-031-9) with the new one according to the following list that shows an expected life span of the battery.
Be sure to make the station No. 200 programming after replacement of the battery.

- Expected Life Span of small Ni-Cd Battery

| Ambient temperature <br> of exchange | Ambient temperature <br> of battery | Life span |
| :---: | :---: | :---: |
| $0^{\circ} \mathrm{C}$ | $10^{\circ} \mathrm{C}$ | About 5 years |
| $25^{\circ} \mathrm{C}$ | $35^{\circ} \mathrm{C}$ | About 4 years |
| $40^{\circ} \mathrm{C}$ | $50^{\circ} \mathrm{C}$ | About 2 years |

9. When shipping the CP-66 unit independently, place the minijumper for battery back-up in "OFF" position. Cover the CP back with cardboard, wrap connector section in aluminium foil and put it in a conductive bag.



## 3. TROUBLE SHOOTING

3-1 Check of ROM \& CMOS-RAM - No calls on the system.

1. HC-64 (when EX-630 is used)
(1) Set the "LINK SELECT" switches of the HC to F (between E and 0) and switch on the AC power of the exchange.
(2) If there is no error, the indication lamps will not light.
(3) In the event of a memory error, the lamps may light as shown in the example of Fig. 1.
(4) The error indications will remain on until you use Link No. 15 for communications.
2. HC-62 (when EX-610 or EX-620 is used)
(1) Lift 4 Link Select switches (Link No. 15 Select) and then set the exchange power switch to ON.
(2) The indicators remain lit if there is no error.
(3) The indicators light as shown in Fig. 2 if there is a memory error.
(4) The indicators remain lit till the link No. 15 is used for conversation.

## 3-2 Confirming of the CP normal working

If the CP, OC and HC are working normally, the HC's indication lamps of LINE BUSY, LINE ADDRESS and SIGNAL CODE go out.
When any of the lamps remains lit, it is possible that any of the CIP, OC or HC is faulty.
Check first that the CLOCK lamp of the HC is lighting, then confirm that the CP is working normally by hearing the clicking sound of the PI unit's relay which is produced when the relay is activated through dial operation of the paging. If the CP is found working normally, chances are that the HC is faulty, followed by the OC.

## 3-3 Check of CMOS-RAM (Programmed data memory)

You hear calling tone instead of confirmation tone, if there is CMOS memory error at the time of initial programming and registration using station No. 200, or at the time of registration to Single Digit Number or Personal Number or Remote Number.

## 3-4 The order of link usage.

After power is on, links are used in numerical order for each communication. Remember this to help you when problems are found with specific links.

## Remarks:

1. Be sure to avoid mistake at the time of DIP switch installation and No. 200 Programming since such mistake can lead to later troubles.
2. Be sure to make "No. 200 Programming" after "Programming Data Table" (attached to this manual) is filled out. Keep the finished "Programming Data Table" (Initial Checking Sheet for the System) as a part of complete drawings for each installation.
 have "read" error.


Fig. 1

Error ROM•RAM Chip No
Example (for HC-62)
No. $1\left(\mathrm{M}_{2}\right)$ out of the ROM have "read" error.

No. $0\left(M_{3}\right)$ and No. $1\left(M_{4}\right)$ out of the C-MOS RAMs (6264) have "read" error.

Indicate memory error.

LINK SELECT Switches set to select No. 15

Error ROM • RAM Chip No.

No. 1 ( $\mathrm{M}_{1}$ ) out of the ROM


Fig. 2

The Tie-line Link Number which is used in calls between exchanges is not directly indicated, but you can possibly get it from the link number which is indicated on the HC-64 or HC-62.

When one Tie-line Link brings up some problems which cause the system not to work properly, try to find which link number is causing the problems from the indication on the HC-64 of the exchange making the call.

As Fig. 1 and Fig. 2 show, in the exchanges which make calls, the DL Link Number corresponds with TI Tie-line Link Number.

In the exchange which is called, the Tie-line Link Number of the TI Unit is fixed by connection between exchanges.

DL Links are used in numerical order.

## 1. Tie-line for 2 exchanges



Fig. 1
2. Tie-line for 3 exchanges


Fig. 2

| Exchange which calls |  |  |  | Exchange which is called |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
| DL <br> Link No | 71 Tie-line Link Number |  |  | TI Tie-line Link Number | DL Link Number |
|  | 2 Tie-lines | 3 Tie-lines |  |  |  |
|  | To T11, TI2 | To TI1 | ToTI2 |  |  |
| 0 | 0 | 0 ) | 8 | Fixed by Cable Connection between Exchanges | After power switch is on. Links are used in numerical order |
| 1 | 1 | 1 | 9 |  |  |
| 2 | 2 | 2 | 10 |  |  |
| 3 | 3 | 3 | 11 |  |  |
| 4 | 4 | 4 | 12 |  |  |
| 5 | 5 | 5 | 13 |  |  |
| 6 | 6 | 6 | 14 |  |  |
| 7 | 7 | 7 | 15 |  |  |
| 8 | 8 | 0 ) | 8 |  |  |
| 9 | 9 | 1 | 9 |  |  |
| 10 | 10 | 2 | 10 |  |  |
| 11 | 11 | 3 | 11 |  |  |
| 12 | 12 | 4 | 12 |  |  |
| 13 | 13 | 5 | 13 |  |  |
| 14 | 14 | 6 | 14 |  |  |
| 15 | 15 | 7 ) | 15 |  |  |

Note.
If the TI Tie-line Link which corresponds with the DL Link No. is already busy, then the next Tie-line Link is automatically used.

## 4. CP-66 DIP SWITCHS FOR FUNCTION SELECTION



Note: CP DIP SWITCHES FOR FUNCTION SELECTION
*1 Be sure to place the SW-C-1 (Paging) switch in the ON position when paging and its allied functions are used.
*2 To perform the "Highest Executive Priority" function in Tie-line system, place this switch of each exchange in the ON position.
*3 Turn on this switch of each exchange even if not all the exchanges require paging function in Tie-line system. Otherwise, the exchange with this switch off can not perform all-call paging.
*4 If the small-digit number is selected, the function can be operated without pressing the figure enclosed in parenthesis ( ) in the following example.
Example: - $(\sqrt{x})(x) x$
*5 Standard (SW-D-5 OFF):

| Exchange | A | B | C |
| :--- | :---: | :---: | :---: |
| Hardwired station number | $200 \sim 455$ | $470 \sim 725$ | $740 \sim 995$ |

Programming (SW-D-5 ON):
The first station number of each exchange in order of the exchanges. $A, B$ and $C$ can be set as any of the following numbers: 100/200/300/400/500/600/700/800/900
(Hardwired station number)
For the personal number call, use the station number of 100 s
5. FUNCTION CODE TABLE FOR STATION NO. 200 PROGRAMMING
A. Clearance at one time

| Function Group | Function | $\begin{aligned} & \text { Func- } \\ & \text { tion } \\ & \text { Code } \end{aligned}$ | Clearance of Function | Function Registration on All Stations | Clearance of Fun | by Function Group |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| s | Numbering schedules of Tie-line system | 40 | [-] (0) (0) ${ }_{\text {Confirmation }}^{\text {tone }}$ |  | $\cdot \underbrace{(4)[4] \cdots \Delta 4}_{10 \text { times }} \begin{gathered} \text { Confir- } \\ \text { mation } \\ \text { tone } \end{gathered}$ | (Clears function group S) |
|  | Call tone selection | 41 | $\square[4][1]$ [2] $\begin{aligned} & \text { Confirmation tone } \\ & \text { Trill tone } 0.3 \text { second) }\end{aligned}$ |  |  |  |
|  | Selection of Paging <br> Preamnouncement Tone duration | 42 | (4) E $\begin{gathered}\text { Confirmation tone } \\ \text { (Pre-announcement tone } 2 \text { seconds) }\end{gathered}$ |  |  |  |
|  | Single-digit dialling key | 430 | [-4] [3] [0) $0_{\text {tone }}^{\text {Confmation }}$ ( 0 ) |  |  |  |
|  | Selection of 1 st digit of 4-digit dialling | ${ }^{431}$ |  |  |  |  |
|  | $\begin{aligned} & \text { Time-out of } \\ & \text { Conversation } \end{aligned}$ | 45 |  |  |  |  |
|  | Time-out of Paging Call | 46 |  |  |  |  |
|  | Pager call output digit <br> selection | 470 |  |  |  |  |
|  | Pager call function code output mode selection | 471 |  |  |  |  |
|  | Pre-pause time selection | ${ }^{48}$ |  |  |  |  |
|  | Number of SM-600 units connected | 490 | - [4] [0] [0] Confirmation tone (No unit connected) |  |  |  |
|  | Message recording hurry-up <br> tone mode selection | 491 | $04010 \text { Confirmation tone }$ |  |  |  |
| A | Executive Priority |  |  |  | (-. $\underbrace{5[5] \cdot \text { 可 }}_{10 \text { times }} \begin{gathered}\text { Confir- } \\ \text { mation } \\ \text { tone }\end{gathered}$ (Clears function group A) |  |
|  | Continuous Calling Tone | 51 |  |  |  |  |  |
|  | Station Allowed Access to All Call | 52 |  |  |  |  |  |
|  | $\begin{aligned} & \text { Stations Allowed } \\ & \text { Access to Conference } \end{aligned}$ | ${ }^{53}$ |  |  |  |  |  |
|  | Automatic Access to Paging | 54 |  |  |  |  |  |
|  | Stations Allowed <br> Access to One Shot Make <br> Output | ${ }^{56}$ |  |  |  |  |  |
|  | $\begin{aligned} & \text { Stations Allowed } \\ & \text { Access to Make/Break } \\ & \text { Output } \end{aligned}$ | 57 |  |  |  |  |  |
|  | Stations Allowed Access to 8 Selectable/Decimal Output | ${ }^{58}$ |  |  |  |  |  |
|  | Stations Allowed Access to 4 Decimal Digits Output | 59 |  |  |  |  |  |
| в | Secretary Transfer | ${ }_{60}$ |  |  | $[\cdot \underbrace{[6][\text { G] }}_{10 \text { times }} \begin{array}{c} \text { Confir- } \\ \text { mation } \\ \text { tone } \end{array}$ | (Clears function group B) |
|  | Master/Sub | ${ }^{61}$ |  |  |  |  |
|  | Group Hunting | ${ }^{62}$ |  |  |  |  |
| c | $\begin{array}{\|l\|l} \hline \text { Paging Response, } \\ \text { Paging Priority } \end{array}$ | 70 |  |  | $\cdot \cdot \underbrace{7(7) \cdots(7)}_{10 \text { times }} \begin{gathered} \text { Confir } \\ \text { matior } \\ \text { tone } \end{gathered}$ | (Clears function group C ) |
|  | $\begin{aligned} & \text { Group Blocking of Each } \\ & \text { Group } \end{aligned}$ | 71 |  |  |  |  |
|  | Group of Calling Party Indication | 72 |  |  |  |  |


| Function Group | Function | Function Code | Clearance of Function | Function Registration on All Stations | Clearance of | Functio | n by Function Group |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 0 | Combination Paging | 80 |  |  | $\text { (-) } \underbrace{\theta] \cdots}_{10 \text { times }}$ | Confirmation tone | (Clears function group D) |
|  | Group Blocking: Allowing Calls Among Groups | 81 |  |  |  |  |  |
|  | Group Blocking: Allowing Access to Paging Zones <br> Allowing Access to Paging Zones | 82 |  |  |  |  |  |
| E | Programable Station Numbering | 90 |  |  | [-] $\underbrace{9][9]}_{10 \text { times }}$ | Confirmation tone | (Clears function group E) |
| F | OD-600 Rented line allocation | ${ }^{23}$ |  |  |  | Confirmation tone | (Clears function group F) |
|  | LD-600 Rented line allocation | 24 |  |  |  |  |  |
|  | CB-600 Telephone line allocation | 25 |  |  |  |  |  |
|  | T1-600 Rented line allocation | 26 |  |  |  |  |  |
|  | CB-600 Telephone line allocation to station group | 27 |  |  |  |  |  |
|  | Telephone line allocation to city pager | 28 |  |  |  |  |  |
|  | Fixed speed dialling | 29 |  |  |  |  |  |
| G | Handset station | 30 |  |  |  | Confirmation tone | (Clears function group G) |
|  | Stations Allowed Access to outgoing phone call | 31 |  |  |  |  |  |
|  | $\begin{array}{\|l\|} \hline \begin{array}{l} \text { Stations Allowed Access to } \\ \text { incoming phone call } \end{array} \\ \hline \end{array}$ | 32 |  |  |  |  |  |
|  | Automatic pager transfer | 34 |  |  |  |  |  |
|  | Door station | 35 |  |  |  |  |  |
|  | Stations Allowed to refuse voice call | 36 |  |  |  |  |  |
|  | Stations Allowed to refuse priority interruption | 37 |  |  |  |  |  |
|  | $\begin{array}{\|l\|} \hline \begin{array}{l} \text { Stations Allowed Access to } \\ \text { zone paging } \end{array} \\ \hline \end{array}$ | 38 |  |  |  |  |  |
|  | $\begin{aligned} & \text { Stations Allowed to refuse } \\ & \text { station paging } \end{aligned}$ | 39 |  |  |  |  |  |
| * | Personal Number Single <br> Digit Dialing Remote <br> Response | - |  |  |  | Confirmation tone | (Clears functions of Personal No., Single Digit Dialing and Remote Response) |

## B. Programming of System



## C. Programming of each Function


*1 Station No.'s except Programmed Station No.'s are Hardwired Station No.'s No.100~/200~/300~/400~/470~/500~/600~/700~/740~/800~/900~. 2 digits in the event of 2-digit dialling
*2 Programmed Station No: s are No.200~999/No. 100~999. 2 digits in the event of 2-digit dialling.

*1. Unless otherwise stated, the station No. is the hardwired station No. 100~/200~/300~/400~/470~/500~/600~/700~/740~/800~/900~ (2 digits in the event of 2digit dialling).
*2. The programmed station No. is No. 200 to No.999/No. 100 to No.999. (2 digits in the event of 2-digit dialling)
*3. Unless otherwise stated, the number available for trunk seizure operation and incoming call catch operation is 0,2 to 9 , and 20 to 99 . To achieve both
operations by dialling a single digit, pressi $x$ (PTD) ( $x: 0$ and 2 to 9 )
*4. The subscriber line No. is 0 to 15 ( 0 to 7 for EX-610).


NOTES

1. To allow all the stations to have this function,


Be sure to depress the PTT key steadily.
2. To release at one time the data programmed into all the stations for this function,

3. Re-start at Step 1 when mis-dialing occures. (All other registrations remain valid.)
4. CP DIP switch B-5 must be "ON" to employ this function.
5. Dial 2 digits when programming the station for 2-digit dialling. Dial last 3 digits for station programming when 4-digit dialling is employed.

## 6-2 CONTINUOUS CALLING TONE (FUNCTION CODE 51)



NOTES

1. To allow all the stations to have this function,

Touch
 (Confirmation tone will be heard.)

Be sure to depress the PTT lkey steadily.
2. To release at one time the data programmed into all the stations for this function,

Touch

(Confirmation tone will be heard.)
3. Re-start at Step 1 when mis-dialing occures. (All other registrations remain valid.)
4. Dial 2 digits when programming the station for 2-digit dialling. Dial last 3 digits for station programming when 4-digit dialling is employed.

## 6-3 STATIONS ALLOWED ACCESS TO ALL CALL (FUNCTION CODE 52)



NOTES

1. To allow all the stations to have this function,
 (Confirmation tone will be heard.)

Be sure to depress the PTT key steadily,
2. To release at one time the data programmed into all the stations for this function,
Touch $\because \boxed{5} \underbrace{0}_{10 \text { times }} \boldsymbol{0} \cdots \cdots 0$ (Confirmation tone
3. Re-start at Step 1 when mis-dialing occures. (All other registrations remain valid.)
4. Dial 2 digits when programming the station for 2-digit dialling. Dial last 3 digits for station programming when 4-digit dialling is employed.

## 6-4 STATIONS ALLOWED ACCESS TO CONFERENCE (FUNCTION CODE 53)



NOTES

1. To allow all the stations to have this function,

Touch $\bullet E \frac{(B T T)(P T T) \cdots(P T T)}{10 \text { times }}$
(Confirmation tone will be heard.)
3. Re-start at Step 1 when mis-dialing occures. (All other registrations remain valid.)
4. Dial 2 digits when programming the station for 2-digit dialling. Dial last 3 digits for station programming when 4-digit dialling is employed.

## 6-5 AUTOMATIC ACCESS TO PAGING (FUNCTION CODE 54)



NOTES

1. To allow all the stations to have this function,

Touch
 10 times

Be sure to depress the PTT key steadily.
2. To release at one time the data programmed into all the stations for this function,


## COMPLEMENTARY NOTES

(1) Automatic Access to Paging

This function facilitates Paging/Paging response from a Substation TL-600S. Just picking up the Handset of Substation automatically activates Paging or Paging Response mode.
(2) Required Programming for Automatic Access to Paging from Handset Substation.
2-1) First, connect a Master Station HF-200 or TL-600M in place of a Substation TL-600S.
2-2) Register at that station such functions as Paging, Paging Response, Personal number call, etc. desired to be operated under Single Digit Dialing.
2-3) Then, replace the Master Station with a Substation TL-600S.
2-4) Program "Automatic Access to Paging from Handset Substation (Function Code 54)" at the Station No. 200 according to the programming instructions.
(3) Single Digit Dialing and Automatic Access to Paging Single digit of a station call, personal call, paging or paging response can be accomplished by one-touch dialing (0) from any master station registered for this funciton. To accomplish Automatic Access to Paging by simply lifting the handset, station No. 200 programming for Function Code 54 is required.
(4) Call to Master Station from Handset Station or from Hands free/Handset Station
The TL-600S handset or handsfree/handset substation can be registered for Master/Sub Relationship. Once this relationship has been established, the substation can be connected to its designated master station by either one-touch dialing [D] or by merely lifting the handset. If the HF-600S station is used and it is desirable that it can call the master station by simply lifting the handset, set its Privacy switch to ON.

## (5) Call by Dialing [0 \& Picking up the Handset

| Function | Necessary Programming | Call to Master Station |  | Paging Call, Paging Response or Personal Number Call |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | By dialing 0 | By picking up Handset | By dialing $\square$ | By picking up Handset |
| Single Digit Dialing | Single Digit Registration at Station | (O) | X | $\bigcirc$ | $X$ |
| Master/sub <br> Relationship | Programming at <br> Station No. 200 <br> (Function Code 61) | $\bigcirc$ | $\bigcirc$ | X | X |
| Automatic Access to Paging (or Calling) from Handset Substation | 1. Single Digit Registration at Station <br> 2. Programming at Station No. 200 (Function Code 54) | $(\bigcirc)$ | $(\bigcirc)$ | $\bigcirc$ | $\bigcirc$ |
| Note. O : Possible <br> X : Impossible <br> (O) : Possible but usually Not to be used <br> *1 : Possible across the tie-lined exchange. <br> *2 : Impossible across the tie-lined exchange |  |  |  |  |  |



NOTES

1. To allow all the stations to have this function,

(Confirmation tone will be heard.)

Be sure to depress the PTT key steadily.
2. To release at one time the data programmed into all the stations for this function,
Touch $\because \boxed{0} \square \underbrace{\square \square \cdots}_{10 \text { times }}$ O (Confirmation tone
3. Re-start at Step 1 when mis-dialing occures.
(All other registrations remain valid.)
4. Dial 2 digits when programming the station for 2-digit dialling. Dial last 3 digits for station programming when 4-digit dialling is employed.

## 6-7 STATIONS ALLOWED ACCESS TO MAKE/BREAK OUTPUT (FUNCTION CODE 57)



NOTES

1. To allow all the stations to have this function,

Touch


Be sure to depress the (PTT key steadily.
2. To release at one time the data programmed into all the stations for this function,

3. Re-start at Step 1 when mis-dialing occures. (All other registrations remain valid.)
4. Dial 2 digits when programming the station for 2-digit dialling. Dial last 3 digits for station programming when 4-digit dialling is employed.

## 6-8 STATIONS ALLOWED ACCESS TO 8 SELECTABLE (ONE-SHOT MAKE) OR DECIMAL OUTPUT (FUNCTION CODE 58)



NOTES

1. To allow all the stations to have this function,

Touc $h \bullet 5\left(\begin{array}{l}\text { PTT PTT } \cdots \text { PTT } \\ 10 \text { times } \\ \text { (Confirmation tone } \\ \text { will be heard.) }\end{array}\right.$
Be sure to depress the PTT key steadily.
2. To release at one time the data programmed into all the stations for this function,
Touch

8 0 $0 \cdot 0$
(Confirmation tone 10 times
3. Re-start at Step 1 when mis-dialing occures. (All other registrations remain valid.)
4. Dial 2 digits when programming the station for 2-digit dialling. Dial last 3 digits for station programming when 4-digit dialling is employed.


NOTES

1. To allow all the stations to have this function,
Touch

- 5

$\qquad$ (Confirmation tone
will be heard.)

3. Re-start at Step 1 when mis-dialing occures. (All other registrations remain valid.)

Be sure to decrease the (PIT key steadily.
2. To release at one time the data programmed into all the stations for this function,

Touch $\cdot 5,9 \underbrace{\square}_{10 \text { times }} \cdots \cdots{ }^{\square}$ (Confirmation tone

## 6-10 SECRETARY TRANSFER (FUNCTION CODE 60)



NOTES

1. To release at one time the data programmed into all the stations for this function,

Touch

2. Re-start at Step 1 when mis-dialing occurs. (All other registrations remain valid.)
3. Dial 2 digits when programming the station for 2-digit dialling. Dial last 3 digits for station programming when 4-digit dialling is employed.
4. Programming of Secretary Transfer can be made in a daisy chain method. For their examples, refer to the following sketch.


## 6-11 MASTER/SUB RELATIONSHIP (FUNCTION CODE 61)



NOTES

1. To release at one time the data programmed into all the stations for this function,

2. Re-start at Step 1 when mis-dialing occurs. (All other registrations remain valid.)
3. Dial 2 digits when programming the station for 2-digit dialling. Dial last 3 digits for station programming when 4-digit dialling is employed.

## 6-12 GROUP HUNTING (FUNCTION CODE 62)



NOTES

1. To release at one time the data programmed into all the stations for this function,
 10 times
2. Re-start at Step 1 when mis-dialing occurs. (All other registrations remain valid.)
3. Dial 2 digits when programming the station for 2-digit dialling. Dial last 3 digits for station programming when 4-digit dialling is employed.
4. Programming of Group Hunting can be made in a daisy chain method. For their examples, refer to the following sketch.


## 6-13 PAGING ZONE (FUNCTION CODE 70)



NOTES

1. To release at one time the data programmed into all the Zones for this function,

Touch


Confirmation tone will be heard.)
2. Re-start at Step 1 when mis-dialing occurs.
(All other registrations remain valid.)
3. Switch $\mathrm{C}-1$ must be "ON" to employ this function.
4. Also dial 2 digits ( 01 to 07 ) to programme the system having paging zones 1 to 7 .
Ex. Zone No. 7 $\qquad$ (0) 7
5. When "Paging Response Without Zone Number" mode $(\square \square, \square \square)$ is selected by the DIP Switch SW-C-7, this registration is essential.
6. When "Paging Priority" function is adopted by the DIP Switch SW-C-3, this registration should be made for each Paging Zone of No. 01 to No. 31.
7. The programming is required for zones 01 to 31 when the telephone line interface is in use.
8. Zone numbers of each exchange in Tie-line system.

Exchange "A" ---- No.01~15
Exchange "B" ---- No. 16~30
Exchange "C" ---- No. $31 \sim 45$
9. Dial 2 digits when programming the station for 2-digit dialling. Dial last 3 digits for station programming when 4-digit dialling is employed.

GROUP BLOCKING 1


NOTES

1. To release at one time the data programmed into all the groups for this function,

Touch
 $\underset{10 \text { times }}{\square}$ (Confirmation tone 10 times
2. Re-start at Step 1 when mis-dialing occurs. (All other registrations remain valid.)
3. Dial 2 digits when programming the station for 2-digit dialling. Dial last 3 digits for station programming when 4-digit dialling is employed.
4. Group No.
Single exchange
No. 1 ~8

Tie-line exchange No. 1 ~6

6-15 CALLING PARTY/CONVERSATION PARTNER INDICATION (LAMP TYPE) (FUNCTION CODE 72)
Registration of station number(s) having indication panel.


NOTES

1. To release at one time the data programmed into all the groups for this function,

Touch $\because \geq \square \square \square \square]$ (Confirmation tone 10 times
2. Re-start at Step 1 when mis-dialing occurs. (All other registrations remain valid.)
3. When the Indication Panel is set up only for one (1) station, you should write the station number in both "First Station No." and "Last Station No." columns.
4. Dial 2 digits when programming the station for 2-digit dialling. Dial last 3 digits for station programming when 4-digit dialling is employed.


NOTES

1. To release at one time the data programmed into all the Zones for this function,

Touch $\because \bullet 8]\left[\begin{array}{c}0][0] \cdots(0)\end{array} \begin{array}{c}\text { (Confirmation tone } \\ \text { will be heard.) }\end{array}\right.$
2. Re-start at Step 1 when mis-dialing occurs.
(All other registrations remain valid.)
3. CP DIP switch $\mathrm{C}-1$ must be "ON" to employ this function.

## GROUP BLOCKING 2



1. To release at one time the data programmed into all the groups for this function,

2. Re-start at Step 1 when mis-dialing occurs.
(All other registrations remain valid.)
3. Do not assign the same group to both the calling and called groups.

GROUP BLOCKING 3

2. Re-start at Step 1 when mis-dialing occurs
(All other registrations remain valid.)

## 6-19 PROGRAMMABLE STATION NUMBERING (FUNCTION CODE 90)

A. Programming of Single Station Number


## B. Programming of Consecutive Station Numbers



NOTES

1. To release all registered Programmed Station No.'s at one time.

C. Limitation of change of station numbering

It is possible to change station numbering within a range of station numbering programmed for exchanges $A, B$, and $C$ in the head number establishment of tie-line numbering schedule (p17).

Restriction of station numbers (*1) and (*2)
<Example 1> With personal number (Standard) <Example 2> Without personal number

| Exchange | Hardwired <br> Station No. | Programmed <br> Station No. |
| :---: | :---: | :---: |
| A | $200 \sim 455$ | $200 \sim 469$ |
| B | $470 \sim 725$ | $470 \sim 739$ |
| C | $740 \sim 995$ | $740 \sim 999$ |


| Exchange | Hardwired <br> Station No. | Programmed <br> Station No. |
| :---: | :---: | :---: |
| A | $100 \sim 355$ | $100 \sim 399$ |
| B | $400 \sim 655$ | $400 \sim 699$ |
| C | $700 \sim 955$ | $700 \sim 999$ |

<Example 3>

| Exchange | Hardwired <br> Station No. | Programmed <br> Station No. |
| :---: | :---: | :---: |
| A | $200 \sim 455$ | $200 \sim 499$ |
| B | $500 \sim 755$ | $500 \sim 799$ |
| C | $800 \sim 999$ | $800 \sim 999$ |

## <Functions and Operating Procedures of External Interface System>

## External interfaces

1. Types of external interfaces

The external interfaces are classified into four types: OD interface, LD interface, CB interface, and Tie-line interface (depending upon their external equipment).
(1) The OD interface is connected to an OD trunk of PBX via 4 wires.
(2) The LD interface is connected to an LD trunk of $P B X$ via 2 wires.
(3) The CB interface is connected to PBX extension lines or to telephone lines.
(4) The tie-line interface connects more than one intercom exchange via rented lines.

## 2. Features of interfaces

## (1) OD interface

When mounted on the EXES-6000 series exchange (EX-610/620/630) and connected to the remote PBX, the OD interface provides the system with mutual paging and calling functions via the PBX extension telephones of a distant area.
(2) LD interface

When mounted on the EXES-6000 series exchange (EX-610/620/630) and connected to a nearby PBX, the
LD interface provides the system with mutual paging and calling functions via the PBX extension telephones.
(3) CB interface

When mounted on the EXES-6000 series exchange (EX-610/620/630) and directly connected to the PBX extensions, the CB interface provides the system with direct calling and call answering functions via telephone lines.
Use this interface when you wish to directly linkup with a telephone line.
In addition, you can use the CB-600 lines in order to interface with pagers and to page/answer city pagers.
(4) Tie-line interface

When mounted on the EXES-6000 series exchange (EX-610/620/630) and connected to the remote extension system, the Tie-line interface provides the system with mutual paging, calling, and conversation functions.
3. Numbering schedule external interfaces

Before the external interfaces can function, they first need to be registered. The calling procedure to the respective interface line (selected number) should be registered through station No. 200. (For the details of registration, refer to the Installation Manual for the CP-66).

## (1) OD interface

When using the OD interface, program the line number to be used into the line seizure operation (1 digit or 2 digits) according to the OD-600 line registration (Function Code 23 of No. 200 programing). If the OD line is divided into more than one group and each group is registered in separate line seizure operations, the interface can be connected to more than one PBX.
(2) LD interface

Similarly, the LD line number to be used has to be registered when using the interface. (See LD-600 line registration of Function Code 24 of No. 200 programing.) By dividing the line into more than one group and registering each group in separate line seizure operation, the interface can be connected to more than one PBX.
(3) CB interface

Similarly, the line number to be used has to be registered when using the interface. Also register the group number of stations which ring when there are incoming telephone calls and from which the calls are answered.
(4) Tie-line interface

Similarly, the line number to be used has to be registered when using the Tie-line interface. Dividing the line into more than one group and registering each group in separate line seizure operations allow the interface to be connected to more than one PBX.


NOTES

1. To clear registration on all rented lines

Touch $\bullet, \underline{0} \underset{10 \text { times }}{0}$, $\begin{aligned} & \text { (Confirmation tone } \\ & \text { will be heard.) }\end{aligned}$
2. Re-start at Step 1 when mis-dialing occurs. (All other registrations remain valid.)
3. Rented line No.: $00 \sim 07$ for $E X \sim 610$.

## 6-21 <LD-600 Rented line allocation> (FUNCTION CODE 24)



NOTES

1. To clear registeration on all rented lines.

Touch $\bullet, \square \square \underbrace{\square, \square] \cdot \square}_{10 \text { times }}$ ( will be heard.)
2. Re-start at Step 1 when mis-dialing occurs. (All other registrations remain valid.)
3. Rented line No.: 00~07 for EX-610.

## 6-22 <CB-600 Telephone line allocation> (FUNCTION CODE 25)



NOTES

1. To clear registration on all rented lines.

2. Re-start at Step 1 when mis-dialing occurs. (All other registrations remain valid.)
3. Telephone line No.: 00~07 for EX-610.
4. Line No. 0 is impossible to use when CB-600 is used in pager call.
5. If the station does not need to receive an incoming telephone call, the trunk seizure operation and incoming call pick up operation are identical.

## 6-23 <TI-600 Rented line allocation> (FUNCTION CODE 26)



NOTES

1. To clear registrations on all rented lines.
 10 times
2. Re-start at Step 1 when mis-dialing occurs. (All other registrations remain valid.)
3. Rented line No.: 00~07 for EX-610.

## 6-24 <CB-600 Telephone line allocation to station group> (FUNCTION CODE 27)



NOTES

1. To clear registrations on all telephone lines.

Touch
 (Confirmation tone will be heard.)
2. Re-start at Step 1 when mis-dialing occurs. (All other registrations remain valid.)
3. Switch C-1 must be "ON" to employ this function.
4. Also dial 2 digits ( 01 to 07 ) to programme the system having paging zones 1 to 7 .
5. Line No. 0 is impossible to use when CB-600 is used in pager call.
6. Zone number of each exchange in Tie-line system. Exchange "A" ---- No. $01 \sim 15$
Exchange "B" ---- No.16~30
Exchange "C" ----- No. $31 \sim 45$
7. Telephone line No.: 00 ~15 (00-07 for EX-610).
8. Mode No.

0 : External ringer mode
1 : Station paging pre-announcement tone mode


NOTES

1. To clear registrations on all telephone lines.

Touch $\bullet \Omega \in \underbrace{\square \in D}_{10 \text { times }}$, $\begin{aligned} & \text { (Confirmation tone } \\ & \text { will be heard.) }\end{aligned}$
2. Re-start at Step 1 when mis-dialing occurs. (All other registrations remain valid.)
3. Line No. $O$ is impossible to use when CB-600 is used in pager call.
4. Telephone line No.: 00~15 (00~07 for EX-610).

## 6-26 <Fixed speed dialling> (FUNCTION CODE 29)



NOTES

1. To clear all data registered for speed dialling
 10 times
2. Re-start Step 1 when mis-dialing occurs. (All other registrations remain valid.)
3. A maximum of 10 telephone numbers may be registered for Speed Dialling. The first digit of each abbreviated number is to be the same.
4. Dial PTT to set up pause in the abbreviated number.
5. When you need to press $\square$ to register Single-digit dialling for intercom (not telephone) applications, press PTT instead of $\bullet$.

## 6-27 <Handset station> (FUNCTION CODE 30)



NOTES

1. To allow all the stations to have this function,

Touch $\because \boxed{0} \underset{10 \text { times }}{\text { PTT PTT } \cdots \text { PTT }} \begin{aligned} & \text { (Confirmation tone } \\ & \text { will be heard.) }\end{aligned}$
Be sure to depress the PTT key steadily.
2. To release at one time the data programmed into all the stations for this function,

Touch

3. Re-start at Step 1 when mis-dialing occures. (All other registrations remain valid.)
4. Dial 2 digits when programming the station for 2-digit dialling. Dial last 3 digits for station programming when 4-digit dialling is employed.

## 6-28 <Stations Allowed Access to outgoing phone call> (FUNCTION CODE 31)



NOTES

1. To allow all the stations to have this function,

Touch $\bullet 3,1$ PTT PTT $\cdots$ PTT
10 times
Be sure to depress the PTT key steadily.
2. To release at one time the data programmed into all the stations for this function,

3. Re-start at Step 1 when mis-dialing occures.
(All other registrations remain valid.)
4. Dial 2 digits when programming the station for 2-digit dialling. Dial last 3 digits for station programming when 4-digit dialling is employed.

## 6-29 <Stations Allowed Access to incoming phone call> (FUNCTION CODE 32)



NOTES

1. To allow all the stations to have this function,

Touch $\because(\underline{E T} \underbrace{P T(P T T) \cdots P_{T T}}_{10 \text { times }}$
Be sure to depress the PTT key steadily.
2. To release at one time the data programmed into all the stations for this function,

Touch $\bullet 3 \in \square \square \cdots \cdots, \begin{aligned} & \text { (Confirmation tone } \\ & \text { will be heard.) }\end{aligned}$
Touch $\underbrace{0}_{10 \text { times }}$
3. Re-start at Step 1 when mis-dialing occures. (All other registrations remain valid.)
4. Dial 2 digits when programming the station for 2-digit dialling. Dial last 3 digits for station programming when 4-digit dialling is employed.


NOTES

1. To allow all the stations to have this function,

(Confirmation tone will be heard.)

Be sure to depress the PTT key steadily.
2. To release at one time the data programmed into all the stations for this function,

Touch

$$
\square \frac{\square \square \square \square \square \square \square}{10 \text { times }}
$$

(Confirmation tone will be heard.)
3. Re-start at Step 1 when mis-dialing occures. (All other registrations remain valid.)
4. Dial 2 digits when programming the station for 2-digit dialling. Dial last 3 digits for station programming when 4-digit dialling is employed.

## 6-31 <Door station> (FUNCTION CODE 35)



NOTES

1. To allow all the stations to have this function,

(Confirmation tone will be heard.)

Be sure to depress the PTT key steadily.
2. To release at one time the data programmed into all the stations for this function,

Touch $\qquad$
(0)

10 times
3. Re-start at Step 1 when mis-dialing occures. (All other registrations remain valid.)
4. Dial 2 digits when programming the station for 2-digit dialling. Dial last 3 digits for station programming when 4-digit dialling is employed.

## 6-32 <Stations Allowed to refuse voice call> (FUNCTION CODE 36)



NOTES

1. To allow all the stations to have this function,


Be sure to depress the PTT key steadily.
2. To release at one time the data programmed into all the stations for this function,

3. Re-start at Step 1 when mis-dialing occures (All other registrations remain valid.)
4. Dial 2 digits when programming the station for 2-digit dialling. Dial last 3 digits for station programming when 4-digit dialling is employed.

## 6-33 <Stations Allowed to refuse priority interruption> (FUNCTION CODE 37)



NOTES

1. To allow all the stations to have this function,

Touch

(Confirmation tone will be heard.)

Be sure to depress the PTT key steadily.
2. To release at one time the data programmed into all the stations for this function,

Touch

(Confirmation tone will be heard.)
3. Re-start at Step 1 when mis-dialing occures. (All other registrations remain valid.)
4. Dial 2 digits when programming the station for 2-digit dialling. Dial last 3 digits for station programming when 4-digit dialling is employed.

## 6-34 <Stations Allowed Access to zone paging> (FUNCTION CODE 38)



NOTES

1. To allow all the stations to have this function,


Be sure to depress the PTT key steadily.
2. To release at one time the data programmed into all the stations for this function,

3. Re-start at Step 1 when mis-dialing occures.
(All other registrations remain valid.)
4. Dial 2 digits when programming the station for 2-digit dialling. Dial last 3 digits for station programming when 4-digit dialling is employed.

## 6-35 <Stations Allowed to refuse station paging> (FUNCTION CODE 39)



NOTES

1. To allow all the stations to have this function.

Touch $\bullet 3 \underbrace{\square}_{10 \text { PID (PIT) } \cdots \text { PIT) }}$ (Confirmation tone will be heard.)

Be sure to depress the PTT key steadily.
2. To release at one time the data programmed into all the stations for this function.
Touch $\bullet \boxed{0} \underset{10 \text { times }}{\square \square \cdots \cdot \square} \begin{aligned} & \text { (Confirmation tone } \\ & \text { will be heard.) }\end{aligned}$
3. Re-start at Step 1 when mis-dialing occures. (All other registrations remain valid.)
4. Dial 2 digits when programming the station for 2-digit dialling. Dial last 3 digits for station programming when 4-digit dialling is employed.

## 7. PROGRAMMING DATA TABLE

- INITIAL PROGRAMMING

Note. (Mark *)
The first station of each exchange becomes the Programming Station:
Exchange "A" . . . . . . . . . . . . . . . . . . . . . . . . . . . . No. 200 (100) 470 (400)
Exchange "B" . . . . . . . . . . . . . . . . . . . . . . . . . . . . 740 (700)
Exchange "C" . . . . . . . . . . . .
= Initial Programming of the Exchange $=$

1. Place CP front-mounted program switch in "ON" position. Dial operation from station No. 200 (100). *
2. © Dial tone will be heard (Station No. 200 (100) becomes a programming station)
3. $\quad 44 \cdot 4$ Confirmation tone will be heard (Clears function group S) 10 times
4. 55.5 Confirmation tone will be heard (Clears function group A) 10 times
5. $\cdot$ 日 $6 \cdot 6$ Confirmation tone will be heard (Clears function group B) 10 times
6. 

[- $\underbrace{7}_{10 \text { times }} \quad 7 \cdot 7$ Confirmation tone will be heard (Clears function group C)
7.
(- $\underbrace{8 \text { B }}_{10 \text { times }}$ (8) Confirmation tone will be heard (Clears function group D)
8.

- $\underbrace{(9) \cdot(9)}_{10 \text { times }}$ Confirmation tone will be heard (Clears function group E)这

9. 
10. 



Confirmation tone will be heard.
(Clears personal numbers, single digit dial numbers and remote numbers)
[ $\underbrace{2] \cdot \square}_{10 \text { times }}$ Confirmation tone will be heard (Clears function group F)
11.
[ $3 \cdot 3 \cdot 3$ Confirmation tone will be heard (Clears function group G) 10 times
12. Dial operation to programme required functions.
(Refer to other instructions for each function)
13. Set the CP front-mounted programme switch to OFF.
14.
c. (Station No. 200 (100) becomes a normal station.) *
$=$ Simultaneous clearance of each function programmed into all stations. $=$

= Simultaneous programming of each function into all stations.


Function Table for the System
$\because(4), \square_{A}, \square_{B}, \square_{C}$
$\left[\cdot\left[\frac{\square}{\mathbf{x}:} \underset{1,2,2}{x}, \square\right.\right.$
$\square \underset{x: 5,6}{(4)}, \square \square$
System function table
［－（4）区 区 $\square$

| Function Group | Function | Function code | Registered data |  | Remark | Initial setting mode |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| S | Numbering schedule of tie－line system． Setting of the head station number of each exchange | 40 | A | $\begin{aligned} & -00 \\ & -00 \\ & -00 \end{aligned}$ | Head station number of each exchange to be selected from among the following schedules． 100／200／300／400／500／600／Z00／800／ 900 | A／B／C＝ <br> 200／470／740 <br> （SW－D－5 off） <br> 200／500／800 <br> （SW－D－5ON） |
|  | Call tone selection | 41 |  | －． | 0：No call tone <br> 1：Single tone（ 0.2 second） <br> 2：Trill tone（ 0.3 second） | Trill tone （0．3 second） |
|  | Selection of paging pre－announcement tone duration | 42 |  | － | 0：No pre－announcement tone <br> 1：Pre－announcement tone （1 second） <br> 2：Pre－announcement tone （2 seconds） | Pre－announcement tone（2 seconds） |
|  | Single－digit dialling key selection | 430 |  | － | $\begin{aligned} & 0: 0 \\ & 5 \sim 9: ~ \\ & 5 \sim \end{aligned}$ | ［0］ |
|  | Selection of 1st digit of 4－digit dialling | 431 |  | － 000 | 1st digit of station No．of local exchange <br> 2000／3000／4000／5000／6000／7000／ 8000／9000 | （None） |
|  | Time－out of conversation | 45 |  | －－ | 00：No time－out 01～99：Time－out（minutes） | No time－out |
|  | Time－out of paging call | 46 |  | －－ | 00：No time－out 01～99：Time－out（minutes） | No time－out |
|  | Pager call output digit selection | 470 |  | － | 0： 2 digits <br> 1： 3 digits <br> 2： 4 digits | 2 digits |
|  | Pager call function code output mode selection | 471 |  | － | 0 ：Output before pager No． <br> 1：Output after paper No． <br> 2．No function code | Output before pager No． |
|  | Pre－pause time selection | 48 |  | － | 0： 0.6 sec $4: 2.5 \mathrm{sec}$ $8: 4.5 \mathrm{sec}$ <br> $1: 1 \mathrm{sec}$ $5: 3 \mathrm{sec}$ $9: 5 \mathrm{sec}$ <br> 2： 1.5 sec $6: 3.5 \mathrm{sec}$  <br> 3： 2 sec $7: 4 \mathrm{sec}$  | 0.6 second |
|  | Number of SM－600 units connected | 490 |  | － | 0 ：No unit connected 1～4：Number of SM－600 units connected | No unit connected |
|  | Message recording hurry－up tone mode selection | 491 |  | － | 0：Hurry－up tone is transmitted <br> 1：No hurry－up tone | Hurry－up tone is transmitted |

Note．Write numerical value over horizontal lines（一）．


| $\begin{aligned} & \text { O} \\ & \text { o } \\ & \text { O } \\ & \text { O} \\ & \text { 은 } \\ & \vdots \end{aligned}$ | Paging Zone |  | First Station No. | Last Station No. | $\xrightarrow{\text { en }}$ |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | Department | No. |  |  |  |
|  |  | 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 |  |  |  |

## PART 3. FUNCTION SELECTION FOR DATA TRANSMITTING AND RECEIVING UNITS

## 8. SETTING OF CHANNEL SELECT SWITCH OF TRANSMITTING UNIT (DT-E60) AND WORD SELECT SWITCH OF RECEIVING UNIT (DR-B61)

## NOTE

1. Connect the DT-E60 and DR-B61 to Exchange correctly. (Refer to operation manuals of DT-E60 and DR-B61).
2. Set the function select switches (DIP SWITCH) on CP-66 correctly and be sure to enter initial programming and function registration at programming station No. 200.
3. Remove the Data Transmitting Unit (DT-E60) front cover by pulling its handle toward you, and the channel select switches can be seen. Set the channel select switches to enable IN/OUT Annunciation, Calling Party Indication, etc. (Refer to 12. Explanation of Data Transmitting Unit Output Data.)
4. The DT-E60 sends out 512 bit data ( 16 bit $\times 32$ words) to control relays on Data Receiving Unit (DR-B61). Therefore set the two word select switches on DR-B61, according to necessary output mode. SW-1 is for Relay No. 1 to No. 16 and SW-2 is for Relay No. 17 to No.32. See Page 51 for details.
(Refer to Explanation of Date Receiving Unit Output Channels.)
5. Connecting Cable YR-802 is used for the Rack mounting system. Connecting Cable YR-806 is used for the Standard Cabinet mounting system with only One (1) DT-E60 unit.


## 9. DIP SWITCH TABLE FOR DATA TRANSMITTING AND RECEIVING UNITS


10. SYSTEM DIAGRAM OF DATA TRANSMITTING AND RECEIVING UNITS (Single Exchange)


Enlarged Block Diagram of Calling Party Indication

11. SYSTEM DIAGRAM OF DATA TRANSMITTING AND RECEIVING UNITS (Tie-line System)



## 12. EXPLANATION OF DATA TRANSMITTING UNIT OUTPUT CHANNELS

| CHANNELSELECTION | FUNCTIONS | DESCRIPTION | APPLICATLON |
| :---: | :---: | :---: | :---: |
| DTE60 CH. 1 | Make/Break Output (512/100 contacts) | Make/Break contacts can be available at any Master station. | - Door Remote <br> - IN/OUT Annunciation |
| DT-E60 CH. 2 $\square$ | One-shot Make Output (500/50 contacts) | One-shot make contacts can be available at any Master station. | - ITV camera select <br> - VTR control |
| DTEE日 <br> CH. 3 | (1) 4 Decimal digits output (9 units) | Indicate by 7 segments LEDs. | - Prescription annunciation |
|  | (2) Decimal Output (9 units) | 10 Selectable Decimal Outputs are available with 7 segments LEDs. | - Room condition indication |
|  | (3) 8 Selectable Make Output. (9 units) | One contact out of 8 selectable make outputs is obtained. "Clear" operation makes all 8 relays break. | - Destination indication |
|  | (4) Pager Control Output (100 pagers) | Make output (100 contacts) is available for pager control. | - Pager |
|  | (5) 8 Selectable One-shot Make Output (9 unit) | One contact out of 8 selectable make outputs is obtained for about 1 or 2 seconds. | - VTR control |
| 0FE60 <br> CH 4 $\square$ | Decimal Output (99 units) | 10 Selectable Decimal Outputs are available with 7 segments LEDs. | - Room condition indication <br> - Destination indication |
| DT-E60 <br> CH. 5 $\square$ | 8 selectable make Output (64 units) | One contact out of 8 selectable make outputs is obtained. "Clear" operation makes all 8 relays break. | - Room condition indication <br> - Destination indication |
| DT-E60 CH. 6 $\square$ | Calling Party Indication Numerical-type (1) | When a station with a Display Board is called, calling party number is | - Called stations are No.201~No.216. |
| DTE60 CH .7 $\square$ | Calling Party Indication Numerical-type (2) | over and also when the called station is busy or in privary. | - Called stations are No .217- No. 232. |
| DT-E60 <br> CH. 8 | Calling Party/Conversation Partner Indication (One Station; One Lamp) (1) | Calling party indication (lamp type) This function permits a maximum of 256 calling stations to be indicated on the display panel installed at a certain station or group | - Called station (s). No.1~2. |
| DTE60 CH. 9 | Calling Party/Conversation Partner Indication (One Station; One Lamp) (2) | display panel indicates all calls received while the called stations is busy or in Privacy mode. This lamp indication is maintained till the conversation with the calling party is terminated | - Called station (s). No .3-4. |
| DT-E60 <br> CH. 10 | Calling Party/Conversation Partner Indication (One Station; One Lamp) (3) | has cancelled his call while waiting. Conversation partner indication (lamp type) A conversation partner is indicated on the dis- | - Called station (s). No.5~6. |
| DI-E60 <br> CH. 11 | Calling Party/Conversation Partner Indication <br> (One Station; One Lamp) (4) | group having stations with consecutive number. The lamp goes out when the conversation is finished. | - Called station (s). No.5~6. |
| DTE60 <br> CH. 12 $\square$ | Destination Indication (1) | When a person makes his own Personal Number Programming at the | - Personal number 1000-1015 |
| DT-E60 <br> CH. 13 | Destination Indication (2) | the registration was made can be indicated by the lamp. | - Personal number 1016~1031 |
| DT-E60 <br> CH. 14 $\square$ | In/Out Annunciation (1) | Personal in and out registration can be accomplished at any Master | - Personal number 1000~1503 |
| DTE60 CH. 15 $\square$ | In/Out Annunciation (2) | Max. 1000 IN/OUT annunciations may be done. | - Personal number 1504~1999 |

## 13. EXPLANATION OF DATA RECEIVING UNTT OUTPUT DATA

## 13-1 Channel 1 (CH. 1) Make/Break Output


Data Receiver
Relay Output No.


NO. 1
WD. 0



## 13-2 Channel 2 (CH. 2) One-Shot Make Output



Data Receiver
Relay Output No.
















Each Relay Output shows RElay Contact Number.

13-3 Channel 3 (CH. 3) (1) 4 Decimal Digits Output (9 units) (2) Decimal Output (9 units)
(3) 8 -Selectable Make Output ( 9 units) (4) Pager Control Output (100 contacts)
(5) 8-Selectable One-shot Make Output

EXES-6000 (9 units)


## 13-4 Channel 4 (CH. 4) Decimal Output (99 Units)





CHNNEL SELECT S
(Example)
Unit No. 8 Condition "1"

Unit No. 10 Condition "8"
witch


WD. 2
WD. 3



WD. 4






## NO. 6

14.43

| ] |
| :---: |
|  |  |


$\frac{23 \cdot 19}{3 \cdot 18}$

















WD. 23
 SW1
SW2
: Relay Make
0: Relay Break



[^0]13-6 Channel 6 (CH. 6) Calling Party Indication Numerical Type (1)

| Exchange | 7 Segments Display of "Calling Station No.", "Waiting Station No." and "Total Number of Waiting |
| :--- | :--- |
| Stations". Total Number of Station with Indications, 16 stations/Channel (32 stations/2 Channel) |  |





Station No. 207

d.c.: Digit of Calling Station No. d.w.: Digit of Waiting Station No t.n.w.: Total Number of Waiting Stations.
-logic: Binary negative logic
1: Relay Make
0: Relay Break

| DR-861 | [-logic"15"] | [-logic"15"] | [-logic "15"] |  |
| :---: | :---: | :---: | :---: | :---: |
| 10.5 | $\left[\begin{array}{lllll}0 & 0 & 0 & 0\end{array}\right]$ | $\left[\begin{array}{llll}0 & 0 & 0 & 0\end{array}\right]$ | $\left[\begin{array}{lllll}0 & 0 & 0 & 0\end{array}\right]$ | $\left[\begin{array}{llll}0 & 0 & 0 & 0\end{array}\right]$ |

WD.
WD.



S $\mathrm{S} / 2$
No. 206

|  | 76. ${ }^{\text {a }}$, 15,14 | , | , | 4 |
| :---: | :---: | :---: | :---: | :---: |
| -861 | [ - logic " 2 "] | [ - logic " 3 "] | [ - logic " 4 "] |  |
| 7 | $\left[\begin{array}{lllll}1 & 1 & 0 & 1\end{array}\right]$ | $\left[\begin{array}{lllll}1 & 1 & 1 & 1\end{array}\right]$ | $\left[\begin{array}{lllll}1 & 1 & 1 & 0\end{array}\right]$ | $\left[\begin{array}{llll}1 & 1 & 0 & 0\end{array}\right]$ |



SWI
No. 207










Note: $\quad$ (凸) shows the Head of a Slide Switch

## 13-7 Channel 7 (CH. 7) Calling Party Indication Numerical Type (2)

| Exchange | 7 Segments Display of "Calling Station No.", "Waiting Station No." and "Total Number of Waiting |
| :--- | :--- |
| Stations". Total Number of Station with Indications, 16 stations/Channel (32 stations/2 Channel) |  |

Stations". Total Number of Station with Indications, 16 stations/Channel (32 stations/2 Channel)
EXES 6000


Data Receiver
Relay Output No.



|  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
| DPB61 [1st d.c.] | [2nd d.c.] | [3rd d.c.] | WUD. 4 |  | SW |
| 10.3 ${ }^{\text {a }}$ [1st d.w.] | [2nd d.w.] | [3rd d.w.] | [t.n.w.] WD. 5 |  | SW2 |
|  | 28 2 ${ }^{2}$ |  | 20 19, 18.011 |  |  |

(Example)


Station No. 223 Lamp "ON" Condition












d.c.: Digit of Calling Station No.
d.w.: Digit of Waiting Station No t.n.w.: Total Number of Waiting Stations.
-logic: Binary negative logic
Relay Make
Relay Break



Indication of calling or waiting station and conversation partner by lamp.

| Exchange | Total Number of Station with Indications: 2 Stations /Channel (8 Stations /4 Channels) |
| :---: | :---: |
| Whyskr | Total Number of Calling Stations: Max. 256 Stations/Each Indication |








Each Relay Output shows
"Calling Station No. or Conversation Partner"

Indication of calling or waiting station and conversation partner by lamp.

Exchange


Total Number of Station with Indications: 2 Stations/Channel (8 Stations /4 Channels) Total Number of Calling Stations: Max. 256 Stations/Each Indication

Data Receiver

Station No. with Indication


WM $0^{\left[\frac{15}{5 \cdot 3.3}\right.}$
SWI







Indication of calling or waiting station and conversation partner by lamp.

| Exchange | Total Number of Station with Indications: 2 Stations/Channel (8 Stations/4 Channels) |
| :---: | :--- |
| WeS-an] | Total Number of Calling Stations: Max. 256 Stations/Each Indication |

Each Relay Output shows
"Calling Station No. or Conversation Partner"


Total Number of Calling Stations: Max. 256 Stations/Each Indication
Station No. with Indication


| Exchange | Indication of calling or waiting station and conversation partner by lamp. |
| :--- | :--- |
| Total Number of Station with Indications: 2 Stations/Channel (8 Stations/4 Channels) |  |
| Total Number of Calling Stations: 256 Stations/Each Indication |  |



Total Number of Station with Indications: 2 Stations/Channel (8 Stations/4 Channels) Total Number of Calling Stations: 256 Stations/Each Indication


CHANNEL SELECT Switch

Each Relay Output shows "Calling Station No. or Conversation Partner"


13-12 Channel 12 (CH. 12) Destination Indication (1)
(Dial Operation)

- Registration of Personal Number
$-6 \pi x, x$
- Cancellation of Personal Number $\bullet \bullet 10 x \times x$
$x X: 00 \sim 31$
Exchange


Personal Number: Max. 32 persons (No.1000~1031)
Station Number which shows Person's Destination: Max. 32 stations (No.201~232)
Data Receiver
Relay Output No.






DR-B61 146





EXAMPLE
Indication Panel-lamp on.
A person "No.1006" registers his Personal Number at the station "No.216", then the Relay contact "No.216" turns into "Make".
Each Relay Output shows "Station No. of Person's Destination"


Each Relay Output shows
"Station No. of
Person's Destination"

Personal
Number

## 13-13 Channel 13 (CH. 13) Destination Indication (2)

(Dial Operation)

- Registration of Personal Number $\because \bullet 6$

- Cancellation of Personal Number


$\bullet \bullet 1 \times \mathbb{x}$
Station Number which shows Person's Destination: Max. 32 stations (No.201~232)
Data Receiver Relay Output No.



Data Transmitter




| DR－B61 | $\frac{16}{15} 1047$ | 614451044 | 120310 | 10210 | 10.104 | 9408 | 839103 | 7386 | 671036 | ${ }^{36} 1035$ | ${ }^{355} 53$ |  | 333032 |  | W0． 2 |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| N0． 2 | 063062 | 2061060 | 00590 | 105805 | 05705 | 5605 | 15505 | 54105 | 153052 | 2051 | 51050 | 50049 | 49048 |  | WD 3 |  |  |  |  |
|  | 32.31 | 3029 | 28.2 | ， | $\bigcirc$ | 25.2 | 24.2 | 23.2 | 221 | 20 | ， | 1918 |  |  |  |  |  |  |  |






|  |  |  | 198 | ${ }^{197}$ | 5 | 4 | 194 | ${ }^{2} 193$ |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | 206 | 205 | ， | 23 | ， |  |  |  |  |  |  |
| N0． 7 |  |  |  | 205 | 204 |  | 20 |  |  |  |  |  |  |


| DR－B61 | ${ }_{\text {20，}}^{16}$ | 1512 | 4．18 | 18.12 | 2711 | 12.10 |  | ${ }^{2} 8123$ | 2322 | ${ }^{6} 2$ | 122 | 219 | 2182 | 217 | 216 | WD． 14 |  | （1）： | SW |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| N0． 8 | 2472 | 24624 | 24524 | 2412 | 4324 | 2422 | 24124 | 201239 | 39238 | 823 | 236 | 235 | 234 2 | 233 | 232 |  |  |  |  |
|  | $\frac{323}{32}$ | 3130 | 3029 | 29 | 28. | 272 | 26.25 | $5{ }^{24}$ | 24.38 | 2 | 21 | 20 | 19 |  |  |  |  | $\cdots$ |  |


|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 2631262 | 261 | 21260 | 201259 |  | 58125 | 571256 | 56255 | 55254 | 54 225 | 53252 | 52251 | 1250 | 249］ | 248 | WD． 16 | 边 |  |  |
|  | $279278$ | $8277$ | $77276$ | 6275 | $75274$ | $274273$ | $73272$ | 22221 | 11270 | 70269 |  | $\frac{682}{687}$ |  | $66265$ | $55264$ | W0． 1 |  |  |  |
| DR－B61 <br> NO． 10 | 16.15 | 14 | 4 | 3.12 | 211 | 110 | 09 | 8 | 7 | 76 | 5 | 5 | 3 | 2 |  |  |  |  |  |
|  | 295129 |  | 23222 | 2229 |  |  | 89288 | 88.287 | 37286 | 186285 | 25224 | 84 |  | 281 | 1280 | WD． 18 |  |  |  |
|  | 311310 | 130 | 393308 | 388，307 |  | 206， 305 | 305304 | 104303 | 203 302 | 302301 | 31300 | 200299 | 228 | 88297 | $7$ | WD． 19 |  |  |  |
| DR-B61$\text { No. } 11$ | 1514 |  |  |  | $11.10 \cdot 9$ |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | 327322 |  | $253324$ | $24:$ | $223322$ | 2232 | $327320$ | 20319 | 9318 |  |  |  |  |  |  | WD． 20 | 䔽 |  |  |
|  | $\frac{343322}{3231}$ | 3413 30103393.38 |  |  |  | ［338 33 | ${ }_{27}^{77}$ |  |  | 1344 333 | 33／332 331 |  | 3303329328 |  |  | WD． 21 | 2 |  |  |
|  |  |  |  |  |  | ， |  |  |  |  |  |  |  |  |  |




## 13-15 Channel 15 (CH. 15) In/Out Annunciation (2) (496 persons)




CHANNEL SELECT Switch

Each Relay Output shows last 3 digits ( $x x x$ ) of Personal Number

Data Receiver Relay Output No.













[^0]:    Note: $\square(凸)$ shows the Head of a Slide Switch

