

VIKING PRODUCT MANUAL

COMMUNICATION & SECURITY SOLUTIONS

C-500
**Advanced Two Door
Entry Phone Controller
with Call Forwarding**

October 16, 2015

Advanced Two Door Entry Phone Controller with Call Forwarding and Door Strike Controls

The **C-500** allows single line telephones or a telephone system to share a phone line with two Viking entry phones. Up to four **C-500**'s can also be connected in series allowing control of up to eight entry phones and/or door strikes. Tenants may answer an entry phone call, converse with the visitor and let them in with a touch tone command which activates one of two relays to control a gate or door strike.

The **C-500** also has a built in five number dialer to call your cell phone or an outside line if there is no answer on the inside phone. If the outside call is busy or ring no answer, the **C-500** can call up to four more numbers.

The **C-500** provides the house phones with user programmable entry phone "Caller ID". Tenants may also call the entry phones for monitoring purposes or enter touch tone commands to activate, deactivate or toggle the doorsrike/gate relays.



The **C-500** allows up to 6 permanent keyless entry codes, 2 "one time use" entry codes and 1 toggle entry code for each door. The **C-500** provides optional entry phone distinctive ring, two trigger inputs for "Request to Exit" and field programmable Caller ID or beep tones when answered to indicate which door is activated.

Features

- Allows single line telephones or a telephone system to share a phone line with two Viking entry phones
- Distinctive ringing, programmable entry phone Caller ID or beep tones allow you to distinguish front and back door entry calls from CO calls
- Stackable - connect up to four **C-500**'s to control up to eight entry points
- Built in five number call forwarding dialer (if inside phone doesn't answer), detects busy or ring no answer and goes on to the next number
- Provide entry phone activated chimes and whole house paging when used with an **SLP-1** or **SLP-4**
- Analog Station Mode allows entry phones to connect to analog PABX station
- Two N.O./N.C. (SPDT) 5A door strike relays with 1 or 2 digit activation commands
- Monitor any entry phone
- Up to 6 different keyless entry codes, 2 "one time use" keyless entry codes, and 1 keyless toggle code per entrance
- Auto answer for remote programming, relay control and monitoring
- Two trigger inputs for Request to Exit (REX), immediate call forwarding or lighted doorbell switches to activate entry phone calls
- Produces "Call Waiting" tones if the entry phone is activated when the house phones are on a call
- Compatible with the following Viking entry phones:
 - **E-10A, E-20B, E-30, E-35, E-40, E-50, E-60, E-65, E-70, and E-75** Phones
 - **K-1500-7** Stainless Steel Panel Phone
 - **K-1700-3** and **K-1705-3** Phone with Keypad
 - **K-1900-8** Stainless Steel Panel Phone with Keypad
 - Or use with any analog touch tone phone

Applications

- Add one or two (expandable to 8) entry phones to your standard home or office phones to provide:
 - Door communication
 - Gate Entry
 - Door entry
 - Keyless Entry
- Provide commercial or residential security via two-way handsfree communication at the door and gate
- Connects in series with a single phone line, phone system analog station port or unused line input (loop start trunk input)
- High security building entry systems
- Door strikes and gates in conjunction with entry phones or hot-line/panel phones

www.vikingelectronics.com
Information: (715) 386-8861

Specifications

Power: 120VAC / 13.8VAC 1.25A, UL listed adapter provided

Dimensions: 133mm x 104mm x 44mm (5.25" x 4.1" x 1.75")

Shipping weight: 0.9kg (2 lbs.)

Environmental: 0°C to 32°C (32°F to 90°F) with 5% to 95% non-condensing humidity

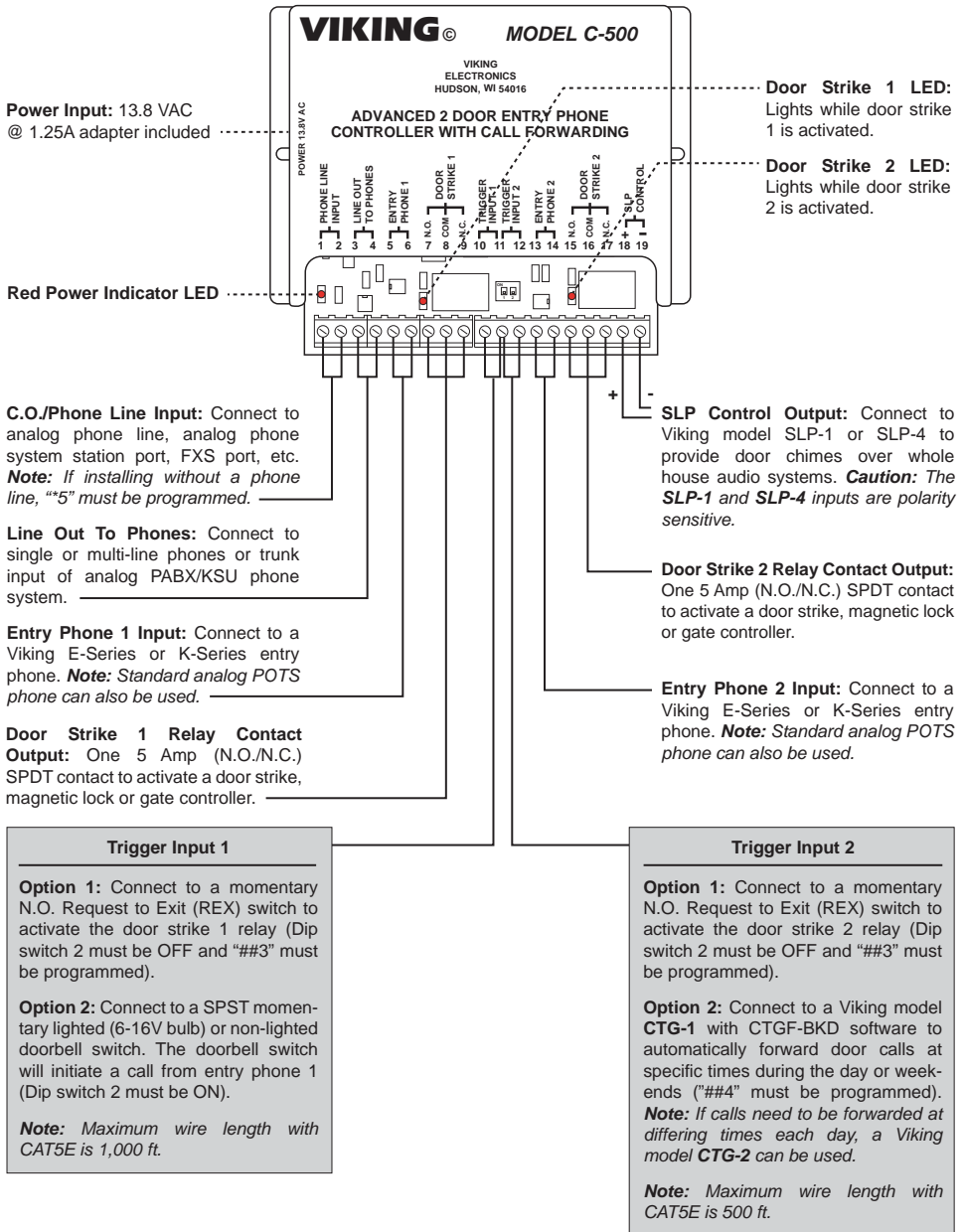
Ring Output: 5 REN, capable of ringing (10) 0.5 REN phones

Talk Battery: 44V DC

Relay Contact Rating: 5A @ 30VDC / 250VAC Maximum

Connections: (19) cage clamp screw terminals

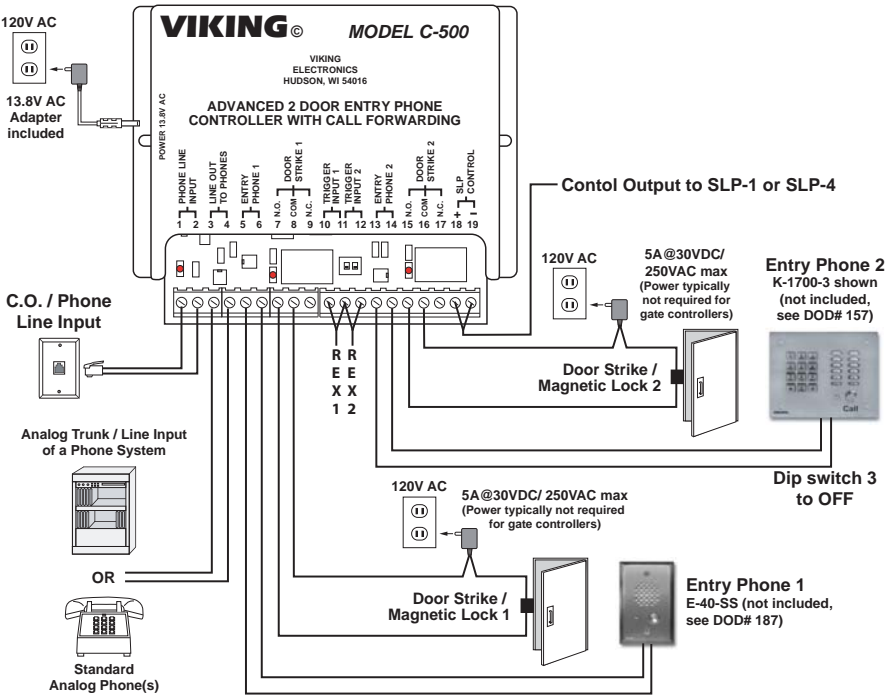
Features Overview



Note: The C-500 call forwarding feature and analog station mode are not compatible with "MagicJack" phone service, to call out to telephone numbers. Local ringing to the house phones does work properly with "MagicJack" service.

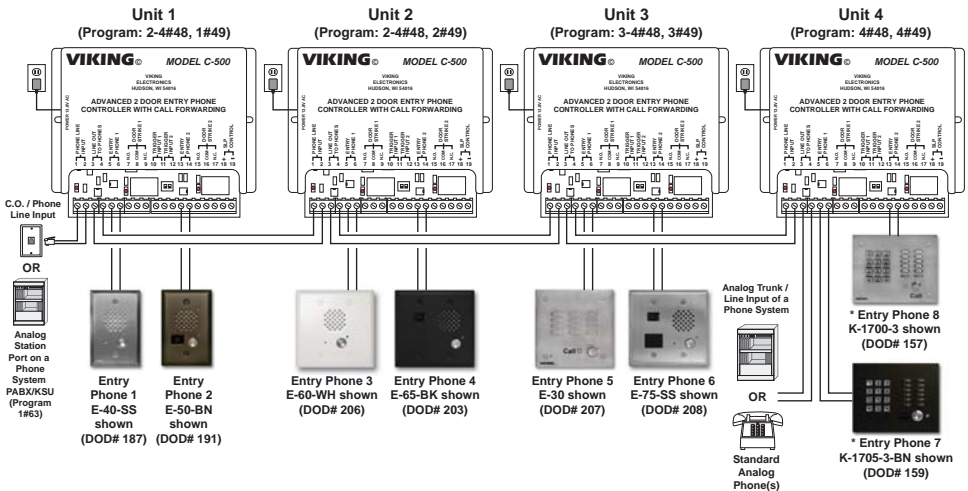
Installation and Applications

A. 1 or 2 Viking E or K Series Entry Phones Sharing a Single Line with Optional Call Forwarding, Keyless Entry and Door Strike/Gate Control



B. Connecting up to Four C-500's to Control up to Eight Viking E or K Series Entry Phones on a Single CO/Phone Line or Phone System Analog Station Port

1. Connecting to a Single CO/Phone Line (0#63 / Factory Default) -OR-
2. Connecting to a Single Phone System Analog Station Port (1#63 / Analog Station Mode Enabled)



1. Dial "9" to access an outside line should only be programmed in unit 1.
2. The following programming commands must be programmed the same in each unit: security access code, incoming ring count for auto answer, total number of units, and analog station mode.
3. When connected to a single CO/phone line (analog station mode disabled – **0#63**), incoming ring count before auto answer must be programmed to a value higher than the maximum ring count from entry phone before call forward (or the **C-500** could answer an entry phone call from another **C-500**).
4. Connect the multiple units as shown and refer to Section 5, "Programming Multiple Units" on page 7 for the initial programming procedure.

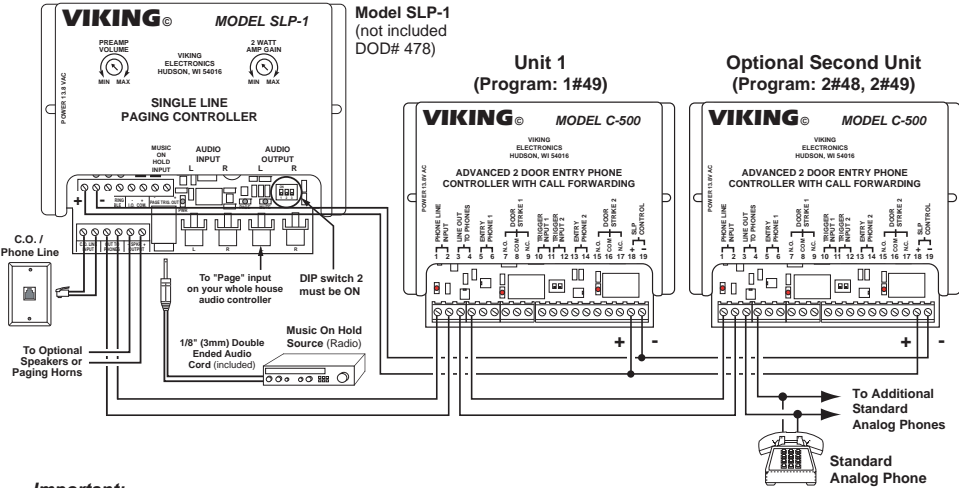
The **SLP-4** can be used with one or two Viking **C-500** entry phone controllers. The phone line first runs through the **SLP-4**, then runs through one or two **C-500**'s before continuing on to the house phones. Connect both **C-500**'s "SLP Control" output terminals 18 & 19 to the **SLP-4**'s trigger input (**CAUTION: This connection is polarity sensitive.**) When entry phone 1, 2, 3, or 4 call in, the **SLP-4** will play its dip switch selected door chime. To provide up to 4 different door chimes, the **SLP-4**'s "Doorbell Mode" dip switch must be turned ON. The **C-500**'s entry phone ringing can be disabled by entering **0#62** in programming. **IMPORTANT: See the SLP-4 Product Manual for complete programming instructions (DOD# 479).**



1. It is not possible to remotely program the **C-500's** or remotely access the **C-500's** to enter operational commands in this **SLP-4** application. The **SLP-4** interferes with these capabilities.
2. To locally program the **C-500's**, the house phones must go off-hook and then hang up for a half second or press the "flash" button on their phone. The **C-500** will provide a single beep and they can then dial ***#** plus the six digit security code to locally program the **C-500(s)**.
3. It is not recommended to use more than two **C-500's** with the **SLP-4**.

D. Provide Paging with Four Unique Door Chimes and Control Up to 4 Entry Phones and Door Strikes from a Single Phone Line with the Viking SLP-1 and Two C-500's

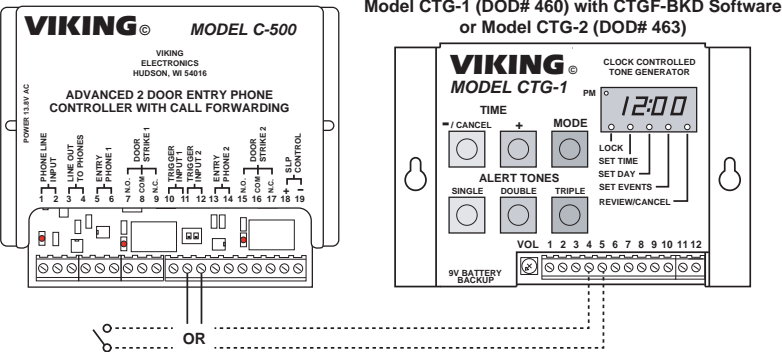
The **SLP-1** can be used with one or two Viking **C-500** entry phone controller. The phone line first runs through the **SLP-1**, then runs through one or two **C-500**'s before continuing on to the house phones. Connect both's **C-500**'s "SLP Control" output terminals 18 & 19 to the **SLP-1**'s "Doorbell Sw Input" input (**CAUTION: This connection is polarity sensitive.**) When entry phones call in, the **SLP-1** will play a "ding-dong" door chime for an entry phone 1 call and a "ding ding" door chime for an entry phone 2 call, a "ding-ding-ding" door chime for an entry phone 3 call and a "ding-ding-ding-ding" door chime for an entry phone 4 call. To provide the four different door chimes, the **SLP-1**'s "Doorbell Mode" dip switch #2 must be **ON**. The **C-500**'s entry phone ringing can be disabled by entering **0#62** in programming.



Important:

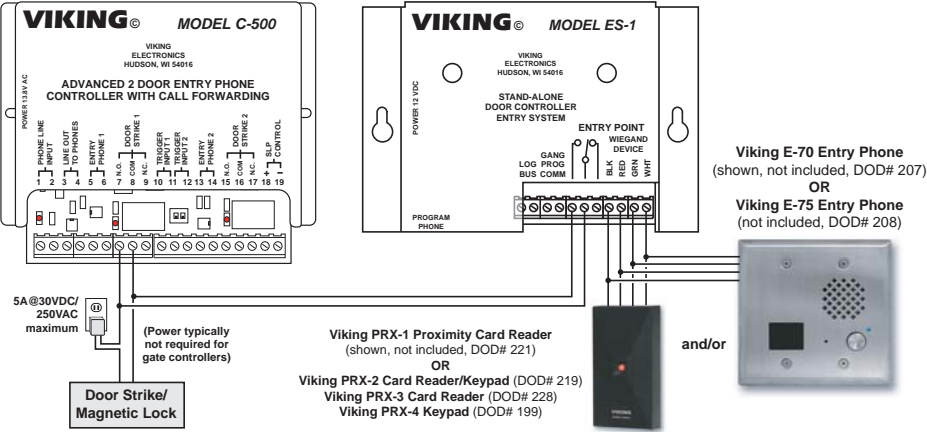
1. Remote programming of the **C-500**'s is possible in this application. However, remotely accessing the **C-500**'s to enter operational commands is not possible. The **SLP-1** interferes with this capability.
2. To locally program the **C-500**'s, the house phones must go off hook and then hang up for a half second or press the "flash" button on their phone. The **C-500** will provide a single beep and they can then dial ***#** plus the six digit security code to locally program the **C-500**'s.
3. It is not recommended to use more than two **C-500**'s with the **SLP-1**.

E. Using the C-500 with the CTG-1, CTG-2 or a Toggle Switch for Immediate Call Forwarding at Certain Hours of the Day (#4 must be programmed)



F. Using the C-500 with an ES-1 to Control a Proximity Card Reader or a Keyless Entry Keypad

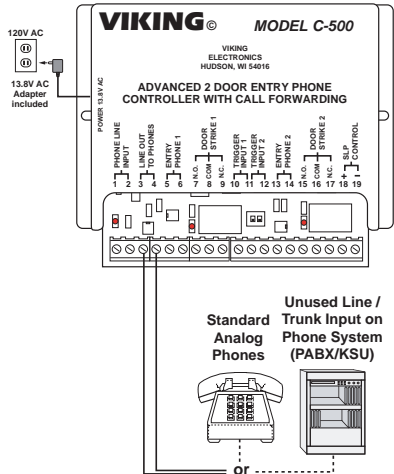
Step 1	Program the ES-1 "Relay Activation Time" to match the "Door strike Activation Time" on the C-500 .
Step 2	Connect the ES-1 relay output in parallel with the door strike output contacts on the C-500 .



G. Using the C-500 Without a C.O. Line

The **C-500** can also be used without a C.O. line. This is ideal for connecting the **C-500** to an unused trunk/line input of your phone system or connecting to phones used only for doorbox communication.

Step 1	Connect the power, required entry phones and door strike outputs (if required) as shown in section A .
Step 2	Connect an analog phone or unused phone system (PABX/KSU) line /trunk port to terminals 3 & 4 , "LINE OUT TO PHONES" on the C-500 .
Step 3	Access programming as shown in section 2 on page 7. Enter *5 , two beeps should be heard.
Step 4	Enter additional desired programming, then hang-up the phone and place DIP switch 1 back to the OFF position.



Accessing Programming

1. Accessing the Programming Mode Locally with a Security Code

Step 1	Come off-hook with any house phone (device) connected to terminals 3 & 4 , LINE OUT TO PHONES .
Step 2	Hookswitch flash the house phone, a single beep will be heard, then enter *# followed by the 6-digit security code (factory set to 845464 , V-I-K-I-N-G, see Quick Programming Features page 8).
Step 3	A double beep will indicate that you have accessed the programming mode.
Step 4	You can now touch tone program the features listed in Quick Programming Features page 8.
Step 5	When finished programming, hang up.

2. Accessing the Programming Mode Locally Without a Security Code (Security Code Bypass Mode)

Note: This mode is useful if you have forgotten your security code or for programming the **C-500** without a telephone line connected.

Step 1	Move DIP switch 1 to ON (Security Code Bypass Mode, see DIP Switch Programming page 14).
Step 2	Come off-hook with any house phone connected to terminals 3 & 4, LINE OUT TO PHONES .
Step 3	A double beep will indicate that you have accessed the programming mode.
Step 4	You can now touch tone program the features listed in Quick Programming Features page 8.
Step 5	When finished programming, hang up and move DIP switch 1 to the OFF position.

3. Accessing the Programming Mode Remotely with a Security Code

Step 1	Call into the C-500 from a touch tone phone.
Step 2	After the incoming ring count is met (factory set to 10), the C-500 will answer the line and output a single beep.
Step 3	Enter *# followed by the six digit security code (factory set to 845464 , see Quick Programming Features page 8).
Step 4	A double beep will indicate that you have accessed the programming mode.
Step 5	You can now touch tone program the features listed in Quick Programming Features page 8.
Step 6	When finished programming, hang up.

Note: Programming from a cell-phone may not be suitable in areas with weak coverage.

4. Accessing the Programming Mode Remotely Without a Security Code (Security Code Bypass Mode)

Note: This mode is useful if you have forgotten your security code for programming the **C-500**. In multi-unit applications, each unit must be set to Security Code Bypass Mode (DIP switch 1 ON) one at a time and a new call must be made for each **C-500**.

Step 1	Move DIP switch 1 to ON (Security Code Bypass Mode, see DIP Switch Programming page 14).
Step 2	Call into the C-500 from a touch tone phone.
Step 3	After one ring, the C-500 will answer the line and beep two times indicating the C-500 is in the programming mode.
Step 4	You can now touch tone program the features listed in Quick Programming Features page 8.
Step 5	When finished programming, hang up and move DIP switch 1 to the OFF position.

5. Programming Multiple Units

Initial Programming: The Learn Mode switch is provided to allow programming an individual unit no matter what the previous programming selections have been. When there are multiple units connected together, it is important that only one unit at a time has it's Learn Mode switch on. This is because the unit with the Learn Mode switch on is the one that will answer incoming calls, or automatically switch to the internal line with outgoing calls. If you are remotely programming units, start with the unit closest to the phone line. If you are locally programming, start with the unit closest to the house phone. As each unit is programmed, hang-up, turn off that unit's Learn Mode switch and proceed with the next unit until all are programmed.

Note: Limit the use of the learn mode to initial programming if possible. Once the **C-500's** are in operation, immediate call forwarding on some **C-500's** can accidentally be turned off when local programming is accessed, a **C-500** has the learn mode switch on and **"###"** is the first command dialed by the house phone. If the learn mode must be used, wait 5 seconds or more after picking up the house phone before dialing the **"###"** command to default the selected **C-500**. This 5 second delay will prevent other **C-500's** from turning off immediate call forwarding.

Previously Programmed: If the total number of units (**#48**) and the Unit number (**#49**) are already programmed for each unit, then any other programming features can be easily changed. Either call into the units or come off hook with the House phone and enter **"*#"** followed by the security code. After the beep, enter the unit number you would like to program (**1-4**). You will then hear two beeps indicating you have accessed the programming mode of the selected unit. After programming that unit, enter **#7** to get back to the unit selection level. A single beep will be heard and you can now select another unit (**1-4**) to program or enter **#** to quit.

Quick Programming Features (after accessing the Programming Mode)

Description	Enter Digits	+ Location
Entry phone 1 first call forward number	1-20 digits (0-9)	+ #00
Entry phone 1 second call forward number	1-20 digits (0-9)	+ #01
Entry phone 1 third call forward number	1-20 digits (0-9)	+ #02
Entry phone 1 fourth call forward number	1-20 digits (0-9)	+ #03
Entry phone 1 fifth call forward number	1-20 digits (0-9)	+ #04
Entry phone 2 first call forward number	1-20 digits (0-9)	+ #05
Entry phone 2 second call forward number	1-20 digits (0-9)	+ #06
Entry phone 2 third call forward number	1-20 digits (0-9)	+ #07
Entry phone 2 fourth call forward number	1-20 digits (0-9)	+ #08
Entry phone 2 fifth call forward number	1-20 digits (0-9)	+ #09
To clear any call forward speed dial number	(no digits)	+ #00-#09
Privacy number (factory disabled)	0-6 digits (0-9)	+ #10
Entry phone 1 keyless entry codes (factory disabled)	4-6 digits (0-9)	+ #11-#16
Entry phone 1 keyless toggle entry code (factory disabled)	4-6 digits (0-9)	+ #17
Entry phone 1 keyless one time use codes (factory disabled)	4-6 digits (0-9)	+ #18-#19
Entry phone 2 keyless entry codes (factory disabled)	4-6 digits (0-9)	+ #21-#26
Entry phone 2 keyless toggle entry code (factory disabled)	4-6 digits (0-9)	+ #27
Entry phone 2 keyless one time use codes (factory disabled)	4-6 digits (0-9)	+ #28-#29
Entry phone 1 caller ID, see section 5 on page 9 (factory set to "Entry Phone 1")	0-15 two digit characters	+ #30
Entry phone 2 caller ID, see section 5 on page 9 (factory set to "Entry Phone 2")	0-15 two digit characters	+ #31
Door strike relay command (blank = disabled, ** = *, **** = **, 0-9 or 00-99, factory set to **)	1 or 2 digits	+ #32
Relay activation tone (buzz) volume (0 = off, 3 = maximum, factory set to 2)	0 - 3	+ #33
Single entry dual door strike mode** (factory disabled/blank, 00 = no delay, 01-99 sec)	00 - 99	+ #34
Door strike 1 activation time (00 = .5 sec, factory set to 5 sec)	00 - 99 sec	+ #40
Door strike 2 activation time (00 = .5 sec, factory set to 5 sec)	00 - 99 sec	+ #41
Call forward maximum call time (0 = 30 sec, blank = disable, factory set to 3 mins)	1 - 9 mins	+ #42
Call forward maximum ring time (00 = disabled, factory set to 30 sec)	01 - 60 sec	+ #43
Maximum ring count from entry phone before call forward* (0=immediate call forward, factory set to 4)	0 - 9	+ #44
Incoming ring count before auto answer* (00 or blank = disables auto answer, factory set to 10)	01 - 99	+ #45
Access code (blank = disabled, factory set to 123456)	6 digits	+ #46
Security code (factory set to 845464)	6 digits	+ #47
Total number of units (factory set to 1)	1 - 4	+ #48
Unit number (factory set to 1)	1 - 4	+ #49
Enable/disable Immediate Call Forward command (0 = disable, 1 = enable, factory set 1)	0 or 1	+ #61
Enable/disable Entry phone ringing (0 = disable, 1 = enable, factory set to 1)	0 or 1	+ #62
Analog Station Mode (0 = disable, 1 = enable, factory set to 0)	0 or 1	+ #63
Flash required before outgoing off-hook operation commands (0 = disable, 1 = enable, factory set to 0)	0 or 1	+ #64
Entry phone chime control mode** (0 = disable, 1 = enable, factory set to 0)	0 or 1	+ #65

*** Caution:** In multi-unit applications, the incoming ring count for auto answer (01-99 #45) must be programmed to the same number in each unit and must be programmed higher than the maximum ring count from the entry phone before call forward (0-9 #44).

**** Note:** "Single Entry Dual Door Strike Mode" is not compatible with "Entry Phone Chime Control Mode". A three beep error will be heard in programming if you attempt to enable both modes.

Description	Enter Digits
Enable door strike latching and toggle commands (factory setting)	*1
Disable door strike latching and toggle commands	*2
Entry phone calls give custom ring cadence (factory setting)	*3
Entry phone calls give standard ring cadence (2 sec on, 4 sec off)	*4
Dial "9" to access an outside line (gives a single beep on off-hook to remind user)	*5
Instant outside line access (factory setting)	*6
To add a 4 - 6 sec pause anywhere in the dialing string	*7
To add a 1 sec pause anywhere in the dialing string	*8
Enable Entry phone identifier beeps (factory setting)	*9
Disable Entry phone identifier beeps	*0
To add a "*" to dialing string, privacy number, keyless code or strike command	**
To add a "#" to dialing string	#
Ignore touch tones for programming Entry phone 1	#1
Ignore touch tones for programming Entry phone 2	#2
Trigger inputs activate door strike relays (factory setting)	#3
Trigger input 2 enables immediate call forwarding when triggered ***	#4
# conflict mode ON (Note: Should only be programmed on the first unit in multi unit applications)	#5
# conflict mode OFF (factory setting)	#6
Exit programming	#7
Reset all programming to factory default settings****	##

*** **Caution:** With **#4** programmed, ****** and **##** operation commands will be disabled.

**** **Note:** Excluding #45, #48, and #49 with 2-4 #48 programmed.

Programming Features

1. Call Forwarding Speed Dial Numbers (#00 – 09)

The **C-500** can be programmed to dial up to 5 different telephone numbers from each entry phone. Entry phone 1's first call forwarding speed dial number is stored in location **#00** and is the first outside number that will be dialed if entry phone 1 goes off hook and the house phone does not answer within the ring count set by programming location **#44**. Additional speed dial numbers will be dialed if there is no answer or a busy at the first number. Each number is called only once. If all numbers are called without an answer, the **C-500** will generate a CPC signal and then a busy signal will be sent to the door phone. To clear a speed dial number position, simply enter a **#** and the location number (**00 to 09**), without any preceding numbers. If no numbers are programmed, the **C-500** will only call the house phone. To program a 4 to 6 second pause in the dialing string enter ***7**". To program a 1 second pause enter ***8**". To program a * or # in the dialing string enter ******" or **#**".

Note 1: Up to 20 digits can be stored in each dial position. Special features such as one and four to six second pauses, and touch tone * and # count as a single digit.

Note 2: When installing a **C-500** on a phone system station port with automatic call routing, a one second pause (***8**) must be programmed in memory locations **#00** and **#05**.

2. Privacy Number (#10)

The "Privacy Number" is factory disabled so an entry phone off-hook will automatically ring the house phones. If a "Privacy Number" is programmed, the visitor must touch tone dial the number to be able to call into the house. The "Privacy Number" may be from 1 to 6 digits and is stored in location **#10**". To disable the "Privacy Number," clear the number's memory location by entering **#10**" without any previous digits.

Note: When a "privacy" number has been programmed, a visitor should know and dial the correct privacy number in order to ring the house (or remote) phones. If an entry phone is activated and has dialed no touch tones or has only partially entered the privacy number and the house phones pick up, the entry and house phone are connected together.

3. Keyless Entry Codes and One Time Use Keyless Entry Codes (#11-16, #18-19, #21-26, #28-29)

Each entry phone may have a combination of up to 6 keyless entry codes and 2 one time use keyless entry codes for touch tone keyless entry. The keyless entry codes may be from 4 to 6 digits in length and are stored in locations **#11 - #16** for entry phone 1 and **#21- #26** for entry phone 2. To clear any keyless entry codes, simply enter the location number (ie: **"#11"**) without any previous digits.

4. Keyless Toggle Entry Code (#17, #27)

Each entry phone may have 1 keyless toggle entry code for toggling the door strike relay on or off. The toggle codes may be from 4 to 6 digits in length and are stored in location **#17** for entry phone 1 and **#27** for entry phone 2. To clear any toggle codes, simply enter the location number (ie: **"#17"**) without any previous digits.

5. Entry Phone Caller ID (#30, #31)

The **C-500** is factory set to send **"Entry Phone 1"** or **"Entry Phone 2"** Caller ID data to the house phones when the corresponding entry phone is activated. The entry phone caller ID is programmable by entering a string of up to 15 two digit numbers into programming location **#30** for entry phone 1 and **#31** for entry phone 2. Use the chart below to enter the two digit number that represents the character to be programmed. To disable Caller ID simply enter the programming location number **#30** and **#31** without any previous digits.

Note: In multi-unit applications, the entry phone number portion of the caller ID messages automatically change when the **C-500** is programmed to be unit 2, 3 or 4. For example, when a **C-500** is programmed to be unit 2 (**2#49**), the entry phone caller ID messages automatically change to "Entry Phone 3" and "Entry Phone 4".

Entry Phone 1 CID Characters:

Two Digit Numbers: _____ **#30**

Entry Phone 2 CID Characters:

Two Digit Numbers: _____ **#31**

Caller ID Programming Chart

2 Digit Number	Character	2 Digit Number	Character	2 Digit Number	Character	2 Digit Number	Character	2 Digit Number	Character
00	(space)	19	3	38	F	57	Y	76	l
01	!	20	4	39	G	58	Z	77	m
02	"	21	5	40	H	59	[	78	n
03	#	22	6	41	I	60	\	79	o
04	\$	23	7	42	J	61	]	80	p
05	%	24	8	43	K	62	^	81	q
06	&	25	9	44	L	63	`	82	r
07	'	26	:	45	M	64	~	83	s
08	(	27	;	46	N	65	a	84	t
09	)	28	<	47	O	66	b	85	u
10	*	29	=	48	P	67	c	86	v
11	+	30	>	49	Q	68	d	87	w
12	,	31	?	50	R	69	e	88	x
13	-	32	@	51	S	70	f	89	y
14	.	33	A	52	T	71	g	90	z
15	/	34	B	53	U	72	h	91	{
16	0	35	C	54	V	73	i	92	|
17	1	36	D	55	W	74	j	93	}
18	2	37	E	56	X	75	k	94	~

Caution: Some Caller ID displays may not be compatible with certain characters.

6. Door Strike Command (#32)

The one or two digit code stored in the Door Strike Command is the touch tone command that the person being called must enter on their touch tone phone in order to actuate the door strike. The command can contain the numbers **1 to 9, 0, *, #** or any one or two digit combination. To disable this feature enter **#32** without any preceding digits. The door strike command must be entered while the house phone or the remote phone is connected to the door phone.

The **C-500** determines which direction the touch tone is coming from and only responds to touch tones from the called phone. The factory setting is ******

Note: Avoid programming the Door Strike Command to ***1**, ***0**, ***2** or **#**, as these are fixed commands. When the Door Strike Command and a fixed command match, the fixed command will no longer work while talking to an entry phone, unless **#1** or **#2** (entry phone 1 or 2) is dialed before the fixed command.

7. Relay Activation Tone (Buzz) Volume (#33)

The relay activation tone is a buzzing sound that is heard on the entry phone when the door strike relay is activated. The tone length will match the door strike activation time up to a maximum of 5 seconds. The tone can be programmed to three different volume settings **1 = Low, 2= Medium, 3 = High** in memory location **#33**. The tone can also be disabled by entering **0#33**.

8. Single Entry Dual Door Strike Mode (#34)

When only a single entry phone is used, the **C-500** can be programmed to activate both of its door strike relays simultaneously or with a programmable delay before the second door strike relay is activated. This is useful in a vestibule or larger entryways with both outside and inside locked doors. A delay can be programmed allowing the visitor enough time to get to the second door before activating the second door strike. Connect the entry phone to the Entry Phone 1 terminals (5 and 6). When the entry phone is activated and the person that answers dials the door strike command, door strike relay 1 will activate first then after the programmed delay, the door strike 2 relay will activate. If a request to exit switch is needed, it should be connected to the trigger 2 input (see note 4 below). When the request to exit switch is activated, the door strike 2 relay will activate first, then after the programmed delay, the door strike 1 relay will activate. If an access control system or a manual switch needs to activate the door strike 1 relay first, delay and then activate the door strike 2 relay, wire the access control system or switch to the trigger 1 input. This delay can be programmed from 1 to 99 seconds by entering 01 -99 into **#34**. Both door strike relays can be simultaneously activated without any delay by programming **00#34**. This feature can be disabled by entering **#34** without any preceding digits.

Notes:

1. The "Single Entry Dual Door Strike Mode" is not compatible with the "Entry Phone Chime Control Mode". A 3 beep error will be heard in programming if you attempt to enable both modes.
2. If a delay is programmed, the delay time starts when the first door strike relay is activated and finishes when the second door strike relay is activated. The door strike activation time has no effect on this delay time.
3. If a latch, unlatch or toggle relay command is dialed, both door strike relays immediately latch, unlatch or toggle without any delay.
4. To use trigger 2 input as a request to exit input, dip switch 2 must be **OFF** and **##3** (trigger inputs activate door strike relays) must be programmed.

9. Door Strike Activation Time (#40, #41)

The value stored in the Door Strike Activation Time is the amount of time the door strike relay will be energized after a correct touch tone command is entered or the trigger input is activated. This two digit number can range from **01 to 99** seconds, or enter **00** for 0.5 seconds. The factory setting is **5** seconds.

10. Call Forward Maximum Call Time (#42)

The Call Forward Max Call Time can be used to cut off a call that has rolled over to an outside number. The timer starts as soon as the call is answered. If the call lasts longer than the time programmed, the phone line will be dropped and a busy signal will be sent to the entry phone. This is useful if a standard telephone is being used for an entry phone and the handset is accidentally left off hook. The Call Forward Maximum Call time does not apply to the Analog Station Mode (there is no time limit for entry phone calls in that mode). This one digit number can range from **1 to 9** minutes or enter **0** for 30 seconds. To disable this feature enter **#42** without any preceding digits. The factory setting is **3** minutes.

11. Call Forward Maximum Ring Time (#43)

After the **C-500** dials an outside number, it listens to the phone line for busy, ringing, or someone answering at the other end. The Call Forward Max Ring Time is used to limit this process in the event that the **C-500** cannot determine if the call has been answered. If the **C-500** cannot determine that the call has been answered within the "Call Forward Max Ring Time", the line will be disconnected and the **C-500** will go onto the next speed dial number. This two digit number can range from **01** to **60** seconds and can be disabled by entering **00#43**. As a general rule, allow 6 seconds for each ring you desire at the distant phone. The factory setting is **30** seconds or about 5 rings.

12. Maximum Ring Count from Entry Phone before Call Forward (#44)

When the entry phone comes off hook, the **C-500** will start ringing the house phone. The number of times the house phone will ring is stored in location **#44**. This value can range from **1** to **9**. If **0** is entered, the **C-500** will skip ringing the house phone and immediately start calling the programmed phone numbers. This feature is useful when the user is not at home and they want the fastest connect time to their cell phone. There is also an operational command of "***" (see **Operation** section **B**) and a trigger input (see **Operation** section **B**) that can be used for immediate call forwarding. Factory set to **4**.

13. Incoming Ring Count (#45)

The 2 digit number in this location determines how many times a call coming in from the phone line will ring the house phones before the **C-500** answers the call. This number can range from **01** to **99**, if blank or **00**, the Auto Answer feature of the **C-500** will be disabled. The factory setting is **10**. **Note:** *In multi-unit applications, each C-500 must be programmed to the same incoming ring count.*

14. Access Code (#46)

The Access Code is used for operating the relays or monitoring an entry phone by calling into the **C-500**. This code provides basic security and only allows operation of the relays or entry phone monitoring and not the ability to change any of the programming parameters. Once entered, any of the Remote Access Operation Commands can be used. The code is not necessary in the **Analog Station** mode. The code must be 6 digits long and cannot contain a "*" or "#". Simply call the **C-500**, the unit will automatically answer the line after the programmed maximum ring count and output a single beep. You then enter the programmed 6 digit access code, 2 beeps should be heard. You can now enter any "Remote Access Operation Commands" (see page 18). If no security is needed, the Access Code can be disabled by entering **#46** without any preceding digits. When the **C-500** answers (single beep), users can then dial Remote Access Operation Commands without dialing an Access Code first.

15. Security Code (#47)

The security code must be 6 digits long and cannot contain a "*" or "#". The factory default code is "**845464**" and can be changed in programming by entering 6 digits followed by "**#47**".

16. Total Number of Units (#48)

When using multiple **C-500**'s on a single phone line (up to 4 units total with up to 8 entry phones), the "Total Number of Units" (**1-4 #48**) must be programmed separately in each unit. The "Unit Number" should then be programmed separately in each unit (see **Programming** section 17).

Caution: *In multi-unit applications, the incoming ring count for auto answer (01-99 #45) must be programmed to the same number in each unit and must be programmed higher than the maximum ring count from the entry phone before call forward (0-9 #44).*

17. Unit Number (#49)

When using multiple **C-500**'s on a single phone line (up to 4 units total with up to 8 entry phones), after the "Total Number of Units" (**1-4 #48**) has been programmed, the "Unit Number" (**1-4 #49**) must then be programmed separately in each unit. The unit connected to the incoming phone line must be programmed as unit 1. The remaining units must be programmed in numerical order (see **Installation** section **B**).

Caution: *In multi-unit applications, the incoming ring count for auto answer (01-99 #45) must be programmed to the same number in each unit and must be programmed higher than the maximum ring count from the entry phone before call forward (0-9 #44).*

18. Enable/disable Immediate Call Forward command (#61)

If touch tones "***" conflict with your phone system, the immediate call forward operation command (***) can be disabled by entering **0#61** in programming.

19. Enable/disable Entry Phone Ringing (#62)

The **C-500**'s entry phone ringing can be disabled. Disabling the ring can be useful when using a **C-500** with a **Viking SLP-1** or **SLP-4** which can supply chimes over a whole house audio system when an entry phone is activated. Disabling the ring can also be useful when using the **C-500** in the "Entry phone chime control mode" to activate your door chime when an entry phone is activated. See **Programming** section 22.

20. Analog Station Mode (#63)

In this mode, when an entry phone is activated the **C-500** accesses the analog PBX extension or telephone line it is connected to and speed dials the first call forwarding number (see Note 1 below) programmed for that entry phone. When the remote party answers the call, they can dial a touch tone command to activate the door strike relay. If one of the **Viking K-series** or **E-series** entry phones is using the line and a second entry phone goes off hook, the second entry phone will not function until the first entry phone hangs up (see Note 2 below). In this mode, custom ring cadence from the Entry Phone is not compatible, no caller ID data is generated by the controller and entry phone calls are not timed (the "Call Forward Maximum Call Time" will not function in the Analog Station Mode). If the **C-500** is programmed to answer inbound calls (see note 3), monitoring an entry phone or forcing a door strike relay to operate is accomplished by calling the analog PBX extension or telephone line connected to the **C-500**, the unit will immediately answer and provide a single beep. You can then dial **#1 - #8** to monitor a specific entry phone or enter a valid Remote Access Operation Command. Remote programming of the **C-500** and any of the Viking hands-free entry phones connected (see Programming section 27) is also possible in this mode, if the **C-500** is programmed to answer inbound calls. Touch tone keyless entry codes can also be programmed per entry phone to provide keyless entry.

Notes:

1. If a call forwarding number is not required because the PBX extension or telephone line is programmed for automatic call routing or "ringdown", program a one second pause (*8) into memory locations **#00** and **#05**. Without a call forward number or pause programmed, the entry phones will get a 3 beep error when activated.
2. In multi-unit applications, if the entry phone from one **C-500** is using the line and an entry phone from another **C-500** is activated, the second entry phone may experience one ring and then be hung up or silence until the line is available. This is a limitation of the multi-unit mode. See **Operation** section K. Limitations for more details (item # 9).
3. If the **C-500** is connected to a shared PBX extension or telephone line and the **C-500** answering inbound calls is not desirable, disable the **C-500** auto answer by programming the incoming ring count before auto answer to "00" ("00#45"). The entry phones can still make outgoing calls but the **C-500** will ignore inbound calls.
4. For a list of operational differences in the Analog Station Mode, see **Operation** section J. Analog Station Mode Operational Differences.

21. Flash Required before Outgoing Off-Hook Commands (#64)

If the **C-500**'s "Outgoing Off-Hook Operation Commands" conflict with your phone line or phone system, you can program the **C-500** to require a 0.5 second hookswitch flash from the phone prior to entering the commands. This can be enabled by entering "**1#64**" and disabled by entering "**0#64**" in programming. **Note:** This feature is not compatible with Analog Station Mode. In multi-unit applications, all units must be programmed with "**1#64**" for this feature to work correctly.

Notes:

1. This feature is not compatible with the Analog Station Mode.
2. In multi-unit applications, all units must be programmed with "**1#64**" for this feature to work correctly.
3. When the "dial 9 to access an outside line" mode is programmed (*5), the **C-500** will accept the Outgoing Off-Hook Commands without a hookswitch flash first, even though "**1#64**" is programmed.

22. Entry Phone Chime Control Mode (#65)

With the **C-500**'s "Entry Phone Chime Control Mode" enabled (**1#65**), door strike relay 2 will actuate whenever an entry phone is activated. Connect a door bell or chime (and power supply) to the normally open door strike 2 contacts. The door strike relay will energize for the programmed "Door Strike 2 Activation Time" See **Programming** section 9. To enable this mode enter "**1#65**" in programming. To disable this mode enter "**0#65**" in programming. **Note:** "Entry Phone Chime Control Mode" is not compatible with "Single Entry Dual Door Strike Mode". A 3 beep error will be heard in programming if you attempt to enable both modes.

23. Enable/Disable Door Strike Latching and Toggle Commands (*1, *2)

If door strike relay latching and toggle commands are not required, they can be disabled by entering (*2) in programming. Disabling these commands can be useful if you want to eliminate any chance of inadvertently latching open a door or gate.

24. Entry Phone Call Ring Cadence (*3, *4)

Entry phone calls are factory set to ring the line out to phones port in 4 different custom ring cadences. This is useful to help distinguish which entry phone is calling in. With entry phone custom ring cadence enabled (*3/factory setting) entry phone calls will ring in the following cadence; Entry phone 1: Double ring, Entry phone 2: Triple short-short-short ring, Entry phone 3: Triple short-short-long ring, Entry phone 4: Triple short-long-short ring. When using four C-500's on a single line, entry phones 5 - 8 will have the same ring cadence as entry phones 1 - 4. The C-500 can be programmed to give a standard ring cadence for entry phone calls (2 seconds of ring, and 4 seconds off between rings) by entering "*4" in programming. Entry phone ringing can also be disabled by entering "0#62". This is useful when connecting the C-500 to a SLP-1 or SLP-4 to provide unique front and back door chimes over your whole house audio system.

25. Outside Line Access, Dial "9"/ Instant (*5, *6)

1. **Dial "9" to Access the Outside Line** - To program the C-500 for C.O. dial tone, enter "*5" while programming. To gain access to C.O. dial tone, dial a touch tone "9". **Note: *5 must be programmed when connecting a C-500 to an unused phone system trunk/line input and no C.O. line is connected to the C-500.**

2. **Instant Outside Line Access (factory default)** - To program the C-500 for private dial tone, enter "*6" while programming. House phones will instantly have the outside line dial tone on an off-hook.

26. Enable/Disable Entry Phone Identifier beeps (*9, *0)

With "*9" programmed, when an entry phone call is answered 1 or 2 beeps (up to 8 beeps with multiple C-500's) will be heard to identify which entry phone is calling in. This can be disabled by entering "*0" in programming.

27. Ignore Touch Tones for Programming Entry Phones (##1, ##2)

This feature is useful if you have an entry phone that requires touch tone programming and can answer a ringing line after 1 ring. All Viking Handsfree Entry Phones have this capability. After entering the programming mode, if ##1 or ##2 is entered, the C-500 will send a ring signal to the entry phone port 1 or 2 respectively. If the device on that port answers the line, the C-500 will connect it to the party programming (local or remote). If the entry phone does not answer, 3 beeps will be heard and the C-500 will stay in the programming mode. Once the party programming is connected to an entry phone, the C-500 ignores touch tones (but each touch tone dialed resets the 20 second programming timer) except for the ##7 hang up command. When the 20 second programming timer elapses or ##7 is detected, the C-500 hangs up the entry phone and immediately exits the program mode.

Note: When using the ##1 and ##2 commands to program the entry phones, only one entry phone can be programmed at a time (either locally or remotely). When finished programming one entry, you must hang up (or dial ##7 and hang up), access the program mode of the C-500 again and dial ##1 or ##2 to program the other entry phone. This is also true in multi-unit applications. There is no way to dial ##7 and get back to C-500 programming or the unit selection level.

28. Trigger Inputs Activate Relays (REX)/ Trigger Input 2 Enables Call Forwarding (##3, ##4)

The C-500 has two Trigger Inputs that can be used for external Postal Lock switches or Request to Exit (REX) switches, when dip switch 2 is OFF (Doorbell Mode Disabled). The switches must have a momentary, normally open contact. With "Trigger Inputs Activate Relays" (##3) programmed, when the C-500 detects a contact closure on trigger input 1 or 2, the corresponding door strike relay will be energized for the amount of programmed Door Strike Activation Time.

With "Trigger Input 2 Enables Call Forwarding" (##4) programmed, Trigger input 2 now controls whether or not the house phone will ring when either entry phone goes off hook. If Trigger Input 2 is shorted, the house phone ringing will be skipped (Immediate Call Forward Mode), if Trigger Input 2 is open, the C-500 will ring the house phone when either entry phone goes off hook. The ##4 mode can be useful when using a Viking model CTG-1 (with CTGF-BKD software) or CTG-2 to automatically forward entry phone calls at certain times of the day. **Note:** With ##4 programmed, trigger input 2 cannot be used for activating door strike relay 2.

29. # Conflict Mode On/Off (##5, ##6)

If the Outgoing Off-Hook Operation Commands don't work from a house phone, the # as the first digit of an operation command may conflict with your cable company provided modem. If so, the "# Conflict" mode can be enabled. With ##5 programmed and # is the first digit dialed by a house phone, the C-500 immediately switches the house phone to an artificial line, which allows the Outgoing Off-Hook Operation Commands to work properly. The "# Conflict" mode can be disabled by entering ##6 in programming. **Note:** The "# Conflict" mode should only be programmed on Unit #1 in multi-unit applications.

Dip Switch Programming

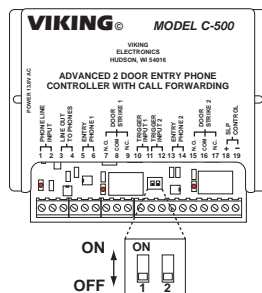
A. Learn/Security Code Bypass Mode (Dip Switch 1 – ON)

This mode is useful for entering programming without a security code or programming the **C-500** without a telephone line connected. See "Accessing the Programming Mode Locally/Remotely" (Security Code Bypass Mode) section 2 and 4 on page 7.

B. Doorbell Mode (Dip Switch 2 - ON)

With the **C-500** in the doorbell mode (DIP switch 2 ON), a normally open switch (SPST 6-16V lighted or non-lighted doorbell button, etc.) can be connected to trigger input 1 or 2. The switches should be located near entry phone 1 or 2. A momentary closure on either of the **C-500**'s trigger inputs will call the corresponding entry phone. The entry phone will automatically answer (see the Product Manual for your entry phone to enable auto answer) and begin ringing the house phones (LINE OUT TO PHONES). The house phones can then be answered, door strike commands entered, etc. (see **Operation** sections **A-K**).

Notes: Entry phones ringing the house phones can be disabled in this doorbell mode, if it is desirable to have the doorbell chime but not ring the house phones. Program the **C-500** with "0#62" (disable entry phone ringing). To control the chime, "Entry Phone Chime Control Mode" must be enabled "1#65". See **Programming** section 22. When the doorbell chimes, picking up a house phone will instantly connect the house phone to the entry phone.



Operation

A. Visitors

When a visitor presses the call button (comes off hook) on the entry phone, the **C-500** will begin ringing the house phones with a distinctive ring cadence to identify it as an entry phone call and entry phone "Caller ID" information is sent. If a house phone is on a C.O. call, a call waiting tone will be heard every 12 seconds. A touch tone "F" from the house phone will put the C.O. call on hold and connect the house to the entry phone (see note 1 below). 1 to 8 beeps will be heard, indicating which entry phone you are connected to. Enter the 1 or 2 digit door strike command (factory set to "F") to momentarily activate that entry phone door strike or enter "F" to just return to the C.O. call without activating the door strike (see note 2 below). If the door strike is activated, a buzz sound will be heard confirming the strike has been activated. If you require the door strike to remain on continuously (a truck delivery for example), enter "F1" to continuously activate that relay. A double beep will indicate the door strike is latched on. When the visitor calls in again (they have finished unloading the truck for example), enter touch tones "F0" to deactivate the relay. Alternatively, the door strike relay can be deactivated by going off hook with any house phone and entering #1F0 for door strike relay 1, #2F0 for door strike relay 2, etc (see "Outgoing Off-Hook / Remote Access Operation Commands"). A single beep will indicate the door strike relay is off.

The number entered into programming position #44 determines how many times the house phone will ring from an entry phone call before the call is forwarded. If no call forward numbers are programmed, the **C-500** will send a CPC signal to automatically hang up the entry phone. All Viking hands free phones are able to detect the CPC signal and automatically hang up. If the **C-500** senses that the entry phone has not dropped off, it will send a busy signal. If call forward numbers are programmed, it will dial the first one then watch for a busy or ring no answer for the duration of the Call Forward Maximum Ring Time (#43). If this time elapses and the **C-500** has not determined the call has been answered, it assumes that the call was not answered and goes on to the next call forward number. If all numbers are called without an answer, the **C-500** will send a CPC signal to hang up the entry phone. The Call Forward Maximum Call Time (#42) is started as soon as the **C-500** determines the call has been answered. If this timer elapses, the entry phone call is terminated.

Notes:

1. The house phones have different options available when they hear the call waiting tone. They have the ability to operate a door strike relay without ever leaving the C.O. call. For example, if they have a camera system installed, can see the visitor at the door and want to let them in right away, they can dial #1 or #2 (depending on the entry phone activated) plus the 1 or 2 digit door strike command. The appropriate door strike relay operates and they remain on their C.O. call.
2. If the house phone simply dials a 1 or 2 digit door strike command, the house phone is disconnected from the entry phone after the door strike operates. If the house phone would like to remain connected to the entry phone after the door strike command is dialed (they would like to make sure the visitor gets in the door for example), they can dial "F" plus the entry phone number (1 to 8), then "F" for timed relay activation, a latch or unlatch command or any other Operation Command.
3. The call waiting "tone" the house phones hear from the C-500 when an entry phone is ringing is actually a short duration ringback tone.
4. If an entry phone call has call forwarded out on the CO line (after ringing the house phones or immediately) and the house phones go off hook, this is what the house phones will receive:
 - a. If the forwarded call has not been answered yet – the house phone and entry phone are connected together and the call forward is stopped (the CO line is hung up).
 - b. If the forwarded call has already been answered – the house phones receive three busy signals and then silence (the entry phone remains connected to the remote party).
5. Entry phone calls will ring through to the house phones with a higher priority than outside CO calls, even when the CO line is ringing first. For example, a CO call is ringing the house phones but has not been answered yet. A visitor activates entry phone 1 and the house phones are switched to the entry phone ringing from entry 1. When the house phones answer the entry phone call, the house phones hear a call waiting tone (single beep) every 12 seconds to remind them the CO line is ringing in.

B. Immediate Call Forward

The entire sequence of the house phone ringing when the entry phone goes off hook can be skipped. This is useful if the user will not be at home and wants the **C-500** to skip ringing the house phone and immediately forward all entry calls to the programmed call forward phone numbers. There are several ways to do this. The first is to set the house phone ring count to 0 in programming position **#44**. This can only be done in the programming mode, but can be done locally or remotely. The second way is to go off hook with any house phone and enter ******* (if enabled, see programming section 18). This places the **C-500** in the Immediate Call Forward mode. With this mode enabled, each time the house phone goes off hook, a triple beep will be heard in order to let the user know that this mode is on. To cancel the Immediate Call Forward mode, pick up the house phone and enter **###**. Two beeps will be heard letting the user know the Immediate Call Forward mode has been cancelled. These immediate call forward commands must be entered within 5 seconds of off hook. If the **C-500** has trouble detecting touch tone commands from off hook or if ***** or **#** commands conflict with your phone system, you can hook flash the line which places the phone on artificial talk battery. A beep will be heard and you can now enter your operation commands. A third option is to provide a contact closure across trigger input 2 (**#44** must be programmed, see programming section 28). A Viking model **CTG-1** (with CTGF-BKD software) or **CTG-2** can be used to provide the immediate call forward contact closure automatically at certain times of the day. **Note:** *Outgoing off-hook/remote access operation commands ******* or **###** are disabled when **#44** is programmed.*

C. Monitoring Entry Phones

If the tenant wants to monitor the entry phone, they can pick up any phone in the house and dial out to an entry phone that supports auto-answering capability by dialing **#1** or **#2** (**#1 - #8** when using multiple **C-500**'s) to call entry phones 1 or 2 respectively. All Viking Handsfree Entry Phones are equipped with an Auto-Answer feature. Once the house phones are connected to an entry phone, any Entry Phone Call Operation Command or Outgoing Off-Hook / Remote Access Operation Command can be dialed to control one or both door strike relays. If the house phones are monitoring an entry phone and the CO line begins ringing, the house phone will receive a call waiting tone (single beep) every 12 seconds to indicate the ringing call.

The house phones also have the ability to monitor an entry phone while they are busy on a CO call but **ONLY** when the house phones have made an outgoing call on the CO line. If the house phones have answered an inbound CO call, monitoring entry phones during that call is not possible.

The **C-500** is factory programmed to automatically answer an incoming call after 10 rings. This will allow you to remotely program, control relays, or monitor entry phones on the **C-500**. The auto answer feature can be set to a different number of rings or disabled by reprogramming the **#45** memory location (see programming section 13). When the **C-500** is set to answer incoming calls after a certain number of rings, there cannot be anything else on the phone line that could answer the call before the **C-500** such as an answering machine.

Note: *If a Viking **K-1500-6A**, **K-1500-7** or any standard analog phone is used for the entry phone and the handset is left off hook (or the button is stuck on any entry phone), the entry phone will receive a continuous busy signal and the house phones will get 3 beeps, two seconds after off hook to indicate the 'pranked' entry phone.*

D. Activating the Door Strike Relay

Anytime the house phone is connected to the entry phone, the tenant can actuate the door strike by entering the door strike command on their touch tone keypad. The **C-500** determines if the touch tones are coming from the house phone or the entry phone and only accepts commands from the house phone. Once a valid command is detected, the door strike relay will actuate for the amount of programmed Door Strike Activation time (**#40 / #41, Programming section 9**). If an invalid command is entered, wait a few seconds and try again. The **C-500** can be programmed to handle either a 1 digit or 2 digit Door Strike Command (**#32, Programming section 6**).

E. Trigger Inputs

The **C-500** has two Trigger Inputs that can be used for external Request to Exit (REX) switches or Postal Lock switches. The switches must have a momentary, normally open contact. With "Trigger Inputs Activate Relays" (**#33**) programmed, when the **C-500** detects a contact closure on trigger input 1 or 2, the corresponding door strike relay will be energized for the amount of programmed Door Strike Activation Time.

With "Trigger Input 2 Enables Immediate Call Forwarding" (**#44**) programmed, Trigger input 2 now controls whether or not the house phone will ring when either entry phone goes off hook. If Trigger Input 2 is shorted, the house phone ringing will be skipped (Immediate Call Forward Mode), if Trigger Input 2 is open, the **C-500** will ring the house phone when either entry phone goes off hook. The **#44** mode can be useful when using a Viking model **CTG-1** (with CTGF-BKD software) or **CTG-2** to automatically forward entry phone calls at certain times of the day. **Note:** *With **#44** programmed, trigger input 2 cannot be used for activating door strike relay 2 and outgoing off-hook remote access operation commands ******* or **###** are disabled.*

F. Privacy Number

The privacy number feature is useful for preventing unwanted (prank) entry phone calls from visitors. If a privacy number has been programmed, an off hook entry phone is given a single beep followed by 4 seconds of silence to allow the visitor to enter the privacy number. If the visitor enters the correct privacy number, the **C-500** will ring the house phones. If they enter an incorrect number, they will be disconnected.

If a privacy number is not programmed, then an off-hook entry phone will immediately ring the house phones. **Note:** The "Privacy Number" may be programmed with the first 6 digits of the actual home/office phone number. Visitors may dial the actual 7- digit phone number as if they are making an actual telephone call to the home/office.

G. Keyless Entry Codes, Keyless Toggle Entry Codes, and One Time Use Keyless Entry Codes

Touch tone keyless entry codes or keyless toggle entry codes may be used by the tenants to provide keyless entry. Each entry phone may have up to 6 keyless entry codes and 1 keyless toggle entry code. If a keyless entry or toggle code has been programmed, an off-hook entry phone is given a single beep followed by 4 seconds of silence before ringing the house phone. During this time a touch tone "# + the "keyless entry code" or "keyless toggle entry code" may be entered.

A correct keyless entry code will provide a timed door strike activation for that entry phone location. A correct keyless toggle entry code will toggle the door strike from its previous position (ON or OFF) for that entry phone location. One time use keyless entry codes function like standard keyless entry codes but can only be used **ONCE**. After the one time use keyless entry code has been used, it is instantly cleared from the **C-500's** memory. This is ideal for issuing keyless entry codes to service personnel, etc. **Note:** A short buzz sound indicates when the relay has been activated and the visitor can now open the door.

H. Programming the Entry Phones

Many of the **Viking** handsfree entry phones are touch tone programmed with silence timing, vox switching speed and other timing and/or dialing options. The **C-500** has an "Ignore Touch Tones for Programming Entry Phone 1 or 2" programming feature that allows the remote programming of these entry phones. For complete details, see **Programming** section 27. In the Analog Station Dial Through mode, this feature allows you to remotely program the **C-500** or any of the entry phones used. **Note:** If using a **K-1700** series entry phone, turn off dial tone detection by setting dip switch 3 to **OFF** on the **K-1700** series phone.

I. Dialing "#" on Cable Company Provided Phone Lines

On some Comcast or Time Warner provided phone lines, when the house phones go off-hook and dial "#" as the first digit of an Outgoing Off-Hook Operation Command (to monitor an entry phone or control a door strike relay), the cable company provided line will produce a short break in the line and this short break will cause the **C-500** to not accept the Outgoing Off-Hook Command. This problem can be corrected by enabling the "# Conflict Mode" (**#5**, see **programming** section 29). When the "# Conflict Mode" is enabled and "#" is the first digit dialed by a house phone, the **C-500** immediately switches the house phone to an artificial line, which allows the Outgoing Off-Hook Operation Commands to work properly. The "# Conflict" mode can be disabled by entering **"#6"** in programming.

J. Analog Station Mode Operational Differences

C-500 operation changes dramatically when the Analog Station Mode is enabled ("**1#63**"). This mode is typically used for commercial or business applications (rather than residential applications), since there is no local ringing to the house phones output in this mode.

These are the operational differences in the Analog Station Mode:

1. Entry phone calls automatically call forward out on the PBX extension or telephone line. There is no local ringing to the house phones (**#44**).
2. There is no Access Code required on inbound calls in order to monitor entry phones or force door strike relays to operate (if the **C-500** is set to answer – see note 3).
3. When the incoming ring count before auto answer ("**#45**") is set to 01 to 99, the **C-500** will answer inbound calls on the first ring. If the ring count before auto answer is set to 00, the **C-500** will ignore ringing.
4. If calling into the **C-500** to monitor entry phones, the **C-500** will send up to 5 rings to the entry phone, to allow the entry phone to answer the call. If the entry has not answered after the fifth ring, the **C-500** provides 3 beeps and hangs up.
5. If a house phone goes off-hook while an entry phone is using the PBX extension or telephone line, the house phone will be dead (no talk voltage).
6. The "Call Forward Maximum Call Time" (**#42**) does not apply. There is no time limit for entry phone calls.

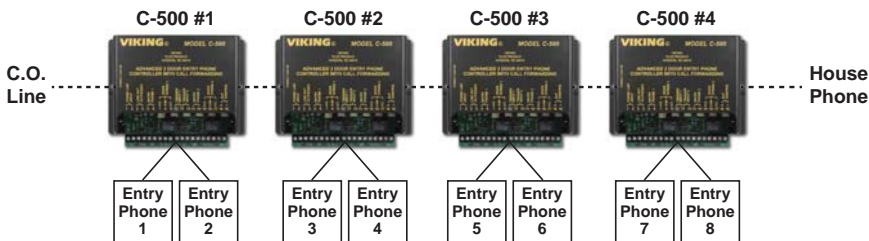
K. C-500 Limitations

The **C-500** has a lot of capability in a small package, but there are some inherent limitations of its product design that can't easily be overcome. This section describes these limitations.

Single Unit Limitations (apply to single unit and master/slave applications):

1. When a custom door strike code has been programmed ("6" for example) and getting disconnected from the entry phone after dialing the code is acceptable, users can dial "6". If they prefer to stay connected to the entry phone after dialing the code, users must dial a fixed code of **#1**** or **#2**** (for timed activation), rather than **#16** or **#26**.
2. When the house phones have answered an entry phone and the CO line is ringing (single beep call waiting tones are provided every 12 seconds), the **C-500** is not able to detect touch tones from the house phones (for door control) during each ring burst from the phone line. If the house phones attempt to dial a relay command while the phone line is ringing but the command isn't accepted, they should try dialing the relay command again.
3. If an entry phone is activated when the house phones are on a CO call but the house phone chooses to ignore the entry phone, there is no limit to the entry phone ring time. The entry phone will hear ringing forever if ignored by the house phones.
4. If an entry phone (that has a keypad) is activated when the house phones are on a CO call and the entry phone dials a **#** touch tone, the CO call is put on hold and the house phone is connected to the entry phone. The **#** to put the call on hold is accepted from the entry or house phone.

Master/Slave Limitations:



5. When an entry phone (that has a keypad) is activated (entry phone 7 for example) and call forwards out on the CO line through another **C-500**, the entry phone can dial **#1**** (for example) and control a door/gate on another **C-500**. The "other" **C-500** can't tell if this relay command was dialed by an entry phone or a house phone.
6. Entry phone 7 is activated, it eventually call forwards out on the CO line, is answered by a remote phone and they are talking. When any lower numbered entry phone is activated, the remote phone hears a "call waiting" type tone. If the remote phone then dials **#**, both entry phones are hung up. The remote party may believe dialing **#** will hold the original entry phone call while they switch over to the second entry phone.
7. When entry phones are locally ringing the house phones, a higher numbered entry phone "steals" the house phones away from a lower numbered entry phone, even when the lowered numbered entry started ringing first. For example, entry phone 1 is activated and rings the house phones. If entry phone 7 also starts ringing before the house phones answer the entry phone 1 call, the house phones are connected to entry phone 7 instead of entry 1.
8. The buzz sound heard by the house phones when a relay has been activated gets weaker in volume as more **C-500**'s are added to the line. In a four unit master/slave stack, the buzz from **C-500** (entry phones 1 and 2) is the weakest volume and the buzz from **C-500 #4** (entry phones 7 and 8) is the loudest volume.
9. When multiple entry phones attempt to forward out on the CO line at the same time (with analog station mode enabled or disabled), entry phones with a higher entry number than the one using the CO line are not handled very well. In the analog station mode, a higher numbered entry phone (when activated) will hear one ringback tone and then hangs up. When the analog station mode is disabled (residential application), a higher numbered entry phone (when activated) will hear multiple ringback tones but it is hung up when the "other" entry phone is finished and hangs up the CO line. Entry phones that have a lower entry number than the one using the CO line are handled better. In the analog station mode, a lower numbered entry phone will hear silence (quiet talk battery) until the CO line becomes available. Once the CO line is available, the C-500 for that entry will forward their call and they start to hear ringback tones. When the analog station mode is disabled (residential application), a lower numbered entry phone hears ringback tones until the CO line becomes available. Once the CO line is available, the **C-500** for that entry will forward their call and they continue to hear ringback tones.

Operation Commands

Entry Phone Call Operation Commands:

Momentarily activate the door strike relay of connected Entry Phone (1 or 2 digits, factory set to **)	** or ____
Un-Latch* (deactivate) the door strike relay of connected Entry Phone	*0
Latch* (continuously activate) the door strike relay of connected Entry Phone	*1
Momentarily activate opposite door strike relay of connected Entry Phone***	*2
Disconnect an Entry phone call	#

Outgoing Off-Hook / Remote Access Operation Commands: ****

Enable Immediate Call Forward**	**#
Disable Immediate Call Forward (factory setting)**	###
Monitor any Entry phone	# + (Entry phone identifier 1 - 8)
Momentarily activate selected door strike relay	# + (Entry phone identifier 1 - 8) **
Un-Latch* (deactivate) selected door strike relay	# + (Entry phone identifier 1 - 8) *0
Latch* (continuously activate) selected door strike relay	# + (Entry phone identifier 1 - 8) *1
Toggle* selected door strike relay	# + (Entry phone identifier 1 - 8) **
Answer or disconnect an Entry phone call while on a C.O. call	#
Momentarily activate ALL door strike relays	**#
Un-Latch* (deactivate) ALL door strike relays	*#0
Latch* (continuously activate) ALL door strike relays	*#1
Toggle* ALL door strike relays	**#

* Note: All Latch, Un-Latch and Toggle commands can be disabled in programming.

** Note: With ##4 programmed, **# and ### operation commands will be disabled.

*** Note: When using multiple C-500's, the *#2* command will only activate the opposite door strike relay on the C-500 unit you are communicating with.

**** Note: The Outgoing Off-Hook / Remote Access Operation Commands that allow you to control a door strike relay can also be dialed while talking to an entry phone, if you wish to remain connected to the entry phone after dialing the relay command (for more information, see note 2 under Operation, section A. Visitors).

Quick Operating Reference Guide

Note: Make a photocopy of the **Operating Commands** (below) and place one near your phones for quick reference to all of the C-500's Touch Tone operating commands.

Entry Phone Operation Commands:

Feature	Touch Tone Command	Description
Activate Door Strike	** or ____	Momentarily activate door strike relay of connected entry phone (1 or 2 digits, factory set to **).
Un-Latch Door Strike	*0	Un-latch* (deactivate) the door strike relay of the connected entry phone.
Latch Door Strike	*1	Latch* (continuously activate) the door strike relay of the connected entry phone.
Activate Opposite Door Strike	*2	Momentarily activate opposite door strike relay of connected entry phone.
Disconnect Phone	#	Disconnect an entry phone call.

Outgoing Off-Hook / Remote Access Operation Commands:

Touch Tone Command	Description
#	Enable Immediate Call Forward
###	Disable Immediate Call Forward (factory setting)**
# + (Entry phone ID 1-8)	Monitor any Entry phone
# + (Entry phone ID 1-8) **	Momentarily activate selected door strike relay
# + (Entry phone ID 1-8) *0	Un-Latch* (deactivate) selected door strike relay
# + (Entry phone ID 1-8) *1	Latch* (continuously activate) selected door strike relay
# + (Entry phone ID 1-8) **	Toggle* selected door strike relay
#	Answer or disconnect an Entry phone call while on a C.O. call
**#	Momentarily activate ALL door strike relays
#0	Un-Latch (deactivate) ALL door strike relays
#1	Latch (continuously activate) ALL door strike relays
**#	Toggle* ALL door strike relays

* Note: All Latch, Un-Latch and Toggle commands can be disabled in programming.

** Note: With ##4 programmed, **# and ### operation commands will be disabled.

*** Note: When using multiple C-500's, the *#2* command will only activate the opposite doorstrike relay on the C-500 unit you are communicating with.

**** Note: The Outgoing Off-Hook / Remote Access Operation Commands that allow you to control a door strike relay can also be dialed while talking to an entry phone, if you wish to remain connected to the entry phone after dialing the relay command (for more information, see note 2 under Operation, section A. Visitors).

Warranty

IF YOU HAVE A PROBLEM WITH A VIKING PRODUCT, CONTACT: VIKING TECHNICAL SUPPORT AT (715) 386-8666

Our Technical Support Department is available for assistance Monday 8am - 4pm and Tuesday through Friday 8am - 5pm central time. So that we can give you better service, before you call please:

1. Know the model number, the serial number and what software version you have (see serial label).
2. Have your Technical Practice in front of you.
3. It is best if you are on site.

RETURNING PRODUCT FOR REPAIR

The following procedure is for equipment that needs repair:

1. Customer must contact Viking's Technical Support Department at 715-386-8666 to obtain a Return Authorization (RA) number. The customer MUST have a complete description of the problem, with all pertinent information regarding the defect, such as options set, conditions, symptoms, methods to duplicate problem, frequency of failure, etc.
2. Packing: Return equipment in original box or in proper packing so that damage will not occur while in transit. Static sensitive equipment such as a circuit board should be in an anti-static bag, sandwiched between foam and individually boxed. All equipment should be wrapped to avoid packing material lodging in or sticking to the equipment. Include ALL parts of the equipment. C.O.D. or freight collect shipments cannot be accepted. Ship cartons prepaid to: **Viking Electronics, 1531 Industrial Street, Hudson, WI 54016**
3. Return shipping address: Be sure to include your return shipping address inside the box. We cannot ship to a PO Box.
4. RA number on carton: In large printing, write the R.A. number on the outside of each carton being returned.

RETURNING PRODUCT FOR EXCHANGE

The following procedure is for equipment that has failed out-of-box (within 10 days of purchase):

1. Customer must contact Viking's Technical Support at 715-386-8666 to determine possible causes for the problem. The customer MUST be able to step through recommended tests for diagnosis.
2. If the Technical Support Product Specialist determines that the equipment is defective based on the customer's input and troubleshooting, a Return Authorization (R.A.) number will be issued. This number is valid for fourteen (14) calendar days from the date of issue.
3. After obtaining the R.A. number, return the approved equipment to your distributor, referencing the R.A. number. Your distributor will then replace the Viking product using the same R.A. number.
4. **The distributor will NOT exchange this product without first obtaining the R.A. number from you. If you haven't followed the steps listed in 1, 2 and 3, be aware that you will have to pay a restocking charge.**

TWO YEAR LIMITED WARRANTY

Viking warrants its products to be free from defects in the workmanship or materials, under normal use and service, for a period of two years from the date of purchase from any authorized Viking distributor. If at any time during the warranty period, the product is deemed defective or malfunctions, return the product to Viking Electronics, Inc., 1531 Industrial Street, Hudson, WI., 54016. Customer must contact Viking's Technical Support Department at 715-386-8666 to obtain a Return Authorization (R.A.) number.

This warranty does not cover any damage to the product due to lightning, over voltage, under voltage, accident, misuse, abuse, negligence or any damage caused by use of the product by the purchaser or others. This warranty does not cover non-EWP products that have been exposed to wet or corrosive environments. This warranty does not cover stainless steel surfaces that have not been properly maintained.

NO OTHER WARRANTIES. VIKING MAKES NO WARRANTIES RELATING TO ITS PRODUCTS OTHER THAN AS DESCRIBED ABOVE AND DISCLAIMS ANY EXPRESS OR IMPLIED WARRANTIES OR MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE.

EXCLUSION OF CONSEQUENTIAL DAMAGES. VIKING SHALL NOT, UNDER ANY CIRCUMSTANCES, BE LIABLE TO PURCHASER, OR ANY OTHER PARTY, FOR CONSEQUENTIAL, INCIDENTAL, SPECIAL OR EXEMPLARY DAMAGES ARISING OUT OF OR RELATED TO THE SALE OR USE OF THE PRODUCT SOLD HEREUNDER.

EXCLUSIVE REMEDY AND LIMITATION OF LIABILITY. WHETHER IN AN ACTION BASED ON CONTRACT, TORT (INCLUDING NEGLIGENCE OR STRICT LIABILITY) OR ANY OTHER LEGAL THEORY, ANY LIABILITY OF VIKING SHALL BE LIMITED TO REPAIR OR REPLACEMENT OF THE PRODUCT, OR AT VIKING'S OPTION, REFUND OF THE PURCHASE PRICE AS THE EXCLUSIVE REMEDY AND ANY LIABILITY OF VIKING SHALL BE SO LIMITED.

IT IS EXPRESSLY UNDERSTOOD AND AGREED THAT EACH AND EVERY PROVISION OF THIS AGREEMENT WHICH PROVIDES FOR DISCLAIMER OF WARRANTIES, EXCLUSION OF CONSEQUENTIAL DAMAGES, AND EXCLUSIVE REMEDY AND LIMITATION OF LIABILITY, ARE SEVERABLE FROM ANY OTHER PROVISION AND EACH PROVISION IS A SEPARABLE AND INDEPENDENT ELEMENT OF RISK ALLOCATION AND IS INTENDED TO BE ENFORCED AS SUCH.

Product Support: (715) 386-8666

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