PRO-XL 616™

ELECTRONIC KEY TELEPHONE SYSTEM
INSTALLATION MANUAL

PATENT PENDING

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TELEPHONE COMPANY NOTIFICATION

Before connecting the PRO-616 System to the Telephone Network, the telephone company must be provided with the following:

1. Your telephone number -
2. FCC Registration Number - EQV5YG-15239-MF-T
3. Ringer Equivalence Number - 3.1B
4. USOC jack required - RJ25C
5. 2-wire loop start
6. Complies with FCC Part 68, Part 15, Subparagraph J, Class A

IMPORTANT - The information in this manual is SUBJECT TO CHANGE WITHOUT NOTICE at the discretion of ASUZI, LTD.

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INTRODUCTION

This manual provides the information required to install and maintain the PRO-616 Electronic Key Telephone System. Areas covered include standard precautions relating to lightning and proper handling of electronic circuit boards, technical specifications, site selection, hardware installation and programming.

It is necessary that the installer read this document prior to beginning installation.

A User's Guide is provided with each phone.

Special care has been taken during the design of the PRO-616 to reduce the time required to install the system. Through careful quality manufacturing, many steps have been eliminated from installation and programming.

The KSU is shipped with the MCU Main Control Unit, the POWU Power Card and an 8STAU 8 Station Card in place. This basic equipment will accomodate six C.O. lines and eight stations using any combination of basic handsfree phones and speakerphones.

There are three options:

a. BLFU - Busy Lamp Card

b. Second 8STAU Circuit Board which provides an additional 8 stations.

c. Externally mounted PFTU - Power Failure Transfer Unit.

The programming of system functions, timings and features has been simplified to save additional time. One simple chart provides all the information necessary to program the system from Station 10.

We sincerely believe you will find the PRO-616 to be the easiest 616 you have ever installed and that your customer will enjoy years of trouble free service from this system.

LIGHTNING

Lightning, static charges in the atmosphere, will always discharge through the strongest available earth ground.

Telephone equipment usually has several entrances through which lightning can enter and damage its electronic components such as AC power, C.O. lines and off premise extensions. Usually all of these entrances are protected and all of the protective devices must be grounded to be effective. Additionally, the KSU frame is usually grounded. Often, different earth grounds are used for each type of device.

With several entrances, each grounded to a different earth ground, lightning damage to the equipment is caused by the differences in the potential of each ground. Some of the static charge can jump the protector having a lower ground potential and go through the equipment to a ground having a higher potential.

To prevent problems caused by grounds with different potentials, it is imperative to bond all grounds with size 10 AWG or larger copper wire to balance the potential of all grounds.

NOTE: A good ground potential is less then 5 ohms.

PROPER HANDLING OF CIRCUIT BOARDS

Special care must be taken when handling electronic components or cards. It is always necessary to discharge static electricity acquired from your clothing or through movement over carpeting, etc. This static electricity is discharged by touching an earth ground.

Any electronic circuit board is very sensitive to and may be damaged by static charges, extreme humidity levels, moisture or extreme temperatures. The handling of electronic components on a card or the wiring between components will cause damage due to static charges or moisture from your hand.

Close proximity to certain types of electrical equipment such as copying machines, fax machines, electrical motors, etc. will also damage electronic components. Certain copying and fax machines distribute a fine chemical mist that may build up and cause corrosion on electronic components.

Due to the sensitive nature of all circuit boards, it is strongly recommended that each board remain in its anti-static plastic bag until ready for installation. Special care should be taken not to drop or stack circuit boards. Never attempt to field-repair a circuit board.

> IMPORTANT: Never install or remove circuit boards from electronic equipment while the power is on.

HEARING AID COMPATABILITY

FCC rules prohibit the use of non-hearing-aid-compatible telephones in the following locations:

1) Any public or semi-public location where coin-operated or credit card telephones may be found.

2) Elevators, highways and tunnels (automobile, subway, railroad or pedestrian) where a person with impaired hearing might be isolated in an emergency.

3) Places where telephones are specifically installed to alert emergency authorities such as fire, police or medical assistance personnel.

4) Hospital rooms, residential health care facilities, convalescent homes and prisons, specifically where telephones are used for signaling life-threatening or emergency situations if alternative signaling methods are not available.

5) Work stations for hearing-impaired personnel.

6) Hotel, motel, apartment lobbies; in stores where telephones are used by patrons to order merchandise; in public transportation terminals where telephones are used to call taxis or to reserve lodging or rental automobiles.

7) Hotel and motel rooms. At least ten percent of the rooms must contain hearing-aid-compatible telephones; or contain jacks for plug-in hearing-aid-compatible telephones which will be provided to hearing-impaired customers upon request.

TECHNICAL SPECIFICATIONS

KSU SPECIFICATIONS

Size:	15.4" high, 18.1" wide, 3.3" deep (390mmH x 460mmW x 85mmD)
Weight:	15.2 pounds (6.9 kg.)
Power:	Input; 117 VAC Output; 24 VDC, 5 VDC
Fuses:	3 AAC, 3 ADC (125V)
Basic Card:	MCU Main Control Unit 8STAU 8-Station Unit POWU Power Unit
Optional:	8STAU 8-Station Expansion Unit BLFU Busy Lamp Field Unit PFTU Power Failure Transfer Unit (mounted externally)
Terminals:	One RJ25C Modular Jack for each three C.O. lines Amphenol Connector for telephone stations Amphenol Connector for BLF Screws for External Music Source Screws for External Paging System Screw for KSU grounding

TELEPHONE SPECIFICATIONS

Type:	PRO-616 HF-EKT Basic Handsfree Telephone PRO-616 SPK-EKT Speakerphone PRO-616 BLF-EKT Busy Lamp Speakerphone
Size:	4.1" high, 7.7" wide, 8.9" deep (103mmH x 199mmW x 225mmD)
Weight:	2.2 pounds (1 kg.)
Connection:	4-conductor RJ14C Modular Jack
Cabling:	4-conductor, non-shielded twisted pair cable. 25-pair non-shielded twisted cable.
Maximum Cable Run:	900 feet for 22 AWG cable 700 feet for 24 AWG cable

PARTS LIST

ITEM	QUANTITY	ACCESSORIES PROVIDED
PRO-616 KSU	2	Fuse; 125V 3AMP (provided in the KSU)
	4	+M4.1x32S Wood Screws for mounting KSU
	1	SKB-2M Cable Tie
	1	PRO-616 Installation Manual
PRO-616 HF-EKT	1	PRO-616 User's Guide
	1	Directory card
PRO-616 SPK-EKT	1	PRO-616 User's Guide
	1	Directory card
PRO-616 BLF-EKT	1	PRO-616 User's Guide
	1	Directory card
8STAU Card	2	S/ 30X90BD(1.25) Flat Cable
	1	Cable Tie
	3	LCBS-18N Spacer
	2	Stand-Offs
	2	+M3X6S Screw
BLFU Card	1	S/C19X70BD(1.25) Flat Cable
	2	Cable Tie
	4	PCB-4L Spacer
PFTU	1	1-Pair PFTU cord
	4	+M3.1X25S Wood Screw

PRE-SURVEY

The PRO-616 should be wall mounted. Consider the following factors when selecting a site for the installation of the KSU.

LOCATION OF KSU CABINET

a) An isolated 117 volt AC power outlet with equipment ground, (3rd wire ground), must be within three feet of the KSU.

b) It is recommended that the telco RJ25C jack be placed no more than 25 feet from the KSU.

c) Stations should be located no farther from the KSU than:

900 feet for 22 AWG cable
700 feet for 24 AWG cable

d) Space should be allowed for accessing and servicing the KSU.

e) The KSU should be located in a well ventilated area having a temperature range of from 32 degrees F to 104 degrees F (0 degrees C to 40 degrees C).

f) The site selected should be dry (humidity below 90%) and the KSU should not be located beneath pipes because of the possibility that leaks or condensation may cause damage.

g) The area must be free of corrosive gases, excessive chemical or industrial dust. If possible, the KSU should be away from copying machines, fax machines or large electrical motors.

h) A good cold water pipe ground should be accessible to the KSU.

INSTALLATION OF THE KEY SERVICE UNIT (KSU)

Note: As is the case with any electronic equipment, the installer must discharge to ground any static electricity on his or her body before handling the KSU.

INSTALLATION STEPS

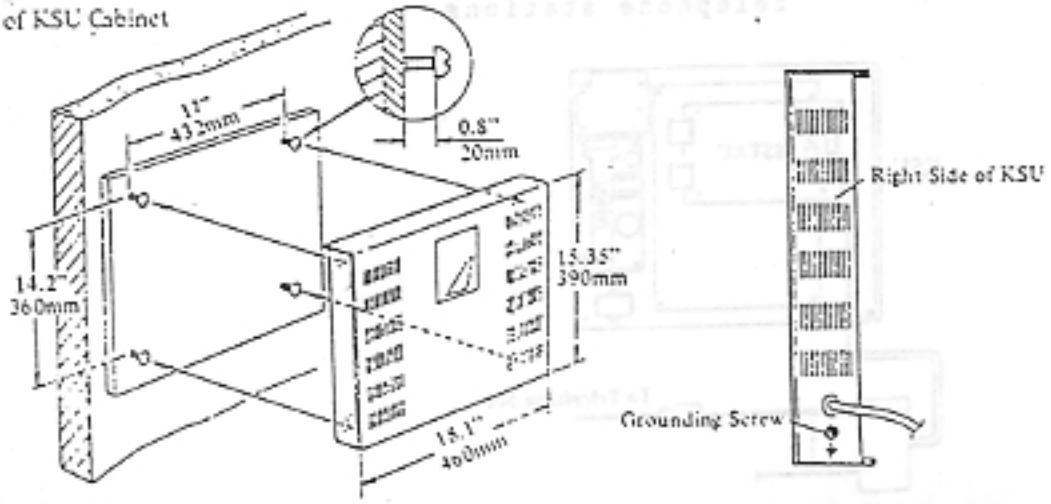
1) Survey the premises for proper location of KSU. See PRE-SURVEY page.
2) Level and mount the KSU on a wall-mounted 3/4" piece of plywood, using the template and screws provided. Refer to SELECTING A SITE FOR THE KSU and the figure below.
3) Properly ground the KSU. See GROUNDING THE KSU below.
4) Bond all grounds with 10 AWG copper wire (cold water ground, power neutral, separate ground rod, telco ground, etc.).
5) Install surge protector, field provided.
6) Plug the KSU into the 117V receptacle.
7) Verify that the LED on the MCU card is flashing.
8) Verify that the LED on the SSTAU is flashing.
9) Unplug the KSU.
10) Install any optional circuit cards required (refer to appropriate sections).

GROUNDING THE KSU

IMPORTANT: PLEASE READ THE "LIGHTNING" PAGE

The KSU should be grounded using a 10 AWG or larger copper wire. Recommended choices for grounding; 1st choice is copper cold water pipe (caution should be taken that no plastic was used in this water line), 2nd choice is power neutral ground, 3rd choice is best available other ground. Caution: Do not use 3rd wire ground at receptacle as it may not be bonded to the power company ground rod.

Wall Mounting of KSU Cabinet



CONNECTION OF TELEPHONE STATIONS

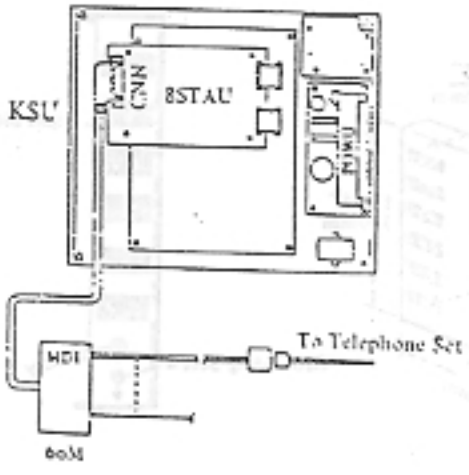
Install an MDF near the KSU using 1 or 2 66M blocks and brackets. Route a 2-pair cable (twisted-wire) from the MDF to each telephone . Mount an RJ14C jack near each telephone location. Connect each telephone to the MDF using a 2-pair cable (twisted-wire).

Connect the MDF to the 8STAU card using 25-pair cables as shown below.

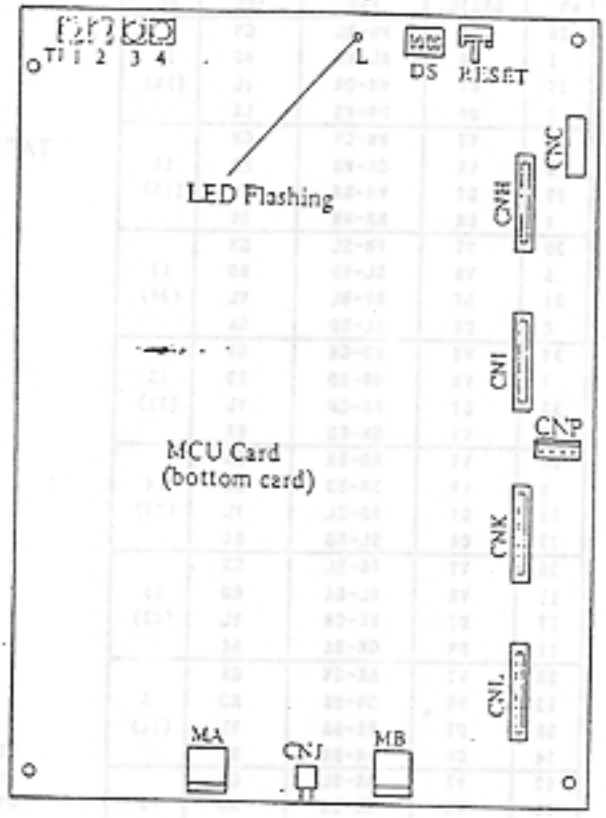
ACCESSORIES:
* Amphenol Connectors - one for each 66M block
* MDF - 2 66M blocks and brackets, one for each 8 stations.
* RJ14C Jacks - one for each station.
* 25-pair cable - one for each 8 stations.
* 2-pair cable (twisted wire) - one for each station.

INSTALLATION STEPS

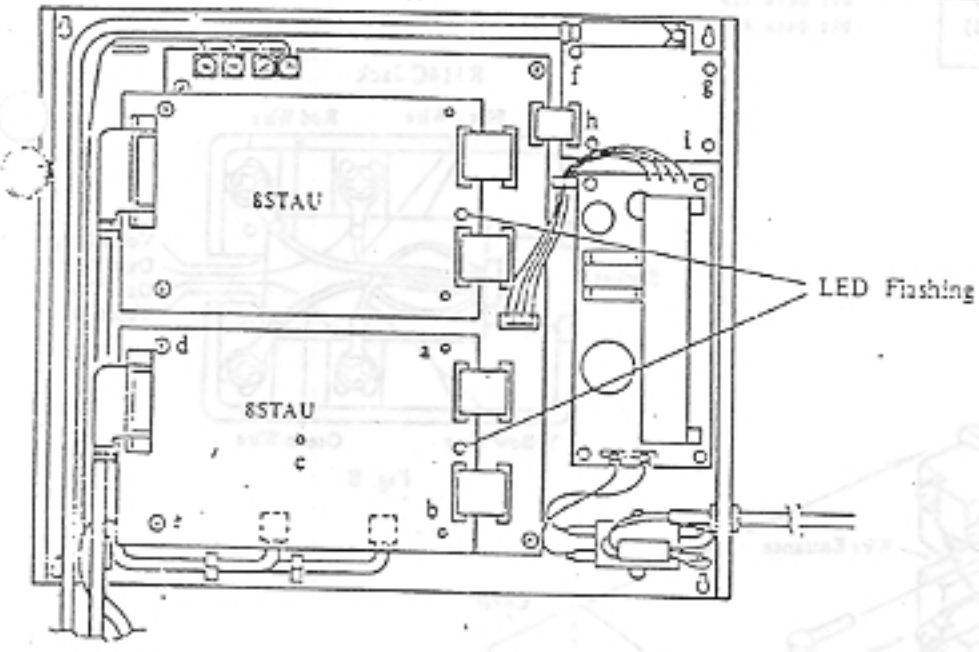
1) Referring to Table A on facing page, connect one end of a 25-pair cable to an amphenol connector. (Connects to "CNN" on 8STAU card in KSU. See figure below.)
2) Connect the other end of the 25-pair cable to the MDF 66M block. (See Table A).
3) Mount an RJ14C jack near each telephone station. See Fig. A.
4) Connect one end of the 2-pair cable (twisted wire) to the MDF (66M block) and the other end to the RJ14C telephone jack. See table A and Fig.B.
5) Using the D4BU mounting cord furnished with the telephone set, connect the telephone to the RJ14C jack.
6) Repeat steps 4 & 5 to connect each remaining telephone.
7) Repeat steps 1 to 5 to connect expansion eight telephone stations.

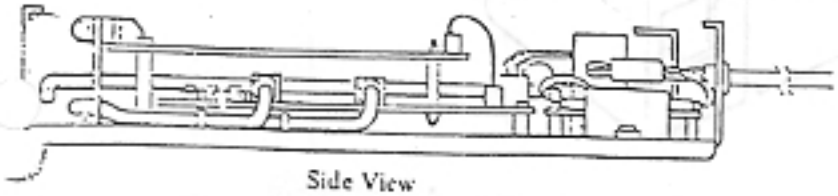


TE1 & 2 Music
TE3 & 4 Paging



Front View





Side View

PIN NO.	LEAD DESIG.	CABLE KSU	COLOR TEL	EXT. NO.
26	VT	WH-BL	GN	
1	VR	BL-WH	RD	10
27	DT	WH-OR	YL	(18)
2	DR	OR-WH	LK	
25	VT	WH-GN	GN	
3	VR	GN-WH	RD	11
29	DT	WH-BR	YL	(19)
4	DR	BR-WH	BK	
30	VT	WH-SL	GN	
5	VR	SL-WH	RD	12
31	DT	RD-BL	YL	(20)
6	DR	BL-RD	BK	
32	VT	RD-OR	GN	
7	VR	OR-RD	RD	13
33	DT	RD-GN	YL	(21)
8	DR	GN-RD	BK	
34	VT	RD-BR	GN	
9	VR	BR-RD	RD	14
35	DT	RD-SL	YL	(22)
10	DR	SL-RD	BK	
36	VT	BK-BL	GN	
11	VR	BL-BK	RD	15
37	DT	BK-OR	YL	(23)
12	DR	OR-BK	BK	
38	VT	BK-GN	GN	
13	VR	GN-BK	RD	16
39	DT	BK-BR	YL	(24)
14	DR	BR-BK	BK	
40	VT	BR-SL	GN	
15	VR	SL-BR	RD	17
41	DT	YL-BL	YL	(25)
15	DR	BL-YL	BK	

TABLE A

VT: Voice Tip
VR: Voice Ring
DT: Data Tip
DR: Data Ring

RJ14C Jack

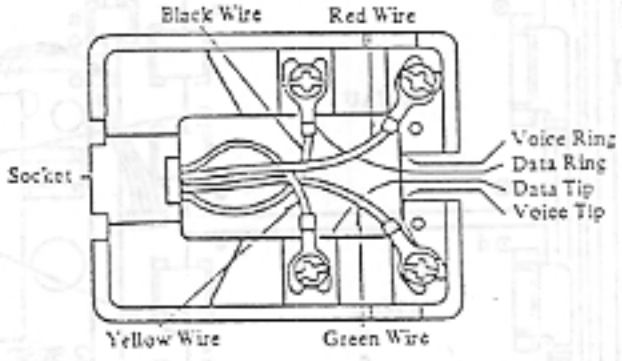
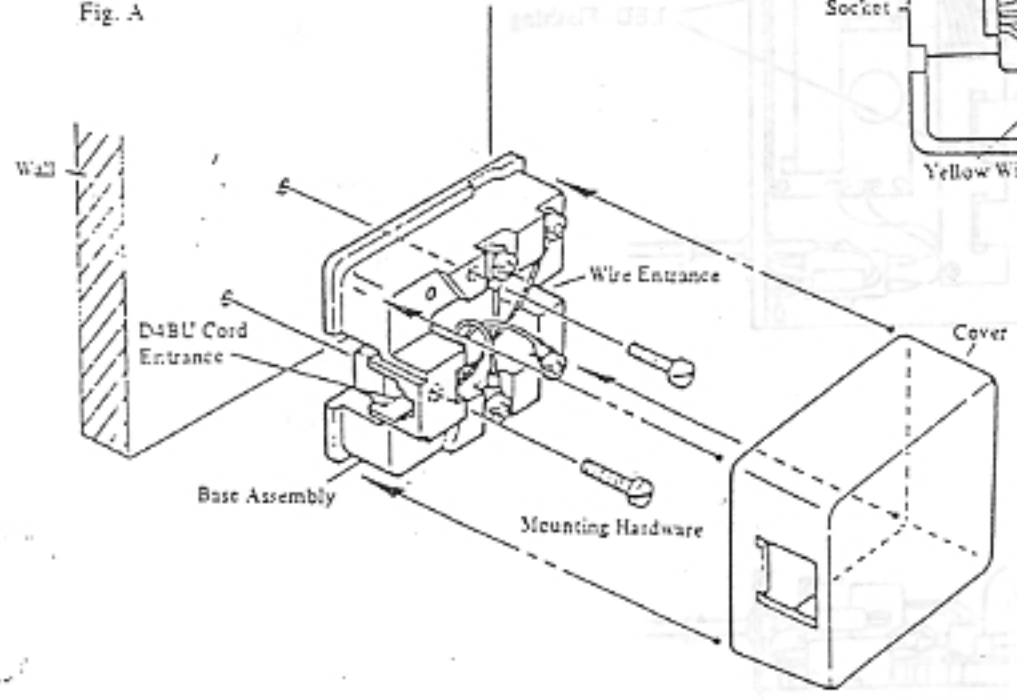


Fig. B

Fig. A



INSTALLATION OF C.O. LINES

Connect the telco RJ25C jack to the KSU at the "MA" jack on the MCU card using a 3-pair modular cord, field provided. The "MA" jack connects C.O. 1 through C.O. 3. The "MB" jack connects C.O. 4 through C.O. 6.

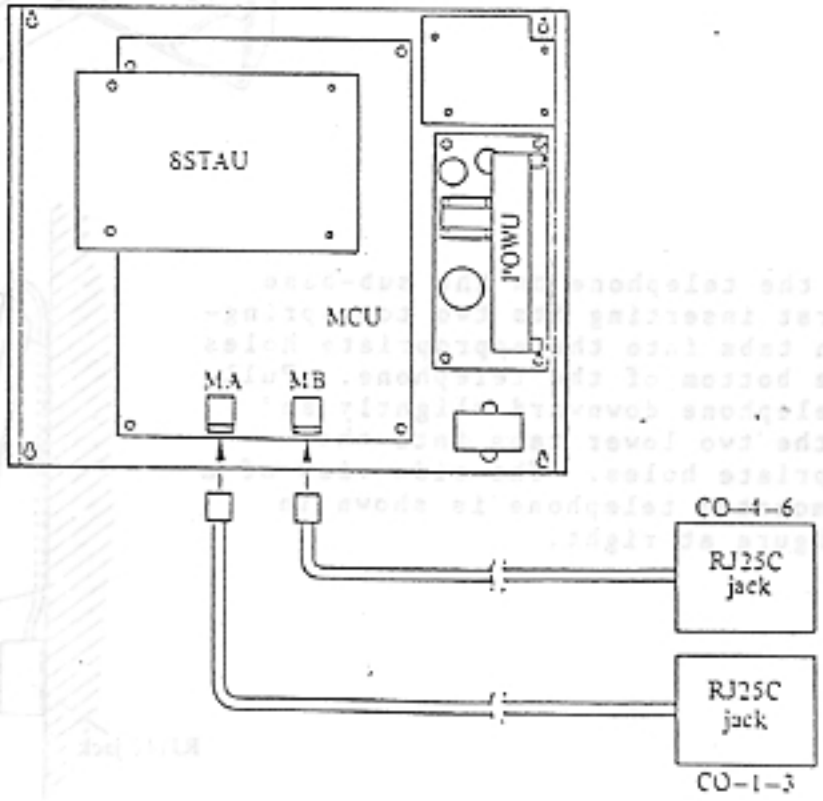
Accessories: 3-pair modular cord, field provided
recommended length - 25 feet or less.

INSTALLATION STEPS

1) Connect one end of a 3-pair modular cord to the telco RJ25C jack for C.O. lines 1 through 3.

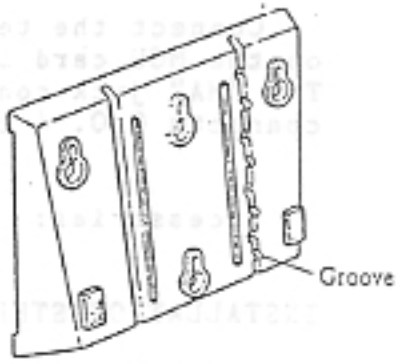
2) Connect the other end of the modular cord to the "MA" jack on the MCU card in the KSU.

3) Repeat steps 1 & 2 for the connection of C.O. 4 through C.O. 6. Modular jack "MB" on the MCU card is used for C.O. 4 through C.O. 6.

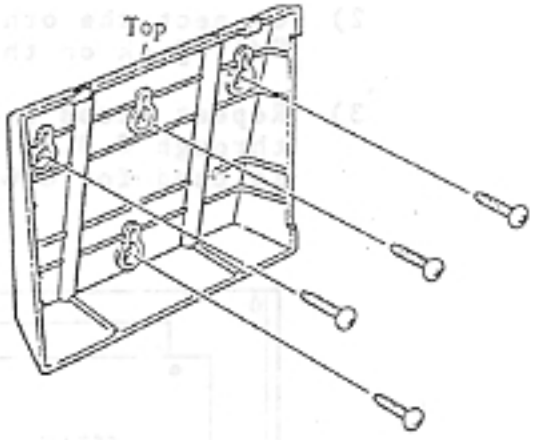


WALL MOUNTING BRACKET

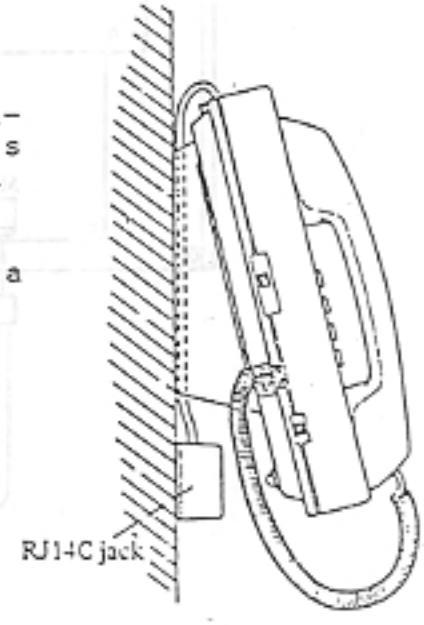
1) Route the modular line cord through the groove on the surface of the sub-base before mounting it on the wall. See figure at right.



2) Mount the sub-base on the wall.



3) Mount the telephone on the sub-base by first inserting its two top spring-action tabs into the appropriate holes on the bottom of the telephone. Pull the telephone downward slightly and snap the two lower tabs into the appropriate holes. The side view of a wall mounted telephone is shown in the figure at right.



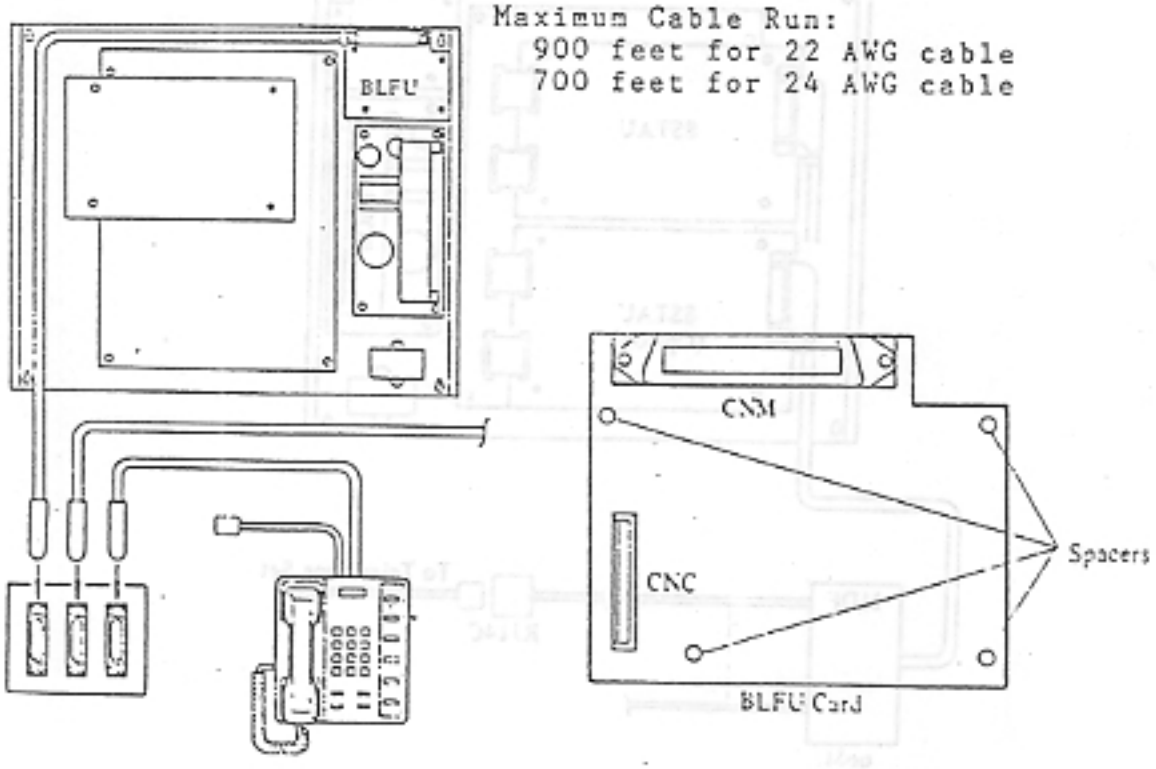
INSTALLATION OF THE BLFU CARD (optional)

The basic PRO-616 is factory shipped with the MCU card and one 8STAU card in place. This provides six C.O. lines and eight station-interface circuits.- One optional BLF card must be added to the system when a BLF phone is desired. The BLF card will accommodate two BLF phones maximum. A 25-pair cable must be pulled to each BLF phone in addition to a 2-pair cable. Only 10 pairs of the 25-pair cable are used to operate the BLF's LEDs.

INSTALLATION STEPS

1) The KSU must be unplugged from AC power.
2) If not already provided, install four PCB-4L spacers in the upper right hand corner of the KSU as shown in the figure below.
3) Secure the BLF card to the four PCB-4L spacers.
4) Using the 19x70BD flat cable furnished with the BLF card, connect "CNC" on the BLF card to the "CNC" on the MCU card.
5) Connect the amphenol connector on the BLF card to an amphenol-to-amphenol adapter using a 25-pair double amphenol-ended cable.
6) Connect the BLF phone and amphenol-to-amphenol adapter using a 25-pair cable as shown below.

Maximum Cable Run:
900 feet for 22 AWG cable
700 feet for 24 AWG cable



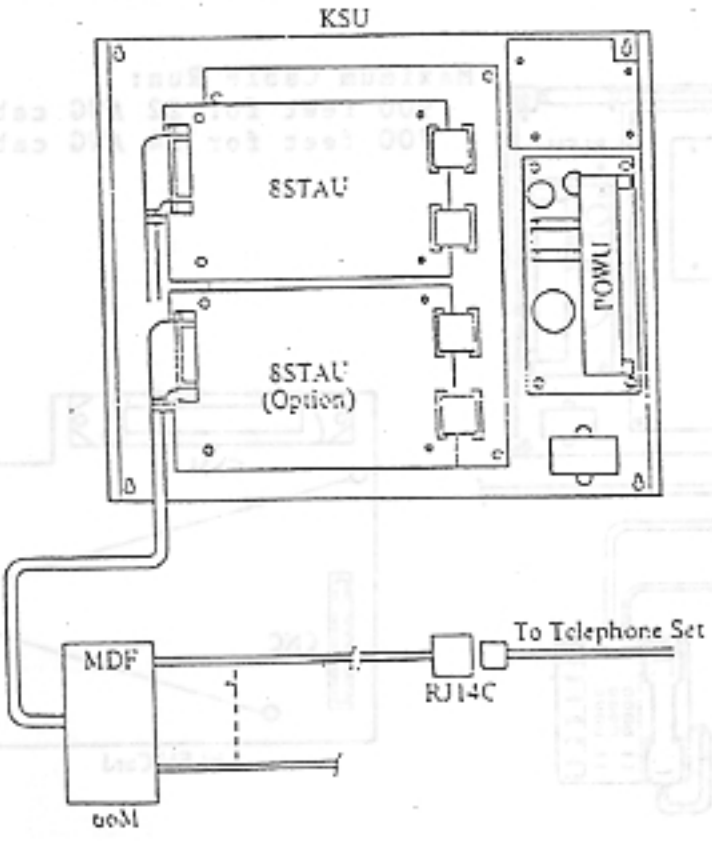
INSTALLATION OF EXPANSION 8STAU CARD (optional)

The basic PRO-616 KSU is shipped with the MCU card and one 8STAU card in place. This provides six C.O. lines and eight station-interface circuits.

To expand the system to sixteen stations, one optional 8STAU card must be added to the KSU.

INSTALLATION STEPS

1) The KSU must be unplugged from AC power.
2) If not already provided, install three LCBS-18N spacers through the MCU card. See diagram on Page 10.
3) If not already provided, install two metal stand-offs to the KSU and secure the 8STAU card to spacers and stand-offs.
4) Using 30x90BD flat cables, connect "CNK" on the MCU card to "CNK" on the 8STAU card and "CNL" on the MCU to "CNL" on the 8STAU card.
5) Connect the amphenol connector on 8STAU card to the MDF (66M block) using 25-pair cable.



INSTALLATION OF THE OPTIONAL POWER FAILURE TRANSFER UNIT (PFTU)

When a power failure occurs, the PFTU (optionally installed) switches three C.O. lines in the PRO-616 system to three single-line telephones.

ACCESSORIES:
* 3-pair Modular Cord
* D4BU Cord
* 1-pair cord, furnished with the PFTU
* +M3X25S wood screws, furnished with the PFTU

INSTALLATION STEPS

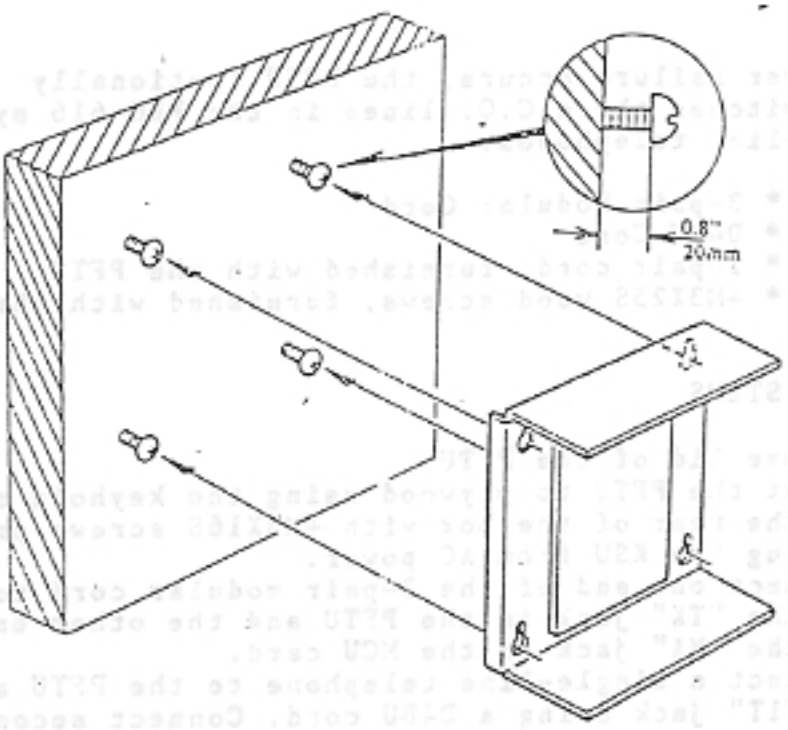
1) Remove lid of the PFTU.
2) Mount the PFTU to plywood using the keyhole slot on the rear of the box with +M3X16S screws provided.
3) Unplug the KSU from AC power.
4) Connect one end of the 3-pair modular cord to the "TK" jack in the PFTU and the other end to the "MA" jack on the MCU card.
5) Connect a single-line telephone to the PFTU at the T1T" jack using a D4BU cord. Connect second S/L set to "T2T" jack, etc.
6) Connect the C.O. lines to the PFTU at its "TC" jack using 3-pair modular cord.
7) Connect the PFTU to the MCU card at the "CNJ" connector using 1-pair cord furnished with the PFTU. Connect other end to the "CNJ" connection of the PFTU.

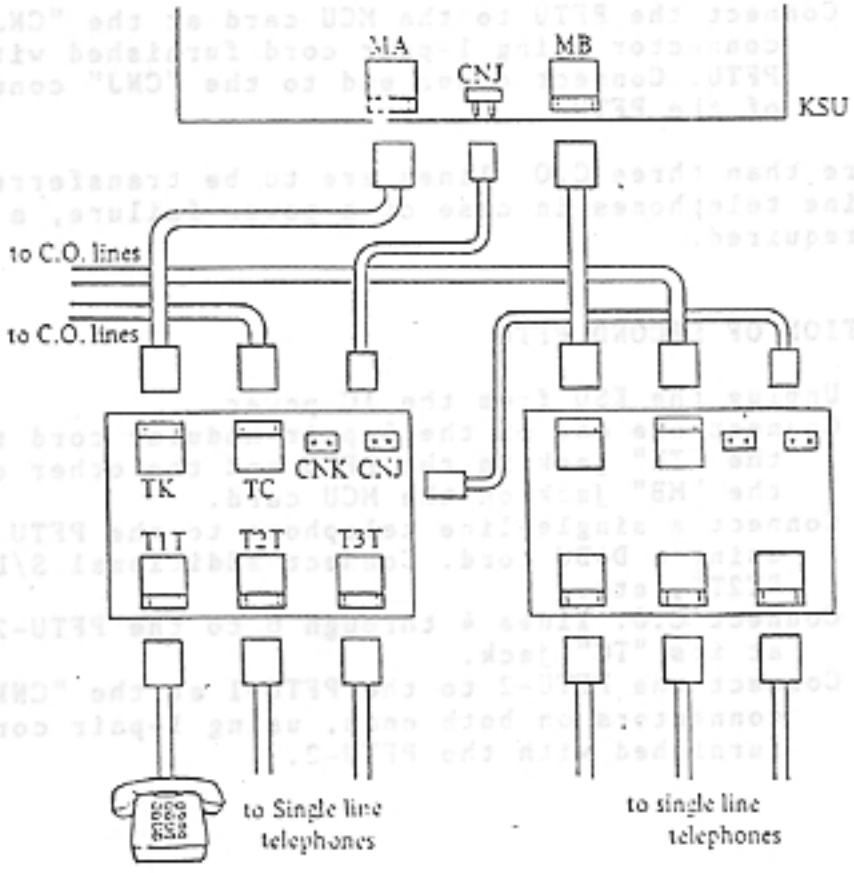
If more than three C.O. lines are to be transferred to single-line telephones in case of a power failure, a second PFTU is required.

INSTALLATION OF SECOND PFTU

1) Unplug the KSU from the AC power.
2) Connect one end of the 3-pair modular cord to the "TK" jack in the PFTU and the other end to the "MB" jack on the MCU card.
3) Connect a single-line telephone to the PFTU at "T1T" using a D4BU cord. Connect additional S/L sets to "T2T", etc.
4) Connect C.O. lines 4 through 6 to the PFTU-2 at its "TC" jack.
5) Connect the PFTU-2 to the PFTU-1 at the "CNK" connectors on both ends, using 1-pair cord furnished with the PFTU-2.

PFTU INSTALLATION DIAGRAM





CONNECTION OF CUSTOMER-PROVIDED EQUIPMENT

TO CONNECT AN EXTERNAL MUSIC SOURCE FOR MUSIC-ON-HOLD

The music-on-hold and background music features are provided by connecting a customer-provided music source to the MCU card in the KSU.

INSTALLATION

1) Unplug the KSU from the AC power.
2) Connect a 2-conductor cable to the terminals "TE1" and "TE2" on the MCU card to the customer-provided music source.
3) Secure the cable to the L-shaped bracket.
   NOTE: Input voltage = 100 mV
4) Call into system and be placed on HOLD to adjust volume. Adjust volume and tuning at music source.

NOTE: Amplified music source required.

TO CONNECT EXTERNAL PAGING SYSTEM

When external paging is used, announcements can be heard on customer-provided loudspeakers installed by dialing Intercom Code 59.

INSTALLATION STEPS

1) Unplug the KSU from the AC power.
2) Connect a 2-conductor cable to the terminals "TE3" and "TE4" on the MCU card to the customer-provided amplifier.
3) Secure the cable to the L-shaped bracket.
4) Dial Intercom Code 59 to test.

NOTE: Output impedence = 500 OHMS
Output level = 200mV

NOTE: If night ringing over external page is desired, or Zone Page with external page, follow procedure on Page 21.

TO TRANSFER NIGHT RINGING TO EXTERNAL PAGING SYSTEM AND/OR TO ADD EXTERNAL PAGE TO ZONE PAGE WITH CALL PICKUP

The PRO-616 system has the capability to transfer night ringing over the external paging system. It also has the capability to connect the external paging system to any zone page with meet me answer.

NOTE: Meet me answer will work by dialing 1 when paging system is connected to terminals NR in a station and that station is programmed in Zone 51, 52, or 53. External page is then connected to one of these zones and not 59.

PROCEDURE

1) Unplug the modular line cord from the telephone.
2) Turn the telephone over, remove the wedge, then remove the four screws from the bottom of the telephone base. See Fig. C below.
3) Lift the base (bottom) of the telephone and carefully lay it to the side of the top of the telephone with its component side up. See Fig. D below.
4) Route the cable from the customer-provided amplifier through knock-out A on the cover. Connect the cable to screw terminals NR on the EKT circuit board. See Fig. D below.

NOTE: NR terminal has an eight ohm output. Depending upon the amplifier used, a matching transformer may be required.

NOTE: The amplifier may be connected to the NR terminal of any EKT of your choice.

5) To achieve night ringing over the customer-provided external page, simply program this station for night ringing.
6) To group external page with Zone page, simply program this station in the Zone desired. To answer this page, pickup at any station and dial 1.

Fig. C

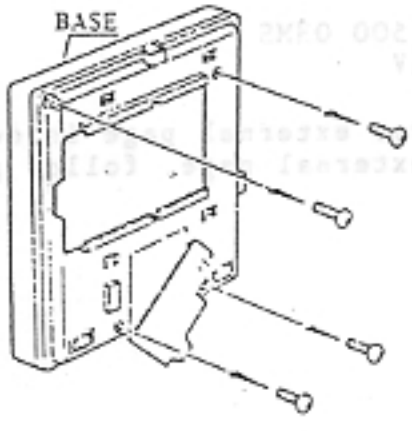
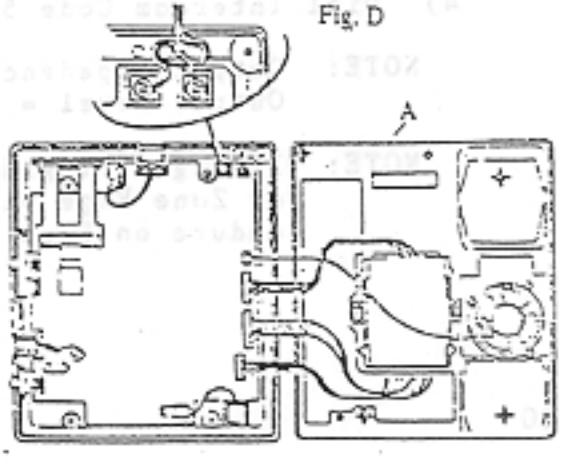


Fig. D



PROGRAMMING PARAMETERS

At the time of System Installation, the features listed below must be programmed according to the specifications of the customer.

	FEATURE	CHOICES
1)	Hold Recall Time	1, 2, or 3 minutes or no recall
2)	DS Ratio (dialing speed)	55mS electronic C.O. or 75mS crossbar C.O.
3)	Recall/Flash	Recall, C.O. line. Flash, PBX extension.
4)	Recall/Flash Time	250mS, 500mS, 1000mS, 3000mS
5)	PBX Outside Access Code	7, 8, 9, or 0
6)	C.O. Line	Behind PBX or C.O. Line or combination
7)	Outgoing Call Restriction by C.O. Line (System Wide)	System Wide - Restrict or Not Restrict
8)	Toll restriction and Outgoing Call Restriction	By Station - Class A, B, or C
9)	Night Transfer Ringing	By Station - Ring or No Ring
10)	Private Line	No private line, OR C.O.-1 private to any one station
11)	Flexible Ringing Assignment	By station or by line.
12)	Zone Page	By station - No page OR 1 to 3 Zones

MEMORY SUPPORT BATTERY

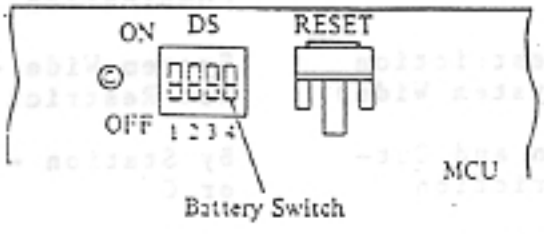
Before programming features, set the Dip Switch (Memory Battery Switch) at position 4 on the MCU card to the ON position.

When a power failure occurs, the programmed services are immediately backed up by the lithium battery provided on the MCU card.

The life of the memory backup battery is ninety <90> days if the Battery Switch is left ON and the System is without power.

Be sure that the Battery Switch is OFF during transit to save the battery life. Under normal operation when the system is ON and the Battery Switch is ON, the backup battery will last ten years as the memory is backed up by the system power.

The System cannot be operated while being programmed.



INITIAL PROGRAMMING

All programming must be entered from Station 10 and system power must be ON. Refer to PROGRAMMING OF FEATURES schedule on pages 26 and 27 when performing steps 8 and 9 below.

PROGRAMMING STEPS

1) Dip Switch-4 on the MCU card must be ON. This is the battery back up switch. Dip Switch-4 should remain ON as long as the system is installed and operating.
2) Set Dip Switch-1 on the MCU card to the ON position.
3) Set Dip Switch-2 on the MCU card to the ON position. This is the programming switch.
4) Press the RESET button on the MCU card.
5) Set Dip Switch-1 back to the OFF position. You have now cleared the memory of any trash that might have been picked up in transit.
6) Press the RESET button again. You are now in the program mode. Go to Station 10 to program.
7) At Station 10, press the SET button. The INT LED lights.
8) Dial the 3-digit ACCESS CODE to select the feature to program. The associated LEDs of Station 10 will reflect the programmed status of the feature you have accessed.
9) To change the status of any LED to ON or OFF press the button associated with the LED. When the LEDs are lighted in the proper manner this feature is now programmed. Dial a new ACCESS CODE for the next feature to be programmed.
10) To exit program mode at Station 10, press the # key. All LEDs at Station 10 go out.
11) Return to the KSU. Set Dip Switch-2 on the MCU card to the OFF position.
12) Press the RESET button on the MCU card. The system is now in normal operation under the new program control.

NOTE 1: If an error is made in Steps 8 or 9, repeat procedure from Step 8. This will reinstate the original programming status.

NOTE 2: After initial programming, subsequent changes are made by beginning at Step 3. Do not attempt to make subsequent changes by beginning at Step 1 as this will clear all programming to original factory programming.

NOTE 3: When shipping the KSU back to ASUZI, set Dip Switch-4 to the OFF position.

INITIALIZING THE SYSTEM

SET DS-4 TO ON. THIS TURNS MEMORY SUPPORT BATTERY ON.

1) Set DS-1 ON.
2) Set DS-2 ON.
3) Press RESET.
4) Set DS-1 back OFF.
5) Set DS-2 back OFF.
6) Press RESET.

This procedure clears all programs from the System. You can now proceed with a clear memory.

PROGRAMMING THE SYSTEM

1) Set DS-2 ON at MCU card.
2) Press RESET at MCU card.
3) Press SET at Station 10.
   (The INT LED of Station 10 lights).

4) Follow PROGRAMMING OF FEATURES schedule on pages 26 and 27.

5) Press # at Station 10.
6) Set DS-2 OFF.
7) Press RESET.
8) Program completed.

When programming the features listed on pages 26 and 27 for a given ACCESS CODE, all of the desired LEDs for that ACCESS CODE must still be ON when dialing the next ACCESS CODE to be programmed.

ACCESS CODE	FEATURE TO BE PROGRAMMED	TIMINGS DESIRED	CO1 LED	CO2 LED	CO3 LED	CO4 LED	CO5 LED	CO6 LED	HOLD MUTE LED	INT LED
010	HOLD/RECALL TIME	No Recall								
		1 Minute	ON							
		2 Minute	-	ON						
		3 Minute	ON	ON						
	DS RATIO	55mS			ON					
		75mS								
	RECALL/FLASH	RECALL								
		FLASH							ON	
030	RECALL/FLASH TIMING	250mS								
		500mS			ON					
		1000mS							ON	
		3000mS			ON				ON	
2 **	FLEXIBLE RING ASSIGNMENT	Ring	ON	ON	ON	ON	ON	ON		
		No Ring								
	ZONE PAGE (See Note 4)	Zone 51								ON
		Zone 52							ON	
		Zone 53							ON	ON
** = STATION DESIRED										
1 **	NIGHT TRANSFER (See Note 3)	Ring			ON					
		No Ring								
	PRIVATE LINE CO-1 (See Note 2)	YES							ON	
		NO								
	TOLL RESTRICT OUTGOING RESTRICTION	Class A								
		Class B	ON							
		Class C		ON						
** = STATION DESIRED										

	CO LINE	BEHIND PBX
Class A	No Restriction	No Restriction
Class B	All of the following are disabled: 1. Dialing 0 and number 2. Dialing 1 and number 3. Dialing more than 8 digits	All of the following are disabled: 1. Dialing PBX access code, 0 and number 2. Dialing PBX access code, 1 and number 3. Dialing PBX access code and more than 8 digits
Class C	Dialing out on all CO lines is disabled	Dialing PBX access code and any number is disabled

ACCESS CODE	FEATURE TO BE PROGRAMMED		CO1 LED	CO2 LED	CO3 LED	CO4 LED	CO5 LED	CO6 LED	HOLD MUTE LED
040	PBX PAUSE NUMBER	7	ON						
		8	.	ON					
		9			ON				
		0						.	ON
060	LINE ACCESS: PBX		ON	ON	ON	ON	ON	ON	
	CO LINE		OFF	OFF	OFF	OFF	OFF	OFF	

			LED ON	LED OFF
070	OUTSIDE CALL RESTRICTION BY CO LINE	CO-1	Restricted	NOT Restricted
		CO-2	Restricted	NOT Restricted
		CO-3	Restricted	NOT Restricted
		CO-4	Restricted	NOT Restricted
		CO-5	Restricted	NOT Restricted
		CO-6	Restricted	NOT Restricted

PROGRAM COMPLETION INSTRUCTIONS

1. Press # to exit Program Mode.
2. Set DS-2 to OFF.
3. Press RESET.
4. Program completed.

NOTES

1. ** means dial Station Number on the dial pad.
2. If C.O. line 1 at one specific station is programmed for the private line, its Flexible Ringing Assignment must be programmed to Ring mode.
3. When the system is not programmed for Night Transfer Ringing and a station is accidentally set in Night Transfer Mode by erroneous operation, no station rings. In order to avoid such a situation, at least one station must be programmed for night ringing to identify the incoming call.
4. In Zone Page, a station cannot be programmed for more than one zone.

FINAL INSPECTION

BEFORE TURNING THE SYSTEM OVER AS OPERATIONAL:

1) Check each circuit board, including optional boards, to be sure that they are installed securely.

2) Verify that all C.O. line cables are connected to telco RJ25C jacks and the modular jacks "MA" and "MB" in the KSU.

3) Verify that proper gas protection has been installed and grounded on all C.O. lines and cables to other buildings.

4) Ensure that all telephone station cables are connected to telephone sets and the KSU at the MDF.

5) Ensure that the programming of the various features required by the customer has been done properly according to the instructions provided.

6) Ensure that the KSU has been properly grounded according to the instructions provided.

7) Ensure that the power cord from the KSU is properly connected and surge protection is in place.

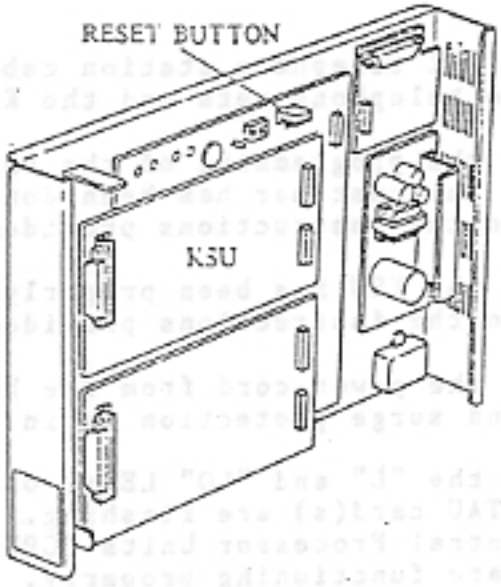
8) Ensure that the "L" and "LO" LEDs, on the MCU card and 8STAU card(s) are flashing. This indicates that the Central Processor Units (CPUs) incorporated in the MCU are functioning properly.

SYSTEM RESET

Occasionally the erroneous or random operation of the function keys of the telephones causes the PRO-616 system or several telephones to malfunction.

Such malfunctioning is corrected by resetting the system. To reset the system, simply unplug AC power for more than three seconds, and then plug it in again. Or you may press the RESET button located on the MCU card. See figure below.

CAUTION: When resetting the system, be sure that none of the stations are being used, as the reset operation disconnects all external or intercom calls in progress.



WARNING: This equipment generates, uses, and can radiate radio frequency energy, and if not installed and used in accordance with the instruction manual, may cause interference to radio communications. It has been tested and found to comply with the limits for a Class A computing device pursuant to Subpart J of Part 15 of FCC Rules, which are designed to provide reasonable protection against such interference when operated in a commercial environment. Operation of this equipment in a residential area is likely to cause interference in which case the user at his own expense will be required to take whatever measures may be required to correct the interference.