



Glow Cube[®] Portable Scoreboard

Operation & Maintenance Manual

ED 8035

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ED 8035

Product #1072

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Setting New Standards Worldwide

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Table of Contents

Section 1:	Introduction	1-1
1.1	How To Use This Manual.....	1-1
1.2	Glow Cube Portable Scoreboard Overview.....	1-1
Section 2:	Mechanical & Electrical Operation.....	2-1
2.1	Cart Assembly.....	2-1
2.2	Lifting the Scoreboard.....	2-1
2.3	Electrical Operation	2-3
2.3.1	Power Switch.....	2-3
2.3.2	Power Source Indicators.....	2-3
2.3.3	External Battery.....	2-3
2.3.4	Internal Battery Level Indicators	2-4
2.3.5	Recharging.....	2-4
2.3.6	Battery Life	2-4
Section 3:	All Sport Controller Operation.....	3-1
3.1	All Sport Console Setup.....	3-1
3.2	Sport Insert Operation Concepts	3-1
3.3	Numeric Keypad	3-2
3.4	Code Operation	3-2
3.4.1	Code 28 Operation - Timing and Scoring.....	3-2
3.4.2	Code 74 Operation - Multi-Sport.....	3-4
3.4.3	Code 41 and 43 Operation -Track.....	3-5
3.4.4	Code 91 Operation - Segment Timer.....	3-5
Section 4:	Maintenance & Troubleshooting.....	4-1
4.1	Component Access.....	4-1
4.1.1	Battery	4-1
4.1.2	Transformer.....	4-1
4.1.3	Driver.....	4-1
4.2	Digit Access.....	4-2
4.3	Digit Removal.....	4-2
4.4	Driver Removal.....	4-2
4.5	Power & Signal Wiring	4-2
4.6	Cleaning the Face Panel.....	4-2
4.7	Cleaning the Glow Cube Pixels	4-2
4.8	Replacement Parts List.....	4-4
4.9	Unit Exchange/Replacement Procedure	4-4
Appendix A:	Reference Drawings.....	A-1
Appendix B:	Eyebolts	B-1

Section 1: Introduction

1.1 How To Use This Manual

This manual is written to assist in the operation and maintenance of Daktronics Glow Cube[®] portable scoreboard. For questions regarding the safety, installation, operation or service of this system, please refer to the telephone numbers listed on the cover page of this manual.

Important Safeguards:

1. Read and understand all instructions before using the equipment.
2. Do not drop the control console or allow it to get wet.
3. Only use 3-prong, grounded, 120 VAC outlets for the scoreboard's 120 VAC power.
4. Do not disassemble the control console or the electronic controls of the display. Failure to follow this safeguard will void the warranty.
5. Disconnect power to the scoreboard when it is not in use.
6. Do not allow the scoreboard to remain outside in rain.
7. Store the scoreboard indoors when it is not in use.

The box below illustrates Daktronics drawing numbering system. The drawing number "7087-P08A-69945" is how Daktronics identifies individual drawings. This number is located in the lower-right corner of the drawing. The manual refers to drawings by listing the last set of digits and the letter preceding them. In the example below, the drawing would be referred to as **Drawing A-69945**. Reference drawings are typically inserted at the *end of the first section which references them*.

DAKTRONICS, INC. BROOKINGS, SD 57006		
PROJ:		
TITLE:		
DES. BY:	DRAWN BY: DOK	DATE: 04-20-95
APPR BY:	7087-P08A-69945	
SCALE: 1=80		

1.2 Glow Cube Portable Scoreboard Overview

Reference Drawings:

Caption Options, Baseball & Volleyball.....**Drawing A-95707**

The Glow Cube portable scoreboard (refer to **Drawing A-95707**) has the following features:

- The scoreboard's internal battery provides power for approximately 8 hours of normal operation.
- The scoreboard can also be powered from an external 12V battery or from 120 VAC. The internal battery recharges when 120 VAC power is connected.
- An attached wheel cart makes the scoreboard portable and raises it for easier viewing. Optional captions for scoring volleyball and baseball are available.

Use the standard All Sport[®] control console to display the time-of-day on the scoreboard.

Section 2: Mechanical & Electrical Operation

2.1 Cart Assembly

Reference Drawings:

Cart Assembly and Operation.....**Drawing A-64422**

Before assembly, inspect the contents of the kit, which should include:

- T One Cart, Wheel Side
- T One Cart, Stand Side
- T Two 10" Wheels
- T Two 1/2" x 3 1/2" Bolts
- T Two 5/16" Diameter Pins

A 3/4" wrench is needed to assemble the cart. Refer to **Drawing A-64422** and the following instructions for cart assembly:

1. Locate the wheel side of the cart. The wheel side has a threaded plug in each end. Bolt the wheels onto the ends of the cart.
2. Slide the wheel side into the attachment on scoreboard. *Make sure the screw head faces out.*
3. Locate the stand side of the cart. Slide the stand side into the attachment. *Make sure the screw head faces out.*

2.2 Lifting the Scoreboard

Reference Drawing:

Lifting the Scoreboard**Drawing A-44548**

Daktronics scoreboards and message centers are shipped equipped with eyebolts that are used to lift the displays. The eyebolts are located along the top of the cabinet for each scoreboard or scoreboard section.

Daktronics strongly recommends using a spreader bar, or lifting bar, to lift the display. Using a spreader bar ensures that the force on the eyebolts is straight up, minimizing lifting stress. Lifting methods are shown in the illustration below and in **Drawing A-44548**.

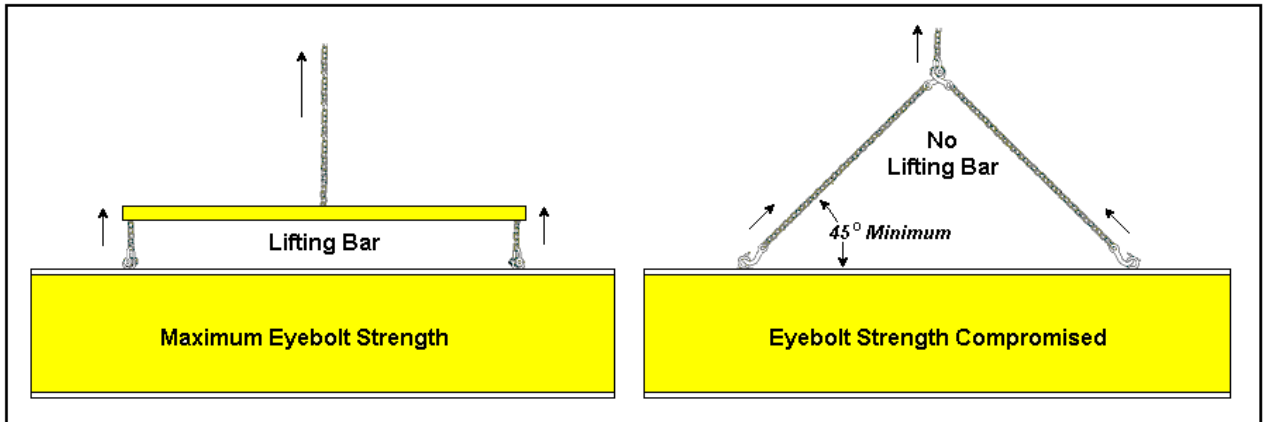


Figure 1: Lifting the Scoreboard

Figure 1 above illustrates both the preferred method (left example) and an alternative method (right example) for lifting a scoreboard. When lifting the display:

- Use a spreader bar.
- Use every lifting point provided.

Take special care to ensure the rated load of the eyebolts is not exceeded. Refer to **ED-7244, Eyebolts**, to determine allowable loads and load angles for the lifting hardware. **ED-7244** is located in the **Appendix** of this manual.

Avoid using other lifting methods. Cables and chains attached to the eyebolts and directly to a center lifting point, as show in the right-hand example in **Figure 1**, can create a dangerous lateral force on the eyebolts and may cause the eyebolts to fail. Daktronics scoreboards use $\frac{1}{2}$ " and $\frac{5}{8}$ " shoulder-type eyebolts mounted to a $\frac{1}{8}$ " aluminum plate or steel nut plate, but exceeding load angles or weight limits could cause the bolts to pull out or the scoreboard cabinet to buckle. In either circumstance, the result would be serious damage to the scoreboard. If you must use this method, ensure a minimum angle between the chain and scoreboard of at least 45° .

⚠ Note: Daktronics assumes no liability for scoreboard damage resulting from incorrect setup or incorrect lifting methods.

Eyebolts are intended for lifting only. Do not attempt to permanently support the display by the eyebolts.

In typical multi-section installations, the lower scoreboard section is installed first and secured to the support beams, and then the upper section is placed atop or above the lower section and attached to the beams. There may be cables extending from the top of the lower section. Guide these cables into the hole in the bottom of the upper section for later connection.

If the lift eyebolts are removed, plug the holes with bolts and the rubber sealing washers that were removed with the eyebolts. Apply silicone or another waterproof sealant to the eyebolt openings. Inspect the top and sides of the display for any other holes or openings that may allow moisture to enter the display, and plug and seal those openings as well.

2.3 Electrical Operation

Reference Drawings:

Control Panel, GP-99 **Drawing A-65273**

2.3.1 Power Switch

The power switch, located behind the rear access door, selects either the internal battery or the external battery.

- Flip the switch to the top position to operate the scoreboard from the internal battery.
- The scoreboard is off when the switch is in the middle position.
- The bottom position operates the scoreboard from an external 12 volt battery.

If the scoreboard's power cord is plugged into an outlet, the internal battery is charging, regardless of switch setting. Refer to **Drawing A-65273** for an illustration of the control panel.

2.3.2 Power Source Indicators

Check the LED indicators on the driver (visible through a small window on the lower right rear of the scoreboard.)

- When the scoreboard is connected to 120 volt power, the indicator labeled "BATTERY CHARGER ON" is lit, even if the main switch is turned off.
- Flip the main switch up, to the position labeled "INTERNAL." The scoreboard's driver will turn all of the glow cubes on, and then off.
- If the power cord is not connected to 120 volt power, then the driver is operating on power from the internal battery. The indicator labeled "BATTERY" is lit.
- If the power cord is connected to 120 volt power, the driver is operating from power supplied by the transformer inside the scoreboard. The indicator labeled "120 VAC" is lit.

2.3.3 External Battery

To provide power from an external 12 volt DC power source, such as a car battery, use the 12 volt DC cord available from Daktronics.

1. Connect one end to the car's lighter.
2. Connect the opposite end to the jack in the scoreboard labeled "EXTERNAL BATTERY 12V DC IN."
3. Flip the main power switch down, to the position labeled "EXTERNAL."

2.3.4 Internal Battery Level Indicators

There are three internal battery level indicators (“FULL”, “MED” and “LOW”) which show the current level of energy remaining in the internal battery. The indicators light to indicate the following:

Lit Internal Battery Level Indicator	
FULL	Internal battery is fully charged.
MED	Scoreboard has been operating on battery power for a short time.
LOW	The internal battery is almost completely discharged. The scoreboard could soon fail to operate properly.

As power demands fluctuate during operation, the higher level indicator may blink on and off. The LED’s do *not* indicate the status of an external battery.

2.3.5 Recharging

To recharge the internal battery plug the scoreboard’s power cord into a standard 120 volt outlet.

- If the battery is severely discharged, it may take 15 hours to fully recharge it.
- If the scoreboard has been powered from the battery for only a few hours, it may require only six to eight hours for a full recharge.

The charger may be left connected to power without damaging the battery. Do not worry about overcharging if the scoreboard is plugged in for several days.

The built-in charger will *not* recharge an external battery.

2.3.6 Battery Life

The internal battery is sealed lead-acid type, rated 12 volts at 6.5 amp-hours, which provides approximately eight hours of operation from a full charge during normal use. As the battery ages, its ability to hold a charge diminishes, and the operating time on a charge is reduced.

The battery’s life is enhanced by keeping it charged, or recharging it soon after it is discharged. Frequently deep-cycling the battery (discharging it below a usable charge level) and only partially recharging it can contribute to early battery failure.

L IMPORTANT NOTICE:

The battery in this product contains lead. At the end of the battery’s useful life, *do not* dispose of it in the municipal waste system. **To do so may be a violation of local, state, or federal environmental regulations. Return the battery to a battery recycling center.**

Section 3: All Sport Controller Operation

3.1 All Sport Console Setup

Reference Drawings:

Consoles, All Sport 2000 Series**Drawing A-29724**

The All Sport Console (refer to **Drawing A-29724**) has a 16-character LCD (liquid crystal display) readout that performs the following functions:

- Verifies entries from the numeric keypad so mistakes can be corrected before being shown on the scoreboard.
- Prompts the user as to what type of information the console is waiting for.
- Displays a console self-test when the power is first connected to the console.

Watch the LCD as the console is first connected to the power. The console will run through a self-test sequence and then stop, displaying “ENTER CODE.” Select the code that is printed on the overlay (refer to **Section 3.4**) and press the appropriate numbers followed by <ENTER>. The console is now ready to operate.

3.2 Sport Insert Operation Concepts

Reference Drawings:

Overlay, Code 41 thru 43**Drawing A-29792**
Overlay, Code 74 Multisport.....**Drawing A-64735**
Overlay, Code 28 Timing/Scoring.....**Drawing A-64736**
Overlay, Segment Timer.....**Drawing A-95556**

A sport insert (overlay) identifies the action keys required in the normal course of the insert’s specific sport. In most cases, pressing a key immediately changes the scoreboard. Sometimes additional keys must be pressed. Keys that require additional information are marked by a \$. This additional information usually is a number followed by the <ENTER> key. (An asterisk (*) will flash on the LCD to remind the operator to press <ENTER> to complete the operation.) Keys without a dot perform their functions immediately when pressed.

Some keys have a +1. By pressing one of these keys once, the value of the corresponding field on the scoreboard (such as score or period) increments (increases) by one.

On some 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 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).

Other keys have been blocked together to emphasize that these keys work together. Refer to the drawings referenced above for each of the sport inserts.

3.3 Numeric Keypad

The numeric keypad is used for all data entry into the console. The <CLEAR> key is used to erase a previously entered number, and the <ENTER> key is used to have the console accept the entered information.

3.4 Code Operation

Reference Drawings:

Overlay, Code 41 thru 43	Drawing A-29792
Overlay, Code 74 Multisport.....	Drawing A-64735
Overlay, Code 28 Timing/Scoring.....	Drawing A-64736
Overlay, Segment Timer.....	Drawing A-95556

Multiple codes and overlays are available to operate the All Sport console. (To provide volleyball or baseball functions, the scoreboard must be equipped with optional captions over the clock digits.) All of the functions operated in Code 28 are also present in Code 74. Additional functions unique to Code 74 are described in **Section 3.4.2**.

All Sport Code	Function	Reference Drawing
28	Basic scoring and timing functions	A-64736
41 and 43	Track Events	A-29792
74	Volleyball/Baseball Multisport Mode	A-64735
91	Segment Timer (primarily used for practice sessions)	A-95556

3.4.1 Code 28 Operation - Timing and Scoring

Install the overlay for Code 28 operation (Daktronics part no. LL-2164, refer to **Drawing A-64736**) by inserting the four corners of the overlay into the slots in the console's face panel. Connect the console to the scoreboard and turn on the power.

At the "ENTER CODE" prompt, press <2>, <8>, then <ENTER>. The console's LCD readout will display a clock value of 15:00. The scoreboard's clock will also show this value, and the other digits will indicate scores of 0 to 0, in the first period.

Clock Operation

Start: To start the clock, press <START>.

Stop: To stop the clock, press <STOP>.

Set Time: Stop the clock to change the time value. To set any value into the clock digits, press <SET TIME \$> followed by the appropriate numbers for minutes and seconds from the numeric keypad. Time values up to 99 minutes and 99 seconds (99 : 99) can be set into the clock. Press <ENTER>.

The next time <SET TIME \$> is operated, the last value used will appear in the LCD readout as the default. To accept this value, press <ENTER>.

To cause the clock digits to blank, press <SET TIME \$> followed by <CLEAR>, then press <ENTER>.

Count Up/Down: When the console is first connected to power, it is in *Count Down mode*. The clock will count down from the current time value until it reaches 0:00. To change to *Count Up mode*, press <COUNT UP/DN \$> followed by <ENTER>. The clock will then count up from the current value to 99:59, and then start over at 0:00 and continue counting.

To return to *Count Down mode*, repeat the keystrokes. The clock must be stopped to change the count direction.

Manual Horn: To sound the horn at any time, press <MANUAL HORN>.

Auto Horn: When the console is first connected to power, the automatic horn is turned on. When the clock reaches 0:00, the horn will sound for two seconds. To turn the automatic horn off, press <AUTO HORN \$> followed by <ENTER>.

Repeat this sequence to turn the automatic horn back on. The character “h” appears in the LCD readout when the automatic horn is on.

Scoring

Score: To set any value into the Home score digits, press <SCORE \$> in the Home area, followed by the desired combination of numbers from the numeric keypad, then press <ENTER>. To make the score digits blank, press <SCORE> followed by <CLEAR>, then press <ENTER>. The Guest score works in the same manner.

Score+1: To advance the Home score by one point, press <SCORE+1> in the Home area. When the score reaches 99, additional increments will appear on the scoreboard as starting over from zero. The Guest score works in the same manner.

Period

Period: To set any number from 0 to 9 into the Period digit, press <PERIOD \$> followed by the desired number, and then press <ENTER>.

Period +1: To advance the Period digit by one, press <PERIOD+1>. Repetition of this function advances the values from 1 through 9, then blank, then starts over at 1.

3.4.2 Code 74 Operation - Multi-Sport

Install the overlay for Code 74 operation (Daktronics part no. LL-2165, refer to **Drawing A-64735**) by inserting the four corners of the overlay into the slots in the console's face panel. Connect the console to the scoreboard and turn on the power.

At the "ENTER CODE" prompt, press <7>, <4>, followed by <ENTER>. The console's LCD readout will display the clock value of 15:00. The scoreboard's clock will also show this value, and the other digits will indicate scores of 0 to 0, in the first period.

Code 74 contains all of the functions included in Code 28, as well as some additional ones. The overlay shows functions for volleyball and baseball. These functions are displayed in the clock digits on the scoreboard, so captions must be attached to the scoreboard above the clock digits to inform the viewer of what data is being displayed in those digits.

Clock, Scoring, and Period

Refer to the instructions for Code 28 (**Section 3.4.1**) for information on using these functions. The Period function is changed to work for Period, Inning (baseball), or Game (volleyball). The prompt in the LCD indicates all three functions, but operation is the same.

Show Clock: To display the current clock information on the scoreboard clock digits, press <SHOW CLOCK>.

Values for clock, volleyball, and baseball functions are all stored in the console's memory while any one of the functions is displayed on the scoreboard.

Volleyball

Show Volleyball: To display the current values of Games Won for the two teams on the scoreboard's clock digits, press <SHOW VOLLEYBALL>. The clock can continue to run in the console, even though the Games Won data is showing on the scoreboard.

Games Won: To set any value from 0 to 9 into the Games Won digit for a team, press <GAMES WON \$> for the desired team, followed by the correct number. Press <ENTER>.

Games Won+1: To advance the Games Won value for a team by one, press <GAMES WON+1>. Repeated operation advances to 9, then starts over at 1.

Baseball

Show Baseball: To display the current Ball, Strike and Out values for baseball on the scoreboard clock digits, press <SHOW BASEBALL>. The clock can continue to run in the console, even though the baseball data is showing on the scoreboard..

Ball+1: To advance the value for Ball by one, press <BALL+1>. Press this button again to rotate through the sequence: 1, 2, 3, blank, 1, etc.

Strike+1: To advance the value for Strike by one, press <STRIKE+1>. Press this button again to rotate through the sequence: 1, 2, blank, 1, etc.

Clear Ball/Strike: To reset the values of Ball and Strike to zero, press <CLEAR BALL/STRIKE>.

Out+1: To advance the value for Out by one, press <OUT+1>. Press this button again to rotate through the sequence: 1, 2, blank, 1, etc.

3.4.3 Code 41 and 43 Operation -Track

Install the overlay for Code 41 and 43 operation (Daktronics part no. LL-1898, refer to **Drawing A-29792**) by inserting the four corners of the overlay into the slots in the console's face panel. *Code 42 is not supported by the Glow Cube Portable.*

3.4.4 Code 91 Operation - Segment Timer

Install the overlay for Segment Timer operation (Daktronics part no. LL-2339, refer to **Drawing A-95556**) by inserting the four corners of the overlay into the slots in the console's face panel.

At the "ENTER CODE" prompt, press <9>, <1>, or <9>, <2> followed by <ENTER>. The consoles LCD will display the segment number and time.

The segment timer initializes all segments to set to 10 minutes and the interval time set to 1 minute. The timer has a total of 24 segments that can be timed. Segment time is displayed in the clock digits while segment number is displayed on HOME score digits. In addition to these features, Segment Timer Code 92 displays the interval time on PERIOD and GUEST score digits.

Timer Operation

Start: Press <START> to activate the timer. The timer will count down to zero and then increment the segment number and set the clock time for the next segment. The timer will then count the interval time before starting to time the next segment. If the interval time is set to zero, the timer will start timing the next segment immediately. The horn will sound at the end of each segment and the end of each interval time.

Stop: Pressing <STOP> will stop the timer.

Set Time: This key can be used to set the time that the segment time is set to. The clock must be stopped to change the time value. To set a new segment time on the clock, press <SET TIME \$> followed by the time entered from the numeric keypad. Press <ENTER>.

First Segment: This key sets the number of the first segment to time.

Last Segment: This key sets the number of the last segment to time. The timer will reset to the first segment time once it has finished timing the last segment.

Current Segment: This key changes the number of the current segment being timed.

Segment Time Edit: This key sets the time for each of the 24 segments. First press this key then select the segment number from the numeric keypad. Press <ENTER>. Now enter the desired time for this segment and press <ENTER>. Repeat this process until all segments are set to the desired times.

Interval Time: This key sets the time of the interval between segments. If set to "0:00" no interval time is counted and the timer automatically begins timing the next segment.

Reset: This key only functions if the clock is stopped. Pressing this key sets the current segment number to the first segment number and puts the first segment time on the clock.

Section 4: Maintenance & Troubleshooting



IMPORTANT NOTES:

1. Disconnect power before any repair or maintenance work is done on the scoreboard!
2. Any access to internal scoreboard electronics must be made by qualified service personnel.
3. Disconnect power when the scoreboard is not in use.

4.1 Component Access

Reference Drawings:

Power & Signal Wiring	Drawing A-64091
Component Locations	Drawing A-64271

4.1.1 Battery

The battery is located behind the GUEST score digit card. To access the battery:

1. Remove the left side face retainer.
2. Slide bottom plex sheet out 2 feet.
3. Detach ribbon cables from digit.
4. Remove four screw holding digit card in place.

4.1.2 Transformer

The transformer is located behind the PERIOD digit card. To access the transformer:

1. Remove either side face retainer.
2. Slide out bottom plex sheet.
3. Detach ribbon cables from digit.
4. Remove two screws holding digit card in place.

4.1.3 Driver

The driver is located behind the HOME score digit card. To access the driver:

1. Remove the right side face retainer.
2. Slide bottom plex sheet out two feet.
3. Detach ribbon cables from digit.
4. Remove four screws holding digit card in place.

4.2 Digit Access

Reference Drawings:

Digit Assignments**Drawing A-64272**

To open the display, remove the three (3) screws securing the face retainer. Remove the face retainer and gently slide the face panel out of the display. Refer to **Drawing A-64272**.

4.3 Digit Removal

Reference Drawings:

Digit Assignments**Drawing A-64272**

Digits need to be removed to replace a glow cube or driver. First open the scoreboard as described in **Section 4.2**. Disconnect the ribbon cable from the digit to be removed. There is a screw on the top and the bottom of the digit. Remove these screws and gently lift the digit from the scoreboard.

4.4 Driver Removal

To replace a driver, follow the steps in **Section 4.2** to open the display. The driver is located behind digits #1 and #2. Remove both of these digits following the procedure in **Section 4.3**.

Note: Make sure the scoreboard is unplugged and the power switch is turned off. Unplug all cables from the driver and remove the nuts holding the driver in place. Carefully, remove the driver and replace with a new driver.

4.5 Power & Signal Wiring

Reference Drawings:

Power & Signal Wiring**Drawing A-64091**

Refer to **Drawing A-64091** to view the power and signal wiring diagram.

4.6 Cleaning the Face Panel

To clean the face panel inside and out, use a wet cloth followed by a dry cloth. An anti-static polycarbonate cleaner is highly recommended and will yield the best long term results. How often the face will require cleaning will depend upon the site conditions. The glow cube pixels do not require the face to be cleaned for any reason except for visual impairment.

4.7 Cleaning the Glow Cube Pixels

Clean the cubes only when necessary, and with care. A damp cloth, a soft brush or a feather duster will work the best. Do not use cleaning solvents or sprays. Avoid applying pressure to the cube face.

Work in upward strokes only when cubes are yellow side up. Downward strokes are used when all the cubes are black side up. Do not brush in a horizontal direction.

4.8 Replacement Parts List

Refer to the table below for replacement parts for the Glow Cube portable scoreboard.

Parts Description	Daktronics Part #
Glow Cube Driver	0P-1066-0047
Glow Cube Digit	0P-1066-0042
Glow Cube, #150 Yellow	0A-1066-0001
Battery, 12V, 6.5 AH	BT-1014
All Sport 2400 Control Console	0A-1072-0005
Overlay, Scoring/Timing Code 28	LL-2164
Overlay, VB/BA Multisport Code 74	LL-2165
Overlay, Track Code 41-43	LL-1898
Overlay, Segment Timer Code 91	LL-2339
Overlay, Code 01 Testing	LL-1951
Cable, 100 Ft Signal	0A-1072-0006
Cable, 150 Ft Signal	0A-1072-0007
Cable, 200 Ft Signal	0A-1072-0008
Multisport Caption And Overlay Set	0A-1072-0004

4.9 Unit Exchange/Replacement Procedure

Daktronics unique exchange program offers our clients the quickest, most economical way of receiving product repairs. If a component fails, Daktronics will send the customer a replacement. The customer, in turn, sends the failed component to Daktronics. This not only saves money but decreases the time the display is inoperable. Daktronics offers repair and return on a timely basis; in urgent situations, every attempt is made to ship by the fastest transit method available.

- 1. Packaging for Return:** Package and pad the item well to prevent damage during shipment. Electronic components, such as printed circuit boards, should either be installed in an enclosure or placed in an anti-static bag before boxing.

Please enclose your name and address along with a list of all the symptoms. Please be as specific as possible.

- 2. Driver Packaging Instructions:** Drivers should be placed in a static-free enclosure for return shipping. An anti-static convoluted foam packing is available from Daktronics (part number PK-1135). The shipping box (Daktronics part number PK-1006) should be used along with the foam.

- 3. Where to Send:** Contact your local representative prior to shipment to acquire a Return Material Authorization Number (RMA#). This will speed up the repair of your unit.

When returning defective items under the exchange program, please use the UPS Blue Return Tags found in the package containing the exchange unit sent from Daktronics. This will speed up the transaction and help avoid confusion when the part is returned to Daktronics. **The defective item must be returned within 15 days of receiving a replacement part.** Using the UPS Blue Return Tag immediately will eliminate the possibility of late charges being assessed against your account.

Mail: Daktronics, Inc., Customer Service
PO Box 5128
331 32nd Avenue
Brookings, SD 57006

Phone : Toll Free: 1-800-843-9879
Or 1-605-697-4400

Customer Service Fax: 1-605-697-4444

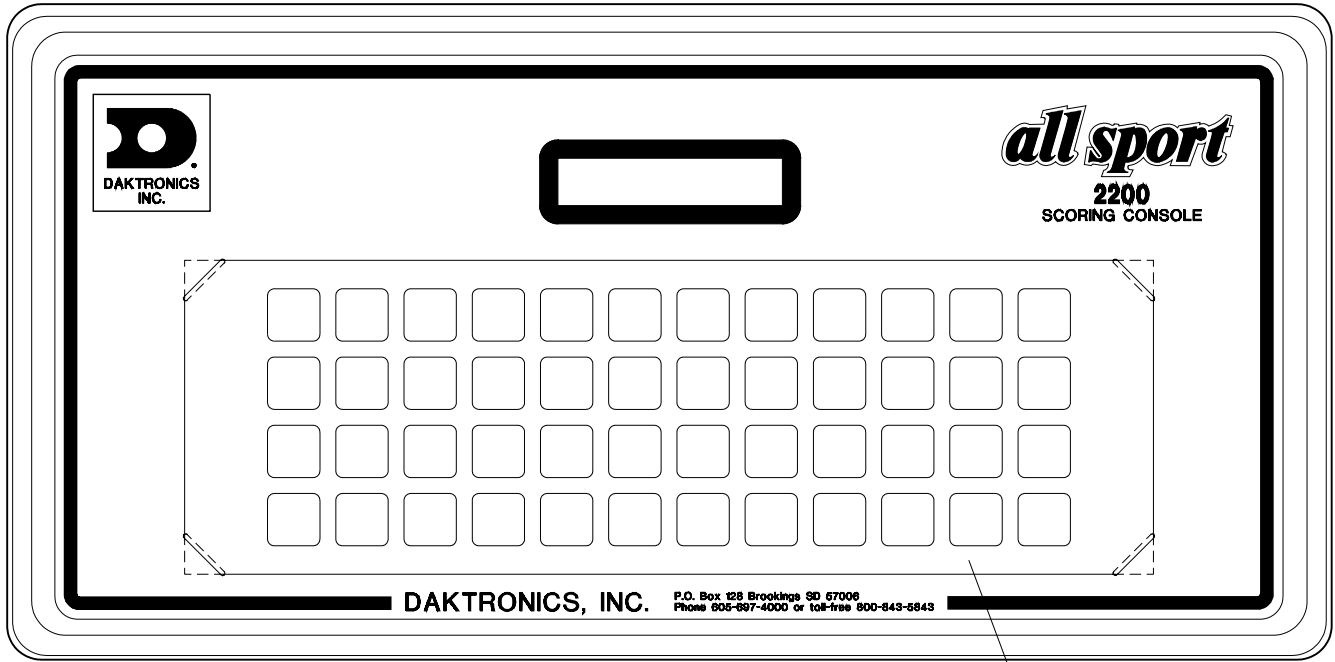
E-Mail: helpdesk@daktronics.com

Appendix A: Reference Drawings

Consoles, AllSport 2000 Series	Drawing A-29724
Overlay, Code 41 thru 43	Drawing A-29792
Lifting the Scoreboard	Drawing A-44548
Power and Signal Wiring.....	Drawing A-64091
Component Locations	Drawing A-64271
Digit Assignments	Drawing A-64272
Cart Assembly and Operation.....	Drawing A-64422
Overlay, Code 74 Multisport.....	Drawing A-64735
Overlay, Code 28 Timing/Scoring.....	Drawing A-64736
Control Panel, GP-99	Drawing A-65273
Overlay, Segment Timer	Drawing A-95556
Caption Options, Baseball and Volleyball	Drawing A-95707

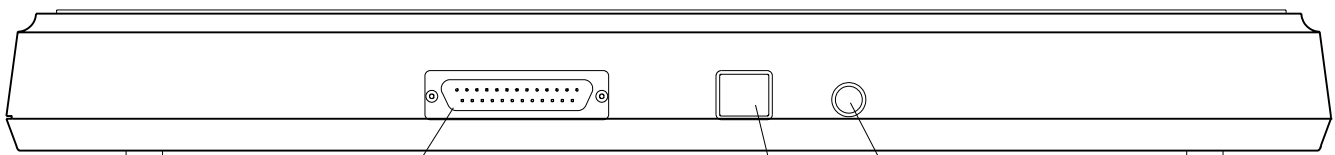
ALL SPORT[®] 2200, 2300, 2400, 2600, OR 3000 CONTROL CONSOLES

ALL SPORT 2200 SHOWN



TOP VIEW

CHANGEABLE
GRAPHIC OVERLAY



REAR VIEW

J3
SCOREBOARD
SIGNAL

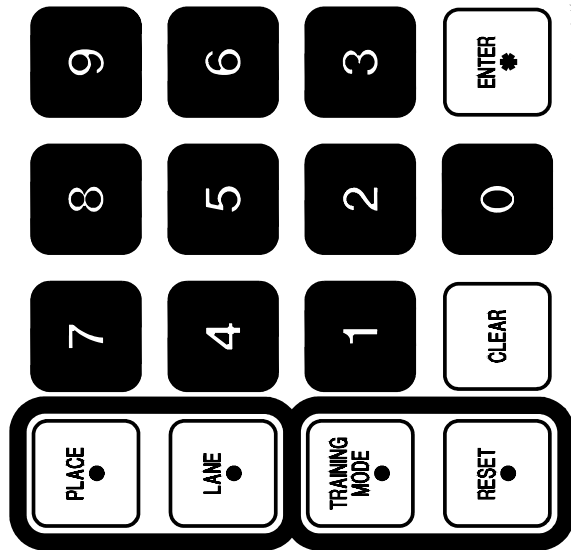
J1
POWER

J2
SHOT CLOCK
REMOTE START STOP

1	03APR89	CHANGED TM TO ®	BHL
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REV.	DATE	DESCRIPTION	BY	APPR.
4	30 OCT 95	ADDED MODEL 3000.	HBB	
3	10 SEPT 92	ADDED MODEL 2600	C FICK	
2	13JUN90	ADDED MODELS NO. 2200 & 2400. CHANGED TO A-SIZE BORDER.	AVB	

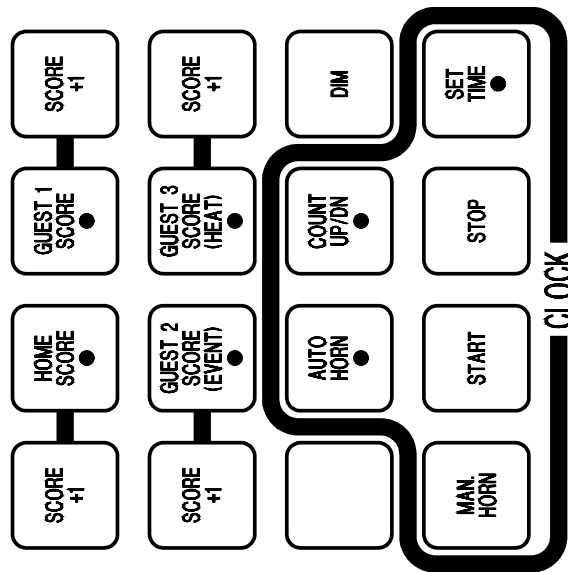
DAKTRONICS, INC. BROOKINGS, SD 57006	
PROJ: ALL SPORT CONTROL CONSOLES	
TITLE: CONSOLES, ALL SPORT 2200, 2300, 2400, 2600 OR 3000	
DES. BY:	DRAWN BY: B LENDT DATE: 6 APR 87
REVISION	APPR. BY:
SCALE: 1=2	1065-R11A-29724



LL1898 REV 3

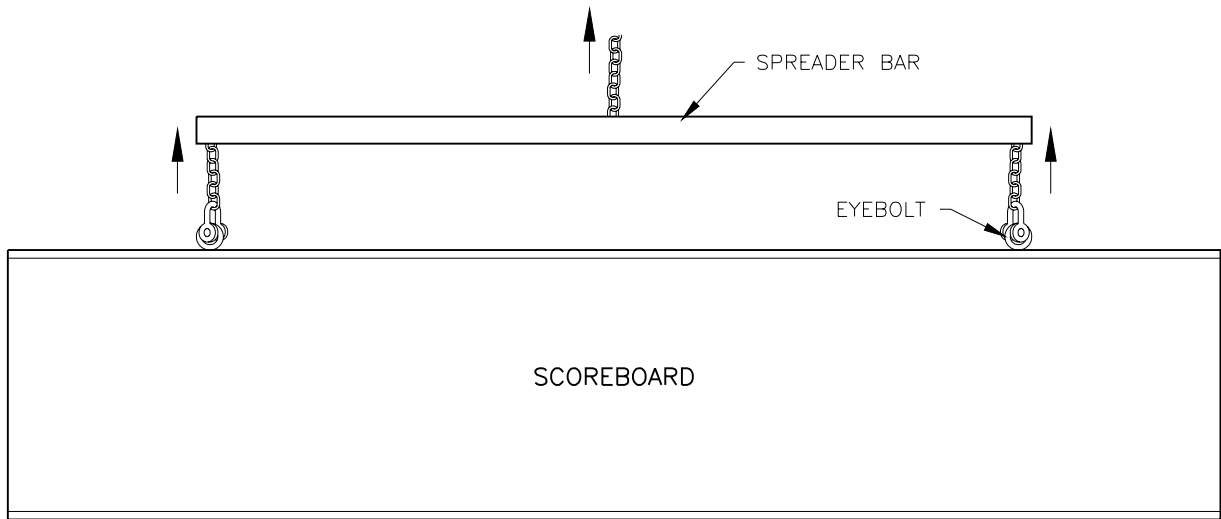


CODE	TRACK MODEL
41	FB-14S, FB15-TS FB-1524, FB-1530
42	FB-14TS
43	FB-18TS, FB-18T FB-1730, FB-1830, FB-1830L



REV.	DATE	DESCRIPTION	BY	APPR.
3	5/MAY/94	ADDED TRAINING MODE AND RESET BUTTONS	CI	
2	10 SEPT 90	CHANGED FROM "B" TO "A" SIZE DWG., ADDED NEW FOOTBALL MODEL NO.'S TO CODE NO.'S	CVF	
1	8 FEB 88	ADDED CODE 43.	BHL	

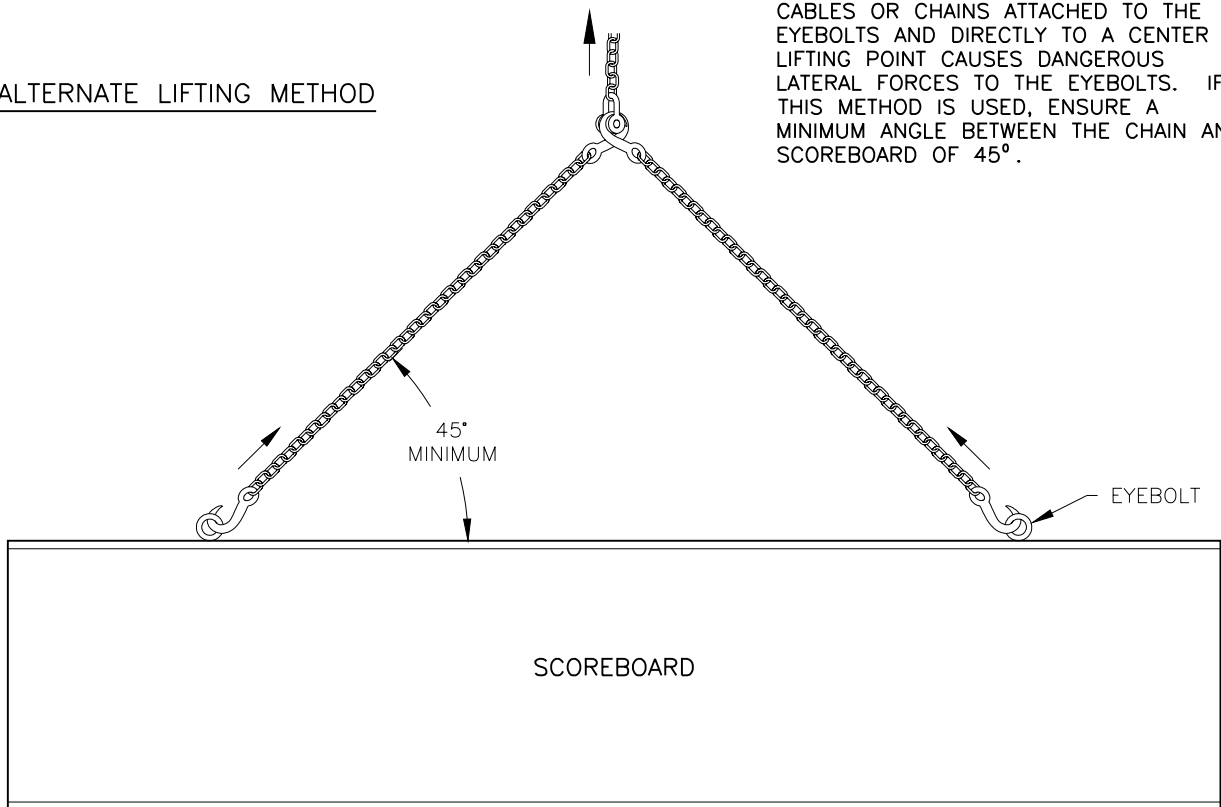
DAKTRONICS, INC. BROOKINGS, SD 57006	
PROJ: ALLSPORT 2000 THRU 2300	
TITLE: OVERLAY, CODE 41 THRU 43	
DES. BY:	DRAWN BY: J.M. LAMBERTZ DATE: 9 APR 87
REVISION	APPR. BY:
	SCALE: 1=1
1065-R11A-29792	



PREFERRED LIFTING METHOD

USE A SPREADER BAR SO THAT THE FORCE ON THE EYEBOLTS IS STRAIGHT UP.

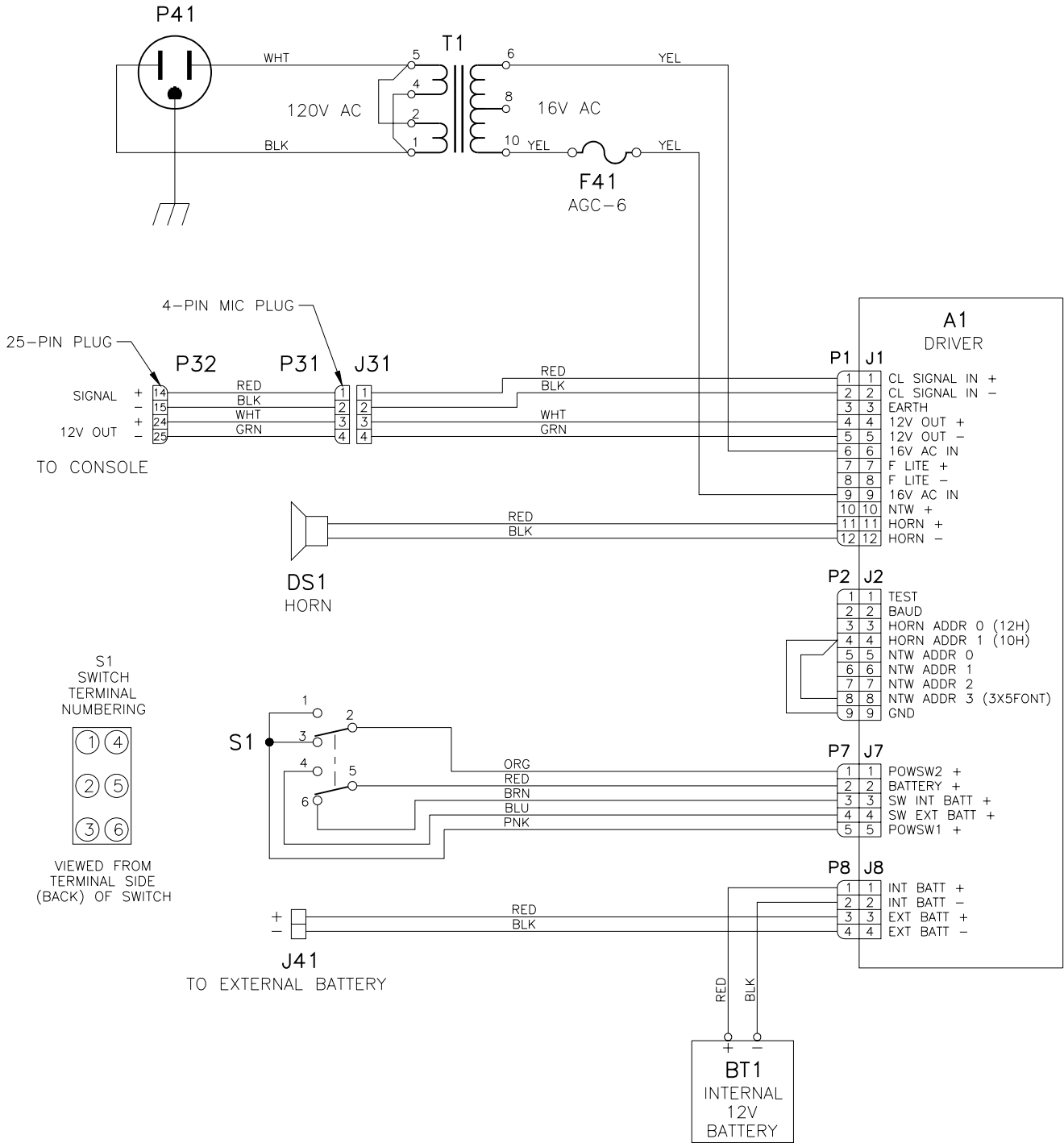
ALTERNATE LIFTING METHOD



CABLES OR CHAINS ATTACHED TO THE EYEBOLTS AND DIRECTLY TO A CENTER LIFTING POINT CAUSES DANGEROUS LATERAL FORCES TO THE EYEBOLTS. IF THIS METHOD IS USED, ENSURE A MINIMUM ANGLE BETWEEN THE CHAIN AND SCOREBOARD OF 45°.

DAKTRONICS, INC. BROOKINGS, SD 57006				
PROJ: OUTDOOR SCOREBOARDS				
TITLE: LIFTING SCOREBOARD				
DES. BY:	DRAWN BY: AVB			DATE: 12SEP90
REVISION	APPR. BY:	1091-R10A-44548		
	SCALE: NONE			

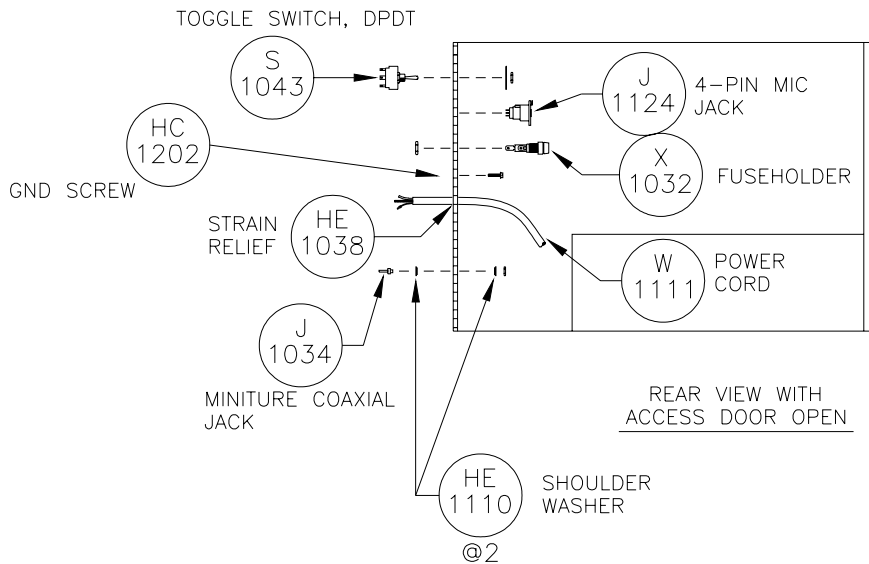
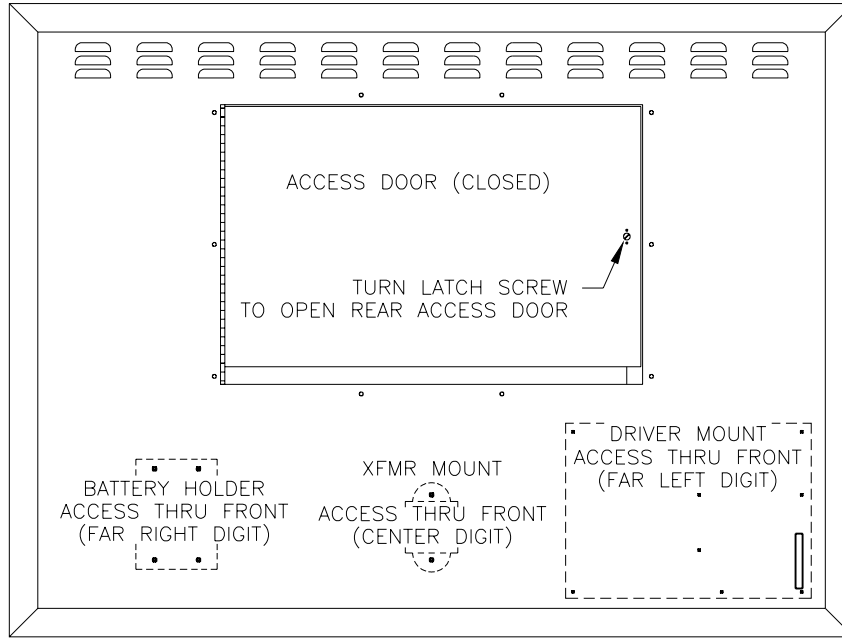
REV.	DATE	DESCRIPTION	BY	APPR.
1	17 MAY 01	ADDED MINIMUM ANGLE TO ALTERNATE LIFTING METHOD; CHANGED CORRECT TO PREFERRED METHOD AND WRONG TO ALTERNATE METHOD	TWEBER	



DAKTRONICS, INC. BROOKINGS, SD 57006				
PROJ: GLOW CUBE PORTABLE SCOREBOARD				
TITLE: POWER AND SIGNAL WIRING				
DES. BY: MGC	DRAWN BY: MGUNDERSON		DATE: 27MAY94	
REVISION	APPR. BY:	1072-R03A-64091		
	SCALE: NONE			

1	18AUG94	ADDED SWITCH TERMINAL NUMBERING DIAGRAM.	AVB	AVB
REV.	DATE	DESCRIPTION	BY	APPR.

REAR VIEW



DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: GLOW CUBE PORTABLE SCOREBOARD

TITLE: COMPONENT LOCATIONS

DES. BY: MGG

DRAWN BY: MGUNDERSON

DATE: 15JUL94

REV.	DATE	DESCRIPTION	BY	APPR.

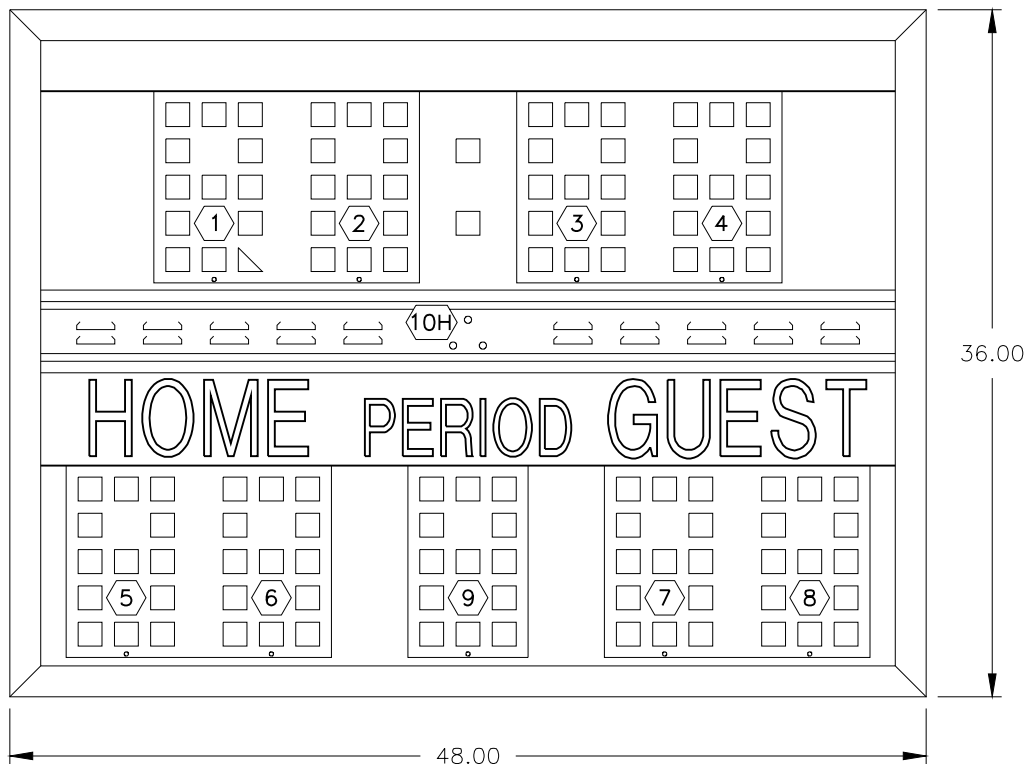
REVISION

APPR. BY:

SCALE: 1 = 10

1072-E10A-64271

FRONT VIEW



NUMBER IN HEXAGON INDICATES
DIGIT NUMBER. EXAMPLE:

 = DIGIT #6

HORN IS WIRED TO 10H

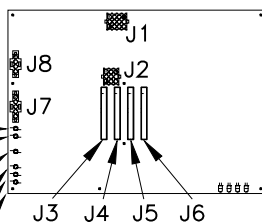
DRIVER TO DIGIT WIRING:

- JACK J-3 TO DIGIT #1
- JACK J-4 TO DIGIT #5
- JACK J-5 TO DIGIT #9

DRIVER

LED INDICATOR
LIGHT FUNCTIONS:

- AC ON
- 12VDC ON
- CHARGE
- BATT FULL
- BATT MED
- BATT LOW



NOTE: LEDs FACE BACKWARDS ON DRIVER
AND ARE READ FROM THE REAR.

DRIVER IS LOCATED BEHIND THE
"HOME" SCORE DIGIT CARD.

TO ACCESS DRIVER:

- 1) REMOVE THE RIGHT SIDE PLEX RETAINER.
- 2) SLIDE BOTTOM PLEX SHEET OUT 2 FEET.
- 3) DETACH RIBBON CABLES FROM DIGIT.
- 4) REMOVE FOUR SCREWS HOLDING DIGIT CARD IN PLACE.

DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: GLOW CUBE PORTABLE SCOREBOARDS

TITLE: DIGIT ASSIGNMENTS

DES. BY: MGG

DRAWN BY: MGUNDESON

DATE: 19JUL94

REVISION

APPR. BY:

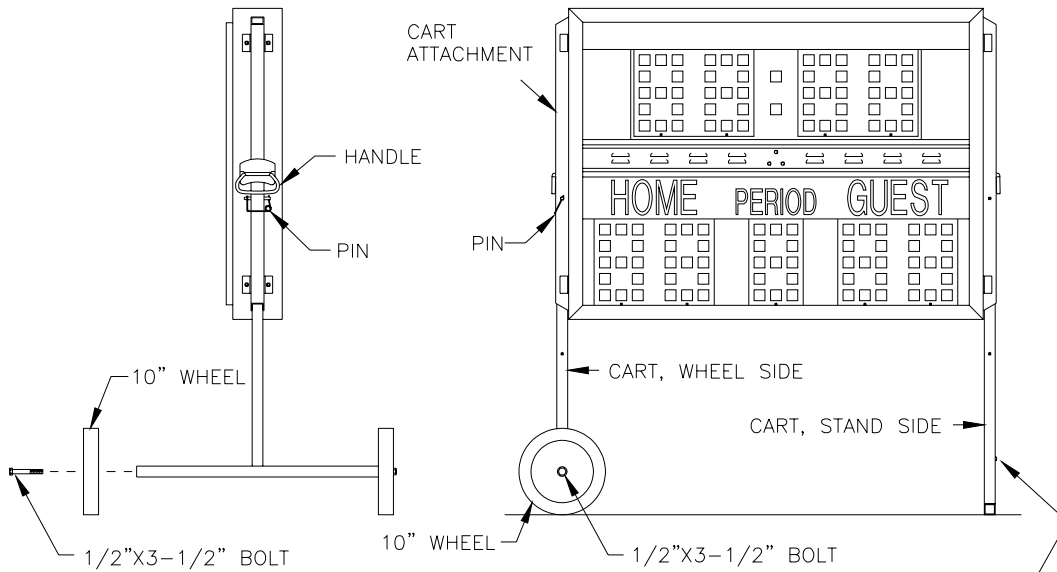
SCALE: 1 = 10

1072-E10A-64272

REV.	DATE	DESCRIPTION	BY	APPR.

SIDE VIEW

FRONT VIEW



TO RAISE AND LOWER THE SCOREBOARD, SIMPLY PULL THE PINS IN BOTH SIDES AND SLIDE THE LEGS TO DESIRED HEIGHT.

WHEN ASSEMBLING CART, MAKE SURE THE SCREW HEADS FACE OUTWARD. THEY PREVENT THE CART FROM SLIDING ALL THE WAY INTO THE ATTACHMENT.

Before assembly, inspect the contents of your kit.
Kit should include:

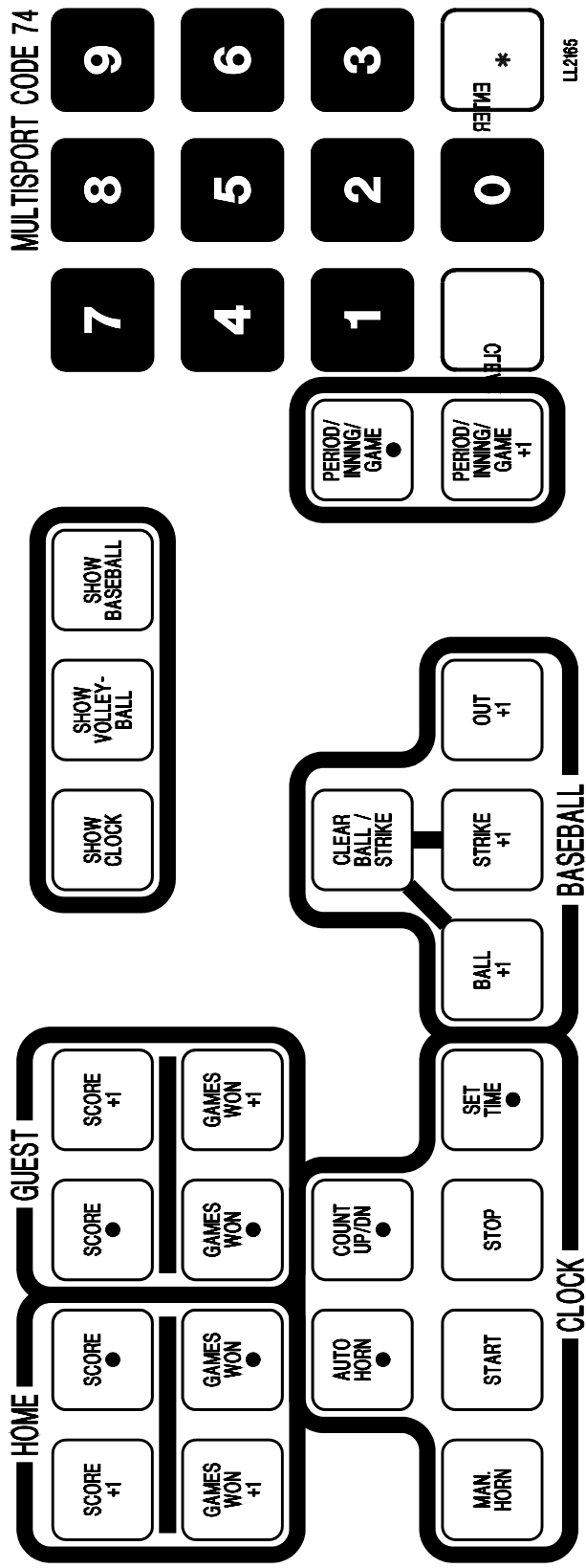
- 1 - CART, WHEEL SIDE
- 1 - CART, STAND SIDE
- 2 - 10" WHEELS
- 2 - 1/2"x3-1/2" BOLTS
- 2 - 5/16" DIAM. PINS

Tools needed to assemble this kit: 3/4" WRENCH

Assembly instructions:

- 1) Locate the wheel side of the cart. The wheel side has threaded plugs in each end. Bolt the wheels onto each side of the cart.
- 2) Slide the wheel side into attachment on scoreboard. MAKE SURE THE SCREW HEAD FACES OUT!
- 3) Locate the stand side of the cart. Slide the stand side into attachment. Once again, MAKE SURE THE SCREW HEAD FACES OUT!

3	05AUG97	CORRECTED SPELLING OF THE WORD "HEIGHT" IN THE LEFT BOX.	MMB		DAKTRONICS, INC. BROOKINGS, SD 57006	
2	10JAN95	CHANGED HANDLE TYPE ON CART.	MGG		PROJ: GLOW CUBE PORTABLE SCOREBOARD	
1	08SEP94	REDUCED HORIZ DIM BY 6".	MGG	AVB	TITLE: CART ASSEMBLY AND OPERATION	
REV.	DATE	DESCRIPTION	BY	APPR.	DES. BY: MGG	DATE: 03AUG94
					REVISION	DRAWN BY: MGUNDERSON
					APPR. BY: AVB	
					SCALE: 1=20	1072-E10A-64422



LL2165

NOTES:

1. MATERIAL 0.010" CLEAR VELVET POLYCARBONATE SHEET,
2. VELVET FACE UP,
3. COLORS:
 TEXT: TO MATCH MATHEWS ACRYLIC POLYURETHANE #42-223 UNITED AIRLINES BLUE.
 BACKGROUND: MARTIN SENOUR (WE6713) 11462 ACRYLIC ENAMEL.
- NOTE: BOTH AS VIEWED FROM MATTE VELVET FINISH SIDE. OPAQUE AFTER PRINTING,
4. DAKTRONICS PART # IS LL2165.
5. START AND STOP KEYS ARE EMBOSSED PER DWG NO. 1065-V07B-42956.

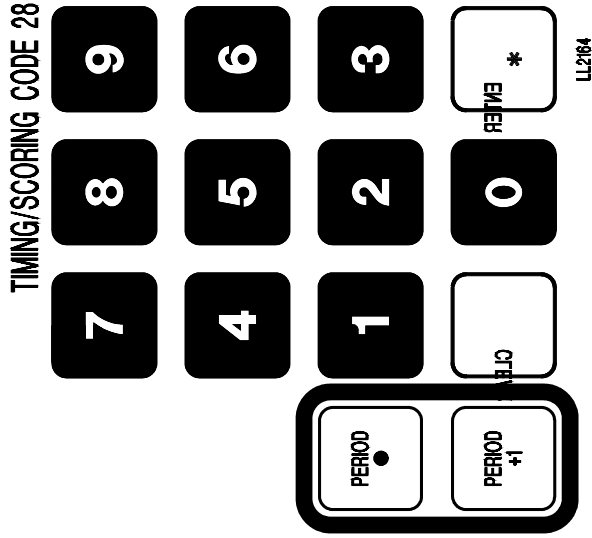
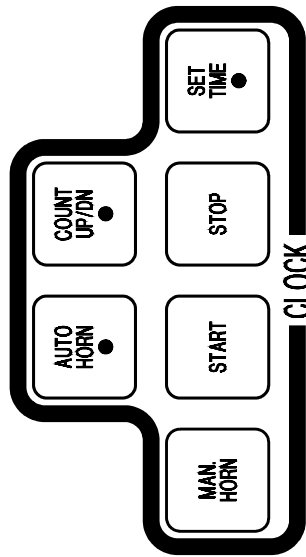
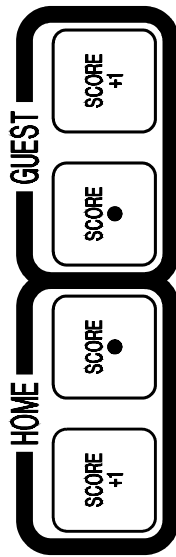
DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: _____
 TITLE: OVERLAY; CODE 74 MULTISPORT
 DES. BY: _____ DRAWN BY: C.S.SPERLICH DATE: 16 AUG 94

REVISION APPR. BY: _____
 SCALE: 1 = 1

1065-V07A-64735

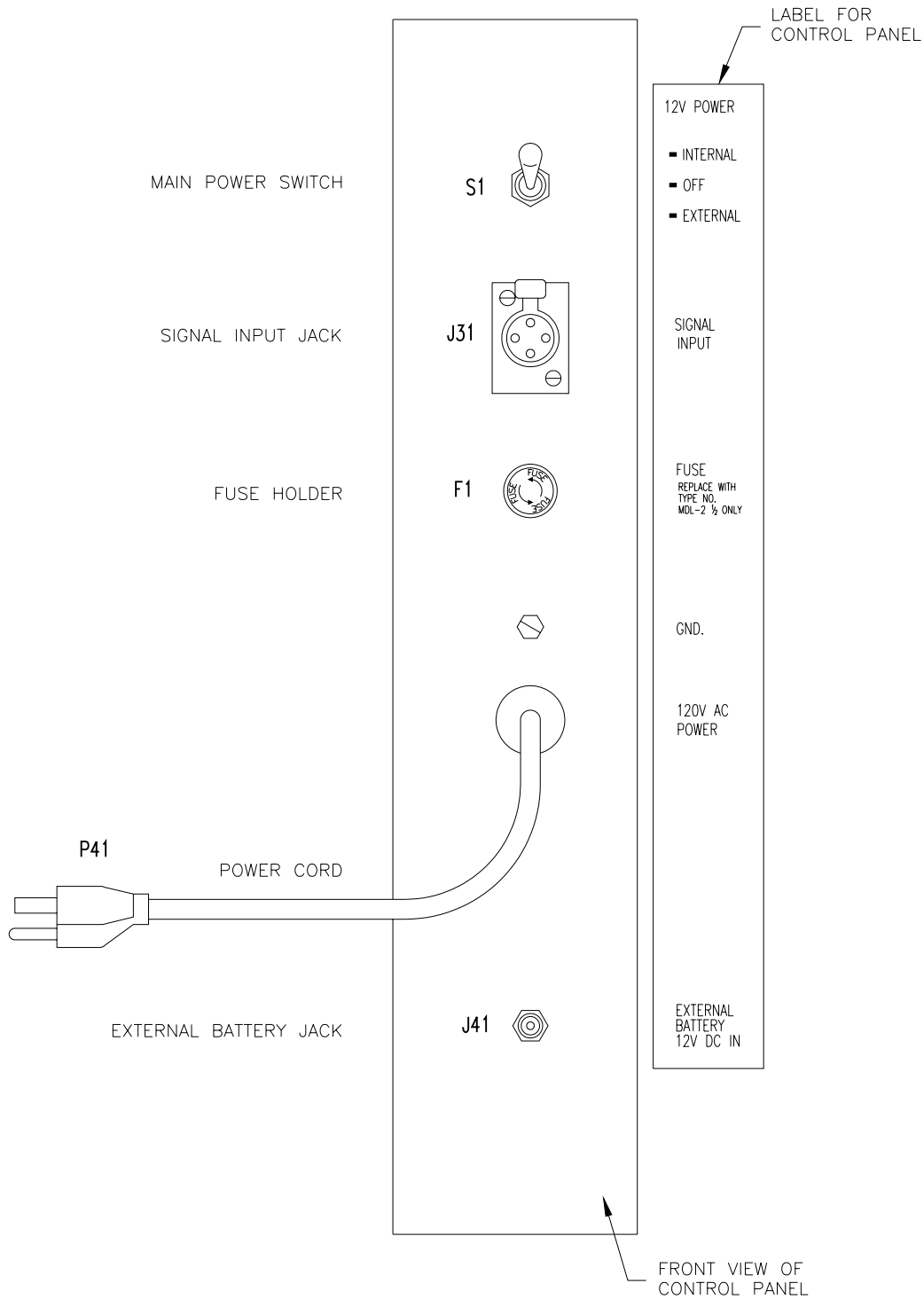
REV.	DATE	DESCRIPTION	BY	APPR.



- NOTES:
1. MATERIAL 0.010" CLEAR VELVET POLYCARBONATE SHEET,
 2. VELVET FACE UP,
 3. COLORS:
 - TEXT: TO MATCH MATHEWS ACRILIC POLYURETHANE #42-223 UNITED AIRLINES BLUE.
 - BACKGROUND: MARTIN SENOUR (WE5713) 11462
 4. DAKTRONICS PART # IS LL2164, FINISH SIDE. OPAQUE AFTER PRINTING.
 5. START AND STOP KEYS ARE EMBOSSED PER DWG NO. 1065-V07B-42956.

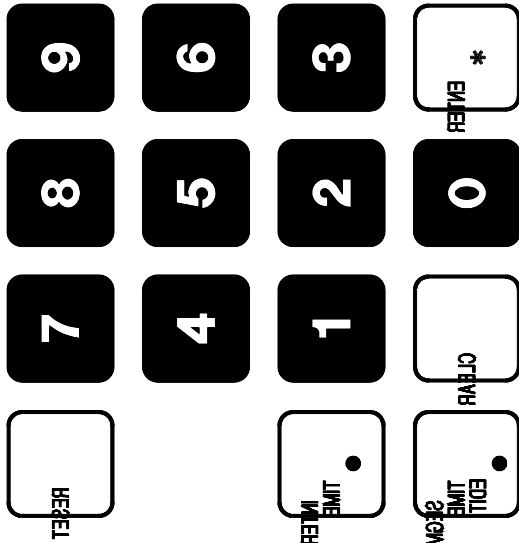
REV.	DATE	DESCRIPTION	BY	APPR.

DAKTRONICS, INC. BROOKINGS, SD 57006	
PROJ:	
TITLE:	OVERLAY; CODE 28 TIMING/SCORING
DES. BY:	DRAWN BY: C.S.SPERLICH DATE: 16 AUG 94
REVISION	APPR. BY:
SCALE:	1 = 1
1065-V07A-64736	



DAKTRONICS, INC. BROOKINGS, SD 57006			
PROJ: GLOW CUBE PORTABLE SCOREBOARD			
TITLE: CONTROL PANEL, GP-99			
DES. BY: MGG		DRAWN BY: MGG	DATE: 08SEP94
REVISION	APPR. BY:	1072-R08A-65273	
	SCALE: 1 = 2		

REV.	DATE	DESCRIPTION	BY	APPR.



0838-JJ



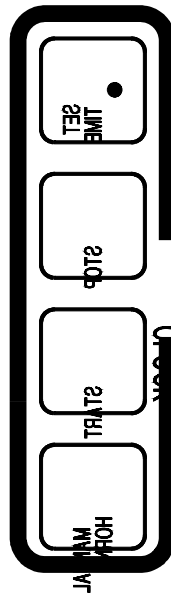
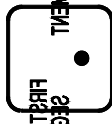
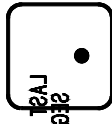
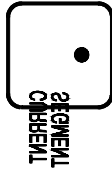
INTERVAL TIME NOT DISPLAYED

DISPLAY INTERVAL TIME

CODE 91

CODE 92

SEGMENT LIMIT



DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: GLOW CUBE PORTABLE SCOREBOARD

TITLE: OVERLAY, SEGMENT TIMER

DES. BY: BCARSRUD

DRAWN BY: MBESSLER

DATE: 11AUG97

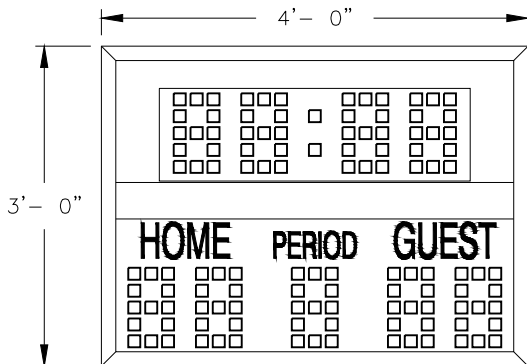
REVISION

APPR. BY:

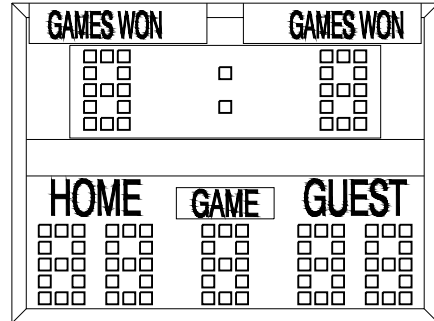
SCALE: 1 = 1

1072-R08A-95556

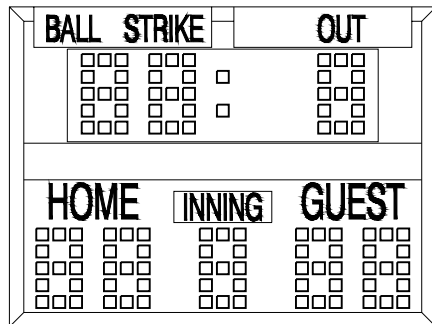
REV.	DATE	DESCRIPTION	BY	APPR.



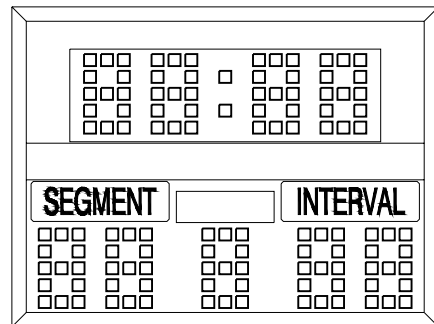
Time/Score Mode



Volleyball Mode



Baseball Mode



Segment Timer

DAKTRONICS, INC. BROOKINGS, SD 57006	
PROJ: GLOW CUBE PORTABLE SCOREBOARD	
TITLE: CAPTION OPTIONS; BASEBALL & VOLLEYBALL	
DES. BY:	DRAWN BY: MBESSLER DATE: 18AUG97
REVISION	APPR. BY:
	SCALE: 1=20
1072-R08A-95707	

REV.	DATE	DESCRIPTION	BY	APPR.
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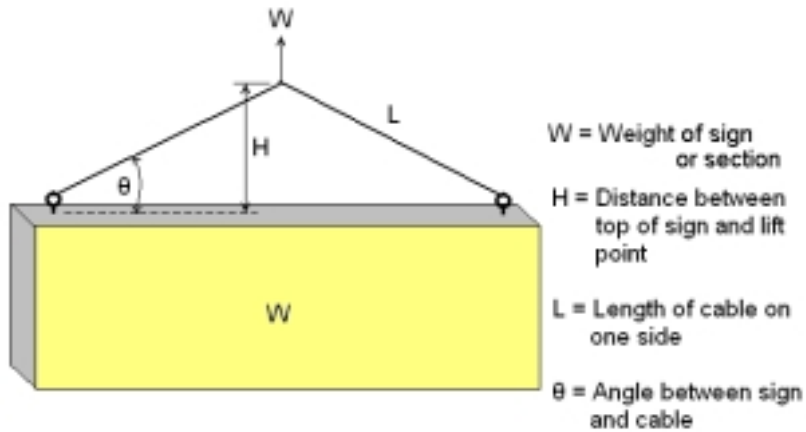
Appendix B: Eyebolts

Refer to the following document for the load limits on eyebolts, **ED-7244**.

Eyebolts

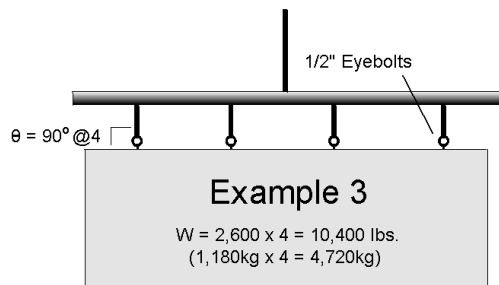
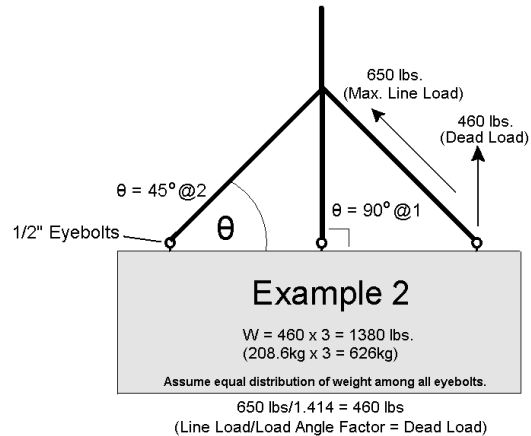
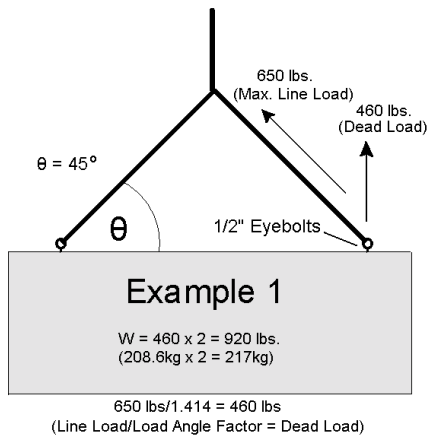
Almost every display that leaves Daktronics is equipped with eyebolts for lifting the display. There are two standard sizes of eyebolts: 1/2" and 5/8".

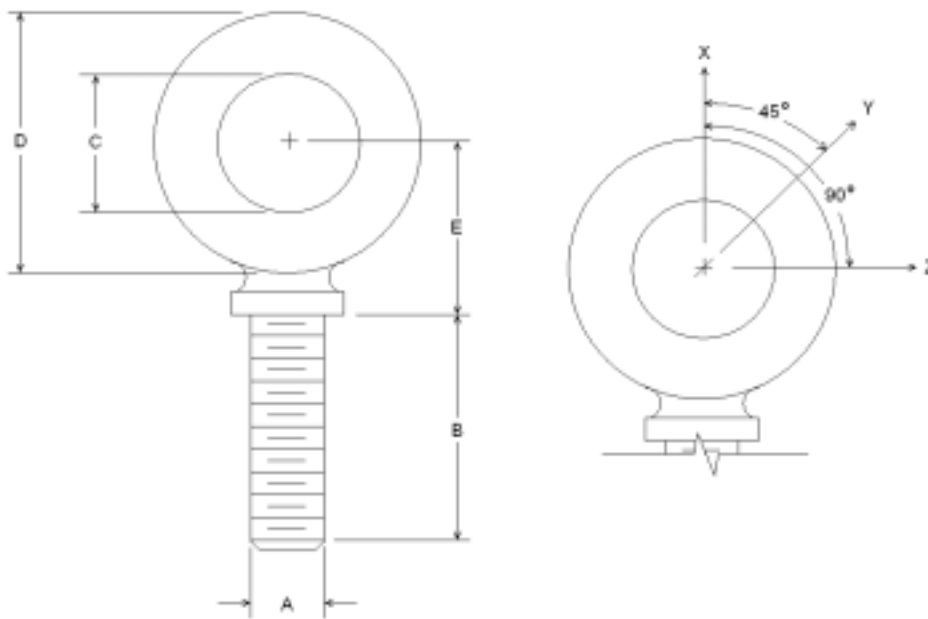
Load Increase Factor: The load increases as the lift angle (θ) decreases. The allowable load on the eyebolts also decreases with the lift angle due the bending stress on the eyebolts. In sum, the smaller the angle between the cable and the top of the display, the lighter the sign must be to safely lift it. *Do NOT attempt to lift the display when the lift angle is less than 30 degrees.*



Horizontal Angle	Load Angle Factor (L/H)
90	1.00
60	1.155
50	1.305
45	1.414
30	2.00

θ	1/2"		5/8"	
	Line Load	Weight/Anchor	Line Load	Weight/Anchor
90	2600	2600	4000	4000
60	1500	1299	3300	2858
45	650	460	1000	707
30	520	260	800	400





A	B	C	D	E	No.	Min. Proof Load (lbs.)	Min. Break Load (lbs.)	Stocked	Min. Eff. Thrd. Length	Line Loads		
										Wx	Wy	Wz
1/4	1	3/4	1-3/16	25/32	21	600	2,000	Blank 1/4-20	7/8	400	100	80
3/8	1-1/4	1	1-21/32	1-3/16	23	2,100	5,000	Blank 3/8-16	1-1/8	1,400	350	250
1/2	1-1/2	1-3/16	2-1/16	1-13/32	25	3,900	9,200	Blank 1/2-13	1-11/32	2,600	650	520
9/16	1-5/8	1-9/32	2-13/16	1-17/32	26	4,500	11,830	Blank 9/16-12	1-3/8	3,000	750	600
5/8	1-3/4	1-3/8	2-1/2	1-11/16	27	6,000	14,700	Blank 5/8-11	1-9/16	4,000	1,000	800
3/4	2	1-1/2	2-13/16	1-13/16	28	9,000	21,700	Blank 3/4-10	1-5/8	6,000	1,500	1,200
7/8	2-1/4	1-11/16	3-1/4	2-1/16	29	10,000	30,000	Blank 7/8-9	1-13/16	6,600	1,670	1,330
1	2-1/2	1-13/16	3-9/16	2-5/16	30	12,000	39,400	Blank 1-8	2-1/16	8,000	2,000	1,600
1-1/2	3-1/2	2-9/16	5-1/2	3-5/32	34	27,000	91,300	Blank 1-1/2-6	3	17,800	4,500	3,600

- A. Do not use eyebolts on angular lifts unless absolutely necessary. For angular lifts, the shoulder pattern eyebolt is preferred.
- B. Load should always be applied to eyebolts in the plane of the eye, not at some angle to this plane.
- C. Shoulder eyebolts must be properly seated (should bear firmly against the mating part), otherwise the working loads must be reduced to those indicated for regular eyebolts. A washer or spacer may be required to put the plane of the eye in the direction of the load when the shoulder is seated.
- D. No load greater than the safe working load listed in the data table should be used.
- E. To obtain the greatest strength from the eyebolt, it must fit reasonably tight in its mounting hole to prevent accidental unscrewing due to twist of cable.
- F. Eyebolts should never be painted or otherwise coated when used for lifting. Such coatings may cover potential flaws in the eyebolt.
- G. To attain the safe working loads listed for regular eyebolts, 90% of the thread length must be engaged.