

**TUFF SPORT® AND
COLORSMART®
4-SIDED INDOOR LED
SCOREBOARDS**
INSTALLATION MANUAL

P1749/1763

DD2481697

Rev 07

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Models			
BB-2102	BB-2126	BB-3106*	H-2105
BB-2104	BB-2154	BB-3108*	H-2107
BB-2106	BB-2156	BB-3124*	H-2109
BB-2108	BB-3102*	BB-3126*	H-2112
BB-2124	BB-3104*		

*ColorSmart model

FCC Statement

Supplier Declaration of Conformity (SDoC)

This product complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

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

Warning: The user is cautioned that changes and modifications made to the equipment without the approval of manufacturer could void the user's authority to operate this equipment.

Industry Canada Regulatory Information

This Class A digital apparatus complies with Canadian ICES-003.

Cet appareil numérique de la classe A est conforme à la norme NMB-003 du Canada.

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DAKTRONICS

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1 Introduction

This manual explains the installation of Daktronics Tuff Sport® and ColorSmart® Four-Sided Indoor LED Scoreboards. For additional information regarding safety, installation, operation, or service, refer to the telephone numbers listed in **Section 5: Daktronics Exchange and Repair & Return Programs (p.22)**. This manual is not specific to a particular installation.

Important Safeguards

- **Read and understand all instructions before beginning the installation process.**
- **Disconnect the display power when not in use or when servicing.**
- **Disconnect the display power before servicing power supplies to avoid electrical shock. Power supplies run on high voltage and may cause physical injury if touched while powered.**
- **Do not modify the structure or attach any panels or coverings to the display without the express written consent of Daktronics.**
- **Do not disassemble control equipment or electronic controls of the display; failure to follow this safeguard will make the warranty null and void.**
- **Do not drop the control equipment or allow it to get wet.**

Specifications Label

Power specifications as well as serial and model number information can be found on an ID label affixed to the top of the display, similar to the one shown in **Figure 1**.

Note: If something mounted above the display obscures this label, a copy of this label can be found behind the PRIMARY DRIVER access panel.

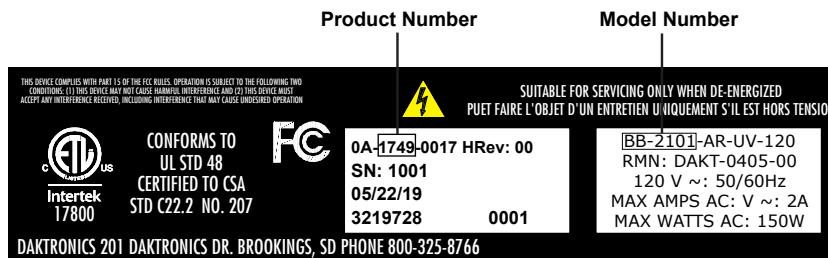
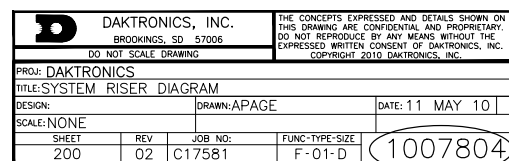


Figure 1: Specifications Label

Please have the assembly number, model number, and the date manufactured on hand when calling Daktronics customer service to ensure the request is serviced as quickly as possible. Knowing the facility name and/or job number will also be helpful. Note that the Product Number(s) are sometimes used to distinguish different generations of displays that have the same model number.

Resources

Figure 2 illustrates a Daktronics drawing label. This manual refers to drawings by listing the last set of digits. In the example, the drawing would be referred to as **DWG-1007804**. All references to drawing numbers, appendices, figures, or other manuals are presented in bold typeface.



Drawing Number

Figure 2: Drawing Label

Any drawings referenced in a section are listed at the beginning of it as shown below:

Reference Drawing:

System Riser Diagram **DWG-1007804**

Daktronics identifies manuals by the DD or ED number located on the cover page.

Listed below are drawing types commonly used by Daktronics, along with the information typically provided. All drawings referenced in this manual are found in the appendices.

- **Schematic Drawings:** describe internal power and signal wiring as well as interconnections between display sections; they may also include digit designations and driver addressing information
- **Shop Drawings:** describe mounting methods to structural elements, access method (front or rear), and power and signal entrance points
- **System Riser Diagrams:** describe power/signal connections between components and the control location; they may also include control room layout and schematic
- **Final Assembly Drawings:** describe internal display component locations and detailed product appearance with part numbers and quantities

Ensure all applicable materials have been gathered before beginning the installation. Contact a Daktronics sales coordinator or project manager.

Troubleshooting

For an extensive troubleshooting guide, instructions on how to replace display components, and detailed schematic drawings, refer to the following manuals, available online at www.daktronics.com/manuals:

- **Tuff Sport Indoor LED Scoreboards Service Manual (DD2481648)**
- **ColorSmart Indoor LED Scoreboards Service Manual (DD2507404)**

Display Controllers

Daktronics Tuff Sport scoreboards are designed for use with the All Sport® 5000 series control consoles, and certain models may also be operated with the hand-held RC-200 wireless controller. The consoles use keyboard overlays (sport inserts) to control numerous sports and scoreboard models. Refer to the manuals below for operating instructions. They are provided on a CD with the control console, and they are also available online at www.daktronics.com/manuals.

- **All Sport 5000 Series Control Console Operation Manual (ED-11976)**
- **Remote Control System RC-200 All Sport Operation Manual (DD3572889)**

The DAK Score app and All Sport MX-1 interface box provide a way to control Daktronics scoreboards using a compatible tablet or mobile device. Visit www.daktronics.com/allsportMXsupport to download the app, view the quick guide below, and access other setup, operation, and troubleshooting information.

- **All Sport MX-1 Quick Guide (DD3667023)**

Daktronics ColorSmart scoreboards are only compatible with the All Sport 5500 series control console. Refer to the manual below:

- **All Sport 5500 Series Control Console Operation Manual (ED-16809)**

Sport Codes

The following table lists common All Sport and RC-200 sport codes. Note that many scoreboards are capable of scoring multiple sports. Refer to the appropriate controller operation manual for a complete listing of sport codes.

Sport	All Sport 5000/5500 Codes	RC-200 Codes
Basketball	1101 (PLAYER-FOUL) 1105 (PLYR/FL/PTS)	10
Hockey	4401 (without SOG) 4402 (with SOG)	01
Volleyball	2101 (MATCH/GAME) 2105 (PLYR/FL/PTS)	01
Wrestling	3101	01

Product Safety Approval

Daktronics indoor scoreboards are ETL-listed, tested to CSA standards, and CE-labeled for indoor use. Contact Daktronics with any questions regarding testing procedures.

Note: The four-sided scoreboards detailed in this manual are designed to be suspended above players/spectators, and that creates serious liability considerations. It is imperative that the roof support system be able to bear the weight of the display and all attachments. Consequently, a licensed engineer must certify the roof support system. Suspension cables and hoist or attachment structures must also be designed and certified by a licensed engineer.

Daktronics is not responsible for structures and suspension systems designed or installed by others.

2 Mechanical Installation

Mechanical installation consists of lifting and permanently mounting the display(s). The product specification sheets listed in **Appendix A** include installation specification drawings that show measurements, cable attachment points, and mounting weights for each scoreboard model. Be sure that the installation complies with local building codes.

Note: Daktronics assumes no liability for installations derived from the information provided in this manual or installations designed and installed by others.

Below is a general overview of the entire installation process. Each step is detailed in the sections that follow, and the instructions are presented in the general order in which events should occur.

1. **Plan and install the hoist or static-suspension structure.**
2. **Provide power circuit(s) and outlet(s) at the scoreboard location.**
3. **Provide a power outlet at the control location.**
4. **Route signal cable from the control location to the scoreboard location, and install the junction box (if the system is not controlled by radio).**
5. **Assemble the scoreboard frame.**
6. **Mount the scoreboard sections to the frame and join them at the top.**
7. **Attach the corner shrouds.**
8. **Route and connect all power cords and signal cables around the top of the scoreboard.**
9. **Mount the upper ad panels or message centers, if required.**
10. **Mount ad panels atop the message center, if required.**
11. **Attach the lower ad panel supports to the frame, if required, and mount the lower ad panels.**
12. **Make power and signal connections between message center sections and/or power connections for backlit ad panels, if required.**
13. **Lift the scoreboard assembly and static-mount, or lower the hoist and attach it to the scoreboard assembly.**
14. **Make the final power and signal hookup to each tier of the display (scoreboard tier, backlit ad panel tier, message center tier).**

Lifting

Most displays and display sections ship equipped with at least one 1/2" shoulder-type eyebolt located along the top of the cabinet for the purpose of lifting.

Note: Daktronics assumes no liability for damages resulting from incorrect setup or lifting methods. Eyebolts are intended for lifting only. Do not attempt to permanently support the display by the eyebolts.

Four-Sided Scoreboard Suspension Options

The method by which the scoreboard is to be suspended must be determined at the time of purchase. There are two primary methods of installing a center-hung scoreboard: creating a static-hung system or using a hoist. Each method has its own benefits and drawbacks. Refer to the suspension publication **DD1627665** in **Appendix C**, and call Daktronics for help in making the best choice for your installation.

Note: Do not attach items to the scoreboard without prior approval.

To properly review and approve a proposed attachment, Daktronics requires information on the size, weight, and method by which the item will be attached to the scoreboard. (Engineering time to review attachments will be charged at a “time and expenses” rate.)

Static Mounting

Static-mounted displays are typically hung with two or four static cables. Two cables may be used when mounting the scoreboard below a large beam or when the display is centered between a pair of beams. Four cables are used to further distribute weight. For either method, the mounting cables must be symmetrically distributed to maintain a level and a square configuration.

Cable assemblies must have a strength greater than six times the actual load. All other rigging components must be sized within the working load limits published by the component manufacturer.

Use hardware components only from reputable domestic suppliers to permanently suspend the scoreboard.

Immediately remove – and do not use – any assemblies that show evidence of excessive wear or broken wires as defined by the component manufacturer.

Follow these procedures for installation:

1. Ensure a structural engineer has certified that the building can safely support the additional display loading and that the connection points are designed to safely carry the scoreboard weight.
2. Attach the cable sling to the scoreboard assembly while it is on the arena floor.
3. Hang ends that attach to the ceiling over the sides of the scoreboards. If an end is too short, attach a rope to the end temporarily so it can be returned from the top.
4. The scoreboard can then be lifted into place in a number of different ways.

Note: It is the installer's responsibility to ensure that the installation is safe and that the display meets OSHA or local regulations.

Lifting Method Example: A common method of *temporarily* lifting the scoreboard is to use a pair of chain-lift motors mounted on the ceiling. Prior to attaching the motors, obtain approval from the facility management regarding location and acceptable loads for each rigging point.

1. Attach the chain hoist hooks to the sling master link, or sling to the corner lift tubes. Be sure the angle of the sling is greater than 45°.
2. Use the chain hoist to lift the scoreboard to the appropriate height.
3. From the lift, retrieve the sling cables draped over the sides of the scoreboard and attach them to the appropriate locations in the ceiling.
4. Connect to power outlets (and signal junction boxes, if required) in the ceiling.
5. Level the scoreboard by adjusting the turnbuckle on the sling.
6. Lower the scoreboard weight onto the slings.
7. Remove the chain-lift motors.

Electric Hoist System

Installing an electric hoist system is more complex and may expose the customer to greater liability. Publication **SL-03610** in **Appendix C** discusses recommended minimum hoist specifications and factors that must be considered when selecting a hoist system.

- A building engineer must review and approve the combined weight of the scoreboard, hoist, and a minimum impact factor of 15 percent.
- The hoist must be accessible for periodic inspections and maintenance as required by ANSI and OSHA.

Note: Records of periodic inspections must be on file to be accessible for OSHA. Refer to **Suspension System Periodic Inspections (p.11)**.

- Electrical service and control wiring must be run to the hoist location.
- Additional structures in the ceiling are often required to accommodate the hoist.
- If an existing hoist is to be used, or if a hoist is to be purchased directly by the customer, the customer assumes all responsibility and liability for the hoist system.
- The hoist must be inspected and certified in writing by the hoist manufacturer, manufacturer's representative, or other qualified hoist inspector.
- Daktronics will inspect hoists installed by Daktronics.
- Daktronics will certify the scoreboard weight but will require a liability waiver signed by the customer before the scoreboard is shipped.
- Once the hoist is installed according to the specifications of the hoist manufacturer and the building engineer, refer to **Attaching Suspension Cables (p.11)** for more information about attaching the scoreboard to the hoist.

WARNING!

- Never ride in or work on or below the scoreboard while the hoist is powered up. Daktronics recommends having an audible horn warning to indicate that the hoist system is ON.
- Never operate the hoist system during public events or when people are below the scoreboard.
- When running the hoist, the operator must have an unobstructed view from ceiling to floor (to ensure free scoreboard travel). Hoist operators should be trained according to the hoist manufacturer’s specifications.

Assembly Overview

The assembly kit includes the following:

- Floor frame – 2 halves, 2 side splice plates, 4 top & bottom splice plates, and 4 kickers with brace angles
- Corner shrouds @ 4
- Shroud brackets @ 8
- Top corner brackets @ 4
- Assorted bolts, nuts, washers, and screws

In addition to the scoreboard pieces, an installation may also include:

- Upper and lower ad panels
- A message center at the top or bottom of the scoreboard

Each scoreboard face section is one piece and must be attached to the structural frame. The frame is shipped in two parts and requires assembly. Corner shrouds, which provide cosmetic covering only, are typically attached to the display last.

Ad panels may simply be painted metal cabinets that do not need power, or they may be backlit, requiring a power circuit. An LED message center requires power as well as signal wiring. The scoreboard itself requires power and signal wiring. The scoreboard tilts outward at approximately 10°, while the ad panels or message centers are vertical. Refer to **Section A-A** shown on the mechanical specification drawings attached to the product specification sheets listed in **Appendix A**.

Frame Assembly

Reference Drawings:

Optional 4-Side Canvas Assembly	DWG-173611
Field Assembly; 8' x 8' Bolted Frame	DWG-1101988
Field Assembly; 10' x 10' Bolted Frame	DWG-1102115
Canvas Floor Attachment Detail.....	DWG-4880921

The scoreboard frame is shipped in two sections (refer to **DWG-1101988** and **DWG-1102115** in **Appendix B**). Note that each section has two corners with a brace across the corner and two corners without a brace. The lift tubes in the braced corners will be on the top side. An optional sheet metal floor may be attached to the top side of the frame sections during manufacturing.

Note: If there is an optional metal floor, remove the screws securing the floor pieces and fold them out of the way.

1. Lay out the two sections with the unbraced sides facing each other and the corner lift tubes facing up.
2. Connect the sections together in the middle using 1/2" hardware.
3. Attach all six section splice plates using 1/2" hardware. Two splice plates will go on the sides, while two smaller splice plates will go on both the top and bottom.

Note: It will be necessary to lift up the frame (or carefully flip it over) to attach the bottom splice plates.

4. Attach all four kickers to the mounting brackets on the frame and a brace angle to each kicker using 1/2" hardware.

Note: If an optional canvas was ordered, attach it to the bottom of the frame using the provided hook and loop fastener strips and self-drilling screws. Refer to **DWG-173611**. Newer displays may instead use zip ties as shown in **DWG-4880921**.

Mounting Display Sections to the Frame

Reference Drawings:

Top 4-Side, Mounting **DWG-1102472**

Each side of the frame has two mounting angles to which the bottom of each display section will be attached. Two sides of the frame have support kickers which attach to the side rear cabinet flanges of two opposing displays. Adjacent displays are then joined at their top corners with brackets. Refer to **DWG-1102472**.

Note: If there is an optional metal floor, ensure the floor pieces are still folded out of the way. This will be the easiest way to avoid stepping on the floor while attaching displays to the frame.

1. Lift one scoreboard/display section into place on the frame, ensuring the mounting angles go inside the bottom rear channel.
2. Align the holes along the bottom rear flange of the scoreboard/display with the 1/4" threaded inserts on the mounting angles, and install the 1/4" bolts.

Note: Start with the two heaviest displays; these will attach to the kickers.

3. Ask for assistance as needed to support the scoreboard/display section and prevent it from tipping as the kickers are attached to both side rear cabinet flanges using brace angles, 1/2" hardware, and reinforcement plates. Once attached to the kickers, the scoreboard/display section will not require additional support during assembly.
4. Lift the second scoreboard/display section into place opposite the first, and secure it to the frame and kickers as described above.
5. Attach the third scoreboard/display section to the frame with 1/4" hardware in between the other two sections attached to kickers. Join this section to the other two sections at their common top corners using top brackets, 3/8" hardware, and reinforcement plates. Use two reinforcement plates on the inside of the top bracket and another two inside the rear cabinet flange.
6. Attach the fourth scoreboard/display section to the frame and to the other sections at the top corners as described above.

Note: Be sure to lay optional floor pieces back down flat on the frame. It is not necessary to reinstall the screws.

Upper Display Attachment (Optional)

Reference Drawings:

Top 4-Side Ad Panel Mounting **DWG-107665**

Note: Ensure all scoreboard power/signal cables are connected before mounting an upper display, or it will be difficult to make these connections once upper displays have been added. Refer to **Power/Signal Connections Between Sections (p.14)**.

DWG-107665 in **Appendix B** illustrates the parts used in this procedure. The ad panels or the message centers are attached to the top of the scoreboard with mounting strips, and then joined at the top with brackets.

1. Position a mounting strip *inside* the top channel of the scoreboard/display section, aligned with the holes in the rear flange.
2. Use the 1/4" bolts and tapered washers to attach the mounting strips to the scoreboards/displays. The tapered washers allow the upper display to be supported in a vertical position while the primary display remains tilted out 10°.
3. Lift one ad panel/message center into place atop the primary display section, and align the holes along the bottom of the rear flange with the threaded inserts in the mounting strips.
4. Insert and tighten 1/4" bolts along the rear flange of the upper display cabinet.
5. Ask for assistance as needed to support the upper display and prevent it from tipping as the second upper display is lifted into place adjacent to the first and secured to the mounting strips of the display section below it.
6. Join the two upper displays at their common top corner using a top bracket, 3/8" hardware, and reinforcement plates. Use two reinforcement plates on the inside of the top bracket and another two inside the rear cabinet flange. Once the two sections are joined at the top, they will not require additional support during assembly.
7. Attach the third upper display to the mounting strips of the display below it and to the second upper display at the top corners.
8. Attach the fourth upper display to the mounting strips of the display below it and to the third and first upper displays at the top corners.

Note: Upper displays also have corner shrouds that attach in a similar fashion to those of the primary display. Refer to **Attaching Corner Shrouds (p.10)**.

Ad Panels on Message Centers (Optional)

Repeat the mounting procedures detailed in **Upper Display Attachment (Optional) (p.9)**, with one major difference: the ad panels and message centers are both vertical and do not require the alignment angle change provided by the tapered washers, and therefore tapered washers will not be used.

Lower Ad Panel Attachment (Optional)

Reference Drawings:

Optional 4-Side Score w/ Ad Panel Canvas Assy.....	DWG-261335
Btm 4-Side, Mounting Detail	DWG-1102427
Canvas Floor Attachment Detail.....	DWG-4880921

This step is required only if ad panels or auxiliary scoreboard displays are to be attached underneath the main display frame. Refer to **DWG-1102427** in **Appendix B**.

Support brackets are attached to the bottom of the frame, and the ad panel sections are to be attached to these brackets. The support brackets are designed to be able to support the weight of the whole scoreboard while sitting on the arena floor.

Note: The bottom ends of the supports should extend about 1/16" beyond the bottom of the lower ad panels so that the scoreboard's weight is not resting on the ad panels.

1. Raise the assembled frame via the sling set master links and support it on sturdy blocks or stands if desired.
2. Use four sets of 3/8" hardware (16 sets total) and four reinforcement plates per corner to secure a support bracket in each of the four bottom corners of the frame. Note that the reinforcement plates go inside the upper flange of the support bracket.
3. Use four sets of 3/8" hardware per ad panel (two in the middle and two in the bottom) to attach the side rear flanges of the ad panels to the support brackets.
4. If an optional canvas was ordered, attach it to the bottom of the ad panels as described in **DWG-261335** or **DWG-4880921**.

Note: Lower ad panels also have corner shrouds that attach in a similar fashion to those of the primary display. Refer to **Attaching Corner Shrouds (p.10)**.

Attaching Corner Shrouds

Reference Drawings:

Top 4-Side, Mounting	DWG-1102472
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Corner shrouds are metal panels that cover the outside corners of a four-sided display and hide the wiring between sections. Separate shrouds are provided for each display tier. Refer to **DWG-1102472** in **Appendix B** for corner shroud installation details.

1. Attach shroud brackets inside the side channel of each scoreboard/display section with #10 self-tapping screws.
2. Position a corner shroud across the corner, and then secure it to the shroud brackets with #10 self-tapping screws. The corner shrouds should be at a 45° angle from the side of each scoreboard.

Attaching Suspension Cables

Reference Drawings:

- Sling Set; Standard 10' Square 4-Side Scoreboards..... **DWG-1130800**
- Sling Set; Standard 8' Square 4-Side Scoreboards..... **DWG-1130854**

The roof of the facility and any structures fabricated for suspending the scoreboard, as well as the suspension cable slings, must be designed by (or inspected and approved by) a qualified engineer. **DWG-1130800** and **DWG-1130854** in **Appendix B** show recommended component specifications of cable slings.

1. Locate the wire rope sling set assembly.
2. Attach each of the four 7/16" shackles to the corner tubes of the frame. When the two master links are lifted, the sling set should resemble the shape of a camping tent, with the master links parallel to the holes used on the corner tubes.

Static Mounting

If the scoreboard is to be suspended from fixed cables without a hoist:

1. Using temporary lift chains, raise the frame 1-2' (305-610 mm) from the floor, and ensure it is level by adjusting the turnbuckles built into the slings.
2. Lift the scoreboard up to the correct suspension height.
3. Attach the cables to the previously prepared mounting points.
4. Remove the temporary lifting apparatus.

Electric Hoist System

If the scoreboard is to be suspended from an electric hoist:

1. Lower the hoist cables and attach them to the master links.
2. Raise the scoreboard 1-2' (305-610 mm) from the floor, and level the scoreboard as needed by adjusting the turnbuckles built into the slings.
3. Raise the scoreboard up to the correct suspension height.

Note: The hoist installer must set upper and lower primary limits and all safety limits. If possible, maintain a minimum of 2' (610 mm) between the scoreboard and the nearest obstruction.

WARNING! Never raise or lower the scoreboard with personnel or equipment underneath!

Suspension System Periodic Inspections

Suspension systems need to be inspected periodically. Listed below are instructions and information about such inspections.

Static System

A static-hung system should be inspected one year after initial installation and once every five years thereafter.

- Inspect cable assemblies for broken wires, crushes, or kinks.
- Inspect components, per manufacturer's recommendations, for deformations.
- Inspect the four-sided scoreboard for any loose or missing bolts.
- Inspect the attachment bracket for loose bolts or cracks in members or welds.
- Check torque on all wire rope clips.

Hoist System

Hoist systems must be inspected annually per OSHA requirements. Some local governing bodies require more frequent inspections. See the hoist manufacturer's manual for inspection procedures.

- Inspect cable assemblies for broken wires, crushes, or kinks.
- Inspect connections for loose bolts or cracks in members or welds.

Be sure to document all inspections. Any irregularities must be addressed immediately. For installation problems, contact the original installer; for hoist problems, contact the hoist manufacturer.

3 Electrical Installation

CAUTION: Only qualified individuals should perform routing and termination to the display. Electrical contractors are responsible for ensuring that all electrical work meets or exceeds local and national codes. Daktronics engineering staff must approve all changes or the warranty will be void.

Installation Overview

Electrical installation for four-sided scoreboards involves routing power and control signal wiring through separate conduit or wireways to the scoreboard location, as well as routing power and signal wiring from section to section.

Figure 3 illustrates a wired setup between the first scoreboard section and controller. Daktronics part numbers are shown in parentheses.

Control signal cable and some junction boxes are not provided as part of this system and can be purchased locally or from Daktronics.

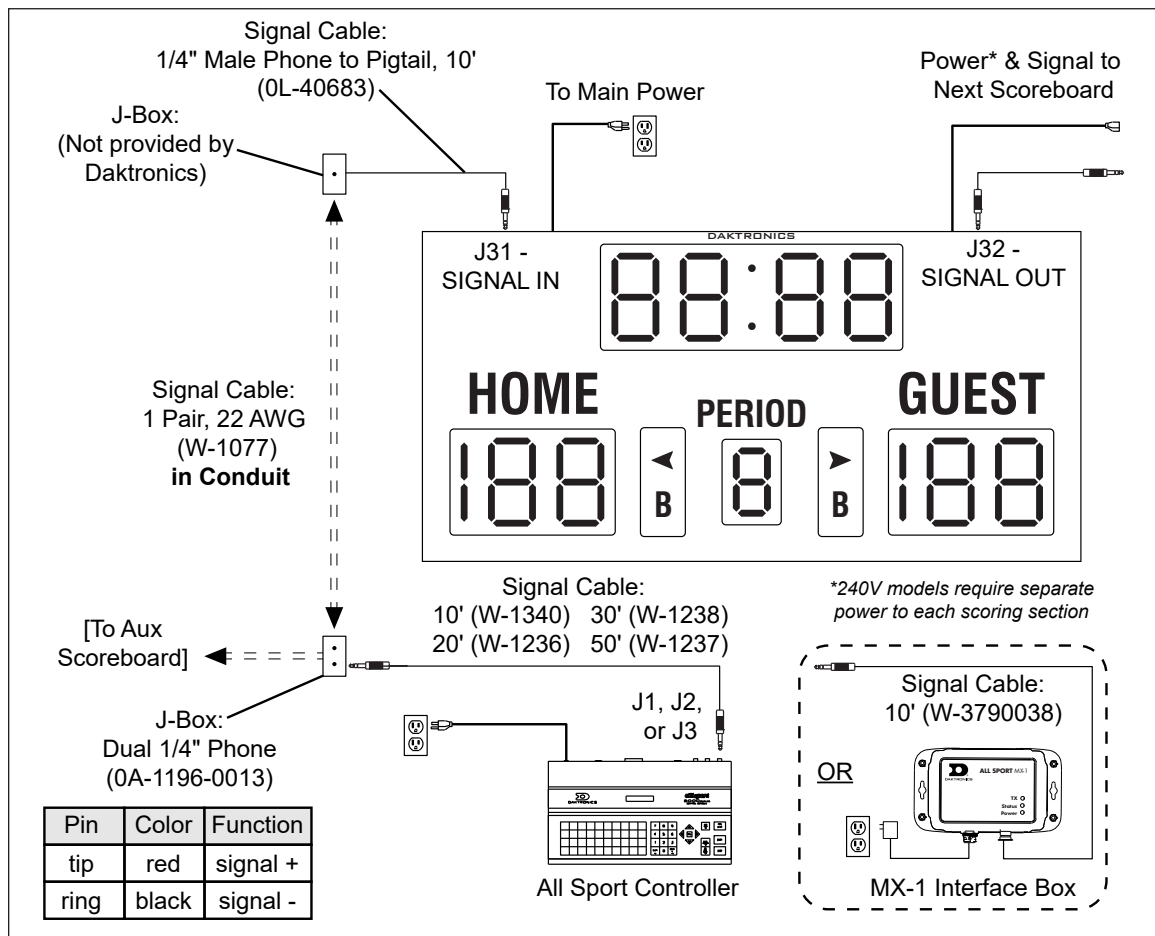


Figure 3: Wired Installation

Note: The BB-2154 and BB-2156 do not have power out cords and must receive separate power inputs for each scoreboard face.

Figure 4 illustrates a wireless setup between the first scoreboard section and controller. Refer to **Wireless Signal Connection (p.18)** for more information about the wireless radio option.

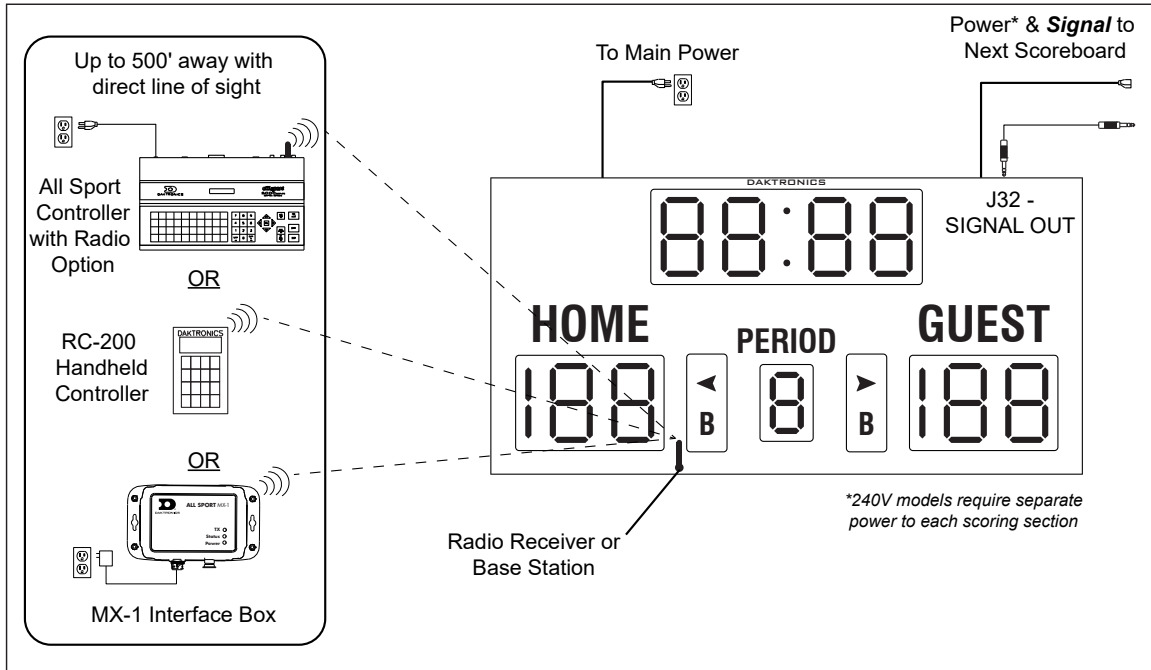


Figure 4: Wireless Installation

Power/Signal Connections Between Sections

Reference Drawings:

Ad Panel/Message Center Hookup Overview, 4-Side **DWG-154599**
 Connection Diagram; 4-Sided SS20i Series Displays **DWG-822860**

Note: Be sure to make sectional power connections before connecting main power! It is also recommended that these connections are made before the corner shrouds or optional top ad panels/message centers are mounted into place.

- Power and signal connectors are located on top of the scoreboard cabinet. Input cables should be routed to the left, and output cables should be routed to the right (as viewed from the front). The scoreboard section that will receive main power/signal is designated “Face A”; all other sections are named in relation to it.

Power and signal flows counterclockwise around the display from face output to face input. **Figure 5** shows the power and signal flow between sections. Main power and signal are terminated last; refer to **Power (p.16)** and **Wired Signal Connection (p.17)**, respectively.

Note: 240V models as well as the BB-2154 and BB-2156 require main power to each scoreboard face; there are no cords to connect power between sections.

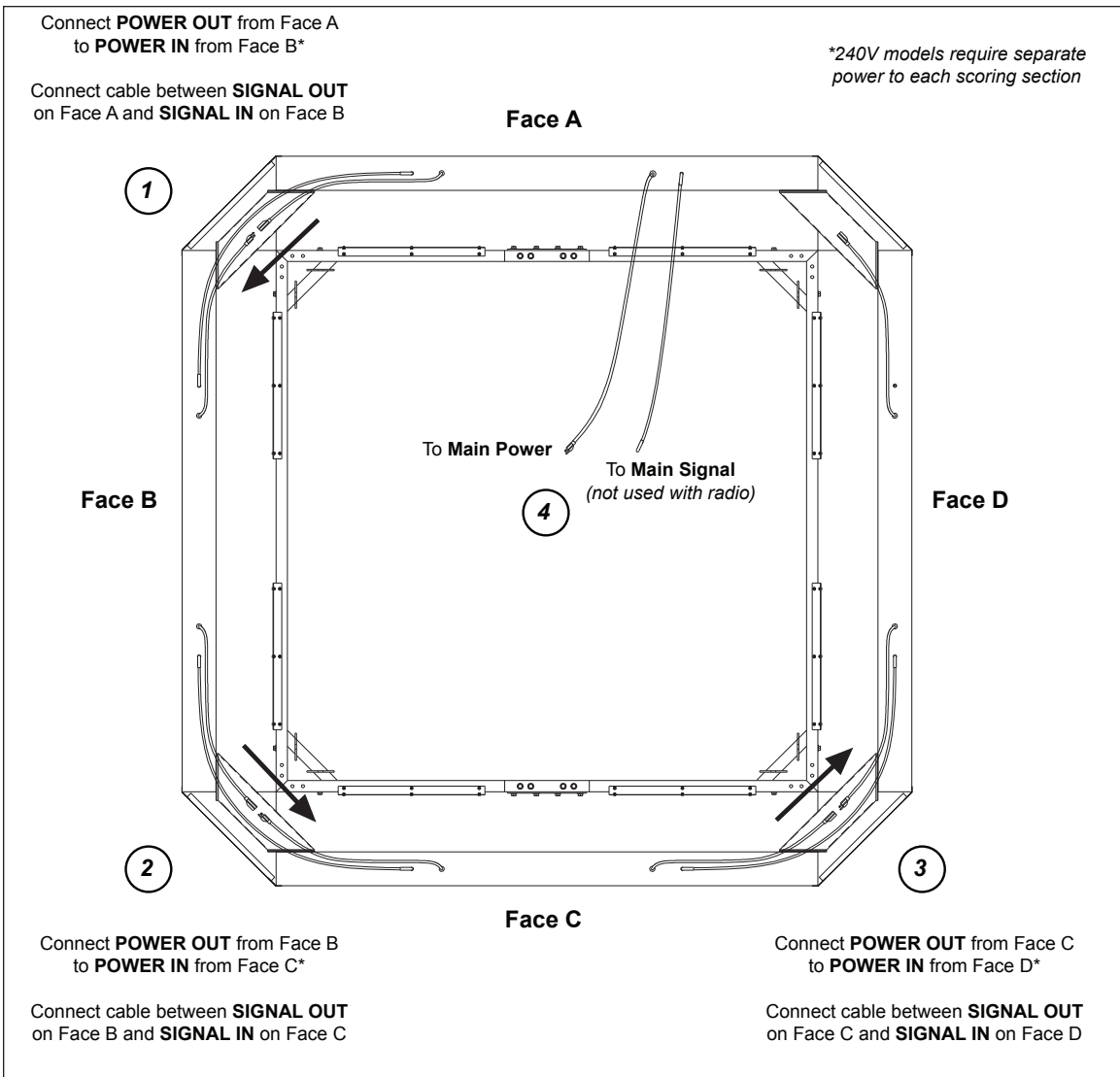


Figure 5: Scoreboard Power & Signal Connection, Top View

- Backlit ad panel and message center connectors are located on the sides of the cabinets. Inputs are on the left, and outputs are on the right (as viewed from the front). Each message center requires its own power input, while backlit ad panels may be daisy-chained together for power. Message center signal connections use 6-pin RJ45 quick connect cables; main signal may be wired or wireless.

Refer to **DWG-154599** in **Appendix B** for connection details of power and signal from one backlit ad panel or message display section to the next. Refer to **DWG-822860** for additional message center connection details.

Note: Standard power cords and signal cables are about 10' (3 m) long. If a hoist is used for this installation, all main power/signal cables must be long enough to allow the display to be lowered. An optional sheet metal floor may contain the cables when the scoreboard is raised. If the scoreboard is static-mounted, the cables only need to be long enough to provide service. Neatly tie excess lengths of cable out of the way.

Power

Only qualified individuals should complete the electrical installation; untrained personnel should not attempt to install these displays or any of the electrical components. Improper installation can seriously damage the equipment and be hazardous to personnel.

Note: Be sure to make sectional power connections before connecting main power!

Each 120 VAC scoreboard section includes two power cords: one for Power In and one for Power Out. Each 240 VAC scoreboard section includes one universal power cord for Power In.

- Install a grounded receptacle near the scoreboard/backlit ad panel location. Try to mount the receptacle so that the power cords are easily accessible to plug in and hidden from view, such as centered above the display.
- Determine which scoreboard/backlit ad panel section is closest to the grounded receptacle, and plug in its power cord (240 VAC scoreboard sections and message centers require their own power receptacle).

The control console requires a 120/240 VAC receptacle and uses less than 1 A of power.

Grounding

All components of a display system – including but not limited to displays, control equipment, and connected peripheral equipment – must be electrically grounded. Only qualified individuals may perform electrical work, including verification of ground resistance. Daktronics is not responsible for improper grounding or damage incurred as a result of improper grounding.

Grounding methods must meet the provisions of all applicable local and national codes. Inspect and verify all grounding methods meet the provisions of all applicable local and national codes.

Proper grounding is necessary for reliable equipment operation and general electrical safety. Failure to properly ground the display system may void the warranty, disrupt operation, damage equipment, and cause bodily harm or death.

Lightning Protection

The use of a disconnect near the display to completely cut all current-carrying lines significantly protects the circuits against lightning damage. Local and national electrical codes also may require it. In order for this system to provide protection, the power must be disconnected when the display is not in use.

The control console should also be disconnected from power and from the signal junction box when the system is not in use. The same surges that may damage the display components can also damage the console's circuitry.

Power-On Self-Test (POST)

The display performs a self-test each time that power is turned on and the control console is powered off or not connected. If the control console is connected and powered on, the self-test does not run, and data from the control console appears on the display after a few seconds. Each self-test pattern will vary depending on the model, the number of drivers, and types of digits. **Figure 6** shows an example of the LED bar test pattern that each digit performs.

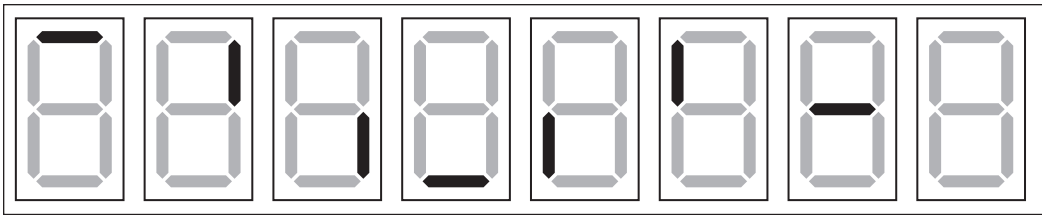


Figure 6: Digit Segment POST

Wired Signal Connection

Reference Drawings:

Signal Connection; Installation	DWG-28124
Schematic; Dual 1/4" Phone J-box w/ Shunt Jack	DWG-125316

Wired signal installation requires routing control cable from the control console to a signal junction box (J-box) near the display. Refer to **Figure 3** for typical signal layout. Refer also to **DWG-28124** and **DWG-125316** in **Appendix B** for signal wire connection. At a minimum, use a paired, 22 AWG shielded cable (Daktronics part # W-1077).

1. Connect the cable to a dual 1/4" J-box at the control console end.

Note: Using a dual J-box for separate Main and Auxiliary scoreboards lets operators control several displays with one controller, and they can also switch jacks to control individual displays using multiple controllers.

2. Install a J-box near the display location. Try to mount it so that the signal cable is easily accessible to plug in and hidden from view, such as centered above the display.
3. Route signal cable from the J-box on the control console end to the J-box at the display end.
4. Install the 1/4" phone plug (part # 0L-40683) to the display end of the cable. Be sure to connect the cable shielding only in the J-box on this end. DO NOT connect cable shielding at the J-box near the control console.
5. Insert the plug into the **J31 – SIGNAL IN** jack located on the top of the scoreboard face closest to the J-box.
6. Ensure each scoreboard face has a signal cable connected to it. Refer to **Figure 5**.
7. Connect a signal cable from the J-box on the control console end to the **J1, J2, or J3** jack on the back of the All Sport 5000/5500 console.

Note: For DAK Score control, connect the 10' (3.05 m) cable (part # W-3790038) between the MX-1 Interface Box and this J-box.

8. If using a Main Clock Start/Stop Switch (part # 0A-1166-0003), connect it to the **J4** jack on the All Sport 5000/5500 console.

Wireless Signal Connection

All Sport Radio Control

A wireless radio system requires a radio receiver plugged into the 6-pin **J21** jack on the primary driver and mounted internally to the front panel of the display. For more information, refer to the **Gen VI Radio Installation Manual (DD2362277)**, provided with the receiver unit and available online at www.daktronics.com/manuals.

Only one scoreboard face will have a radio receiver installed. All other scoreboard faces must have a wired signal connection between them. Refer to **Figure 5**.

RC-200 Control

A hand-held RC-200 wireless radio control system requires a base station receiver plugged into the 6-pin **J21** jack on the primary driver and mounted internally to the front panel of the display. For more information, refer to the appropriate manual listed in **Display Controllers (p.2)**.

Only one scoreboard face will have a base station receiver installed. All other scoreboard faces must have a wired signal connection between them. Refer to **Figure 5**.

If an All Sport radio receiver and an RC-200 base station are both installed in the same display, the wireless device that takes precedence is the one that the receiver finds active first; it will control the display until the signal is no longer present.

Radio Settings

With an All Sport radio receiver or RC-200 base station installed, watch for the radio Broadcast settings ("b1") and Channel settings ("C1") in the clock digits during the **Power-On Self-Test (POST)** (p.16). Refer to **Figure 7**.

These values must match the settings in the control console/scoring app. Refer to the controller screens below and the manual listed in **Display Controllers (p.2)**.

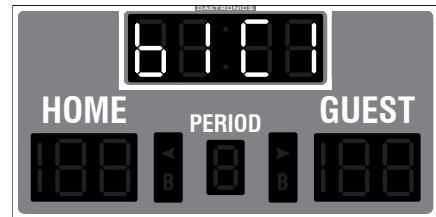
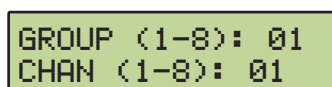


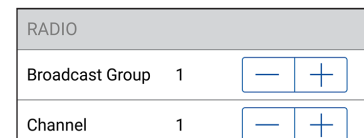
Figure 7: Radio Settings in Clock Digits



All Sport Radio Settings



RC-200 Radio Settings



DAK Score App Settings

If the radio receiver channel and broadcast settings match those set in the console/scoring app but the console does not control the display, there may be radio interference. This can occur when a nearby display also uses radio control. In this case, change the settings of the wireless radio receiver inside the display as described in the appropriate controller or radio installation manual.

4 Scoreboard Options

Time of Day Mode

Time of Day (TOD) mode allows the scoreboard to function as a clock when no All Sport signal is present. The instructions below DO NOT apply to ColorSmart models.

Note: TOD mode is available on scoreboards with driver firmware version 1.0 or higher.

To enable Time of Day mode:

1. **Unplug the power cord from the scoreboard.**
2. On one scoreboard face, access the scoreboard driver to which the clock digits are connected. Refer to the component location drawings attached to the product specification sheets listed in **Appendix A**.

3. At the bottom of the driver are two address switches labeled “H” and “L.”

Record the position of both switches here as they will need to be returned to their exact positions later:

H	
L	

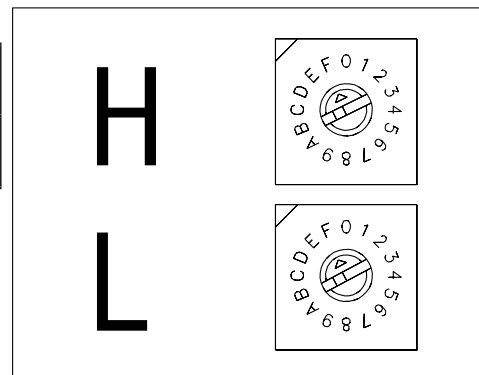


Figure 8: Address Switch Settings – Diagnostic Mode

4. Use a small flathead screwdriver to move both H and L address switches to the “F” position (**Figure 8**). This will set the scoreboard driver to Diagnostics Mode.
5. Reapply power to the scoreboard. If the driver has successfully entered Diagnostics Mode, the “RUN” LED (DS2) will be blinking at a fast rate, about four times per second.
6. Rotate the L address switch to the “0” position (**Figure 9**). The “232” LED (DS1) will blink to show a change has been made:
 - Three blinks = Time of Day Enabled
 - Two blinks = Time of Day Disabled
7. To exit Diagnostics Mode, rotate the High address switch (H) to any value other than “F.”

THIS STEP MUST BE PERFORMED TO SAVE THE TIME OF DAY SETTING!

8. Set both address switches back to their original positions as recorded in **Step 3**. Note that the “RUN” LED (DS2) will now be blinking slower, about once per second, and the scoreboard will finish the power-up sequence to operate as normal.

9. Repeat steps 2-8 for the remaining scoreboard faces.

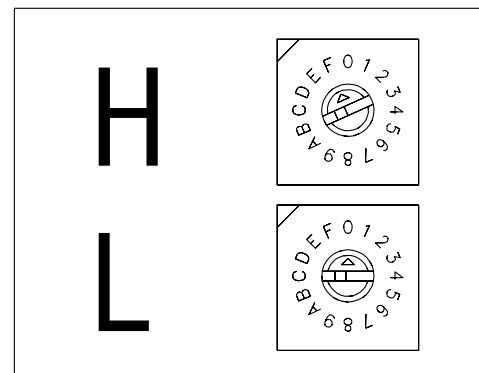


Figure 9: Address Switch Settings – Time Of Day Mode Enable

To adjust the Time of Day settings, refer to the All Sport control console operation manual.

Team Name Message Centers and Electronic Captions

Team Name Message Centers (TNMCs) are programmable LED displays that allow scoreboards to show custom Home and Guest names. Electronic captions, on the other hand, are pre-programmed to only show specific labels to match the captions for a particular sport mode, making it much simpler to switch between sports. TNMCs and electronic captions are typically factory-installed, but they can also be added later, after the scoreboard has been mounted. For more information about TNMCs or electronic captions, contact a Daktronics representative or refer to the service manual listed in **Troubleshooting (p.2)**.

Horns

Reference Drawings:

12V DC Horn Option Installation **DWG-148960**

Daktronics indoor scoreboards are equipped with a 120 VAC vibrating horn mounted behind the cabinet face. The horn sounds automatically when the period clock counts down to zero, or when manually triggered by the operator using the control console.

Installation of an optional 12 VDC horn is detailed in **DWG-148960** in **Appendix B**. Louder trumpet horns are also available. Contact Daktronics for information and pricing.

Adjusting Horn Volume

CAUTION: The horn is a 120 VAC device. Turn off power before adjusting the horn.

The volume for the electronic, buzzer-type horn is set at its maximum level at the factory. If the horn is too loud, reduce its volume by adjusting the setscrew mounted in the front of the horn. A plastic tip on the screw touches the horn's diaphragm, reducing the volume. Turn the screw clockwise and test the volume by operating the horn from the scoreboard control console. Continue adjusting and testing until the desired volume level is obtained.

Note that with spectator noise, the horn will not seem as loud as when it is being tested in an empty area. Be sure to set the volume according to the acoustics of the facility.

Visual Horn Indicator (VHI)

In addition to the horn, Daktronics offers a visual horn indicator (VHI) that lights up when the buzzer sounds. To install a VHI, the existing horn wiring must be tapped into in order to provide power and signal. For more information about installing the VHI option, including details on the inputs, outputs, and switches of a shot clock relay board that controls when the VHI should be turned on, refer to the **VHI (ED-13397)** or **BB-2133 (ED-13806)** **Installation Instructions**.

Double Bonus Indicators

All of the clock/score basketball scoreboards in this manual have the option to include double-bonus indicators, which are factory installed. This option is illustrated in the component location drawings attached to the product specification sheets listed in **Appendix A**.

Goal Lights

To install optional hockey goal lights, refer to the **Indoor Hockey Goal Lights Manual (ED-13358)**.

Time Outs Left (TOL) Digits

Reference Drawings:

T.O.L. Option Installation **DWG-149030**

Certain scoreboards have the option to add a time outs left (TOL) digit for both the home and guest teams. These digits are installed by simply unscrewing the blank face panel, connecting and securing the digit, and manually applying the "T.O.L." caption. Refer to **DWG-149030** in **Appendix B** for more information.

Changeable Caption Kits

Reference Drawings:

Changeable Team Name Caption Installation **DWG-1132576**

Team name and statistics caption kits contain hardware for one caption only and consist of an upper caption retainer, a lower caption retainer, a changeable caption panel and screws. The standard HOME and GUEST captions are applied directly to the face of the scoreboard. Team name captions are on changeable panels that fit into retainers mounted above and below the standard captions. If these retainers are not already present, attach the retainers included with the caption kit.

Refer to **DWG-1132576** in **Appendix B** for changeable caption installation instructions.

5 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:

Display Serial Number: _____

Display Model Number: _____

Job/Contract Number: _____

Date Manufactured/Installed: _____

Daktronics Customer ID Number: _____

To participate in the Exchange Program, follow these steps:

1. Call Daktronics Customer Service.

United States & Canada: 1-800-DAK-TRON (325-8766)

Outside the U.S. & Canada: +1-605-275-1040

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 Daktronics Customer Service.

United States & Canada: 1-800-DAK-TRON (325-8766)

Outside the U.S. & Canada: +1-605-275-1040

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

5. Ship to:

Daktronics Customer Service

[Case #]

201 Daktronics Drive, Dock E

Brookings, SD 57006

Daktronics Warranty & Limitation of Liability

The Daktronics Warranty & Limitation of Liability is located at the end of this manual. The Warranty is independent of Extended Service agreements and is the authority in matters of service, repair, and display operation.

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A Specifications

All of the product specification sheets for the displays in this manual are listed below. Product-specific installation and component location drawings are included with each spec sheet.

Note: Refer to **Figure 1** to determine a display's model number.

Viewing Product Specifications Online:

If a specification sheet is incorrect or missing, they are all available for download online.

- When viewing the digital version of this manual, simply click a link below to open it.
- When referencing the printed version of this manual, open an Internet browser and go to www.daktronics.com/Web%20Documents/HSPR-Documents/DD#####.pdf (replace "DD#####" with one of the Spec Sheet numbers shown below).

Model	Spec Sheet	Model	Spec Sheet
BB-2102	DD2481850	BB-3104	DD2506532
BB-2104	DD2481853	BB-3106	DD2506540
BB-2106	DD2481859	BB-3108	DD2506550
BB-2108	DD2481866	BB-3124	DD2506578
BB-2124	DD2481909	BB-3126	DD2506583
BB-2126	DD2481913	H-2105	DD2541497
BB-2154	DD2475304	H-2107	DD2541501
BB-2156	DD2475313	H-2109	DD2541516
BB-3102	DD2506524	H-2112	DD2541519

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B Reference Drawings

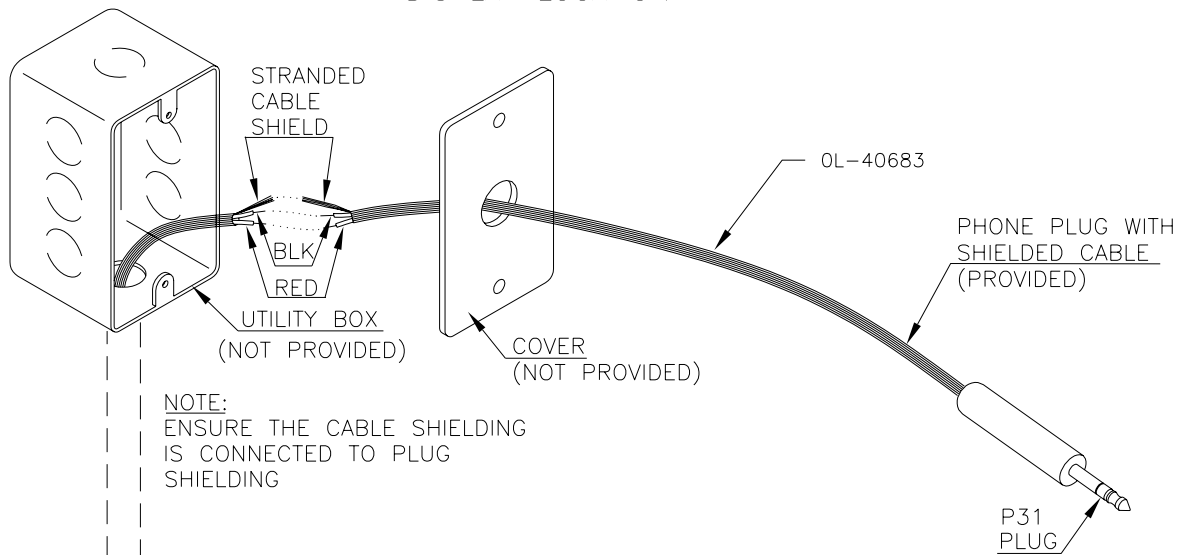
Refer to **Resources (p.1)** for information regarding how to read the drawing number. Any contract-specific drawings take precedence over the general drawings.

Reference Drawings:

- Signal Connection; Installation **DWG-28124**
- Top 4-Side Ad Panel Mounting **DWG-107665**
- Schematic; Dual 1/4" Phone J-box w/ Shunt Jack **DWG-125316**
- 12V DC Horn Option Installation **DWG-148960**
- T.O.L. Option Installation **DWG-149030**
- Ad Panel/Message Center Hookup Overview, 4-Side **DWG-154599**
- Optional 4-Side Canvas Assembly **DWG-173611**
- Optional 4-Side Score w/ Ad Panel Canvas Assy **DWG-261335**
- Connection Diagram; 4-Sided SS20i Series Displays **DWG-822860**
- Field Assembly; 8' x 8' Bolted Frame **DWG-1101988**
- Field Assembly; 10' x 10' Bolted Frame **DWG-1102115**
- Btm 4-Side, Mounting Detail **DWG-1102427**
- Top 4-Side, Mounting **DWG-1102472**
- Sling Set; Standard 10' Square 4-Side Scoreboards **DWG-1130800**
- Sling Set; Standard 8' Square 4-Side Scoreboards **DWG-1130854**
- Changeable Team Name Caption Installation **DWG-1132576**
- Canvas Floor Attachment Detail **DWG-4880921**

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DISPLAY LOCATION



NOTE:
ENSURE THE CABLE SHIELDING
IS CONNECTED TO PLUG
SHIELDING

PROCEDURE

1. ROUTE CONDUIT BETWEEN CONTROL AND DISPLAY LOCATIONS.
2. MOUNT BOXES.
3. PULL CABLE THROUGH CONDUIT.
4. CONNECT CABLE TO J31 AND P31

J31: USE CONNECTORS PROVIDED.
INSERT WIRES INTO CONNECTOR
AND SQUEEZE CONTACT
DOWN WITH PLIERS. SNAP PLASTIC
COVER SHUT.

P31: CONNECT WIRES TO CABLE AS
FOLLOWS:

- J31 RED TO P31 RED (+)
- J31 BLK TO P31 BLK (-)
- J31 SHIELD TO P31 SHIELD

NOTE!!

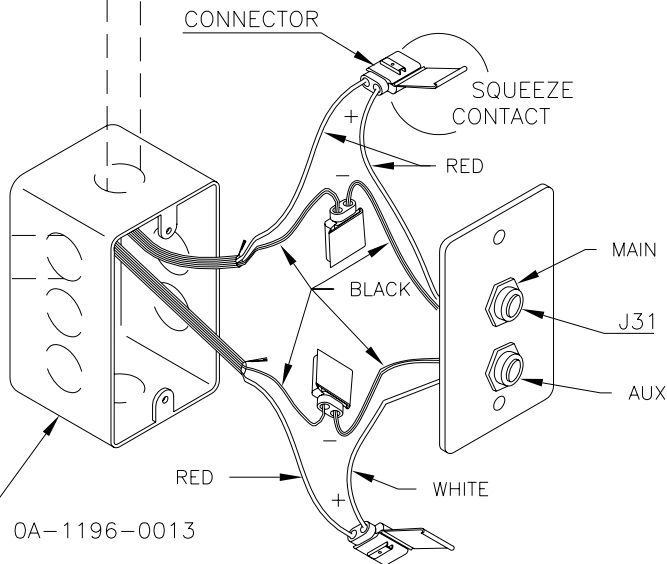
DO NOT CONNECT
CABLE SHIELD AT
CONTROL CONSOLE END

SHIELDED CABLE
IN CONDUIT
(NOT PROVIDED)

TO MAIN BOARD

TO AUX BOARD

J-BOX
(PROVIDED)



CONTROL LOCATION

REV.	DATE	DESCRIPTION	BY	APPR.
05	30 JUL 03	BOLD FACED GROUNDING NOTE	TLH	
04	17 JUN 03	CHANGED GROUNDING PROCEDURES	JJC	MWM
3	17 JAN 02	ADDED AUX TO J-BOX	JJS	
2	25 MAR 92	CHANGED WHITE TO RED	JTC	
1	05 NOV 91	REDREW ON A-SIZE ON ACAD.	JLH	

DAKTRONICS, INC. BROOKINGS, SD 57006			
PROJ: BASKETBALL			
TITLE: SIGNAL CONNECTION; INSTALLATION			
DES. BY: AVB		DRAWN BY: MHART	
		DATE: 15SEP86	
REVISION	APPR. BY: AVB	1009-R10A-28124	
05	SCALE: NONE		

ASSEMBLY PROCEDURE:

THIS DRAWING DEPICTS THE ADDITION OF AN AD PANEL TO A CENTERHUNG SCOREBOARD. REFER TO DWG-1237-E10A-154598 FOR SCOREBOARD ASSY. INSTRUCTIONS.

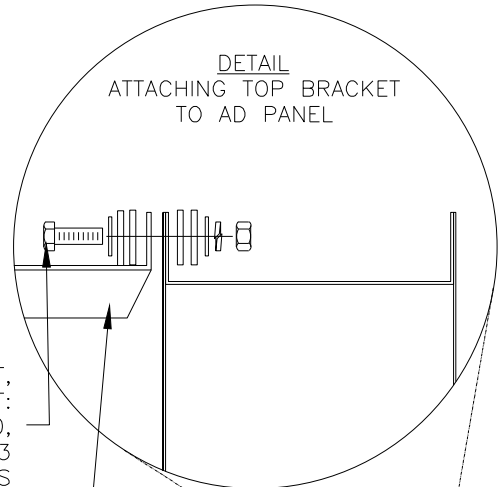
POSITION THE MOUNTING STRIPS INSIDE THE TOP OF THE SCOREBOARD FRAME AND ATTACH WITH THE 1/4" BOLTS, USING THE TAPERED SQUARE WASHERS TO TILT THE STRIP 10° TO THE SCOREBOARD.

MOUNT THE BOTTOM OF THE AD PANEL TO THE STRIPS.

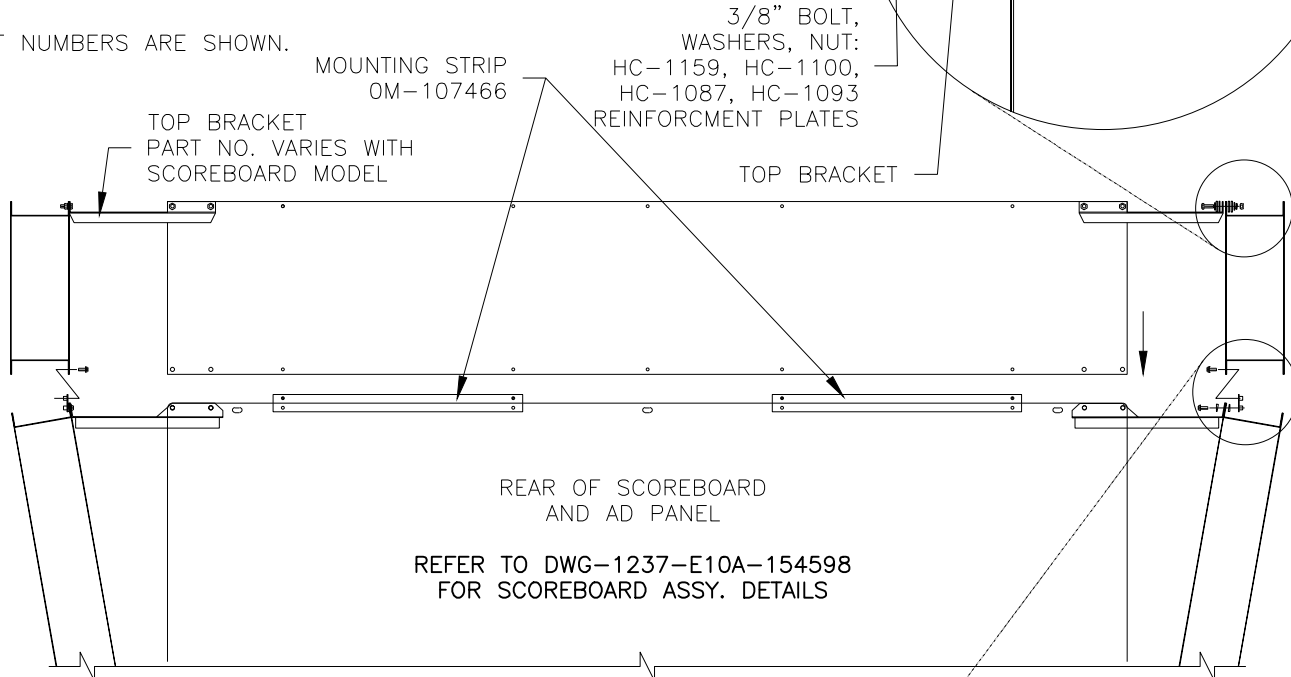
JOIN THE TOPS OF TWO AD PANEL SECTIONS USING THE TOP BRACKETS AND 3/8" BOLTS, WASHERS, AND NUTS.

ATTACH THE CORNER SHROUDS TO THE CORNERS AFTER ALL REAR ASSEMBLY IS COMPLETE.

PART NUMBERS ARE SHOWN.

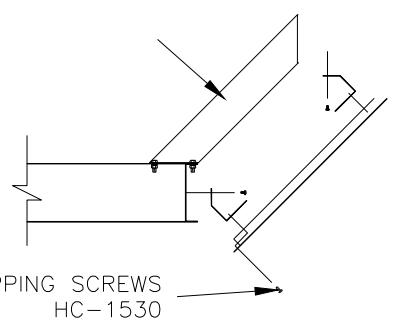


DETAIL
ATTACHING TOP BRACKET
TO AD PANEL



REAR OF SCOREBOARD
AND AD PANEL

REFER TO DWG-1237-E10A-154598
FOR SCOREBOARD ASSY. DETAILS

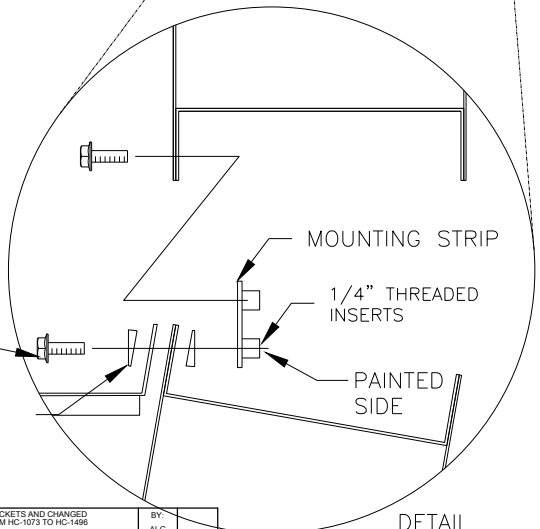


CORNER SHROUD
PART NO. VARIES

TAPPING SCREWS
HC-1530

1/4" BOLT
HC-1043

TAPERED SQ. WASHER
HC-1438



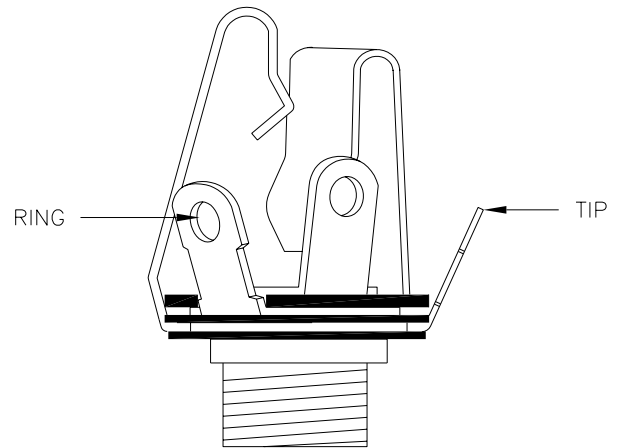
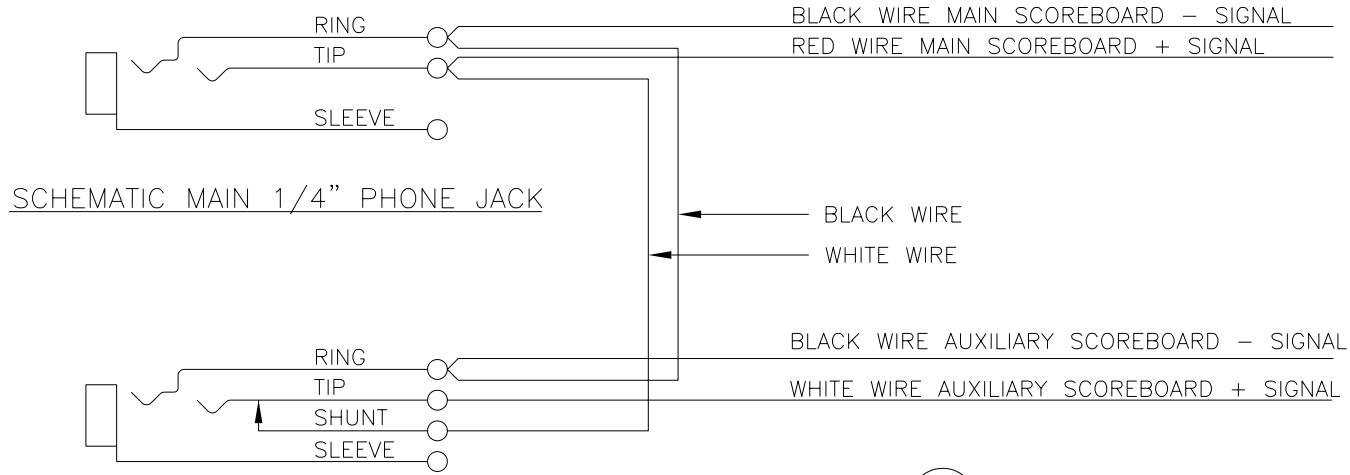
DETAIL
JOINING AD PANEL TO
TOP OF SCOREBOARD

MOUNT THE ANGLE BRACKETS TO THE AD PANEL THEN POSITION THE CORNER SHROUD AGAINST THE ANGLE BRACKETS, MARK AND DRILL 9/64" Ø HOLES. SECURE CORNER SHROUD WITH TAPPING SCREWS PROVIDED.

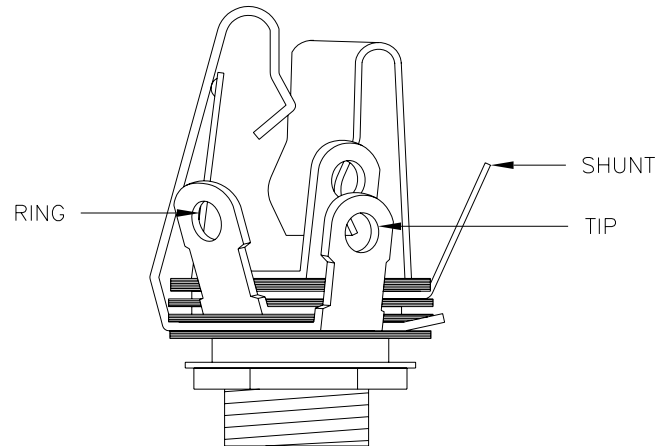
REV 03	DATE: 07 AUG 02	UPDATED ANGLE BRACKETS AND CHANGED TAPPING SCREW FROM HC-1073 TO HC-1496	BY: ALG
REV 02	DATE: 12 DEC 01	LABELLED ANGLE BRACKETS, AND MODIFIED MOUNTING INSTRUCTIONS	BY: ALG
REV 01	DATE: 10 NOV 00	FIXED CORNER SHROUDDING ATTACHMENT.	BY: EPR

REV 08	DATE: 29 JUN 12	ADDED FLAT WASHERS AND REINFORCEMENT PLATES TO CORNER MOUNTING BRACKET ATTACHMENT	BY: DRO
REV 07	DATE: 07 JUL 11	ADDED PAINTED SIDE NOTE	BY: LMG
REV 06	DATE: 07 JAN 10	CHANGE HC-1496 TAPPING SCREWS TO HC-1530 TAPPING SCREWS FOR ATTACHING CORNER SHROUDS	BY: LMIX
REV 05	DATE: 16 JAN 09	ADDED DRAWING REFERENCE NOTES	BY: CJH
REV 04	DATE: 15 JAN 09	ADDED SCOREBOARD CORNER BRACE	BY: CLS

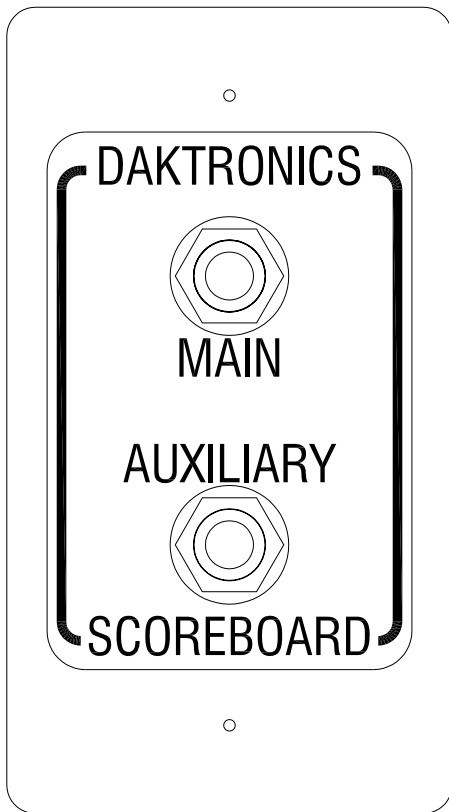
DAKTRONICS, INC. BROOKINGS, SD 57006		THE CONCEPTS EXPRESSED AND DETAILS SHOWN ON THIS DRAWING ARE CONFIDENTIAL AND PROPRIETARY. DO NOT REPRODUCE BY ANY MEANS WITHOUT THE EXPRESSED WRITTEN CONSENT OF DAKTRONICS, INC. COPYRIGHT 2011 DAKTRONICS, INC.	
DO NOT SCALE DRAWING			
PROJ: BASKETBALL SCOREBOARDS			
TITLE: TOP 4-SIDE AD PANEL MOUNTING			
DESIGN: AVB	DRAWN: A VANBEMMEL	DATE: 08 OCT 98	
SCALE: 1=20			
SHEET	REV	JOB NO:	FUNC-TYPE-SIZE
	08	P 1009	E - 10 - A
			107665



MAIN
PHONE JACK
J-1003



AUXILIARY
PHONE JACK
J-1131



0A-1196-0013

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

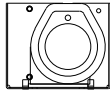
APPR. BY:

SCALE: NONE

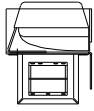
1196-R03A-125316

REV.	DATE	DESCRIPTION	BY	APPR.
00				

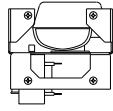
12V DC HORN
IN BRACKET:



TOP VIEW



SIDE VIEW



FRONT VIEW

12V DC HORN OPTION INSTALLATION PROCEDURE

REMOVE THE FOUR SCREWS SECURING THE CLOCK PANEL. DISCONNECT THE PLUGS AT THE BACK OF THE DIGITS, AND UNPLUG THE EXISTING BUZZER TYPE HORN.

REMOVE THE SCREWS THAT ATTACH THE BUZZER HORN TO THE CLOCK PANEL.

MOUNT THE 12V DC HORN TO THE CLOCK PANEL USING THE SCREWS PROVIDED WITH IT.

TAKE THE HORN INTERFACE CARD, WITH HARNESSSES CONNECTED TO IT, AND USE THE TAPE TO SECURE IT TO THE BACKSHEET. MAKE SURE IT IS AN OPEN SPOT SO IT DOESN'T GET TOUCHED WHEN THE PANEL IS PLACED BACK ON.

RUN THE TWO NEW HARNESSSES TO THE DRIVER. DISCONNECT EXISTING PLUG IN J18 ON DRIVER. CONNECT NEW ONE. DISCONNECT EXISTING PLUG IN THE J43 POWER JACK ON DRIVER TRAY HARNESS THAT WAS FOR THE OLD HORN, AND PLUG IN THE NEW ONE.

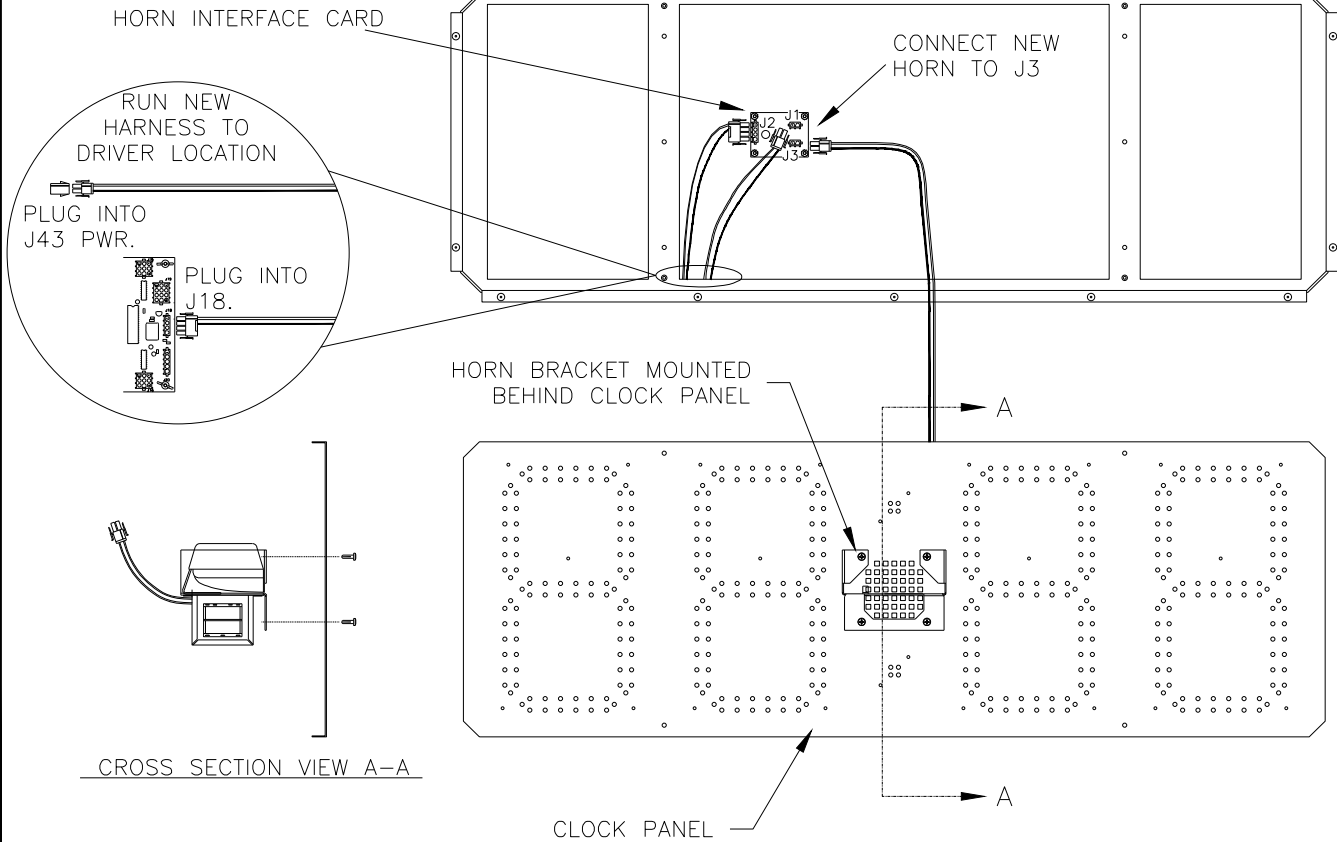
CONNECT THE 2-PIN PLUG FROM THE HORN ASSEMBLY TO J3 ON THE HORN INTERFACE CARD.

PLUG THE DIGIT CABLES INTO THE BACKS OF THE DIGITS AND RE-INSTALL THE CLOCK PANEL.

TEST THE HORN BY OPERATING THE SCOREBOARD AND PRESSING THE HORN BUTTON ON THE CONTROL CONSOLE.

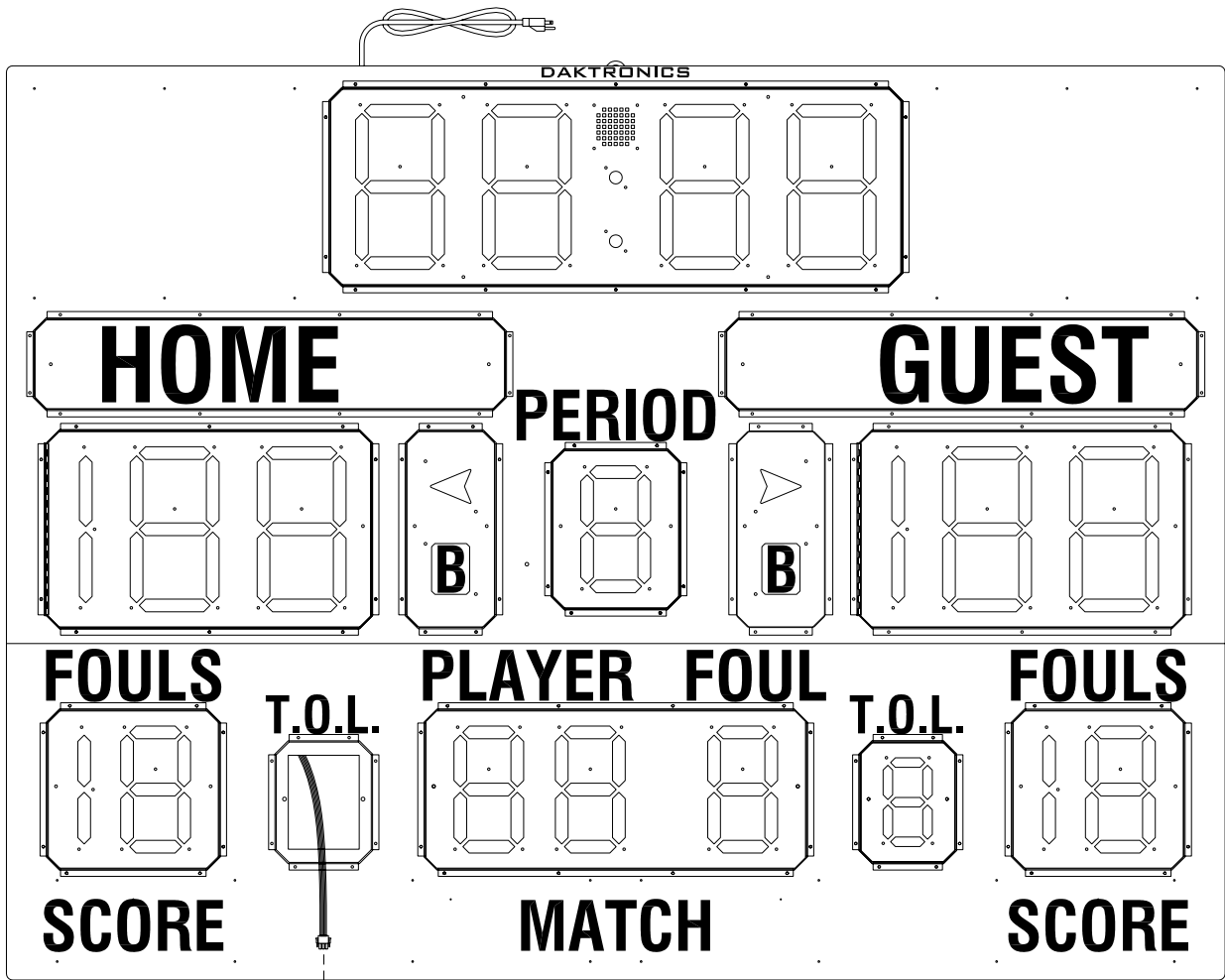
FRONT OF SCOREBOARD, CLOCK AREA:

DAKTRONICS



04	14 DEC 15	UPDATED VIEWS AND REMOVED SEPARATE INSTRUCTIONS FOR UNVIEW PRODUCTS PER EC-1798	LJH	
03	07 JAN 10	UPDATED INSTALL DRAWING WITH HORN INTERFACE CARD DETAILS AND STEPS.	MWM	
02	20 JUN 06	UPDATED COLON AND HORN LAYOUT. REPLACED UNVIEW DIGITS WITH PANAVIEW TO SHOW HORN MOUNTING. ADDED UNVIEW HORN MTG NOTES.	JLF	CW
01	20 JUN 02	CHANGED DIGITS TO UNVIEW.	ALG	

<p>DAKTRONICS, INC. BROOKINGS, SD 57006</p>	<p>DO NOT SCALE DRAWING</p>		<p>THE CONCEPTS EXPRESSED AND DETAILS SHOWN ON THIS DRAWING ARE CONFIDENTIAL AND PROPRIETARY. DO NOT REPRODUCE BY ANY MEANS WITHOUT THE EXPRESS WRITTEN CONSENT OF DAKTRONICS, INC. COPYRIGHT 2015 DAKTRONICS, INC.</p>	
	<p>PROJ: TUFF SPORT INDOOR SCOREBOARDS</p>			
<p>TITLE: 12V DC HORN OPTION INSTALLATION</p>				
<p>DESIGN: AVB</p>		<p>DRAWN: A VANBEMMEL</p>		<p>DATE: 16MAY01</p>
<p>SCALE: 1=10</p>				
<p>SHEET</p> <p>1 OF 1</p>	<p>REV</p> <p>04</p>	<p>JOB NO:</p> <p>P 1237</p>	<p>FUNC-TYPE-SIZE</p> <p>E - 10 - A</p>	<p>148960</p>



1. REMOVE THE TWO BLANK PANELS CURRENTLY INSTALLED IN PLACE OF THE T.O.L. DIGITS.
2. LOCATE THE CABLES WITH 9-PIN PLUGS BEHIND THE BLANK PANELS. CONNECT THE PLUGS TO THE MATING JACK ON THE BACK OF EACH DIGIT.
3. INSTALL THE DIGITS IN THE OPENINGS AND SECURE WITH THE SCREWS THAT FORMERLY HELD THE BLANK PANELS.
4. APPLY THE "T.O.L." CAPTIONS ABOVE THE DIGITS.

9-PIN JACK LOCATION ON BACK OF DIGIT

T.O.L. DIGIT PANEL

NOTES:

THE SCOREBOARD IS SHOWN WITH UNIVIEW™ DIGIT TECHNOLOGY. SEE DRAWING A-158550 FOR MORE DETAILS.

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DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: TUFF SPORT™ SCOREBOARDS

TITLE: T.O.L. OPTION INSTALLATION

DES. BY: AVB

DRAWN BY: A VANBEMMEL

DATE: 17 MAY 01

REVISION

APPR. BY:

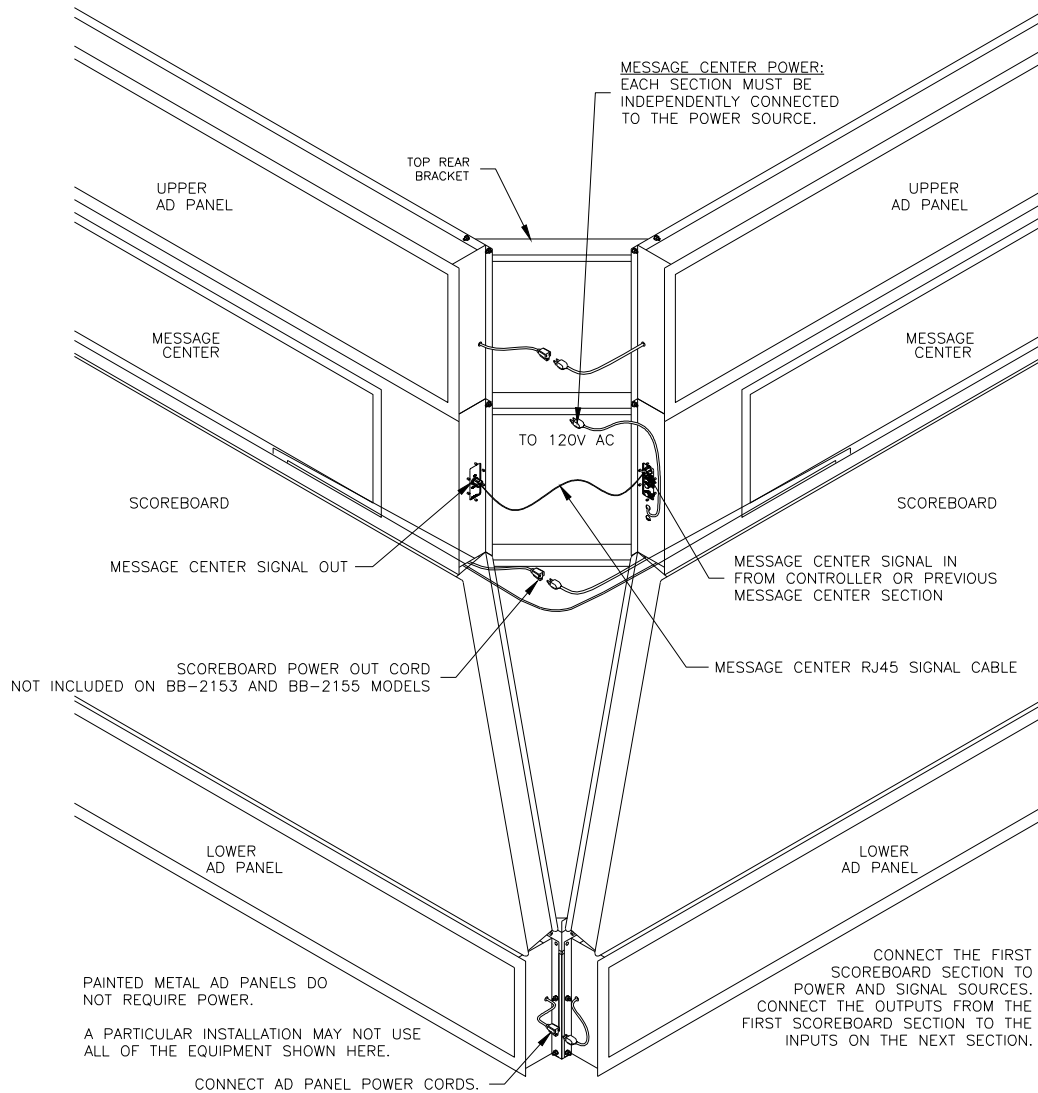
SCALE: 1=20

1237-R10A-149030

01	20 JUN 02	CHANGED DIGITS TO UNIVIEW.	ALG	
REV.	DATE	DESCRIPTION	BY	APPR.

ONE CORNER OF A 4-SIDED SCOREBOARD, WITH UPPER AND LOWER AD PANELS, AND MESSAGE CENTER.

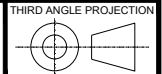
SHOWN WITH CORNER SHROUDS REMOVED.



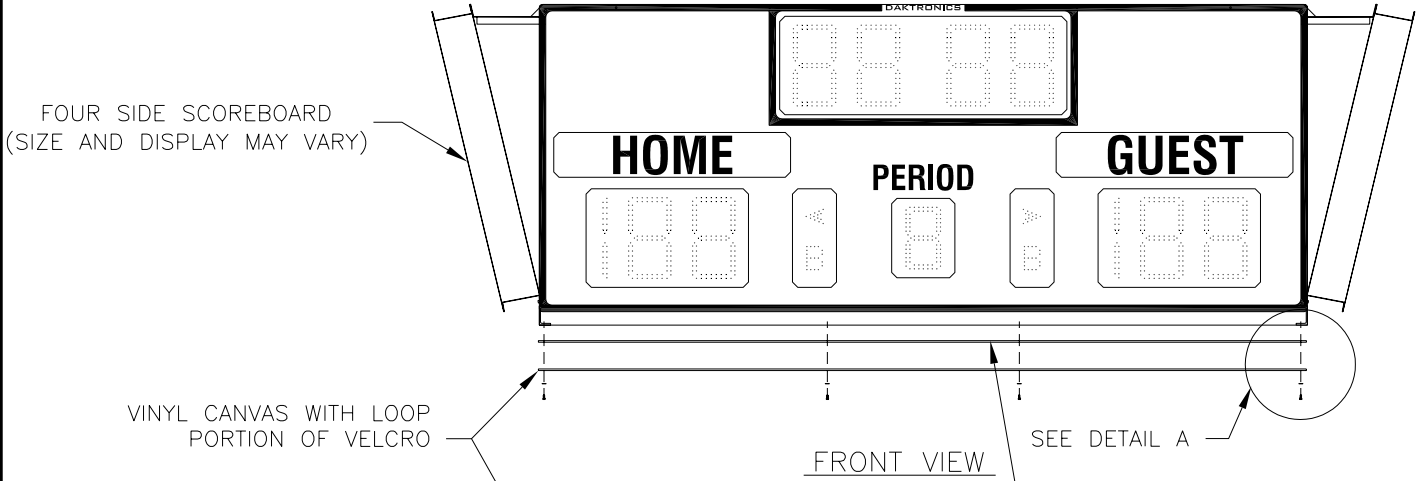
REV 07	DATE: 21 NOV 16	REMOVED SIGNAL CABLE NOT INCLUDED NOTE	BY: NCB
REV 06	DATE: 28 MAR 16	ADDED NOTE THAT POWER AND SIGNAL INTERCONNECT IS NOT AVAILABLE ON BB-2153 AND BB-2155 MODELS.	BY: HBB
REV 05	DATE: 02 SEP 09	UPDATED FOR NEW SS MESSAGE CENTERS	BY: MBC
REV 04	DATE: 18 JUL 08	ADDED SIDE HEYCOS	BY: KZB
REV 03	DATE: 27 APR 06	REMOVED LIFT EYE ON FRAME	BY: JNR
REV 02	DATE: 29 OCT 02	UPDATED NOTE AND SIGNAL INFORMATION	BY: BDP
REV 01	DATE: 10 SEP 02	CHANGED MESSAGE CENTER POWER AND SIGNAL CONNECTORS. REMOVED POWER OUTPUT ON MESSAGE CENTER.	BY: AVB



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PROJECT: TUFF SPORT SCOREBOARDS			
TITLE: AD PANEL/ MESSAGE CENTER HOOKUP OVERVIEW- 4-SIDE			
DATE: 15 AUG 01	DIM UNITS: INCHES [MILLIMETERS]	SHEET	REV
SCALE: 1=30	DO NOT SCALE DRAWING		07
DESIGN: BPETERSON	JOB NO. 1237	FUNC - TYPE - SIZE R - 10 - A	154599
DRAWN: JJSYRSTAD			



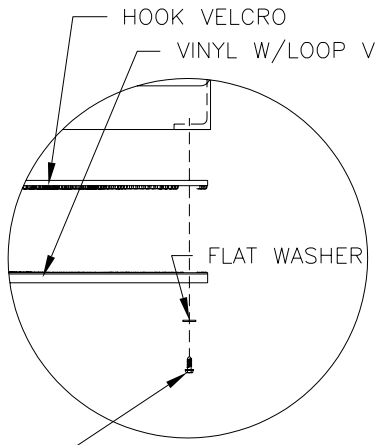
FOUR SIDE SCOREBOARD
(SIZE AND DISPLAY MAY VARY)

VINYL CANVAS WITH LOOP
PORTION OF VELCRO

FRONT VIEW

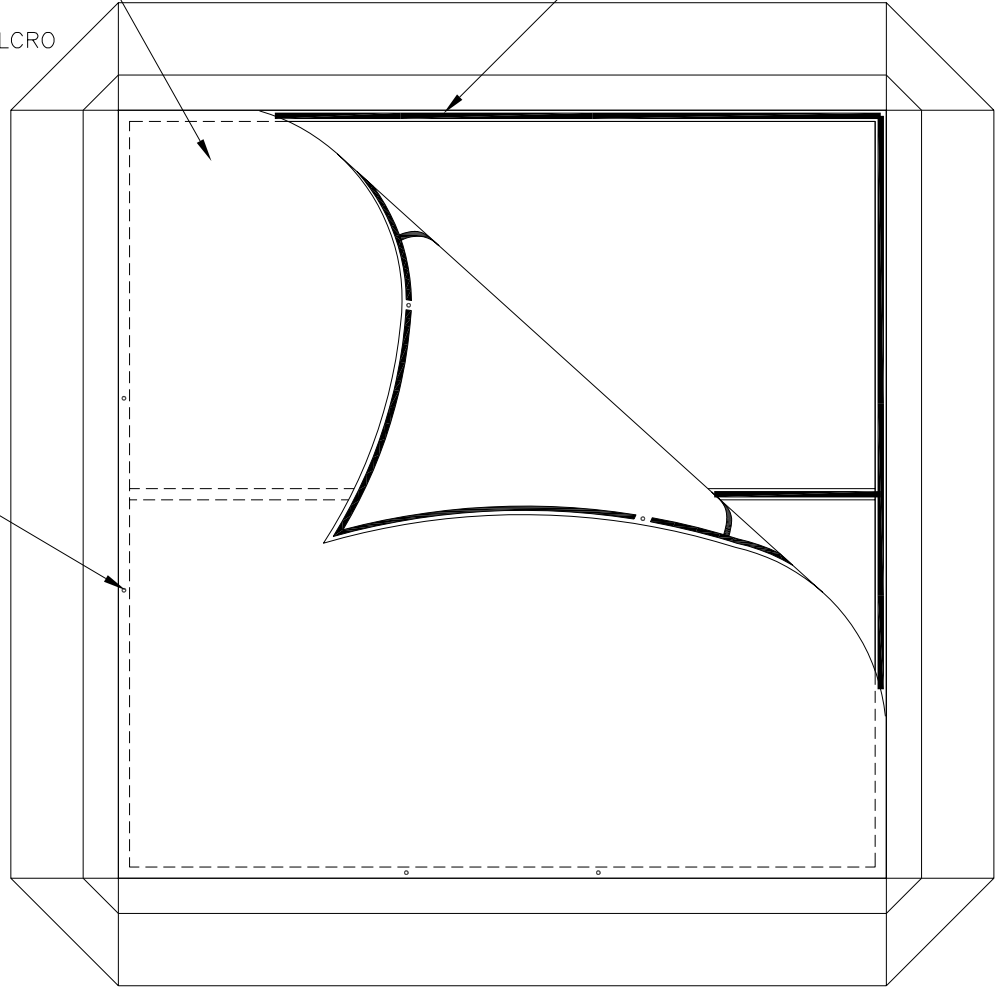
SEE DETAIL A

HOOK PORTION OF VELCRO
WITH ADHESIVE BACKING



10-16 X 3/4" SELF
DRILLING SCREW AT
GROMMET LOCATIONS

DETAIL: A



BOTTOM VIEW

WITH CORNER OF
CANVAS TURNED BACK

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DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: TUFF SPORT SCOREBOARD

TITLE: OPTIONAL 4-SIDE CANVAS ASSEMBLY

DES. BY: BPETERSON

DRAWN BY: AGIBSON

DATE: 20 AUG 02

REVISION

APPR. BY:

SCALE: 1=30

1237-E10A-173611

REV.	DATE	DESCRIPTION	BY	APPR.

INSTRUCTIONS FOR ASSEMBLY

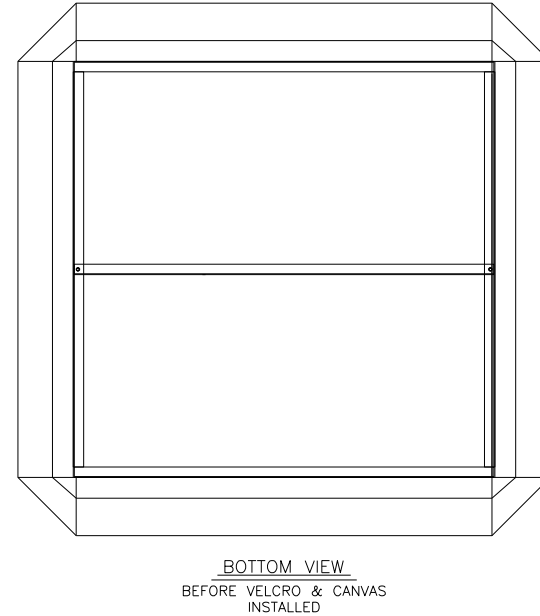
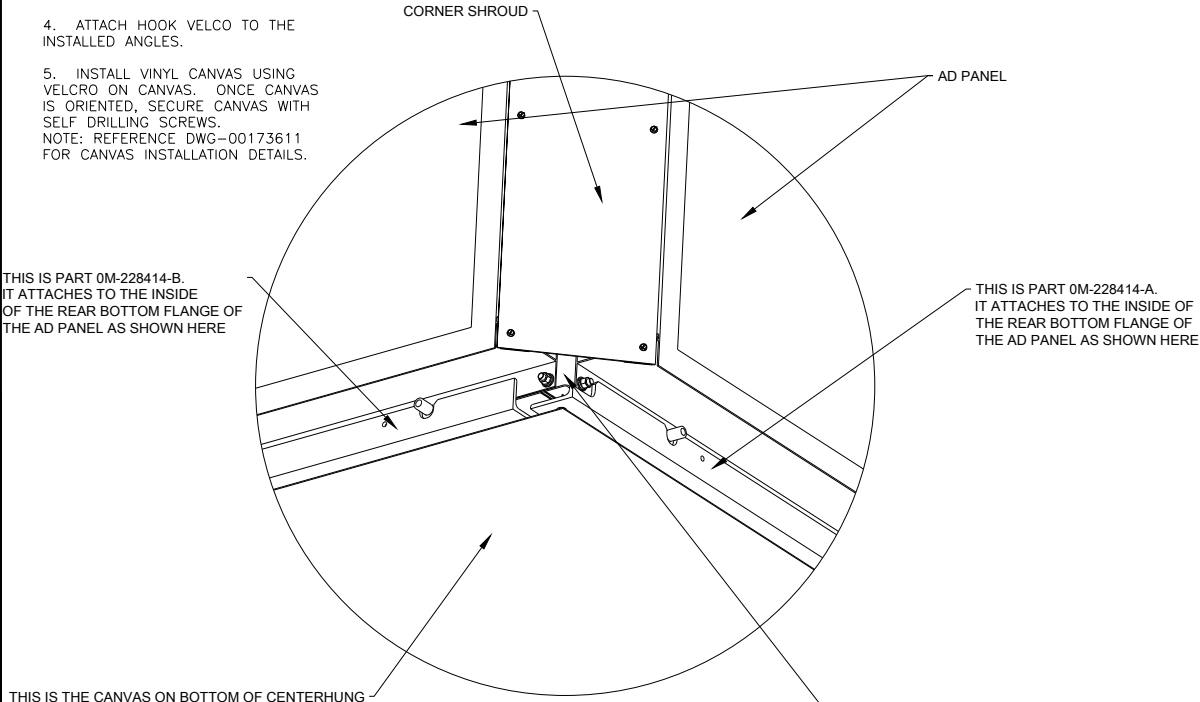
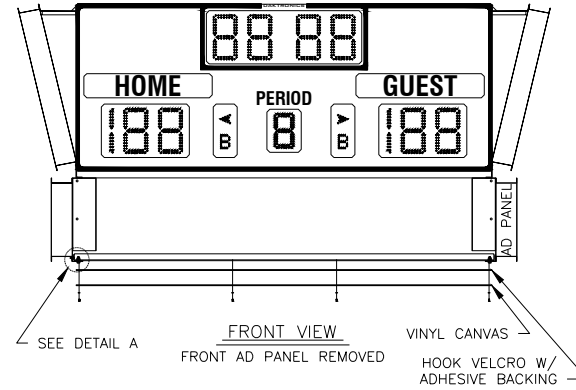
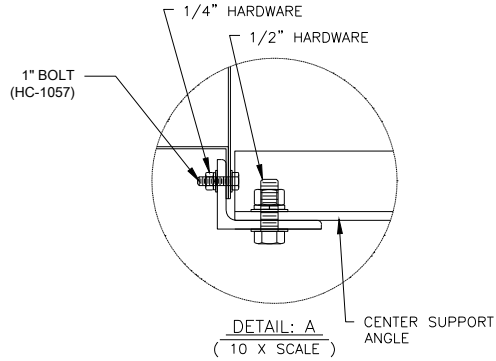
1. INSTALL 114.5" ANGLES TO THE BACKSIDE OF TWO OPPOSING AD PANELS. THE 2" FLANGE SHOULD BE MOUNTED AGAINST THE INSIDE OF THE AD PANEL WITH THE 3" FLANGE STICKING INWARD. MOUNTING HOLES SHOULD BE MATCH DRILLED AND 1/4" HARDWARE SHOULD BE USED FOR INSTALLATION.

2. INSTALL A 121.28" ANGLE AS THE CENTER SUPPORT ANGLE CONNECTING THE MIDDLES OF THE TWO PREVIOUSLY INSTALLED ANGLES. THIS 121.28" ANGLE WILL SIT ON TOP OF THE 114.5" ANGLES AND WILL BE ATTACHED USING 1/2" HARDWARE.

3. INSTALL 121.28" ANGLES TO THE TWO REMAINING AD PANELS. THESE WILL BE INSTALLED THE SAME AS THE 114.5" ANGLES PREVIOUSLY INSTALLED.

4. ATTACH HOOK VELCRO TO THE INSTALLED ANGLES.

5. INSTALL VINYL CANVAS USING VELCRO ON CANVAS. ONCE CANVAS IS ORIENTED, SECURE CANVAS WITH SELF DRILLING SCREWS.
NOTE: REFERENCE DWG-00173611 FOR CANVAS INSTALLATION DETAILS.



THIS IS PART 0M-228414-B. IT ATTACHES TO THE INSIDE OF THE REAR BOTTOM FLANGE OF THE AD PANEL AS SHOWN HERE

THIS IS PART 0M-228414-A. IT ATTACHES TO THE INSIDE OF THE REAR BOTTOM FLANGE OF THE AD PANEL AS SHOWN HERE

THIS IS THE CANVAS ON BOTTOM OF CENTERHUNG

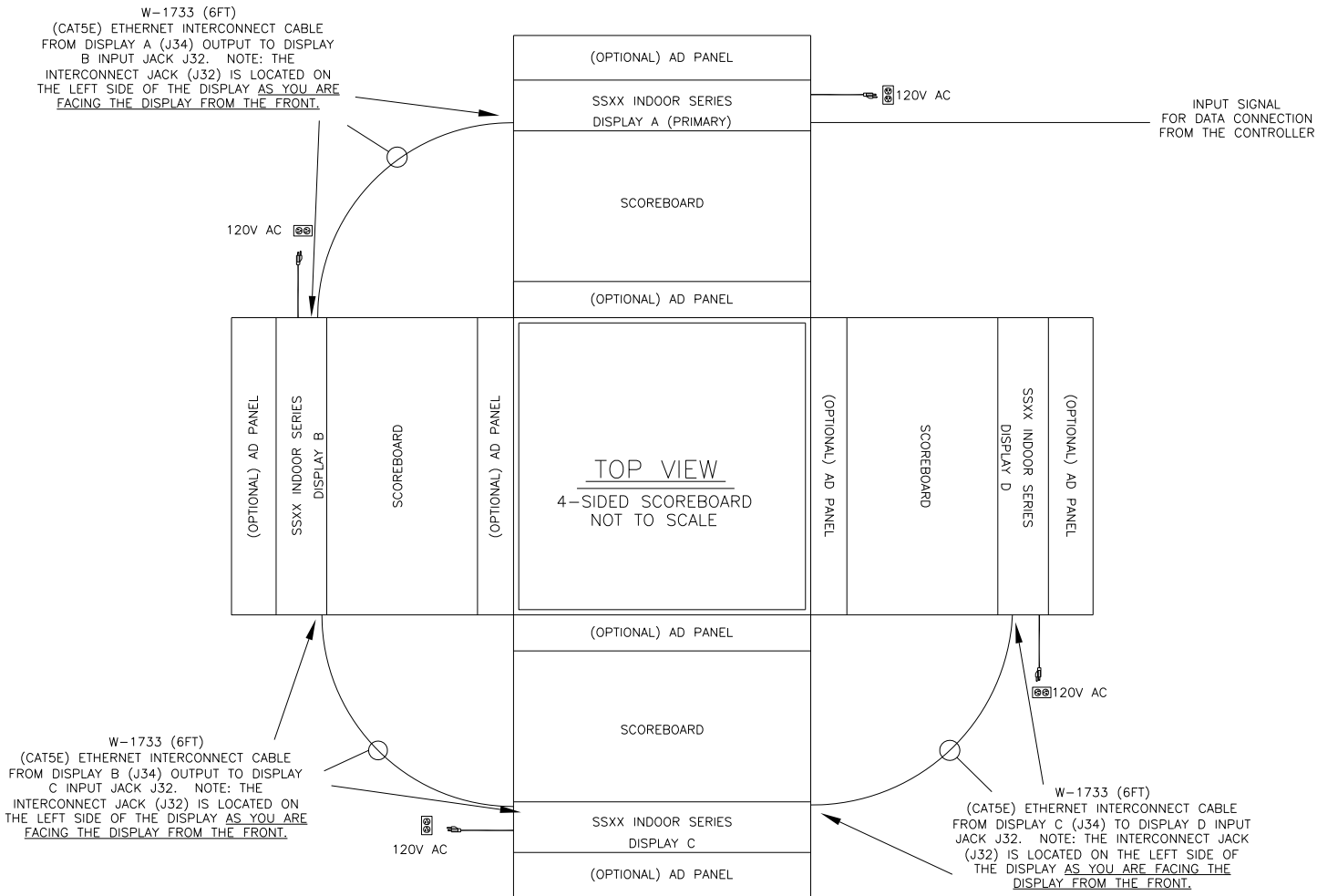
THIS MOUNTING BRACKET CONNECTS THE AD PANELS TOGETHER AT A CORNER. THIS ADDS SOME ADDITIONAL LENGTH FROM ONE SIDE OF AN AD PANEL TO THE OTHER.

DETAIL: B
(5 X SCALE)

		<small>THE CONCEPTS EXPRESSED AND DETAILS SHOWN ON THIS DRAWING ARE CONFIDENTIAL AND PROPRIETARY. DO NOT REPRODUCE BY ANY MEANS WITHOUT THE EXPRESS WRITTEN CONSENT OF DAKTRONICS, INC. OR ITS WHOLLY OWNED SUBSIDIARIES. COPYRIGHT 2018 DAKTRONICS, INC. (USA)</small>			
PROJECT: TUFF SPORT SCOREBOARD					
TITLE: OPTIONAL 4-SIDE SCORE W/ AD PANEL CANVAS ASSY					
DATE:	06 JAN 06	DIM UNITS:	INCHES (MILLIMETERS)	SHEET	REV
SCALE:	1=35	DO NOT SCALE DRAWING			02
DESIGN:	EREGHAHN	JOB NO.:	P1237	FUNC - TYPE - SIZE	E - 10 - B
DRAWN:	JFELDA				261335

REV	DATE	PER	BY:
02	3 OCT. 18	CN-65420; ADDED ISOMETRIC VIEW AND ITS DETAIL	JDG
01	11 MAY 15	PER EC-17928; UPDATED DETAIL A	KDG

INTERNAL/REAR VIEW



INSTALLATION:

CONNECT TO DISPLAY A, (USUALLY DESIGNATED AS "FACE A"), USING MAIN SYSTEM RISER, QUICK INSTALL GUIDE(S) AND HARDWARE PROVIDED IN CONNECTION KIT.
 NOTE: THERE ARE THREE MAIN COMMUNICATION METHODS. ETHERNET, FIBER/ETHERNET AND ETHERNET BRIDGE. MAKE SURE TO BE AWARE OF THE COMMUNICATION METHOD AT THIS FACILITY.

INSTRUCTIONS ARE REFERENCED AS YOU ARE FACING THE FRONT OF EACH DISPLAY. THE DETAILED ABOVE IS A REAR VIEW.

3. PLUG W-1733 IN TO THE OUTPUT J34 ON THE FIRST SIGN AND INTO THE INPUT J32 OF THE SECOND SIGN.

3. CONNECT THE THIRD AND FOURTH DISPLAYS SAME WAY.

SIGNAL TRAVELS FROM PRIMARY DISPLAY TO SECONDARY DISPLAYS VIA INTERCONNECTING ETHERNET CABLES.

EXAMPLE: PRI TO SEC. #1, SEC. #1 TO SEC. #2, SEC. #2 TO SEC. #3.

NOTES:

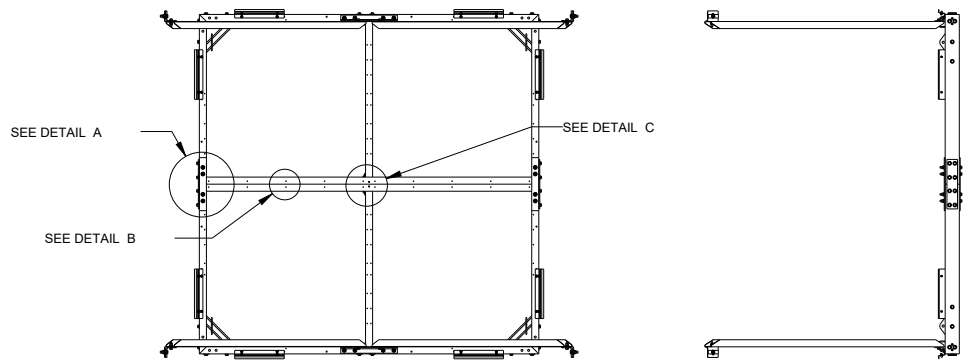
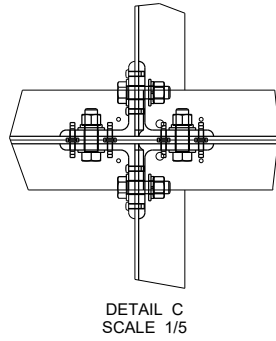
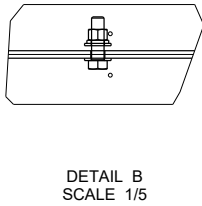
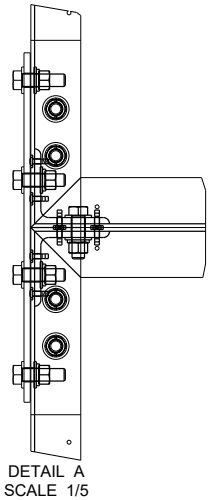
REFER TO THE 4-SIDED SCOREBOARD INSTALLATION MANUAL FOR HOW TO MECHANICALLY INSTALL THE SCOREBOARDS, AD PANELS (IF THIS SYSTEM INCLUDES THEM), AND THE MESSAGE CENTERS.

REFER TO THE ELECTRICAL SPEC DRAWINGS INCLUDED IN THE MESSAGE CENTER INSTALLATION MANUAL FOR THE POWER REQUIREMENTS FOR EACH DISPLAY. THESE POWER REQUIREMENTS CAN RANGE FROM 150 WATTS PER DISPLAY UP TO 2000 WATTS. ALWAYS HAVE AN ELECTRICIAN PROPERLY SIZE AND INSTALL THE POWER CIRCUIT FOR THE DISPLAYS.

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DAKTRONICS, INC. BROOKINGS, SD 57006			
PROJ:			
TITLE: CONNECTION DIAGRAM; 4-SIDED SS20i SERIES DISPLAYS			
DES. BY:		DRAWN BY: DDINING	
		DATE: 30 MAR 09	
REVISION	APPR. BY:	1539-R01A-822860	
02	SCALE: NONE		

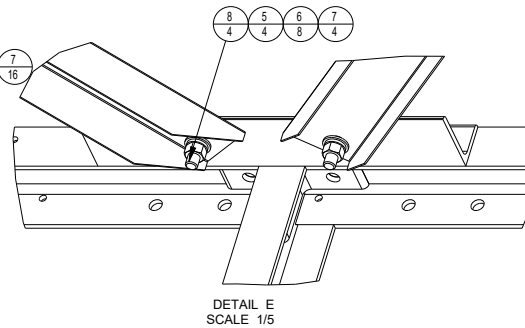
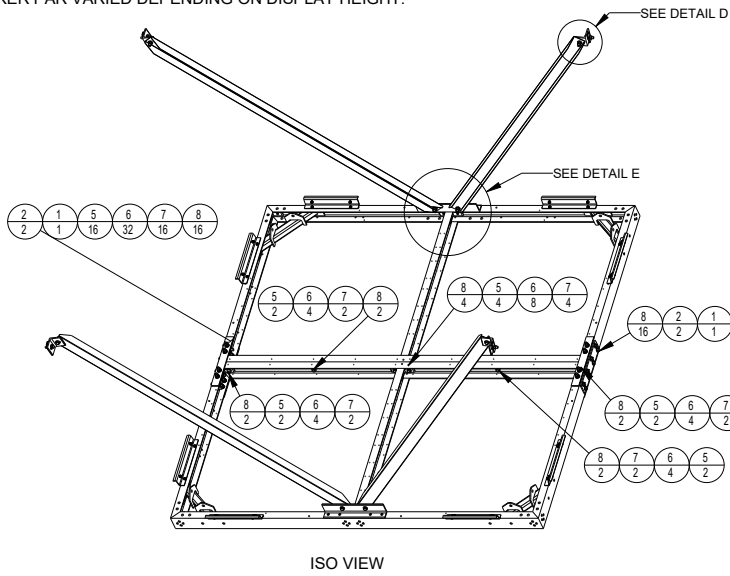
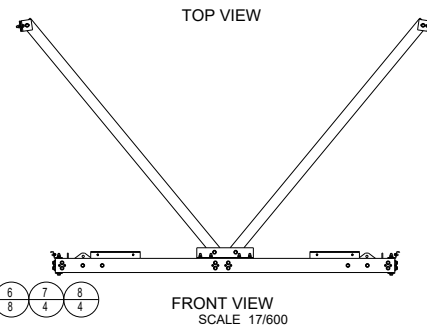
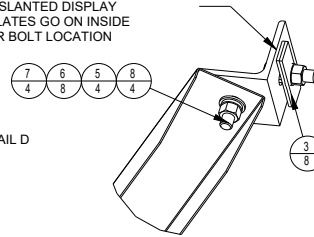
REV.	DATE	DESCRIPTION	BY	APPR.
02	08 JUL 09	UPDATED TEXT FOR FACE INTERCONNECTION.	DKD	
01	22 APR 09	CHANGED SIGNAL FLOW AND CHANGED SIGNAL CABLE FROM W-1921 TO W-1733	TLK	

NOTES:
 USE FOR FIELD INSTALLATION ONLY
 BOLT 2 FRAME HALVES TOGETHER
 FLAT WASHER GOES ON EACH SIDE,
 LOCK WASHER ON NUT SIDE



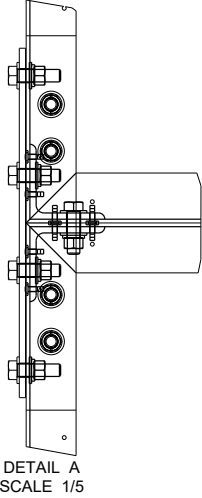
NOTE:
 BOLT KICKER TO MIDDLE ATTACHMENT ANGLE
 BOLT DISPLAY BRACE TO ENDS OF KICKER AND
 ATTACH REINFORCEMENT PLATE TO DISPLAY BRACE.
 KICKER PAR VARIED DEPENDING ON DISPLAY HEIGHT.

ANGLE IS ATTACHED TO SLANTED DISPLAY
 REINFORCEMENT PLATES GO ON INSIDE
 OF DISPLAY FLANGES @2 PER BOLT LOCATION

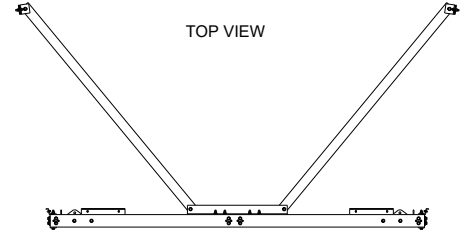
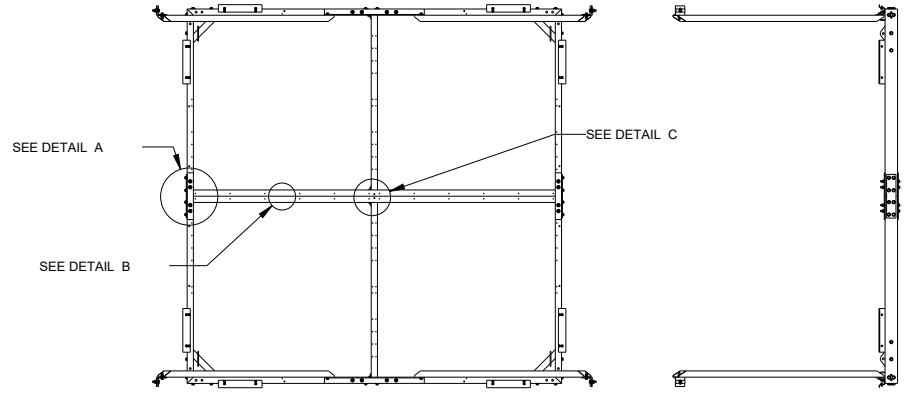
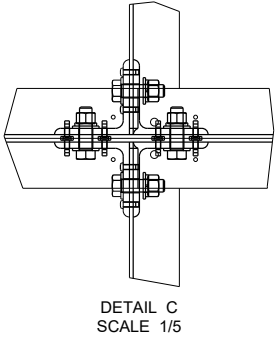
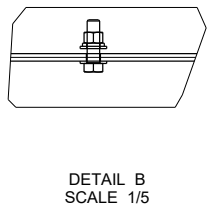


INDEX	NAME	QTY	DESCRIPTION
1	0M-219695	2	PART; SIDE SPLICE PLATE; 4 SIDE FRAME
2	0M-219696	4	PART; TOP/BTM SPLICE PLATE; 4 SIDE FRAME
3	0M-1086379	8	REINFORCEMENT PLATE; CLIP ANGLE; 4-SIDE SS
4	0M-1088649	4	DISPLAY BRACE KIT
5	HC-1088	56	NUT, 1/2-13 HEX, ZN PLTD, GRADE 5
6	HC-1095	112	WASHER; 1/2 FLAT, ZN PLTD, SAE
7	HC-1101	56	WASHER; 1/2 SPLIT LOCK, ZN PLTD, MEDIUM
8	HC-1444	56	BOLT, 1/2-13 X 1.75", HEX HEAD, GRADE 5, ZN PLTD

03	26 MAR 20	PER CN-100515; ADDED ATTACHMENT ANGLE, KICKER, REINFORCEMENT ANGLE, AND HARDWARE	KCM 12059
REV: 02	DATE: 26 NOV 19	DESCRIPTION: PER CN-92909; REPLACED 0M-221003 WITH 0M-816264, REPLACED HC-1152 WITH HC-1444 FOR FIELD CONNECTIONS	BY: DRG 4920
		THE CONCEPTS EXPRESSED AND DETAILS SHOWN ON THIS DRAWING ARE CONFIDENTIAL AND PROPRIETARY. DO NOT REPRODUCE BY ANY MEANS WITHOUT THE EXPRESS WRITTEN CONSENT OF DAKTRONICS, INC. OR ITS WHOLLY OWNED SUBSIDIARIES. COPYRIGHT 2019 DAKTRONICS, INC. (USA)	
PROJECT: INDOOR TUFF SPORT SCOREBOARDS			
TITLE: FIELD ASSEMBLY; 8' X 8' BOLTED FRAME			
DATE: 25-MAR-20	DIM UNITS: INCHES (MILLIMETERS)	SHEET 1 OF 1	REV 03
SCALE: 1/30	DO NOT SCALE DRAWING		
DESIGN: DOPPELT	JOB NO. P1237	FUNC - TYPE - SIZE E - 07 - B	1101988
DRAWN: DOPPELT			



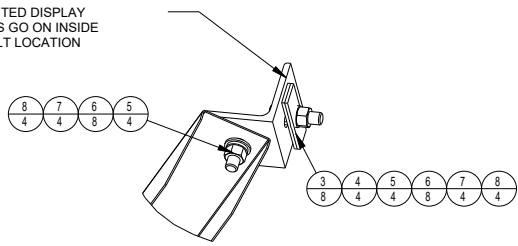
NOTES:
 USE FOR FIELD INSTALLATION ONLY
 BOLT 2 FRAME HALVES TOGETHER
 FLAT WASHER GOES ON EACH SIDE,
 LOCK WASHER ON NUT SIDE



SIDE VIEW

ANGLE IS ATTACHED TO SLANTED DISPLAY
 REINFORCEMENT PLATES GO ON INSIDE
 OF DISPLAY FLANGES @2 PER BOLT LOCATION

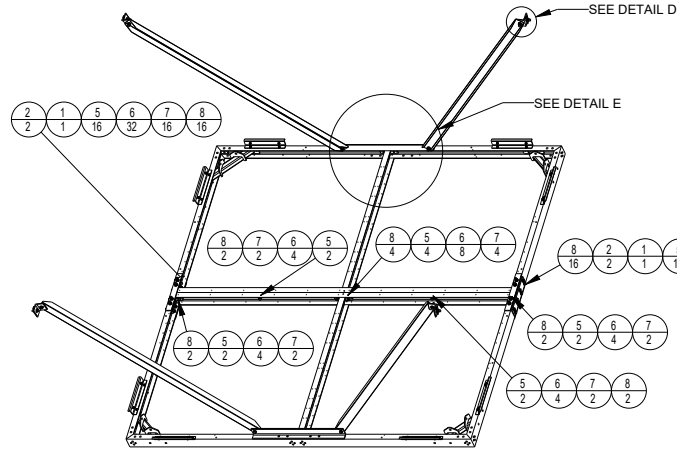
NOTE:
 BOLT KICKER TO MIDDLE ATTACHMENT ANGLE
 BOLT DISPLAY BRACE TO ENDS OF KICKER AND
 ATTACH REINFORCEMENT PLATE TO DISPLAY BRACE.
 KICKER PAR VARIED DEPENDING ON DISPLAY HEIGHT.



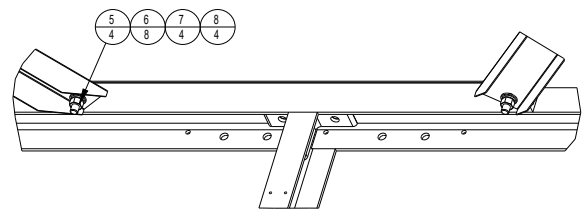
KICKER TOP
 DETAIL D
 SCALE 1/5

FRONT VIEW

INDEX	NAME	QTY	DESCRIPTION
1	0M-219695	2	PART; SIDE SPLICE PLATE; 4 SIDE FRAME
2	0M-219696	4	PART; TOP/BTM SPLICE PLATE; 4 SIDE FRAME
3	0M-1086379	8	REINFORCEMENT PLATE; CLIP ANGLE; 4-SIDE SS
4	0M-1088649	4	DISPLAY BRACE KIT
5	HC-1088	56	NUT, 1/2-13 HEX, ZN PLTD, GRADE 5
6	HC-1095	112	WASHER; 1/2 FLAT, ZN PLTD, SAE
7	HC-1101	56	WASHER; 1/2 SPLIT LOCK, ZN PLTD, MEDIUM
8	HC-1444	56	BOLT, 1/2-13 X 1.75", HEX HEAD, GRADE 5, ZN PLTD

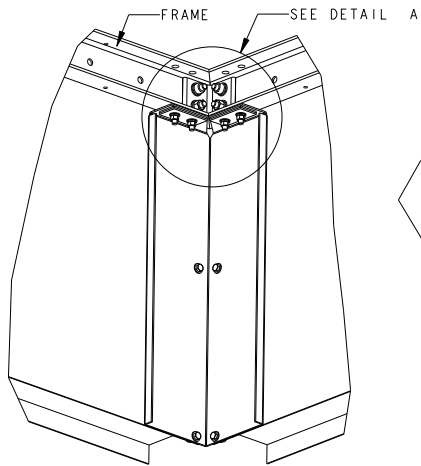


ISO VIEW
 SCALE 1/40

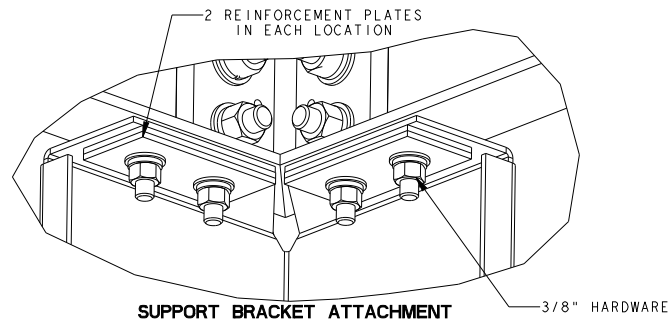


KICKER BOTTOM
 DETAIL E
 SCALE 1/8

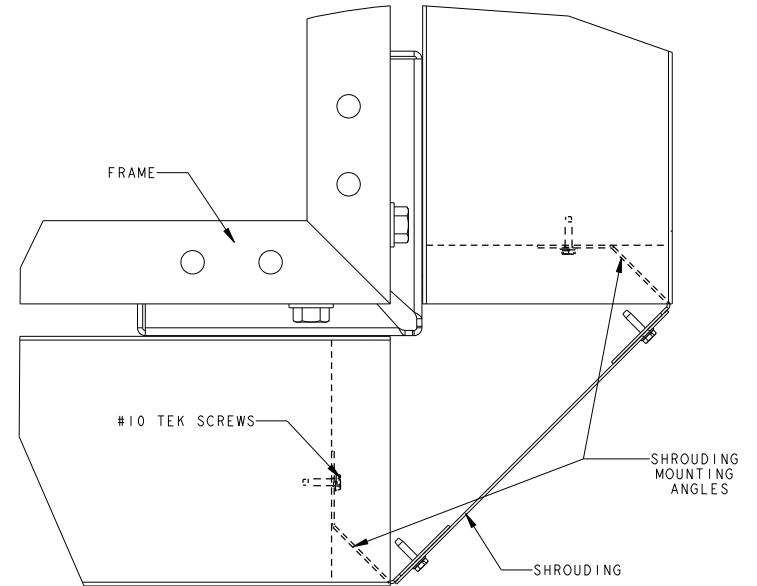
03	28 MAR 20	PER CN-100515; ADDED ATTACHMENT ANGLE, KICKER, REINFORCEMENT ANGLE, AND HARDWARE	KCM 12059
REV: 02	DATE: 28 NOV 19	DESCRIPTION: PER CN-92909, REPLACED 0M-221003 WITH 0M-816264, REPLACED HC-1152 WITH HC-1444 FOR FIELD CONNECTIONS	BY: DRG 4920
		<small>THE CONCEPTS EXPRESSED AND DETAILS SHOWN ON THIS DRAWING ARE CONFIDENTIAL AND PROPRIETARY. DO NOT REPRODUCE BY ANY MEANS WITHOUT THE EXPRESS WRITTEN CONSENT OF DAKTRONICS, INC. OR ITS WHOLLY OWNED SUBSIDIARIES. COPYRIGHT 2019 DAKTRONICS, INC. (USA)</small>	
PROJECT: INDOOR TUFF SPORT SCOREBOARDS TITLE: FIELD ASSEMBLY; 10' X 10' BOLTED FRAME DATE: 25-MAR-20 DIM UNITS: INCHES (MILLIMETERS) SHEET 1 OF 1 REV 03 SCALE: 1/40 DO NOT SCALE DRAWING DESIGN: MJOHNSO JOB NO. P1237 FUNC - TYPE - SIZE E - 07 - B DRAWN: DOPPELT			
			1102115



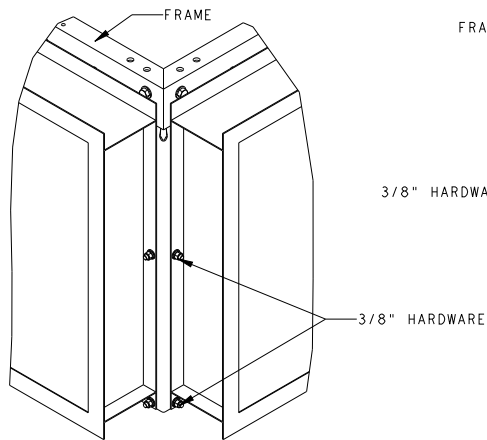
**SUPPORT BRACKET ATTACHMENT
REAR ISO VIEW
SCALE 1/10**



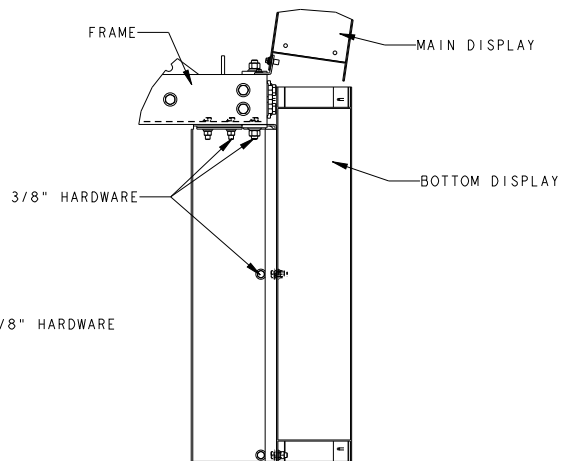
**SUPPORT BRACKET ATTACHMENT
DETAIL A
SCALE 2/5**



**SHROUDING ATTACHMENT
SCALE 1/3**



**BOTTOM DISPLAY ATTACHMENT
FRONT ISO VIEW
SCALE 1/10**



**BOTTOM DISPLAY ATTACHMENT
SIDE VIEW
SCALE 1/10**

NOTES

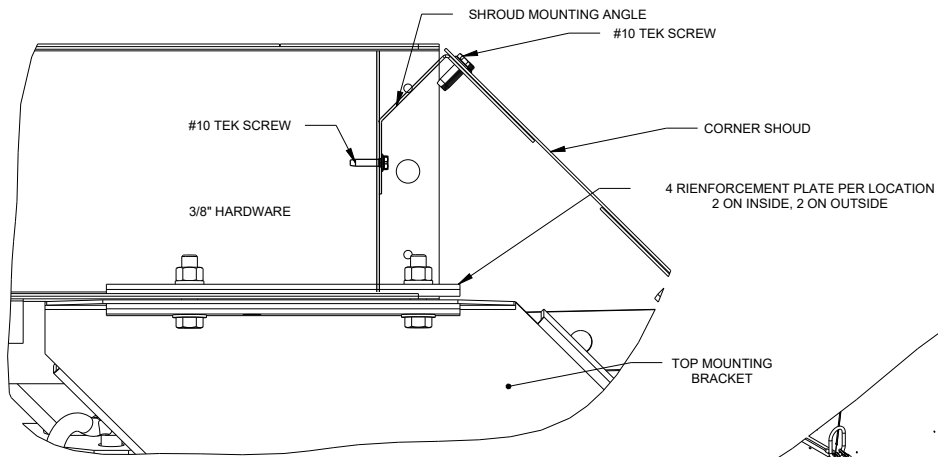
ATTACH SUPPORT BRACKET TO FRAME USING 3/8" HARDWARE AND REINFORCEMENT PLATES @2 ON BOTTOM AT EACH BOLT LOCATION

ATTACH BOTTOM DISPLAY TO SUPPORT BRACKET USING 3/8" HARDWARE AT 2 LOCATIONS ON EACH END

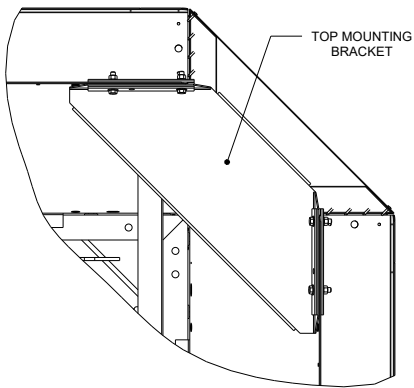
ATTACH SHROUDING ANGLES TO DISPLAY ENDS USING #10 TEK SCREWS
ATTACH SHROUD TO SHROUDING ANGLES USING #10 TEK SCREWS.

DAKTRONICS, INC. BROOKINGS, SD 57006 DO NOT SCALE DRAWING		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 2011 DAKTRONICS, INC.	
		PROJ: INDOOR TUFFSPORT SCOREBOARDS TITLE: BTM 4-SIDE, MOUNTING DETAIL	
DESIGN: DOPPELT		DRAWN: DOPPELT	
SCALE: AS SHOWN		DATE: 01-JUL-12	
SHEET:	REV:	JOB NO.:	FUNC-TYPE-SIZE:
1 OF 1	00	P 1237	E-10-B

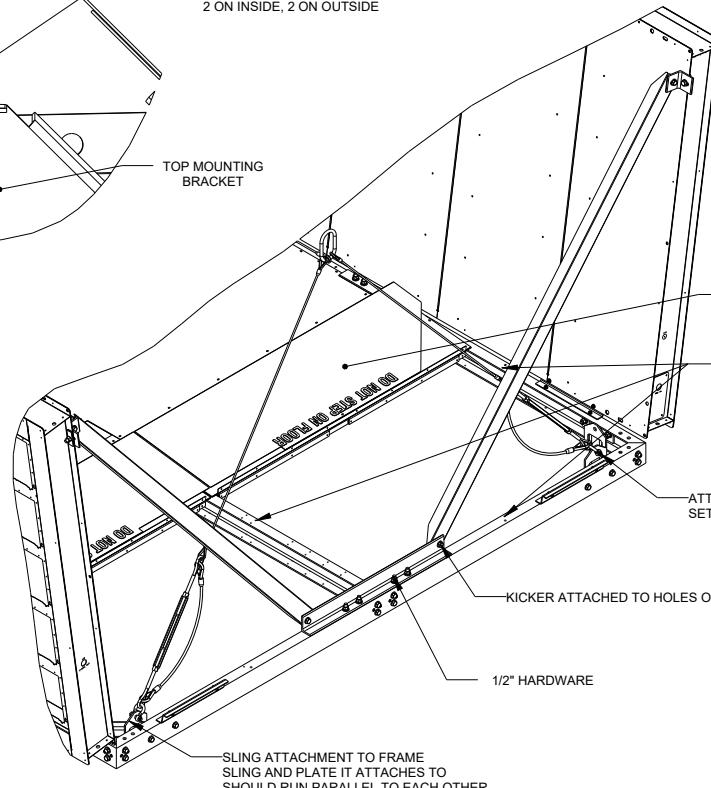
REV	DATE:	BY:	1102427
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DISPLAY END DETAIL
TOP VIEW
SCALE 1/3

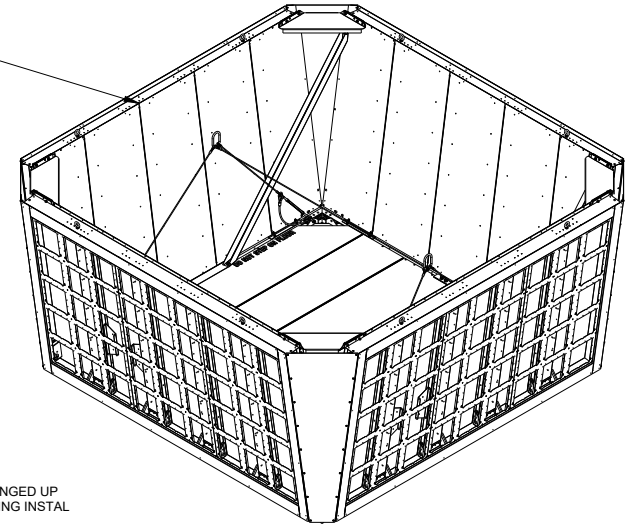


TOP VIEW
CORNER OF DISPLAY
SCALE 1/10



KICKER ATTACHMENT
IF LED MATRIX DISPLAY ONLY
SCALE 1/20

MAIN DISPLAY SHOWN IS LED MATRIX
DISPLAY WITHOUT ELECTRONICS
DISPLAY MAY BE A SCOREBOARD OR AD PANEL
(HEIGHT OF DISPLAY MAY VARY)



FINAL ASSY
ISOMETRIC VIEW
SCALE 1/40

METAL FLOOR HINGED UP
TO CENTER DURING INSTAL

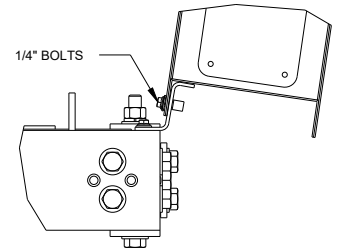
IF METAL FLOOR, REMOVE THE
3 SCREWS PER QUARTER OF FLOOR
THEN FLOOR CAN BE
HINGED UP TO CENTER.
FOLD PARTS DOWN AT END.
DO NOT REINSTALL SCREWS.

ATTACH SLING
SET TO CORNERS

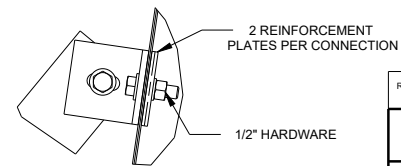
KICKER ATTACHED TO HOLES ON ATTACHMENT ANGLE

1/2" HARDWARE

SLING ATTACHMENT TO FRAME
SLING AND PLATE IT ATTACHES TO
SHOULD RUN PARALLEL TO EACH OTHER



MAIN DISPLAY
BOTTOM CONNECTION DETAIL
SCALE 1/5

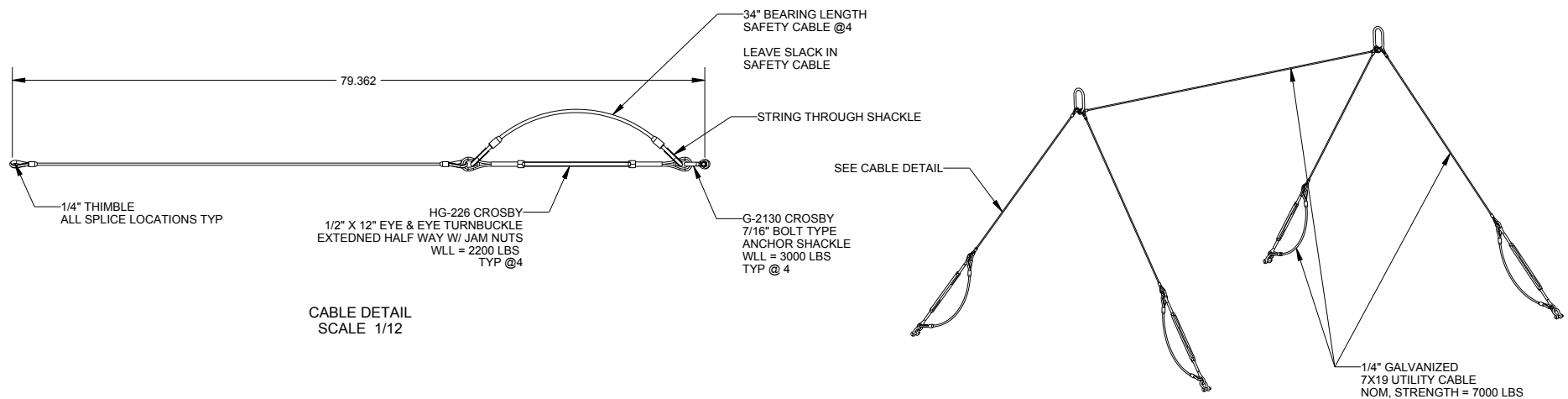


DISPLAY BRACE ATTACHMENT
ANGLE BOLTS TO KICKER
AND EDGE OF DISPLAY
SCALE 1/5

NOTES

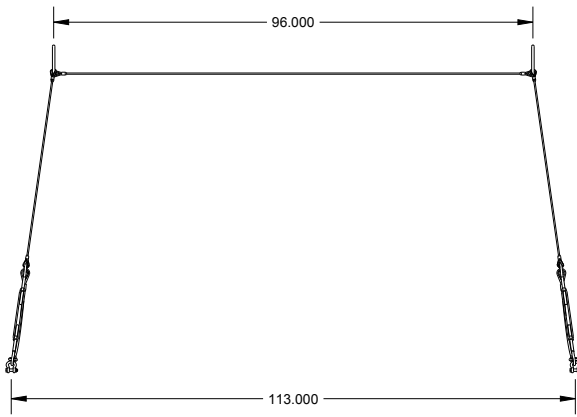
- KICKER ATTACHES TO 2 OPPOSITE SIDE DISPLAYS NEAR TOP AND TO MIDDLE OF FRAME WITH 1/2" HARDWARE
- ATTACH MAIN DISPLAYS TO ANGLE ON FRAME AT BOTTOM WITH 1/4" BOLTS
- ATTACH DISPLAYS TOGETHER AT TOP WITH TOP MOUNTING BRACKETS REINFORCEMENT PLATES AND 3/8" HARDWARE
- ATTACH SHROUD MOUNTING ANGLES TO DISPLAY ENDS WITH #10 TEK SCREWS
- ATTACH CORNER SHROUDS TO ANGLES WITH #10 TEK SCREWS

REV: 01	DATE: 13 APR 20	DESCRIPTION: PER CN-100515, UPDATED BRACKET IN MAIN DISPLAY DETAIL, UPDATED KICKER PROFILE, UPDATED NOTES, KICKER FOR ALL DISPLAY TYPES AN MULTIPLE OPTIONS.	BY: DRG 4520
<p>DAKTRONICS</p> <p>THE CONCEPTS EXPRESSED AND DETAILS SHOWN ON THIS DRAWING ARE CONFIDENTIAL AND PROPRIETARY. DO NOT REPRODUCE BY ANY MEANS WITHOUT THE EXPRESS WRITTEN CONSENT OF DAKTRONICS, INC. OR ITS WHOLLY OWNED SUBSIDIARIES. COPYRIGHT 2020 DAKTRONICS, INC. (USA)</p>			
PROJECT: INDOOR TUFTSPORT SCOREBOARDS			
TITLE: TOP 4-SIDE, MOUNTING			
DATE: 25-MAR-20	DIM UNITS: INCHES [MILLIMETERS]	SHEET 1 OF 1 REV 01	
SCALE: 7/600	DO NOT SCALE DRAWING		
DESIGN: DOPPELT	JOB NO. P1237	FUNC - TYPE - SIZE: E - 10 - B	1102472
DRAWN: DOPPELT			

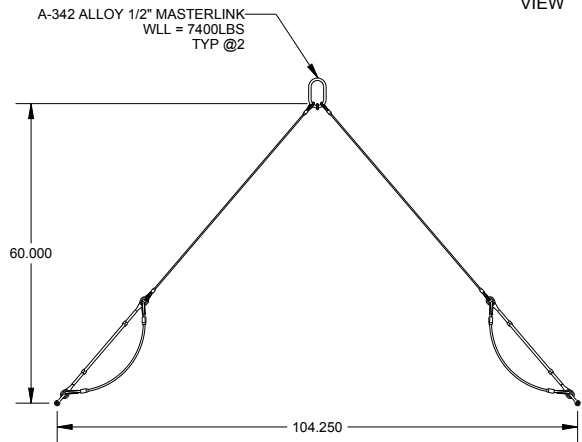


CABLE DETAIL
SCALE 1/12

FRONT ISOMETRIC
VIEW



FRONT VIEW



SIDE VIEW

USE WITH MODELS:

- BB-2106
- BB-2108
- BB-2124
- BB-2126
- BB-2146
- BB-2147
- H-2105
- H-2107
- H-2109

MAXIMUM OVERALL
STATIC LOAD CAPACITY
2,800 LBS

MAXIMUM OVERALL
IMPACT LOAD CAPACITY
4,200 LBS

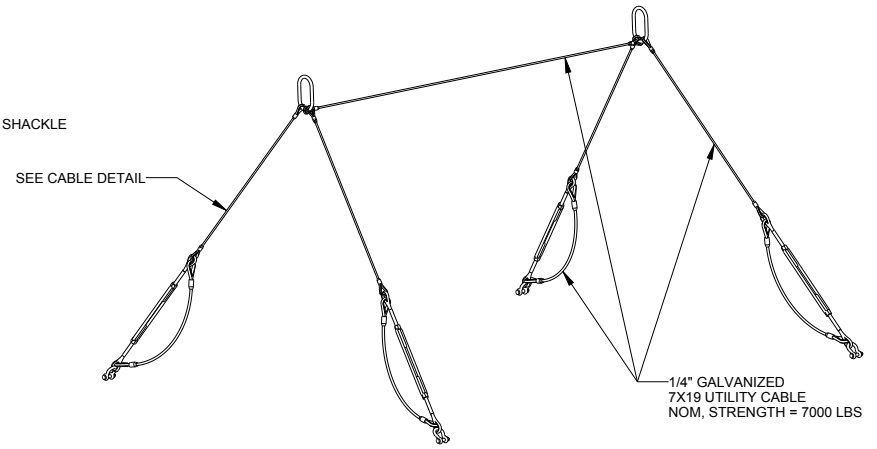
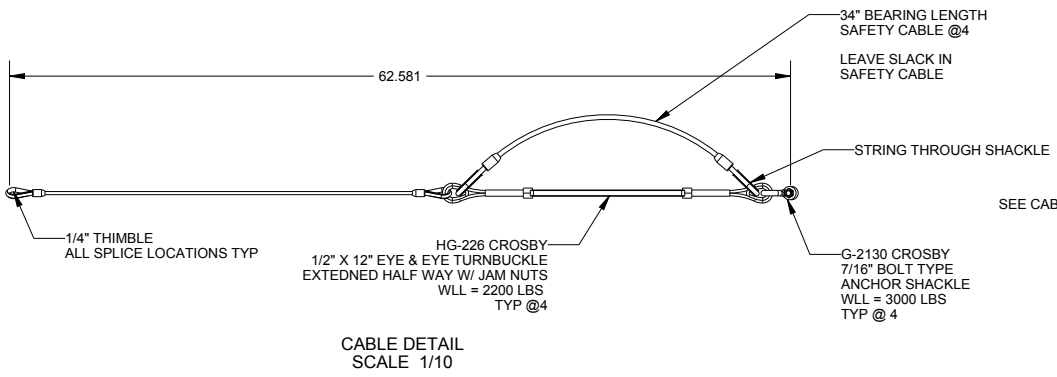
DAKTRONICS PART NUMBER: HS-2306

NOTE:

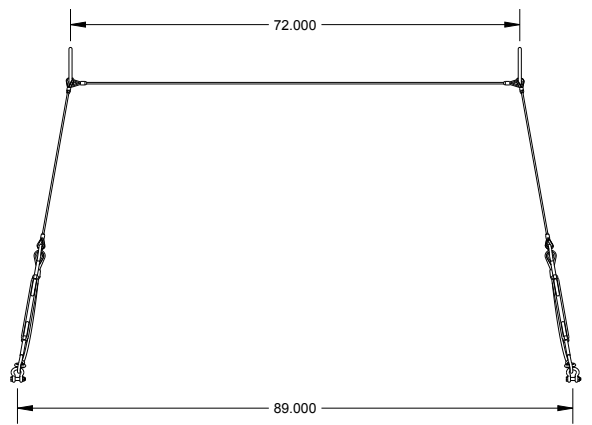
1. ALL COMPONENTS ARE CROSBY PARTS UNLESS OTHERWISE NOTED. SUBSTITUTIONS REQUIRE DAKTRONICS APPROVAL.
2. ALL MEASUREMENTS ARE FROM THE POINT OF CONTACT OF THE LINKAGES.
3. PROOF TEST TO 150% OF WORKING LOAD. SEND QUALITY SHEETS TO DAKTRONICS.
4. ALL CONNECTIONS ARE TO BE FLEMISH EYE SPLICE WITH SWAGED SLEEVES.

03	15 MAY 15	UPDATED LOAD CAPACITY	MKD
02	21 JUL 14	CHANGED 1/2" THIMBLE TO 1/4" THIMBLE	KWR
01	23 JUL 13	ADDED BB-2146 & BB-2147 TO THE MODEL LIST	KCS
REV	DATE:		BY:

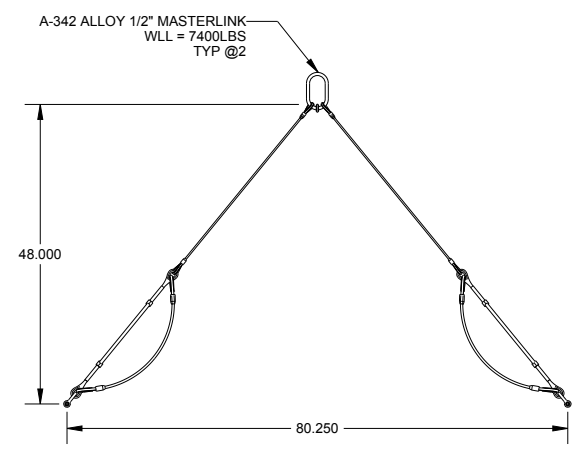
DAKTRONICS, INC. BROOKINGS, SD 57006 DO NOT SCALE DRAWING		THE CONCEPTS EXPRESSED AND DETAILS SHOWN ON THIS DRAWING ARE CONFIDENTIAL AND PROPRIETARY. DO NOT REPRODUCE BY ANY MEANS WITHOUT THE EXPRESSED WRITTEN CONSENT OF DAKTRONICS, INC. COPYRIGHT 2013 DAKTRONICS, INC.	
		PROJ: INDOOR SCOREBOARDS TITLE: SLING SET; STANDARD 10' SQUARE 4-SIDE SCOREBOARDS	
DESIGN: KSCHNAB		DRAWN: LGROOTW	
SCALE: 1/25		DATE: 15-MAY-15	
SHEET:	REV:	JOB NO.:	FUNC-TYPE-SIZE:
1 OF 1	03	P 1237	E - 10 - B
			1130800



FRONT ISOMETRIC VIEW



FRONT VIEW



SIDE VIEW

USE WITH MODELS:
BB-2102
BB-2104
H-2112

MAXIMUM OVERALL
STATIC LOAD CAPACITY
2,800 LBS

MAXIMUM OVERALL
IMPACT LOAD CAPACITY
4,200 LBS

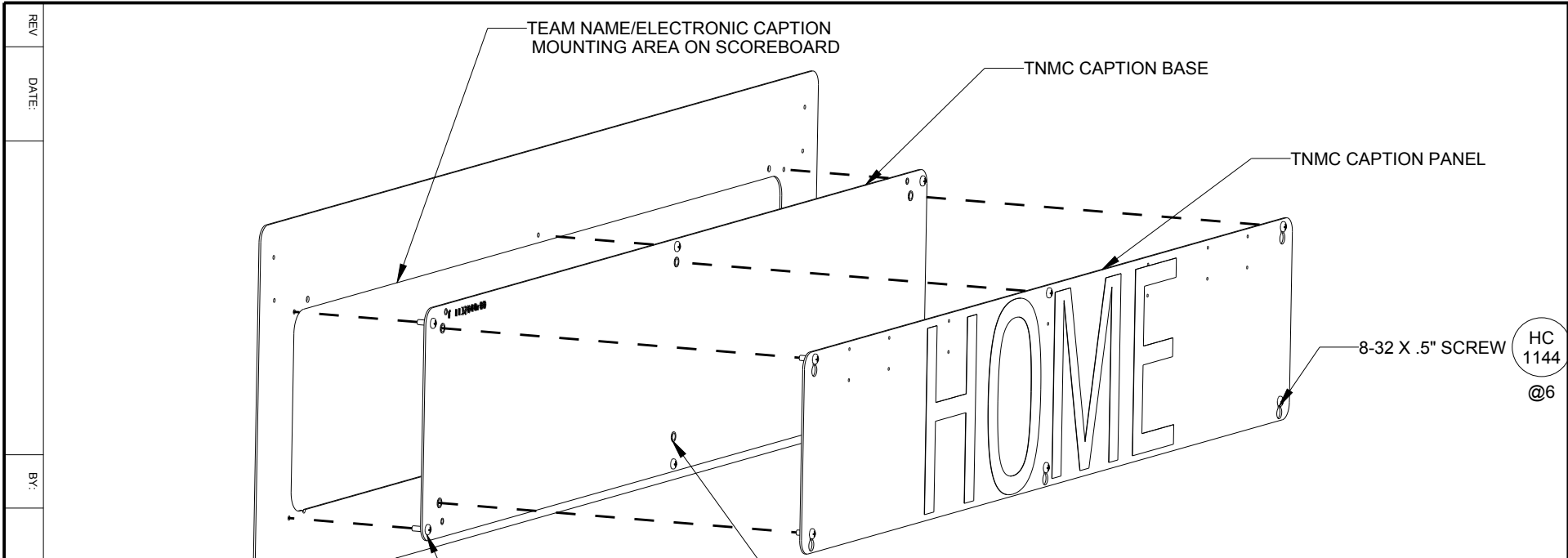
DAKTRONICS PART NUMBER: HS-2305

NOTE:

1. ALL COMPONENTS ARE CROSBY PARTS UNLESS OTHERWISE NOTED. SUBSTITUTIONS REQUIRE DAKTRONICS APPROVAL.
2. ALL MEASUREMENTS ARE FROM THE POINT OF CONTACT OF THE LINKAGES.
3. PROOF TEST TO 150% OF WORKING LOAD. SEND QUALITY SHEETS TO DAKTRONICS.
4. ALL CONNECTIONS ARE TO BE FLEMISH EYE SPLICE WITH SWAGED SLEEVES.

02	15 MAY 15	UPDATED LOAD CAPACITY	MKD
01	21 JUL 14	CHANGED 1/2" THIMBLE TO 1/4" THIMBLE	KWR
REV	DATE:		BY:

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 2013 DAKTRONICS, INC.	
DO NOT SCALE DRAWING			
PROJ: INDOOR SCOREBOARDS			
TITLE: SLING SET; STANDARD 8' SQUARE 4-SIDE SCOREBOARDS			
DESIGN: KSCHNAB	DRAWN: LGROOTW	DATE: 15-MAY-15	
SCALE: 1/20			
SHEET: 1 OF 1	REV: 02	JOB NO: P 1237	FUNC-TYPE-SIZE: E - 10 - B
			1130854



HC
1144
@6

HC
1144
@6

HS
1269
@6

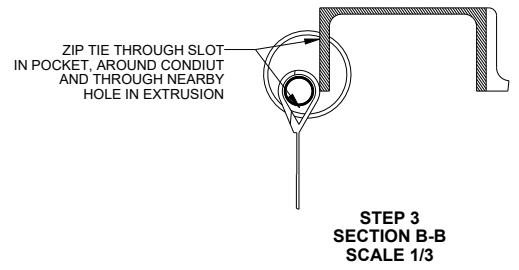
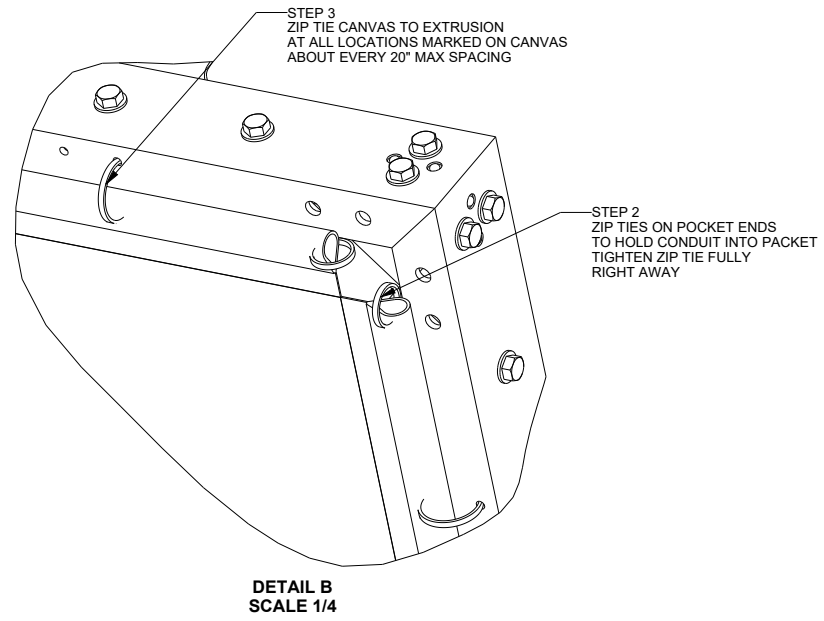
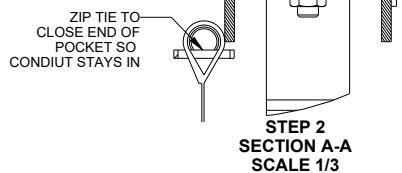
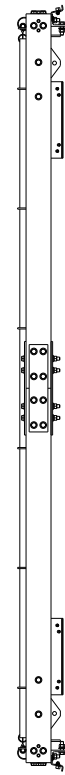
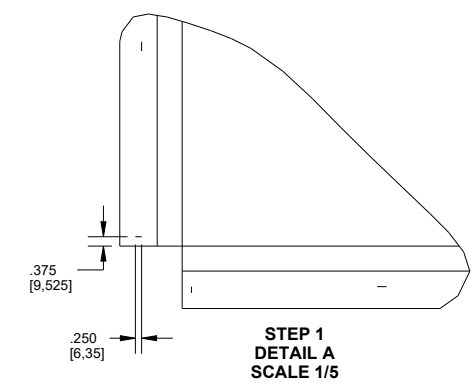
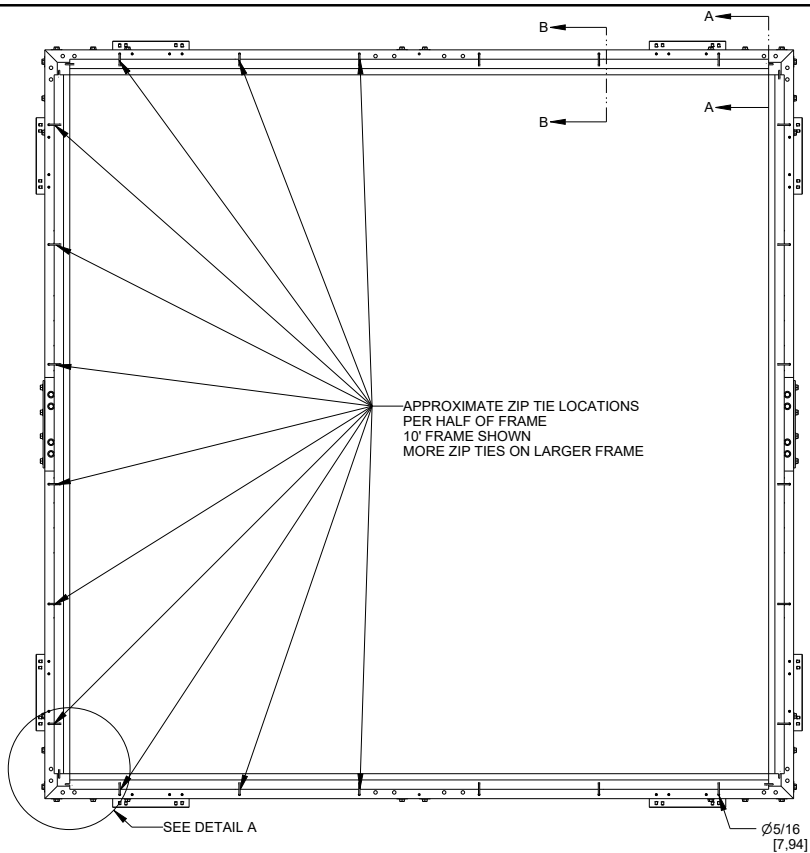
NOTE:
ALIGN CAPTION CENTER HORIZONTALLY
BASED ON SCOREBOARD AND
CLOSEST ALIGNMENT HOLE.
CENTER CAPTION VERTICALLY.

PROCEDURE:

1. PLACE HS-1269 NUTSERTS IN TNMC CAPTION BASE.
2. ATTACH TNMC CAPTION BASE TO SCOREBOARD USING HC-1144 SCREWS.
3. ATTACH TNMC CAPTION PANEL TO TNMC CAPTION BASE USING HC-1144 SCREWS PLACED IN ALL KEYHOLE LOCATIONS.
4. IN ORDER TO CHANGE CAPTION NAME, REMOVE TOP CENTER SCREW, LOOSEN ALL OTHER SCREWS, SLIDE PANEL UP TO REMOVE FROM SCREWS AND FLIP PANEL. PLACE PANEL BACK ON, SLIDE PANEL DOWN. FASTEN TOP MIDDLE SCREW AND TIGHTEN ALL OTHER SCREWS.

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<small>BROOKINGS, SD 57006</small>		<small>DO NOT SCALE DRAWING</small>	
PROJ: INDOOR SCOREBOARD			
TITLE: CHANGEABLE TEAM NAME CAPTION INSTALLATION			
<small>DESIGN: MJOHNSO</small>	<small>DRAWN: MJOHNSO</small>	<small>DATE: 09-APR-13</small>	
<small>SCALE: 1/5</small>	<small>SHEET: 1 OF 1</small>	<small>REV: 00</small>	<small>JOB NO: P 1749</small>
		<small>FUNC: TYPE-SIZE</small>	1132576
		<small>E - 10 - A</small>	

<small>REV</small>	<small>DATE</small>	<small>BY</small>



- NOTES:
- STEP 1 - SEE DETAIL A
 - ROLL OUT THE CANVAS FLOOR
 - CUT SLOTS INTO THE CANVAS AROUND THE PERIMETER THROUGH THE POCKETS ON MARKS ON CANVAS
 - STEP 2 - SEE SECTION A-A
 - INSERT 1/2" CONDUIT INTO POCKETS
 - ZIP TIE THROUGH SLOTS AT END OF POCKETS SO CONDUIT CANNOT COME OUT
 - STEP 3 - SEE SECTION B-B
 - ZIP TIE CANVAS TO BOTTOM OF FLOOR
 - ZIP TIES GO THROUGH SLOTS IN CANVAS AND AROUND CONDUIT AND NEARBY HOLES IN EXTRUSION
 - ATTACH CANVAS LOOSLY TO BOTTOM EXTRUSION TO BEGIN THEN SLOWLY TIGHTEN ONE SIDE AT A TIME TO KEEP CANVAS CENTERED AND TO REMOVE ALL WRINKLES.
 - ADDITIONAL ZIP TIES MAY BE ADDED AS NEEDED.
 - HOLES (5/16") MAY NEED TO BE DRILLED INTO EXTRUSION

REV.	DATE:	DESCRIPTION:	BY:	REV
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PROJECT: INDOOR SCOREBOARDS				
TITLE: CANVAS FLOOR ATTACHMENT DETAIL				
DATE:	22-JUN-21	DIM UNITS: INCHES [MILLIMETERS]	SHEET	REV
SCALE:	1/20	DO NOT SCALE DRAWING		00
DESIGN:	DOPPELT	JOB NO.:	FUNC. - TYPE - SIZE	
DRAWN:	DOPPELT	P1237	E - 10 - B	4880921

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C **Supplementary Documents**

This section contains additional information about hoist suspension systems.

- **Scoreboard Hoist Suspension System Specifications (SL-03610)**
- **Suspension Systems for Centerhung Scoreboards (DD1627665)**

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SCOREBOARD HOIST/SUSPENSION SYSTEM SPECIFICATIONS

The objective of these specifications is to design to single component failure prevention principals. This means that the system has been analyzed for reasonable failure possibilities and a means of backing up the possible failing component is designed into the system.

THE HOIST SYSTEM INCLUDES:

- The hoist, which includes all components necessary for a complete and safe installation.
- All necessary components, brackets, required to mount the hoist to the building infrastructure.
- Hoist control pendant.
- Hoist installation including scoreboard hookup and setting of safety limits, and maintenance/operator training.
- Hoist provider shall provide customer with detailed building loading information.

THE BASE BUILDING WILL PROVIDE:

- Verification that the system and its integration into the building structure compose a thoroughly designed and adequately engineered system to support all anticipated static and dynamic loads.

HOIST SPECIFICATIONS

- Shall be designed to support the scoreboard load 100% of the time
- Shall have automatic failure-protection safety brake one per drum to slow, stop and hold the rated load with a maximum impact of 150% of rated load.
- Shall automatically disable hoist motor functions when an over speed condition is detected.
- Shall have key ways designed to eliminate possibility of keys walking or escaping.
- Shall have reeving of lifting cables with maximum of 2-degree fleet angle.
- Shall have 8:1 factor of safety on any single leg of a reeved cable.
- Shall have sheave, cable, and cable to drum connections with 8:1 factor of safety to design load.
- Shall have continuously engaged mechanical braking system, which runs in parallel to the electro-magnetic motor brake
- Shall have gear reducer manufactured to AGMA specification, rated to support the scoreboard at a minimum service factor of 1.
- Shall have lifting speed range of 5-20 fpm.
- Shall have 2 separate cables per pick point on 2 pick point systems.
- Shall have integral motor disc brake rated in excess of 150% of full load motor torque.

CONTROL SPECIFICATIONS

- The manual control center for the self-contained rigging system shall be wall mountable and contain two momentary control push buttons for direction and a hoist enable selector switch for each hoist in the system. Maximum number of motors permitted to run simultaneously shall be limited to power availability or customer preference. A power on indicator and a keyed system maintained Emergency Stop button shall come standard with all control options. The manual control center shall house all hardware necessary to control each hoist module in the system independently.
- Each hoist shall operate in open loop permitting the hoist to travel within its allowable trim limits.
- Each hoist shall be tested and commissioned at the factory to configure upper and lower soft limits as specified. Fine hard limit adjustment shall be done on site by a certified Daktronics representative.
- Each hoist will be equipped with hard struck over travel limits as well as a redundant ground out circuit designed to set the motor brake in the event of a switch failure.
- Hard struck switches shall only be used as the first line of defense to prevent an over travel occurrence. Under normal operation, the hoist will be permitted to travel within its hard struck limits. If a hard struck limit is engaged, the hoist must come to a complete stop and automatically disable any further movement in that direction.

SCOREBOARD HOIST/SUSPENSION SYSTEM SPECIFICATIONS

JOB SPECIFIC SPECIFICATIONS

- Weight of scoreboard system load
- Vertical lift required
- Hook blocks as required for reeving
- Vertical reach if required
- Quantity and type of elevation detection
- Number of remote pendants
- Pickup points to scoreboard
- Type of mounting
- Hook centers
- Voltage
- Tentative installation start and completion date
- Mounting drawings required from hoist supplier for customer engineers approval
- Hoist weight certification required
- Hoist to include interface steel/fasteners required for mounting to structure

DOCUMENTATION REQUIRED FROM HOIST MANUFACTURER

- Signed Certification by PE/Company CEO that the design meets the specifications for this application.
- Auxiliary fail-protection secondary braking system to have been installed and functional on at least 2 installations for a period of one year or be field testable for functionality.
- Recommended inspection schedule.
- Calculations for hoist design must be available on demand with PE signature.
- Certificate of Conformance to metallurgical, drawing and general manufacturing processes of the gear drive manufacturer.
Document must originate from the gear drive manufacturer.
- Calculations on maximum impact load to structure if secondary brakes are activated.

HOIST INSTALLATION SCOPE OF WORK

Provide all labor, materials, and equipment to perform the following:

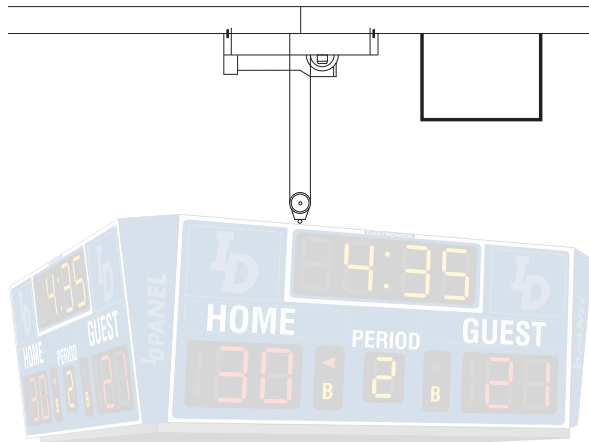
- Accept, lift, and remove hoist from freight carrier. Coordinate all shipments with Daktronics. You are responsible for coordinating delivery, offloading, and staging and on site transportation of all equipment and materials provided by your company.
- Provide all necessary labor, equipment and material required for the installation of the hoist system.
- Responsible for providing any/all-rigging steel required for the installation of the hoist system.
- Responsible for removing any grating that may interfere with the hoist system.
- All welds are to be performed by a certified welder. All slag must be chipped and welds must be cleaned.
- All welding rod stubs, slag and other misc. materials must be cleaned up and disposed of properly.
- All steel and welds, shop and field, must be primed, cover coated and finish coated after cleaning.
- Lift and install hoist onto customer provided hoist platform
- Reeve hook blocks and attach to scoreboard hook points.
- Lift and level scoreboard.
- Set all safety limits.
- Verify hoist is fully operational and meets all safety requirements.
- Provide operation/maintenance training to building support staff. Obtain a list of the trainees with their signatures and submit a copy to Daktronics for file.
- Provide a copy of installation checklist to Daktronics for file.

SUSPENSION SYSTEMS FOR CENTERHUNG SCOREBOARDS

Daktronics centerhung scoreboards can be suspended in two different ways:

- A **static suspension system** holds the scoreboard securely in place using cables attached to the structural framework of a building. This technique works well with smaller scoreboards and in applications where the scoreboard has no need for lowering and raising. A portable elevating work platform is required to service the scoreboard.
- An **electronic hoist system** offers more options. This technique uses multiple drums attached to the arena's structure which wind (or unwind) cables attached to the scoreboard which enable it to be lowered and raised. A hoist system works best in larger facilities and in applications where the scoreboard needs to be lowered for service or moved to allow additional clearance for events.

ELECTRONIC HOIST SYSTEM



SCOREBOARD IS LOWERED TO FLOOR FOR SERVICE

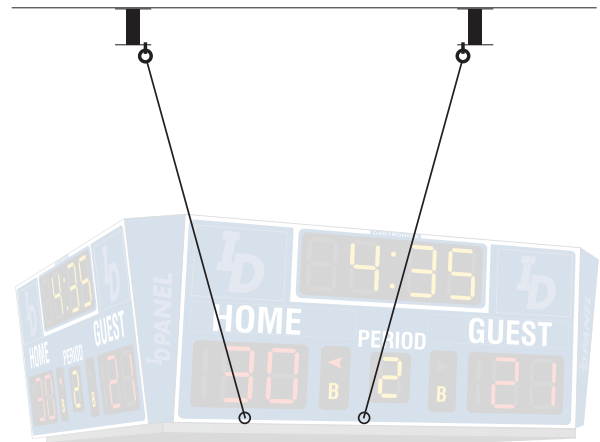
ADVANTAGES

- Allows scoreboard to be lowered and serviced from the floor
- Can move scoreboard to various heights for different events and when not in use or allow scoreboard to be lowered and removed from arena entirely

DISADVANTAGES

- Higher purchase cost
- Higher installation costs*
- Maintenance requirements (semi-annual inspection required by local or state inspectors)
- Additional liability issues
- Additional stress on roof structure

STATIC SUSPENSION SYSTEM



SERVICE PERSONNEL MUST USE ELEVATING LIFT TO ACCESS SCOREBOARD

ADVANTAGES

- Lower purchase cost
- No hoist maintenance necessary
- Easier to get engineering approval

DISADVANTAGES

- Cannot lower and raise scoreboard to different levels
- Must have or purchase lift to service scoreboard
- Scoreboard may be in the way for concerts and events

* Installation of an electrical hoist system often requires increased structural work for mounting. Engineering approval is required as well as installation of electrical service for the hoist.

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D Daktronics Warranty & Limitation of Liability

This section includes the Daktronics Warranty & Limitation of Liability statement (SL-02374).

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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", which may also be the Purchaser) 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 per Incoterms® 2020. 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 per Incoterms® 2020; 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 per Incoterms® 2020. 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;



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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;
- 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

- A. 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.
- B. 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
- C. 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

- A. 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; Election of Remedies

- A. 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.
- B. Any dispute, controversy or claim arising from or related to this Warranty, the parties shall first attempt to settle through negotiations. In the event that no resolution is reached, then such dispute, controversy, or claim shall be resolved by final and binding arbitration under the Rules of Arbitration of the International Chamber of Commerce. The language of the arbitration

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shall be English. The place of the arbitration shall be Sioux Falls, SD. A single arbitrator selected by the parties shall preside over the proceeding. If a single arbitrator cannot be agreed upon by the parties, each party shall select an arbitrator, and those arbitrators shall confer and agree on the appointed arbitrator to adjudicate the arbitration. The arbitrator shall have the power to grant any provisional or final remedy or relief that it deems appropriate, including conservatory measures and an award of attorneys' fees. The arbitrator shall make its decisions in accordance with applicable law. By agreeing to arbitration, the Parties do not intend to deprive any court of its jurisdiction to issue a pre-arbitral injunction, pre-arbitral attachment, or other order in aid of arbitration proceedings and the enforcement of any award. Without prejudice to such provisional remedies as may be available under the jurisdiction of a court, the arbitrator shall have full authority to grant provisional remedies and to direct the Parties to request that any court modify or vacate any temporary or preliminary relief issued by such court, and to award damages for the failure of any Party to respect the arbitrator's orders to that effect.

6. Availability of Extended Service Agreement

- A. 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).

Additional Terms applicable to sales outside of the United States

The following additional terms apply **only** where the installation site of the Equipment is located outside of the United States of America.

1. In the event that the installation site of the Equipment is in a country other than the U.S.A., then, notwithstanding Section 5 of the Warranty, where the selling entity is the entity listed in Column 1, then the governing law of this Warranty is the law of the jurisdiction listed in the corresponding row in Column 2 without regard to its conflict of law principles. Furthermore, if the selling entity is an entity listed in Column 1, then the place of arbitration is listed in the corresponding row in Column 3.

Column 1 (Selling Entity)	Column 2 (Governing Law)	Column 3 (Location of Arbitration)
Daktronics, Inc.	The state of Illinois	Chicago, IL, U.S.A.
Daktronics Canada, Inc.	The Province of Ontario, Canada	Toronto, Ontario, Canada
Daktronics UK Ltd.	England and Wales	Bristol, UK
Daktronics GmbH	The Federal Republic of Germany	Wiesbaden, Germany
Daktronics Hong Kong Limited	Hong Kong, Special Administrative Region of the P.R.C.	Hong Kong SAR
Daktronics Shanghai Co., Ltd.	The Peoples Republic of China	Shanghai, P.R.C.
Daktronics France, SARL	France	Paris, France
Daktronics Japan, Inc.	Japan	Tokyo, Japan
Daktronics International Limited	Macau, Special Administrative Region of the P.R.C.	Macau SAR
Daktronics Australia Pad Ltd	Australia	Sydney, Australia
Daktronics Singapore Pte. Ltd	Singapore	Singapore
Daktronics Brazil LTDA	Brazil	São Paulo, Brazil
Daktronics Spain S.L.U.	Spain	Madrid, Spain
Daktronics Belgium N. V	Belgium	Kruikeke, Belgium
Daktronics Ireland Co. Ltd.	Ireland	Dublin, Ireland

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