

AMANO

TCX-85

Atomic Time Clock

Installation and Operation Guide



Proprietary Notice

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Amano Cincinnati, Inc. reserves the right to make equipment changes and improvements, which may not be reflected in this document. Portions of this document may have been updated to include the latest hardware or firmware version, if applicable.

To ensure safe use of this time recorder/stamp, be sure to thoroughly read this manual in its entirety before any attempt is made to operate the equipment. After you have finished reading this manual, be sure to store it in a safe place for future reference.

Thank You....

For purchasing another fine product from Amano Cincinnati, Inc.

For Safe and proper operation, please carefully read the manual before using the time clock and save it for reference.

Warranty Notice

Any claim for warranty, express or implied, due to the clocks failure to properly receive the radio signal because of interference, whatever may be the source of this interference, are hereby expressly excluded.

The TCX-85 has the atomic clock (radio-controlled clock) feature which displays the current time precisely by automatically receiving time code signals on long wave radio from the transmitting station. The unit receives the time code signal via its built-in antenna system.

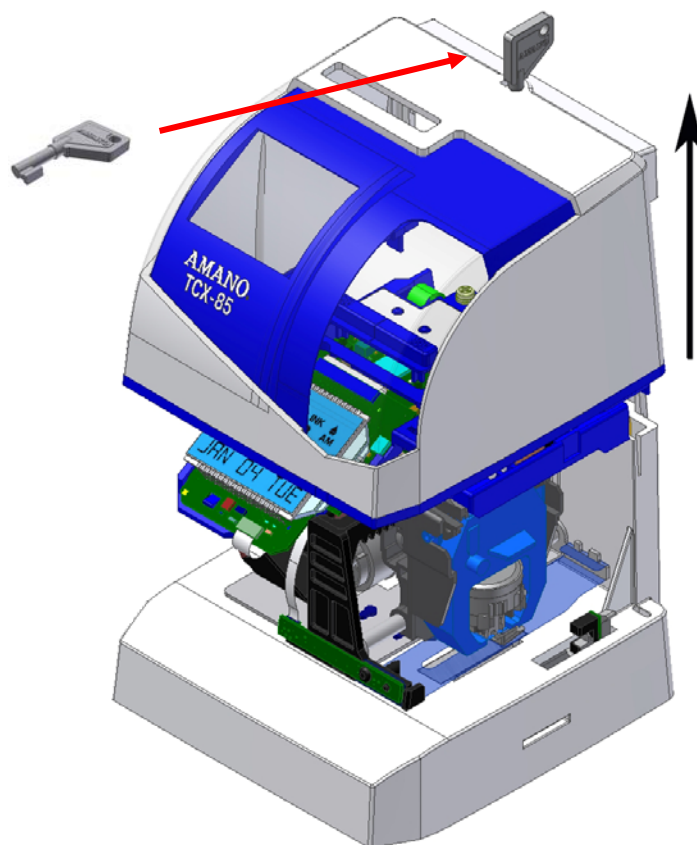
Note: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment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

Why PIX-85

The TCX-85 Atomic Time Clock recognizes and responds to your American English voice commands. Set the time, Daylight Saving, Print Direction, Print Language, Print Method, Atomic Clock, Display Format and even select a Print Format using only your voice. Say **"Hello Clock"** and the clock responds **Welcome, to the Amano time clock, what would you like to change?** Then simply speak your command, for example **"Time"** to set the time and the TCX-85 will respond appropriately.

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Cover Removal















Note – See www.amano.com/tkb for videos and/or the latest information about the TCX-85, etc. The **printed time format can be different than display format!!**








During the programming modes the clock will not have all features available to the user. To exit programming (Setup) mode simply put on the clock cover.

GUIDELINES FOR SAFE OPERATION.....

To ensure safe operation, please carefully read the following warnings and cautions prior to using the TCX-85 Electronic time recorder/stamp.

 Warning	
	Do not disassemble the unit. There is a high voltage present inside, possibly leading to an electric shock.
	Do not modify the unit. Modifications may cause a fire and/or electric shock.
	If any anomaly occurs, for example, heat or smoke is generated or an odor is emitted, unplug the unit immediately and contact your dealer for servicing. There is a danger that further use may cause a fire or electric shock.
	Do not use any voltage of the power source other than designated. Do not share a single outlet with another plug. These may lead to fire or shock hazards.
	Do not damage, break, or modify the power cord. Do not put a heavy object on, pull, or forcefully bend the cord, either. These may damage the cord, possibly resulting in a fire or electric shock.
	If foreign matter should get in the unit (including a piece of metal, water, or liquid), disconnect the plug from the outlet immediately and contact your dealer for servicing. There is a danger that further use may cause a fire or electric shock.
	Do not plug or unplug the unit with a wet hand. You may get an electric shock.

 Caution	
	Do not place the unit on an uneven or tilted surface. This may result in injuries due to the unit dropping or falling off.
	Do not put a water-filled container or a metal object on top of the unit. If water is spilled or the metallic object slips inside, a fire or shock hazard may occur.
	Do not install the unit in a humid or dusty environment. It may cause a fire or electric shock.

	Do not place the unit near kitchen counter or humidifier. Oil, smoke, or steam generating from them may cause fire or shock hazards.
	Do not yank the power cord to disconnect from the outlet. Hold the plug with your hand to do so, or the cord may be damaged, possibly leading to a fire or electric shock.
	Remove the line cord plug from the outlet before transferring the unit, or it may damage the cord, possibly leading to a fire or electric shock.
	Be careful not to contact the print head, as you may get hurt or burned.
	Make sure to insert the power plug as far as it will go. Improper insertion of the plug may develop fire or shock hazards.
	Do not insert or drop any other time card than specified into the slot. Such misuse may cause a fire or electric shock.
	If the unit should be dropped or the case is broken, unplug the unit and contact your dealer for servicing. Further use may lead to a fire or shock hazard.

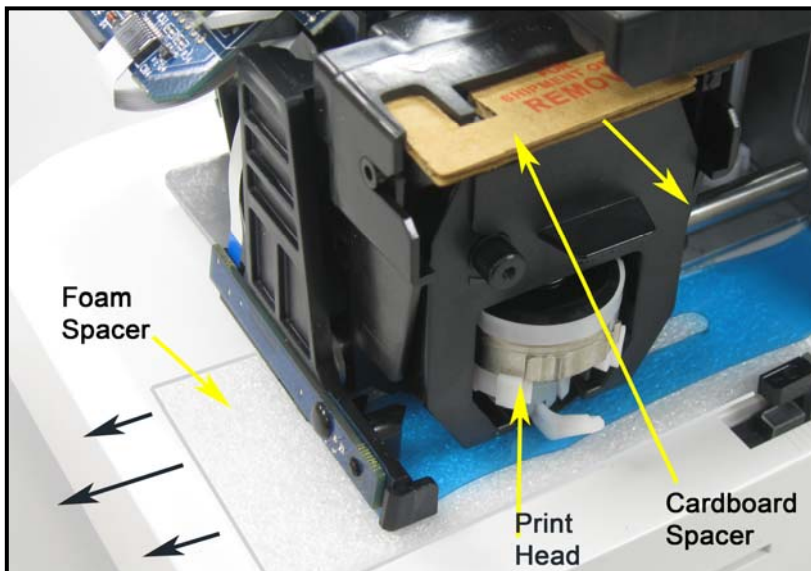
Relation to the Health and the Environment

The plastic currently used for the outer enclosure of this apparatus does not contain the halogen substance.

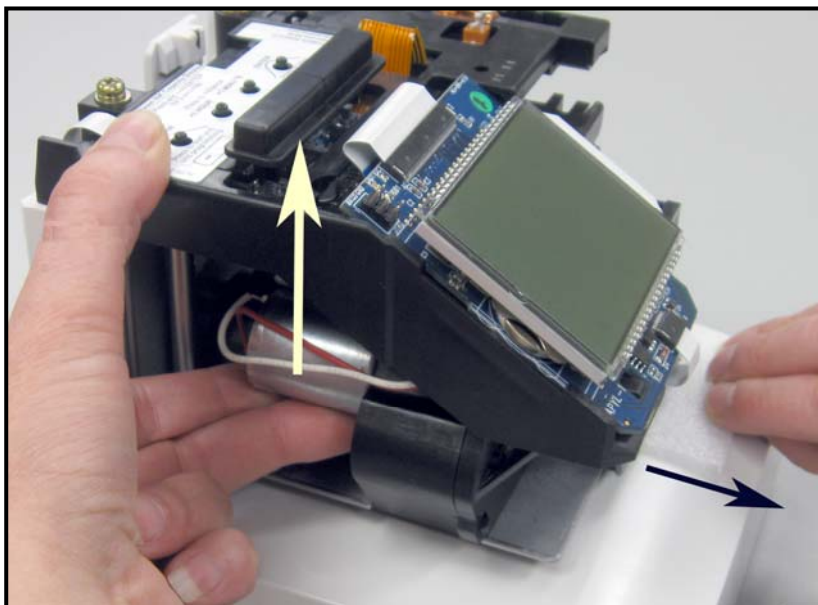
Chapter 1 - Quick-Start Instructions

Step 1 – Remove the Cover & Packing Material

1. Insert the key provided into the keyhole on top of the clock, turn clockwise $\frac{1}{4}$ turn to unlock the cover and lift the cover to remove (see Figure on previous page).
2. Remove the cardboard spacer located above the ribbon cartridge by pulling straight out (see right-hand Figure).



3. Lift up the printer carriage by placing your fingers under the metal motor on the left-hand side and remove the foam spacer (white) located under the print head (see right-hand Figures). Release the printer carriage.
4. After removing the foam spacer with the cover off **plug in the clock!**



5. The clock will announce "**Voice mode enabled**" and display **Setup** (see right-hand Figure) on the bottom line.



Note –Should the clock not power up, verify that the AC Adapter is plugged into the rear of the clock. See Figure 2 on page 1-11 and Figure 8 on page 2-30 for AC Adapter plug-in location.

Step 2 - Setting the Time

Using this method does not zero the seconds as the seconds continue to roll during setting the hours and/or minutes.

1. Press the **HOUR** button to advance hour by increments of one (1) until the correct hour appears.
2. Press the **MINUTE** button to advance minutes by increments of one (1) until the correct minute appears.

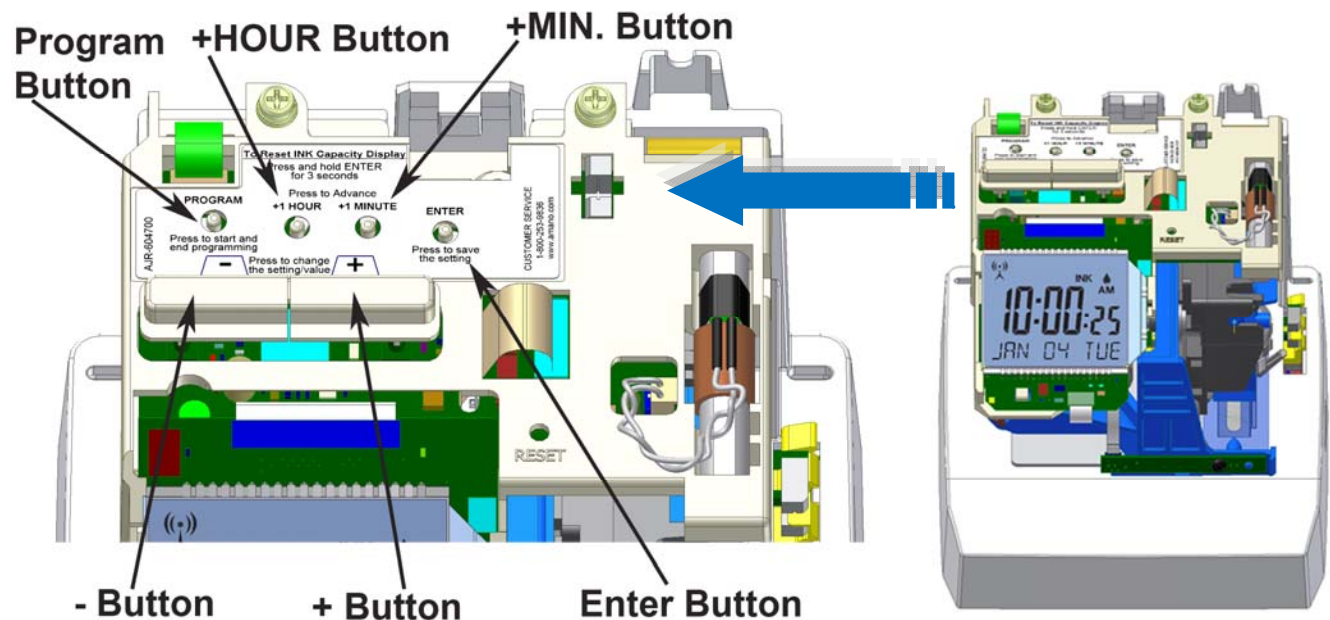


Figure 1: Programming Button Locations.

3. The default print format is Format-1 (YEAR, MONTH, DATE and TIME with AM or PM).

YEAR, MONTH, DATE, 12 Hr., MINUTES
11 JAN 23 1:45 PM

If this format is acceptable replace the cover and the clock is ready for use. If you need to change the print format proceed to Step 3 on the next page.

Note – If your TCX-85 is located in an area that cannot receive the Atomic time signal, DO NOT be concerned. The TCX-85 will accurately keep the time using its Quartz mechanism (plus or minus three seconds per week).



When you first receive the clock, it may be necessary to adjust the time so the test printout may not show the accurate time. However, under normal conditions upon power up, the TCX-85 will automatically search for and synchronize with the atomic time signal.

Step 3 - Changing the Print Format (P4)

1. With the cover removed, press the **PROGRAM** button to begin button program mode and **P1 TIME** will appear.
2. Press the **+** button to change the current programming mode until the display shows **P4 Print FORMAT**.
3. Press the **ENTER** button once and the clock will flash the current print format. The default setting = FORMAT-1.
4. Press the **+** or **-** button to increase or decrease the print format value to **1, 2, 3, 4, 5, or 6**. See the following for examples of Print Format:



	YEAR, MONTH, DATE, 12 Hr., MINUTES
Format-1	'11JAN23 1:45PM
	YEAR, MONTH, DATE, 24 Hr., MINUTES
Format-2	'11JAN23 13:45
	YEAR, MONTH, DATE, 24 Hr., DECIMAL (100ths)
Format-3	'11JAN23 13.75
	YEAR, MONTH, DATE, 24 Hr., DECIMAL (10ths)
Format-4	'11JAN23 13.7
	DAY, 24 Hr., DECIMAL (100ths)
Format-5	TU13.75
	2 DIGIT YEAR, MONTH, DATE, 24 Hr., MINUTES, SECONDS
Format-6	'11JAN23 13:45 20s

5. Press the **ENTER** button once to accept the current value.
6. Replace the cover for normal operation.

There are six (6) print formats pre-configured to select [Format 1 thru Format 6]. Each print format has its own pre-configured print content. See the previous illustration or the following:

Format 1 [default]

2 Digit Year	Space	Month	Space	Date	Space	12 Hour	60 th Minutes
--------------	-------	-------	-------	------	-------	---------	--------------------------

Format 2

2 Digit Year	Space	Month	Space	Date	Space	24 Hour	60 th Minutes
--------------	-------	-------	-------	------	-------	---------	--------------------------

Format 3

2 Digit Year	Space	Month	Space	Date	Space	24 Hour	100 th Minutes
--------------	-------	-------	-------	------	-------	---------	---------------------------

Format 4

2 Digit Year	Space	Month	Space	Date	Space	24 Hour	10 th Minutes
--------------	-------	-------	-------	------	-------	---------	--------------------------

Format 5

Day	Space	24 Hour	100 ^h Minutes
-----	-------	---------	--------------------------

Format 6

2 Digit Year	Space	Month	Space	Date	Space	24 Hour	60 th Minutes	Seconds
--------------	-------	-------	-------	------	-------	---------	--------------------------	---------

Note – when the print format is changed, the following settings are overridden:



- The custom symbol printing is overridden by the selected format.
- There will only be one line printed for the selected format.
- The “Print Year”, “Print Minute”, and “Print Hour” settings will be overridden by the selected pre-defined print format. However, these settings can be changed after selecting the pre-defined print format.

Should you want to change anything else; the clock can now be programmed using voice commands (see next page) or through the program buttons (see starting page 1-8 and page 2-4).

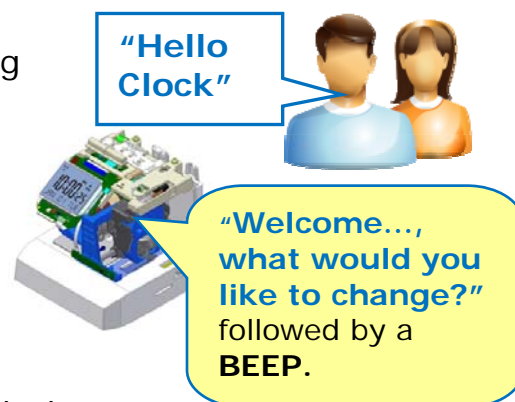
Voice Programming

1. Unlock and remove the cover to activate the programming mode and the clock will announce, **“Voice mode enabled”**.
2. Say **“Hello Clock”** to begin voice programming the clock. The clock will respond by saying **“Welcome, to the Amano time clock, what would you like to change?”** and the clock will **BEEP**.

You must wait for the BEEP before saying command!!

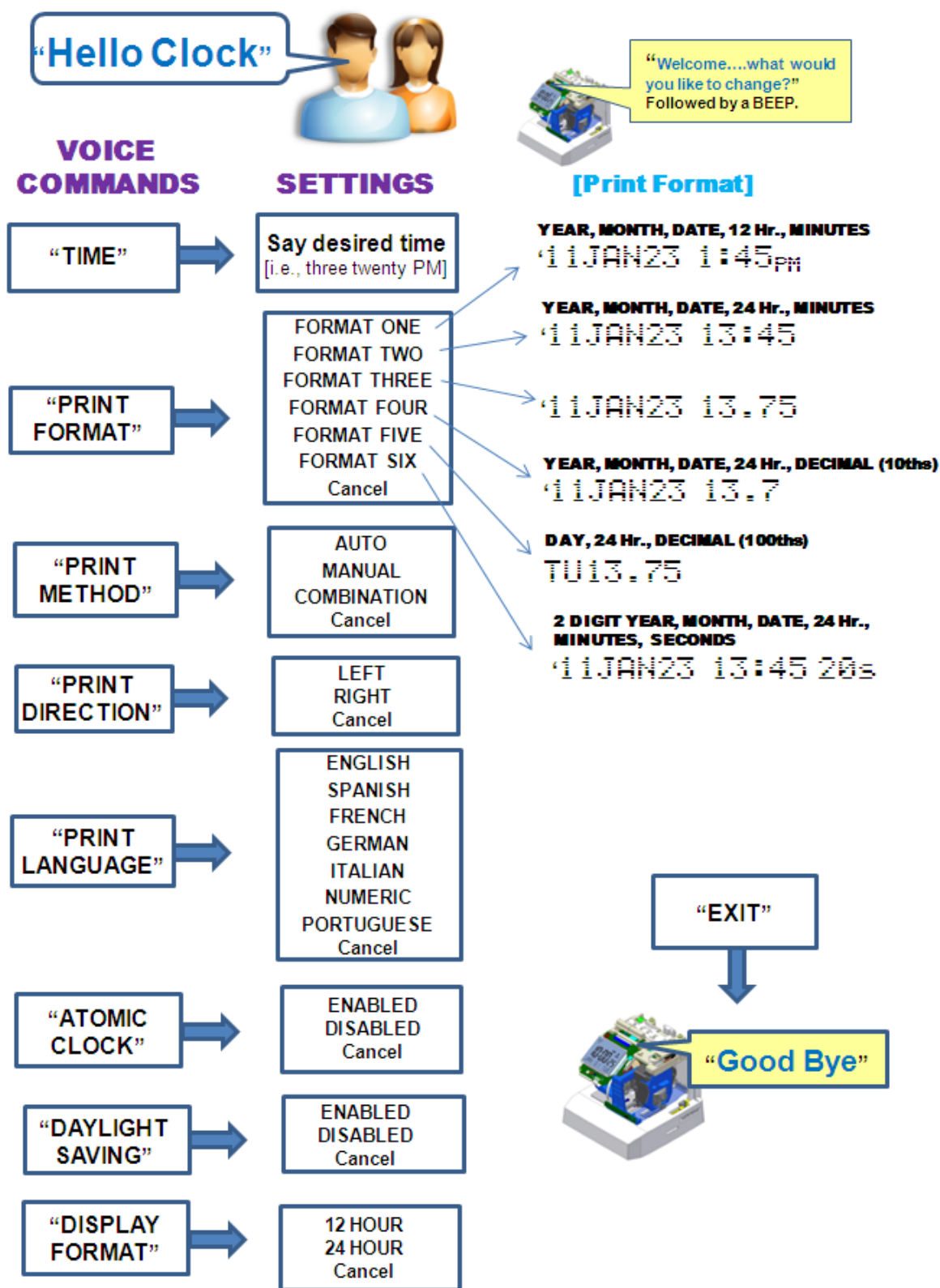
Only valid commands will be accepted by the clock.

3. Voice commands can be entered in any order. See voice commands on the following page.



Voice Commands

MUST wait for the BEEP before saying commands!



At any time say **"EXIT"**, or replace the cover to stop voice programming.

Voice Programming Print Format Example

The following table lists the typical pattern of announcement messages that the clock might play for changing print format.

Voice Message Prompt	Reason
"Welcome to the Amano time Clock" "What would you like to change?"	To greet the user and prompt for command.
The User says "Print Format"	Request the clock to change the print format.
"The current print format is" followed by "Please tell me the new print format" followed by a BEEP.	To announce the current print format, request the new print format and prompt with BEEP.
The User says "Format Three"	Request the clock to set the print format = Format 3.
"The new print format is format three" followed by "What would you like to change?"	To announce the new print format set by the user and inquire for the next possible change.
The User says "Exit"	Request the clock to quit the voice programming mode.
"Good Bye"	To acknowledge exit.

During a typical voice command, the clock might say;

- "Sorry, Command not recognized" To inform the user that it could not understand the command so the user can repeat the command again.
- "Sorry, data not recognized" To inform the user that it could not understand the verbal value from the user for the current setting so the user can repeat the value again.

Voice Programming Hints

- Wait for the clock to complete any voice prompt question followed by a BEEP before speaking a command.
- Speak as clearly as possible towards the clock within 3 – 4 seconds after the clock announcement, "Please tell me the new....." followed by a BEEP.
- Say the entire voice command. Do not use partial commands. For example, say "Print Language", not just "Language" or "Print". See chart for list of valid commands on page 1-5.
- Complete the voice command within the 3- 4 seconds after a clock announcement. Failure to do so may result in the clock failing to recognize the command.

- If the clock fails to recognize the time requested, it will cancel the time command after 3 attempts and ask you **"What would you like to change?"**

- If the clock fails to recognize the command and/or data the following announcements may occur;

"Sorry, command not recognized"

"Sorry, data not recognized"

"Invalid data"

If this occurs, wait for the announcement to complete and simply speak the desired command again.

- Say **"Cancel"** to exit the current voice request.
- Say **"Exit"** to quit voice programming and the clock will acknowledge by saying **"Good Bye"**. Must say **"Hello Clock"** to return back to voice programming.
- To set some parameters such as Date [Month/Date/Year] you must use the buttons on top of the clock for button programming mode. See appropriate following section.

Sequence for Time Entry with Voice Commands

1. Say **"Time"** to enter into the set time mode.
2. The clock will announce, **"Current time is....."** followed by, **"Please tell me the new time"** followed by a **BEEP**.
3. After the **BEEP**, say the desired time, i.e., **"Two Twenty PM"** to set the current time as 2:20 PM. The user must end the sentence with **"AM"** or **"PM"** to complete time entry. When entering a time for the top of the hour you must say the hour followed by o'clock. For example, for 7:00 AM, please say, **"seven o'clock AM"**. In another example, for 10:02 PM, please say **"ten o' two PM"**.

Upon acceptance of the voice entry, the clock will announce **"New time is....."**



Note – If the clock does not accept the new setting, it will announce an error message and keep asking the user every 3 - 4 seconds to speak the new value until the new value is accepted.
During voice program mode the buttons on top of the clock will be ignored.

4. Say **"Exit"** to quit all voice programming or say new voice command (see chart on page 1-5). When quitting voice programming the clock will respond by announcing, **"Goodbye"**.

Button Programming

The following paragraphs must be performed with the clock cover removed and the voice mode off.

Setting the Time (P1)

Using this way to set time will set the seconds to zero, and the seconds will not start until you press the **ENTER** button to return to **P1 TIME** on the display (see step 6).

1. With the cover removed, press the **PROGRAM** button and **P1 TIME** will appear and the voice mode will be disabled.
2. Press the **ENTER** button and the hours will start flashing.
3. Press the **+** or **-** button to increase or decrease the hours to the desired value.
4. Press the **ENTER** button once to accept the current hours and go to the minutes setup mode and the minutes will start flashing.
5. Press the **+** or **-** button to increase or decrease the minutes. The seconds will automatically start at zero when entering minutes.
6. Press the **ENTER** button once to accept the current minutes, complete the set time mode, and go back to the previous menu.
7. Replace the cover for normal operation.



Note – During button programming the time will always be set depending on the mode the display is currently set in [either 12-hour or 24-hour].

During voice programming the time will always be set in the 12-hour format despite what mode the display format is set in.

Setting the Date [Month/Date/Year](P2)

1. With the cover removed, press the **PROGRAM** button to begin button program mode and **P1 TIME** will appear.
2. Press the **+** button to change the current programming mode until the display shows **P2 DATE**.
3. Press the **ENTER** button once and the clock will display the current date on the 2nd line (see right-hand Figure). The month will start flashing. Press the **+** or **-** button to



increase or decrease the month value.

4. When the desired month is reached, press the **ENTER** button once to accept the current month and go to the date setup mode.
5. The date of the month will start flashing. Press the **+** or **-** button to increase or decrease the date to the desired value.
6. Press the **ENTER** button once to accept the current displayed date of the month and go to the year setup mode.
7. The year will start flashing. Press the **+** or **-** button to increase or decrease the year to the desired value.
8. Press the **ENTER** button once to accept the current displayed year and complete the set date mode and return to the previous menu.
9. Replace the cover for normal operation.

Enabling or Disabling Daylight Saving Time (P3)



Note – when this setting is set to **ENABLED**, the clock's time will automatically change for Daylight Saving. When this setting is set to **DISABLED**, the clock's time will not change for Daylight Saving.

1. With the cover removed, press the **PROGRAM** button to begin button program mode and **P1 TIME** will appear.
2. Press the **+** button to change the current programming mode until the display shows **P3 Daylight saving**. [The second line will scroll].
3. Press the **ENTER** button and the clock will begin flashing the current Daylight Saving setting.
4. Press the **+** or **-** button to change the Daylight Saving setting to the desired value of **Enabled** or **Disabled**. The default setting = Enabled [ON].
5. Press the **ENTER** button to set [save] the current value and go back to the previous menu.
6. Replace the cover for normal operation.



Enabling/Disabling Auto Print (P508)

1. With the cover removed, press the **PROGRAM** button to begin button program mode and **P1 TIME** will appear.
2. Press the **+** or **-** button to change the current programming mode until the display shows **P5 others**.
3. Press the **ENTER** button once and the clock will display the submenu for other settings such as **P501**.
4. Press the **+** or **-** button until the display shows **P508**
Print method. [The second line will scroll]
5. Press the **ENTER** button once and the clock will start flashing the current print method format. The default setting = AUTO. The mode choices are:



Mode	Description
Auto	Will automatically print a single print when media is inserted.
Manual	Requires you to use the PRINT button when printing.
Combination	Requires you to insert media to trigger and press the PRINT button.



Caution – when the clock is in the manual print mode print media should be inserted in the clock before the print button is pressed to protect the print head.

6. Press the **+** or **-** button to change the value.
7. Press the **ENTER** button once to accept the current displayed value and go back to the previous menu.
8. Replace the cover for normal operation.



Note – when the clock is in the manual or combination print mode, the print buttons (**+** and **-** buttons –see Figure 1 on page 1-2) are enabled when the cover is on. Pressing either of these buttons will cause the clock to print. When 2 print lines are configured, pressing the **+** button will print line 2, while pressing the Minus (**-**) button will print line 1.

Wall Mounting (Optional)

Avoid the following:



1. Using the supplied mounting template (see last page of this guide), mark the two (2) mounting slots on the wall. A 3rd mounting slot can be used to provide security (see Figure 2).
2. Verify that the cable for AC Power Adapter is plugged into the back of the TCX-85 before hanging on the wall.
3. Hang the TCX-85 on the wall level using #10 wood screws [not included] or equivalent in the two mounting slots without removing the cover.
4. If security is an issue for removing the TCX-85 from the wall, remove the cover, and use the upper mounting slot (see Figure 2 and Figure 8 on page 2-30) to firmly secure the back of the TCX-85 to the wall. Secure to the wall using #10 wood screw (or equivalent).
5. Replace the cover for normal operation.

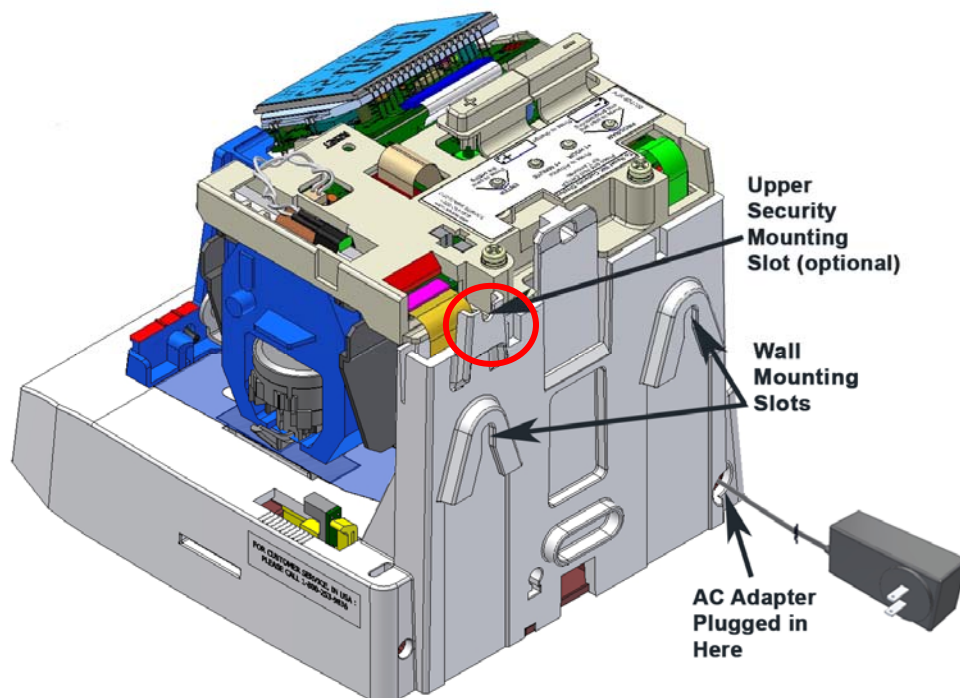


Figure 2: TCX-85 Rear View for Wall Mounting.

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TCX-85 View Description


Internal View

The 7 function buttons are used to navigate through the Setup Mode to change the clock's settings.

- The **PROGRAM** button is used to enter/exit the Program Mode and exit any sub-program menu.
- The **+** and **-** buttons are used to change the information on the display through programmable areas and possible inputs. By pressing and releasing these buttons, the selectable option will be displayed or the number values will be increased or decreased by 1. These buttons (see illustration on previous page) can be pressed and held for 3 seconds or greater for faster change.
- The **ENTER** button is used to accept the information shown on the display and save it in memory.
- The **+ HOUR** button advances the hour in the display by increments of 1.
- The **+ MINUTE** button advances the minutes in the display by increments of 1.
- The **RESET** button will restart the clock with no change to user settings, time, and ink capacity.

LCD Display View

The LCD display contains an INK indicator. The TCX-85 calculates the ink capacity of the ribbon cartridge from the number of imprints made. As the ink capacity decreases, the amount of ink in the drop [indicator] will disappear. This shows the amount of ink remaining in the ribbon cartridge using 3 drop segments, from  = empty, to  = half-full, to  = full.

The empty  indicator will flash when the print counter reaches a VERY LOW level. The drop indicator and "INK" segment will continue to blink until the print counter is reset.

Need Ribbons, Keys and Accessories?
Visit
www.amano.com/time
Or call **1-800-253-9836**



Note – Reset the INK indicator by pressing the **ENTER** button and holding for three (3) seconds only in the "Setup Mode" [must see **SETUP** in display] and the TCX-85 will display the message "**INK RESET**" to confirm. Whenever the cover is removed you are automatically in the "Setup Mode".

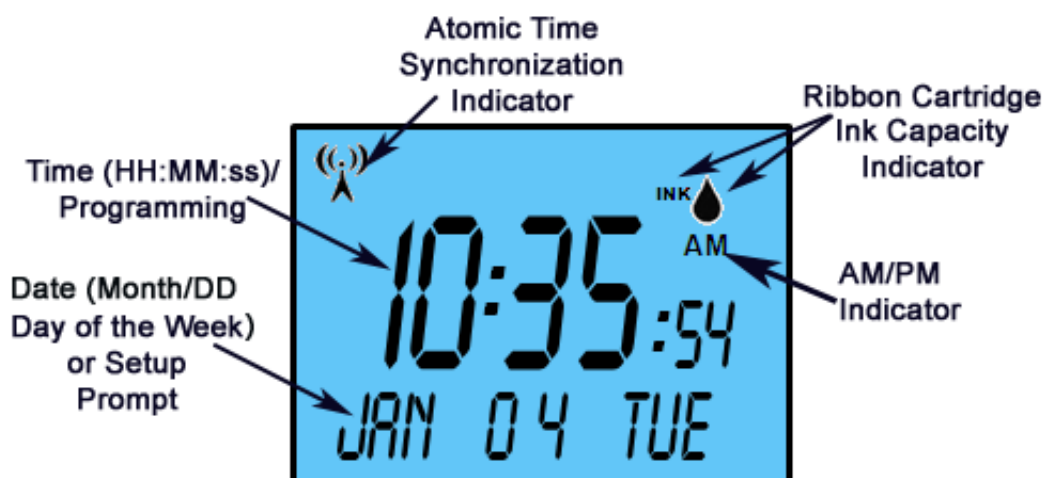
The Atomic Time Synchronization Indicator in the LCD Display indicates the status of the signal. When you first receive the clock, it may be necessary to adjust the hour and minute. **This Atomic Time Synchronization feature is not available in Hawaii and Alaska.**



Whenever the time is changed on the clock by the user the “Signal Found” Atomic Time Synchronization Indicator will be turned off and just the “Searching for Signal” indicator will be displayed. The clock will automatically resynchronize the time (minutes and seconds) by searching for the Atomic Time signal.



Note – The atomic clock feature must be enabled for this time synchronization process. Amano recommends facing the front of the clock (display side) either in the South or North direction to increase potential atomic time signal reception.

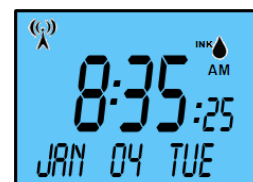


Auxiliary Display

The TCX-85 backlit LCD display has the bottom line of 10 characters that can be configured to display different items as;

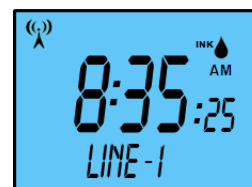
Date

When configured with the Date option [this = default], the clock will display the Month, Date, and Day of the week in the auxiliary display bottom line (see right-hand figure).



Line Number

When configured for this feature if custom printing has been selected, the clock will display the next line number to be printed when the user inserts a piece of paper in the clock for printing. If the user has selected a pre-defined print format, it will display that format (see right-hand figure).



Note – Two lines must be configured for symbol printing when using the auto print method, or the display will show “**LINE-1**”.



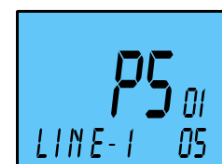
If custom printing is selected but no line-1 is configured, the clock will display “**LINE-1 ERR**” as long as the LINE NUMBER has been configured to be displayed with **P517 AUX display** (see page 2-20).

Advanced Button Programming

The following paragraphs must be performed with the clock cover removed and the voice mode off.

Setting Custom Print (Symbol Printing) (P501)

1. With the cover removed, press the **PROGRAM** button to begin button program mode and **P1 TIME** will appear.
2. Press the **+** or **-** button to change the current programming mode until the display shows **P5 others**.
3. Press the **ENTER** button once and the clock will display the submenu **P501** for custom print with the display showing **CUSTOM PRINT** on the 2nd line [scrolling].
4. Press the **ENTER** button once and the clock will display **Line - 1** and the number of currently programmed symbols (see right-hand Figure which indicates 5 symbols for line 1). (See Symbol Table on page 2-8).
5. If you do not want to change **Line - 1**, press the **+** button to move to line 2 for line 2 programming.

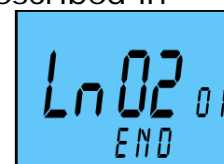
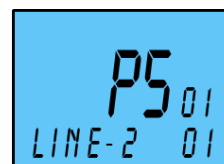


6. From either Line – 1 or Line – 2, press the **ENTER** button once to begin programming that line. Note – if line 1 is not programmed, it must be programmed before line 2 can be programmed. Line 2 does not have to be programmed. The 2nd line [auxiliary display line] will flash each symbol item (see right-hand Figure).
7. Press the **+** or **–** button until the desired symbol item is displayed and press the **ENTER** button once to accept the flashing symbol value. Once a symbol item has been selected the number of symbols shown on the right will increment by one (1). See right-hand Figure for example showing MONTH for 02 [second] symbol for Line -1.



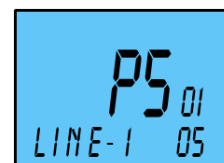
Note – You can use the **+1 HOUR** or **+1 MINUTE** buttons to scroll up or down through the custom programmed line to see what symbols are currently chosen for the line.

8. Repeat the process described in step 7 to enter each element for line 1. Select the **"END"** symbol followed by pressing the **ENTER** button once to complete custom programming of line 1.
9. If desired, press the **+** button once to advance to **Line – 2** for custom programming (see right-hand Figure).
10. Press the **ENTER** button again to begin symbol programming for line 2 and follow the same procedure as described in steps 7 and 8. The first symbol to appear will be the **"END"** symbol (see right-hand Figure).
11. Press the **PROGRAM** button to end custom print line symbol programming and/or replace the cover for normal operation.

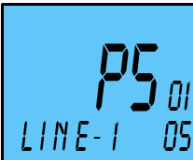


To delete a Whole Line of Symbol Printing

1. Press the **ENTER** button once from the **P501** submenu for custom print and the clock will display **Line – 1** and the number of programmed symbols (see right-hand Figure for example of line-1 with 5 symbols).
2. If desired, press the **+** button once to advance to **Line – 2**.
3. Press the **ENTER** button once and use the **+** or **–** buttons to navigate to the **"END"** symbol. With this symbol flashing on the Auxiliary Display Line, press the **ENTER** button once to save the **"END"** symbol at the beginning of the symbol line. This will terminate/delete that line of symbol printing.



To Add a Symbol to a Custom Print Line

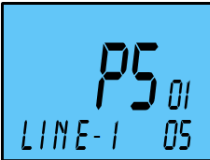
1. Press the **ENTER** button once from the **P501** submenu and the clock will display **Line - 1** and the number of programmed symbols (see right-hand Figure for example of a line-1 with 5 symbols).
2. If desired, press the **+** button once to advance to **Line - 2**.
3. Press the **ENTER** button once and use the **+ HOUR** or **+ MINUTE** buttons to navigate through the print line of symbols to the symbol you want to insert before [the new symbol will always be inserted before the flashing symbol]. When this symbol is flashing on the Auxiliary Display Line use the **+** or **-** buttons to navigate to the **"add"** symbol to perform the add function to the line. Press the **ENTER** button once to begin the add function.
4. Press the **+** or **-** button to navigate to and display the desired symbol to be added [by default **"2D YEAR"** symbol will always be the first symbol shown for insertion]. Then press the **ENTER** button once to accept the flashing symbol value.
5. Keep pressing the **ENTER** button until you see the flashing **"END"** symbol to finish the symbol line. Press **ENTER** to save the **"END"** and complete the line 1 or line 2 of symbol printing.

Failure to finish a line 1 or line 2 of symbol printing without entering the **"END"** symbol will cause the entire line not to be saved.



Note – Pressing the **PROGRAM** button while performing custom print line setup with symbol printing will end the custom print submenu without altering the program.

To Delete a Symbol from a Custom Print Line

1. Press the **ENTER** button once from the **P501** submenu and the clock will display **Line - 1** and the number of programmed symbols (see right-hand Figure for example of a line-1 with 5 symbols).
2. If desired, press the **+** button once to advance to **Line - 2**.
3. Press the **ENTER** button once and use the **+ HOUR** or **+ MINUTE** buttons to navigate through the print line of symbols to the symbol you want to delete [the symbol will always be deleted at the flashing symbol]. With the symbol to be deleted flashing use the **+** or **-** buttons to navigate to the **"del"** symbol.

4. Then press the **ENTER** button once to perform the deletion.
5. Keep pressing the **ENTER** button until you see the "**END**" symbol and press the **ENTER** button to finish the deletion process and save the modified line 1 or line 2.

Failure to finish a line 1 or line 2 of symbol printing without entering the "**END**" symbol will cause the entire line not to be saved.



Note – Pressing the **PROGRAM** button while performing custom print line setup with symbol printing will end the custom print submenu without altering the program.

TCX-85 Symbol Printing

If the print format is not acceptable to the user, the user can create a maximum of 2 print lines for their desired print format.

If only line 1 is programmed, the user can print the line automatically (paper sensor) or manually (either one of two top print buttons) based on the "print method" selected. If line 1 and line 2 are both programmed, the user can print the lines via these options:

- If the "print method" is set to "**Auto**", the clock will print line 1 the first time paper is inserted, and print line 2 the second time the paper is inserted. Repeat this pattern for subsequent printing.



Note – After line 1 is printed, the user has to insert the paper before the 5 second timeout for line 2 occurs in order to print line 2. Otherwise, the clock will print Line 1 after the Line 2 timeout.

- If the "print method" is set to "**Manual**", the clock will print line 1 when user presses the top left button [labeled minus], and print the line 2 when user presses the top right button [labeled plus] (see Figure 3 & Figure 4 on page 2-1) without using the paper sensor.
- If the "print method" is set to "**Combination**", the clock will print line 1 when user inserts the paper and presses the left top print button, and print line 2 when user inserts the paper and presses the right top button.

All available symbols are listed in the following table with the length expressed in dots and percent of maximum line length allowed (160 dots).

Table: Symbols

Displayed/Printed Symbol	Description	Length in Dots
2D YEAR	2-digit Year	25 = 16.45%
4D YEAR	4-digit Year	40 = 26.67%
MONTH	Month	30 = 19.74%
DATE	Date	20 = 13.16%
DAY	Day of Week	20 = 13.16%
JULIAN	Julian Date	30 = 19.74%
10MIN 12HR	12 Hr. and 10th/Hr.	49 = 32.24%
20MIN 12HR	Skip, Not Applicable	59 = 38.82%
60MIN 12HR	12 Hr. and 60th/Hr.	59 = 38.82%
100MIN 12H	12 Hr. and 100th/Hr.	59 = 38.82%
10MIN 24HR	24 Hr. and 10th/Hr.	35 = 23.03%
20MIN 24HR	Skip, Not Applicable	45 = 29.61%
60MIN 24HR	24 Hr. and 60th/Hr.	45 = 29.61%
100MIN 24H	24 Hr. and 100th/Hr.	45 = 29.61%
SECOND	Second	27 = 18.00%
RCVD	RCV'D	43 = 28.29%
SENT	SENT	40 = 26.32%
FAXD	FAX'D	43 = 28.29%
VOID	VOID	40 = 26.32%
PAID	PAID	40 = 26.32%
CFMD	CFM'D	43 = 28.29%
APRD	APR'D	43 = 28.29%
CMPLD	CMPL'D	53 = 34.87%
ORIGN	ORIGN	50 = 32.89%
FILE	FILE	40 = 26.32%
IN	IN	20 = 13.16%
OUT	OUT	30 = 19.74%
USED	USED	40 = 26.32%
SPACE	Space ()	03 = 1.97%
BLOCK	Field Divider (■)	07 = 4.61%
DASH	Dash (-)	10 = 4.61%
SLASH	Slash (/)	10 = 6.58%
ADD	Add a Character	-
DEL	Delete a Character	-
END	End of File	0 = 0%

Each symbol has a number of dots associated with it for printing. During line configuration, each line allows the user to select the maximum number of symbols, whose total doesn't exceed the maximum number of 160 dots. During the line configuration, only those symbols will appear for selection, which can comprise the total number of 160 dots per print line.

Set Print Year Format (P502)

This setting will override the default print year setting of the selected print format.

1. With the cover removed, press the **PROGRAM** button to begin button program mode and **P1 TIME** will appear.
2. Press the **+** or **-** button to change the current programming mode until the display shows **P5 others**.
3. Press the **ENTER** button once and the clock will display the submenu for other settings such as **P501**.
4. Press the **+** or **-** button until the display shows **P502 Print YEAR**.
5. Press the **ENTER** button once and the clock will start flashing the current print year format.
6. Press the **+** or **-** button to change the value. The choices are 2 DIGIT or 4 DIGIT. The default = 2 DIGIT. For example; 2 digit year = 2 digits with apostrophe, i.e., 2010 = '10. For example; 4 digit year for 2010 = 2010 printed.
7. Press the **ENTER** button once to accept the current displayed value and go back to the previous menu.
8. Replace the cover for normal operation.



Note – Print FORMAT – 6 is not supported with print year set to 4-digit year.

Set Print Hours Format (P503)

This setting will override the default print hour setting of the selected print format.

1. With the cover removed, press the **PROGRAM** button to begin button program mode and **P1 TIME** will appear.
2. Press the **+** or **-** button to change the current programming mode until the display shows **P5 others**.
3. Press the **ENTER** button once and the clock will display the submenu for other settings such as **P501**.

4. Press the **+** or **–** button until the display shows **P503 PRint hour.**
5. Press the **ENTER** button once and the clock will start flashing the current print hours format.
6. Press the **+** or **–** button to change the value. The choices are 12 HOUR or 24 HOUR. The default setting = 12 HOUR.
7. Press the **ENTER** button once to accept the current displayed value and go back to the previous menu.
8. Replace the cover for normal operation.



Set Print Minutes Format (P504)

1. With the cover removed, press the **PROGRAM** button to begin button program mode and **P1 TIME** will appear.
2. Press the **+** or **–** button to change the current programming mode until the display shows **P5 others.**
3. Press the **ENTER** button once and the clock will display the submenu for other settings such as **P501.**
4. Press the **+** or **–** button until the display shows **P504 PRint minute.** [The second line will scroll].
5. Press the **ENTER** button once and the clock will start flashing the current print minutes format.
6. Press the **+** or **–** button to change the value. The choices are 1/60th MINUTE, 1/100th MINUTE, 1/10th MINUTE, or 1/20th MINUTE. The default = 1/60th.
7. Press the **ENTER** button once to accept the current displayed value and go back to the previous menu.
8. Replace the cover for normal operation.



The user can set the print minutes from any of the following options:

- 1/10th Minutes – The minutes will be printed in 1/10 format, which means 6 minutes equal to 0.1 hour.
- 1/20th Minutes – The minutes will be printed in 1/20 format, which means 3 minutes equal 0.05 hour.
- 1/60th Minutes – The minutes will be printed in 1/60 format (Default),

which means 1 minute equals 0:01 hour.

- 1/100th Minutes – The minutes will be printed in 1/100 format, which means 36seconds equal 0.01 hour.

Based on the “print minute” setting, an imprint will be made as illustrated in the following table:

M'S"	0'00"	0'36"	1'00"	1'12"	1'48"	2'00"	2'24"	3'00"	3'36"	4'00"	4'12"	4'48"	5'00"	5'24"
60 th	hh:00	hh:00	hh:01	hh:01	hh:01	hh:02	hh:02	hh:03	hh:03	hh:04	hh:04	hh:04	hh:05	hh:05
10 th	hh.0	hh.0	hh.0	hh.0	hh.0	hh.0	hh.0	hh.0	hh.0	hh.0	hh.0	hh.0	hh.0	hh.0
100 th	hh.00	hh.01	hh.01	hh.02	hh.03	hh.03	hh.04	hh.05	hh.06	hh.06	hh.07	hh.08	hh.08	hh.09
20 th	hh.00	hh.00	hh.00	hh.00	hh.00	hh.00	hh.00	hh.05	hh.05	hh.05	hh.05	hh.05	hh.05	hh.05
M'S"	6'00"	6'36"	7'00"	7'12"	7'48"	8'00"	8'24"	9'00"	9'36"	10'00"	10'12"	10'48"	11'00"	11'24"
60 th	hh:06	hh:06	hh:07	hh:07	hh:07	hh:08	hh:08	hh:09	hh:09	hh:10	hh:10	hh:10	hh:11	hh:11
10 th	hh.1	hh.1	hh.1	hh.1	hh.1	hh.1	hh.1	hh.1	hh.1	hh.1	hh.1	hh.1	hh.1	hh.1
100 th	hh.10	hh.11	hh.11	hh.12	hh.13	hh.13	hh.14	hh.15	hh.16	hh.16	hh.17	hh.18	hh.18	hh.19
20 th	hh.10	hh.10	hh.10	hh.10	hh.10	hh.10	hh.10	hh.15	hh.15	hh.15	hh.15	hh.15	hh.15	hh.15
M'S"	12'00"	12'36"	13'00"	13'12"	13'48"	14'00"	14'24"	15'00"	15'36"	16'00"	16'12"	16'48"	17'00"	17'24"
60 th	hh:12	hh:12	hh:13	hh:13	hh:13	hh:14	hh:14	hh:15	hh:15	hh:16	hh:16	hh:16	hh:17	hh:17
10 th	hh.2	hh.2	hh.2	hh.2	hh.2	hh.2	hh.2	hh.2	hh.2	hh.2	hh.2	hh.2	hh.2	hh.2
100 th	hh.20	hh.21	hh.21	hh.22	hh.23	hh.23	hh.24	hh.25	hh.26	hh.26	hh.27	hh.28	hh.28	hh.29
20 th	hh.20	hh.20	hh.20	hh.20	hh.20	hh.20	hh.20	hh.25	hh.25	hh.25	hh.25	hh.25	hh.25	hh.25
M'S"	18'00"	18'36"	19'00"	19'12"	19'48"	20'00"	20'24"	21'00"	21'36"	22'00"	22'12"	22'48"	23'00"	23'24"
60 th	hh:18	hh:18	hh:19	hh:19	hh:19	hh:20	hh:20	hh:21	hh:21	hh:22	hh:22	hh:22	hh:23	hh:23
10 th	hh.3	hh.3	hh.3	hh.3	hh.3	hh.3	hh.3	hh.3	hh.3	hh.3	hh.3	hh.3	hh.3	hh.3
100 th	hh.30	hh.31	hh.31	hh.32	hh.33	hh.33	hh.34	hh.35	hh.36	hh.36	hh.37	hh.38	hh.38	hh.39
20 th	hh.30	hh.30	hh.30	hh.30	hh.30	hh.30	hh.30	hh.35	hh.35	hh.35	hh.35	hh.35	hh.35	hh.35
M'S"	24'00"	24'36"	25'00"	25'12"	25'48"	26'00"	26'24"	27'00"	27'36"	28'00"	28'12"	28'48"	29'00"	29'24"
60 th	hh:24	hh:24	hh:25	hh:25	hh:25	hh:26	hh:26	hh:27	hh:27	hh:28	hh:28	hh:28	hh:29	hh:29
10 th	hh.4	hh.4	hh.4	hh.4	hh.4	hh.4	hh.4	hh.4	hh.4	hh.4	hh.4	hh.4	hh.4	hh.4
100 th	hh.40	hh.41	hh.41	hh.42	hh.43	hh.43	hh.44	hh.45	hh.46	hh.46	hh.47	hh.48	hh.48	hh.49
20 th	hh.40	hh.40	hh.40	hh.40	hh.40	hh.40	hh.40	hh.45	hh.45	hh.45	hh.45	hh.45	hh.45	hh.45
M'S"	30'00"	30'36"	31'00"	31'12"	31'48"	32'00"	32'24"	33'00"	33'36"	34'00"	34'12"	34'48"	35'00"	35'24"
60 th	hh:30	hh:30	hh:31	hh:31	hh:31	hh:32	hh:32	hh:33	hh:33	hh:34	hh:34	hh:34	hh:35	hh:35
10 th	hh.5	hh.5	hh.5	hh.5	hh.5	hh.5	hh.5	hh.5	hh.5	hh.5	hh.5	hh.5	hh.5	hh.5
100 th	hh.50	hh.51	hh.51	hh.52	hh.53	hh.53	hh.54	hh.55	hh.56	hh.56	hh.57	hh.58	hh.58	hh.59
20 th	hh.50	hh.50	hh.50	hh.50	hh.50	hh.50	hh.50	hh.55	hh.55	hh.55	hh.55	hh.55	hh.55	hh.55
M'S"	36'00"	36'36"	37'00"	37'12"	37'48"	38'00"	38'24"	39'00"	39'36"	40'00"	40'12"	40'48"	41'00"	41'24"
60 th	hh:36	hh:36	hh:37	hh:37	hh:37	hh:38	hh:38	hh:39	hh:39	hh:40	hh:40	hh:40	hh:41	hh:41
10 th	hh.6	hh.6	hh.6	hh.6	hh.6	hh.6	hh.6	hh.6	hh.6	hh.6	hh.6	hh.6	hh.6	hh.6
100 th	hh.60	hh.61	hh.61	hh.62	hh.63	hh.63	hh.64	hh.65	hh.66	hh.66	hh.67	hh.68	hh.68	hh.69
20 th	hh.60	hh.60	hh.60	hh.60	hh.60	hh.60	hh.60	hh.65	hh.65	hh.65	hh.65	hh.65	hh.65	hh.65
M'S"	42'00"	42'36"	43'00"	43'12"	43'48"	44'00"	44'24"	45'00"	45'36"	46'00"	46'12"	46'48"	47'00"	47'24"
60 th	hh:42	hh:42	hh:43	hh:43	hh:43	hh:44	hh:44	hh:45	hh:45	hh:46	hh:46	hh:46	hh:47	hh:47
10 th	hh.7	hh.7	hh.7	hh.7	hh.7	hh.7	hh.7	hh.7	hh.7	hh.7	hh.7	hh.7	hh.7	hh.7
100 th	hh.70	hh.71	hh.71	hh.72	hh.73	hh.73	hh.74	hh.75	hh.76	hh.76	hh.77	hh.78	hh.78	hh.79
20 th	hh.70	hh.70	hh.70	hh.70	hh.70	hh.70	hh.70	hh.75	hh.75	hh.75	hh.75	hh.75	hh.75	hh.75
M'S"	48'00"	48'36"	49'00"	49'12"	49'48"	50'00"	50'24"	51'00"	51'36"	52'00"	52'12"	52'48"	53'00"	53'24"
60 th	hh:48	hh:48	hh:49	hh:49	hh:49	hh:50	hh:50	hh:51	hh:51	hh:52	hh:52	hh:52	hh:53	hh:53
10 th	hh.8	hh.8	hh.8	hh.8	hh.8	hh.8	hh.8	hh.8	hh.8	hh.8	hh.8	hh.8	hh.8	hh.8
100 th	hh.80	hh.81	hh.81	hh.82	hh.83	hh.83	hh.84	hh.85	hh.86	hh.86	hh.87	hh.88	hh.88	hh.89
20 th	hh.80	hh.80	hh.80	hh.80	hh.80	hh.80	hh.80	hh.85	hh.85	hh.85	hh.85	hh.85	hh.85	hh.85
M'S"	54'00"	54'36"	55'00"	55'12"	55'48"	56'00"	56'24"	57'00"	57'36"	58'00"	58'12"	58'48"	59'00"	59'24"
60 th	hh:54	hh:54	hh:55	hh:55	hh:55	hh:56	hh:56	hh:57	hh:57	hh:58	hh:58	hh:58	hh:59	hh:59
10 th	hh.9	hh.9	hh.9	hh.9	hh.9	hh.9	hh.9	hh.9	hh.9	hh.9	hh.9	hh.9	hh.9	hh.9

100 th	hh.90	hh.91	hh.91	hh.92	hh.93	hh.93	hh.94	hh.95	hh.96	hh.96	hh.97	hh.98	hh.98	hh.99
20 th	hh.90	hh.90	hh.90	hh.90	hh.90	hh.90	hh.90	hh.95	hh.95	hh.95	hh.95	hh.95	hh.95	hh.95

Set Print Leading Zero (P505)

The leading zero setting affects only the month, day, hour, and day of the week printing. The other symbols [year, seconds, minutes, etc.] will ignore this setting and always print a leading zero in front of a single digit.

1. With the cover removed, press the **PROGRAM** button to begin button program mode and **P1 TIME** will appear.
2. Press the **+** or **-** button to change the current programming mode until the display shows **P5 others**.
3. Press the **ENTER** button once and the clock will display the submenu for other settings such as **P501**.
4. Press the **+** or **-** button until the display shows **P505 PRINT leading zero**. [The second line will scroll]
5. Press the **ENTER** button once and the clock will start flashing the current leading zero format.
6. Press the **+** or **-** button to change the LEADING ZERO setting to the desired value. Your choices are ENABLED or DISABLED. The default setting = Disabled [OFF]. When it is turned off, the printer will not print a leading zero before a single digit number [example: **Jan 1**].
7. Press the **ENTER** button once to accept the current displayed value and go back to the previous menu.
8. Replace the cover for normal operation.



Set Print Language (P506)

1. With the cover removed, press the **PROGRAM** button to begin button program mode and **P1 TIME** will appear.
2. Press the **+** or **-** button to change the current programming mode until the display shows **P5 others**.
3. Press the **ENTER** button once and the clock will display the submenu for other settings such as **P501**.

4. Press the **+** or **-** button until the display shows **P506 Print language**. [The second line will scroll].



5. Press the **ENTER** button once and the clock will start flashing the current print language format. The default setting = ENGLISH.
6. Press the **+** or **-** button to change the PRINT LANGUAGE setting to the desired value. Your choices are ENGLISH, SPANISH, FRENCH, GERMAN, ITALIAN, or PORTUGUESE. See the table for a complete listing of language characters.
7. Press the **ENTER** button once to accept the current displayed value and go back to the previous menu.
8. Replace the cover for normal operation.

Table: Print Languages

	English	Spanish	French	Germany	Italy	Portuguese	Numeric
Monday	MO	LU	LU	MO	LU	SG	1
Tuesday	TU	MA	MA	DI	MA	TR	2
Wednesday	WE	MI	ME	MI	ME	QU	3
Thursday	TH	JU	JE	DO	GI	QI	4
Friday	FR	VI	VE	FR	VE	SX	5
Saturday	SA	SA	SA	SA	SA	SB	6
Sunday	SU	DO	DI	SO	DO	DO	7
January	JAN	ENE	JAN	JAN	GEN	JAN	1
February	FEB	FEB	FEV	FEB	FEB	FEV	2
March	MAR	MAR	MAR	MAR	MAR	MAR	3
April	APR	ABR	AVR	APR	APR	ABR	4
May	MAY	MAY	MAI	MAI	MAG	MAI	5
June	JUN	JUN	JUN	JUN	GIU	JUN	6
July	JUL	JUL	JUL	JUL	LUG	JUL	7
August	AUG	AGO	AOU	AUG	AGO	AGO	8
September	SEP	SEP	SEP	SEP	SET	SET	9
October	OCT	OCT	OCT	OKT	OTT	OUT	10
November	NOV	NOV	NOV	NOV	NOV	NOV	11
December	DEC	DIC	DEC	DEZ	DIC	DEZ	12
received	RCVD	RCBDO	RECU	EING	RICEV	RCBDO	RCVD
sent	SENT	ENVDO	ENV	AUSG	SPED	ENVDO	SENT
faxed	FAXED	FAX	FAXE	FAX	FAX	FAX	FAXED
void	VOID	ANLDO	ANNUL	LAGER	ANNUL	ANUL	VOID
paid	PAID	PGADO	PAYE	BEZ	PAGA	PAGO	PAID
confirmed	CFM'D	CONF	CONF	EMPF	CONF	CONF	CFM'D
approved	APR'D	APBDO	APPR	BEST	APPR	APRV	APR'D
completed	CMPL'D	TRMDO	TERM	ABGES	COMPL	TERM	CMPL'D

	English	Spanish	French	Germany	Italy	Portuguese	Numeric
origin	ORIGN	ORIGN	ORIG	ORIG	ORIG	ORIG	ORIGN
file	FILE	ARCH	FICH	AKTE	FILE	ARQV	FILE
in	IN	ENTRA	ENTRE	KOMMT	ENTRA	ENTRA	IN
out	OUT	SALID	SORTI	GEHT	USCIT	SALID	OUT
Used	USED	UTIL	UTIL	GEBRA	UTIL	UTIL	USED

Set Print Direction (P507)

1. With the cover removed, press the **PROGRAM** button to begin button program mode and **P1 TIME** will appear.
2. Press the **+** or **-** button to change the current programming mode until the display shows **P5 others**.
3. Press the **ENTER** button once and the clock will display the submenu for other settings such as **P501**.
4. Press the **+** or **-** button until the display shows **P507 Print direction**. [The second line will scroll]
5. Press the **ENTER** button once and the clock will start flashing the current print direction.
6. Press the **+** or **-** button to change the value. Your choices are LEFT or RIGHT. The default = RIGHT.
7. Press the **ENTER** button once to accept the current displayed value and go back to the previous menu.
8. Replace the cover for normal operation.



Set Paper Detection (P509)

The paper detect sensor can be set for either Center, Edge, or Both. Amano recommends the default setting of EDGE for paper detection. If your TCX-85 is not printing, make sure you are triggering the paper sensor, which can be changed with this parameter.

1. With the cover removed, press the **PROGRAM** button to begin button program mode and **P1 TIME** will appear.
2. Press the **+** or **-** button to change the current programming mode until the display shows **P5 others**.

3. Press the **ENTER** button once and the clock will display the submenu for other settings such as **P501**.
4. Press the **+** or **-** button until the display shows **P509 Paper detect**. [The second line will scroll]
5. Press the **ENTER** button once and the clock will start flashing the current paper detection setting.
6. Press the **+** or **-** button to change the value. Your choices are EDGE, CENTER, or BOTH. The default = EDGE.



Note – the CENTER setting cannot be used for Amano time cards Part Number (**AMA5200**).

7. Press the **ENTER** button once to accept the current displayed value and go back to the previous menu.
8. Replace the cover for normal operation.

Changing Begin Date for Daylight Saving Time (P510)

Note – the government standard for Daylight Saving is subject to change. Your clock is factory set for correct Daylight Saving based upon when it was manufactured, but any revision to Daylight Saving begin or end dates may require updating the system-set Daylight Saving calendar. The default start date setting = March 13, 2011 at 2:00AM, which is the second Sunday of March, 2011.



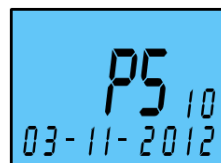
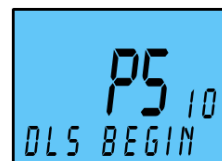
If the current year and date has been changed, the available daylight saving start/end date will be automatically updated.

The TCX-85 during DLS advance/rollback at 2:00 AM will only shift 1 hour.

If the DLS feature is enabled and the user sets the same start/end dates, the clock will not change its time on the start/end date. However, the clock will calculate the start/end date for the next year.

The following steps change the begin date for Daylight Saving. Updating the begin date for Daylight Saving needs to be done just one time, since the clock's rolling calendar function will auto-calculate the begin date for each year thereafter. To change the *end* date for Daylight Saving, refer to the next section.

1. With the cover removed, press the **PROGRAM** button to begin button program mode and **P1 TIME** will appear.
2. Press the **+** or **-** button to change the current programming mode until the display shows **P5 others.**
3. Press the **ENTER** button once and the clock will display the submenu for other settings such as **P501.**
4. Press the **+** or **-** button until the display shows **P510 dls begin date.** [The second line will scroll]
5. Press the **ENTER** button once and the month will start flashing. Press the **+** or **-** button to increase or decrease the month value.
6. Press the **ENTER** button once to set the desired month and go to the date setup mode.
7. The date will start flashing. Press the **+** or **-** button to increase or decrease the date.
8. Press the **ENTER** button once to set the desired date and go to the year setup mode.
9. The year will start flashing. Press the **+** or **-** button to increase or decrease the year.
10. Press the **ENTER** button once to set the desired year and complete the set date mode and go to the previous menu.
11. Replace the cover for normal operation.



Changing End Date for Daylight Saving Time (P511)



Note – the government standard for Daylight Saving is subject to change. Your clock is factory set for correct Daylight Saving based upon when it was manufactured, but any revision to Daylight Saving begin or end dates may require updating the system-set Daylight Saving calendar. The default end date setting = November 6, 2011 at 2:00AM, which is the first Sunday of November, 2011.

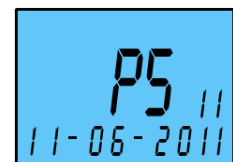
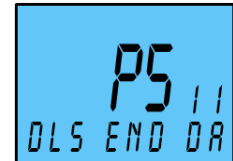
If the current year and date has been changed, the available daylight saving start/end date will be automatically updated.

The TCX-85 during DLS advance/rollback at 2:00 AM will only shift 1 hour.

If the DLS feature is enabled and the user sets the same start/end dates, the clock will not change its time on the start/end date. However, the clock will calculate the start/end date for the next year.

The steps below change the end date for Daylight Saving. Updating the end date for Daylight Saving needs to be done just one time, since the clock's rolling calendar function will auto-calculate the end date for each year thereafter. To change the *begin* date for Daylight Saving, refer to the previous section.

1. With the cover removed, press the **PROGRAM** button to begin button program mode and **P1 TIME** will appear.
2. Press the **+** or **-** button to change the current programming mode until the display shows **P5 others**.
3. Press the **ENTER** button once and the clock will display the submenu for other settings such as **P501**.
4. Press the **+** or **-** button until the display shows **P511 dls end date**. [The second line will scroll]
5. Press the **ENTER** button once and the month will start flashing. Press the **+** or **-** button to increase or decrease the month value.
6. Press the **ENTER** button once to set the desired month and go to the date setup mode.
7. The date will start flashing. Press the **+** or **-** button to increase or decrease the date.
8. Press the **ENTER** button once to set the desired date and go to the year setup mode.
9. The year will start flashing. Press the **+** or **-** button to increase or decrease the year.
10. Press the **ENTER** button once to set the desired year and complete the set date mode and go to the previous menu.
11. Replace the cover for normal operation.



Note – In order for the Daylight Saving Time feature to function correctly, both Begin and End dates need to be programmed.

Set Time Zone (P513)

1. With the cover removed, press the **PROGRAM** button to begin button program mode and **P1 TIME** will appear.
2. Press the **+** or **-** button to change the current programming mode until the display shows **P5 others**.
3. Press the **ENTER** button once and the clock will display the submenu for other settings such as **P501**.
4. Press the **+** or **-** button until the display shows **P513 time zone**.
5. Press the **ENTER** button once and the clock will start flashing the current time zone setting.
6. Press the **+** or **-** button to change the value. Your choices are EASTERN, CENTRAL, MOUNTAIN, PACIFIC, and various GMT settings. The default = PACIFIC, so use the **-** button to change the value to MOUNTAIN → CENTRAL → EASTERN.
7. Press the **ENTER** button once to accept the current displayed value and go back to the previous menu.
8. Replace the cover for normal operation.



Set Display Hour Format (P514)

1. With the cover removed, press the **PROGRAM** button to begin button program mode and **P1 TIME** will appear.
2. Press the **+** or **-** button to change the current programming mode until the display shows **P5 others**.
3. Press the **ENTER** button once and the clock will display the submenu for other settings such as **P501**.

4. Press the **+** or **–** button until the display shows **P514 display hour**. [The second line will scroll]



5. Press the **ENTER** button once and the clock will start flashing the current display hours format setting.

6. Press the **+** or **–** button to change the value. Your choices are 12-HOUR or 24-HOUR. The default = 12-HOUR.

7. Press the **ENTER** button once to accept the current displayed value and go back to the previous menu.

8. Replace the cover for normal operation.

Set Display Contrast (P515)

1. With the cover removed, press the **PROGRAM** button to begin button program mode and **P1 TIME** will appear.

2. Press the **+** or **–** button to change the current programming mode until the display shows **P5 others**.

3. Press the **ENTER** button once and the clock will display the submenu for other settings such as **P501**.

4. Press the **+** or **–** button until the display shows **P515 LCD contrast**. [The second line will scroll].



5. Press the **ENTER** button once and the clock will start flashing the current display contrast setting.

6. Press the **+** or **–** button to change the value. Your choices are 0 to 15. The default = 0.

7. Press the **ENTER** button once to accept the current displayed value and go back to the previous menu.

8. Replace the cover for normal operation.

Set LCD Backlight (P516)

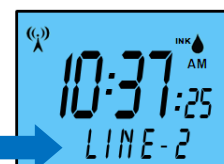
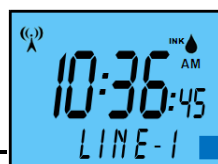
1. With the cover removed, press the **PROGRAM** button to begin button program mode and **P1 TIME** will appear.

2. Press the **+** or **-** button to change the current programming mode until the display shows **P5 others**.
3. Press the **ENTER** button once and the clock will display the submenu for other settings such as **P501**.
4. Press the **+** or **-** button until the display shows **P516 LCD backlight**. [The second line will scroll].
5. Press the **ENTER** button once and the clock will start flashing the current display backlight setting.
6. Press the **+** or **-** button to change the value. Your choices are 0 to 15. The default = 5.
7. Press the **ENTER** button once to accept the current displayed value and go back to the previous menu.
8. Replace the cover for normal operation.



Set Auxiliary Display (P517)

1. With the cover removed, press the **PROGRAM** button to begin button program mode and **P1 TIME** will appear.
2. Press the **+** or **-** button to change the current programming mode until the display shows **P5 others**.
3. Press the **ENTER** button once and the clock will display the submenu for other settings such as **P501**.
4. Press the **+** or **-** button until the display shows **P517 AUX display**. [The second line will scroll].
5. Press the **ENTER** button once and the clock will start flashing the current auxiliary display setting.
6. Press the **+** or **-** button to change the value. The choices are DATE or LINE NUM. The default = DATE. When set to LINE NUM, and the cover is on the 2nd line [auxiliary line] will show the current default print format (see example right-hand Figure). However, if a custom print format is defined for line 2 the clock will display "**LINE - 1**" in the auxiliary line to prompt the user that the first line will be printed. After printing line 1, the



clock will display "**LINE - 2**" for 5 seconds to prompt the user that line 2 is being printed (see example Figure above).

7. Press the **ENTER** button once to accept the current displayed value and go back to the previous menu.
8. Replace the cover for normal operation.

Set Clock Voice Mode (P518)

1. With the cover removed, press the **PROGRAM** button to begin button program mode and **P1 TIME** will appear.
2. Press the **+** or **-** button to change the current programming mode until the display shows **P5 others**.
3. Press the **ENTER** button once and the clock will display the submenu for other settings such as **P501**.
4. Press the **+** or **-** button until the display shows **P518 voice mode**.
5. Press the **ENTER** button once and the clock will start flashing the current voice mode setting.
6. Press the **+** or **-** button to change the value. Your choices are ENABLED or DISABLED. The default = ENABLED.
7. Press the **ENTER** button once to accept the current displayed value and go back to the previous menu.
8. Replace the cover for normal operation.



Set Clock Voice Volume (P519)

1. With the cover removed, press the **PROGRAM** button to begin button program mode and **P1 TIME** will appear.
2. Press the **+** or **-** button to change the current programming mode until the display shows **P5 others**.
3. Press the **ENTER** button once and the clock will display the submenu for other settings such as **P501**.

4. Press the **+** or **–** button until the display shows **P519 volume**.
5. Press the **ENTER** button once and the clock will start flashing the current voice volume setting. The default = HIGH. The choices are LOW, MEDIUM, and HIGH.
6. Press the **+** or **–** button to change the value.
7. Press the **ENTER** button once to accept the current displayed value and go back to the previous menu.
8. Replace the cover for normal operation.



Acceptable Print Media

Print Media is defined as the type of material you will be using in the machine to time stamp (time cards, documents, etc.). To avoid damaging the print head, it is recommended that you do not exceed a media thickness of 0.3 mm (0.01"). The following are general specifications for the different media dimensions.

- **Time Card:** Time card thickness less than or equal to 0.3 mm (0.01").
- **Small Ticket:** Tickets, slips, receipts or other validation media should be no smaller than 100 mm (4") long x 60 mm (2.25") wide.
- **Larger Paper:** When using standard paper sizes, such as 8.5" x 11", if the weight of the paper (thickness) is too light, the paper will curl up and tear off inside the TCX-85 clock. This may result in jams or damage to the clock.



Note – Amano recommends using the manual print method (see "Setting the Print Method") for large paper and transparent media printing.

- **Carbon Paper:** The TCX-85 clock will print on both carbon and carbonless paper. The imprint will print through up to four copies, depending on the quality of the document used. Carbon and carbonless paper deteriorates over time. Humidity, high temperatures and sunlight accelerate this process. For maximum print performance, use only high grade, uncontaminated carbon or carbonless paper.

Adjusting the Print Margin

If you wish to change the default margin adjustment, locate the **Margin Selector** on the print platen once the cover has been removed and slide in the direction of the arrows to adjust the print margin (see Figure 5).

This selector will move the **Paper Sensor** forward or backward on the **Printer Platen** and determine how much of a margin there is between the imprint and the edge of the print media. The margin can be adjusted to a maximum of 15 mm (0.6").

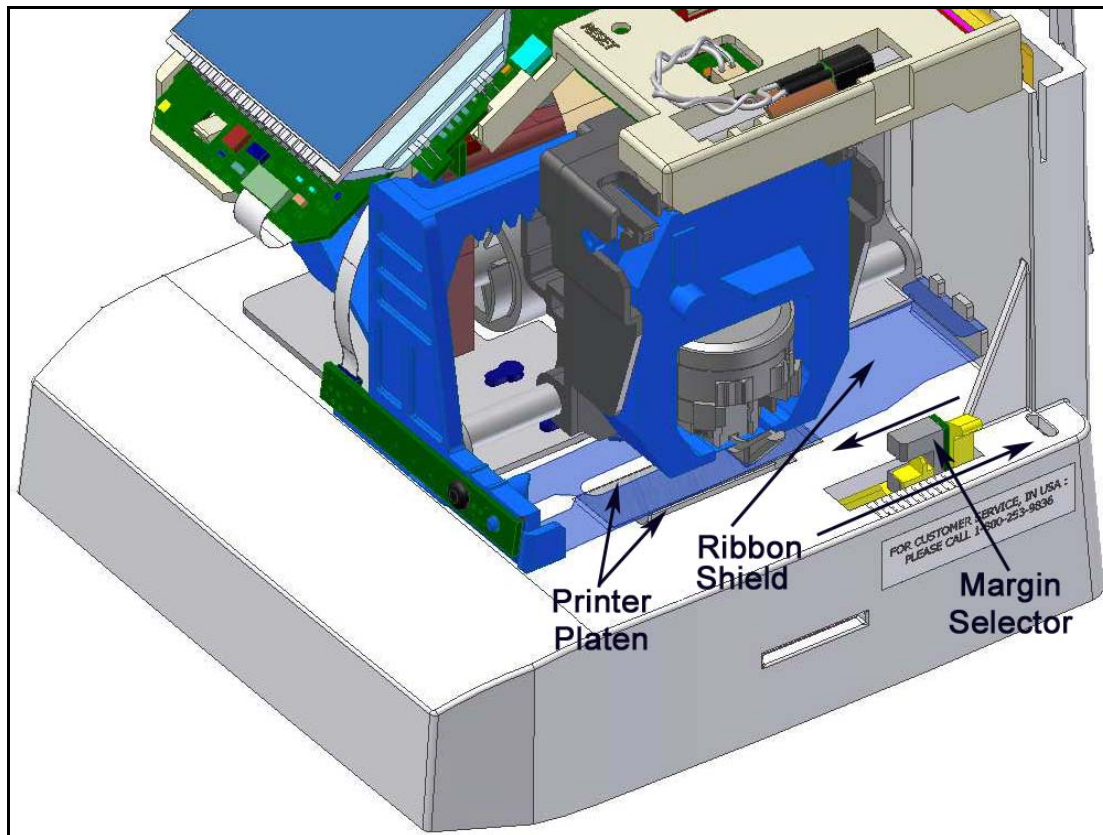


Figure 5: TCX-85 Print Margin Adjustment.

Atomic Clock Feature (Not available in HI and AK)

The atomic clock receives time signals on long wave radio (60 kHz) from the National Institute of Standards and Technology (NIST) radio station WWVB, located in Fort Collins, Colorado, which is coupled with the atomic cesium clock in Boulder; no other time-code signal is supported. The TCX-85 receives the WWVB time signal via its built-in antenna system. Your clock will try to find the signal continuously if this feature is enabled.



When the clock is powered on, the time is changed, or the **Reset** button is pressed, the clock receiver is enabled to acquire the Atomic Time Synchronization signal, and the indicator will display the triangle tower symbol. Once the correct minutes and seconds [time] is received the curved wave symbol will be displayed with the tower.

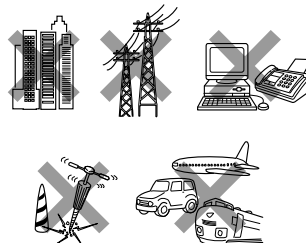
If your TCX-85 is located in an area that cannot receive the Atomic time signal, DO NOT be concerned, since the TCX-85 is able to accurately keep the time using its quartz mechanism (plus or minus three (3) seconds per week).

Please visit to <http://tf.nist.gov/stations/radioclocks.htm> for more information about how radio-controlled clocks work, where they work, and what to do when they don't work.

Inappropriate places to keep the unit

Please note that the clock may be unable to receive radio wave signals properly under the following conditions.

- Inside a large building, between tall buildings, underground, building without windows.
- Close to overhead power lines, TV stations and train cables.
- Close to home electrical appliances or devices such as TV's, PC's, refrigerators or fax machines.
- Close to furniture made of steel, such as steel desk.
- In places generating radio interference, such as near construction sites, airports or in heavy traffic.
- Inside a vehicle, train or airplane.



To help enhance signal reception, Amano recommends facing the clock display in either South or North direction.

Enable/Disable Atomic Clock Feature (P5 12)

1. With the cover removed, press the **PROGRAM** button to begin button program mode and **P1 TIME** will appear.
2. Press the **+** or **-** button to change the current programming mode until the display shows **P5 others**.
3. Press the **ENTER** button once and the clock will display the submenu for other settings such as **P501**.
4. Press the **+** or **-** button until the display shows **P5 12 atomic clock**.



5. Press the **ENTER** button once and the clock will start flashing the current atomic clock setting.
6. Press the **+** or **–** button to change the value to either enabled or disabled. The default setting = Enabled [ON].
7. Press the **ENTER** button once to accept the current displayed value and go back to the previous menu.
8. Replace the cover for normal operation.



Note FAQ – If the Atomic Clock feature has been turned off by setting to disable, pressing the “Reset” button or changing the time will not turn the feature back on. The feature must be Enabled by following the above steps.

Ribbon Cartridge Replacement

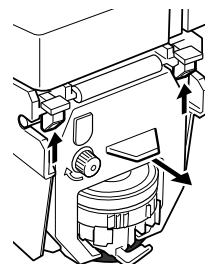
- Step 1. Insert the clock key and turn clockwise to unlock the cover, lift up the cover, and remove for ribbon access. Locate the ribbon cradle.



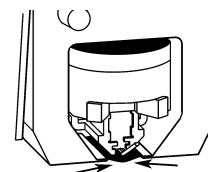
Note – You MUST have the key to remove the cover for ribbon replacement.

The Amano TCX-85 clock pictured in Figure 6 shows a typical layout with the ribbon cartridge removed from the cradle.

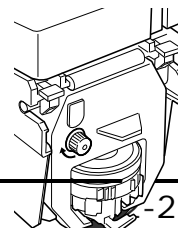
- Step 2. Grasp the tab on the ribbon cartridge, and pull the ribbon cartridge out of the cradle (see Figure 6).



- Step 3. Insert a new ribbon and be sure to guide the ribbon between the ribbon shield and the printer head as illustrated (see right-hand Figure and arrows).



- Step 4. Turn the knob on the cartridge clockwise one turn to take up any slack in the ribbon (see right-hand Figure).



- Step 5. To reset the INK indicator, press and hold the **ENTER** button for three (3) seconds.
- Step 6. Replace the cover, and stamp a card to check the printing quality and confirm that you have installed the ribbon cartridge properly.



Note – If the print mechanism is down (a piece of paper could not be inserted), press the **RESET** button to move the carriage to the up position. This will make the ribbon cartridge installation easier. **The Margin Selector (see Figure 6) can be moved toward the rear of the clock to provide more clearance for ribbon replacement.**

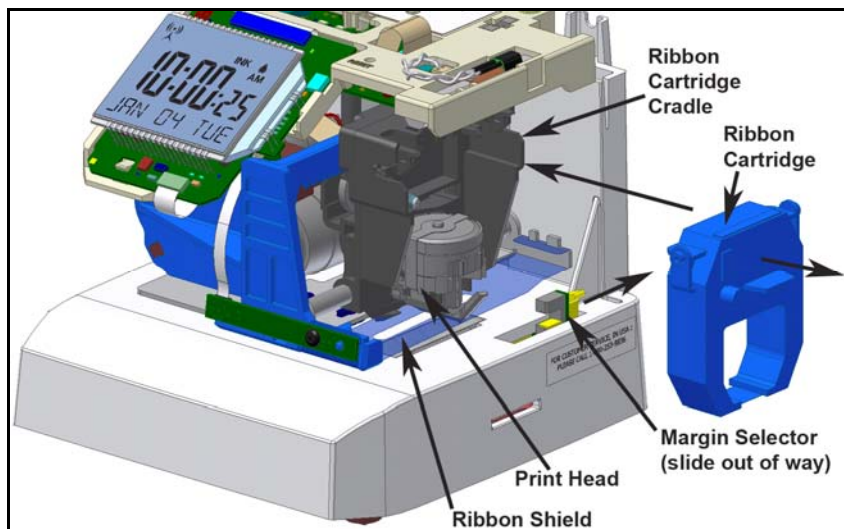


Figure 6: TCX-85 Ribbon Cradle Location.

Parts

Need Ribbons, Keys and Accessories?
Visit
www.amano.com/time
Or call 1-800-253-9836

The TCX-85 ribbon cartridge in **Black** ink is Amano Part No. **CE-315151**
The TCX-85 ribbon cartridge in **Red** ink is Amano Part No. **YK-629671**
The TCX-85 ribbon cartridge in **Green** ink is Amano Part No. **YK-629771**

These ribbon cartridges are normally good for approximately 9,000 stamps, but they are supplied in sealed plastic bags to provide an average shelf life of 2 plus years.

The Amano Part number for a set of TCX-85 replacement keys is **AJR-201150**





Note – A key is required to unlock the top cover which allows you access to the ribbon cartridge for replacement and/or the programming.

The Amano Part number for a replacement Ribbon Shield (see Figure 6) is **AJR-600600**.

When ordering parts and/or accessories, be sure to include the TCX-85 model number.

Error Messages

In the event of an error, a message will appear in the display. The possible error messages are listed in the following table along with their probable causes and solutions.



Note – An error message can be possibly cleared by pressing the “**Reset**” button. The Reset button is located under the cover on top of the clock (see Figure 7). The Rest button is recessed, so it will require using an object such as the tip of a ballpoint pen to press.

For error messages **Pr E 01** through **Pr E 05**, unplug the clock before checking to see that the carriage is not stuck or jammed. Also, check to see that the ribbon cables are in good condition. After clearing any jams, plug the clock back in. Contact us at **1-800-253-9836** if you need assistance.

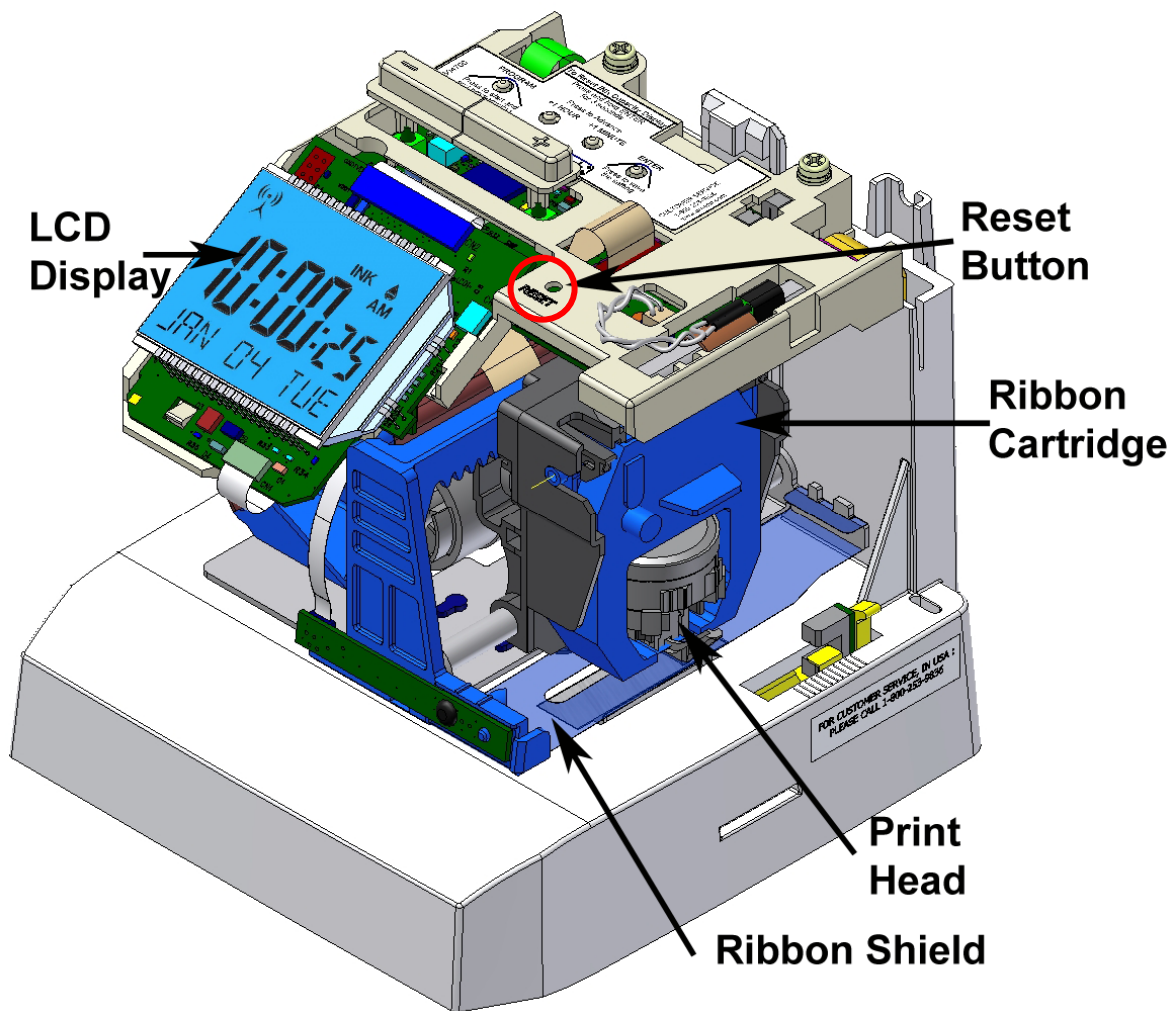


Figure 7: TCX-85 Reset Button Location.

Table: Error Messages

Error	Cause	Solution
Er 01	Home Position Error, Carriage Stuck.	Unlock cover and remove. Set TCX-85 on side with the ribbon side up. Press the Reset button to reset the printer carriage and blow air into the printer platen (see Figure 5 on page 2-23) to remove or dislodge jammed objects (i.e., staples).

Error	Cause	Solution
Er 02	Motor Sensor Error, Carriage Stuck.	Unlock cover and remove. Set TCX-85 on side with the ribbon side up. Press the Reset button to reset the printer carriage and blow air into the printer platen (see Figure 5 on page 2-23) to remove or dislodge jammed objects. If the error reoccurs, check the wires and cables to verify all components are connected properly.
Er 03	Motor Moving Error.	Unlock cover and remove. Press the Reset button to reset the printer carriage and the time should reappear on the display. Replace the cover and try to stamp a card again so you can hear the machine attempting to stamp.
Er 04	Print Buffer Empty.	User has configured clock for symbol printing without entering a symbol for line 1 or line 2. Select predefined print format or re-configure symbol printing.
Er 05	Print Buffer Full.	User has configured clock for symbol printing with more than allowed number of dots per line. This error could also occur with a pre-defined print format and overwriting print/minutes/year format. To correct the problem, select a pre-defined print format or enter less than 160 dots per line. If this error occurs the clock will ignore the print request and display the error.

TCX-85 Support

Should you need further assistance in clearing an error message:

1. Visit our website at: www.amano.com/time or find more information at www.amano.com/tkb
2. Call us at: **1 (800) 253-9836**
 - Monday – Friday 8:15am – 5:00pm (EST)

3. E-mail us at: tkb@amano.com

TCX-85 Cleaning

Do not use any chemical solvents or oils to clean or lubricate your TCX-85. This will damage your clock. To clean the inside of your clock, simply blow it out with air.

Resetting Clock After Extended Loss of Power

If there has been a AC power interruption sufficient to drain the internal lithium battery, the date setting, the clock setting and the Daylight Saving Time setting will need to be reset.

TCX-85 Power Modes

Power On Mode

During this mode where the clock has power from the AC power adapter, the clock will have all functionality and the display will show the current time, date, weekday, ink level, atomic clock signal level, etc.

Power Off Mode

During this mode where the clock has NO power from the AC power adapter, the clock will have NO functionality and the display will be off. The clock will continue to run on the internal coin battery to retain the correct time and user settings. Upon restoring the AC power, the clock will return to normal operation.



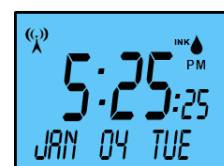
Note – If the clock does not have AC power and the coin battery is removed or dead, the clock will lose all user settings and the time and date will revert to displaying the factory default setting of **Jan 1, 2011, 12:00 AM** when the AC power is restored. The maximum amount to time the clock can preserve the user settings with the coin battery is 2 years (see Specifications on page 2-33).

TCX-85 Time Display Modes

The time will always be displayed on the TCX-85 LCD display when the clock is connected to AC power.

12 Hour Format

In the 12 hour time format, the hours will be displayed up to 12 with the letters “AM” or “PM”. For example, 12:05AM and 5:25 PM (see Figure).



24 Hour Format

In the 24 hour time format [alias “military time”], the hours will be displayed up to 23. The time after 12 hours would be considered “PM”. For example, 17:25 (see Figure) = 5:25 PM, 12:00 = 12:00, 00:01 = 12:01 AM, and etc.

Wall Mounting Template

Use the “Mounting Template” page of the Installation and Operation Guide as a template for wall mounting the TCX-85. Cut out the figure to use as a template. This figure has been designed, when printed at 100%, to be the correct size for mounting hole placement. However, the mounting hole placement should be verified that it conforms to the listed dimensions.



Note – the optional security screw, if used, must be installed at a downward angle to provide adequate clearance for the cover to fit on properly (see the following figure). The top plate has been notched to accommodate the screw insertion at a downward angle.

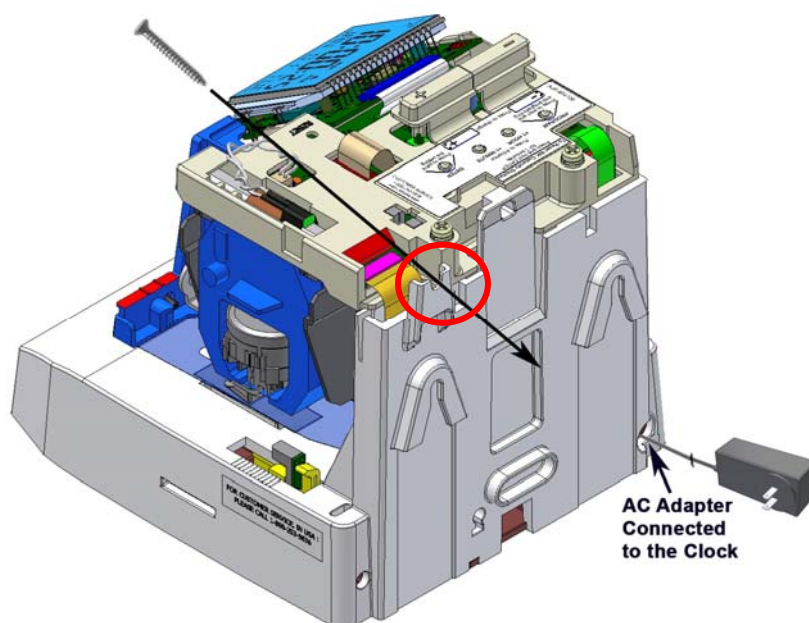


Figure 8: TCX-85 Optional Security Screw.

TCX-85 Programmable Features Summary

The following table summarizes some of the TCX-85 features that are user programmable in the button mode.

Feature (Menu Item)	Description	Install Guide
P1 TIME	Set the displayed clock time.	Pg. 1-8

Feature (Menu Item)	Description	Install Guide
P2 DATE	Set the clock date [Month/Date/Year].	Pg. 1-8
P3 DAYLIGHT SAVING	Enable/disable automatic Daylight Saving adjustment.	Pg. 1-9
P4 PRINT FORMAT	Select 1 of 6 pre-defined print formats for single line printing.	Pg. 1-3
P5 OTHERS	Access submenu items for additional other features.	
P501 Custom print	Setup custom symbol print format for a maximum of two (2) print lines. Also, used to add and delete symbols or print line.	Pg. 2-4
P502 PRINT YEAR	Setup printed year format.	Pg. 2-9
P503 PRINT HOUR	Setup printed hour format.	Pg. 2-9
P504 PRINT MINUTE	Setup printed minute format.	Pg. 2-10
P505 leading zero	Enable/disable leading zero from being printed.	Pg. 2-12
P506 PRINT language	Select the language to print pre- formatted and custom symbol print.	Pg. 2-12
P507 PRINT direction	Select print direction (left or right).	Pg. 2-14
P508 PRINT Method	Enabling/Disabling TCX-85 method for printing.	Pg. 1-10
P509 Paper detect	Setup method TCX-85 uses to detect paper for printing.	Pg. 2-14
P510 DLS BEGIN DATE	Change DLS start date from factory default setting.	Pg. 2-15
P511 DLS end DATE	Change DLS end date from factory default setting.	Pg. 2-16
P512 Atomic clock	Enable/disable NIST Atomic time synchronization.	Pg. 2-24

Feature (Menu Item)	Description	Install Guide
P513 time zone	Select desired time zone.	Pg. 2-18
P514 display hour	Select displayed hour format. Display can be different from print.	Pg. 2-18
P515 lcd contrast	Select contrast for LCD display.	Pg. 2-19
P516 lcd backlight	Select brightness for LCD backlight.	Pg. 2-19
P517 aux display	Select either Date or line number format to be displayed on the 2 nd line [auxiliary line].	Pg. 2-20
P518 voice mode	Enable/disable voice mode.	Pg. 2-21
P519 voice volume	Select voice volume (loudness) for clock speaker.	Pg. 2-21

Please consult the TCX-85 Installation and Operation Guide at:
www.amano.com/tkb for detailed instructions.

Warranty Notice

Any claim for warranty, expressed or implied, due to the clock's failure to properly receive the radio signal because of interference, whatever the source of this interference may be, are hereby expressly excluded.

For more information about the WWVB radio signal, actual signal coverage in North America visit NIST's website at:

<http://tf.nist.gov/stations/radioclocks.htm>

For actual signal coverage in North America visit:

www.boulder.nist.gov/timefreq/stations/wwvbcovrage.htm

Warranty Information

Limited Warranty Statement: Amano Cincinnati, Inc. warrants this equipment to be free from defects in materials and workmanship for a period of one year from the date of purchase from an authorized distributor. If the equipment fails within the one year period, Amano Cincinnati, Inc. will, at its sole option, replace or repair at no charge, the equipment which, in its sole discretion is determined to be defective.

There are no other warranties expressed or implied and Amano Cincinnati, Inc. disclaims any and all other warranties including, without limitations, implied warranties of merchantability and fitness or a particular purpose. Under no circumstances will Amano Cincinnati, Inc. be liable for consequential, incidental or similar damages, including lost savings, profits or other damages caused by use in connection with the product or the ability to use the product, even if the distributor or Amano Cincinnati, Inc. has been advised of such potential liability or other claims, repair or replacement constitutes your sole and exclusive remedy. Some states do not allow the limitation or exclusion of liability for incidental or consequential damages, so the above limitation or exclusion may not apply to you.

During the one year period of warranty, Amano Cincinnati, Inc., will, at its sole option, replace or repair the returned product at no charge if it is determined by Amano Cincinnati, Inc. that the product has failed due to defects in materials and workmanship. If the failure is for any other reason, Amano Cincinnati, Inc. shall repair or replace the returned product and will charge a fee to cover repair or replacement, handling and service based upon its current price schedule in effect at the time of repair or replacement. Amano Cincinnati, Inc. reserves the right, at its sole option, to replace the returned product with a current product having similar features and functionality as determined by Amano Cincinnati, Inc. You, the customer are responsible for properly packing the product for shipment and for the charges for shipment and insuring the product during shipment to Amano Cincinnati, Inc. Amano Cincinnati, Inc. is responsible for the charges of shipment the repaired or replaced product back to you if it is determined that the product failed due to defects in materials or workmanship. If it is determined that the failure of the product was for reason other than defects in materials or workmanship, the product will be return to you C.O.D. for all charges. If the returned product has been modified without Amano Cincinnati, Inc. written consent or if the failure is the result of misuse, abuse, or misapplication, Amano Cincinnati, Inc. has no obligation to repair or replace the defective product. To obtain warranty service, this registration card must be returned to Amano Cincinnati, Inc. with proof of purchase in the form of an invoice from an authorized Amano Cincinnati distributor. For warranty and non-warranty service, contact the seller from whom you directly purchased the product.

For further instructions, extended warranty, or for the authorized Amano Cincinnati, service, support or parts distributor near you, call (800) 253-9836 or visit

www.amano.com

Any replacement or parts become the property of Amano Cincinnati, Inc.

Specifications

Power Requirements

For Clock Input: 15 VDC, 1.2A (Max.)

For AC Adapter: 100 - 240 VAC, 50/60Hz

Battery: Lithium Battery for Memory Backup in case of power failure (factory installed). Shelf life of 2 years.

Ambient Temperature: -10°C to 45°C (14°F to 113°F)

Ambient Humidity: 10% to 90% (non-condensing)

Clock Accuracy: ± 3 seconds/week on AC Power
± 10 seconds/week on Lithium

Dimensions: 6-11/16" (170 mm) Wide X 6- 7/16" (163 mm) High X 6-5/8" (168 mm) Deep.

Weight: Approximately 3.6 lbs. (1.63 kg)

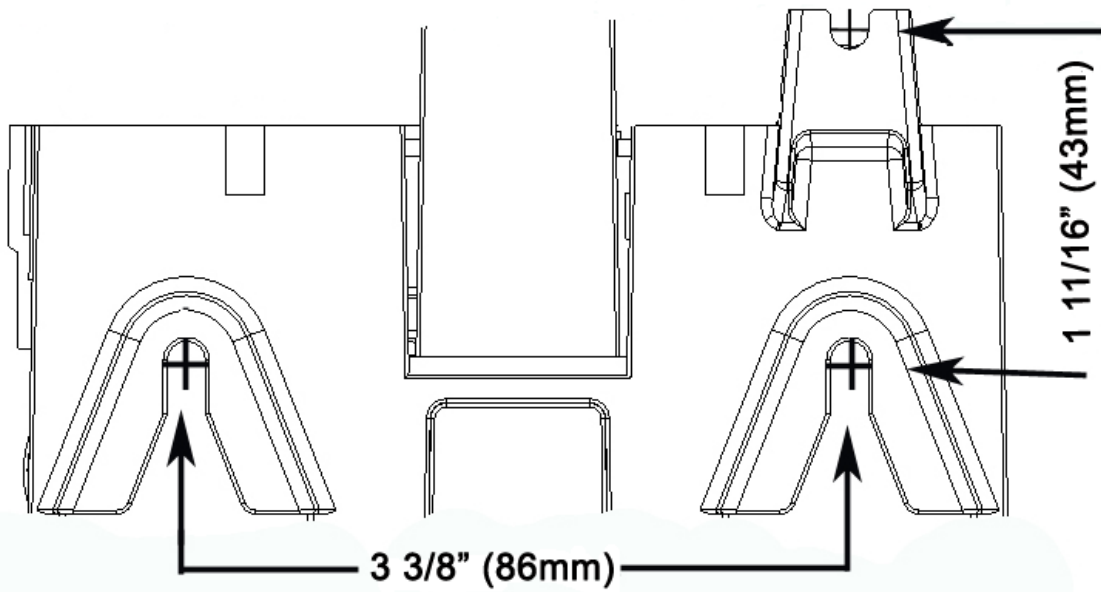
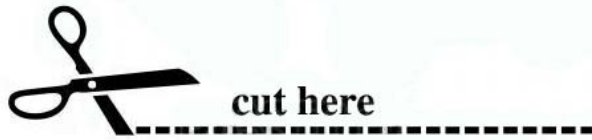
Environment: Indoor use only; dust-free environment. Keep out of direct sunlight.

Standards Compliance:



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Mounting Template



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Search the Knowledge Base

Find answers to frequently asked questions, and general product information such as a more detailed owner's manual for this product at:

www.amano.com/tkb



Service and Support

Contact us by; phone @ 800 253-9836, Mon – Fri.

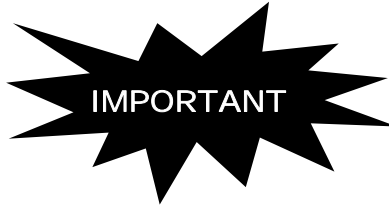
8:15 am – 5pm EST

e-mail: tkb@amano.com

PRODUCT REGISTRATION

Protect Your Investment

Register your product for:



☒ **Product Notifications**

We contact our customers in case of product updates.

☒ **Owner Verification**

Registration can serve as verification of your ownership in the event of product theft or loss.

☒ **Efficient Service**

Completing the warranty card will help you obtain more efficient warranty service in case there is a problem with your product.

Don't forget

Please take the time to register your product. Registration takes 2 minutes!

AMANO

Corporate Headquarters
140 Harrison Avenue, Roseland, NJ 07068-1239

Need Ribbons, Keys and Accessories?
Visit

www.amano.com/time

Or call 1-800-253-9836