OUTDOOR LED
MOTORSPORTS DISPLAYS
INSTALLATION MANUAL

P1198

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<table>
<thead>
<tr>
<th>Motorsports Models</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>AR-1522</td>
<td>AR-2426</td>
<td>CH-3105</td>
</tr>
<tr>
<td>AR-2401</td>
<td>AR-2427</td>
<td>DR-2482</td>
</tr>
<tr>
<td>AR-2402</td>
<td>AR-2428</td>
<td>DR-2483</td>
</tr>
<tr>
<td>AR-2404</td>
<td>AR-2429</td>
<td>DR-3682</td>
</tr>
<tr>
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<td>CH-3001</td>
<td>DR-3683</td>
</tr>
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<td>AR-2421</td>
<td>CH-3002</td>
<td>DR-4882</td>
</tr>
<tr>
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<td>CH-3004</td>
<td></td>
</tr>
<tr>
<td>AR-2424</td>
<td>CH-3006</td>
<td></td>
</tr>
</tbody>
</table>
# Table of Contents

1 **Introduction** ........................................................................................................................................... 1
   - Important Safeguards ............................................................................................................................... 1
   - Specifications Label ................................................................................................................................. 1
   - Resources ................................................................................................................................................ 1
   - Troubleshooting ..................................................................................................................................... 2
   - Display Controllers ................................................................................................................................. 2
   - Product Safety Approval ......................................................................................................................... 2

2 **Mechanical Installation** ..................................................................................................................... 3
   - Lifting ................................................................................................................................................... 3
   - Vertical Display Mounting .................................................................................................................... 4
   - Mounting Horizontal Displays .............................................................................................................. 6
     - Clamping Angles ................................................................................................................................. 6
     - I-Beam Clamps (Drag Racing) ........................................................................................................... 7
   - Go-Kart Display Mounting ................................................................................................................... 8
     - CH-3105 ........................................................................................................................................... 9
   - Ad Panel Mounting ............................................................................................................................... 9
   - Unistrut Attachment ............................................................................................................................. 9
   - Clamping Angles ................................................................................................................................ 10
   - I-Beam Clamps (Drag Racing) ........................................................................................................... 11

3 **Electrical Installation** .......................................................................................................................... 12
   - Installation Overview .......................................................................................................................... 12
   - Power .................................................................................................................................................. 15
     - Grounding ..................................................................................................................................... 16
       - Installation with Ground and Neutral Conductors Provided ......................................................... 16
       - Installation with Only a Neutral Conductor Provided .................................................................... 16
     - Lightning Protection ......................................................................................................................... 16
     - Connection ..................................................................................................................................... 17
   - Power-On Self-Test (POST) ................................................................................................................. 18
   - Wired Signal Connection .................................................................................................................... 18
     - Copper Signal ................................................................................................................................. 18
     - Fiber Optic Signal ............................................................................................................................ 19
     - Multiple Driver Connections .......................................................................................................... 19
   - Wireless Signal Connection ................................................................................................................ 19
     - All Sport Control ............................................................................................................................ 19
     - Radio Settings ............................................................................................................................... 19
   - Power/Signal Connections Between Sections ..................................................................................... 20
     - Vertical Displays ............................................................................................................................ 20
     - Horizontal Displays (AR-2402 + AR-2407) .................................................................................. 20
     - CH-3105 ......................................................................................................................................... 21
     - CH-3001 & CH-3006 ....................................................................................................................... 21
     - Drag Racing Displays ...................................................................................................................... 21
     - Optional Win Light Installation ...................................................................................................... 22
Table of Contents

4 Daktronics Exchange and Repair & Return Programs .........................................................23
   Exchange Program ..................................................................................................................23
   Repair & Return Program ......................................................................................................24
   Daktronics Warranty & Limitation of Liability .....................................................................24

A Specifications ..........................................................................................................................25
B Reference Drawings .................................................................................................................27
C Daktronics Warranty & Limitation of Liability .....................................................................37
1 Introduction

This manual explains the installation of Daktronics auto racing, drag racing, and go-kart displays. For additional information regarding the safety, installation, operation, or service of these displays, refer to the telephone numbers listed in Section 4: Daktronics Exchange and Repair & Return Programs (p.23). This manual is not specific to a particular installation.

Important Safeguards

- Read and understand all instructions before beginning the installation process.
- Properly ground the cabinet with a grounding electrode at the display location.
- 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 painted face of the display, similar to the one shown in Figure 1.

![Figure 1: Specifications Label](image)

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:** AR = Auto Racing displays, CH = Go Kart displays, DR = Drag Racing displays

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.

![Figure 2: Drawing Label](image)
Any drawings referenced in a section are listed at the beginning of it as shown below:

Reference Drawings:
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 component locations and detailed product appearance with part numbers and quantities

Project-specific information takes precedence over any other general information found in this manual. Ensure all applicable material has 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 manual, available online at www.daktronics.com/manuals:

- **Outdoor LED Scoreboards with Gyrus Driver Service Manual (DD3000541)**

Display Controllers
Daktronics racing displays are designed for use with All Sport® 5100 series control consoles. These consoles use keyboard overlays (sport inserts) to control numerous sports/events and display models. Refer to the manual below for operating instructions.

- **All Sport 5100 Timer Operations Manual (ED-12501)**

Daktronics motorsports displays may also be controlled by third-party software. In these instances, the All Sport controller functions as a signal converter between the software and the display. Software providers must have permission to output data in a specific format for Daktronics displays. Contact Daktronics for approved providers. Refer to the documentation from the particular software provider for operating instructions.

Product Safety Approval
Daktronics outdoor displays are ETL-listed, tested to CSA standards, and CE-labeled for outdoor use. Contact Daktronics with any questions regarding testing procedures.
2 Mechanical Installation

Mechanical installation consists of installing concrete footing and steel beams and
mounting the display and accompanying ad panels to the beams. The product
specification sheets listed in Appendix A include installation specification drawings that
show the recommended number of beams and spacing between them. The drawings
also indicate the size of beams required to support the display at different heights and at
various wind speeds.

Any column and footing size dimensions are to assist with estimating installation costs;
they are estimates only and are not intended for actual construction purposes. Be sure
that the installation complies with local building codes and is suitable for the particular
soil and wind conditions. The columns, footings, and all connection details must be
designed and certified by a professional engineer licensed to practice in the state of the
display installation.

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

Lifting

Displays and display sections ship equipped with 1/2" shoulder-type eyebolts located
along the top of the cabinet for the purpose of lifting.

**Whenever possible, use a spreader bar, or lifting bar, to lift the display.** Spreader bars
ensure force on the eyebolts remains straight up, minimizing lifting stress.

*Figure 3: Lifting Methods*

*Figure 3* illustrates the preferred lifting method on the left and an acceptable alternative
lifting method on the right. When lifting the cabinet:

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

Avoid using other lifting methods. Cables and chains attached to the eyebolts and
directly to a center lifting point, as shown in the “Acceptable” example in *Figure 3,*
can create a dangerous lateral force on the eyebolts and may cause them to fail. The
smaller the angle between the cable and the top of the cabinet, the lighter the cabinet
must be to safely lift it. If this method must be used, ensure a minimum angle between
the chain and cabinet of at least 45°.
Do NOT attempt to lift the cabinet if the angle is less than 45°. Exceeding load angles or weight limits could cause the bolts in the cabinet to buckle, resulting in serious damage to the equipment or injury to personnel. Also, loads should be applied directly in the plane of the eyebolt as shown in Figure 4.

**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 cabinet by the eyebolts or eyebolt holes.

In typical multi-section installations, the lowest display section is installed first and secured to the support beams. The upper sections are then placed atop or above the lower sections and attached to the beams.

If installers remove the eyebolts, plug the holes with bolts and the rubber washers that are used with the eyebolts. Apply silicone or another waterproof sealant to the eyebolt openings. Also inspect the top and sides of the display for any other holes that may allow moisture to enter the display, then plug and seal those openings.

**Vertical Display Mounting**

Reference Drawings:

P1647; Pole Mounting Options ............................................................ Drawing A-1048184

Mounting hardware includes spring nuts, rear clamping angles; 1/2-13 x 24" threaded rods; and 1/2" nuts, flat washers, and lock washers. Refer to DWG-1048184 in Appendix B.

**Note:** Do not use lubrication on any mounting hardware or the warranty will be void!

1. Lift the display to the desired height on the main vertical structure.

2. Insert spring nuts into the left and right cabinet channels. Twist the spring nuts until they are perpendicular to the channel (Figure 5).

**Figure 4:** Eyebolt Plane Load

**Figure 5:** Spring Nut Insertion (Vertical)
Note: Each vertical POSITION cabinet section will typically require two horizontal beams fastened to the main vertical structure. Cabinets are attached to each horizontal beam with four spring nuts and two clamping angles.

3. Position a spring nut on the top and bottom of each horizontal beam.
4. Screw a threaded rod into each of the spring nuts as far as it will go.
5. Slide clamping angles over the ends of the rods and loosely install the washers and nuts.
6. Make final adjustments in the positioning of the display section to ensure it is flush and level.
7. Ensure the threaded rods are perpendicular to the display, and then tighten all of the 1/2" hex nuts (Figure 6).
8. Repeat Steps 1-7 for all display sections.

Figure 6: Spring Nut Mounting, Side View
Mounting Horizontal Displays

Two standard mounting methods are available for horizontal displays, including variable position sections below vertical pylons and time/lap sections above vertical pylons. Each method requires spring nuts to be inserted into the rear channel of the display cabinet.

**Note:** Do not use lubrication on any mounting hardware or the warranty will be void!

1. Insert spring nuts into the top and bottom cabinet channels. Twist the spring nuts until they are perpendicular to the channel (Figure 7).

2. Measure the beam spacing and position a spring nut on either side of the beams. Each display section requires four spring nuts per beam (two at the top and two at the bottom).

![Figure 7: Spring Nut Insertion](image)

Once the spring nuts are in place, refer to the appropriate section that follows for the type of mounting hardware provided with the display.

**Clamping Angles**

**Reference Drawings:**
- P1647; Pole Mounting Options
- DWG-1048184

Use this mounting method to mount a display to I-beams or any beam/pole that does not have flanges. Mounting hardware includes spring nuts; rear clamping angles; 1/2-13 x 24” threaded rods; and 1/2” nuts, flat washers, and lock washers. Refer to Figure 8 and DWG-1048184 in Appendix B.

**Note:** The threaded rods do not pass through the beams; they run along both sides.

1. Screw a threaded rod into each of the spring nuts as far as it will go.
2. Position a display section at the front of the beams with the threaded rods extending from the rear of the spring nuts, straddling the beams.
3. Lift the display section to the desired height.
4. Slide clamping angles over both rods, and then loosely install the washers and nuts.
5. Make final adjustments to the display section position to ensure it is flush and level, and then firmly tighten all of the 1/2” hex nuts.
6. Repeat Steps 1-5 for all display sections.
I-Beam Clamps (Drag Racing)

Reference Drawings:
- P1647; I-Beam Clamp Mounting................................. DWG-1052565
- P1647; DSA I-Beam Clamp Mounting............................ DWG-1064893

Use this mounting method to mount a display to I-beams with a flange thickness of 1/4" – 3/4". If the flange is thicker than 3/4", longer bolts will be required at added expense.

Mounting hardware includes spring nuts, I-beam clamps, 1/2-13 x 3" bolts, 1/2" flat washers, and 1/2" lock washers. Refer to Figure 9 and DWG-1052565 in Appendix B.

1. Position a display section at the front of the beams, and lift it to the desired height.
2. Slide a lock washer, flat washer, and I-beam clamp onto the bolt, and loosely screw the bolt into the spring nut.
3. Position each I-beam clamp assembly as close to the I-beam flanges as possible.
4. Make final adjustments to the display section position to ensure it is flush and level, and then firmly tighten all of the bolts.
5. Repeat Steps 1-4 with all display sections.

Note: For DSA (California) approved mounting to I-beams, refer to DWG-1064893.
Go-Kart Display Mounting

Reference Drawings:
- Scoreboard Mounting: DWG-1130246

Mounting hardware includes C-channels; rear clamping angles; 1/2-13 x 15" threaded rods; and 1/2" square nuts, hex nuts, and lock washers. Refer to Figure 10 and DWG-1130246 in Appendix B.

**Note:** Do not use lubrication on any mounting hardware or the warranty will be void!

1. Position the display at the front of the beams, and lift it to the desired height.
2. Place a C-channel against the upper rear flange of the cabinet next to each beam.
3. With the C-channel as a template, use a 9/16" bit to drill holes in the upper rear flange of the cabinet where the rods will pass through. The rods should be as close to the beam as possible.
4. Push the rods through the holes in the rear flange of the cabinet and into the C-channel, and then thread 1/2" square nuts onto the rods inside the C-channel.
5. Slide clamping angles over both rods, and then loosely install the washers and nuts.
6. Make final adjustments to the display position to ensure it is flush and level, and then firmly tighten all of the 1/2" hex nuts.
7. Repeat Steps 2-6 for the lower rear flange of the cabinet for every beam.
The CH-3105 horizontal 4-section go-kart display can be mounted to beams with the use of special brackets that both hold the cabinet to the beams and connect two sections together. The CH-3105 can also be mounted to a wall via holes in the sides of the cabinet. Due to the variety of wall materials used in racing facilities, Daktronics cannot anticipate a customer's individual installation needs or provide mounting hardware suitable for every installation. Choose a method of installation that will safely support the display weight.

Refer to the installation drawings attached to the CH-3105 product specification sheet listed in Appendix A for more information about beam and wall mounting.

Ad Panel Mounting

**Note:** Do not use lubrication on any mounting hardware or the warranty will be void!

**Unistrut Attachment**

1. Using the backup channel as a template, drill four 7/16" holes in the upper and lower rear flanges of the ad panel where the beams will be located.

   **Note:** Try to ensure that the two center holes will be within the width of the beam.

2. If the ad panel has backsheets, remove them as needed to access the ad panel interior.

3. Attach the piece of unistrut to the ad panel with the included hardware, as shown in Figure 11.
4. If any backsheets were removed, put them back on at this time.

5. Place spring nuts into the unistrut. Twist the spring nuts until they are perpendicular to the unistrut channel. Refer to Figure 7 from Mounting Horizontal Displays (p. 6). Once the unistrut is attached and the spring nuts are in place, refer to the appropriate section that follows for the type of mounting hardware provided with the ad panel.

Clamping Angles

Reference Drawings:
Ad Panel Pole Mounting .......................................................... DWG-1052388

Mounting hardware includes rear clamping angles; 1/2-13 x 24” threaded rods; and 1/2” nuts, flat washers, and lock washers. Refer to Figure 12 and DWG-1052388 in Appendix B.

Note: The threaded rods do not pass through the beams; they run along both sides.

1. Screw a threaded rod into each of the spring nuts as far as it will go.
2. Position the ad panel at the front of the beams, and lift it to the desired height.
3. Slide clamping angles over both rods, and then loosely install the washers and nuts.
4. Make final adjustments to the ad panel position to ensure it is flush and level, and then firmly tighten all of the 1/2” hex nuts.

![Diagram of Ad Panel Clamping Angle Mounting](image-url)
I-Beam Clamps (Drag Racing)

Reference Drawings:

Ad Panel I-beam Clamp Mounting.................................................................DWG-1052539
Ad Panel DSA I-beam Clamp Mounting.........................................................DWG-1064894

Use this mounting method to mount an ad panel to I-beams with a flange thickness of 1/4” – 3/4”. If flange is thicker than 3/4”, longer bolts will be required at added expense.

Mounting hardware includes I-beam clamps, 1/2-13 x 3” bolts, 1/2” flat washers, and 1/2” lock washers. Refer to Figure 13 and DWG-1052539 in Appendix B.

1. Position the ad panel at the front of the beams, and lift it to the desired height.
2. Slide a lock washer, flat washer, and I-beam clamp onto the bolt, and loosely screw the bolt into the spring nut.
3. Position each I-beam clamp assembly as close to the I-beam flanges as possible.
4. Make final adjustments to the ad panel position to ensure it is flush and level, and then firmly tighten all of the bolts.

Note: For DSA (California) approved mounting to I-beams, refer to DWG-1064894.

Figure 13: Ad Panel I-beam Clamp Mounting, Rear Rotated View
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.

Electrical installation consists of the following processes:

- Providing power and ground to a disconnect near the display.
- Routing power and ground from the main disconnect to the display power/signal enclosure.
- Routing the control signal cable from the control location to the display location and/or installing the wireless radio receiver.

Installation Overview

Figure 14 illustrates a wired setup between a vertical (Auto Racing) display and controller. Daktronics part numbers are shown in parentheses.

![Diagram of Vertical Display Wired Installation](image)

**Figure 14:** Vertical Display Wired Installation (AR Shown)

**Note:** Power, signal, and control are similar for go-kart displays, while mounting differs.
Figure 15 illustrates a typical wireless setup between a vertical (Auto Racing) display and controller.

Figure 15: Vertical Display Wireless Installation (AR Shown)
Figure 16 illustrates a typical wired setup between a horizontal (Drag Racing) display and controller. Daktronics part numbers are shown in parentheses.

![Diagram of horizontal display wiring](image)

**Display Rear**

Power is terminated inside both display sections; Signal is terminated inside bottom section and re-driven into top section

**Concrete Footings**

**Grounding Wire**

**Grounding Rod**

**Lockable Power Distribution / Disconnect**

Signal Cable: 2 Pair, 22 AWG (W-1234); Max 2000’

To Control Location

To Main Power Source

- See Specifications

**Grounding Rod**

**Grounding Wire**

**Concrete Footings**

**J-Box, 1/4" Phone Jack;**

**Outdoor:** (0A-1091-0227)

**Indoor:** (0A-1009-0038)

**Signal Cable:**

- 10’ (W-1340)
- 20’ (W-1236)
- 30’ (W-1238)
- 50’ (W-1237)

**Pin Color Function**

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<td>signal -</td>
</tr>
<tr>
<td>shaft</td>
<td>green</td>
<td>not used at control end</td>
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**All Sport Controller**

**Note:** Multi-section horizontal displays require internal power/signal interconnects between sections, and prior to June 2016, Drag Racing displays required PVC pipes to route power and signal between sections; refer to **Power/Signal Connections Between Sections** (p.20).
**Figure 17** illustrates a typical wireless setup between a horizontal (Drag Racing) display and controller.

**Figure 17: Horizontal Display Wireless Installation (DR Shown)**

**Note:** Radio-controlled Drag Racing displays require signal wire in conduit from the bottom section up into the top section; refer to [Wired Signal Connection](p.18). Multi-section horizontal displays require internal power/signal interconnects between sections, and prior to June 2016, Drag Racing displays required PVC pipes to route power and signal between sections; refer to [Power/Signal Connections Between Sections](p.20).

**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.

Refer to the specification label (Figure 1) on the display, or the product specification sheets shipped with it (and listed in Appendix A), to determine maximum power requirements. Ensure all external overcurrent protection meets all local and national electrical codes and is appropriately sized to the load it is terminating. Failure to meet wiring and overcurrent protection device requirements will void the warranty.

**Note:** Ensure the display is on a dedicated circuit. This will prevent loss of critical race/event information that may otherwise occur if another component on the same circuit should fail.
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.

There are two types of power installation: installation with ground and neutral conductors provided, and installation with only a neutral conductor provided. These two power installations differ slightly, as described in the following subsections.

Installation with Ground and Neutral Conductors Provided
For this type of installation, the power circuit must contain an isolated earth-ground conductor. In this circumstance, do not connect neutral to ground at the disconnect or at the display as this would violate electrical codes and void the warranty.

Use a disconnect so that all ungrounded lines can be disconnected. The local and national electrical codes may require using a lockable power disconnect at or within sight of the display.

Installation with Only a Neutral Conductor Provided
Installations where no grounding conductor is provided must comply with local and national electrical codes. If the installation meets all requirements, observe the following guidelines:

- Connect the grounding electrode cable at the local disconnect, never at the display driver/power enclosure.
- Use a disconnect that opens all of the ungrounded phase conductors.

Lightning Protection
The use of a disconnect near the display location to completely cut all current-carrying lines significantly protects the circuits against lightning damage. Local and national electrical codes may also 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 also should 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.
Connection

Power and signal cables are routed into the display from the rear via separate conduits. All power and signal wiring terminates at the primary driver enclosure. Note that systems with radio control typically only require signal wiring for backup purposes.

Refer to the component location drawings attached to the product specification sheets listed in Appendix A for precise power/signal termination location for each model.

1. Look for a warning label similar to Figure 18 to locate the front access panel to the driver enclosure.
2. Remove the screws or loosen the latches to open the access door panel.
3. Remove the metal cover of the driver enclosure by lifting it up, then back and down to expose the driver components.
4. Connect the power wires coming through the rear of the display to the main terminal block, as shown in Figure 19.

Some displays do not receive power via terminal block. Instead, an interconnect harness routes from the nearest display section. Refer to Power/Signal Connections Between Sections (p.20).

Note: If a power receptacle is needed to operate the control console at the display for troubleshooting, an installation electrician must provide an outlet close to the disconnect box specifically for this purpose.
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 20 shows an example of the LED bar test pattern that each digit performs.

![Figure 20: Digit Segment POST](image)

Wired Signal Connection

Copper Signal

Route copper signal cable through the conduit knockout on the rear of the display to the signal surge arrester card (Figure 21), located in the primary driver enclosure.

At the SIGNAL IN terminal block, connect red signal wire to positive (+) and black signal wire to negative (−).

Note: Ensure shield (silver) wire is properly connected to the SHLD terminal.

To connect signal to additional nearby displays, such as from the bottom (MPH) section to the top (Elapsed Time) section of a Drag Racing display, route signal wire in conduit from SIGNAL OUT of the signal surge arrester card in the primary display to SIGNAL IN on the signal surge arrester card in the secondary display.

At a minimum, single-pair, shielded cable, 22 AWG (part # W-1077) is recommended. Two-pair shielded cable (part # W-1234) is preferred.

![Figure 21: Signal Surge Arrester Card](image)
Fiber Optic Signal
Route fiber optic signal cable through the conduit knockout on the rear of the display. The fiber optic cable is terminated to a male ST-type connector and plugged into the J3 jack on the fiber card (Figure 22), located in the primary driver enclosure.

A minimum cabling of multi-mode, 62.5/125 um, and 2-core fiber cable is recommended (part # W-1242). This method requires a signal converter between the All Sport console’s scoreboard output and the fiber optic cable (not provided by Daktronics).

To connect signal to additional nearby displays, such as from the bottom (MPH) section to the top (Elapsed Time) section of a Drag Racing display, route *copper* signal wire in conduit from SIGNAL OUT of the fiber card in the primary display to SIGNAL IN on the signal surge arrestor card in the secondary display.

Multiple Driver Connections
Some display models require multiple drivers that use a primary/secondary driver system. Primary and secondary drivers function identically, but secondary enclosures lack the power termination block and signal surge arrestor (or fiber) card. When one section has multiple drivers, they simply plug into one another, and this is done at the factory. Drivers between sections, however, require additional on-site connection. Refer to Power/Signal Connections Between Sections (p.20).

Wireless Signal Connection

All Sport Control
A wireless radio system requires an All Sport control console equipped with radio transmitter as well as 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.

Radio Settings
With an All Sport radio receiver installed, watch for the radio Broadcast settings (“b1”) and Channel settings (“C1”) during the Power-On Self-Test (POST) (p.18).

These values must match the settings in the control console. Refer to the controller screen at right and the manual listed in Display Controllers (p.2).

If the radio receiver channel and broadcast settings match those set in the console 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 and in the console as described in the radio control manuals.
Power/Signal Connections Between Sections
Refer to the Specifications drawings attached to the product specification sheets listed in Appendix A for exact driver locations when connecting multiple display sections.

Vertical Displays
Open the appropriate access panel on the bottom display section to locate the coiled bundle of interconnect cable coming from the driver, then route and connect the cables as described below and shown in Figure 23.

Note: Additional panels may be opened for easier access when routing the cable.

1. Starting with the bottom section, disconnect and discard the harness with 5-pin plug (P42) from the driver and terminal block; this is where external power and signal will be terminated as described in Power (p.15) and Wired Signal Connection (p.18).

2. Locate the interconnect cable with the 5-pin jack (J43) toward the top of the bottom section. Route this cable up through the hole in the top of the cabinet and into the next section, then connect the jack to the mating 5-pin plug (P42).

3. Repeat Step 2 for each display section, moving upward until they are all connected.

Horizontal Displays (AR-2402 + AR-2407)
These displays are connected via a single power/signal interconnect cable between a driver in the lower section (AR-2407) and a driver in the upper section (AR-2402).

1. On the lower section cabinet, open the appropriate access panel to locate the bundle of interconnect cable with 5-pin plug (P42) coming from the driver.

2. Route the interconnect cable up through the hole in the top of the lower section cabinet and up through the hole in the bottom of the upper section cabinet, and then connect it to the mating 5-pin jack (J42) coming from the driver.
CH-3105
The CH-3105 is composed of four sections. Power and signal are terminated in the top section, and then interconnect cables route down from section to section. Connect the J51 jack in the top section to the mating P51 plug in the section below it. Continue making these connections until all sections have power and signal.

CH-3001 & CH-3006
Since these displays have no driver, they require individual digit harnesses to be routed down into the Position 1-5 display and connected to the appropriate jacks in the driver. Refer to the Component Location drawing attached to the spec sheets listed in Appendix A.

Drag Racing Displays
- For drag racing displays built after June 2016, power is terminated in each section; refer to Power (p. 15). Signal is terminated in the bottom section and re-driven into the top section; refer to Wired Signal Connection (p. 18).
- For drag racing displays built before June 2016, PVC pipes were required to route several digit harnesses between sections as described below.

Elapsed Time (ET) sections do not have a terminal block to receive power and signal. Instead, individual digit harnesses must be routed into the MPH section and connected to the appropriate jacks on the driver(s). PVC pipes are used as conduits for the digit harnesses between display sections. Refer to Figure 24 and the instructions below.

Note: The Elapsed Time section will always be located above the MPH section, no more than 24” (610 mm) away.

1. Route the wiring harnesses from the bottom of the elapsed Time Section through a PVC pipe, making sure the end with the 2” (51 mm) adaptor is pointing down.
2. Insert the PVC pipe up into a hole in the bottom of the Elapsed Time section. Inside is another 2” (51 mm) adaptor with the 9-pin harness pre-routed through it. Connect this adaptor to the PVC pipe.
3. For the DR-3683 and DR-4883, repeat Steps 1–2 for the other interconnect conduit.
4. Route the harnesses down through the hole(s) in the top of the MPH section. Make sure the threaded end of the 2” (51 mm) adaptor is just inside the top of this section as well.
5. Once the harnesses are inside the bottom section, slip a 2” (51 mm) locknut over the harnesses, and screw it onto the adaptor, securing the PVC pipe to the top of the display cabinet.

Electrical Installation
6. Connect the 9-pin plugs of the digit harnesses to the mating jacks on the driver(s). Refer to the Component Location drawings attached to the spec sheets listed in Appendix A for exact driver locations and digit designations.

Note: On the DR-4882, there is also a power supply next to the driver enclosure. Connect the 2-pin plugs from each digit to the mating power supply jacks.

Optional Win Light Installation
The optional drag racing win light is designed for mounting below the miles per hour section, but it can be flipped over and mounted atop the timing section. DWG-186500 in Appendix B provides examples of mounting to both locations. Refer to the steps below and Figure 25 for further mounting information.

1. Determine where the win light will be mounted on the existing display.
2. Cut or drill a 2” (51 mm) hole in the bottom (or top) of the existing racing display that lines up with the hole in the win light cabinet.
3. Route the 25’ (7.6 m) harness through the hole in the win light cabinet into the main display via the hole created in step 2.
4. Access the primary (A1) display driver by opening the appropriate digit/access panel, and connect the 9-pin plug from the win light to the J10 jack. Refer to the Component Location drawings attached to the spec sheets listed in Appendix A for exact driver location of a particular model.
5. Using the six (6) predrilled mounting holes on the outside flange of the win light cabinet, attach it to the main display cabinet with sheet metal screws, bolts, or rivets (not provided by Daktronics).

Figure 25: Win Light Installation (Not to Scale)
4 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:

Model Number: ____________________________________________________________

Assembly 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.**

<table>
<thead>
<tr>
<th>Market Description</th>
<th>Customer Service Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Schools (including community/junior colleges), religious organizations, municipal clubs, and community centers</td>
<td>877-605-1115 Fax: 605-697-4444</td>
</tr>
<tr>
<td>Universities and professional sporting events, live events for auditoriums, and arenas</td>
<td>866-343-6018 Fax: 605-697-4444</td>
</tr>
</tbody>
</table>

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

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

   a. Package the old part in the same shipping materials in which the replacement part arrived.

   b. Fill out and attach the enclosed UPS shipping document.

   c. Ship the part to Daktronics.

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

   If any part is not returned within five (5) weeks, a non-refundable invoice will be presented to the customer for the costs of replenishing the exchange parts inventory with a new part. Daktronics reserves the right to refuse parts that have been damaged due to acts of nature or causes other than normal wear and tear.
Repair & Return Program
For items not subject to exchange, Daktronics offers a Repair & Return Program. To send a part for repair, follow these steps:

1. **Call or fax Daktronics Customer Service.**
   Refer to the appropriate number in the chart on the previous page.

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 operation.
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](http://www.daktronics.com/Web%20Documents/HSPR-Documents/DD#####.pdf) (replace “DD#####” with one of the Spec Sheet numbers shown below).

<table>
<thead>
<tr>
<th>Model</th>
<th>Spec Sheet</th>
<th>Model</th>
<th>Spec Sheet</th>
</tr>
</thead>
<tbody>
<tr>
<td>AR-1522</td>
<td>DD2910635</td>
<td>AR-2429</td>
<td>DD2910651</td>
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<tr>
<td>AR-2401</td>
<td>DD2910636</td>
<td>CH-3001</td>
<td>DD2910652</td>
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<td>AR-2428</td>
<td>DD2910650</td>
<td>DR-4883</td>
<td>DD2910660</td>
</tr>
</tbody>
</table>
B Reference Drawings

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

Reference Drawings:
Attachment; Win Light Display...................................................................................... DWG-186500
P1647; Pole Mounting Options ................................................................................ DWG-1048184
Ad Panel Pole Mounting .......................................................................................... DWG-1052388
Ad Panel I-beam Clamp Mounting ............................................................................. DWG-1052539
P1647; I-beam Clamp Mounting ............................................................................... DWG-1052565
P1647; DSA I-Beam Clamp Mounting ....................................................................... DWG-1064893
Ad Panel DSA I-beam Clamp Mounting .................................................................... DWG-1064894
Scoreboard Mounting .............................................................................................. DWG-1130246
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WIN LIGHT DISPLAY MOUNTED ON BOTTOM OF SCOREBOARD

FOR HARNESS ROUTING:
-- THERE WILL BE A 25" HARNESS PROTRUDING FROM THE TOP OF THE WIN LIGHT DISPLAY THROUGH A 2"
HEYCO HOLE.
-- A CORRESPONDING HOLE WILL NEED TO BE DRILLED OR CUT IN THE BOTTOM OR TOP OF THE EXISTING
SCOREBOARD TO ENABLE THIS HARNESS TO BE ROUTED TO THE EXISTING SCOREBOARD DRIVER.

FOR WIN LIGHT DISPLAY MOUNTING:
-- THE WIN LIGHT DISPLAY HAS A TOTAL OF 6 MOUNTING HOLES ON THE TOP FLANGE OF THE CABINET.
-- THE WIN LIGHT DISPLAY CAN BE MOUNTED TO THE TOP OR THE BOTTOM OF THE EXISTING SCOREBOARD
USING SCREWS, BOLTS, OR RIVETS AND THE MOUNTING HOLES PROVIDED.

WIN LIGHT DISPLAY MOUNTED ON TOP OF SCOREBOARD

HARNESS ROUTING
(SEE NOTES)

MOUNTING SCREW, BOLT,
OR RIVETS @3 PER SIDE
PROVIDED BY CUSTOMER

TOP OF
SCOREBOARD

DIGIT COLOR:

10A = RED LED
10D = AMBER LED

THE CONCEPTS EXPRESSED AND DETAILS SHOWN ON THIS DRAWING ARE CONFIDENTIAL AND
PROPRIETARY. DO NOT REPRODUCE BY ANY MEANS, INCLUDING ELECTRONICALLY WITHOUT
THE EXPRESSED WRITTEN CONSENT OF DAKTRONICS, INC.

DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: OUTDOOR RACING DISPLAYS
TITLE: ATTACHMENT; WIN LIGHT DISPLAY
DES BY: DAKPLAN
DRAWN BY: DAKPLAN
DATE: 07APR03

REV. DATE DESCRIPTION APPR.
01 13JAN05 REVISED DESIGNATION FROM 10C TO 10D,
ADDED DIGIT COLOR LEGEND. K&B

SCALE: 1=5

1198-E10A-186500
NOTES:
- Threaded rods run along both sides of beam
- Rods do not pass through the flanges of the beam
- No drilling necessary
- Make sure spring nut is perpendicular to channel opening on scoreboard

STRUCTURAL NOTES:
- Bolt torque: 30 FT-LB

***CRITICAL***
Make sure spring nut is turned to vertical position inside scoreboard channel

***CRITICAL***
Do not use any lubricant on any mounting hardware or warranty will be voided
MOUNTING INSTRUCTIONS:

1. USING THE BACKUP CHANNEL AS A TEMPLATE, DRILL (7/16") HOLES IN THE UPPER AND LOWER REAR FLANGE OF THE AD PANEL WHERE THE VERTICAL BEAMS WILL BE LOCATED.
2. IF AD PANEL HAS BACKSHEETS, REMOVE BACKSHEETS NECESSARY AT THIS TIME TO ACCESS HARDWARE FOR UNISTRUT ATTACHMENT.
3. ATTACH UNISTRUT TO AD PANEL THROUGH HOLES DRILLED IN STEP 1 AS SHOWN IN UNISTRUT ATTACHMENT SIDE VIEW.
4. REPLACE BACKSHEETS REMOVED IN STEP 2.
5. PLACE SPRING NUTS INTO UNISTRUT IN APPROXIMATE LOCATION OF VERTICAL BEAMS.
6. THREAD THE 1/2" THREADED ROD INTO THE SPRING NUTS.
7. LIFT AD PANEL INTO POSITION.
8. PLACE REAR MOUNTING ANGLES OVER EACH PAIR OF THREADED RODS AND SECURE AS SHOWN IN SIDE AND TOP VIEW AD PANEL ATTACHMENT.
9. MAKE SURE THE THREADED ROD IS AS CLOSE TO THE VERTICAL BEAM AS POSSIBLE.
10. WHEN AD PANEL IS ADJUSTED TO FINAL DESIRED POSITION, TIGHTEN NUTS FIRMLY.

NOTES:
- THREADED RODS RUN ALONG BOTH SIDES OF BEAM.
- RODS DO NOT PASS THROUGH THE FLANGE OF THE BEAM.
- NO DRILLING REQUIRED.
- MAKE SURE THE SPRING NUT IS PERPENDICULAR TO CHANNEL OPENING ON UNISTRUT.

***CRITICAL***
DO NOT USE ANY LUBRICANT ON ANY MOUNTING HARDWARE OR WARRANTY WILL BE VOIDED.
MOUNTING INSTRUCTIONS:
1. USING THE BACKUP CHANNEL AS A TEMPLATE, DRILL (5) 7/16” HOLES IN THE UPPER AND LOWER REAR FLANGE OF THE AD PANEL WHERE THE VERTICAL BEAMS WILL BE LOCATED.
2. IF AD PANEL HAS BACKSHEETS, REMOVE BACKSHEETS NECESSARY AT THIS TIME TO ACCESS HARDWARE FOR UNISTRUT ATTACHMENT
3. ATTACH UNISTRUT TO AD PANEL THROUGH HOLES DRILLED IN STEP 1 AS SHOWN IN UNISTRUT ATTACHMENT SIDE VIEW
4. REPLACE BACKSHEETS REMOVED IN STEP 2
5. PLACE SPRING NUTS INTO UNISTRUT IN APPROXIMATE LOCATION OF VERTICAL BEAMS
6. LIFT AD PANEL INTO POSITION
7. ATTACH I-BEAM CLAMPS WITH 1/2” HARDWARE AS SHOWN IN TOP AND REAR ISOMETRIC VIEW AD PANEL ATTACHMENT
8. MAKE SURE THE 1/2-13 BOLTS ARE AS CLOSE TO THE I-BEAM FLANGES AS POSSIBLE
9. WHEN AD PANEL IS ADJUSTED TO FINAL DESIRED POSITION, TIGHTEN BOLTS FIRMLY

STRUCTURAL NOTES:
ALLOWABLE LOADS PER COLUMN CONNECTION
MAX ALLOWABLE WIND LOAD: 2,400 LBS
MAX ALLOWABLE PANEL WEIGHT: 158 LBS
COEFFICIENT OF FRICTION: 0.03
BOLT TORQUE: 50 FT-LB
MIN-MAX I-BEAM FLANGE THICKNESS: 0.25”-0.75”

***CRITICAL***
DO NOT USE ANY LUBRICANT ON ANY MOUNTING HARDWARE OR WARRANTY WILL BE VOIDED
STANDARD MOUNTING METHOD

MOUNTING INSTRUCTIONS:
1. PLACE SPRING NUTS INTO SCOREBOARD CHANNEL IN APPROXIMATE LOCATION OF VERTICAL BEAMS.
2. LIFT SCOREBOARD INTO POSITION
3. MAKE SURE THE 1/2-13 BOLTS ARE AS CLOSE TO THE I-BEAM FLANGES AS POSSIBLE
4. WHEN SCOREBOARD IS ADJUSTED TO FINAL DESIRED POSITION, TIGHTEN BOLTS FIRMLY
5. IF FLANGE THICKNESS IS MORE THAN 3/4" THICK LONGER BOLTS WILL BE REQUIRED AT THE CUSTOMER'S EXPENSE.

STRUCTURAL NOTES

ALLOWABLE CAPACITY PER EACH CLAMP:
SHEAR = 160 LBS
TENSION = 2300 LBS

SHEAR AND TENSION LOAD DIRECTION ARE AS INDICATED ON REAR ISOMETRIC VIEW

***CRITICAL***
MAKE SURE SPRING NUT IS TURNED TO VERTICAL POSITION INSIDE SCOREBOARD CHANNEL

1/2-13 X 3.000 BOLT
1/2" LOCK WASHER
1/2" FLAT WASHER
I-BEAM CLAMP
SPRING NUT

1/2-13 X 3.000 BOLT
1/2" LOCK WASHER
1/2" FLAT WASHER
MOUNTING INSTRUCTIONS:
1. PLACE SPRING NUTS INTO SCOREBOARD CHANNEL IN APPROXIMATE LOCATION OF VERTICAL BEAMS
2. LIFT SCOREBOARD INTO POSITION
3. MAKE SURE THE 1/2-13 BOLTS ARE AS CLOSE TO THE I-BEAM FLANGES AS POSSIBLE
4. WHEN SCOREBOARD IS ADJUSTED TO FINAL DESIRED POSITION, TIGHTEN BOLTS FIRMLY
5. ATTACH I-BEAM STOPS TIGHT AGAINST I-BEAM CLAMPS USING 5/16" X 1.5" TEK SCREWS

ALLOWABLE CAPACITY PER EACH CLAMP:
- SHEAR = 160 LBS
- TENSION = 2300 LBS

SHEAR AND TENSION LOAD DIRECTION ARE AS INDICATED ON REAR ISOMETRIC VIEW

***CRITICAL***
DO NOT USE ANY LUBRICANT ON ANY MOUNTING HARDWARE OR WARRANTY WILL BE VOIDED
MOUNTING INSTRUCTIONS:
1. USING THE BACKUP CHANNEL AS A TEMPLATE, DRILL 7/16" HOLES IN THE UPPER AND LOWER REAR FLANGE OF THE AD PANEL WHERE THE VERTICAL BEAMS WILL BE LOCATED.
2. IF AD PANEL HAS BACKSHEETS, REMOVE BACKSHEETS NEEDED AT THIS TIME TO ACCESS HARDWARE FOR UNISTRUT ATTACHMENT.
3. ATTACH UNISTRUT TO AD PANEL THROUGH HOLES DRILLED IN STEP 1 AS SHOWN IN UNISTRUT ATTACHMENT SIDE VIEW.
4. REPLACE BACKSHEETS REMOVED IN STEP 2.
5. PLACE SPRING NUTS INTO UNISTRUT IN APPROXIMATE LOCATION OF VERTICAL BEAMS.
6. LIFT AD PANEL INTO POSITION.
7. ATTACH I-BEAM CLAMPS WITH 1/2" HARDWARE AS SHOWN IN TOP AND REAR ISOMETRIC VIEW AD PANEL ATTACHMENT.
8. MAKE SURE THE 1/2-13 BOLTS ARE AS CLOSE TO THE I-BEAM FLANGES AS POSSIBLE.
9. WHEN AD PANEL IS ADJUSTED TO FINAL DESIRED POSITION, TIGHTEN BOLTS FIRMLY.
10. FASTEN I-BEAM STOPS TIGHT AGAINST I-BEAM CLAMPS WITH 5/16" X 1.5" TEK SCREWS.

STRUCTURAL NOTES:
ALLOWABLE LOADS PER COLUMN CONNECTION
MAX ALLOWABLE WIND LOAD: 2,400 LBS
MAX ALLOWABLE PANEL WEIGHT: 158 LBS
COEFFICIENT OF FRICTION: 0.03
BOLT TORQUE: 50 FT-LB
MIN-MAX I-BEAM FLANGE THICKNESS: 0.25"-0.75"

***CRITICAL***
DO NOT USE ANY LUBRICANT ON ANY MOUNTING HARDWARE OR WARRANTY WILL BE VOIDED.
MOUNTING INSTRUCTIONS:

1. USE THE MOUNTING CHANNEL TO DETERMINE WHICH HOLE COMBINATION SHOULD BE USED. BE SURE TO KEEP THE BOLT AS CLOSE TO THE BEAM AS POSSIBLE.

2. USING THE MOUNTING CHANNEL AS A TEMPLATE, DRILL 9/16" HOLES IN THE UPPER AND LOWER REAR FLANGE OF SCOREBOARDS WHERE THE SUPPORTS WILL GO.

3. PLACE SQUARE NUTS INSIDE CHANNEL AND THREAD BOLTS THROUGH.

4. LIFT SCOREBOARD INTO POSITION WITH BOLTS STILL IN PLACE.

5. PLACE MOUNTING ANGLES OVER EACH PAIR OF BOLTS AND SECURE WITH LOCK WASHERS AND HEX NUTS.

6. WHEN SCOREBOARD IS ADJUSTED TO FINAL DESIRED POSITION, TIGHTEN HEX NUTS FIRMLY.
C Daktronics Warranty & Limitation of Liability

This section includes the Daktronics Warranty & Limitation of Liability statement (SL-02374).
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This Warranty and Limitation of Liability (the “Warranty”) sets forth the warranty provided by Daktronics with respect to the Equipment. By accepting delivery of the Equipment, Purchaser and End User agree to be bound by and accept these terms and conditions. Unless otherwise defined herein, all terms within the Warranty shall have the same meaning and definition as provided elsewhere in the Agreement.

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

1. Warranty Coverage

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

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

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

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

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

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

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

THIS LIMITED WARRANTY IS NOT TRANSFERABLE.

2. Exclusion from Warranty Coverage

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

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

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

C. damage caused by the failure to provide a continuously suitable environment, including, but not limited to: (i) neglect or misuse; (ii) improper power including, without limitation, a failure or sudden surge of electrical power; (iii) improper air conditioning, humidity control, or other environmental conditions outside of the Equipment’s technical specifications such as extreme temperatures, corrosives and metallic pollutants; or (iv) any other cause other than ordinary use;
D. damage caused by fire, flood, earthquake, water, wind, lightning or other natural disaster, strike, inability to obtain materials or utilities, war, terrorism, civil disturbance, or any other cause beyond Daktronics’ reasonable control;

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

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

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

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

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

J. performance of preventive maintenance;

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

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

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

3. Limitation of Liability

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

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

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

4. Assignment of Rights

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

5. Governing Law

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

6. Availability of Extended Service Agreement

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