Drag Race Timing Display
Model CH-36-DS

Installation and Service Manual

ED-4760

ED-4760
Product#1081
Rev. 8 - 27July98

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Section 1: Introduction

Reference Drawing: Display, CH-36-DS ................. Drawing A-37834

Drawing A-37834 shows a complete Daktronics CH-36-DS display consisting of three sections: MPH display, ET display, and ADV/Sponsor Panel for advertising or drag strip logo. A typical installation includes two of these displays, one for each lane. Each display can be comprised of only the MPH section, both MPH and ET sections, or all three sections. If only the single MPH section is used, the latest versions of the Daktronics C-33 timer can display the speed and ET alternately on the same display.

This manual covers installation of the CH-36-DS display and provides information for servicing the digits and wiring. Setup of other control equipment or operation of the C-33 timer are not covered in this manual.

The following table shows the approximate weights of the individual sections of the CH-36-DS, as well as the maximum power requirements of each section:

<table>
<thead>
<tr>
<th>Section</th>
<th>Uncrated Weight (lbs)</th>
<th>Crated Weight (lbs)</th>
<th>Maximum Power Demand</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>1 per Crate</td>
<td>2 per Crate</td>
</tr>
<tr>
<td>ET Display</td>
<td>290</td>
<td>600</td>
<td>975</td>
</tr>
<tr>
<td>MPH Display</td>
<td>290</td>
<td>600</td>
<td>975</td>
</tr>
<tr>
<td>Adv/Sponsor Panel</td>
<td>275</td>
<td>570</td>
<td>925</td>
</tr>
</tbody>
</table>

**IMPORTANT SAFEGUARDS**

✔ Do not disassemble the control console or the electronic controls of the display. If you do, the warranty will be void.

⊙ Disconnect power when the display is not in use, or when servicing. Prolonged power-on may shorten the life of electronic components.
OVERALL DIMENSIONS:
48.30" H x 192.00" W x 8" D PER SECTION
(UP TO 24" SPACE BETWEEN SECTIONS)

DIGITS ARE 36" HIGH, 6 x 7 LAMP MATRICES.

DIGIT LAMPS ARE 50W FROSTED, REFLECTOR TYPE 30-P25.

MAXIMUM POWER DEMAND PER SECTION IS:
ADV/SPONSOR DISPLAY: 1275W
ET DISPLAY: 3480W
MPH DISPLAY: 3010W
Section 2: Installation

Reference Drawings:  Display Mounting ................. Drawing A-37771
                   Driver Enclosure Layout ................. Drawing A-37773
                   Beam Spacing ................................ Drawing A-39054
                   Electrical Installation ....................... Drawing A-39066
                   Installation, Adv ............................. Drawing A-43370
                   Installation, Finish Light ..................... Drawing A-43388
                   Power Wiring and Grounding .................. Drawing A-45220
                   Control Signal Connection ................. Drawing A-51939
                   System Layout ............................... Drawing A-51940

2.1 General Installation

Drawing A-51940 illustrates the general system layout. The procedure for installing the CH-36-DS display is as follows:

1. Select beam and footing recommendations from Table 1 (Section 2.2).
2. Dig the footing holes and install beams and footings.
3. Route power and signal cables to the display and control locations.
4. Mount the displays to the beams as described in Section 2.3.
5. Route power and signal wires into the displays as described in Section 2.4.

2.2 Beam and Footing Selection

Table 1 (on the following page) contains recommendations for beams and footings to support your display. The distance in the left column is from the ground to the bottom of the lowest section. The second column is wind velocity in miles per hour. Your choice from these columns depends upon your display location. Drawing A-39054 shows typical beam and footing placement.

The beams listed are W-shape (wide flange) beams which provide maximum wind load strength for the weight and cost of the beams. Choose your beams under the appropriate headings for 1-Section, 2-Section, or 3-Section displays.

The calculations for footing diameters and depths assume footings in undisturbed soils, NOT FILL SOILS. Lateral bearing capacity of 300 psf per foot of depth in natural grade was used to derive these figures. The footing and beam recommendations for multiple section displays are figures with the maximum two foot space between sections.

These footing recommendations are based on an allowable soil bearing pressure of 3000 psf vertically and 300 psf/ft of depth horizontally. However, these recommendations are suggestions only and each installation should be treated individually. You must be sure that your installation complies with local codes and is suitable for your particular soil and wind conditions. Daktronics recommends that W-sections of grade 36 steel be used for beams, and that 28-day (strength 3000 psi) concrete be used for footings.

♀ DAKTRONICS ASSUMES NO RESPONSIBILITY FOR STRUCTURES INSTALLED BY OTHERS. ♀
Table 1: Beam and Footing Selection Table

<table>
<thead>
<tr>
<th>Dist. To Bottom of Lower Section</th>
<th>Design Wind Velocity (MPH)</th>
<th>ONE SECTION</th>
<th>TWO SECTION</th>
<th>THREE SECTION</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Beam Required (2 each)</td>
<td>FOOTINGS</td>
<td>Beam Required (2 each)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Diam (Ft)</td>
<td>Depth (Ft)</td>
<td>Diam (Ft)</td>
</tr>
<tr>
<td>8</td>
<td>80</td>
<td>W8x13</td>
<td>2.50</td>
<td>4.50</td>
</tr>
<tr>
<td></td>
<td>12</td>
<td>W8x15</td>
<td>2.50</td>
<td>5.00</td>
</tr>
<tr>
<td></td>
<td>14</td>
<td>W8x17</td>
<td>3.00</td>
<td>5.50</td>
</tr>
<tr>
<td></td>
<td>16</td>
<td>W8x20</td>
<td>3.50</td>
<td>5.50</td>
</tr>
<tr>
<td></td>
<td>20</td>
<td>W8x24</td>
<td>3.50</td>
<td>6.00</td>
</tr>
<tr>
<td>8</td>
<td>90</td>
<td>W8x13</td>
<td>2.25</td>
<td>5.00</td>
</tr>
<tr>
<td></td>
<td>12</td>
<td>W8x15</td>
<td>2.50</td>
<td>5.50</td>
</tr>
<tr>
<td></td>
<td>14</td>
<td>W8x17</td>
<td>3.00</td>
<td>6.00</td>
</tr>
<tr>
<td></td>
<td>16</td>
<td>W8x20</td>
<td>3.00</td>
<td>6.50</td>
</tr>
<tr>
<td></td>
<td>20</td>
<td>W8x24</td>
<td>3.50</td>
<td>6.50</td>
</tr>
</tbody>
</table>

These footing recommendations are based on an allowable soil bearing pressure of 3000 psf vertical and 300 psf/ft of depth horizontally. However, these recommendations are suggestions only and each installation should be treated individually. You must be sure that your installation complies with local codes and is suitable for your particular soil and wind conditions.

* DAKTRONICS ASSUMES NO RESPONSIBILITY FOR STRUCTURES INSTALLED BY OTHERS. *

2.3 Display Mounting

Drawing A-37771 shows the mounting procedure for a typical three-section display. The sections may be mounted with up to 24" of space between them.

✓ NOTE: The bolts that secure the display do not go through the beams, but run along both sides of the beam to clamp the section to the beams.
Start with the bottom of the lowest section and work your way up, adding brackets and sections as you go. The ET display, if included, has wires in plastic conduit that extend into the back of the MPH display. Remove the rubber hole plug from the top of the box protruding from the rear of the MPH display before lifting into place.

Once the display is in place, use mounting brackets provided and secure the bottom of the display to the beams as shown. Next secure the top of the display with another set of brackets. Make sure all bolts are tight.

Mount the next section above the first in the same manner. All three sections are mounted the same way at the desired spacing, not exceeding 24" between sections.

2.4 Electrical Installation

2.4.1 Control Signal Cable

For each display, two conductors of 24 AWG for distances up to 600 ft. or 22 AWG, for distances up to 1000 ft. are required. Daktronics has the following cables available: Daktronics part no. W-1105, this is a 6 conductor 24 AWG direct burial cable. Also Daktronics part no. W-1077, this is a two conductor, 22 AWG cable that must be pulled through conduit before it is buried.

At the control location, mount the signal J-box to a convenient location. Route the cables and connect to the wires leading from the connector in the cover, according to the table below and illustration in Drawing A-51939.

At the display, remove the cover from the box on the rear of the display, containing the enclosure as shown in Drawing A-39054. Remove the cover from the driver enclosure. Refer to Drawing A-39066 for an illustration of the components inside the enclosure. Connect the signal wires to TB301 as indicated in the table below.

<table>
<thead>
<tr>
<th>Signal Connections</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Control End</strong></td>
</tr>
<tr>
<td>J-box Term. No.</td>
</tr>
<tr>
<td>1</td>
</tr>
<tr>
<td>2</td>
</tr>
<tr>
<td>3</td>
</tr>
<tr>
<td>4</td>
</tr>
</tbody>
</table>

2.4.2 Power Wiring

The display requires that two "hot" wires be run into a load center. The power demands for each display section are listed below. Add the values for each section you are installing to find the power required by each line.
<table>
<thead>
<tr>
<th>Display Section</th>
<th>Line 1 (amps)</th>
<th>Line 2 (amps)</th>
</tr>
</thead>
<tbody>
<tr>
<td>MPH</td>
<td>3.25</td>
<td>26.00</td>
</tr>
<tr>
<td>ET</td>
<td>24.25</td>
<td>4.75</td>
</tr>
<tr>
<td>Backlit ADV Panel</td>
<td>4.30</td>
<td>26.00</td>
</tr>
</tbody>
</table>

Install a lockable safety disconnect and load center to the display support beam as shown in **Drawing A-39066**. A three-conductor disconnect is recommended for proper protection from lightening strikes (refer to **Drawing A-45220**). Install a copper ground rod by each of the support poles of the display.

**The display must be connected to earth ground at the display location.** This is in addition to the separate earth-ground conductor in the power cable.

Route four "hot", two "neutral", and one "ground" wire, 12 AWG from the load center to the driver enclosure in the MPH display. Refer to **Drawing A-43370** for component locations. Connect wires as follows:

**NOTE:** Load Center Breaker numbers are for example only.

<table>
<thead>
<tr>
<th>Load Center</th>
<th>Display Component</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Breaker 2</td>
<td>-----</td>
<td>120V Main, Line 1</td>
</tr>
<tr>
<td>Breaker 3</td>
<td>-----</td>
<td>120V Main, Line 2</td>
</tr>
<tr>
<td>Breaker 4A</td>
<td>TB401-1</td>
<td>Power, MPH and ET - Line 1</td>
</tr>
<tr>
<td>Breaker 4B</td>
<td>TB401-2</td>
<td>Power, MPH and ET - Line 1</td>
</tr>
<tr>
<td>Breaker 5A</td>
<td>TB401-5</td>
<td>Power MPH - Line 2</td>
</tr>
<tr>
<td>Breaker 5B</td>
<td>TB401-6</td>
<td>Power MPH - Line 2</td>
</tr>
<tr>
<td>Breaker 6</td>
<td>-----</td>
<td>Power, ADV Panel - Line 1</td>
</tr>
<tr>
<td>Breaker 7</td>
<td>-----</td>
<td>Power, ADV Panel - Line 2</td>
</tr>
<tr>
<td>Neutral</td>
<td>TB401-3 or 4</td>
<td>Neutral, MPH and ET</td>
</tr>
<tr>
<td>Ground</td>
<td>E401</td>
<td>Earth Ground, MPH and ET</td>
</tr>
</tbody>
</table>

### 2.4.3 Digit Connection for ET Display

Remove locknut from PVC conduit on the back of the ET display. Push plugs and cables, protruding from conduit, through the hole in the top of the driver enclosure on the back of the MPH display. Extend conduit into the top of the driver enclosure. Secure conduit with the locknut. Each plug has a number written on it. Carefully connect these plugs into the corresponding jacks on the driver enclosure jack panel.

### 2.4.4 Power Wiring for Backlit Sponsor Panel

The backlit sponsor/advertiser panel requires 2 "hot", 1 "neutral", and 1 "ground" wire, routed in ⅛" conduit (refer to **Drawings A-39066** and **A-43370** for illustrations). Connect these wires at the sponsor panel and load center as follows:
<table>
<thead>
<tr>
<th>Load Center</th>
<th>Display Component</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Breaker 6</td>
<td>TB41-1</td>
<td>Power, Line 1</td>
</tr>
<tr>
<td>Breaker 7</td>
<td>TB41-3</td>
<td>Power, Line 2</td>
</tr>
<tr>
<td>Neutral</td>
<td>TB41-2</td>
<td>Neutral, both lines</td>
</tr>
<tr>
<td>Ground</td>
<td>E41</td>
<td>Earth Ground for display</td>
</tr>
</tbody>
</table>

**NOTE:** Breaker numbers are for example only.

### 2.5 CH-36-DS Win Light Installation for Non Daktronics Supplied Win Light

**NOTE:** Refer to User's Manual ED-5469 to install Daktronics supplied win lights.

**WARNING:** Each lamp circuit can drive a maximum of 85 Watts. Therefore, a relay may be required to drive larger loads.

**Drawing A-43388** describes the installation of a finish light on a CH-36-DS display.

1. Drill a 1½” diameter hole in the bottom of the rear enclosure on the 5-digit MPH display.
2. Remove the screws holding the cover on the rear enclosure and remove the cover.
3. Route cable from finish light along signal or power conduit through hole in bottom of rear enclosure on MPH display and plug into jack #110 on the connector plate (refer to Drawing A-43388).
4. Use cable ties to secure cable of conduit. Coil any excess cable and lay in bottom of rear enclosure.
5. Replace cover of rear enclosure and secure.
REAR ENCLOSURE
(At lamp driver is located inside)

REAR VIEW MPH DISPLAY

A1
LAMP DRIVER


A

JACK PANEL

SEE DETAIL #A#

DRIVER ENCLOSURE LAYOUT

SECTION A-A
TB 301 SIGNAL

1 2
+-

SECTION B-B
TB 401 POWER

BREAKER A @ 20A
BREAKER A @ 20A
NEUTRAL
NEUTRAL
BREAKER B @ 20A
BREAKER B @ 20A

E41 EARTH GROUND

DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: CRONDEK DISPLAYS
TITLE: DRIVER ENCLOSURE LAYOUT
DES: JLM
DRAWN BY: AR
DATE: 27 APR 89
REVISION: 1
SCALE: 1:1

2 15 MAR 91 REDRAWN ON AUTOCAD, CHANGED FROM "B" TO "A" SIZE DWG, ADDED DETAIL "C" E41 DWG
1 7 AUG 89 ADDED TERMINAL BLOCK DETAILS, REMOVED DIGIT/JACK CHART.

REV DATE DESCRIPTION BY APPR.

1081-R08A-37773
AD/ASPECT PANEL

SPONSOR PANEL REQUIRES POWER WIRES FOR ONE 120/240V, 10A CIRCUIT.

ET DISPLAY

ROUTE HARNESS FROM ET DISPLAY THROUGH CONDUIT TO ENCLOSURE WITH DRIVER INSIDE.

POWER WIRES FOR TWO 120/240V, 20A CIRCUIT.
7/8 AWG MIN.
(By Others)

MPH DISPLAY

ENCLOSURE (DRIVER INSIDE)

REMOVE COVER TO ACCESS DRIVER

REAR VIEW

WEATHERPROOF LOAD CENTER WITH BREAKERS.
(By Others)

BRING POWER WIRES INTO LOAD CENTER FOR 120/240V, 30A 3-WIRE PLUS GROUND.

NOTE
-12 AWG MINIMUM WIRE IS NEEDED FROM THE LOAD CENTER TO THE DISPLAY. CHECK WITH A QUALIFIED ELECTRICIAN FOR CORRECT WIRE SIZE FROM POWER SOURCE TO LOAD CENTER.

GROUND ROD

CONTROL SIGNAL
25 AWG, ONE PAIR IN CONDUIT.
(By Others)

Daktronics, Inc. Brookings, SD 57006

Proj: Chrondek Displays
Title: Electrical Installation, CH-36-DS
Des: By: JHiederscheidt Drawn By: JHiederscheidt Date: 07Aug89
Revision: Appr. By: AVB
Scale: None

1081-R10A-39066
ET DISPLAY

SPEED DISPLAY

OUTLINE OF REAR ENCLOSURE ON REAR OF DISPLAY.

FINISH LIGHT

PUNCH OR DRILL A 1.25" MINIMUM DIAMETER HOLE IN BOTTOM OF REAR ENCLOSURE.

ROUTE CABLE FROM FINISH LIGHT THROUGH HOLE IN BOTTOM OF REAR ENCLOSURE.

REMOVE SCREWS ON COVER OF REAR ENCLOSURE TO ACCESS DRIVER AND COMPONENTS.

PLUG INTO JACK #110 ON CONNECTOR PLATE, INSIDE DRIVER ENCLOSURE, INSIDE DRIVER BOX.

THE LETTER ON EACH LAMP IS THE SEGMENT WHICH THAT LAMP IS CONNECTED TO ON THE DRIVER. THE NUMBER ON THE FINISH LIGHT IS THE DRIVER CONNECTOR IT IS CONNECTED TO.

MOUNT FINISH LIGHT SLIGHTLY TO THE INSIDE OF CENTER ON THE POLE SO THE POWER CABLE CLEARS THE POLE.

<table>
<thead>
<tr>
<th>LAMP LETTER</th>
<th>LAMP COLOR</th>
<th>CHRONDEK PART NUMBER</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>RED</td>
<td>DS1186</td>
</tr>
<tr>
<td>B</td>
<td>BLUE</td>
<td>DS1187</td>
</tr>
<tr>
<td>C</td>
<td>GREEN</td>
<td>DS1185</td>
</tr>
<tr>
<td>D</td>
<td>AMBER</td>
<td>DS1184</td>
</tr>
</tbody>
</table>

1/2" HARDWARE

FINISH LIGHT MOUNTING 1=15

DAKTRONICS, INC. BROOKINGS, SD 57006

PROD: CHRONDEK DISPLAYS
TITLE: INSTALLATION, FIN—LIGHT, CH—36—DS
DES. BY: JHEDERSCHEIDT DRAWN BY: JHEDERSCHEIDT DATE: 13JUL90

REVISION
APPR. BY:

SCALE: 1=30

1081-R10A-43388
FOR NEW SERVICE INSTALLATIONS:
The scoreboard **MUST** be connected to earth-ground.
The power cable **MUST** contain a separate earth-ground conductor.
National Electrical Code requires a lockable power disconnect near the scoreboard.

When a separate ground conductor is used, do not connect neutral to ground at the disconnect or at the scoreboard.

---

FOR LIGHTNING PROTECTION, DAKTRONICS RECOMMENDS a three-conductor disconnect that can break both hot lines and the neutral.

---

FOR INSTALLATIONS WITH EXISTING ELECTRICAL SERVICE that does not contain a separate ground conductor:
The scoreboard **MUST** be connected to earth-ground.
National Electrical Code requires a lockable power disconnect near the scoreboard.
When a separate ground conductor is **NOT** available, connect the neutral to the earth-ground at the disconnect.

---

DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ. OUTDOOR SCOREBOARDS
TITLE: POWER WIRING AND GROUNDING

REV. 06MAY91 ADDED FIGURE FOR USING EXISTING SERVICE. AVB
DESCRIPTION DATE: 09NOV90 DRAWN BY: AVB
REVISION APPR. BY: APPR.
SCALE: NONE

1091-R03A-45220
CONNECT SPADE LUGS TO:
(TB31) IN POWER & SIGNAL ENTRANCE MODEL CH-24-DS.
(TB-301) IN DRIVER ENCLOSURE BACKSIDE MODEL CH-36-DS.

PROCEDURE:
1. ROUTE CONDUIT BETWEEN CONTROL AND DISPLAY LOCATIONS.
2. MOUNT SIGNAL J-BOX.
3. PULL CABLE THROUGH CONDUIT.
4. CONNECT CABLE TO SIGNAL J-BOX AND (TB31) ON MODEL CH-24-DS OR (TB301) ON MODEL CH-36-DS.

NOTE: USE CONNECTORS PROVIDED. DO NOT STRIP WIRES, INSERT WIRES INTO CONNECTOR AND SQUEEZE DOWN WITH PLIERS. SNAP PLASTIC COVER SHUT.

TB31 OR TB301: CONNECT WIRES TO TERMINAL BLOCK IN DISPLAY AS FOLLOWS:
- RED TO TB31 OR TB301-1 (+)
- BLK TO TB31 OR TB301-2 (-)
- WHIT TO TB31 OR TB301-1 (+)
- GRN TO TB31 OR TB301-2 (-)

FOR MODELS:
CH-24-DS
CH-36-DS

SIGNAL J-BOX COVER WITH CONNECTOR.
TIMING EQUIPMENT:
(EQUIPMENT SENDING DATA TO TIMER IS NOT SHOWN.)

CONTROL SIGNAL CABLE
2 PAIR, 22 OR 24 AWG, 24 AWG UP TO 600 FT
22 AWG UP TO 1000 FT
18 AWG UP TO 1/4 MILE IN CONDUIT (BY OTHERS) OR DIRECT BURIAL.

DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: CHRONDEK
TITLE: SYSTEM LAYOUT, CH-36-DS
DES. BY: C FICKBOHM DATE: 15 JUN 92
DRAWN BY: C FICK REV. APPR. BY: 1081-R04A-51940

REV. DATE DESCRIPTION BY APPR.
1 26 APR 93 ADDED "UP TO 1/4 MILE" IN CONTROL SIGNAL CABLE SPEC. C FICK
Section 3: Service

Reference Drawings: Lamp Driver, 16 Col., W/Fan ................. Drawing A-37070
Schematic; Pwr & Sig. ........................................ Drawing A-38788
Lamp Seg. & Jack Panel Assign. .......................... Drawing A-39067

3.1 Lamp Replacement

The primary service required by the CH-36-DS display is to replace burned-out lamps. Replacement lamps are 120V, 30W reflector, type 30R20, available at your local store, or directly from Daktronics (part no. DS-1126).

The Advertiser/Sponsor Panel uses 72 inch, 120V, 85W cool white fluorescent lamps, Daktronics part no. DS-1037. Refer to Drawing A-43370 for an illustration of how to access lamps for replacement.

Do not use lamps larger than those originally installed in the display. Using higher power lamps will likely cause fuse failures in the display and could exceed the current levels that the display's circuits can safely handle.

3.2 Lamp Driver

In the display, the task of switching lamps on and off is performed by the lamp driver. Drawing A-39066 shows the location of the lamp driver in the display. Drawing A-37070 is an illustration of the lamp driver and the fuses located in it.

The lamp driver has 21 connectors, providing power and signal inputs and outputs to digits. The functions of these connectors are as follows:

<table>
<thead>
<tr>
<th>Connector No.</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 - 16</td>
<td>Outputs to digits</td>
</tr>
<tr>
<td>17</td>
<td>Signal Input</td>
</tr>
<tr>
<td>18</td>
<td>Power input for outputs 1-8 (120V)</td>
</tr>
<tr>
<td>19</td>
<td>Power input for driver logic and fan (120V)</td>
</tr>
<tr>
<td>20</td>
<td>Power input for outputs 9-16 (120V)</td>
</tr>
<tr>
<td>24</td>
<td>Dim option selector</td>
</tr>
</tbody>
</table>

On Drawing A-39067, the numbers on the digits refer to the lamp driver output connector wired to each digit.

3.3 Digit Segmentation

In a digit certain lamps always go on and off together. These groupings of lamps are known as "segments". Drawing A-39067 illustrates these segments and shows which connector pin and wire color is wired to each segment.
3.4 Schematic

**Drawing A-38788** shows the power and signal inputs into the display and to the lamp driver. The component numbers correspond to those shown in **Drawing A-37773** (in Section 2).

3.5 Trouble Shooting

Below is a list of problems that may occur and their possible solutions:

<table>
<thead>
<tr>
<th>Problem</th>
<th>Possible Cause</th>
</tr>
</thead>
<tbody>
<tr>
<td>One lamp won’t light</td>
<td>Burned out lamp</td>
</tr>
<tr>
<td></td>
<td>Broken wire behind digit</td>
</tr>
<tr>
<td>Digit segment won’t light</td>
<td>Broken wire (black)</td>
</tr>
<tr>
<td></td>
<td>Poor contact at connector, pin 7</td>
</tr>
<tr>
<td></td>
<td>Fuse blown in driver</td>
</tr>
<tr>
<td>Half the display won’t light</td>
<td>Service breaker tripped</td>
</tr>
<tr>
<td></td>
<td>Main fuse blown</td>
</tr>
<tr>
<td></td>
<td>Poor contact at main power connection</td>
</tr>
<tr>
<td></td>
<td>P18 disconnected</td>
</tr>
<tr>
<td>Entire display won’t light</td>
<td>Power disruption</td>
</tr>
<tr>
<td></td>
<td>Poor signal connection</td>
</tr>
<tr>
<td></td>
<td>Driver logic fuse blown</td>
</tr>
<tr>
<td></td>
<td>Control not Connected to display</td>
</tr>
<tr>
<td></td>
<td>P20 disconnected</td>
</tr>
<tr>
<td>Segment stays lit</td>
<td>Broken wire behind digit</td>
</tr>
<tr>
<td></td>
<td>Internal driver malfunction</td>
</tr>
<tr>
<td>Garbled display</td>
<td>Control malfunction</td>
</tr>
<tr>
<td></td>
<td>Internal driver malfunction</td>
</tr>
</tbody>
</table>

If a problem is observed in one digit, the cause may be isolated by swapping plugs on the driver. That is, connect the plug from the digit into a different jack. If the same digit shows the same problem, the cause may be in the digit or wiring. If the problem moves to another digit, then the cause is probably an internal driver problem.

Use a volt meter at driver inputs to determine if power is being supplied to the driver. An ohmmeter can be helpful in finding broken wires and bad connections. Internal electronic problems must be corrected by Daktronics or an authorized service center.
### 3.6 Exchange/Replacement Parts

<table>
<thead>
<tr>
<th>Part Name or Description</th>
<th>Type</th>
<th>Daktronics Part Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lamp Driver</td>
<td></td>
<td>A-1033-0122</td>
</tr>
<tr>
<td>J-Box, Signal, 16-Pin</td>
<td></td>
<td>A-1010-26</td>
</tr>
<tr>
<td>Cable, Timer/Interface/J-box</td>
<td></td>
<td>A-1067-40</td>
</tr>
<tr>
<td>Fuse, Lamp Driver, 10A</td>
<td>AGC-10</td>
<td>F-1006</td>
</tr>
<tr>
<td>Fuse, Driver Logic, 1/2A</td>
<td>AGC-1/2</td>
<td>F-1000</td>
</tr>
<tr>
<td>Digit 36&quot; w/louvers</td>
<td></td>
<td>A-1081-03</td>
</tr>
<tr>
<td>Mounting Kit</td>
<td></td>
<td>A-1081-04</td>
</tr>
<tr>
<td>Socket, Med. Base A-1081-04</td>
<td></td>
<td>X-1046</td>
</tr>
<tr>
<td>Lamp, 30W Reflector</td>
<td>30R20</td>
<td>DS-1126</td>
</tr>
<tr>
<td>Lamp, Fluorescent, 72&quot; 85W</td>
<td></td>
<td>DS-1037</td>
</tr>
</tbody>
</table>

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

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

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

2. **Lampbank and Driver Packaging Instructions:** Lampbanks and drivers should be placed in a static-free enclosure for return shipping. An anti-static convoluted foam packing is available from Daktronics, part number PK-1135 for your use if needed. The shipping box (Daktronics part number PK-1006) should be used in conjunction with the foam.

3. **Where to Send:** To return parts for service, contact your local representative prior to shipment to acquire a Return Material Authorization Number (RMA#). This will speed up the repair of your unit.

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

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

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

**Customer Service Fax:** 1-605-697-4444

**E-Mail:** helpdesk@daktronics.com
F1 THRU F16 ARE TYPE AGC-10, DAKTRONICS PART NUMBER F-1006.
F17 IS TYPE AGC-1/2, DAKTRONICS PART NUMBER F-10000
NOTES
ALL WIRES ARE 18 AWG UNLESS OTHERWISE SPECIFIED.