

All Sport® 1600 Series Control Console

Operation Manual

ED-12462

Rev 14 – 9 June 2016

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Rev 14 – 9 June 2016

DAKTRONICS, INC.

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Section 1: Introduction

This manual is designed to explain the operation of the All Sport® 1600 Series control console. For additional information regarding the safety, installation, operation, or service of this system, refer to the telephone numbers listed in **Section 1.3**.

1.1 Important Safety Instructions

- Read and understand all instructions, both general and for specific sports.
- Do not drop the device or immerse it in water.
- This device shall not be exposed to dripping or splashing, and no objects filled with liquid shall be placed upon it.

WARNING! To reduce the risk of fire or electric shock, do not expose this device to rain or moisture.

- Console may include external battery pack.

CAUTION! DANGER OF EXPLOSION IF BATTERY IS INCORRECTLY REPLACED. REPLACE ONLY WITH THE SAME OR EQUIVALENT TYPE.

WARNING! Do not expose batteries to excessive heat, such as direct sunlight or open fire.

- Never yank the power cord to pull the plug from the outlet. Grasp the plug and pull to disconnect.
- Do not let the power cord touch hot surfaces or hang over the edge of a table that could damage or cut the cord.
- If an extension cord is necessary, use a three-pronged polarized cord. Arrange the cord with care so that no one will trip over or pull it out.
- Before using an extension cord, inspect the cable thoroughly and verify its compliance with the local electric codes.
- Always turn off and unplug the control equipment when it is not in use.
- To avoid electrical shock, do not disassemble the control equipment or electronic controls of the display. Incorrect reassembly can cause electric shock and faulty operation or permanent damage to the circuits. Failure to follow this safeguard will make the warranty null and void.
- Inspect console for shipping damage such as rattles and dents, and verify that all equipment is included as itemized on the packing slip. Immediately report any problems to Daktronics; save all packing materials if exchange is necessary.

All Sport consoles receive external power through a standard 8' (2.44 m) long three-pronged power cord plugged into a 120 or 240 VAC grounded outlet. The outlet shall be installed near the console and easily accessible. Contact Daktronics for information on running an All Sport console via optional battery power pack.

Note: All Sport consoles feature an internal time delay 1/8 amp, 250 V fuse for 120 VAC models or 1/16 amp 250 V fuse for 240 VAC models. In the unlikely event the fuse needs to be replaced, contact Daktronics Customer Service.

1.1 Specifications Label

Power specifications as well as serial and model number information can be found on the rear of the console. Refer to **Figure 1**.

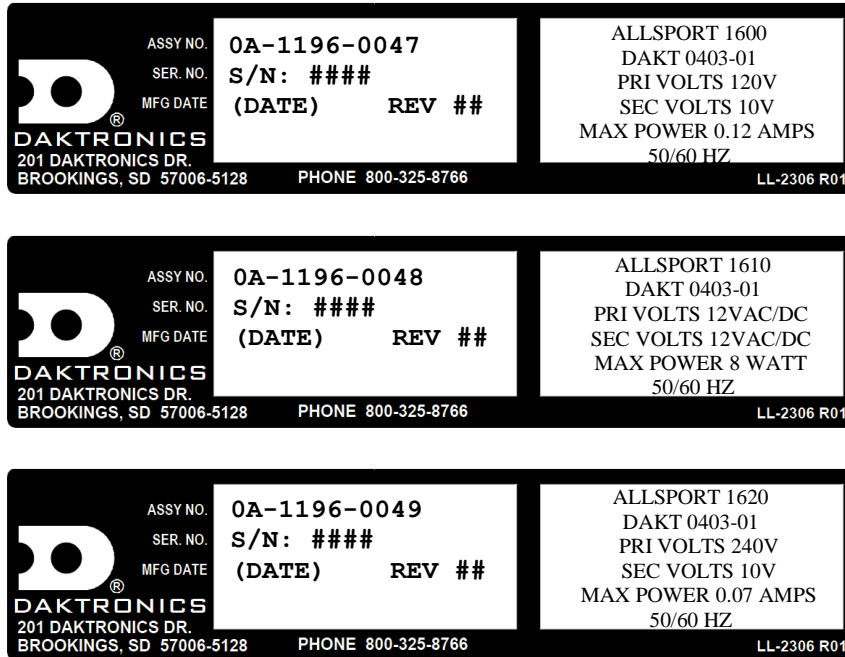


Figure 1: Specifications Labels

When calling Daktronics customer service, please have the model number, serial number, and the date the device became operational available to ensure the request is serviced as quickly as possible.

1.2 Resources

Figure 2 illustrates a Daktronics drawing label. The drawing number is located in the lower-right corner of a drawing. This manual refers to drawings by listing the last set of digits and the letter preceding them. In the example, the drawing would be referred to as **Drawing C-325405**.

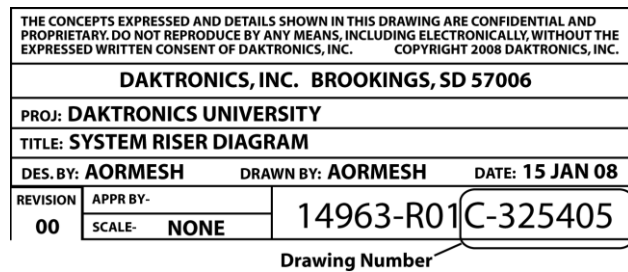


Figure 2: Daktronics Drawing Label

Reference Drawing:

System Riser Diagram..... **Drawing C-325405**

Daktronics identifies manuals by an ED or DD number located on the cover page of each manual. For example, this manual would be referred to as **ED-12462**.

1.3 Daktronics Exchange and Repair & Return Programs

Exchange Program

The Daktronics Exchange Program is a service for quickly replacing key components in need of repair. If a component fails, Daktronics sends a replacement part to the customer who, in turn, returns the failed component to Daktronics. This decreases equipment downtime. Customers who follow the program guidelines explained below will receive this service.

Before Contacting Daktronics

Identify these important numbers:

Assembly Number: _____
Job/Contract Number: _____
Date Installed: _____
Daktronics Customer ID Number: _____

To participate in the Exchange Program, follow these steps.

1. Call Daktronics Customer Service.

Market Description	Customer Service Number
Schools (including community/junior colleges), religious organizations, municipal clubs and community centers	877-605-1115
Universities and professional sporting events, live events for auditoriums and arenas	866-343-6018

2. When the new exchange part is received, mail the old part to Daktronics.

If the replacement part fixes the problem, send in the problem part being replaced.

- a. Package the old part in the same shipping materials in which the replacement part arrived.
- b. Fill out and attach the enclosed UPS shipping document.
- c. Ship the part to Daktronics.

3. The defective or unused parts must be returned to Daktronics within 5 weeks of initial order shipment.

If any part is not returned within five (5) weeks, a non-refundable invoice will be presented to the customer for the costs of replenishing the exchange parts inventory with a new part.

Daktronics reserves the right to refuse parts that have been damaged due to acts of nature or causes other than normal wear and tear.

Repair & Return Program

For items not subject to exchange, Daktronics offers a Repair & Return Program. To send a part for repair, follow these steps:

- 1. Call or fax Daktronics Customer Service:**
Refer to the appropriate market number in the chart listed on the previous page.
Fax: 605-697-4444
- 2. Receive a case number before shipping.**
This expedites repair of the part.
- 3. Package and pad the item carefully to prevent damage during shipment.**
Electronic components, such as printed circuit boards, should be placed in an antistatic bag before boxing. Daktronics does not recommend using packing 'peanuts' when shipping.
- 4. Enclose:**
 - name
 - address
 - phone number
 - the case number
 - a clear description of symptoms

Shipping Address

Daktronics Customer Service
[Case #]
201 Daktronics Drive, Dock E
Brookings, SD 57006

Daktronics Warranty and Limitation of Liability

The Daktronics Warranty and Limitation of Liability is located in **Appendix F**. The Warranty is independent of Extended Service agreements and is the authority in matters of service, repair, and display operation.

Section 2: Basic Operation

2.1 Console Operation

The console face consists of a two-line by 16-character liquid crystal display and an area for a sport-specific insert. Refer to **Figure 3** to locate these components on the control console face.



Figure 3: All Sport® 1600 Layout

In most cases, the top line of the LCD shows the main clock time, the direction the clock is counting, and when the main horn is sounding, while the bottom line typically shows the HOME and GUEST team scores.

The keys and functions common to all sports are explained in **Section 2.5**. All of the keys that pertain to a specific sport code insert are explained in detail in their respective sport section.

Throughout this manual, the names or letters of keys on the keyboard are enclosed in angle brackets (such as <ENTER*/EDIT>).

2.2 Sport Inserts

Sport inserts allow a single console to control multiple sports. Select the proper insert from the chart below and slide it into the opening on the left side of the console until it stops. To remove a sport insert, pull on the tab that extends from the console.

Note: The All Sport® 1600 series control console is capable of running older, single driver baseball scoreboards and Glow Cube® portable displays, which were previously controlled with the 1000 and the 2500 series consoles.

If an insert is lost or damaged, a printed copy of the sport insert drawing, located in **Appendix B** can be used until a replacement can be ordered.

Sport	Insert Number	Code
Clock/score	LL-2496	01, 81
Volleyball	LL-2502	02, 82
Baseball	LL-2500	03, 83, 80, 87
Basketball	LL-2667	21, 88
Shot clock/play clock	LL-2501	04, 05, 84 ,85
Segment timer	LL-2498	06
Multipurpose timer	LL-2499	07
Tennis	LL-2497	08
Relay board	0G-139761	09
Lap counter	0G-140230	10
Field events metric 1	0G-140229	11
Field events metric 2	0G-140229	12
Field events metric 3	0G-140229	13
Field events imperial	0G-140229	14
Gymnastics	0G-144810	15
Squash	0G-199192	16

Sport Insert Operation Concepts

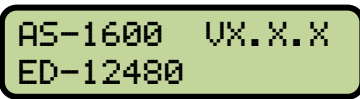
A sport insert identifies the keys required for normal operation of a specific sport. In most cases, pressing a key immediately changes the scoreboard. Keys that require entry of additional information are marked by a dot, (such as <SET TIME •>). This additional information is usually a number followed by the <ENTER*/EDIT> key.

Some keys are labeled **+1**. Pressing one of these keys once “increments”, or increases, the corresponding field on the scoreboard by one (such as score or period). A key with **-1** “decrements”, or decreases, by one.

On most inserts, certain keys have been grouped together under the heading **Home** or **Guest**. These keys are **team** keys and work the same for both teams. They affect the statistics only for that one team. Keys not under one of these headings are **game** keys. They are general keys for the progress of the game (such as period or quarter). Other keys may be grouped in a similar way to emphasize that they work together.

2.3 Startup

Use the rocker switch on the back of the console to turn it on, then follow the LCD screens:

Display	Action
	<p>The console performs a self-test when it is powered on. During the self-test, a message displays the version of the standard software loaded in the console.</p> <p>V = version number and revision number ED = standard software number</p>

Display	Action
<div data-bbox="347 296 711 386" style="border: 1px solid black; border-radius: 10px; padding: 5px; background-color: #d9ead3;"> PREV CODE NN ENTER TO RESUME </div> <p data-bbox="347 396 602 422">NN = last code selected</p>	<p data-bbox="740 296 1399 386">When the self-test completes, a prompt displays the code number for the last game played. This is useful when power to the console is lost during a game.</p> <p data-bbox="740 430 1349 491">Press <ENTER*/EDIT> to resume the last game stored in memory. The console is now ready for game operation.</p> <p data-bbox="740 535 1393 596">Press <CLEAR/ALT> to start a new game or enter a different code. The console will prompt for a new code number.</p>
<div data-bbox="347 676 711 766" style="border: 1px solid black; border-radius: 10px; padding: 5px; background-color: #d9ead3;"> SELECT CODE CODE NN </div> <p data-bbox="347 777 542 802">NN = current code</p>	<p data-bbox="740 676 1406 737">The SELECT CODE prompt allows users to accept the last code selected (shown on the second line) or enter a new code.</p> <p data-bbox="740 781 1036 806">To select a new sport code:</p> <ol data-bbox="740 814 1382 940" style="list-style-type: none"> 1. Get the code number from the sport insert or the section of the manual for that sport. 2. Use the number keys to enter the new two-digit code. 3. Press <ENTER*/EDIT>.
<div data-bbox="347 1010 711 1100" style="border: 1px solid black; border-radius: 10px; padding: 5px; background-color: #d9ead3;"> RADIO SETTINGS BCAST X CHAN YY </div> <p data-bbox="347 1119 686 1180">X = last broadcast number used YY = last channel number used</p>	<p data-bbox="740 1010 1393 1087">If a new code is selected, and the radio option is installed, the console prompts for a channel. When Resume Game is used, the last channel selected is used.</p> <p data-bbox="740 1119 1338 1171">Press <ENTER*/EDIT> to accept the channel number or press <CLEAR/ALT> to enter a new channel number.</p> <p data-bbox="740 1199 1187 1224">Refer to Section 2.4 for more information.</p>

2.4 Setting Radio Channels

Reference Drawings:

Channel Selection; Multiple Broadcast Group, Gen IV **Drawing A-203113**

Installation Details, Gen VI Channel Selection Guide **Drawing A-1109870**

The radio receiver units used in Daktronics scoreboards have a channel (CHAN) switch that can be set from 1–8. The receivers also have a broadcast group (BCAST) setting. The broadcast group defines a group of radio receivers that “listen” to the channel selected on the channel switch as well as “listen” for data sent out on their broadcast channel.

Note: The number of available broadcast groups varies depending on the generation of radio receiver: Gen V radio receivers have 1–4, while Gen VI radio receivers have 1–8.

Each radio receiver will accept data sent from the broadcast channel of its respective broadcast group, as well as data sent from the “Master Broadcast” channel. This is selected when the console is set to BCAST 0 and CHAN 00.

In this type of system, the receiver unit at the scoreboard must have the channel switch set to a specific channel. The operator must know which channel is selected in the scoreboard. The operator must then enter the specific channel when prompted during console startup.

To determine the settings of a scoreboard, first power it down and shut off any radio-equipped consoles in the area. Next, power the scoreboard back up and watch for the radio settings. The settings will appear as “bX CY” where X is the current broadcast group and Y is the current channel.



Figure 4: Radio Settings in Clock Digits

The settings are typically displayed in the clock digits (**Figure 4**) or Home and Guest score digits (**Figure 5**), depending on the scoreboard model.

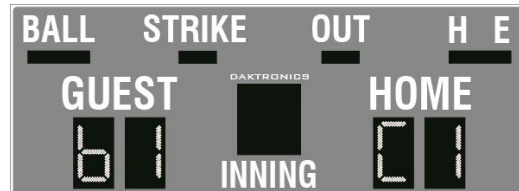


Figure 5: Radio Settings in Score Digits

The console automatically detects when a radio transmitter is installed and will prompt the user for transmitter settings after a valid sport code is entered.

Note: If interference from a nearby Daktronics system is suspected, press <CLEAR> at the “RADIO SETTINGS” prompt to change the channel number.

There are three different radio scenarios that can be accommodated: a single controller system, a multiple controller system with a single broadcast group, and a multiple controller system with multiple broadcast groups. These scenarios are described on the following pages.

Single Controller System

In a single controller system (Figure 6), all radio receivers and all scoreboards receive signal from the same console at all times. The default channel and broadcast group settings on the receiver are not typically modified. An example of this type of system is a football field with a scoreboard in one or both end zones displaying the same information.

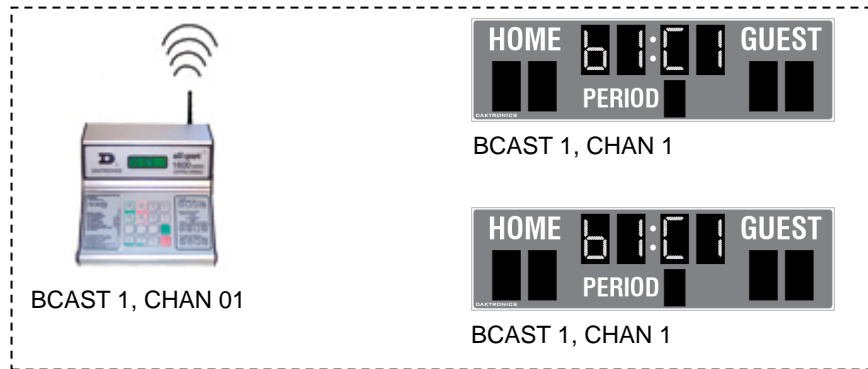


Figure 6: Single Control Console

Typically all single controller systems will use the default setting BCAST = 1, CHAN = 1. All radio receivers in the system must be set to the same values.

Display	Action
<div style="border: 1px solid black; padding: 5px; margin-bottom: 10px;"> <p>RADIO SETTINGS BCAST X CHAN YY</p> </div> <div style="border: 1px solid black; padding: 5px; margin-bottom: 10px;"> <p>ENTER TO ACCEPT CLEAR TO MODIFY</p> </div> <p>The LCD will toggle between these 2 screens.</p> <div style="border: 1px solid black; padding: 5px;"> <p>BCAST GROUP 1* RADIO CHAN 01</p> </div>	<p>The LCD shows the current radio settings along with a prompt to accept or modify these values.</p> <p>If the radio settings are correct press <ENTER>.</p> <p>If these values are incorrect press <CLEAR>, and the LCD at bottom left is shown, allowing edit of the channel or broadcast group setting.</p> <p>Broadcast Group Setting</p> <p>1 Use this setting for all single controller systems. Use the number keys to edit this value and press <ENTER> to accept. The asterisk will move to the channel setting.</p> <p>Channel Setting</p> <p>1-8 Edit the channel number to the desired value and press <ENTER> to accept. The CHAN switch on the receiver must match this value.</p>

Multiple Controller System with Single Broadcast Group

In a multiple controller system with a single broadcast group (Figure 7), there may be one console for each scoreboard and/or one master controller that can run every scoreboard at one time or take control of a specific scoreboard. An example of this type of system is a softball complex with individual scoreboards on several different fields.

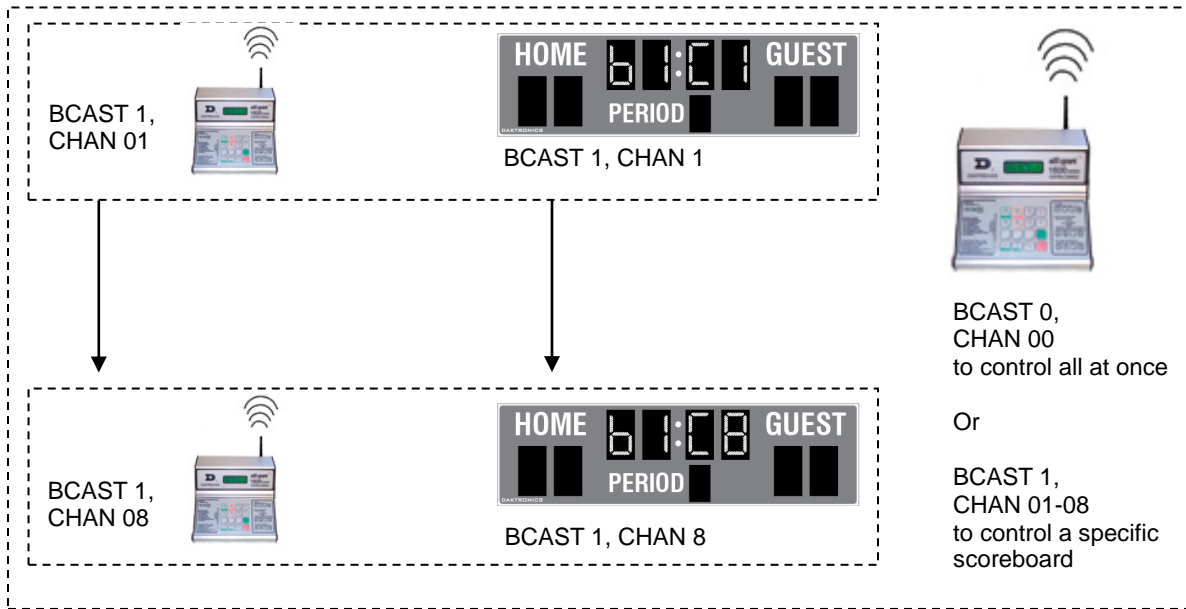


Figure 7: Single Broadcast Group

Multiple controller systems typically use Broadcast 1 and Channel 1 for the first controller and Channels 2-8 for all remaining controllers. All radio receivers in the system must be set to Broadcast 1 (BCAST 1).

Display	Action
 The LCD will toggle between these 2 screens.	The LCD shows the current radio settings along with a prompt to accept or modify these values. If the radio settings are correct press <ENTER> . If these values are incorrect press <CLEAR> , and the LCD at bottom left is shown, allowing edit of the channel or broadcast group setting.
	<p>Broadcast Group Setting</p> <p>1 Use this setting for all multiple controllers with single broadcast group setups. Use the number keys to edit this value and press <ENTER> to accept. The asterisk will move to the channel setting.</p> <p>Channel Setting</p> <p>1-8 Edit the channel number to the desired value and press <ENTER> to accept. The CHAN switch on the receiver must match this value.</p>

Multiple Controller with Multiple Broadcast Groups

In a multiple controller system with multiple broadcast groups (Figure 8), there are many consoles that control multiple scoreboards and/or scoreboard groups. The radio receiver inside the scoreboard is set to broadcast group 1-4 (Gen V) or 1-8 (Gen VI). By changing the console settings to the specific broadcast group address, a single console can control all scoreboards or specific groups of scoreboards. One example of this scenario is split court operation in basketball installations, where scoreboards are used to score multiple games at once, but can be grouped together to show one game if necessary.

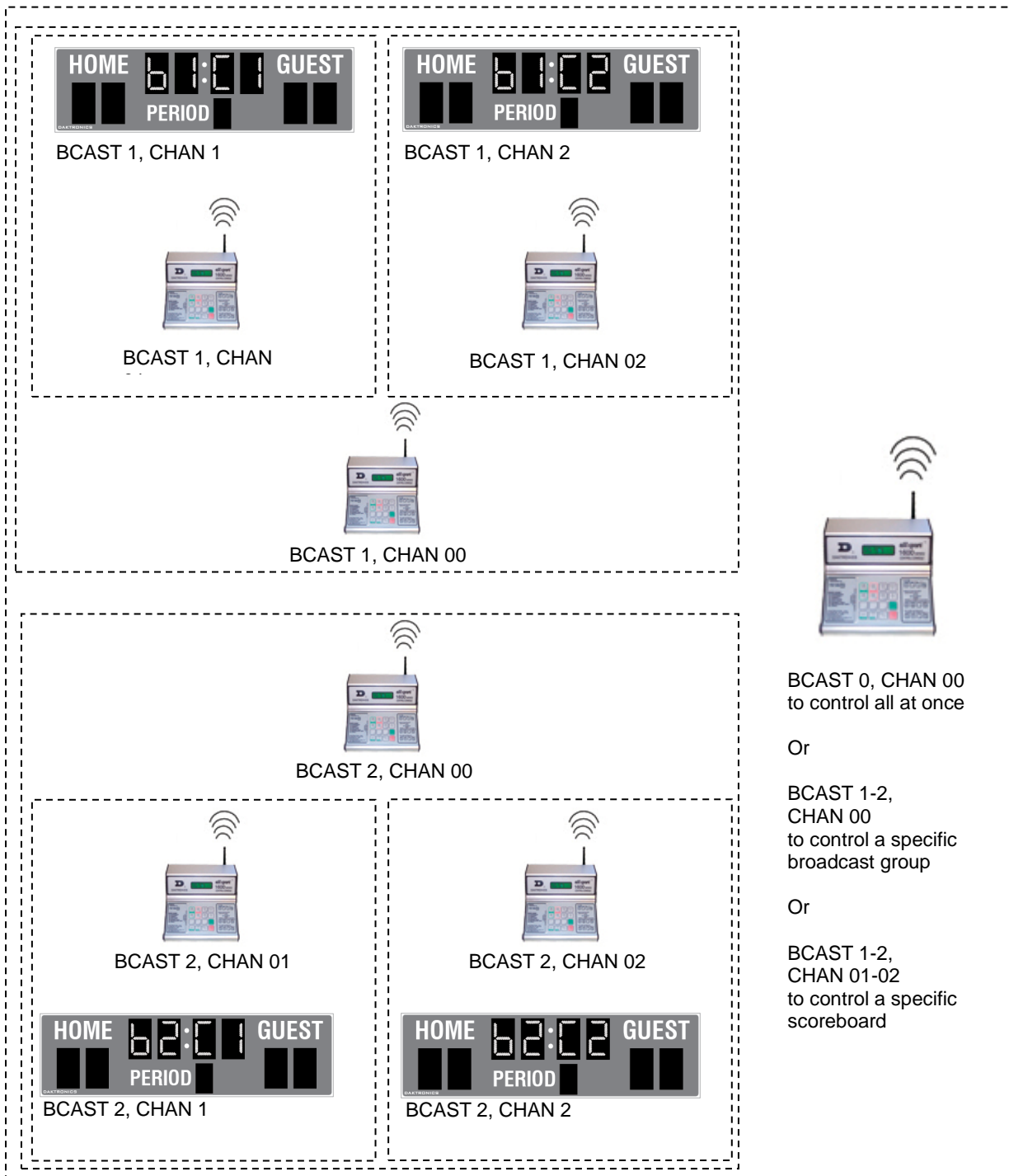


Figure 8: Multiple Broadcast Group

Typically, all multiple controller systems will use BCAST 1, CHAN 1 for the first controller in Broadcast Group 1 and BCAST 2, CHAN 1 for the first controller in Broadcast Group 2. All other consoles in a group are added sequentially.

Display	Action																			
<div data-bbox="298 415 662 510" style="border: 1px solid black; padding: 5px; margin-bottom: 10px;"> RADIO SETTINGS BCAST X CHAN YY </div> <div data-bbox="298 556 662 651" style="border: 1px solid black; padding: 5px; margin-bottom: 10px;"> ENTER TO ACCEPT CLEAR TO MODIFY </div> <p>The LCD will toggle between these 2 screens.</p> <div data-bbox="298 856 662 951" style="border: 1px solid black; padding: 5px;"> BCAST GROUP 1* RADIO CHAN 01 </div>	<p>The LCD shows the current radio settings along with a prompt to accept or modify these values.</p> <p>If the radio settings are correct press <ENTER>.</p> <p>If these values are incorrect press <CLEAR>, and the LCD at bottom left is shown, allowing edit of the channel or broadcast group setting.</p> <p>Use the number keys to enter the desired broadcast group and press <ENTER> to accept. The asterisk will move to the channel setting.</p> <p>Edit the channel number to the desired value and press <ENTER> to accept.</p> <table border="1" data-bbox="695 972 1357 1356"> <thead> <tr> <th>Broadcast Group</th> <th>Channel Setting</th> <th>Control Scoreboards</th> </tr> </thead> <tbody> <tr> <td>0</td> <td>0</td> <td>All Scoreboards</td> </tr> <tr> <td rowspan="2">1</td> <td>0</td> <td>All in BCAST Group 1</td> </tr> <tr> <td>1-8</td> <td>Set to corresponding BCAST 1 Channel</td> </tr> <tr> <td style="text-align: center;">↓</td> <td style="text-align: center;">↓</td> <td style="text-align: center;">↓</td> </tr> <tr> <td rowspan="2">8*</td> <td>0</td> <td>All in BCAST Group 8</td> </tr> <tr> <td>1-8</td> <td>Set to corresponding BCAST 8 Channel</td> </tr> </tbody> </table> <p>* Gen V radio receivers have only 4 groups; also, on broadcast groups 2 and 4, only channels 1-4 may be used.</p>	Broadcast Group	Channel Setting	Control Scoreboards	0	0	All Scoreboards	1	0	All in BCAST Group 1	1-8	Set to corresponding BCAST 1 Channel	↓	↓	↓	8*	0	All in BCAST Group 8	1-8	Set to corresponding BCAST 8 Channel
Broadcast Group	Channel Setting	Control Scoreboards																		
0	0	All Scoreboards																		
1	0	All in BCAST Group 1																		
	1-8	Set to corresponding BCAST 1 Channel																		
↓	↓	↓																		
8*	0	All in BCAST Group 8																		
	1-8	Set to corresponding BCAST 8 Channel																		

2.5 Standard Keys

Start

<START> is used to start the main clock.

Stop

<STOP> is used to stop the main clock.


Enter/Edit

The <ENTER*/EDIT> key has dual functions. The key functions as the enter key when editing game data. Pressing the key will accept the new data and exit the edit mode. If not in **Edit** mode, the key allows the user to select the item to be edited, such as team score. After pressing the <ENTER*/EDIT> key, the operator then presses one of the increment or decrement keys for the desired field on the scoreboard. The operator then enters the new value to display and presses <ENTER*/EDIT> to accept.

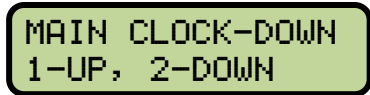
Clear/Alt

The <CLEAR/ALT> key has two functions. The key operates as the clear key when editing game data. Pressing the key will clear the data being edited, or, if pressed twice, will exit the edit mode. When not in **Edit** mode the <CLEAR/ALT> key allows the user to access the alternate function keys. Pressing the <CLEAR/ALT> and one of the alternate function keys will initiate the desired function.

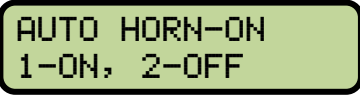
Set Time

Display	Action
 MM:SS.T = minutes, seconds, tenths of a second	After the main clock has been stopped, press <SET TIME*> to display the current time of the main clock. To change the time, enter the desired value on the number pad and press <ENTER*/EDIT>. Press <CLEAR/ALT> twice to cancel any changes and return to the game.

Count Up/Down

Display	Action
	After the main clock has been stopped, the direction of the clock can be set using the <COUNT UP/DN> function. Press <1> or <2> to select UP or DOWN (default). Note: The current direction of the main clock is shown on the top line of the LCD.

Auto Horn


Display	Action
	Press <AUTO HORN *> and then press <1> or <2> to select ON (default) or OFF .

Manual Horn


Press <MANUAL HORN> to sound the main horn. The horn sounds as long as the key is pressed and stops sounding when the key is released.

Score +1, -1

The home and guest <SCORE +1> key is used to increment the team score, and the <SCORE -1> key is used to decrement the team score.

Display	Action
 <p>NNN = current setting</p>	Press the appropriate score key to increase or decrease the score for the home or guest team. The LCD shows which key was pressed and the new value for the team score of the corresponding team. Press <ENTER*/EDIT> then either <SCORE +1> or <SCORE -1> to display the current setting. Enter the correct number and press <ENTER*/EDIT>.

Dim

Display	Action
 <p>NN = current level NONE = bright <0> 90% = <1> 80% = <2> 70% = <3> 60% = <4> 50% = <5> 40% = <6> 30% = <7> 20% = <8> 10% = <9></p>	Press <CLEAR/ALT> followed by <DIM>. Press <0> through <9> to select the intensity for the digits on the scoreboard. Press <CLEAR/ALT> to resume the game in progress using the current data and exit the Menu. Press the down arrow key to scroll to the next selection. Note: The incremental dim levels pertain only to outdoor LED products. Indoor LED and incandescent products only support one level of dimming at 50%.

2.6 Remote Start/Stop Controls

The All Sport® 1600 console lets operators control timing functions remotely using the Game Clock Start/Stop switch and the Shot Clock Start/Stop switch. Only one type of switch may be used at any given time.

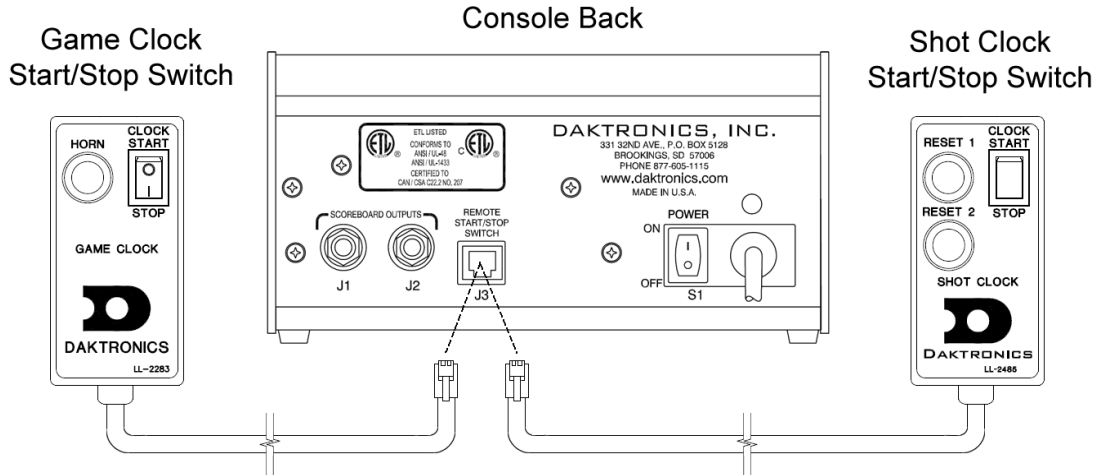


Figure 9: Remote Start/Stop Switches

Game Clock Control

The Game Clock Start/Stop switch plugs into J3 on the back of the All Sport® 1600 console (Figure 9). This unit has a rocker switch for clock start/stop and a button for horn. The horn button sounds the horn as long as the button is pressed.

Shot Clock Control

The Shot Clock Start/Stop switch also plugs into J3 on the back of the console (Figure 9). This unit has a rocker switch for Start/Stop and reset button(s). When a reset button is pressed, the shot clock timer is changed to the reset value and stops the timer from decrementing. The shot clock timer restarts when the reset button is released.

Refer to Section 7 for more information about shot/play clock & pitch timer configurations.

2.7 Battery Kit

Reference Drawings:

All Sport Battery Kit Option..... **Drawing A-139990**

Refer to **Drawing A-139548** for an overview of the All Sport® 1600 series console layouts and connectors. For the battery-operated model, **Drawing A-139990** details the connection options for power and charging.

Section 3: Clock/Score

Sport Insert: LL-2496 (Code 01) (Code 81)

The sport insert drawing is located in **Appendix B**. The block diagram drawings are located in **Appendix A**.

Reference Drawings:

Insert; LL-2496 A/S 1600, Clock/Score.....**Drawing A-139419**
 System Riser Diagram, Indoor/Outdoor A/S 1600.....**Drawing A-139544**

Refer **Section 2** for information on starting the console and for instructions for use of the sport insert.

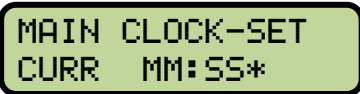

If an insert is lost or damaged, a copy of the insert drawing can be used until a replacement arrives.

If the code number for a scoreboard is unknown, refer to **Appendix C**. If the model number of a scoreboard is unknown, refer to the documentation provided with the scoreboard.

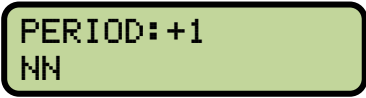
3.1 Clock/Score Keys

Set Time

The current time on the main clock is displayed by pressing **<SET TIME •>**, and it can be changed by entering the desired time on the number pad and pressing **<ENTER*/EDIT>**. The period length can be edited by pressing **<SET TIME •>** a second time.

Display	Action
 <p>MM:SS = minutes, seconds</p>	<p>To display the current clock time, press <SET TIME •>.</p> <p>To change the current clock time, enter the new time in minutes and seconds and press <ENTER*/EDIT>.</p> <p>Press <CLEAR/ALT> twice to cancel any changes and return to the game.</p>
 <p>MM:SS = minutes, seconds</p>	<p>To display the configured time for period length, press <SET TIME •> twice.</p> <p>To accept the period length as the new clock time, press <ENTER*/EDIT>. To decline the selection of the period length, press <CLEAR/ALT>.</p> <p>To change the period length and set the main clock, enter the new time in minutes and seconds and press <ENTER*/EDIT>.</p> <p>Press <CLEAR/ALT> twice to cancel any changes and return to the game.</p>

Period +1

Display	Action
 <p>PERIOD: +1 NN</p> <p>NN = current setting</p>	<p>Press <PERIOD +1> to increment the current period.</p> <p>Press <ENTER*/EDIT> then <PERIOD +1> to display the current setting. Enter the correct number and press <ENTER*/EDIT>.</p>

Section 4: Multipurpose Timer

Sport Insert: LL-2499 (Code 07)

The sport insert drawing is located in **Appendix B**. The block diagram drawings are located in **Appendix A**.

Reference Drawings:

- Insert; LL-2499 A/S 1600, Multipurpose Timer **Drawing A-139487**
- System Riser Diagram, Indoor/Outdoor A/S 1600 **Drawing A-139544**

Refer **Section 2** for information on starting the console and for instructions for use of the sport insert.

If an insert is lost or damaged, a copy of the insert drawing can be used until a replacement arrives.

If the code number for a scoreboard is unknown, refer to **Appendix C**. If the model number of a scoreboard is unknown, refer to the documentation provided with the scoreboard.


4.1 General Multipurpose Timer Information

The sport insert for the timer is **LL-2499**, and **Code 07** is used to run the timer. The multipurpose timer is a general timer used for two-, four-, and six-digit time displays. The timer counts up or down through hours, minutes and seconds. The information shifts on the two- and four-digit displays to show the most significant time values as the time changes.

TOD/Game



The <TOD/GAME •> key toggles the console between displaying game time or time of day (TOD), allowing the user to change the time of day.

Press <TOD/GAME •> to display the **Time of Day** prompt if the console is currently showing **Game Time**. If **Time of Day** is currently displayed, it will change to **Game Time**.

Display	Action
 <p>HH:MM:SS = hours, minutes, seconds</p>	<p>Enter the time of day in hours, minutes, and seconds and press <ENTER*/EDIT>.</p> <p>The time of day clock is now displayed on the console.</p>

Set Clock

The current time on the main clock is displayed by pressing <SET TIME •>, and it can be changed by entering the desired time on the number pad and pressing <ENTER*/EDIT>. The period length can be edited by pressing <SET TIME •> a second time.

Display	Action
 <p>MM:SS = minutes, seconds</p>	<p>To display the current clock time, press <SET TIME •>.</p> <p>To change the current clock time, enter the new time in minutes and seconds and press <ENTER*/EDIT>.</p> <p>Press <CLEAR/ALT> twice to cancel any changes and return to the game.</p>
 <p>MM:SS = minutes, seconds</p>	<p>To display the configured time for period length, press <SET TIME •> twice.</p> <p>To accept the period length as the new clock time, press <ENTER*/EDIT>. To decline the selection of the period length, press <CLEAR/ALT>.</p> <p>To change the period length and set the main clock, enter the new time in minutes and seconds and press <ENTER*/EDIT>.</p> <p>Press <CLEAR/ALT> twice to cancel any changes and return to the game.</p>

Note: All keys listed on the timer insert except <TOD/GAME •> are explained in **Section 2.5**.

Section 5: Segment Timer

Sport Insert: LL-2498 (Code 06)

The sport insert drawings are located in **Appendix B**. The block diagram drawings are located in **Appendix A**.

Reference Drawings:

Insert; LL-2498 A/S 1600, Segment Timer **Drawing A-139492**

Refer to the information in **Section 2** to start up the console and use the sport insert.

If an insert is lost or damaged, a copy of the insert drawing can be used until a replacement arrives.

If the code number for a scoreboard is unknown, refer to **Appendix C**. If the model number of a scoreboard is unknown, refer to the documentation provided with the scoreboard.

5.1 Accessing Segment Timer

To run the segment timer for the dedicated segment timer display, enter **Code 06** at the **Enter Code** command.

5.2 Segment Timer Information

The segment timer is used to time events such as practice sessions. The operation of the segment timer is determined by 40 segments of pre-programmed length. The segment timer will count down starting at the segment number that is set as **First Segment**. When the first segment is completed, the segment timer will count the **Interval Time** and proceed with the next segment. The timer will continue counting segments until the segment number that is set as **Last Segment** is counted down. It then will reset to the segment saved as the **First Segment** and will either begin counting down or pause for the **<START>** key to be pressed, depending on the **Auto Stop At Last Seg** setting. To stop the timer after each segment is completed, use the **Auto Stop** feature.

The **First Segment** and **Last Segment** values can be used to set up specific practice sessions. For example, the practice session for one sport could be programmed to use segments 1-10, while another might use segments 11-20. Set the **First Segment** and **Last Segment** values to the desired segment numbers for the session, and the console will count down each of the segments in order, either stopping on the last segment or looping through included segments again, based on the **Auto Stop At Last Seg** setting.

The default **First Segment** value is 1. The default value for the **Last Segment** is 40.

5.3 Segment Timer Keys

First/Last Segment

Display	Action
<p> NN = current first segment XX = current last segment </p>	<p>Press the <FIRST/LAST SEG> key. This setting determines the first and last segment in a range of segments to run when <START> is pressed.</p> <p>Enter the First Segment value and press <ENTER*/EDIT>.</p> <p>Enter the Last Segment and press <ENTER*/EDIT> to exit.</p> <p>The console will be reset to the segment saved as First Segment when the <RESET TO 1ST SEG> key is pressed.</p> <p>The console automatically resets to the segment saved as First Segment after the segment saved as Last Segment is completed.</p>

Segment Number/Time

Display	Action
<p>XX = segment number</p>	<p>Press <SEG. NO. • TIME •> to set individual segment times.</p> <p>Enter the segment to be edited using the <0> through <9> keys and press <ENTER*/EDIT>.</p>
<p>XX = segment number MM:SS = minutes, seconds</p>	<p>Enter the time for the segment and press <ENTER*/EDIT> to accept the time and move to the next segment time.</p> <p>Press <ENTER*/EDIT> again to exit the function.</p>

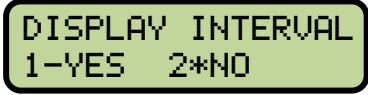
Interval Time

The interval time is the time between each segment.

Display	Action
<p>MM:SS = minutes, seconds</p>	<p>Press <INTERVAL TIME •> to display the current value of interval time on the bottom line of the LCD. Edit the value of the interval time and press <ENTER*/EDIT>.</p> <p>If the interval time is set to 00:00, no interval time will be counted.</p>

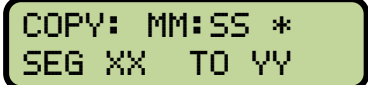
Display Interval

This setting determines whether the interval count will be displayed on the scoreboard.

Display	Action
 <p>* = current setting</p>	<p>Press <1> to display the interval time on the scoreboard. Press <2> to disable interval time display. The interval time will be displayed only on the console.</p> <p>Note 1: Regardless of this setting, the value saved in interval time will be counted down between segments. Set the interval time to zero if no interval between segments is desired.</p> <p>Note 2: When the interval time is being displayed, the segment number on the scoreboard flashes to indicate that the time displayed is interval time.</p>

Copy Range

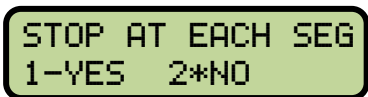
This key sets a range of segments to a specific value.

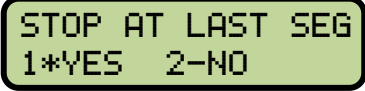
Display	Action
 <p>MM:SS = minutes, seconds XX = starting segment value YY = ending segment value</p>	<p>Press <COPY RANGE ·> and enter the time desired.</p> <p>Press <ENTER*/EDIT> to move to the next field. Enter the first and last segments that will have this time. When the last segment in the copy range is set, the menu will be exited.</p> <p>Once completed, all segments from xx to yy (inclusive) will be set to the specified value.</p>

Auto Stop

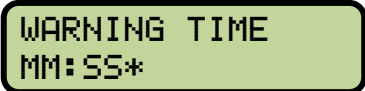
This key is the auto stop function of the console.

Note: To set the console to stop after the last segment in the series is completed, the auto stop at each segment setting must be set to **NO**.

Display	Action
 <p>* = current setting</p>	<p>Press <AUTO STOP> to enter this menu.</p> <p>Press <1> to set the console to stop after each segment is completed and wait for the <START> key to proceed with the next segment.</p> <p>Press <2> to set the console to automatically begin the next segment when each segment is completed.</p>

Display	Action
 <p>* = current setting</p>	<p>The console will prompt for the auto stop at last segment setting.</p> <p>Press <1> to set the console to stop when the last segment has been completed.</p> <p>Press <2> to set the console to start over at the first segment when the last segment is completed</p>

Warning Time

Display	Action
 <p>MM:SS = minutes, seconds</p>	<p>Press <WARNING TIME ·>, enter the time in minutes and seconds and press <ENTER*/EDIT>.</p> <p>Enter 00:00 for no warning time (default).</p> <p>When the warning time is reached, the segment number flashes until the main clock reaches zero.</p>

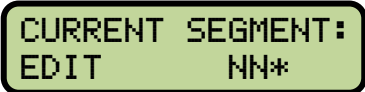
Current Segment +1

Press <CURRENT SEGMENT +1> to increment the segment number.

Reset Current Segment

Press <RESET CURRENT SEG> to reset the segment time to the value specified by the current segment. The segment number will remain at the current value.

Edit Current Segment

Display	Action
 <p>NN = current setting</p>	<p>Press <ENTER*/EDIT> then <CURRENT SEGMENT + 1> to display the current segment for editing.</p> <p>Enter the new value for the current segment number and press <ENTER*/EDIT>.</p>

Reset to First Segment

Press <RESET TO 1ST SEG> to reset the segment number and segment time to the values saved as the first segment.

Note: The **Reset to First Segment** function is disabled while the clock is running.

Section 6: Relay Board Operation

Sport Insert: 0G-139761 (Code 09)

The sport insert drawings are located in **Appendix B**. The block diagram drawings are located in **Appendix A**.

Reference Drawing:

Insert, 0G-139761; A/S1600 Relay Board **Drawing A-139761**

Refer to the information in **Section 2** to start up the console and use the sport insert.

If an insert is lost or damaged, a copy of the insert drawing can be used until a replacement arrives.

If the code number for a scoreboard is unknown, refer to **Appendix C**. If the model number of a scoreboard is unknown, refer to the documentation provided with the scoreboard.

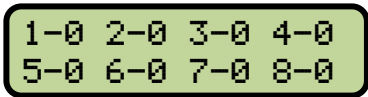
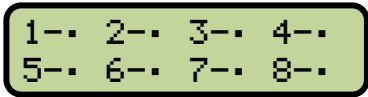
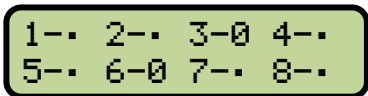
6.1 Relay Board Description

The relay board consists of eight relays that can be used to control loads of up to 10 amps at 120V AC per relay.

The LCD on the console will indicate which relays are ON by displaying a 0 (zero) by the number of that relay. Relays that are OFF will have a “.” by the number.

Making a list of what each relay number is controlling will make it easy to tell from the LCD verifier if a specific item is ON or OFF.

6.2 Relay Control Keys

Display	Action
	Press <ALL ON> to turn on all relays.
	Press <ALL OFF> to turn on all relays.
	<p>Press any key <1> through <8> once to turn on relay No. 1 through relay No. 8, respectively. Press the same key a second time to turn off the relay.</p> <p>In the example at left, only relays 3 and 6 are set to on, while all of the other relays are set to off.</p>

Section 7: Shot/Play Clock & Pitch Timer Operation

Sport Insert: LL-2501

- Shot Clock (Code 04) (Code 84)
- Play Clock/Pitch Timer (Code 05) (Code 85)

The sport insert drawings are located in **Appendix B**. The block diagram drawings are located in **Appendix A**.

Reference Drawings:

- Insert; LL-2501 A/S 1600, Shot/Play Clock..... **Drawing A-139889**
- System Layout - Independent Shot Clock System **Drawing A-139547**

Refer to the information in **Section 2** to start up the console and use the sport insert.

If an insert is lost or damaged, a copy of the insert drawing can be used until a replacement arrives.

If the code number for a scoreboard is unknown, refer to **Appendix C**. If the model number of a scoreboard is unknown, refer to the documentation provided with the scoreboard.

7.1 Shot/Play Clock & Pitch Timer Keys

Set Time, Set Reset 1, Set Reset 2

Display	Action
	<p>Note: The example shows operation in Play Clock mode.</p> <p><SET RESET 1 > sets the current Reset 1 value for the shot clock, play clock, or pitch timer.</p>
	<p><SET RESET 2 > sets the current Reset 2 value for the shot clock, play clock, or pitch timer.</p>
	<p><SET TIME > sets the current time for the shot clock, play clock, or pitch timer.</p>
	<p>Reset on Stop (Play Clock mode only) After editing the RESET 1 time, the console will ask whether or not to reset the time after pressing <STOP>.</p> <p>Typically, YES will only be selected when using remote start/stop sideline kits that have just one RESET button.</p>

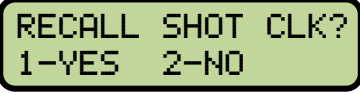
Timer Reset 1

Press <TIMER RESET 1> to reset the timer to the **Reset 1** time and to show the **Reset 1** time value on the display.

Timer Reset 2

Press <TIMER RESET 2> to reset the timer to the **Reset 2** time and to show the **Reset 2** time value on the display.

Recall Shot Time (Shot Clock Mode Only)

Display	Action
	Press <RECALL SHOT TIME> followed by <1> to undo an inadvertent shot clock reset. This will change the clock to the value it would display if the previous reset was not executed.

Refer to **Section 2.6** for information on using remote start/stop switches for shot/play clock and pitch timer functions.

Section 8: Volleyball Operation

Sport Insert: LL-2502 (Code 02) (Code 82)

The sport insert drawings are located in **Appendix B**. The block diagram drawings are located in **Appendix A**.

Reference Drawings:

- Insert; LL-2502 A/S 1600, Volleyball..... **Drawing A-139482**
- System Riser Diagram; Indoor/Outdoor A/S 1600..... **Drawing A-139544**

Refer to the information in **Section 2** to start up the console and use the sport insert.

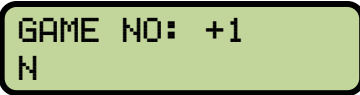
If an insert is lost or damaged, a copy of the insert drawing can be used until a replacement arrives.

If the code number for a scoreboard is unknown, refer to **Appendix C**. If the model number of a scoreboard is unknown, refer to the documentation provided with the scoreboard.

8.1 Volleyball Keys

Game +1, -1

The <GAME +1> and <GAME -1> keys are used to increment or decrement and team totals.

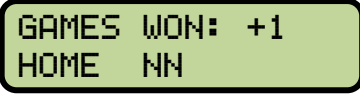
Display	Action
 <p>N = current setting</p>	<p>Press the appropriate key to increment statistics for the home or guest team. The LCD shows which key was pressed and the new value.</p> <p>Press <ENTER*/EDIT> and either of the Game keys to display the current setting. Enter the correct number and press <ENTER*/EDIT>.</p>

Reset Game Score

Press <RESET GAME SCORE> to reset both home and guest scores to zero. This key is used to clear the **Game Score** fields at the beginning of each match.

Home/Guest Won +1, -1

The <HOME WON +1> and <HOME WON -1> and <GUEST WON +1> and <GUEST WON -1> keys are used to increment or decrement their respective totals.

Display	Action
 <p>NN = current setting</p>	<p>Press the home or guest <WON +1> key to increment the number of games won by the team. Press the home or guest <WON -1> key to decrement the number of games won.</p> <p>Press <ENTER*/EDIT> then either of the home or guest <WON +1> keys to display the current setting. Enter the correct number and press <ENTER*/EDIT>.</p>

Section 9: Baseball Operation

Sport Insert: LL-2500 (Code 03) (Code 23) (Code 80) (Code 83) (Code 87)

The sport insert drawings are located in **Appendix B**. The block diagram drawings are located in **Appendix A**.

Reference Drawings:

- Insert; LL-2500 A/S 1600, Baseball **Drawing A-139491**
- System Riser Diagram; Indoor/Outdoor A/S 1600 **Drawing A-139544**

Refer to the information in **Section 2** to start up the console and use the sport insert.

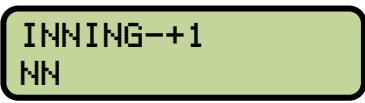
If an insert is lost or damaged, a copy of the insert drawing can be used until a replacement arrives.

If the code number for a scoreboard is unknown, refer to **Appendix C**. If the model number of a scoreboard is unknown, refer to the documentation provided with the scoreboard.

9.1 Baseball Keys

Out +1, Inning +1

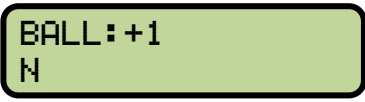
The <OUT +1> and <INNING +1> keys are used to increment their respective totals.

Display	Action
 <p>INNING--1 NN</p> <p>NN = current setting</p>	<p>Press <OUT +1> or <INNING +1> to increment their respective totals.</p> <p>To change values, first press <ENTER*/EDIT> then <OUT +1> or <INNING +1> to display the current setting. Enter the correct number and press <ENTER*/EDIT>.</p>

Ball, Strike, Clear Ball/Strike

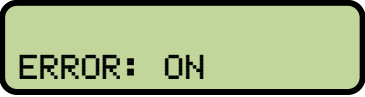
The <BALL +1> and <STRIKE +1> keys increment the ball and strike digits. Pressing the <CLEAR BALL & STRIKE> key clears the digits.

Note: If the ball count value is 4 when <BALL +1> is pressed, the value is blanked out. If the strike count value is 3 when <STRIKE +1> is pressed, the value is blanked out.

Display	Action
 <p>BALL: +1 N</p> <p>N = current setting</p>	<p>Press the <BALL +1> or <STRIKE +1> to increment the ball and strike digits.</p> <p>Press the <CLEAR BALL & STRIKE> key to clear the digits to zero.</p>


Hit, Error

The <HIT> and <ERROR> keys are used to turn on the Hit or Error indicator or digits. In the table that follows, <ERROR> is used as an example.

Display	Action
	<p>Press the <HIT> or <ERROR> key to turn on the Hit or Error indicator or digits.</p> <p>This display appears briefly.</p>

Home/Guest Score +1, -1

The <HOME SCORE +1> and <HOME SCORE -1> and <GUEST SCORE +1> and <GUEST SCORE -1> keys are used to increment or decrement their respective totals.

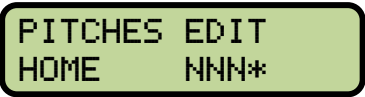
Display	Action
 <p>NN = current setting</p>	<p>Press the appropriate home or guest <SCORE +1> or <SCORE -1> key to increment or decrement the total number of runs for the team.</p> <p>The <ENTER*/EDIT> key permits the user to select and edit Runs +1 or -1. First, press <ENTER*/EDIT> and the key for the home or guest field to be edited, then enter the correct number and press <ENTER*/EDIT>.</p>

Time, At Bat, P-Count, H/E (Alternative Key)

The <TIME>, <AT BAT>, <P-COUNT>, and <H/E> keys are used to select what is shown on the two time digits. First press the <CLEAR/ALT> key and then one of the above keys to select what is displayed on the two time digits. If <TIME> is selected, they will show two digits of time. If <AT BAT> is selected, they will show the player At Bat. If <P-COUNT> is selected they will show the pitch count of the current pitcher. If <H/E> is selected, they will show an 'H' or an 'E' on the first digit when <HIT> or <ERROR> is pressed.

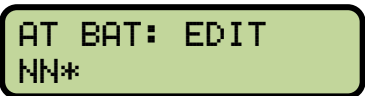
Pitch (Alternative Key)

The Home and Guest <PITCH> keys will edit the Home and Guest pitch count.

Display	Action
 <p>NNN = current setting</p>	<p>Press the <CLEAR/ALT> key and then press one of the pitch keys. Enter the pitch count and then press <ENTER*/EDIT>.</p>

Time/At Bat

The <TIME/AT BAT ·> key operates as the standard SET TIME key if the console is set to show the time. If the console is set to show AT BAT it will operate as shown below.

Display	Action
 <p>NN = current setting</p>	<p>Press the <TIME/AT BAT ·> key, enter the current batter number and press <ENTER*/EDIT>.</p>

Section 10: Tennis Operation

Sport Insert: LL-2497 (Code 08)

The sport insert drawings are located in **Appendix B**. The block diagram drawings are located in **Appendix A**.

Reference Drawings:

- Insert; LL-2497 A/S 1600, Tennis **Drawing A-139494**
- System Riser Diagram; Indoor/Outdoor A/S 1600 **Drawing A-139544**

Refer to the information in **Section 2** to start up the console and use the sport insert.

If an insert is lost or damaged, a copy of the insert drawing can be used until a replacement arrives.


If the code number for a scoreboard is unknown, refer to **Appendix C**. If the model number of a scoreboard is unknown, refer to the documentation provided with the scoreboard.

10.1 Tennis Keys

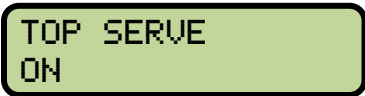
TOD/Game

The <TOD/GAME •> key toggles the console between displaying **Game Time** or **Time of Day** (TOD). It also allows the user to change the time of day.

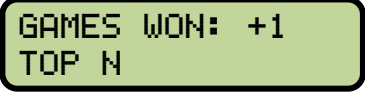
Press <TOD/GAME •> to display the **Time of Day** prompt if the console is currently showing **Game Time**. If **Time of Day** is currently displayed, it will change to **Game Time**.

Display	Action
 <p>HH:MM:SS = hours, minutes, seconds</p>	<p>Enter the time of day in hours, minutes, and seconds and press <ENTER*/EDIT>.</p> <p>The time of day clock is now displayed on the console.</p>

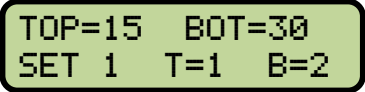
Serve

Display	Action
	<p><SERVE> turns the serve indicators on or off for the respective player.</p>

Game +1

Display	Action
 N = current setting	Press <GAME +1> to increment the number of games won in the current set for the respective player. To change values, first press <ENTER*/EDIT> then <GAME +1> to display the current setting. Enter the correct number and press <ENTER*/EDIT> .

Point

Display	Action
	The <POINT> key increments the point value for the respective player. If Tie Break scoring mode is selected, the points will increment by 1. Otherwise, the points will increment as 15, 30, 40 AD or GA. The current point values will be shown on the LCD.

Tie Break

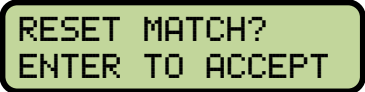
The **<TIE BREAK>** key sets the mode of scoring to **Tie Break** mode. In **Tie Break** scoring mode, points for each player are incremented by one when the **<POINTS>** key is pressed.

Note: Tie Break scoring mode may only be selected when both player point values are 0. To change scoring mode back to normal, use the **<RESET GAME>** key.

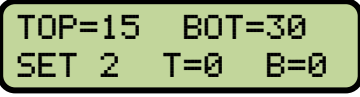
Reset Game

Press **<RESET GAME>** to reset the player points values for the current game.

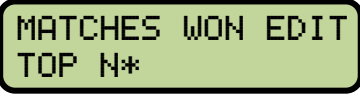
Reset Match (Alternative Function)

Display	Action
	The <MATCH> key will reset the current match. Press <CLEAR/ALT> and then <MATCH> . Press <ENTER*/EDIT> to reset the current match. All set scores and the current game score will be cleared, and the set number will be set to 1.

Set +1

Display	Action
	<p>Press <SET +1> to increment the current set number. The new set number and new set games won values will be displayed on the LCD.</p> <p>To change values, first press <ENTER*/EDIT> then <SET +1> to display the current setting. Enter the correct number and press <ENTER*/EDIT>.</p>

Team Score (Alternative Function)

Display	Action
	<p>The <TEAM> key will edit the matches for the team. Press <CLEAR/ALT> then <TEAM>. Enter the current team score and press <ENTER*/EDIT>.</p>

Section 11: Field Events Operation

Sport Insert: 0G-140229:

- Metric 1: Discus, Hammer Javelin (Code 11)
- Metric 2: Long/Triple Jump, Shot Put (Code 12)
- Metric 3: High Jump, Pole Vault (Code 13)
- Imperial (Code 14)

The sport insert drawings are located in **Appendix B**. The block diagram drawings are located in **Appendix A**.

Reference Drawings:

- Insert, 0G-140229; A/S 1600 Field Event Board **Drawing A-140229**
- System Riser Diagram; Indoor/Outdoor A/S1600 **Drawing A-139544**

Refer to the information in **Section 2** to start up the console and use the sport insert.


If an insert is lost or damaged, a copy of the insert drawing can be used until a replacement arrives.

If the code number for a scoreboard is unknown, refer to **Appendix C**. If the model number of a scoreboard is unknown, refer to the documentation provided with the scoreboard.

11.1 Field Events Keys

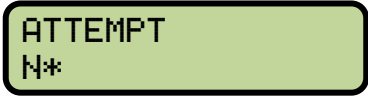
Competitor

The <COMPETITOR ·> key is used to enter the competitor number.

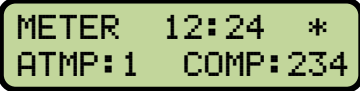
Display	Action
 <p>COMPETITOR NNN*</p> <p>NNN = current setting</p>	<p>Press the <COMPETITOR ·> key to display the current competitor number.</p> <p>Enter the desired number and press <ENTER*/EDIT>.</p>

Attempt

The <ATTEMPT·> key is used to enter the attempt number.

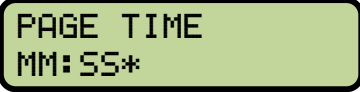
Display	Action
 <p>ATTEMPT N*</p> <p>N = current setting</p>	<p>Press the <ATTEMPT ·> key to display the current attempt number.</p> <p>Enter the desired number and press <ENTER*/EDIT>.</p>

Performance

Display	Action
 <p>METER 12:24 * ATMP:1 COMP:234</p>	<p>Press the <PERFORMANCE •> key to display the current performance number.</p> <p>Enter the desired number and press <ENTER*/EDIT>.</p>

Note: For Metric Codes 11, 12 and 13, the value entered for performance will be converted to imperial, and the metric and imperial values will be cycled on the display, based on the page time. Page time can be set to the length of time you want the board to cycle between metric performance and imperial performance. For Imperial Code 14, the value will be displayed only in imperial format.

Page Time

Display	Action
 <p>PAGE TIME MM:SS*</p> <p>MM:SS = minutes, seconds</p>	<p>Press the <PAGE TIME •> key to display the current page time on the LCD.</p> <p>Enter the desired number and press <ENTER*/EDIT>.</p> <p>Note: If the value is set at zero, the performance number will not be converted and the display will not change.</p>

Section 12: Lap Counter

Sport Insert: 0G-140230 (Code 10)

The sport insert drawings are located in **Appendix B**. The block diagram drawings are located in **Appendix A**.

Reference Drawings:

- Insert, 0G-140230, A/S 1600 Lap Counter **Drawing A-140230**
- System Riser Diagram; Indoor/Outdoor A/S 1600 **Drawing A-139544**

Refer to the information in **Section 2** to start up the console and use the sport insert.

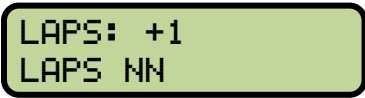
If an insert is lost or damaged, a copy of the insert drawing can be used until a replacement arrives.

If the code number for a scoreboard is unknown, refer to **Appendix C**. If the model number of a scoreboard is unknown, refer to the documentation provided with the scoreboard.

12.1 Lap Counter Keys

Lap +1, -1

The <LAP +1> and <LAP -1> keys are used to increment the lap number.

Display	Action
 NN = current setting	Press the appropriate key to increment or decrement the current lap number. The LCD shows which key was pressed and the new value. To edit the lap number, first press <ENTER*/EDIT> then <LAP +1> or <LAP -1>. Enter the current lap number and press <ENTER*/EDIT>.

Section 13: Gymnastics Operation

Sport Insert: 0G-144810 (Code 15)

The sport insert drawings are located in **Appendix B**. The block diagram drawings are located in **Appendix A**.

Reference Drawings:

- Insert; A/S 1600 Gymnastics **Drawing A-144810**
- System Riser Diagram; Indoor/Outdoor A/S 1600 **Drawing A-139544**

Refer to the information in **Section 2** to start up the console and use the sport insert.

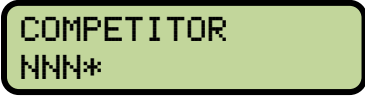
If an insert is lost or damaged, a copy of the insert drawing can be used until a replacement arrives.

If the code number for a scoreboard is unknown, refer to **Appendix C**. If the model number of a scoreboard is unknown, refer to the documentation provided with the scoreboard.

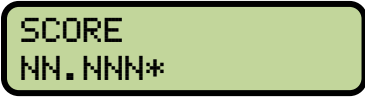
13.1 Gymnastics

Competitor

The <COMPETITOR> key is used to enter the competitor number.

Display	Action
 <p>COMPETITOR NNN*</p> <p>NNN = current setting</p>	<p>Press the <COMPETITOR > key to display the current competitor number.</p> <p>Enter the desired number and press <ENTER*/EDIT>.</p>

Score

Display	Action
 <p>SCORE NN.NNN*</p> <p>NN.NNN = current setting</p>	<p>Press the <SCORE > key to display the score for the current competitor.</p> <p>Enter the score value and press <ENTER*/EDIT>.</p>

Blank Display

Press the <BLANK DISPLAY> key to blank the competitor number and score information. This key will blank the information on the scoreboard and in the console.

Section 14: Squash Operation

Sport Insert: 0G-199192 (Code 16)

The sport insert drawings are located in **Appendix B**. The block diagram drawings are located in **Appendix A**.

Reference Drawings:

- Insert; 0G-199192; A/S 1600 Squash **Drawing A-199192**
- System Riser Diagram; Indoor/Outdoor A/S 1600 **Drawing A-139544**

Refer to the information in **Section 2** to start up the console and use the sport insert.


If an insert is lost or damaged, a copy of the insert drawing can be used until a replacement arrives.

If the code number for a scoreboard is unknown, refer to **Appendix C**. If the model number of a scoreboard is unknown, refer to the documentation provided with the scoreboard.

14.1 Squash Keys

Home/Guest Game Score +1, -1

The <GAME SCORE +1> and <GAME SCORE -1> keys are used to increment or decrement the home or guest game score.


Display	Action
	<p>Press the appropriate key to increment the game score for the home or guest team.</p> <p>The LCD shows home and guest scores and the games won.</p> <p>Press <ENTER*/EDIT> then either of the Game score keys to display the current setting. Enter the correct number and press <ENTER*/EDIT>.</p>

Reset Game Score

Press <RESET GAME SCORE> to reset both home and guest scores to zero. This key is used to clear the **Game Score** fields at the beginning of each game.


Home/Guest Won +1, -1

The <HOME WON +1> and <HOME WON -1> and <GUEST WON +1> and <GUEST WON -1> keys are used to increment or decrement their respective totals.

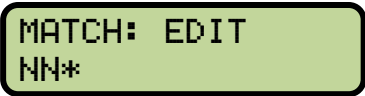
Display	Action
	<p>Press the home or guest <WON +1> key to increment the number of games won by the home or guest team. Press the home or guest <WON -1> key to decrement the games won.</p> <p>The LCD shows home and guest scores and the games won.</p> <p>Press <ENTER*/EDIT> and either of the home or guest <WON +1> keys to display the current setting. Enter the correct number and press <ENTER*/EDIT>.</p>

Home/Guest Team Score +1, -1

The <HOME SCORE +1> and <HOME SCORE -1> and <GUEST TEAM +1> and <GUEST TEAM -1> keys are used to increment or decrement their respective totals.

Display	Action
 NN = current setting	<p>Press the home or guest <TEAM SCORE +1> key to increment the number of games won by the home or guest team. Press the home or guest <TEAM SCORE -1> key to decrement the number of games won.</p> <p>The LCD shows home and guest scores and the games won.</p> <p>Press <ENTER*/EDIT> and either of the home or guest <TEAM SCORE +1> keys to display the current setting. Enter the correct number and press <ENTER*/EDIT>.</p>

Match Number

Display	Action
 NN = current setting	<p>Press the <MATCH NUMBER> key to set the match number.</p> <p>Enter the correct number and press <ENTER*/EDIT>.</p>

Section 15: Basketball Operation

Sport Insert: LL-2667 (Code 21) (Code 88)

The sport insert drawings are located in **Appendix B**. The block diagram drawings are located in **Appendix A**.

Reference Drawings:

- Insert: LL-2667- A/S Basketball- Code 21 **Drawing A-303302**
- System Riser Diagram; Indoor/Outdoor A/S 1600 **Drawing A-139544**

Refer to the information in **Section 2** to start up the console and use the sport insert.


If an insert is lost or damaged, a copy of the insert drawing can be used until a replacement arrives.

If the code number for a scoreboard is unknown, refer to **Appendix C**. If the model number of a scoreboard is unknown, refer to the documentation provided with the scoreboard.

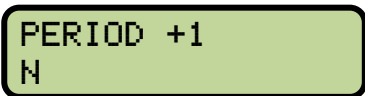
15.1 Basketball Keys

Home/Guest Game Score +1, +2, +3, -1

The **Home Score +1,+2,+3** and **Home Score -1** and **Guest Score +1,+2,+3** and **Guest Score -1** keys are used to increment or decrement their respective totals.

Display	Action
 <p>TEAM SCORE: +1 HOME NNN</p> <p>NNN = current setting</p>	<p>Press home or guest <SCORE +1, +2, +3> or <SCORE -1> to increment or decrement the total number of points for the team. The LCD shows which key was pressed and the new value for the corresponding team.</p> <p>The +3 and -1 keys are alternate keys and require <CLEAR/ALT> to be pressed first.</p> <p>Press <ENTER*/EDIT> and the key for the home or guest field to be edited. Then enter the correct number and press <ENTER*/EDIT>.</p>

Period +1

Display	Action
 <p>PERIOD +1 N</p> <p>N = current setting</p>	<p>Press <PERIOD + 1> to increment the current period.</p> <p>The LCD shows which key was pressed and the new value.</p> <p>To edit the period, press <ENTER*/EDIT> then <PERIOD + 1>. Enter the desired number and press <ENTER*/EDIT>.</p>

Fouls +1

Display	Action
<p>TEAM FOULS +1 NN</p> <p>NN = current setting</p>	<p>Press home or guest <FOULS + 1> to increment the total number of team fouls.</p> <p>The LCD shows which key was pressed and the new value.</p> <p>To edit the fouls, press <ENTER*/EDIT> then <FOULS + 1>. Enter the desired number and press <ENTER*/EDIT>.</p>

Set Time

The **Set Time** key is used to set or adjust the game time.

Display	Action
<p>TIME EDIT SET CURR MM:SS*</p>	<p>Press <SET TIME •> once and enter the desired time and then press <ENTER*/EDIT>.</p> <p>Press <SET TIME •> twice to set the period time.</p>
<p>TIME EDIT SET PERIOD MM:SS*</p> <p>MM:SS = minutes, seconds</p>	
<p>CLOCK RUNNING 57:25</p>	<p>If the <SET TIME •> key is pressed when the clock is on, the LCD will show the current clock status.</p>

Possession

Press <POSS> to light the appropriate indicator. Each press will turn the other possession light on.

Bonus (Alternate Function)

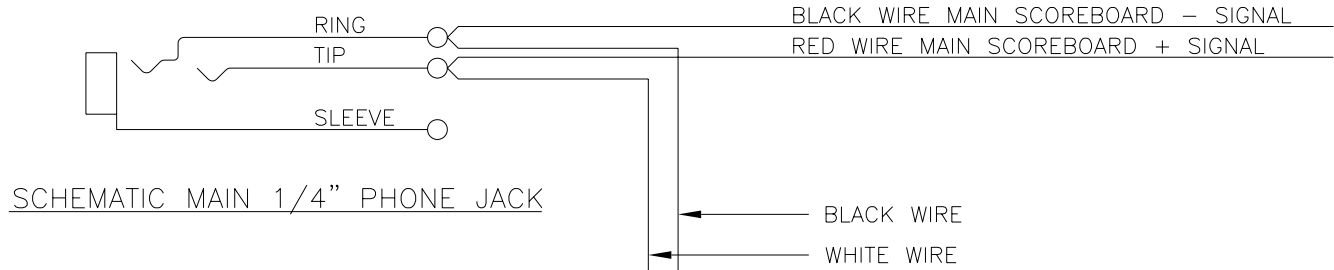
Press <CLEAR/ALT> then <BONUS> for Home or Guest team to toggle the bonus light.

1/10 SEC (Alternate Function)

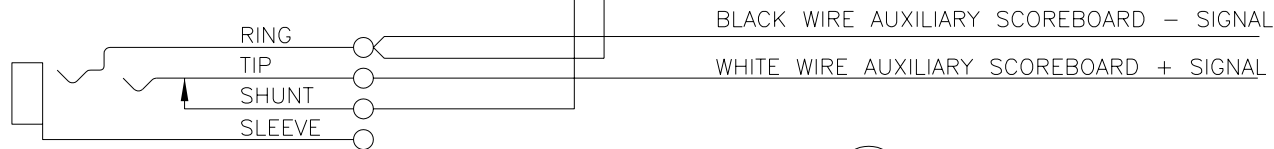
Press <CLEAR/ALT> and then <1/10 SEC> to toggle the 1/10 sec setting of the clock.

Appendix A: Reference Drawings

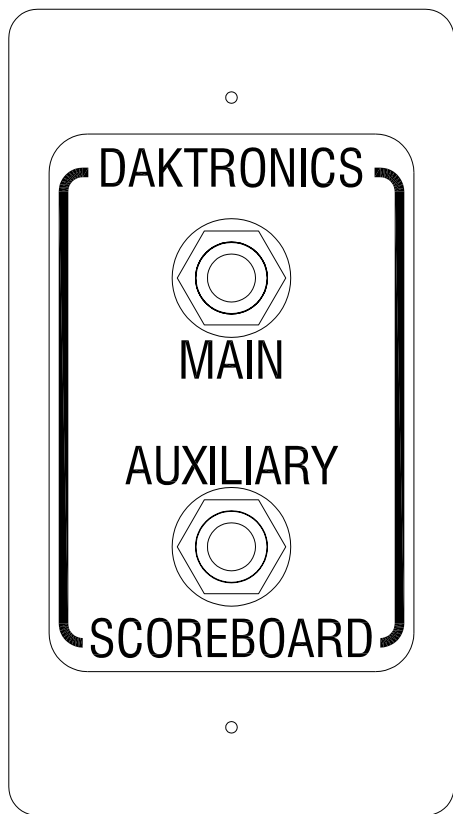
<i>Drawing Title</i>	<i>Drawing Number</i>
Schematic; Dual ¼" Phone J-Box w/Shunt Jack	A-125316
System Riser Diagram; Indoor/Outdoor A/S 1600	A-139544
System Layout - Independent Shot Clock System	A-139547
Rear View, A/S 1600 Connector Assignments.....	A-139548
All Sport Battery Kit Option.....	A-139990
Channel Selection; Multiple Broadcast Group, Gen IV	A-203113
Installation Details, Gen VI Channel Selection Guide	A-1109870



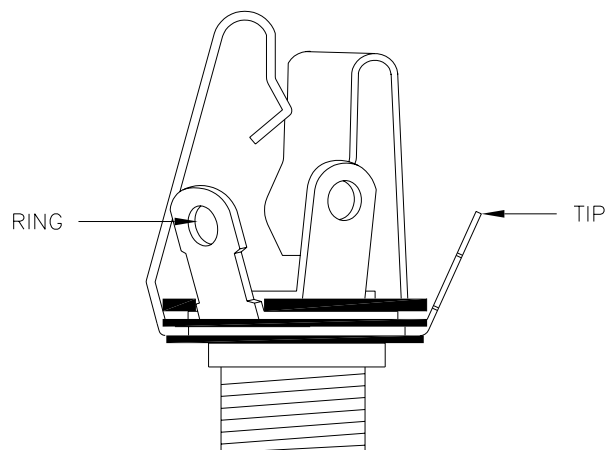
SCHEMATIC MAIN 1/4" PHONE JACK



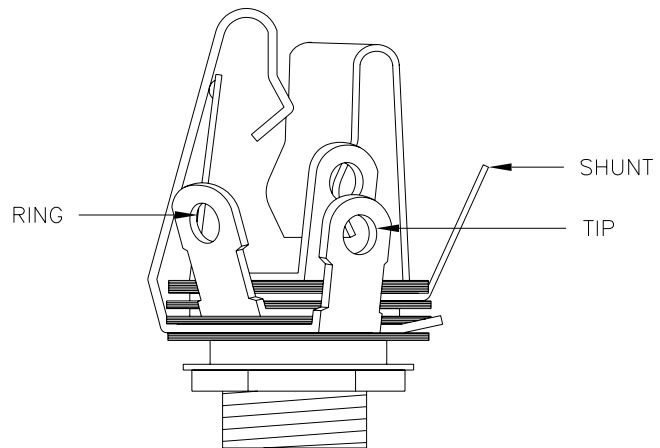
SCHEMATIC AUXILIARY 1/4" PHONE JACK



0A-1196-0013



MAIN
PHONE JACK
J-1003



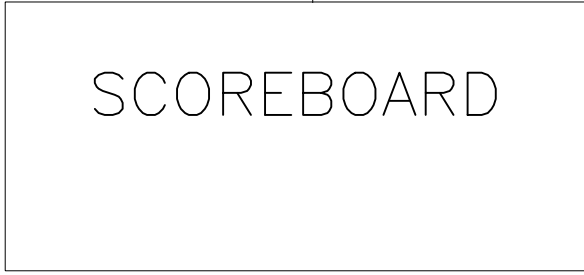
AUXILIARY
PHONE JACK
J-1131

DAKTRONICS, INC. BROOKINGS, SD 57006			
PROJ:			
TITLE: SCHEMATIC; DUAL 1/4" PHONE J-BOX W/SHUNT JACK			
DES. BY: E BRAVEK		DRAWN BY: E BRAVEK	
		DATE: 15 DEC 99	
REVISION	APPR. BY:	1196-R03A-125316	
00	SCALE: NONE		

REV.	DATE	DESCRIPTION	BY	APPR.

J-BOX BY CUSTOMER

120V AC



PIN	COLOR	FUNCTION
TIP	RED	SIGNAL +
RING	BLK	SIGNAL -

1, 1 PAIR 22 AWG SIGNAL CABLE

INDOOR J-BOX
OA-1009-0038

SIGNAL CORD

- W-1340, 10'
- W-1236, 20'
- W-1238, 30'
- W-1237, 50'

120V AC

AS1600 (120VAC)
OA-1196-0047

INDOOR

SCOREBOARD

INTERNAL TERMINATION PANEL

PIN	COLOR	FUNCTION
TIP	RED	SIGNAL +
RING	BLK	SIGNAL -

1, 1 PAIR 22 AWG SIGNAL CABLE.

OUTDOOR J-BOX
OA-1091-0227

SIGNAL CORD

- W-1340, 10'
- W-1236, 20'
- W-1238, 30'
- W-1237, 50'

120V AC

AS1600 (120VAC)
OA-1196-0047

OUTDOOR



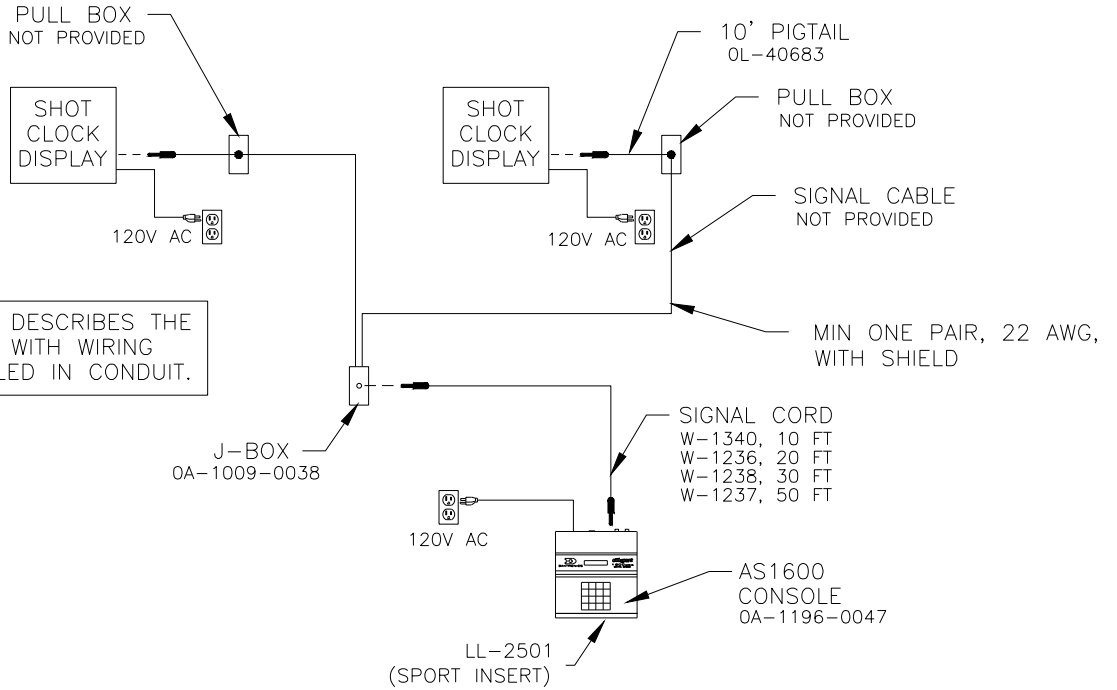
DAKTRONICS, INC.
BROOKINGS, SD 57006

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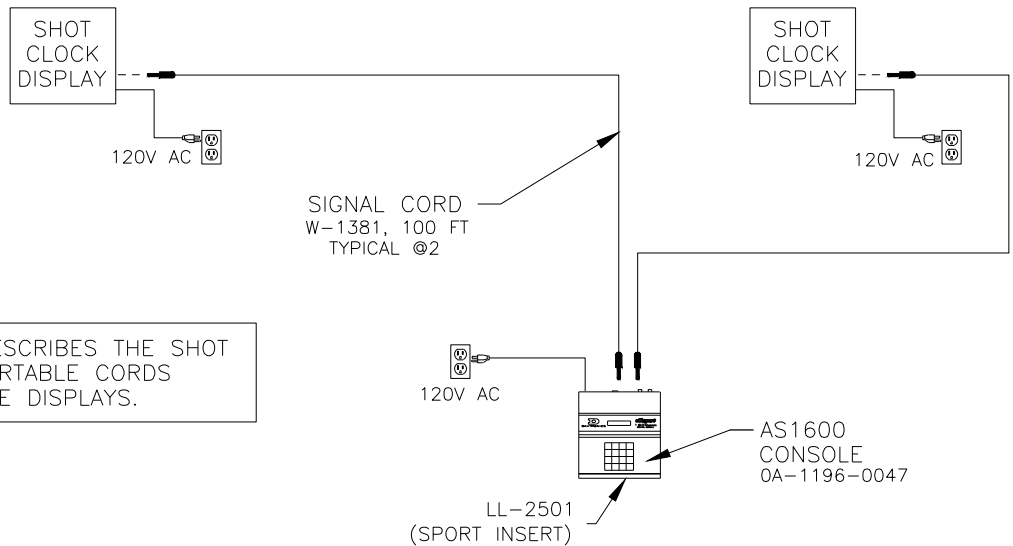
DO NOT SCALE DRAWING

REV	DATE	DESCRIPTION	BY:
04	02 DEC 10	UPDATED TITLE BLOCK AND BORDER	SJC
03	04 MAR 04	REPLACED OA-166-0024 WITH OA-1091-0227	RT
02	11 OCT 01	CHANGED OUTDOOR J-BOX TO AN OA-1166-0024.	NW
01	27 APR 01	CHANGED AS1600 PART # FROM OP TO OA	JDB


PROJ:			
TITLE: SYSTEM RISER DIAGRAM: INDOOR/OUTDOOR A/S 1600			
DESIGN: HBONER	DRAWN: NWRIEDT	DATE: 5 OCT 00	
SCALE: 1 = 1			
SHEET	REV	JOB NO:	FUNC-TYPE-SIZE
	04	P1196	R-01-A
			139544



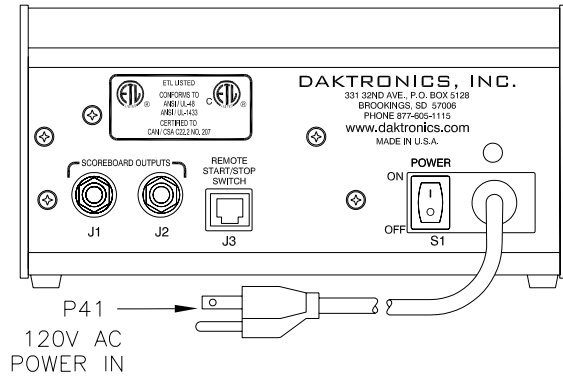
THIS BLOCK DIAGRAM DESCRIBES THE SHOT CLOCK SYSTEM WITH WIRING PERMANENTLY INSTALLED IN CONDUIT.



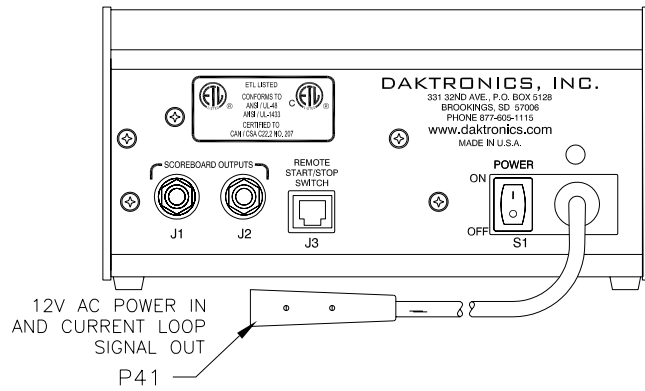
THIS BLOCK DIAGRAM DESCRIBES THE SHOT CLOCK SYSTEM WITH PORTABLE CORDS CARRYING SIGNAL TO THE DISPLAYS.

 DAKTRONICS, INC. BROOKINGS, SD 57006		THE CONCEPTS EXPRESSED AND DETAILS SHOWN ON THIS DRAWING ARE CONFIDENTIAL AND PROPRIETARY. DO NOT REPRODUCE BY ANY MEANS WITHOUT THE EXPRESSED WRITTEN CONSENT OF DAKTRONICS, INC. COPYRIGHT 2012 DAKTRONICS, INC.	
		DO NOT SCALE DRAWING	
Proj: ALL SPORT 5000			
TITLE: SYSTEM LAYOUT- INDEPENDENT SHOT CLOCK SYSTEM			
DESIGN: AVB		DRAWN: NWRIEDT	
SCALE: NONE		DATE: 5 OCT 00	
SHEET	REV	JOB NO:	FUNC-TYPE-SIZE
01	01	P1196	R-04-A
REV 01 DATE: 02 FEB 12 UPDATED TEXT FROM 24 AWG TO MIN ONE PAIR, 22 AWG, WITH SHIELD. UPDATED BORDER AND TITLE BLOCK. BY: JJJ			139547

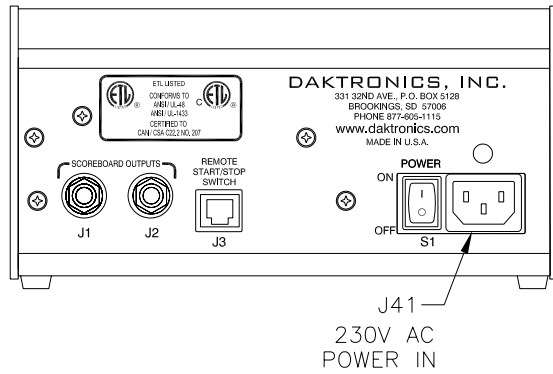
ALL SPORT 1600



ALL SPORT 1610



ALL SPORT 1620



J1-J2 - OUTPUT #1-#2

CONTACT	FUNCTION
TIP	CURRENT LOOP OUTPUT 1 +
RING	CURRENT LOOP OUTPUT 1 -
SHAFT	GND

ALL SPORT 1600 SERIES MODELS

MODEL #	FUNCTION
1600	120V, STANDARD PROGRAMMING
1610	12V, STANDARD PROGRAMMING
1620	230V, STANDARD PROGRAMMING

J3 - SHOT/PLAY CLOCK

PIN #	FUNCTION
1	SWITCH INPUT 5 -
2	SWITCH INPUT 4 -
3	SWITCH INPUT 3 -
4	SWITCH INPUT 3 +
5	SWITCH INPUT 4 +
6	SWITCH INPUT 5 +

A/S 1610 P41-PWR IN/SIGNAL OUT

PIN #	FUNCTION
1	CL SIGNAL +
2	CL SIGNAL -
3	12 VAC-P
4	12 VAC-N

DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: ALL SPORT 1600 SERIES CONSOLES

TITLE: REAR VIEW, A/S 1600 CONNECTOR ASSIGNMENTS

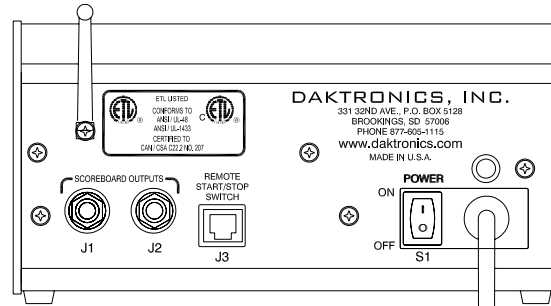
DES. BY: EBRAVEK DRAWN BY: NWRIEDT DATE: 19 OCT 00

REVISION 00 APPR. BY: SCALE: 1=3

1196-R04A-139548

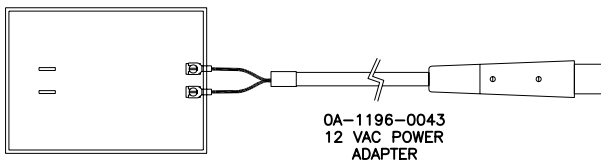
REV.	DATE	DESCRIPTION	BY	APPR.

ALL SPORT 1610R5 SHOWN



OTHER 12V MODELS AVAILABLE

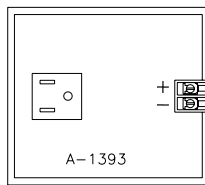
- A/S 1610
- A/S 3110
- A/S 3110R5
- A/S 5012
- A/S 5012R5



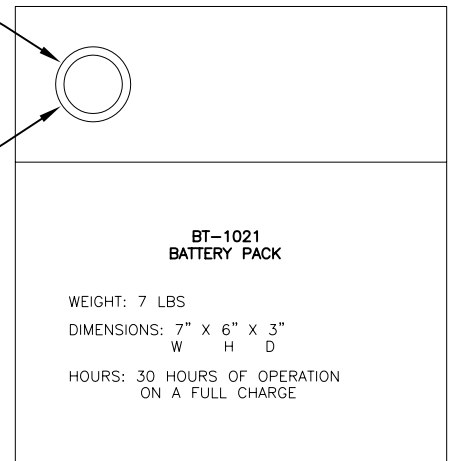
OA-1196-0043
12 VAC POWER
ADAPTER

POWER IN

PLUG IN EITHER THE 12VAC ADAPTER OR
DIRECTLY INTO THE BATTERY PACK TO
POWER THE CONSOLE



OA-1196-0044
SMART BATTERY
CHARGER ASSEMBLY
SEE NOTE



BT-1021
BATTERY PACK

WEIGHT: 7 LBS
DIMENSIONS: 7" X 6" X 3"
 W H D
HOURS: 30 HOURS OF OPERATION
 ON A FULL CHARGE

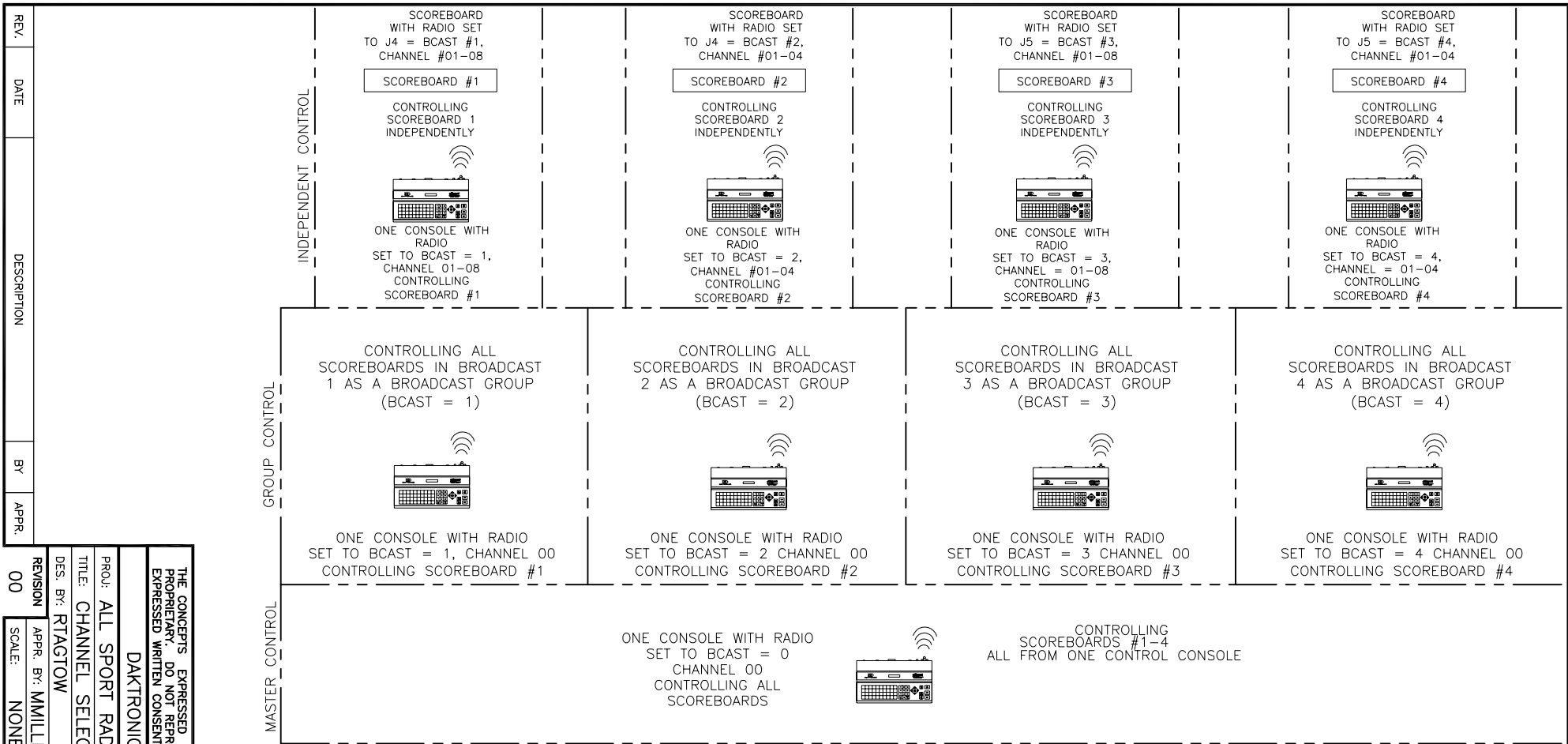
- OA-1196-0039 BATTERY KIT INCLUDES
- OA-1196-0043 @1, 12 VAC ADAPTER CABLE
 - OA-1196-0044 @1, SMART CHARGER ASSEMBLY.
 - BT-1021 @1, BATTERY PACK

NOTE:

OLD CHARGER THAT USED 12 VOLT ASSESSORY (CIGARETTE LIGHTER) CABLES ORDER THE CABLES LISTED BELOW AS NEEDED:
W-1448 FEMALE 12 VOLT ASSESSORY CABLE.
W-1479 MALE 12 VOLT ASSESSORY CABLE.

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DAKTRONICS, INC. BROOKINGS, SD 57006			
PROJ: ALL SPORT 1600 SERIES CONSOLES			
TITLE: ALL SPORT BATTERY KIT OPTION			
DES. BY: EBRAVEK		DRAWN BY: NWRIEDT	
		DATE: 19 OCT 00	
REVISION	APPR. BY:	1196-R04A-139990	
03	SCALE: 1=3		

03	09 DEC 08	CORRECTER PART NUMBERS AND TEXT	DKD	
02	07 MAY 08	REVISED PART NUMBERS AND TEXT	BLH	
01	03 JUN 03	UPDATED DRAWING TO ILLUSTRATE THE XLR ONLY CONNECTIONS.	CJB	
REV.	DATE	DESCRIPTION	BY	APPR.



ADVANCED SETUP CONFIGURATIONS: INDEPENDENT SCOREBOARDS, GROUPED SCOREBOARDS, OR OVERALL MASTER CONTROLLED SCOREBOARDS.

A TYPICAL SCENARIO FOR THIS SETUP IS A BASKETBALL COURT THAT CAN BE RUN IN FULL COURT AND HALF COURT SETUP. THE INFORMATION BELOW WILL APPLY TO ANY SET OF SCOREBOARDS THAT NEED TO HAVE MULTIPLE CONTROL OPTIONS.

EACH SCOREBOARD RADIO RECEIVER WILL NEED TO BE SETUP; THERE ARE 4 BROADCAST GROUPS THAT CAN BE USED, BROADCAST 1 AND 3 CAN USE UP TO 8 CHANNELS (1-8), BROADCAST 2 AND 4 CAN USE UP TO 4 CHANNELS (1-4). J4 AND J5 ARE USED TO SELECT THE BROADCAST GROUP. J4 IS USED TO SELECT BROADCAST GROUPS 1 AND 2. J5 IS USED TO SELECT BROADCAST GROUP 3 AND 4. USE THE ROTARY DIAL ON THE RADIO TO SELECT THE CHANNEL. REFER TO DRAWING 1110-R01A-203543 OR 1110-R01A-203542 FOR BROADCAST AND CHANNEL SETTING INSTRUCTIONS.

FOR ALL SCOREBOARDS IN ONE BROADCAST GROUP, SET J4 OR J5 OF THE RADIO TO THE DESIRED BROADCAST GROUP (1-4) AND SET THE CHANNEL NUMBER TO THE CORRESPONDING SCOREBOARD CHANNEL. IT MAY BE NECESSARY TO CHANGE THE CHANNEL ON THE SCOREBOARD, IF A CHANNEL OTHER THAN WHAT IS SET IS NEEDED (REFER TO DRAWING 1110-R01A-203543 OR 1110-R01A-203542 FOR SCOREBOARD CHANNEL SETTING INSTRUCTIONS). EACH RADIO WITHIN THE SAME BROADCAST GROUP MUST BE SET TO A DIFFERENT CHANNEL NUMBER FROM 1-8 FOR GROUPS 1 AND 3 (CHANNELS 1-4 FOR BROADCAST GROUPS 2 AND 4).

MASTER CONTROL

TO RUN ALL SCOREBOARDS AT ONCE; SET THE CONTROL CONSOLE TO BCAST = 0, CHANNEL = 00.

GROUP CONTROL

TO RUN ALL SCOREBOARDS IN BROADCAST GROUP 1 AT ONCE SET THE CONTROL CONSOLE TO BCAST = 1, CHANNEL = 00
 TO RUN ALL SCOREBOARDS IN BROADCAST GROUP 2 AT ONCE SET THE CONTROL CONSOLE TO BCAST = 2, CHANNEL = 00
 TO RUN ALL SCOREBOARDS IN BROADCAST GROUP 3 AT ONCE SET THE CONTROL CONSOLE TO BCAST = 3, CHANNEL = 00
 TO RUN ALL SCOREBOARDS IN BROADCAST GROUP 4 AT ONCE SET THE CONTROL CONSOLE TO BCAST = 4, CHANNEL = 00

INDEPENDENT CONTROL

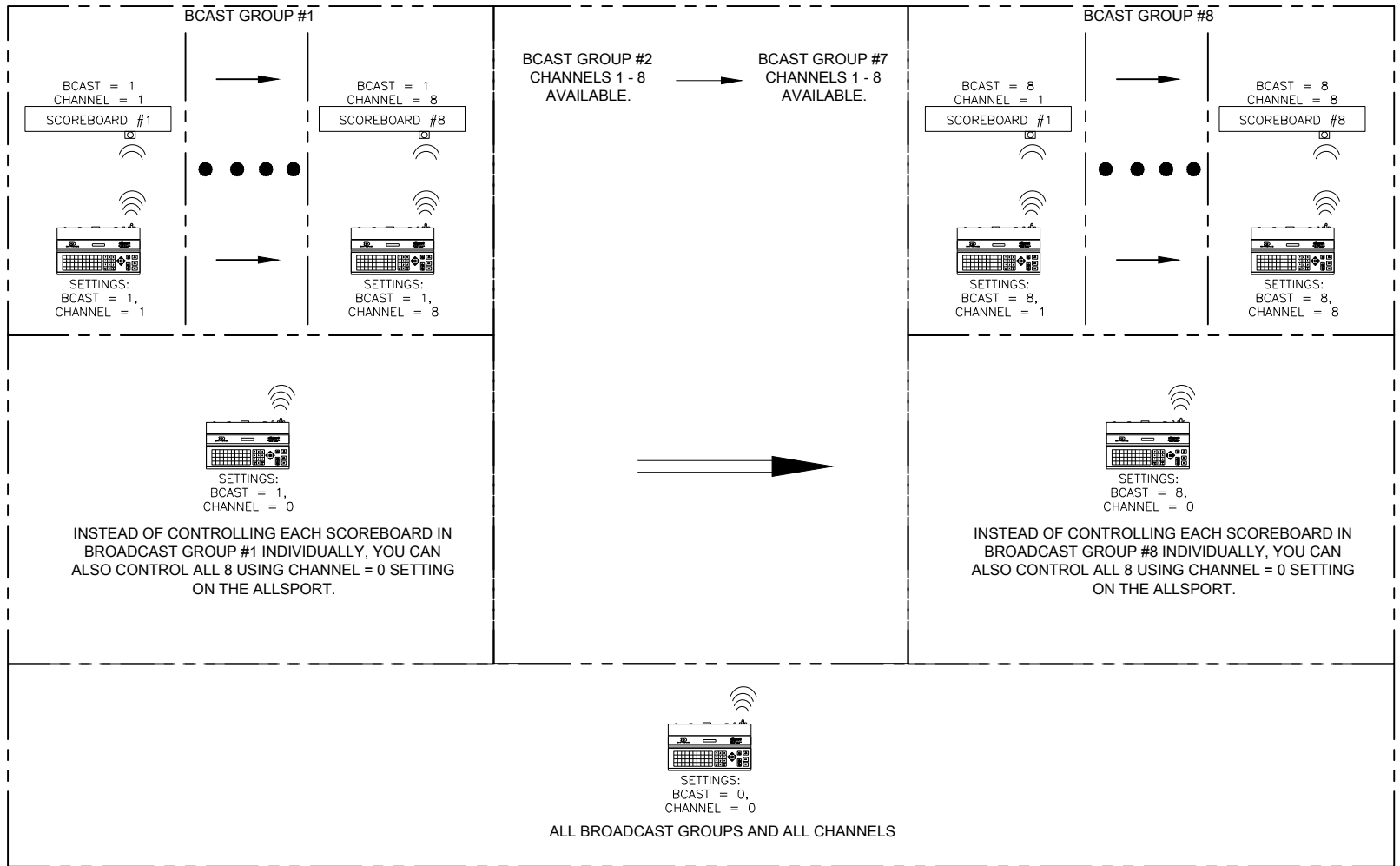
TO RUN EACH SCOREBOARD INDEPENDENTLY, SET THE CONTROL CONSOLE TO THE APPROPRIATE BROADCAST GROUP (BCAST = 1-4), AND THEN SET THE CHANNEL TO THE SCOREBOARD CHANNEL. EX. TO RUN SCOREBOARD #3 IN THE SETUP ILLUSTRATED ABOVE, SET THE CONTROL CONSOLE TO BCAST = 3, CHANNEL = 01.

PROJ: ALL SPORT RADIO
 TITLE: CHANNEL SELECTION; MULTIPLE BROADCAST GROUP, GEN IV
 DES. BY: RTAGTOW
 DRAWN BY: RTAGTOW
 DATE: 26 JAN 04

REVISION 1110-R01A-203113
 APPR. BY: MILLER
 SCALE: NONE

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ADVANCED SETUP CONFIGURATIONS:

- 1 CONSOLE HAS 64 CHANNELS. USING IT AS A MASTER CONTROL:

- *RUNS ALL SCOREBOARDS AT ONCE
- *CONSOLE RADIO SETTING: BCAS T = 0, CHANNEL = 0

- 1 CONSOLE CAN ALSO CONTROL JUST 8 CHANNELS IN A SELECTED GROUP. GROUP CONTROL:

- *RUNS ALL SCOREBOARDS ASSIGNED TO BCAS T X AND CHANNELS 1 - 8. X COULD BE BCAS T GROUP 1, OR 2, OR... 8
- *CONSOLE RADIO SETTING: BCAS T = X, CHANNEL = 0. X COULD BE BCAS T GROUP 1, OR 2, OR... 8

- 1 CONSOLE CAN ALSO CONTROL JUST 1 CHANNEL IN A SELECTED GROUP. INDIVIDUAL CONTROL:

- *RUNS ALL SCOREBOARDS ASSIGNED TO BCAS T X AND CHANNEL Y. X COULD BE BCAS T GROUP 1, OR 2, OR... 8. Y COULD BE CHANNEL 1, OR 2, OR... 8
- *CONSOLE RADIO SETTING: BCAS T = X, CHANNEL = Y. X COULD BE BCAS T GROUP 1, OR 2, OR... 8. Y COULD BE CHANNEL 1, OR 2, OR... 8

NOTE: TO FIND THE SCOREBOARD RADIO SETTING:

- MAKE SURE THE CONSOLE IS TURNED OFF.
- CYCLE POWER TO THE SCOREBOARD
- WATCH THE DIGITS AS THE SCOREBOARD BOOTS UP. YOU WILL SEE A B X AND C Y APPEAR ON THE DIGITS.



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PROJ: RADIO LINK, GEN VI

TITLE: INSTALLATION DETAILS, GEN VI CHANNEL SELECTION GUIDE

DESIGN: JCOSE DRAWN: MILLER DATE: 14 AUG 12

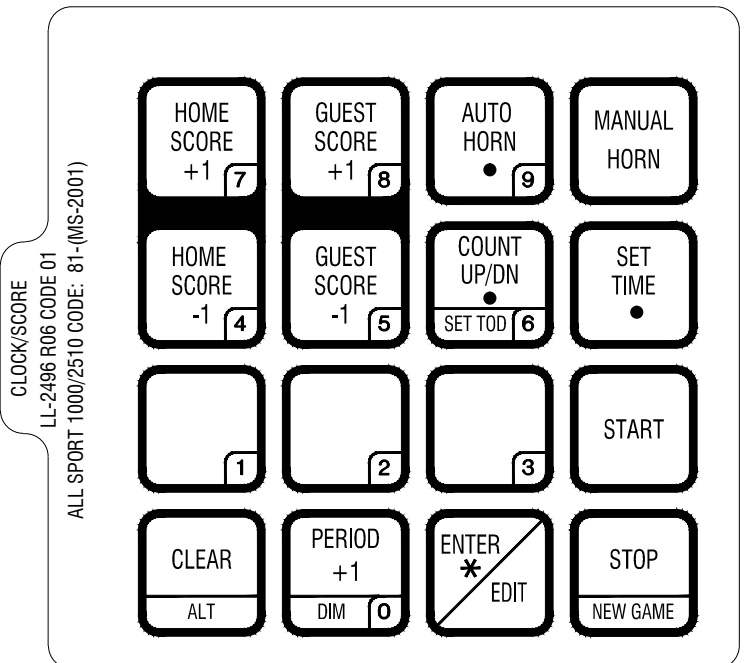
SCALE: NONE

SHEET	REV	JOB NO.	FUNC-TYPE-SIZE
00		P1110	F-01-A

1109870

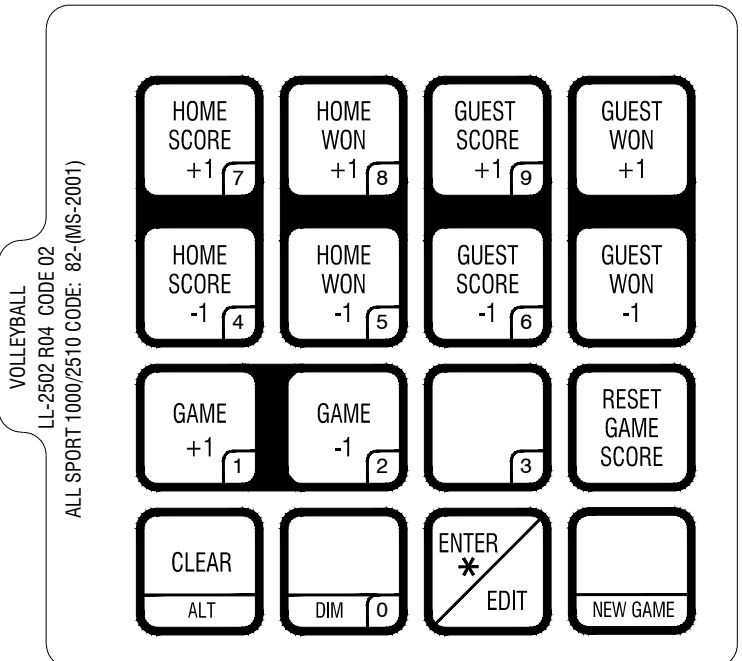
Appendix B: Sport Inserts

<i>Drawing Title</i>	<i>Drawing Number</i>
Insert; LL-2496 A/S 1600, Clock/Score	A-139419
Insert; LL-2502 A/S 1600, Volleyball	A-139482
Insert; LL-2499 A/S 1600, Multipurpose Timer.....	A-139487
Insert; LL-2500 A/S 1600, Baseball.....	A-139491
Insert; LL-2498 A/S 1600, Segment Timer.....	A-139492
Insert; LL-2497 A/S 1600, Tennis.....	A-139494
Insert; 0G-139744, A/S 1600 Test Insert.....	A-139744
Insert, 0G-139761; A/S 1600 Relay Board.....	A-139761
Insert; LL-2501 A/S 1600, Shot/Play Clock	A-139889
Insert, 0G-140299; A/S 1600 Field Event Board	A-140229
Insert, 0G-140230, A/S 1600 Lap Counter.....	A-140230
Insert; A/S 1600 Gymnastics	A-144810
Insert; 0G-199192; A/S 1600 Squash	A-199192
Insert: LL-2667- A/S Basketball- Code 21	A-303302



REV 06	DATE: 19 AUG 08	UPDATED DRAWING BORDER NO CHANGES TO INSERT	BY: JMC
REV 05	DATE: 26 JUN 08	ADDED "SET TOD" TEXT TO COUNT UP/DN KEY	BY: JMC
REV 04	DATE: 04 JAN 06	ADDED NEW GAME TEXT TO STOP KEY	BY: DJU
REV 03	DATE: 14 MAY 02	CORRECTED CODE NUMBER FROM 02 TO 01	BY: EB
REV 02	DATE: 03 DEC 01	ADDED DIM FUNCTION TO "0" KEY	BY: CJB
REV 01	DATE: 04 APR 01	ADDED ALL SPORT 1000 AND 2510 CODE	BY: NW

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PROJ: _____ TITLE: INSERT; LL-2496 A/S 1600, CLOCK/SCORE			
DESIGN: EB SCALE: 1=1		DRAWN: N WRI/EDI DATE: 9 OCT 00	
SHEET	REV	JOB NO:	FUNC-TYPE-SIZE
06	P1196		E-07-A
			139419



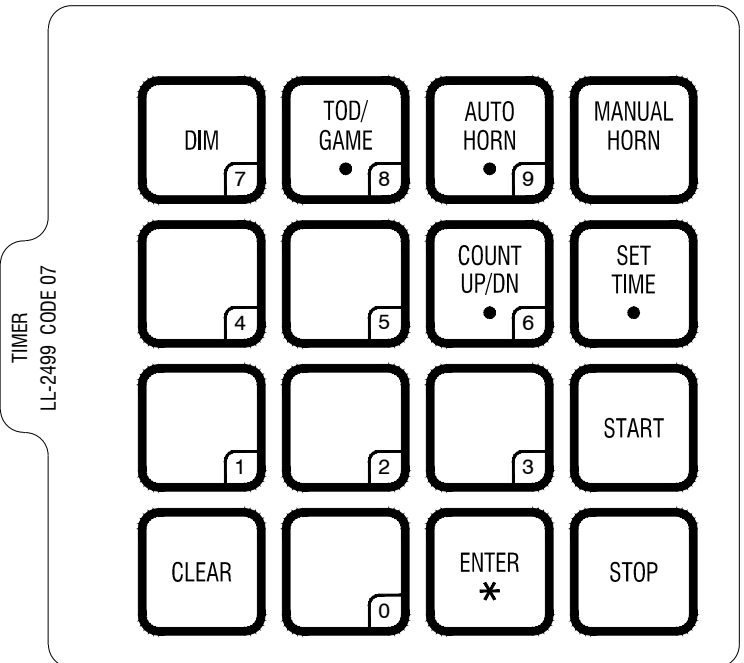
REV 04	DATE: 10 DEC 08	ADDED NEW GAME KEY	BY: DJU
REV 03	DATE: 20 JAN 04	REMOVED TEXT FROM DIM LAYER	BY: DJU
REV 02	DATE: 03 DEC 01	ADDED DIM KEY TO KEY "0"	BY: CJB
REV 01	DATE: 04 APR 01	ADDED ALL SPORT 1000 AND 2510 CODE	BY: NW



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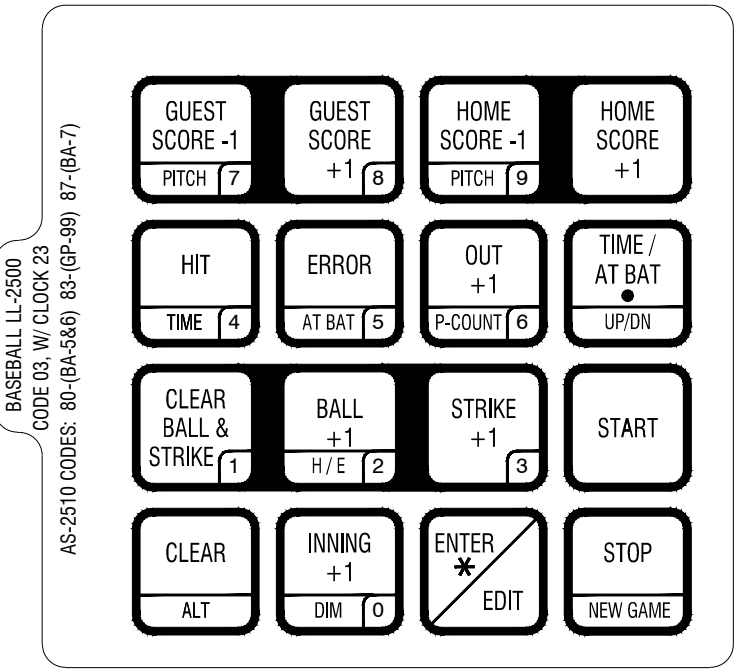
PROJ:	TITLE: INSERT; LL-2502 A/S 1600, VOLLEYBALL		
DESIGN: EB	DRAWN: NSW		DATE: 04 OCT 00
SCALE: 1 = 1	REV 04	JOB NO: P1196	FUNC-TYPE-SIZE: E-07-A
SHEET	REV	JOB NO:	DATE:
	04	P1196	139482




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PROJ: _____
 TITLE: INSERT: LL-2499 A/S 1600, MULTIPURPOSE TIMER
 DESIGN: EB DRAWN: N WRIEDT DATE: 4 OCT 00
 SCALE: 1=1
 SHEET _____ REV _____ JOB NO: _____ FUNC-TYPE-SIZE _____
 01 P1196 E-07-A 1 39487

REV 01 DATE: 20 JAN 04 BY: DJU
 REMOVED MICROGRAPHER TEXT FROM DIM LAYER



REV 07	DATE: 21 JUN 10	ADDED H/E LABEL TO KEY 2.	BY: CRD
REV 06	DATE: 09 DEC 08	ADDED NEW GAME TO STOP KEY	BY: DJU
REV 05	DATE: 1 JUL 08	ADDED BASEBALL WITH CLOCK CODE 23 TEXT	BY: JMC
REV 04	DATE: 21 AUG 07	ADDED PITCH COUNT CONTROL	BY: JMC
REV 03	DATE: 21 MAY 07	ADDED AT BAT CONTROLS ADDED PITCH COUNT CONTROLS	BY: JMC
REV 02	DATE: 20 JAN 04	REMOVED MITROGRAPHER TEXT FROM DIM LAYER	BY: DJU
REV 01	DATE: 04 APR 01	ADDED ALL SPORT 1000 AND 2510 CODES	BY: NW

PROJ: **DAKTRONICS, INC.**
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TITLE: INSERT; LL-2500 A/S 1600, BASEBALL

DESIGN: EB

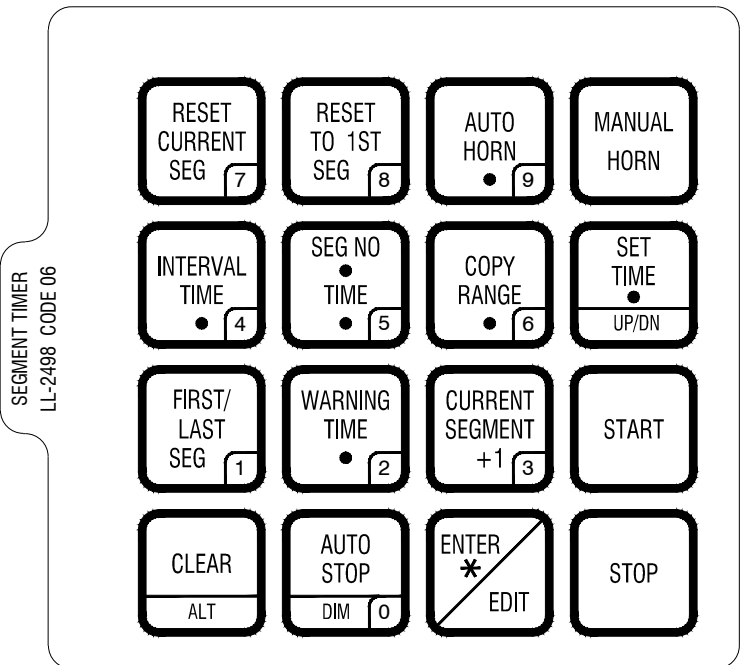
DRAWN: N WRIEDT

SCALE: 1 = 1


SHEET 07 REV 07 JOB NO: P1196 FUNC-TYPE-SIZE: E-07-A

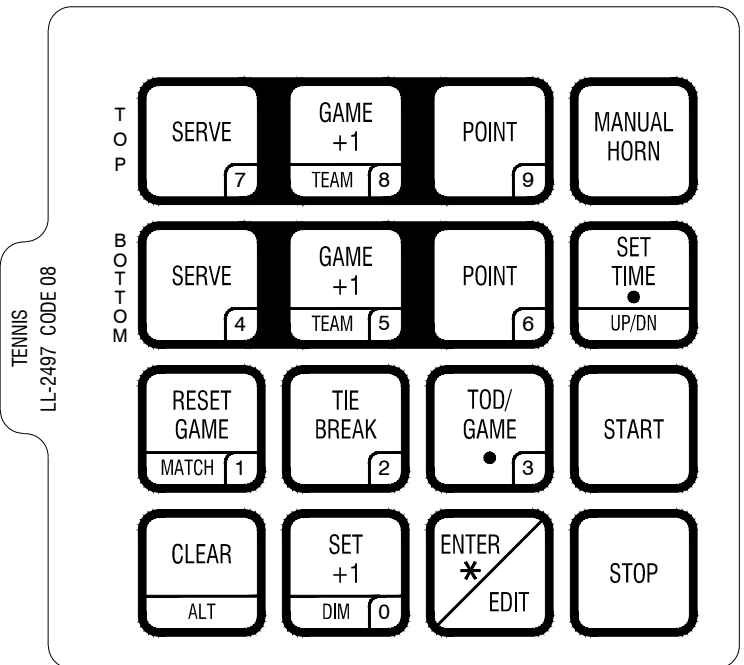
DATE: 04 OCT 00

139491



REV 01 DATE: 20 JAN 04 REMOVED TEXT FROM DIM LAYER BY: DJU

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PROJ: TITLE: INSERT: LL-2498 A/S 1600, SEGMENT TIMER			
DESIGN: EB		DRAWN: N WRIEDT	
SCALE: 1=1		DATE: 4 OCT 00	
SHEET	REV	JOB NO:	FUNC-TYPE-SIZE
01	P1196		E-07-A
			139492

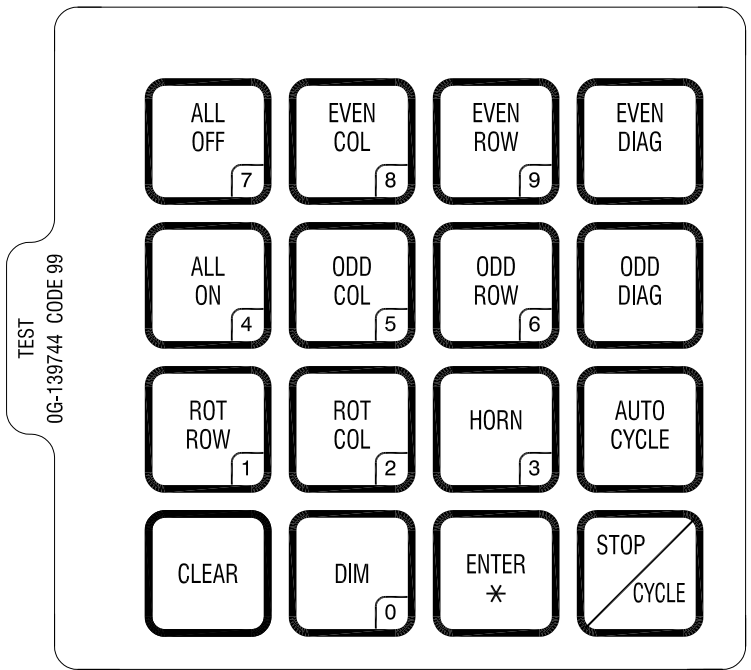


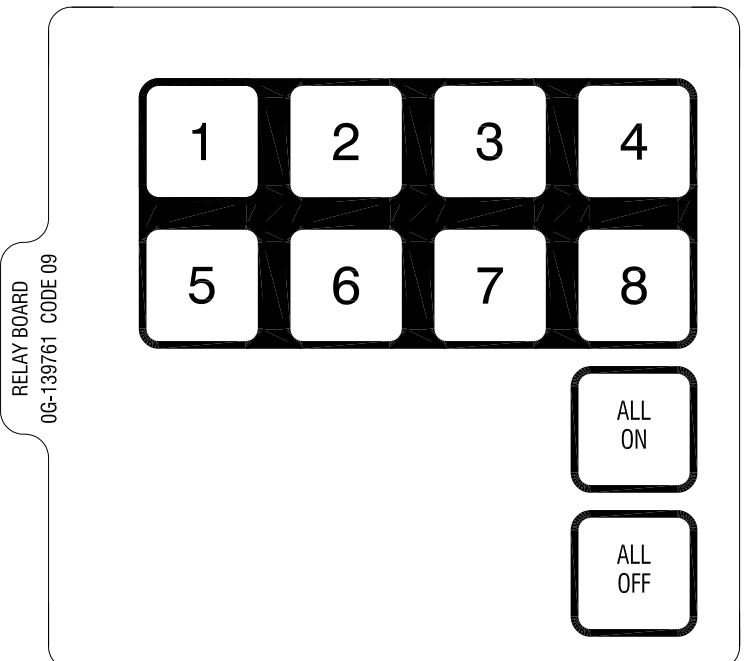
REV 01 DATE: 20 JAN 04 BY: DJU
REMOVED TEXT FROM DIM LAYER

		DAKTRONICS, INC. BROOKINGS, SD 57006	
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PROJ:	TITLE: INSERT; LL-2497 A/S 1600, TENNIS		
DESIGN: EB	DRAWN: N WRI/EDJ		DATE: 04 OCT 00
SCALE: 1 = 1	SHEET	REV	JOB NO:
		01	P1196
			FUNC-TYPE-SIZE
			E-07-A
			139494

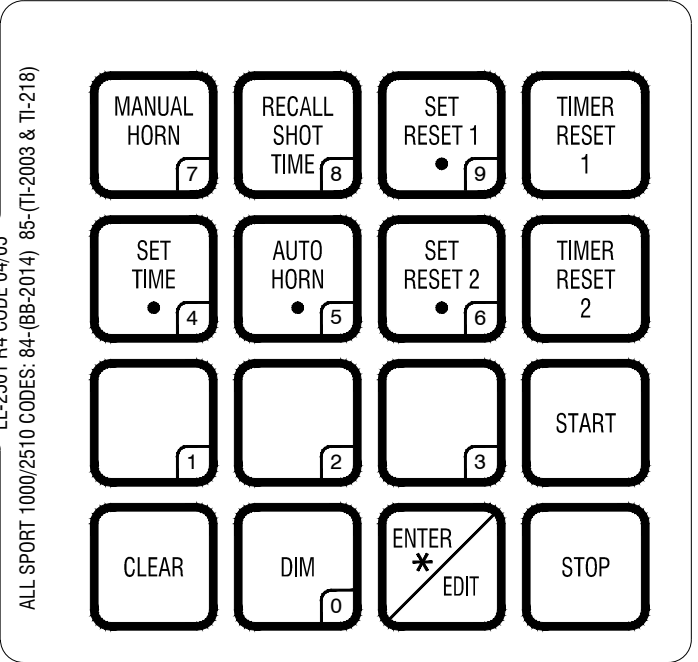
REV.	DATE	DESCRIPTION	BY	APPR.
------	------	-------------	----	-------

PROJ:		DAKTRONICS, INC. BROOKINGS, SD 57006	
TITLE:		INSERT; 0G-139744, A/S 1600 TEST INSERT	
DES. BY:	EB	DRAWN BY:	N WRIEDT
DATE:	4 OCT 00		
REVISION		APPR. BY:	
00	SCALE:	1 = 1	1 196-E07A-1 39744





REV.	DATE	DESCRIPTION	BY	APPR.
PROJ: DAKTRONICS, INC. BROOKINGS, SD 57006				
TITLE: INSERT, 06-139761; A/S 1600 RELAY BOARD				
DES. BY: EB DRAWN BY: N WRIEDT DATE: 9 OCT 00				
REVISION APPR. BY:				
00	SCALE:	1 = 1	1 196-E07A-1 39761	



REV 04	DATE: 20 JAN 04	REMOVED TEXT FROM DIM LAYER	BY: DJU
REV 03	DATE: 24 SEP 02	ADDED AUTO HORN BUTTON	BY: CJB
REV 02	DATE: 08 MAY 01	ADDED MANUAL HORN BUTTON	BY: NW
REV 01	DATE: 04 APR 01	ADDED ALL SPORT 1000 AND 2510 CODES	BY: NW



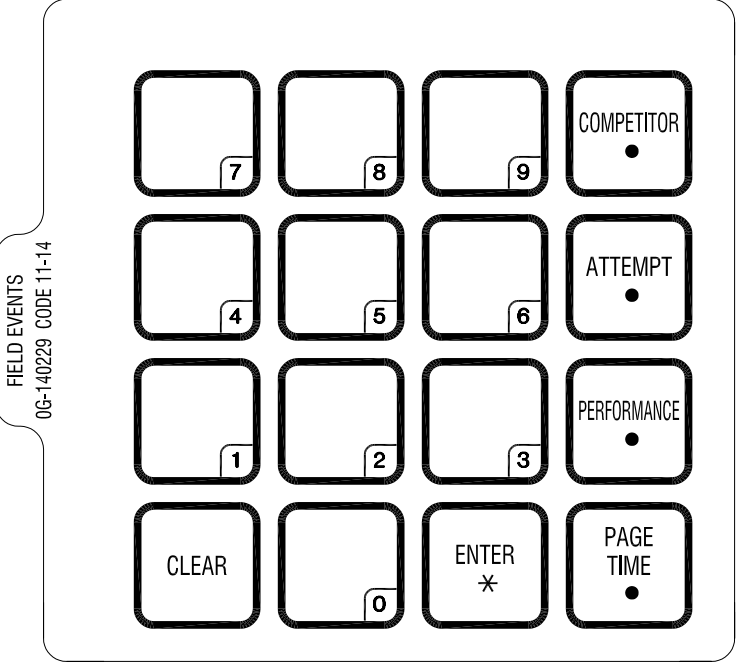
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PROJ:	TITLE: INSERT; LL-2501 A/S 1600, SHOT/PLAY CLOCK		
DESIGN: EB	DRAWN: N WRI	EDT	DATE: 12 OCT 00
SCALE: 1 = 1	SHEET	REV	JOB NO:
	04	P1196	E-07-A
			1 39889

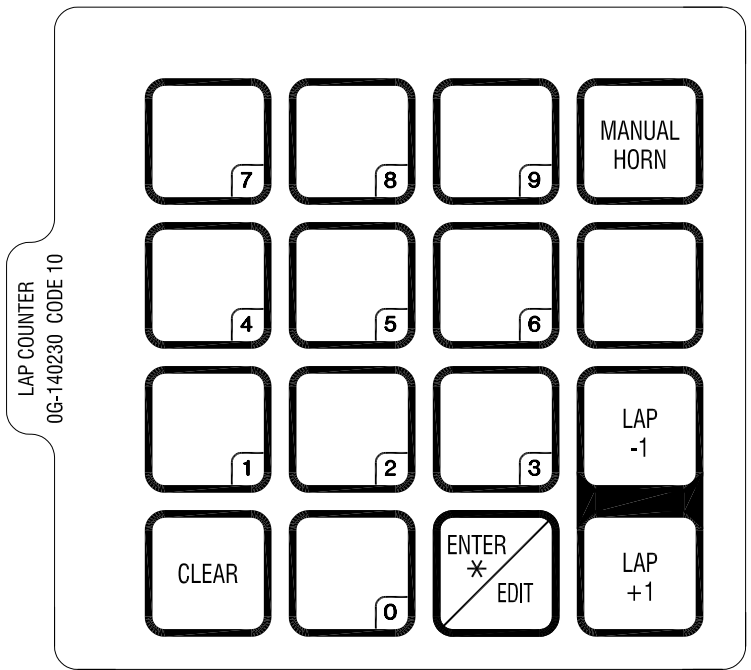
REV.	DATE	DESCRIPTION	BY	APPR.
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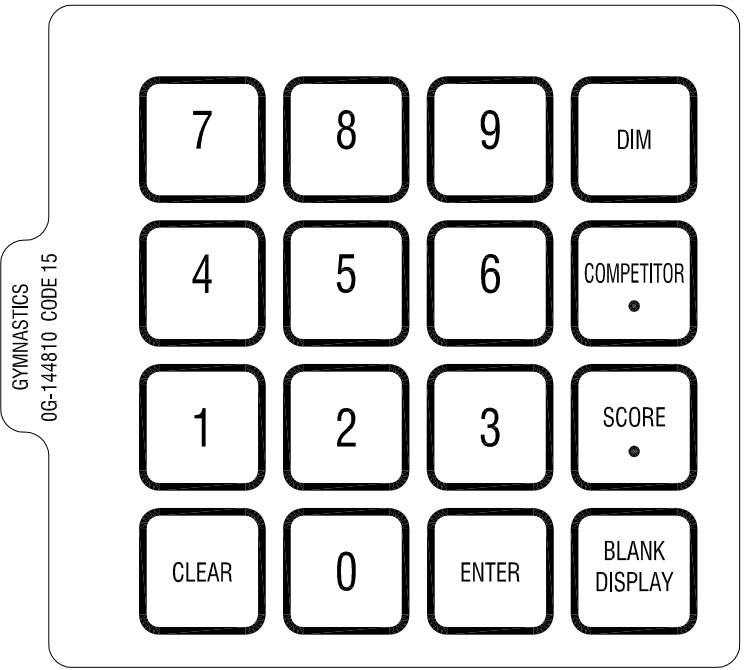
PROJ:		DAKTRONICS, INC. BROOKINGS, SD 57006	
TITLE:		INSERT, 0G-140229; A/S 1600 FIELD EVENT BOARD	
DES. BY:	EB	DRAWN BY:	N WRIEDT
DATE:	23 OCT 00		
REVISION		APPR. BY:	
00		SCALE:	1 = 1
1196-E07A-140229			



REV.	DATE	DESCRIPTION	BY	APPR.
------	------	-------------	----	-------

PROJ:		DAKTRONICS, INC. BROOKINGS, SD 57006	
TITLE:		INSERT; 0G-140230, A/S 1600 LAP COUNTER	
DES. BY:	EB	DRAWN BY:	N WRIEDT
DATE:	23 OCT 00		
REVISION	00	APPR. BY:	1 = 1
SCALE:	1 = 1	1196-E07A-140230	





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PROJ:

TITLE: INSERT; A/S 1600 GYMNASTICS

DES. BY: DRAWN BY: N WRIEDT DATE: 19 FEB 01

REVISION APPR. BY: SCALE: 1 = 1 1196-E07A-144810

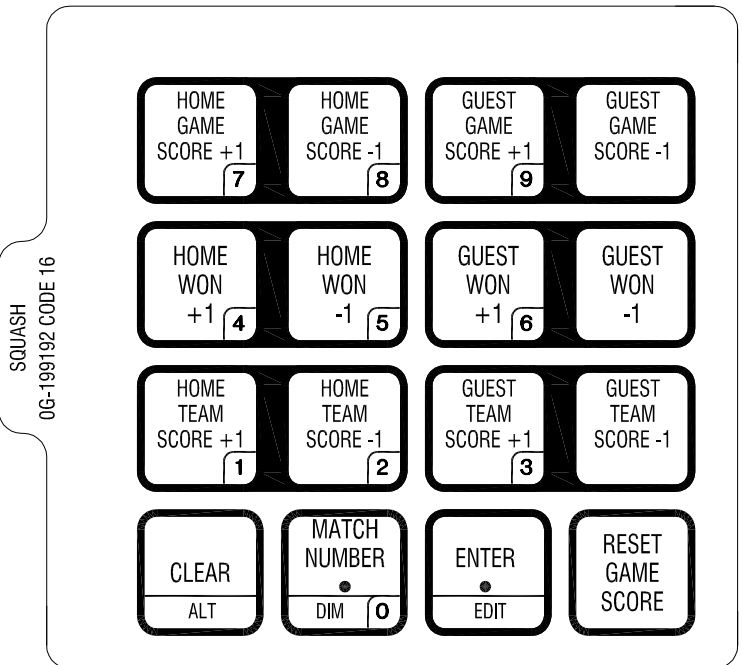
01	20 JAN 04	REMOVED TEXT FROM DIM LAYER	DUU	
REV.	DATE	DESCRIPTION	BY	APPR.

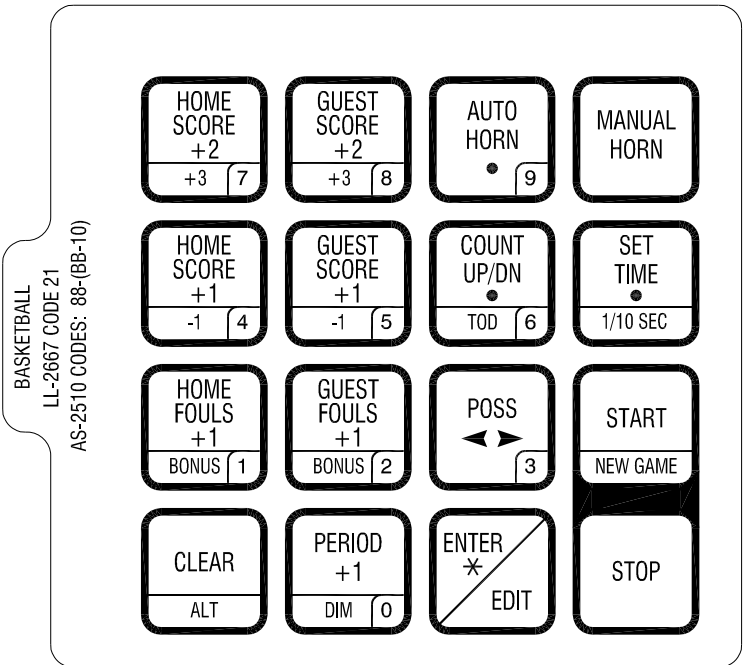
01	13 DEC 05	CHANGE GAME TO TEAM ON BUTTON 2	JRA	DMD
REV.	DATE	DESCRIPTION	BY	APPR.

PROJ:		TITLE: INSERT: 0G-199192, A/S 1600 SQUASH	
DES. BY: DULSCHM		DRAWN BY: DULSCHM	
DATE: 23 OCT 00		SCALE: 1=1	
1196-E07A-199192		1196-E07A-199192	

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02	28 DEC 09	UPDATED TO MATCH SPEC DRAWING	DUU	DUU	APPR.
01	09 DEC 08	ADDED ALL SPORT 2510 CODES	DUU		
REV.	DATE	DESCRIPTION	BY		APPR.
<p style="font-size: small; margin: 0;">PROJ: _____</p> <p style="font-size: small; margin: 0;">TITLE: INSERT: LL-2667 - A/S BASKETBALL - CODE 21</p> <p style="font-size: small; margin: 0;">DES. BY: JCOSE DRAWN BY: JCOSE DATE: 24 APR 07</p> <p style="font-size: small; margin: 0;">REVISION APPR. BY: _____</p> <p style="font-size: small; margin: 0;">SCALE: 1=1 1196-E07A-303302</p>					
<p>THE CONCEPTS EXPRESSED AND DETAILS SHOWN ON THIS DRAWING ARE CONFIDENTIAL AND PROPRIETARY. DO NOT REPRODUCE BY ANY MEANS, INCLUDING ELECTRONICALLY WITHOUT THE EXPRESSED WRITTEN CONSENT OF DAKTRONICS, INC. COPYRIGHT 2004 DAKTRONICS, INC.</p> <p>DAKTRONICS, INC. BROOKINGS, SD 57006</p>					

Appendix C: Sport Code Numbers

Note: Code numbers in parenthesis are for boards previously controlled by an All Sport® 1000 or 2510 series console.

Sport Code Output Table

Sport/Code	Scoreboard Models	Address Sent
Clock/Score Code 01 (Code 81)	MS-915, MS-918, MS-2001, MS-2002, MS-2003, MS-2006, MS-2011, MS-2013, MS-2020, MS-2025, MS-3918, SO-918, SO-2009, SO-2010, SO-2918	11 (No Address Code 81)
	MS-2017, MS-2026	17
Volleyball Code 02 (Code 82)	MS-2001, MS-2013	11 (No Address Code 82)
Baseball Code 03 (Code 83) (Code 80) (Code 87)	TI-413, TI-418, TI-2019, TI-2032	1
	TI-215, TI-218, TI-2003, TI-2010, TI-2014, TI-2015, TI-2024	2
	BA-2023, BA-2024	3
	MS-2001, MS-2013	11 (No Address Code 83)
	BA-1018, BA-2020	12
	BA-515, BA-518, BA-618, BA-624, BA-2010, BA-2012, BA-2017, BA-2515, BA-2518, BA-2618	61 (No Address Code 80)
	BA-718, BA-2715, BA-2718	62 (No Address Code 87)
Baseball Code 23	TI-413, TI-418, TI-2019, TI-2032	1
	TI-215, TI-218, TI-2003, TI-2010, TI-2014, TI-2015, TI-2024	2
	BA-2023, BA-2024	3
	MS-915, MS-918, MS-2002, MS-2003, MS-2006, MS-2011, MS-2020, MS-2025, MS-3918, SO-918, SO-2009, SO-2010, SO-2918	11
	BA-1018, BA-2020	12
	BA-515, BA-518, BA-618, BA-624, BA-2010, BA-2012, BA-2017, BA-2515, BA-2518, BA-2618	61
	BA-718, BA-2715, BA-2718	62
Shot Clock Code 04 (Code 84)	BB-2014, BB-2114	1 (No Address Code 84)
	TI-215, TI-218, TI-2003, TI-2010, TI-2014, TI-2015, TI-2024	2
Play Clock/ Pitch Timer Code 05 (Code 85)	BB-2014, BB-2114, TI-2019, TI-2032	1
	TI-215, TI-218, TI-2003, TI-2010, TI-2014, TI-2015, TI-2024	2 (No Address Code 85)
Segment Timer Code 06	BB-2014, BB-2015, BB-2114, BB-2115, TI-2012	1
	TI-215, TI-218, TI-2003, TI-2010, TI-2014, TI-2015, TI-2024	2
	MS-2001, MS-2013	11
Multipurpose Timer Code 07	TI-413, TI-418, TI-2002, TI-2007, TI-2011, TI-2013, TI-2019, TI-2022, TI-2028, TI-2031, TI-2032, TI-2101, TI-2200	1
	TI-215, TI-218, TI-2003, TI-2010, TI-2014, TI-2015, TI-2024	2
	TI-2102	4
	TI-2017, TI-2018, TI-2020, TI-2021	22

Sport/Code	Scoreboard Models	Address Sent
Tennis Code 08	TI-413, TI-418, TI-2019, TI-2032	1
	TN-2007, TN-2008, TN-2016	11
	TN-2009	74
Relay Control Code 09		220
Lap Counter Code 10	BB-2014, BB-2114	1
	TI-215, TI-218, TI-2003, TI-2010, TI-2014, TI-2015, TI-2024	2
Field Events Codes 11, 12, 13, 14	TI-2021	22
Gymnastics Code 15	GM-2101, GM-2102, GM-2103	11
	WR-2024, WR-2025, WR-2026, WR-2101, WR-2102, WR-2103	104
Squash Code 16	SQ-2002, SQ-2003	10
	SQ-2001	11
Basketball Code 21 (Code 88)	BB-1013	11 (No Address Code 88)
	BB-1113, BB-2021	12
	BB-114, BB-2101, BB-2105, BB-2116, BB-2121, BB-2122, BB-2142, MS-2017, MS-2026	17

Appendix D: Scoreboard Addresses

Model	Address	Model	Address
BA-515	61 + columns 1-8	MS-2002	11
BA-518	61 + columns 1-8	MS-2003	11
BA-618	61 + columns 1-8	MS-2006	11
BA-624	61 + columns 1-8	MS-2011	11
BA-718	62 + columns 1-8	MS-2013	11
BA-1018	12	MS-2017	17
BA-2010	61	MS-2020	11
BA-2012	61	MS-2025	11
BA-2017	61	MS-2026	17
BA-2020	12	MS-3918	11
BA-2023	3	SO-918	11
BA-2024	3 + Columns 1-4	SO-2009	11
BA-2515	61 + Columns 1-8	SO-2010	11
BA-2518	61 + Columns 1-8	SO-2918	11
BA-2618	61 + Columns 1-8	SQ-2001	11
BA-2715	62 + Columns 1-8	SQ-2002	10
BA-2718	62 + Columns 1-8	SQ-2003	10 + columns 1-4
BB-1013	11	TI-215	2 + Columns 1-4
BB-1113	12	TI-218	2 + Columns 1-8
BB-114	17	TI-413	1 + columns 1-4
BB-2014	1 + columns 5-8	TI-418	1 + Columns 1-8
BB-2015	1	TI-2002	1 + columns 1-4
BB-2021	12	TI-2003	2 + Columns 1-8
BB-2101	17	TI-2007	1 + columns 1-4
BB-2105	17	TI-2010	2 + Columns 1-8
BB-2114	1 + columns 5-8	TI-2011	1 + columns 1-4
BB-2115	1	TI-2012	1 + Columns 1-8
BB-2116	17	TI-2013	1 + columns 1-4
BB-2121	17	TI-2014	2 + columns 1-4
BB-2122	17	TI-2015	2 + Columns 1-8
BB-2142	17	TI-2017	22
GM-2101	11	TI-2018	22
GM-2102	11	TI-2019	1 + columns 1-8
GM-2103	11	TI-2020	22 + Columns 1-8
MS-915	11	TI-2021	22 + Columns 1-8
MS-918	11	TI-2022	1
MS-2001	11	TI-2024	2

Model	Address
TI-2028	1 + columns 1-4
TI-2031	1 + columns 1-4
TI-2032	1 + columns 1-8
TI-2101	1 + columns 1-4
TI-2102	4 + columns 1-4
TI-2200	1 + columns 1-4
TN-2007	11
TN-2008	11
TN-2009	74
TN-2016	11
WR-2024	104
WR-2025	104
WR-2026	104
WR-2101	104
WR-2102	104
WR-2103	104

Appendix E: Console Revision History

- Version 1.0.0** *Release date: 21 December 2000*
- Initial software release
- Version 1.1.0** *Release date: 23 February 2001*
- Added Gymnastics Code 15 to the console
- Version 1.2.0** *Release date: 30 March 2001*
- Added codes for 12.8k protocol Baseball and MS-2001 scoreboards
- Version 1.2.1** *Release Date: 9 May 2001*
- Added a horn key for the shot/play clock codes 04 and 05
 - Added a horn output to col 9-H of driver address 1 for multi-purpose timer
 - Added address 22 output (6 digit clk) to the multipurpose timer
- Version 1.2.2** *Release Date: 12 June 2001*
- Modified the keyboard test for the automated board test so the test would work correctly
- Version 1.2.3** *Release Date: 12 September 2001*
- Added radio channels up to channel 75
 - Added more segments to segment timer
 - Fixed Time of Day to count and set as 12 hour time
 - Changed segment timer to allow count up of segment time
- Version 1.2.4** *Release Date: 26 October 2001*
- Added the data for BA-2010 to the BA-5 scoreboard output on address 61
 - Made the MS-2001 output at address 11 handle an MS-918 for clock/score and baseball
- Version 1.2.6** *Release Date: 20 December 2001*
- Changed default segment timer time to 5 minutes instead of 10 minutes
 - Added a dim key to volleyball and clock/score for codes 01 and 02
- Version 1.2.7** *Release Date: 23 September 2002*
- Added data on address 11 for the MS-2013 for segment timer & volleyball modes
 - Added an auto horn key in shot timer/play clock codes 04/05 so the horn can be disabled
 - Fixed bug in set time of segment timer and made default of 5 minutes in copy range key
 - Added a "Reset on stop" option for play clock mode
 - Added dimming levels of 1-9

Version 2.0.0*Release Date: 15 January 2003*

- Added group and channel selection for the GEN 4 radios
- Added the E segment of the colon for 6 digit clock on address 22

Version 2.0.1*Release Date: 4 June 2003*

- Added 2 digit time to address 61 in code 03 for baseball for the model BA-2012
- Fixed the radio channel select to work for GEN 4 radios after exit from the production test

Version 2.0.2*Release Date: 4 November 2003*

- Added code 16 for squash boards with team score

Version 2.0.3*Release Date: 10 March 2004*

- Added dimming to lap counter code 10
- Made clock flash when stopped in baseball
- Added address 11 for MS-2013 in squash code

Version 2.0.4*Release Date: 29 December 2005*

- Added address 12 for BA-1018 to baseball
- Added game # to column 15 of MS-2013 in volleyball
- Removed flashing from clock when stopped in baseball
- Added a new game key in clock/score code
- Added lap # to address 1 in lap counter code

Version 2.0.5*Release Date: 25 May 2007*

- Added key for selecting display of At Bat in baseball
- Added basketball code 21
- Added pitch count to baseball

Version 2.0.6*Release Date: 6 November 2007*

- Added an alt key to select Pitch Count for display
- Added a delay at start up for radio initialize

Version 2.0.7*Release Date: 2 July 2008*

- Added a time of day/game key to the clock/score code
- Added 12/24 time of day selection
- Added a code (23) for baseball that has clock on address 11

Version 3.0.0*Release Date: 15 December 2008***(New hardware with non-volatile RAM)**

- Added restore of radio broadcast group and channel settings
- Added resume game for restore of GIP data for all sport codes
- Added save and restore of config for all sports
- Added address 1 to multipurpose timer (code 07)
- Added code 88 for old 12.8k protocol boards (BB-10)
- Added address 11 to basketball code 21
- Added new game key to baseball and volleyball

Version 3.0.1 *Release Date: 8 January 2009*

- Corrected code 11,12, and 13 (field events) to operate as metric values
- Corrected baseball codes to restore configuration values
- Corrected tennis to restore team scores on resume game

Version 3.0.2 *Release Date: 20 September 2009*

- Added address 254 in all codes with console type and version number for All Sport CG
- Corrected a problem in baseball and multi-purpose timer with the clock not using hours precision for setting time or counting

Version 3.0.3 *Release Date: 17 November 2009*

- Fixed the problem of driver output in old codes not showing correct data
- Fixed the driver output of BB-17 in the old codes to swap home and guest possession

Version 3.0.4 *Release Date: 19 March 2010*

- Added address 17 to segment timer code 06
- Made the New Game function in Basketball reset from TOD and start in game time
- Added a 2 shot bonus to basketball and added to address 17 driver output

Version 3.0.5 *Release Date: 22 October 2010*

- Added a H/E key selection to baseball for the 2 clock digits; allows the clock digits to show H or E when the Hit or Error key is pressed
- Added a pitch timer clock output to address 1 in the play clock code 05

Version 4.0.0 *Release Date: 7 April 2011*

- Added support for the use of serial EEprom as non-volatile memory.

Version 4.0.1 *Release Date: 11 Aug 2011*

- Changed power loss detection to not show the Battery Low message if not running from battery.
- Added a test code for old 12.8K protocol, code 98.

Appendix F: Daktronics Warranty and Limitation of Liability

DAKTRONICS WARRANTY & LIMITATION OF LIABILITY

This Warranty and Limitation of Liability (the "Warranty") sets forth the warranty provided by Daktronics with respect to the Equipment. By accepting delivery of the Equipment, Purchaser and End User agree to be bound by and accept these terms and conditions. Unless otherwise defined herein, all terms within the Warranty shall have the same meaning and definition as provided elsewhere in the Agreement.

DAKTRONICS WILL ONLY BE OBLIGATED TO HONOR THE WARRANTY SET FORTH IN THESE TERMS AND CONDITIONS UPON RECEIPT OF FULL PAYMENT FOR THE EQUIPMENT.

1. Warranty Coverage

A. Daktronics warrants to the original end user (the "End User") that the Equipment will be free from Defects (as defined below) in materials and workmanship for a period of one (1) year (the "Warranty Period"). The Warranty Period shall commence on the earlier of: (i) four weeks from the date that the Equipment leaves Daktronics' facility; or (ii) Substantial Completion as defined herein. The Warranty Period shall expire on the first anniversary of the commencement date.

"Substantial Completion" means the operational availability of the Equipment to the End User in accordance with the Equipment's specifications, without regard to punch-list items, or other non-substantial items which do not affect the operation of the Equipment.

B. Daktronics' obligation under this Warranty is limited to, at Daktronics' option, replacing or repairing, any Equipment or part thereof that is found by Daktronics not to conform to the Equipment's specifications. Unless otherwise directed by Daktronics, any defective part or component shall be returned to Daktronics for repair or replacement. This Warranty does not include on-site labor charges to remove or install these components. Daktronics may, at its option, provide on-site warranty service. Daktronics shall have a reasonable period of time to make such replacements or repairs and all labor associated therewith shall be performed during regular working hours. Regular working hours are Monday through Friday between 8:00 a.m. and 5:00 p.m. at the location where labor is performed, excluding any holidays observed by Daktronics.

C. Daktronics shall pay ground transportation charges for the return of any defective component of the Equipment. All such items shall be shipped by End User DDP Daktronics designated facility. If returned Equipment is repaired or replaced under the terms of this Warranty, Daktronics will prepay ground transportation charges back to End User and shall ship such items DDP End User's designated facility; otherwise, End User shall pay transportation charges to return the Equipment back to the End User and such Equipment shall be shipped Ex Works Daktronics designated facility. All returns must be pre-approved by Daktronics before shipment. Daktronics shall not be obligated to pay freight for any unapproved return. End User shall pay any upgraded or expedited transportation charges.

D. Any replacement parts or Equipment will be new or serviceably used, comparable in function and performance to the original part or Equipment, and warranted for the remainder of the Warranty Period. Purchasing additional parts or Equipment from the Seller does not extend the Warranty Period.

E. Defects shall be defined as follows. With regard to the Equipment (excepting LEDs), a "Defect" shall refer to a material variance from the design specifications that prohibit the Equipment from operating for its intended use. With respect to LEDs, "Defects" are defined as LED pixels that cease to emit light. Unless otherwise expressly provided, this Warranty does not impose any duty or liability upon Daktronics for partial LED pixel degradation. Notwithstanding the foregoing, in no event does this Warranty include LED pixel degradation caused by UV light. This Warranty does not provide for the replacement or installation of communication methods including but not limited to, wire, fiber optic cable, conduit, trenching, or for the purpose of overcoming local site interference radio equipment substitutions.

EXCEPT AS OTHERWISE EXPRESSLY SET FORTH IN THIS WARRANTY, TO THE MAXIMUM EXTENT PERMITTED BY APPLICABLE LAW, DAKTRONICS DISCLAIMS ANY AND ALL OTHER PROMISES, REPRESENTATIONS AND WARRANTIES APPLICABLE TO THE EQUIPMENT AND REPLACES ALL OTHER WARRANTIES OR CONDITIONS, EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, ANY IMPLIED WARRANTIES OR CONDITIONS OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, OR ACCURACY OR QUALITY OF DATA. OTHER ORAL OR WRITTEN INFORMATION OR ADVICE GIVEN BY DAKTRONICS, ITS AGENTS OR EMPLOYEES, SHALL NOT CREATE A WARRANTY OR IN ANY WAY INCREASE THE SCOPE OF THIS LIMITED WARRANTY.

THIS LIMITED WARRANTY IS NOT TRANSFERABLE.

2. Exclusion from Warranty Coverage

This Warranty does not impose any duty or liability upon Daktronics for any:

A. damage occurring at any time, during shipment of Equipment unless otherwise provided for in the Agreement. When returning Equipment to Daktronics for repair or replacement, End User assumes all risk of loss or damage, agrees to use any shipping containers that might be provided by Daktronics, and to ship the Equipment in the manner prescribed by Daktronics;

B. damage caused by: (i) the improper handling, installation, adjustment, use, repair, or service of the Equipment, or (ii) any physical damage which includes, but is not limited to, missing, broken, or cracked components resulting from non-electrical causes; altered, scratched, or fractured electronic traces; missing or gauged solder pads; cuts or clipped wires; crushed, cracked, punctured, or bent circuit boards; or tampering with any electronic connections, provided that such damage is not caused by personnel of Daktronics or its authorized repair agents;

C. damage caused by the failure to provide a continuously suitable environment, including, but not limited to: (i) neglect or misuse; (ii) improper power including, without limitation, a failure or sudden surge of electrical power; (iii) improper air conditioning, humidity control, or other environmental conditions outside of the Equipment's technical specifications such as extreme temperatures, corrosives and metallic pollutants; or (iv) any other cause other than ordinary use;

DAKTRONICS WARRANTY & LIMITATION OF LIABILITY

D. damage caused by fire, flood, earthquake, water, wind, lightning or other natural disaster, strike, inability to obtain materials or utilities, war, terrorism, civil disturbance, or any other cause beyond Daktronics' reasonable control;

E. failure to adjust, repair or replace any item of Equipment if it would be impractical for Daktronics personnel to do so because of connection of the Equipment by mechanical or electrical means to another device not supplied by Daktronics, or the existence of general environmental conditions at the site that pose a danger to Daktronics personnel;

F. statements made about the product by any salesperson, dealer, distributor or agent, unless such statements are in a written document signed by an officer of Daktronics. Such statements as are not included in a signed writing do not constitute warranties, shall not be relied upon by End User and are not part of the contract of sale;

G. damage arising from the use of Daktronics products in any application other than the commercial and industrial applications for which they are intended, unless, upon request, such use is specifically approved in writing by Daktronics;

H. replenishment of spare parts. In the event the Equipment was purchased with a spare parts package, the parties acknowledge and agree that the spare parts package is designed to exhaust over the life of the Equipment, and as such, the replenishment of the spare parts package is not included in the scope of this Warranty;

I. security or functionality of the End User's network or systems, or anti-virus software updates;

J. performance of preventive maintenance;

K. third-party systems and other ancillary equipment, including without limitation front-end video control systems, audio systems, video processors and players, HVAC equipment, batteries and LCD screens;

L. incorporation of accessories, attachments, software or other devices not furnished by Daktronics; or

M. paint or refinishing the Equipment or furnishing material for this purpose.

3. Limitation of Liability

Daktronics shall be under no obligation to furnish continued service under this Warranty if alterations are made to the Equipment without the prior written approval of Daktronics.

It is specifically agreed that the price of the Equipment is based upon the following limitation of liability. In no event shall Daktronics (including its subsidiaries, affiliates, officers, directors, employees, or agents) be liable for any claims asserting or based on (a) loss of use of the facility or equipment; lost business, revenues, or profits; loss of goodwill; failure or increased cost of operations; loss, damage or corruption of data; loss resulting from system or service failure, malfunction, incompatibility, or breaches in system security; or (b) any special, consequential, incidental or exemplary damages arising out of or in any way connected with the Equipment or otherwise, including but not limited to damages for lost profits, cost of substitute or replacement equipment, down time, injury to property or any damages or sums paid to third parties, even if Daktronics has been advised of the possibility of such damages. The foregoing limitation of liability shall apply whether any claim is based upon principles of contract, tort or statutory duty, principles of indemnity or contribution, or otherwise.

In no event shall Daktronics be liable for loss, damage, or injury of any kind or nature arising out of or in connection with this Warranty in excess of the Purchase Price of the Equipment. The End User's remedy in any dispute under this Warranty shall be ultimately limited to the Purchase Price of the Equipment to the extent the Purchase Price has been paid.

4. Assignment of Rights

The Warranty contained herein extends only to the End User (which may be the Purchaser) of the Equipment and no attempt to extend the Warranty to any subsequent user-transferee of the Equipment shall be valid or enforceable without the express written consent of Daktronics.

5. Governing Law

The rights and obligations of the parties under this Warranty shall not be governed by the provisions of the United Nations Convention on Contracts for the International Sales of Goods of 1980. The parties consent to the application of the laws of the State of South Dakota to govern, interpret, and enforce each of the parties' rights, duties, and obligations arising from, or relating in any manner to, the subject matter of this Warranty, without regard to conflict of law principles.

6. Availability of Extended Service Agreement

For End User's protection, in addition to that afforded by the warranties set forth herein, End User may purchase extended warranty services to cover the Equipment. The Extended Service Agreement, available from Daktronics, provides for electronic parts repair and/or on-site labor for an extended period from the date of expiration of this warranty. Alternatively, an Extended Service Agreement may be purchased in conjunction with this Warranty for extended additional services. For further information, contact Daktronics Customer Service at 1-800-DAKTRONICS (1-800-325-8766).