

OPERATORS MANUAL

FOR

Boone

**KF-200
MEMORY
PORTABLE**

**GRAIN TEMPERATURE
MONITORING SYSTEM**

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STARTUP

When you turn on the KF200 by pressing <ON/OFF> the opening screen will appear:

BOONE KF200

If a date appears below the KF200, it corresponds to the last time a cable in the system was read.

Press ↑ or ↓ to step through the KF200 menus.

Pressing <CLEAR> is mainly used to step you backwards through whatever you have previously selected, finally arriving at the opening screen.

Pressing <OPTIONS+CLEAR> is mainly used to abort what you are doing and brings you back to the opening screen.

STARTUP - KF200

The first thing you need to do with the KF200 is enter your facility name, bin names, and cable names.

This is accomplished through menu item, EDIT BIN-CABLE CONFIGURATION. This is used if you are entering names for the first time, adding or deleting facilities, bins, or cables.

Press ↑ to step to the EDIT BIN-CABLE CONFIGURATION and follow the instructions under that menu.

STARTUP - SOFTWARE

If you purchased the BCS1000/KF200 software package for viewing and printing your cable data, follow the instructions below to install the serial cable and software.

The 9 pin serial - RS232 port, located at the top right side of the KF200 is used to communicate with your computer. Connect the serial cable between the top right 9 pin connector on the KF200 and a RS232 port on your computer.

Insert the floppy disk in drive A.

In Windows press START then RUN.

In the Open window type a:\setup and click OK.

The Installation Program Menu will now come up.

Click on Install for program installation.

The program will now ask you to enter your name and company name.

Press Next to continue the installation.

The program will now show you the Name, Company and Serial Number.

Press Next to continue the installation

The program will now show the path where the program will be located as C:\KFW. Do not change the path.

Press Next to continue the installation.

The program is now copied to your hard disk. This may take a few minutes.

To run the program:

Click on the KF 200 System Icon.

CONVENTIONS USED IN THIS MANUAL



KF200 DISPLAY....Standard menu and display.



KF200 DISPLAY....*ITALICIZED* print represents the display of a flashing field which asks for adjustment or confirmation.

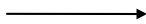
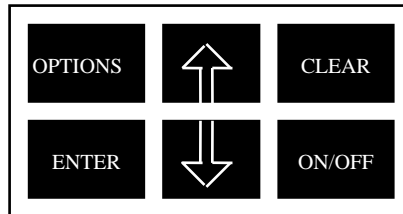


KF200 DISPLAY....Sub-menu and display for repetitive procedures.



KF200 KEYBOARD....Darkened square represents key or combination of keys pressed for resultant action.

UP ARROW →



ARROWS....Represent program flow after key entry.

<ENTER>

KF200 KEY ENTRY



KF200 KEY ENTRY....Up arrow or down arrow.

<OPTIONS+ENTER>

KF200 COMBINATION KEY ENTRY....Press and hold first key shown in brackets and then while holding, press the second key.

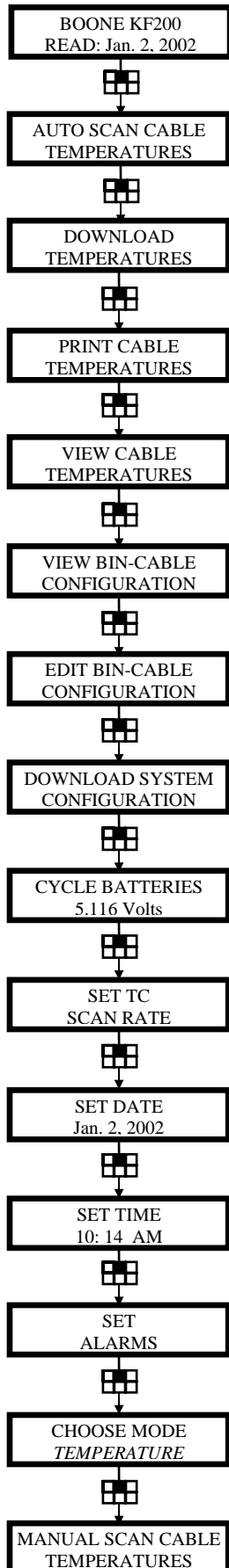


DIALOG BOX....Provides description of action of KF200.



OUTPUT....Represents output to printer or PC.

KF200 MAIN MENUS



OPENING SCREEN....Pressing <OPTIONS+CLEAR> returns you to this screen from anywhere in program. Displays last date data was saved. First shown when powered on.

AUTO SCAN....Automatically scan and save temperature/resistance data. KF200 will store internally up to five histories of temperature data. [See page #2.](#)

DOWNLOAD....Send saved temperature/resistance data to optional BCS1000/KF200 PC software package. [See page #3](#) and BCS1000/KF200 Software Manual.

PRINT CABLE....Send saved temperature/resistance data to compatible parallel printer for a hard copy of historical data including highlighted alarms. [See page #4.](#)

VIEW CABLE....View last stored temperature/resistance data by facility, bin, cable, and thermocouple. [See page #5.](#)

VIEW CONFIGURATION....Confirm system configuration entered in **EDIT CONFIGURATION** by facility, bin, cable, and thermocouple (TC). [See page #6.](#)

EDIT CONFIGURATION....Enter system configuration with unique names by facility, cable, and number of thermocouples per cable. [See page #7.](#)

DOWNLOAD CONFIGURATION....Send system configuration to optional BCS1000/KF200 PC software package. [See page #8](#) and BCS1000/KF200 Software Manual.

CYCLE BATTERIES....Once every 60 days the rechargeable batteries should be drained to ensure longevity and then recharged for 12 hours. Displays battery voltage. [See page #9.](#)

SET TC SCAN RATE....Adjust speed of thermocouple scanning. **Auto** recommended for most efficient speed and optimal accuracy. [See page #10.](#)

SET DATE....The KF200 includes a battery backed clock/calendar which once the date has been set, will automatically adjust for the current date. [See page #11.](#)

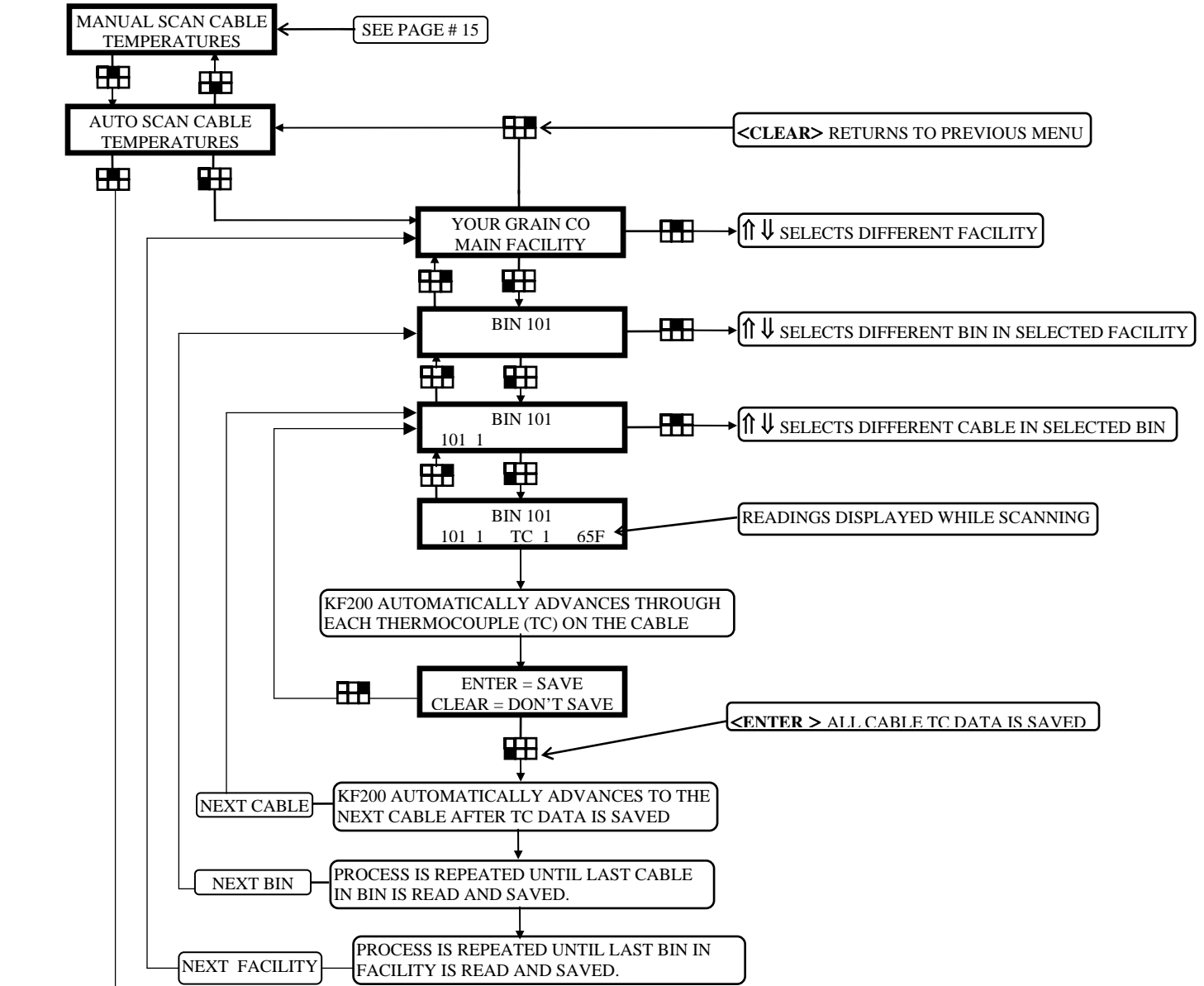
SET TIME....The KF200 includes a battery backed clock/calendar which once the time has been set, will automatically adjust for the current time. [See page #12.](#)

SET ALARMS....Enter maximum rise over previous readings and maximum value for highlighting during printing of temperature/resistance data. [See page #13.](#)

CHOOSE MODE....Select whether temperature or resistance is to be scanned/analyzed. Resistance mode allows checking integrity of thermocouple signal. [See page #14.](#)

MANUAL SCAN....Manually scan thermocouple cable temperature/resistance without resultant data. Displays values as they are read. [See page #15.](#)

AUTO SCAN MENU OPERATION

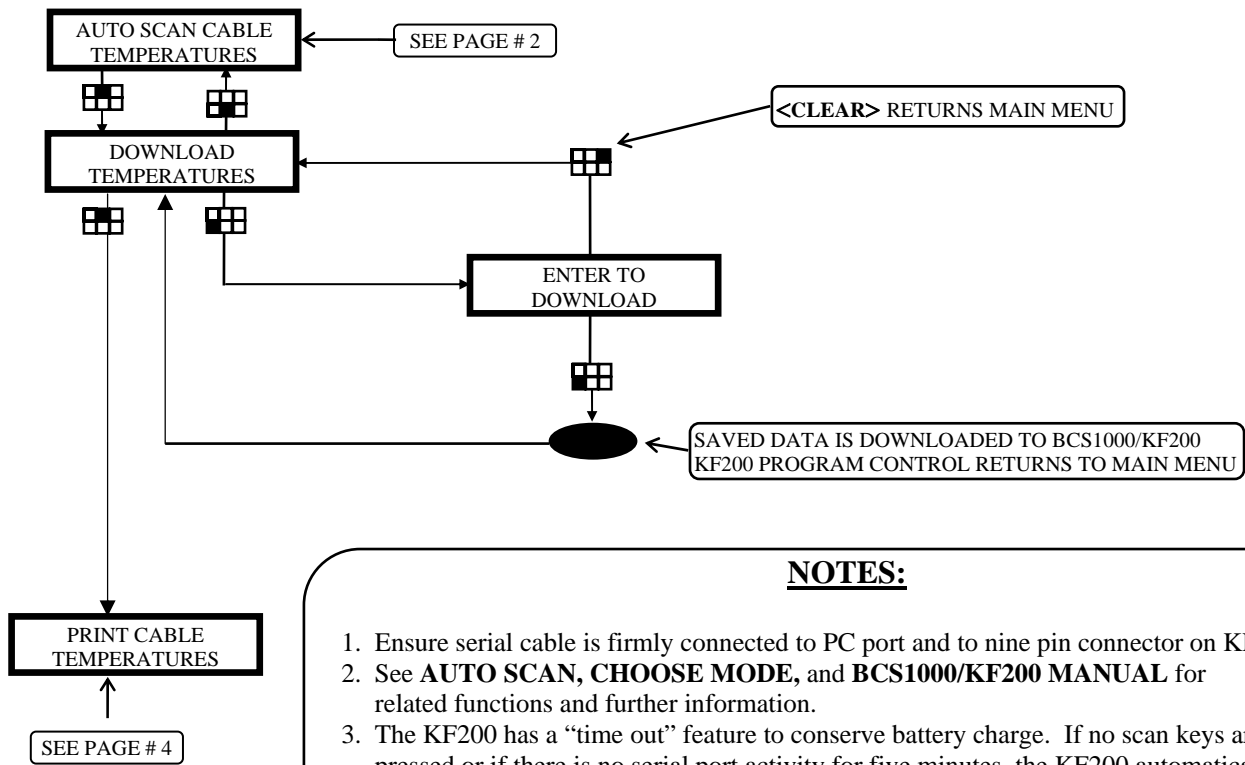
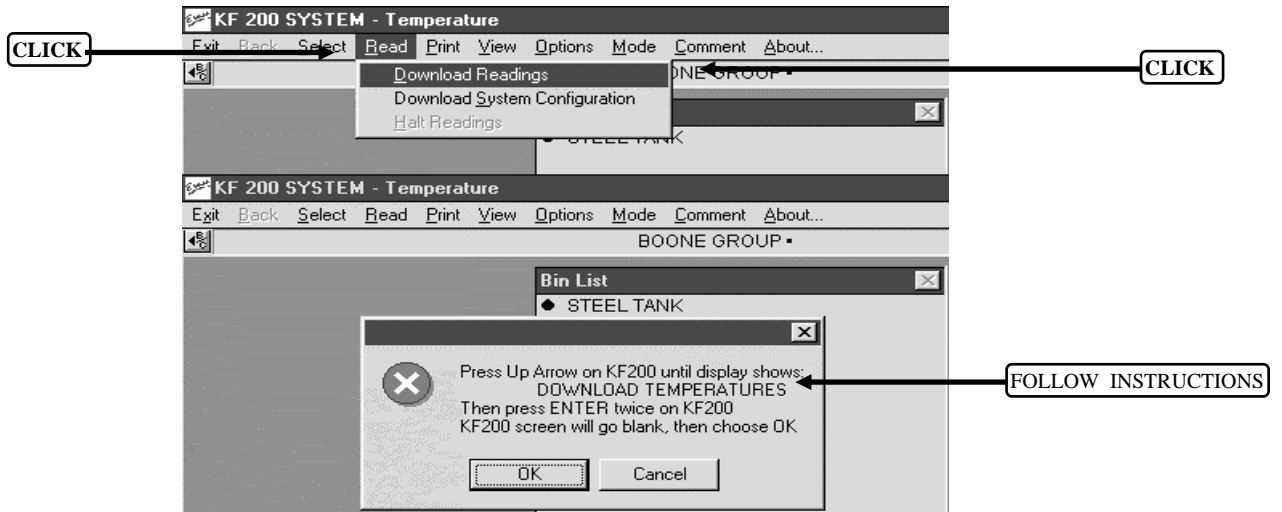


NOTES:

1. From anywhere in the program, <OPTIONS+CLEAR> returns directly to **OPENING SCREEN**.
2. If the message **NO FACILITIES AVAILABLE**, **NO BIN AVAILABLE**, or **NO CABLE AVAILABLE** is displayed, go to **EDIT BIN-CABLE CONFIGURATION** to enter the applicable information.
3. Pressing <CLEAR> during TC scan causes retrieved data for that cable to be lost and returns to beginning of cable routine.
4. See **EDIT BIN-CABLE CONFIGURATION**, **SET TC SCAN RATE**, and **CHOOSE MODE** for related functions that affect the **AUTO SCAN OPERATION**.
5. The KF200 stores up to five histories of temperature data on a first in-first out sequential read, not on a date oriented, basis. (ie. If five readings are saved on a cable on the same date, all previous dates' data for that cable will be lost). The KF200 stores one history of resistance data.
6. The KF200 has a "time out" feature to conserve battery charge. If at the end of a cable scan no keys are pressed within 5 minutes, the KF200 automatically turns off and the just scanned cable's data will be lost.

DOWNLOAD MENU OPERATION

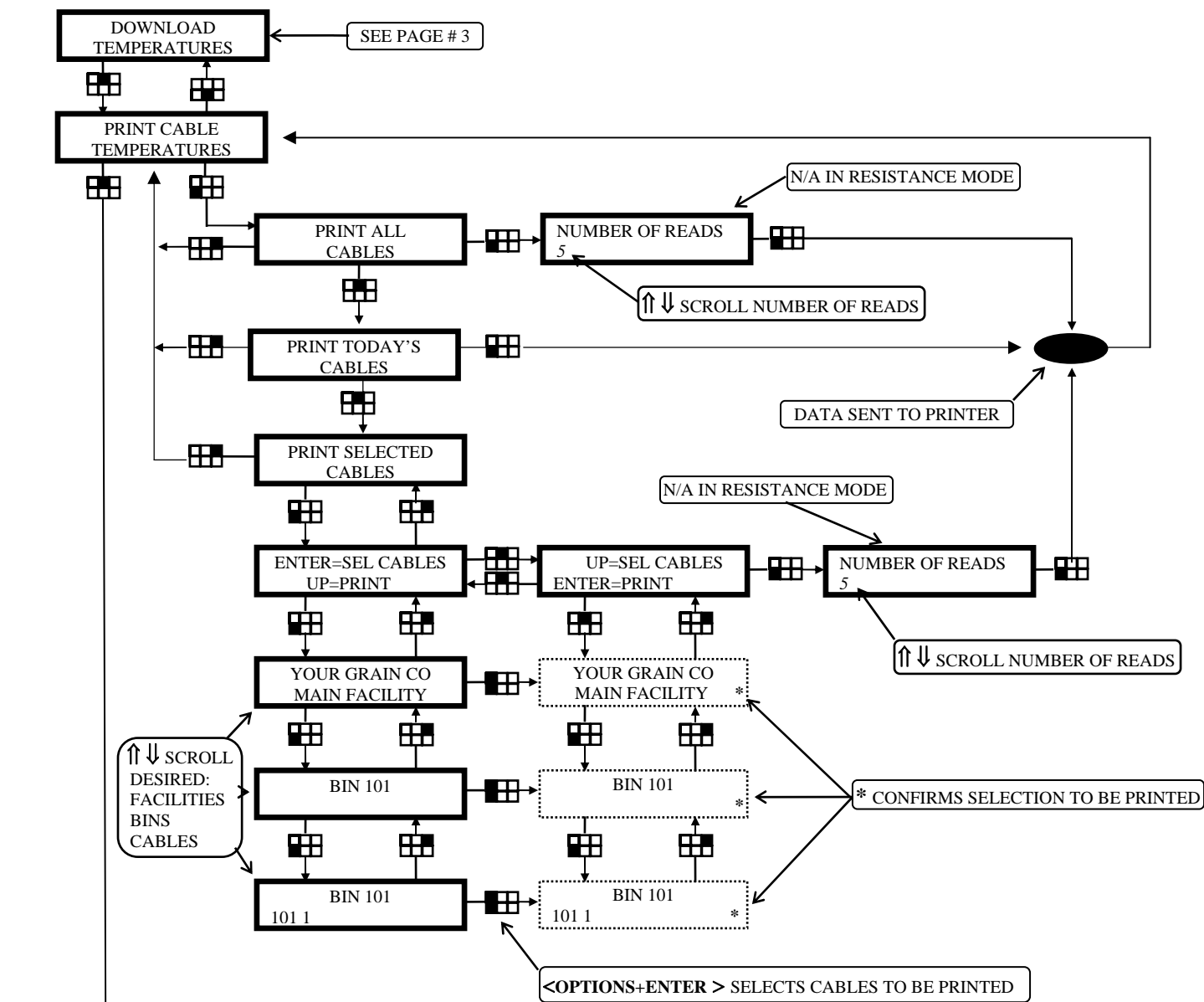
PRIOR TO OPERATING THIS MENU, FIRST START THE BCS1000/KF200 SOFTWARE - SEE BCS1000/KF200 MANUAL



NOTES:

1. Ensure serial cable is firmly connected to PC port and to nine pin connector on KF200.
2. See **AUTO SCAN**, **CHOOSE MODE**, and **BCS1000/KF200 MANUAL** for related functions and further information.
3. The KF200 has a "time out" feature to conserve battery charge. If no scan keys are pressed or if there is no serial port activity for five minutes, the KF200 automatically turns off.

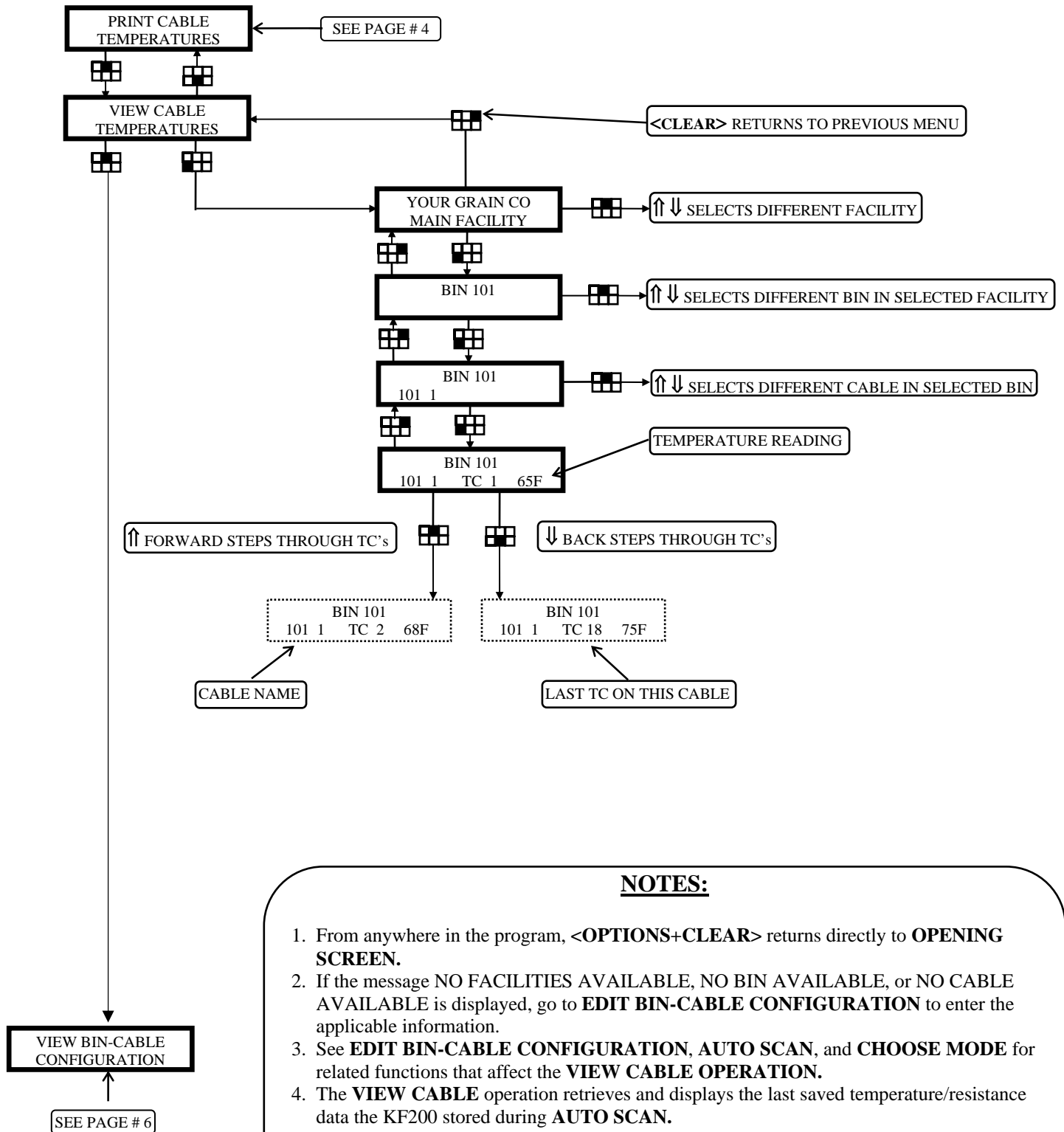
PRINT CABLE MENU OPERATION



NOTES:

1. From anywhere in the program, <OPTIONS+CLEAR> returns directly to **OPENING SCREEN**.
2. Ensure printer cable is firmly connected to printer and 25 pin connector on KF200 and printer is "on line". Printer may need to be set for condensed print mode depending on maximum number of TC's to be printed on any single cable.
3. See **AUTO SCAN** and **CHOOSE MODE** for related functions that affect the **PRINT CABLE** operation.
4. In **PRINT SELECTED CABLES** above, if <OPTIONS+ENTER> is pressed for **FACILITY**, all bins and cables in the facility will be printed. If <OPTIONS+ENTER> is pressed for **BIN**, all cables in that bin will be printed. <OPTIONS+ENTER> at **CABLE** selects individual cable(s).
5. The KF200 has a "time out" feature to conserve battery charge. If no keys are pressed or no activity is detected at the printer port within 5 minutes, the KF200 automatically turns off.

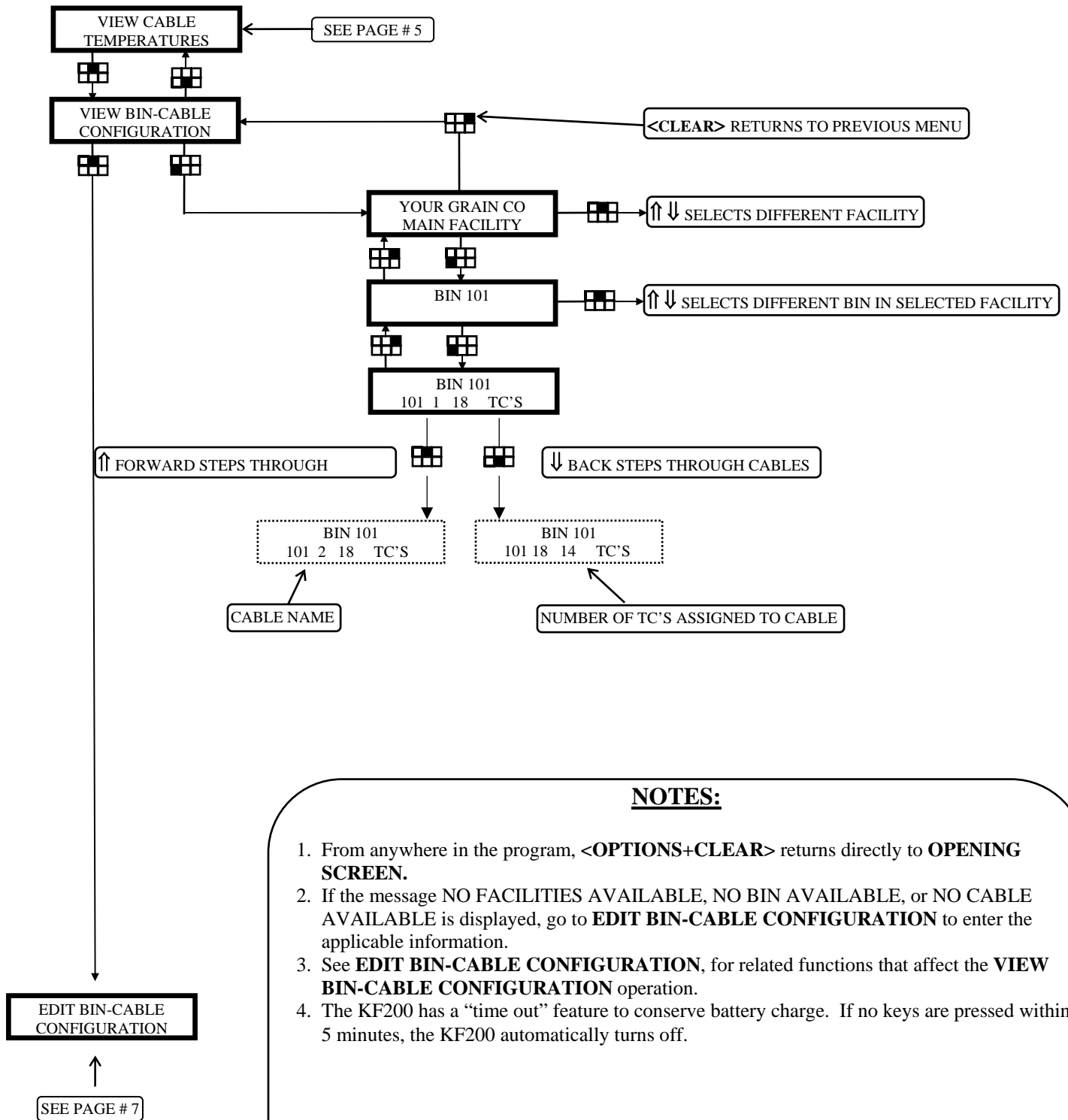
VIEW CABLE MENU OPERATION



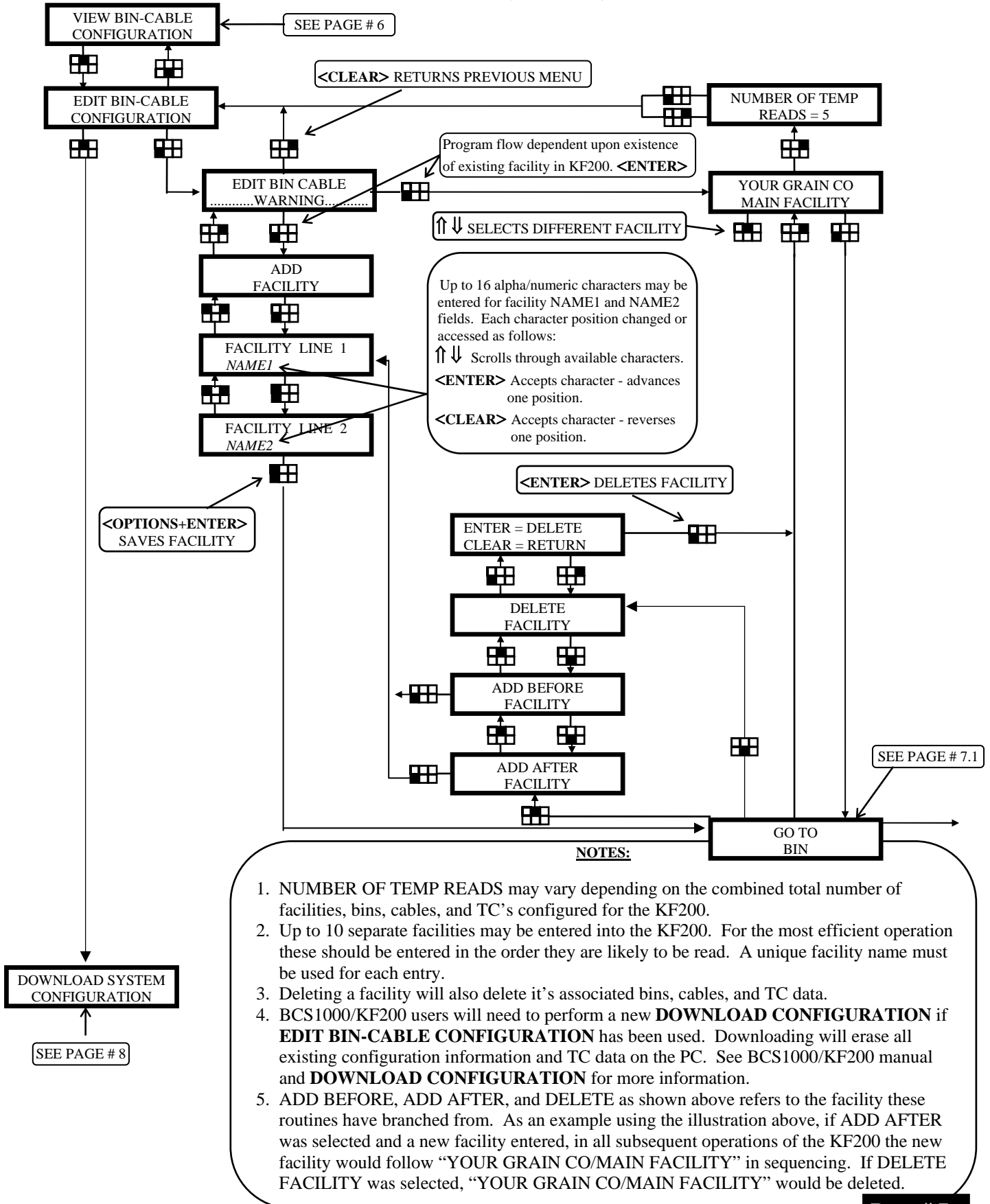
NOTES:

1. From anywhere in the program, <OPTIONS+CLEAR> returns directly to **OPENING SCREEN**.
2. If the message NO FACILITIES AVAILABLE, NO BIN AVAILABLE, or NO CABLE AVAILABLE is displayed, go to **EDIT BIN-CABLE CONFIGURATION** to enter the applicable information.
3. See **EDIT BIN-CABLE CONFIGURATION**, **AUTO SCAN**, and **CHOOSE MODE** for related functions that affect the **VIEW CABLE OPERATION**.
4. The **VIEW CABLE** operation retrieves and displays the last saved temperature/resistance data the KF200 stored during **AUTO SCAN**.
5. The KF200 has a "time out" feature to conserve battery charge. If no keys are pressed within 5 minutes, the KF200 automatically turns off.

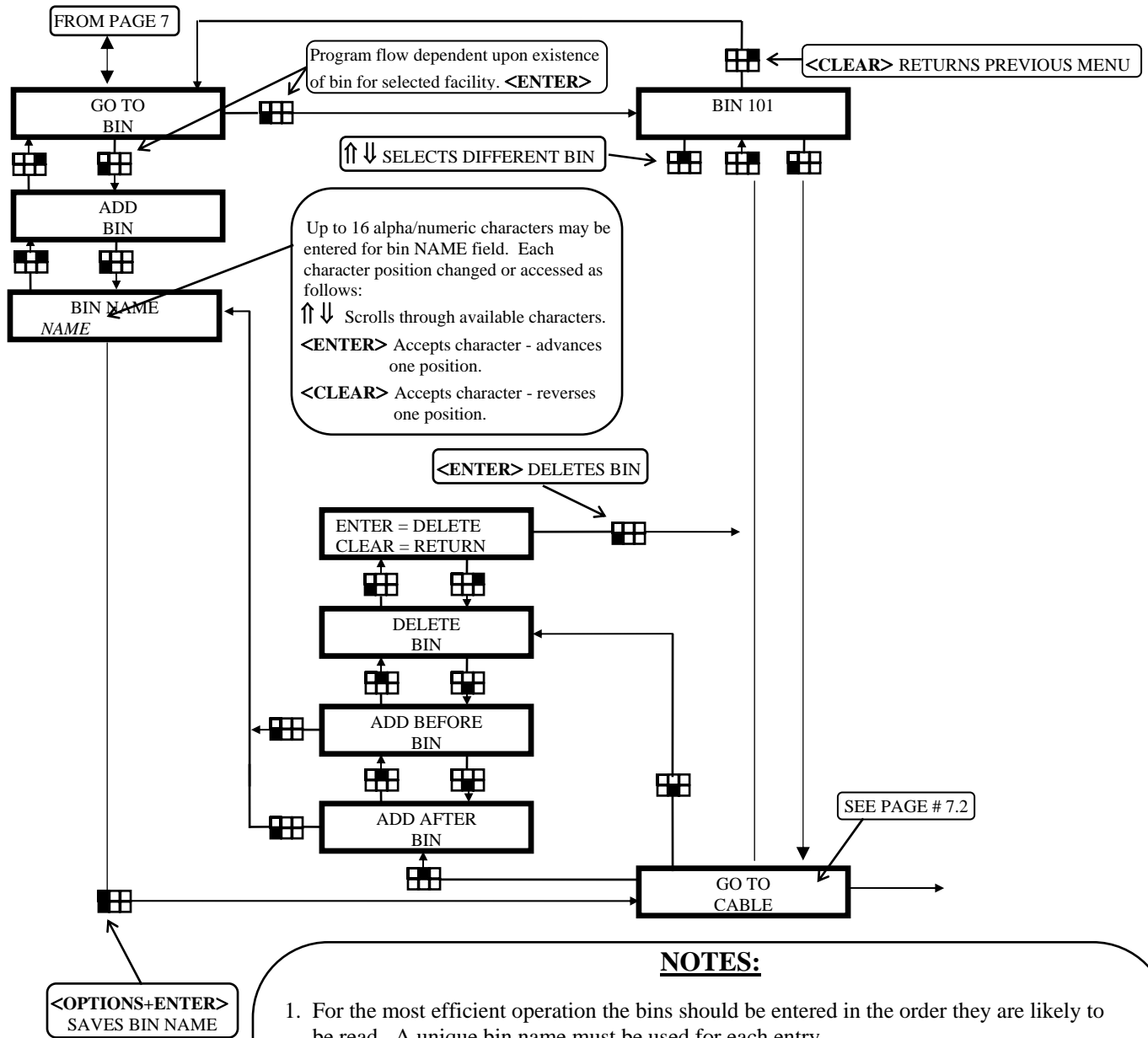
VIEW CONFIGURATION MENU OPERATION



EDIT BIN-CABLE CONFIGURATION MENU OPERATION (FACILITY)



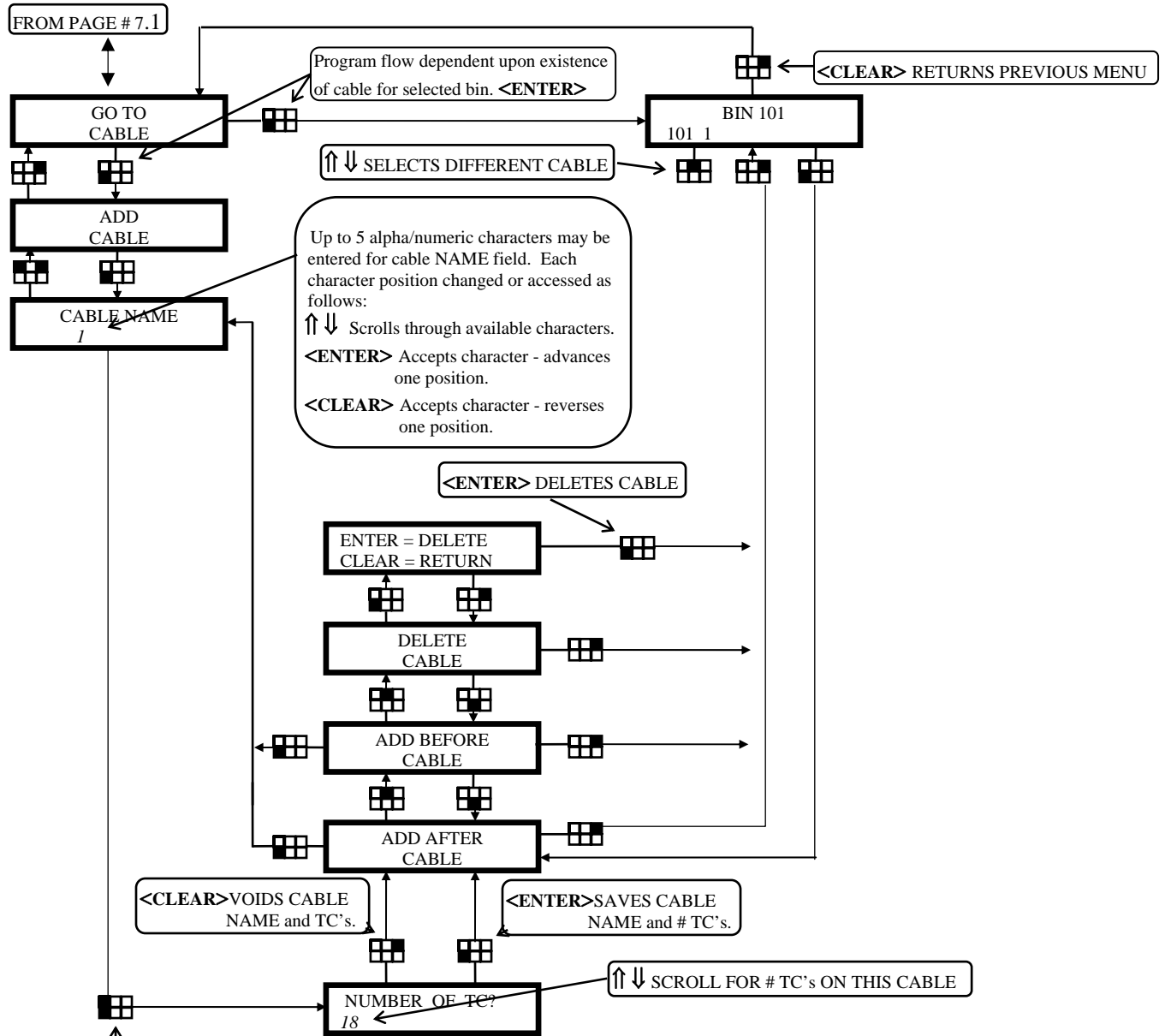
EDIT BIN-CABLE CONFIGURATION MENU OPERATION (BIN)



NOTES:

1. For the most efficient operation the bins should be entered in the order they are likely to be read. A unique bin name must be used for each entry.
2. Deleting a bin will also delete it's associated cables and TC data.
3. BCS1000/KF200 users will need to perform a new **DOWNLOAD CONFIGURATION** if **EDIT BIN-CABLE CONFIGURATION** has been used. Downloading will erase all existing configuration information and TC data on the PC. See BCS1000/KF200 manual and **DOWNLOAD CONFIGURATION** for more information.
4. ADD BEFORE, ADD AFTER, and DELETE as shown above refers to the bin these routines have branched from. As an example using the illustration above, if ADD AFTER was selected and a new bin entered, in all subsequent operations of the KF200 the new bin would follow "BIN 101" in sequencing. If DELETE BIN was selected, "BIN 101" would be deleted.
5. The KF200 has a "time out" feature to conserve battery charge. If no keys are pressed within 5 minutes, the KF200 automatically turns off.

EDIT BIN-CABLE CONFIGURATION MENU OPERATION (CABLE)

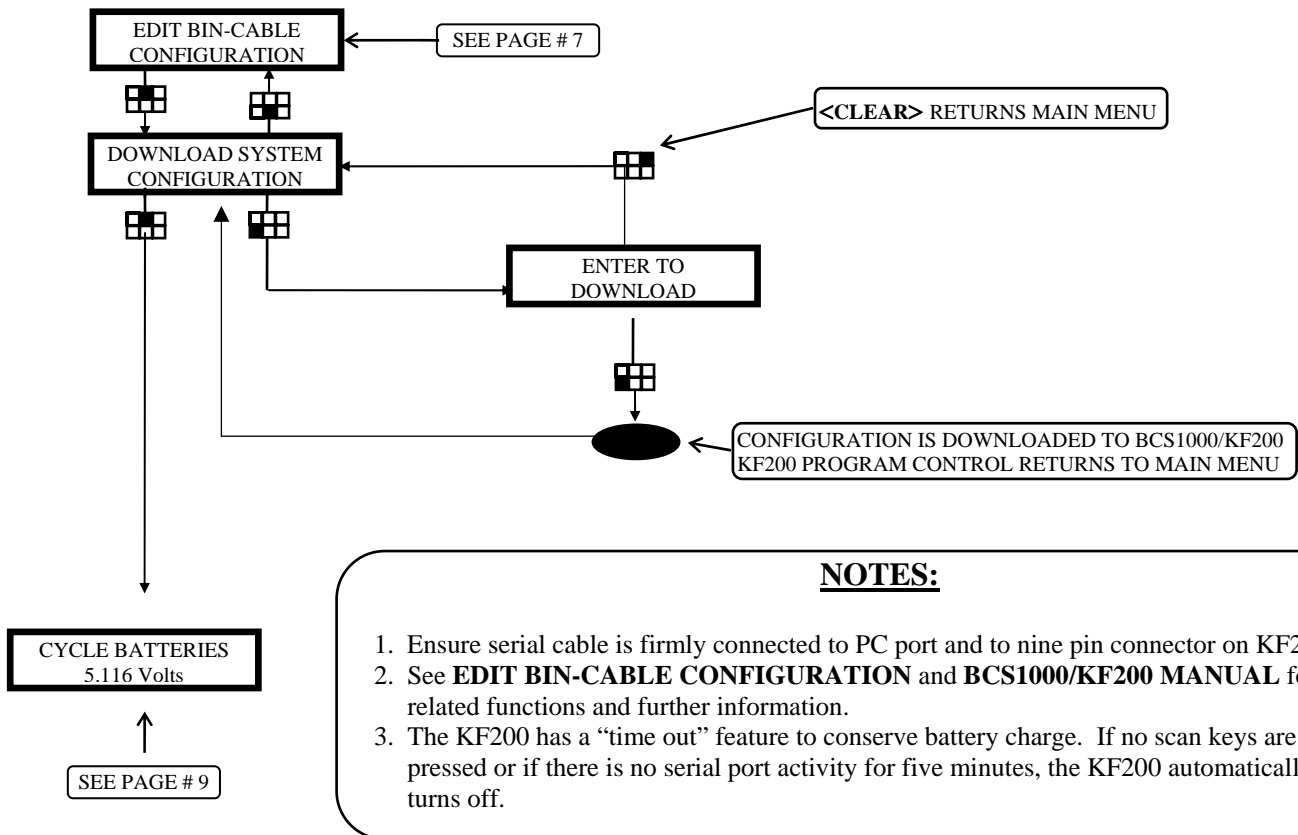
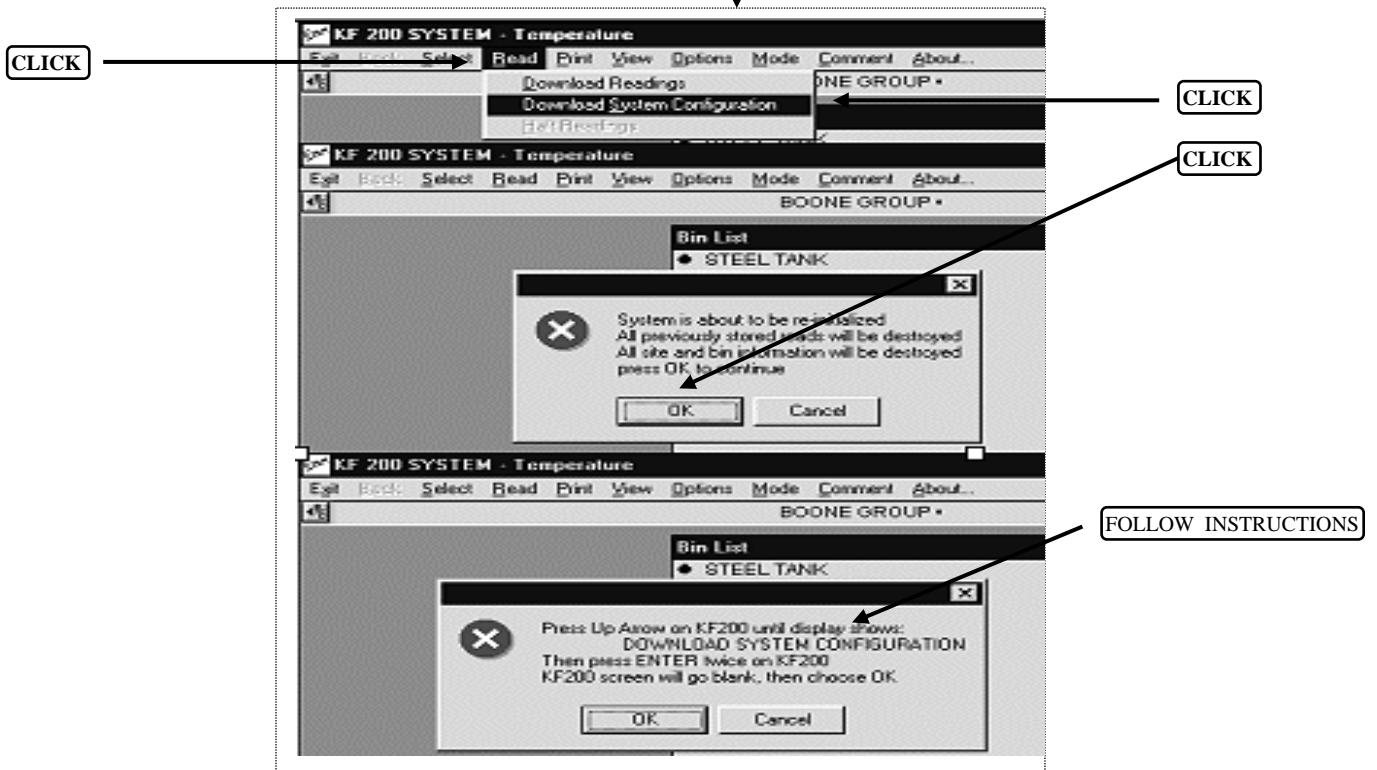


NOTES:

1. For the most efficient operation the cables should be entered in the order they are likely to be read. A unique cable name must be used for each entry. A maximum of 21 TC's may be entered for each cable.
2. Deleting a cable also deletes it's associated TC data.
3. BCS1000/KF200 users will need to perform a new **DOWNLOAD CONFIGURATION** if **EDIT BIN-CABLE CONFIGURATION** has been used. Downloading will erase all existing configuration information and TC data on the PC. See BCS1000/KF200 manual and **DOWNLOAD CONFIGURATION** for more information.
4. ADD BEFORE, ADD AFTER, and DELETE as shown above refers to the cable these routines have branched from. As an example using the illustration above, if ADD AFTER was selected and a new cable entered, in all subsequent operations of the KF200 the new cable would follow "101 1" in sequencing. If DELETE CABLE was selected, "101 1" would be deleted.
5. The KF200 has a "time out" feature to conserve battery charge. If no keys are pressed within 5 minutes, the KF200 automatically turns off.

DOWNLOAD SYSTEM CONFIGURATION MENU OPERATION

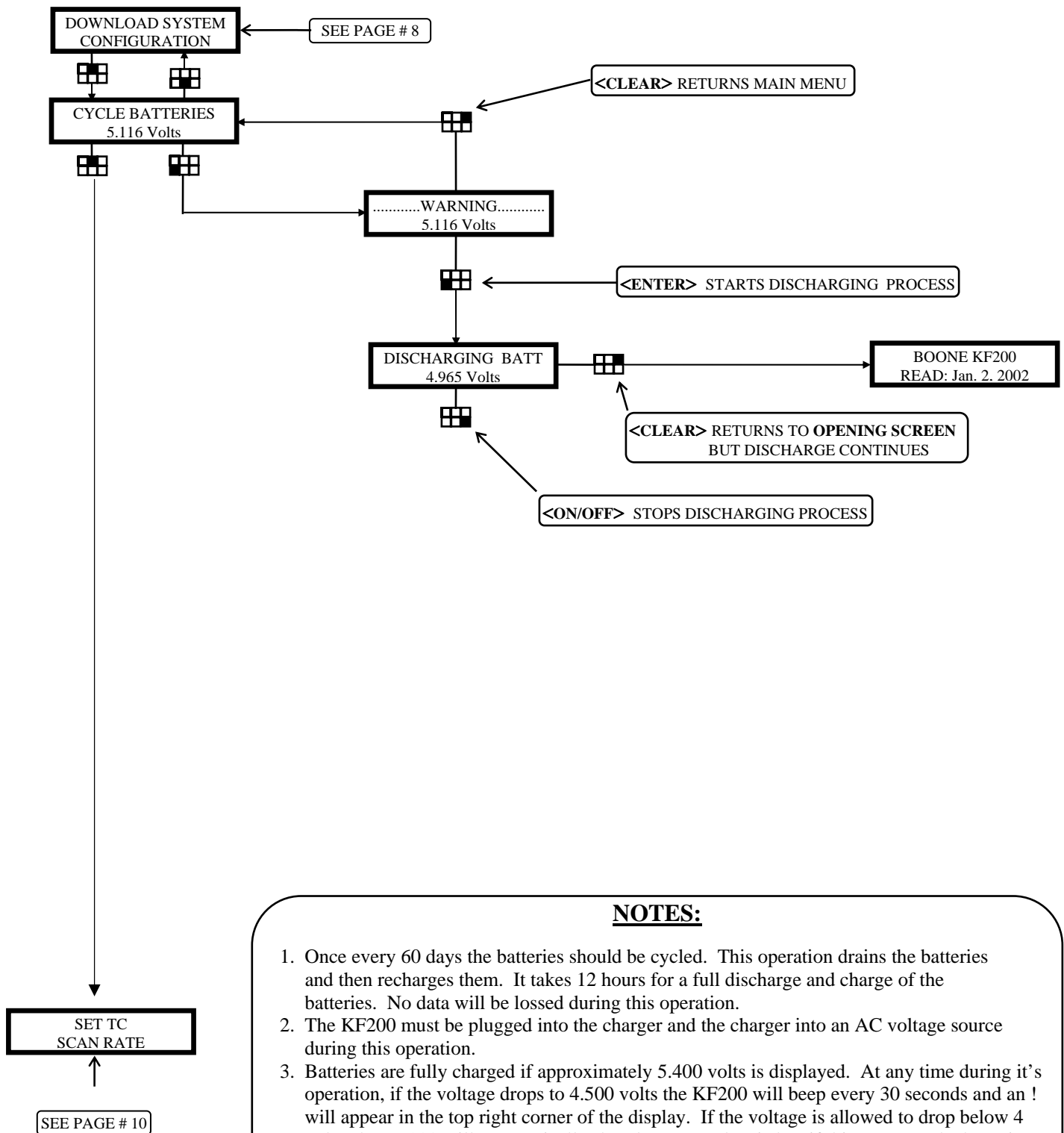
PRIOR TO OPERATING THIS MENU, FIRST START THE BCS1000/KF200 SOFTWARE - SEE BCS1000/KF200 MANUAL



NOTES:

1. Ensure serial cable is firmly connected to PC port and to nine pin connector on KF200.
2. See **EDIT BIN-CABLE CONFIGURATION** and **BCS1000/KF200 MANUAL** for related functions and further information.
3. The KF200 has a "time out" feature to conserve battery charge. If no scan keys are pressed or if there is no serial port activity for five minutes, the KF200 automatically turns off.

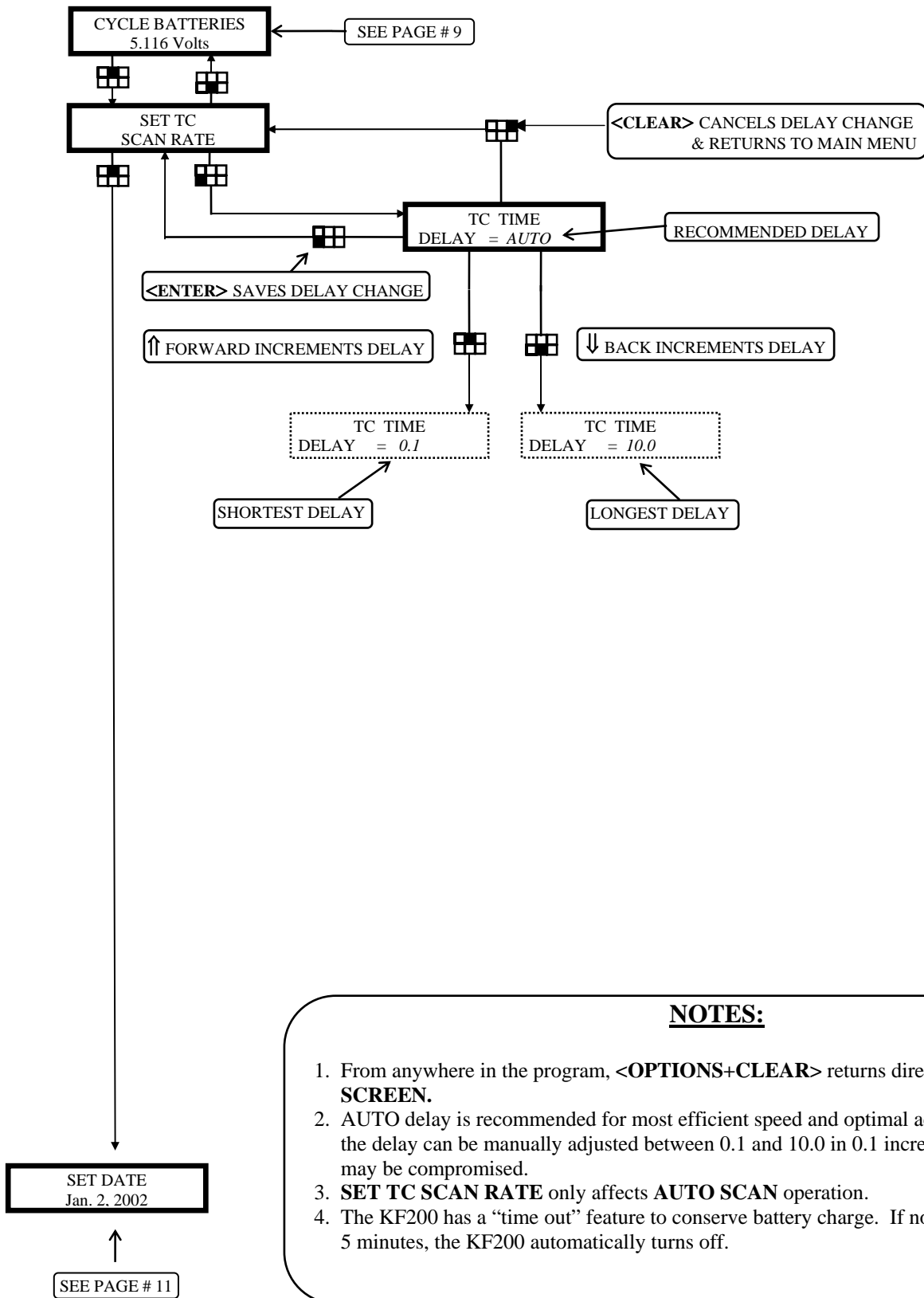
CYCLE BATTERIES MENU OPERATION



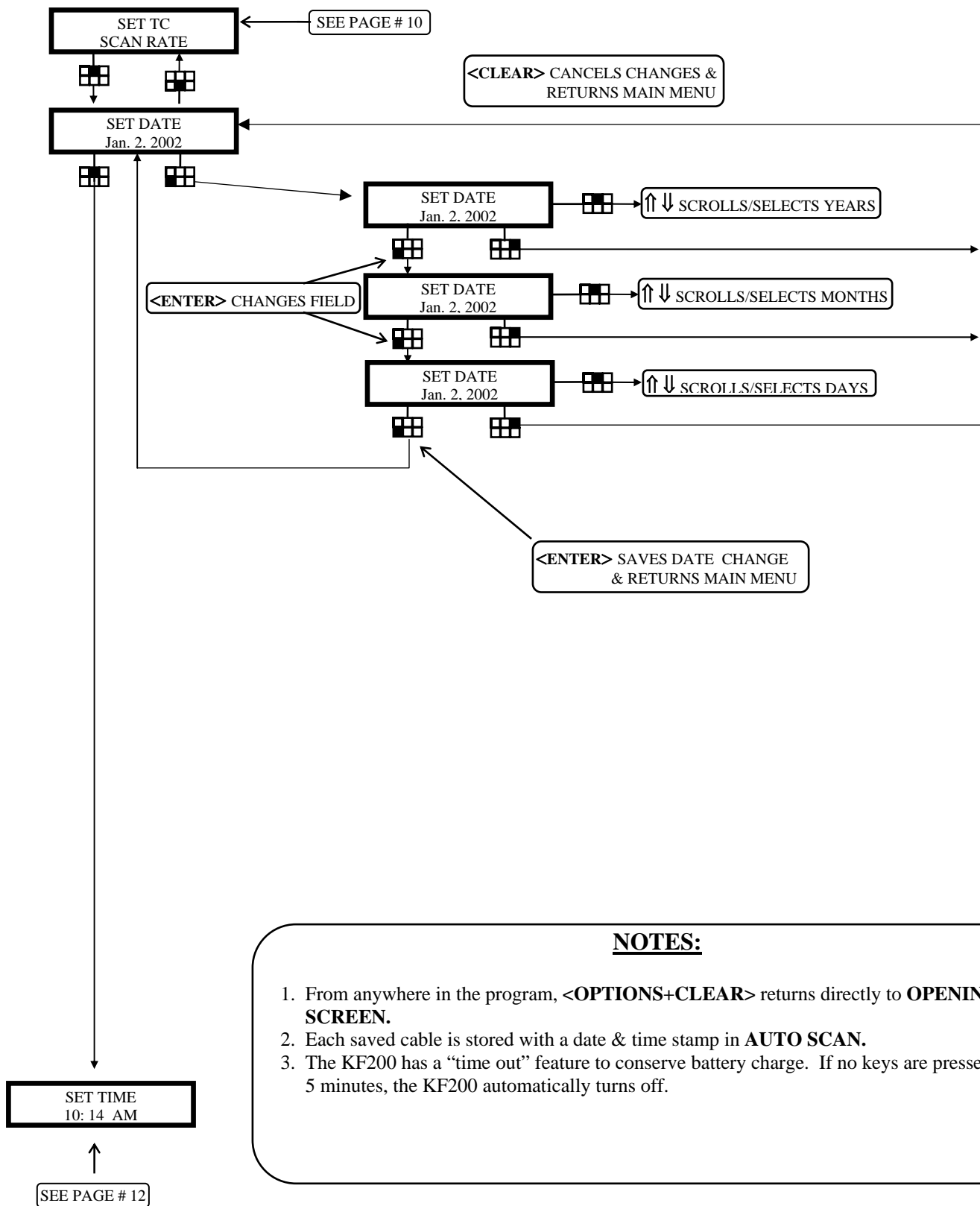
NOTES:

1. Once every 60 days the batteries should be cycled. This operation drains the batteries and then recharges them. It takes 12 hours for a full discharge and charge of the batteries. No data will be lost during this operation.
2. The KF200 must be plugged into the charger and the charger into an AC voltage source during this operation.
3. Batteries are fully charged if approximately 5.400 volts is displayed. At any time during it's operation, if the voltage drops to 4.500 volts the KF200 will beep every 30 seconds and an ! will appear in the top right corner of the display. If the voltage is allowed to drop below 4 volts, the KF200 will automatically shut down. No data is lost if this occurs. The batteries will then need to be recharged for approximately 12 hours.

SET TC SCAN RATE MENU OPERATION



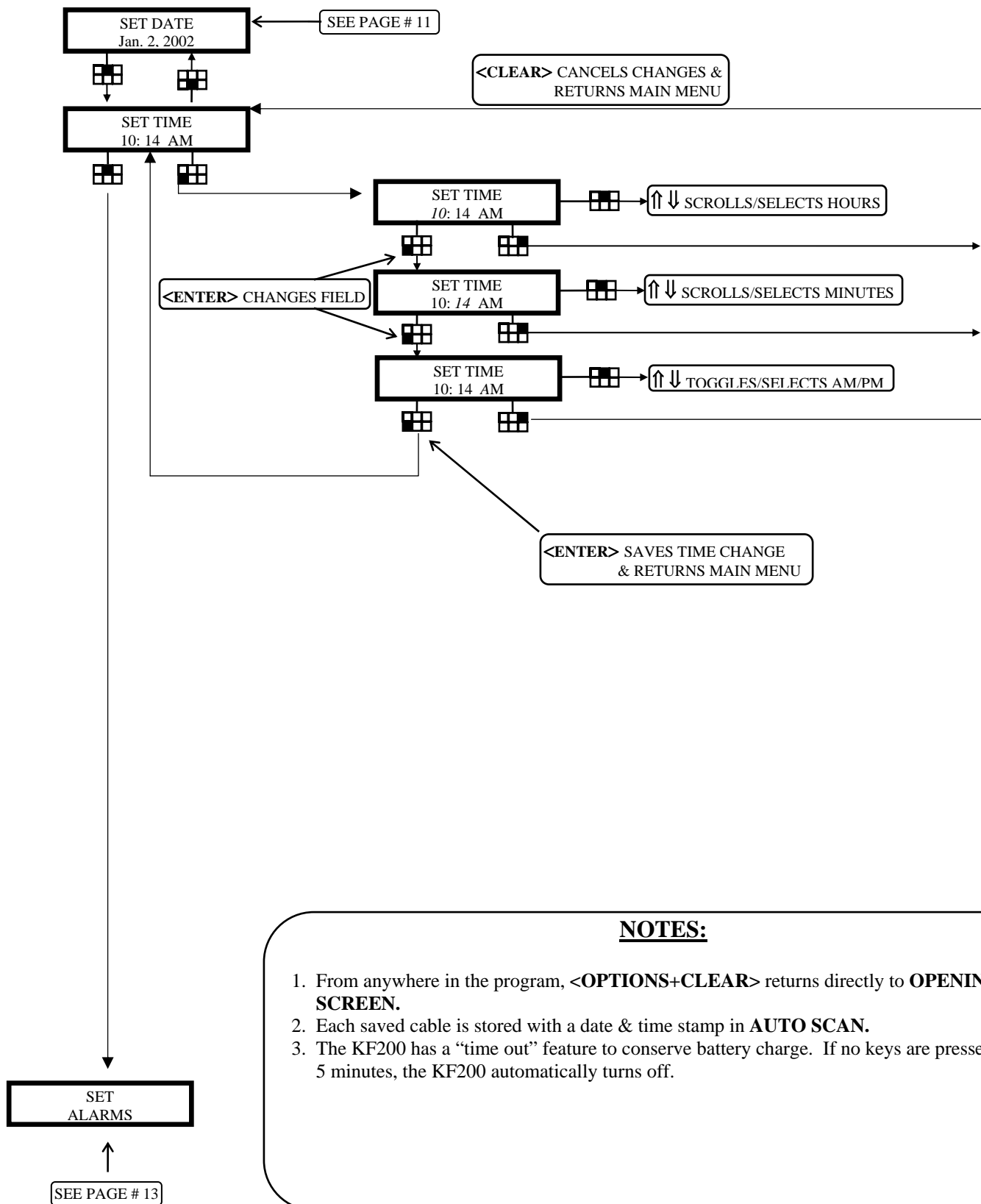
SET DATE MENU OPERATION



NOTES:

1. From anywhere in the program, <OPTIONS+CLEAR> returns directly to **OPENING SCREEN**.
2. Each saved cable is stored with a date & time stamp in **AUTO SCAN**.
3. The KF200 has a "time out" feature to conserve battery charge. If no keys are pressed within 5 minutes, the KF200 automatically turns off.

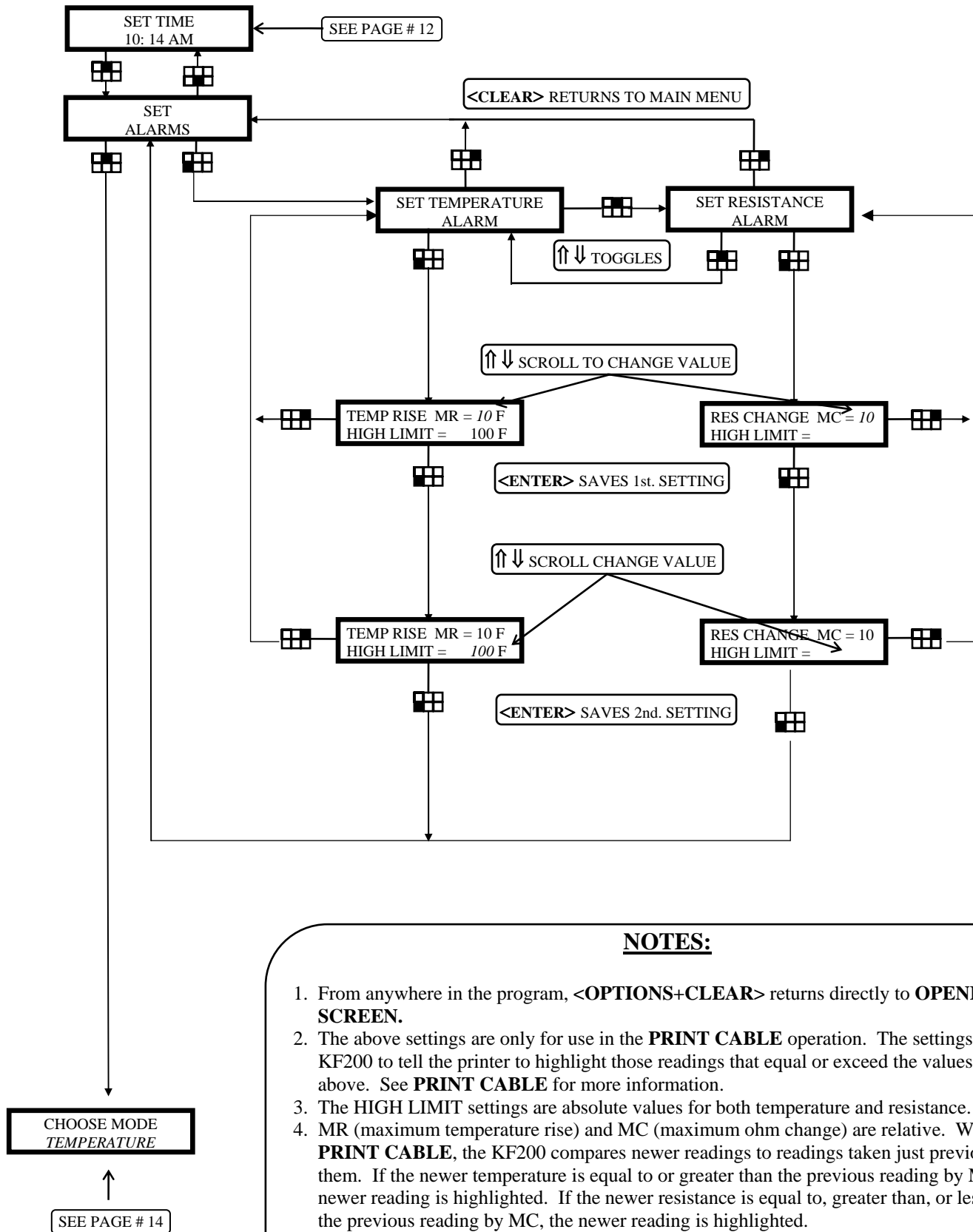
SET TIME MENU OPERATION



NOTES:

1. From anywhere in the program, <OPTIONS+CLEAR> returns directly to **OPENING SCREEN**.
2. Each saved cable is stored with a date & time stamp in **AUTO SCAN**.
3. The KF200 has a "time out" feature to conserve battery charge. If no keys are pressed within 5 minutes, the KF200 automatically turns off.

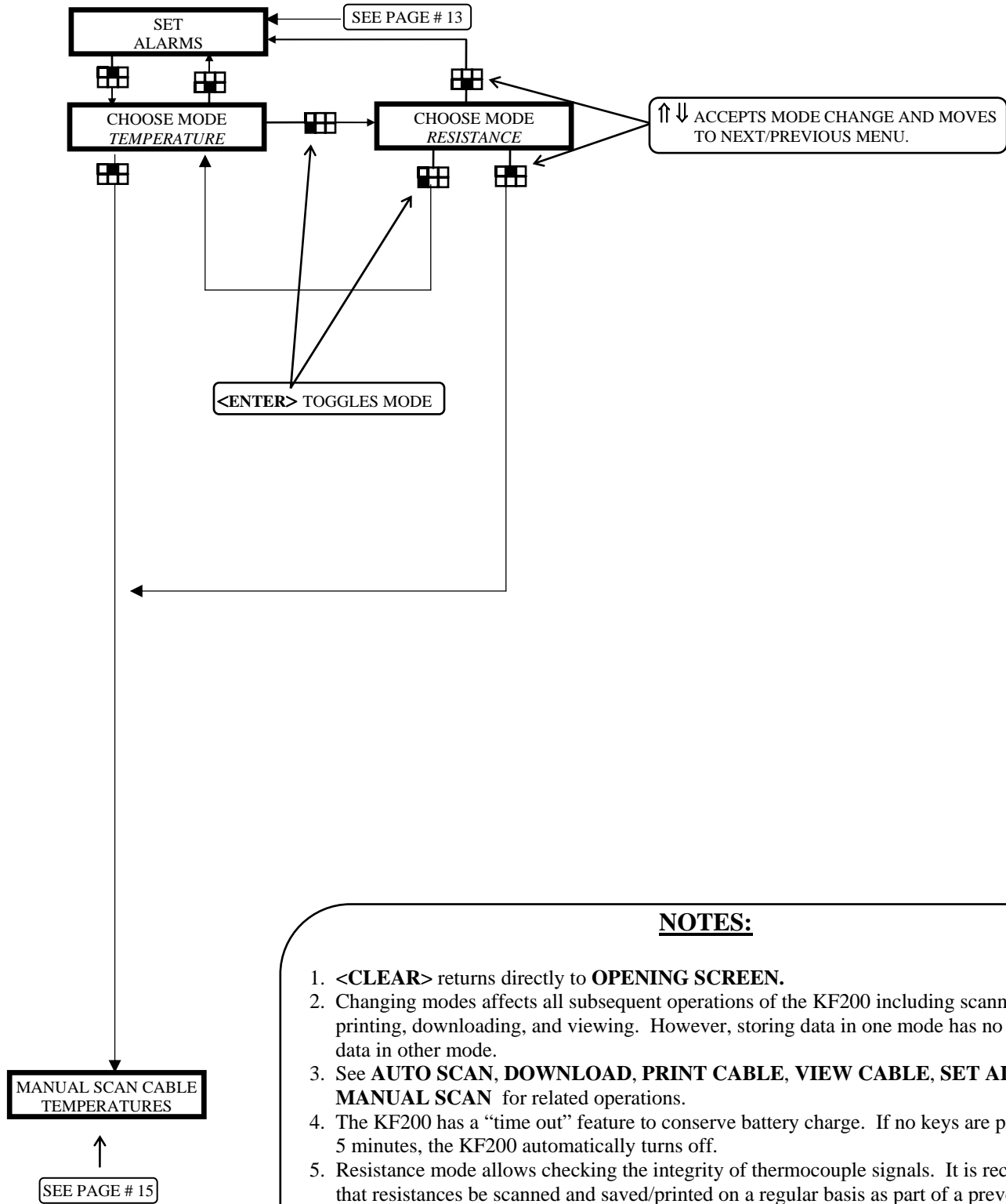
SET ALARMS MENU OPERATION



NOTES:

1. From anywhere in the program, <OPTIONS+CLEAR> returns directly to **OPENING SCREEN**.
2. The above settings are only for use in the **PRINT CABLE** operation. The settings allow the KF200 to tell the printer to highlight those readings that equal or exceed the values entered above. See **PRINT CABLE** for more information.
3. The **HIGH LIMIT** settings are absolute values for both temperature and resistance.
4. **MR** (maximum temperature rise) and **MC** (maximum ohm change) are relative. When in **PRINT CABLE**, the KF200 compares newer readings to readings taken just previously to them. If the newer temperature is equal to or greater than the previous reading by **MR**, the newer reading is highlighted. If the newer resistance is equal to, greater than, or less than the previous reading by **MC**, the newer reading is highlighted.
5. The KF200 has a "time out" feature to conserve battery charge. If no keys are pressed within 5 minutes, the KF200 automatically turns off.

CHOOSE MODE MENU OPERATION



NOTES:

1. <CLEAR> returns directly to **OPENING SCREEN**.
2. Changing modes affects all subsequent operations of the KF200 including scanning, saving, printing, downloading, and viewing. However, storing data in one mode has no effect on data in other mode.
3. See **AUTO SCAN, DOWNLOAD, PRINT CABLE, VIEW CABLE, SET ALARMS, and MANUAL SCAN** for related operations.
4. The KF200 has a "time out" feature to conserve battery charge. If no keys are pressed within 5 minutes, the KF200 automatically turns off.
5. Resistance mode allows checking the integrity of thermocouple signals. It is recommended that resistances be scanned and saved/printed on a regular basis as part of a preventative maintenance program. The absolute ohmic value of a thermocouple circuit is not necessarily a critical factor. However, the amount of relative change in ohms between individual thermocouples on a cable or the amount of change from one date to the next are excellent indicators of the thermocouple circuit condition.

MANUAL SCAN MENU OPERATION

