



*Installation, Pre-Installation & Operation Manual*

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# **LED Pin Light**

June 2010 / 47-902714-000

***Brunswick***   
CUSTOMER SERVICE  
A tradition in excellence.

## **LED Pin Light Installation, Pre-Installation & Operations Manual**

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Reorder Part No. 47-902714-000

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# Safety

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## NOTES AND WARNING

Throughout this publication, “Warnings” and “Cautions” (accompanied by one of the International HAZARD Symbols) are used to alert the mechanic to special instructions concerning a particular service or operation that may be hazardous if performed incorrectly or carelessly. They are defined below. **OBSERVE AND READ THEM CAREFULLY!**

These “Safety Alerts” alone cannot eliminate the hazards that they signal. Strict compliance to these special instructions when performing the service, plus training and “Common Sense” operation are major accident prevention measures.



**NOTE or IMPORTANT!:**

*Will designate significant informational notes.*



**WARNING!**

*Will designate a mechanical or nonelectrical alert which could potentially cause personal injury or death.*



**WARNING!**

*Will designate electrical alerts which could potentially cause personal injury or death.*



**CAUTION!**

*Will designate a mechanical or nonelectrical alert which could potentially cause product damage.*



*Will designate grounding alerts.*

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## SAFETY NOTICE TO USERS OF THIS MANUAL

This manual has been written and published by the Service Department of Brunswick Bowling and Billiards to aid the reader when servicing or installing the products described.

It is assumed that these personnel are familiar with, and have been trained in, the servicing or installation procedures of these products, which includes the use of common mechanic's hand tools and any special Brunswick or recommended tools from other suppliers.

We could not possibly know of and advise the reader of all conceivable procedures by which a service might be performed and of the possible hazards and/or results of each method. We have not attempted any such wide evaluation. Therefore, anyone who uses a service procedure and/or tool, which is not recommended by Brunswick, must first completely satisfy himself that neither his nor the product's safety will be endangered by the service procedure selected.

All information, illustrations and specifications contained in this manual are based on the latest product information available at the time of publication.

It should be kept in mind, while working on the product, that the electrical system is capable of violent and damaging short circuits or severe electrical shocks. When performing any work where electrical terminals could possibly be grounded or touched by the mechanic, the power to the product should be disconnected prior to servicing and remain disconnected until servicing is complete.

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# Packaging

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<b>MODEL NUMBER CONFIGURATION</b>			
<i>BRUNSWICK BOWLING &amp; BILLIARDS CORPORATION</i>			
Drawing Number:		<b>G6-30001-000</b>	Rev. No: <b>N/C</b>
<b>DESCRIPTION: MNC - PIN DECK LED LIGHTING, LED LIGHT</b>			
REV.	QTY.	PART NUMBER	DESCRIPTION OF PACKAGE
	1.00	47-863001-000	PKG. - LED LIGHT FIXTURE
	1.00	47-863002-000	PKG. - DMX CABLE, 10'

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<b>MODEL NUMBER CONFIGURATION</b>			
<i>BRUNSWICK BOWLING &amp; BILLIARDS CORPORATION</i>			
Drawing Number:		<b>G6-30002-000</b>	Rev. No: <b>N/C</b>
<b>DESCRIPTION: MNC - PIN DECK LED LIGHTING, DMX CONTROLLER, 110V</b>			
REV.	QTY.	PART NUMBER	DESCRIPTION OF PACKAGE
	1.00	47-863003-000	PKG. - CONTROLLER FOR PIN DECK LIGHTING, 110V
	1.00	47-902714-000	MANUAL - LED PIN LIGHT PRE-INSTALLATION, INSTALLATION & OPERATION

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<b>MODEL NUMBER CONFIGURATION</b>			
<i>BRUNSWICK BOWLING &amp; BILLIARDS CORPORATION</i>			
Drawing Number:		<b>G6-30003-000</b>	Rev. No: <b>N/C</b>
<b>DESCRIPTION: MNC - PIN DECK LED LIGHTING, DMX CONTROLLER, 230V</b>			
REV.	QTY.	PART NUMBER	DESCRIPTION OF PACKAGE
	1.00	47-863004-000	PKG. - CONTROLLER FOR PIN DECK LIGHTING, 230V
	1.00	47-902714-000	MANUAL - LED PIN LIGHT PRE-INSTALLATION, INSTALLATION & OPERATION

**MODEL NUMBER CONFIGURATION***BRUNSWICK BOWLING & BILLIARDS CORPORATION*Drawing Number: **G6-300004-000**

Rev. No:

**DESCRIPTION: MNC - PIN DECK LED LIGHTING, HOME RUN CABLE**

REV.	QTY.	PART NUMBER	DESCRIPTION OF PACKAGE
	1.00	47-863005-000	PKG. - DMX CABLE, 150'

**MODEL NUMBER CONFIGURATION***BRUNSWICK BOWLING & BILLIARDS CORPORATION*Drawing Number: **G6-300005-000**

Rev. No:

**N/C****DESCRIPTION: MNC - PIN DECK LED LIGHTING, GSX MOUNTING BRACKET**

REV.	QTY.	PART NUMBER	DESCRIPTION OF PACKAGE
	1.00	47-862933-000	PKG. - PIN DECK LIGHT MOUNTING BRACKETS

**MODEL NUMBER CONFIGURATION***BRUNSWICK BOWLING & BILLIARDS CORPORATION*Drawing Number: **G6-300006-000**

Rev. No:

**N/C****DESCRIPTION: MNC - PIN DECK LED LIGHTING, 25' EXTENSION CABLE**

REV.	QTY.	PART NUMBER	DESCRIPTION OF PACKAGE
	1.00	47-863006-000	PKG. - DMX CABLE, 25'

**MODEL NUMBER CONFIGURATION***BRUNSWICK BOWLING & BILLIARDS CORPORATION*Drawing Number: **G6-300007-000**

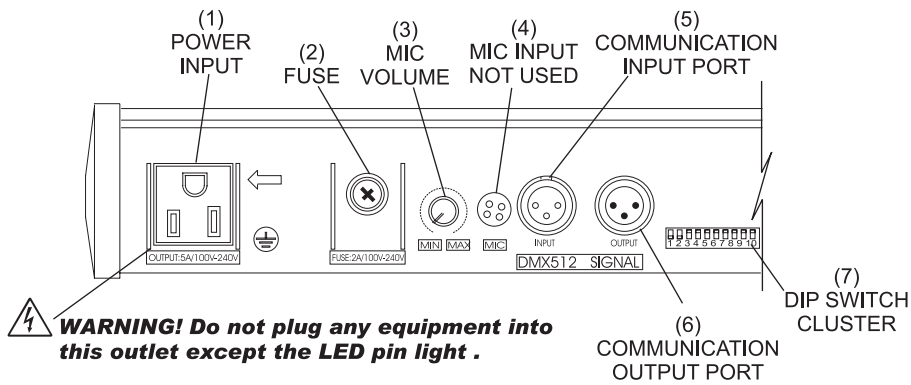
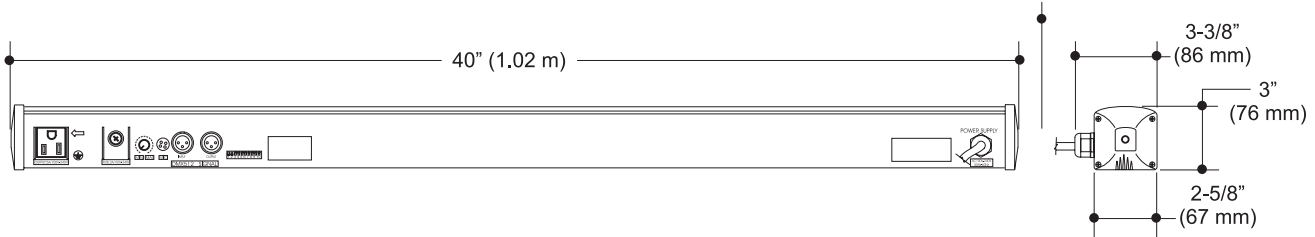
Rev. No:

**DESCRIPTION: MNC - BRACKETS, A2 PIN DECK LIGHT**

REV.	QTY.	PART NUMBER	DESCRIPTION OF PACKAGE
	1.00	12-860812-000	PKG. - BRACKETS, A2 PIN DECK LIGHT, W/HDWR.

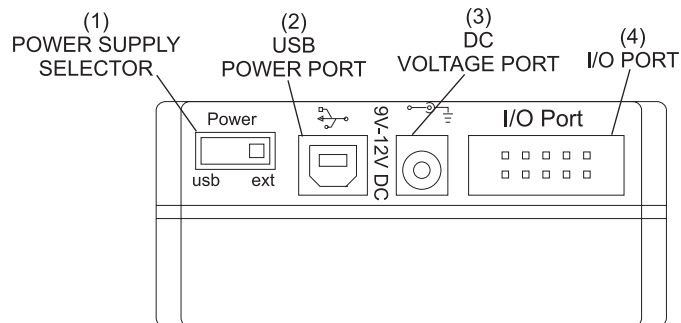
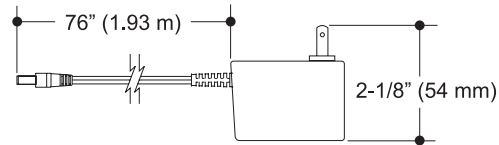
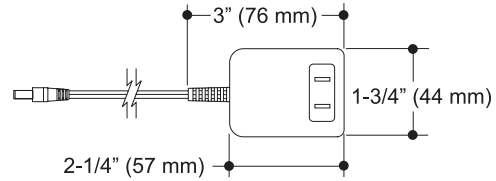
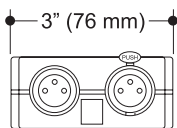
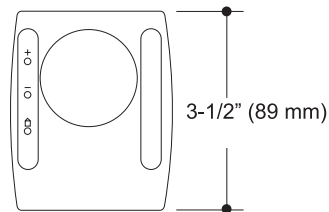
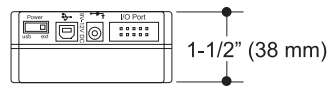
# Pre-Installation

LED Pin Light, 47-863001-000							
Volts	Hertz	AC/DC	Phase	Amps Per Unit	Watts	Branch Circuit	Customer's Responsibility
100-130	50/60	AC	1	0.5	60	2 wires + ground	No more than 12 lights daisy chained in series
200-240	50/60	AC	1	.25	60	2 wires + ground	No more than 12 lights daisy chained in series



- (1) **POWER INPUT** - 120-240VAC, 5 amp
- (2) **FUSE** - 100-240VAC, 2 amp
- (3) **MIC VOLUME** - Not Used
- (4) **MIC** - Not Used
- (5) **COMMUNICATION INPUT PORT** -
- (6) **COMMUNICATION OUTPUT PORT** -
- (7) **DIP SWITCH CLUSTER**-

Controller, 47-863003-000							
Volts	Hertz	AC/DC	Phase	Amps Per Unit	Watts	Branch Circuit	Customer's Responsibility
100-130	50/60	AC	1	.1	120	2 wires + ground	No more than 12 lights daisy chained in series
200-240	50/60	AC	1	0.5	120	2 wires + ground	No more than 12 lights daisy chained in series



- (1) **POWER SUPPLY SELECTOR SWITCH** - Use to select power to controller from the "USB" Power Port (2) or the "EXT" DC Voltage Port (3). Needs to be set to "EXT" (3)
- (2) **USB POWER PORT** - Not Used
- (3) **DC VOLTAGE PORT** - Not Used
- (4) **I/O PORT**- Not Used

# Installation LED Pin Lighting

## GS-X LED PIN LIGHT BRACKETS

If the GS-X Pinsetter has an attached wire way on the front of the machine perform *step 1*, if pinsetter is not equipped with a wire way proceed to *step 2*.

1. Remove one of the two M8 screws and nuts (Left Hand side of the machine) securing the wire way to the pinsetter.

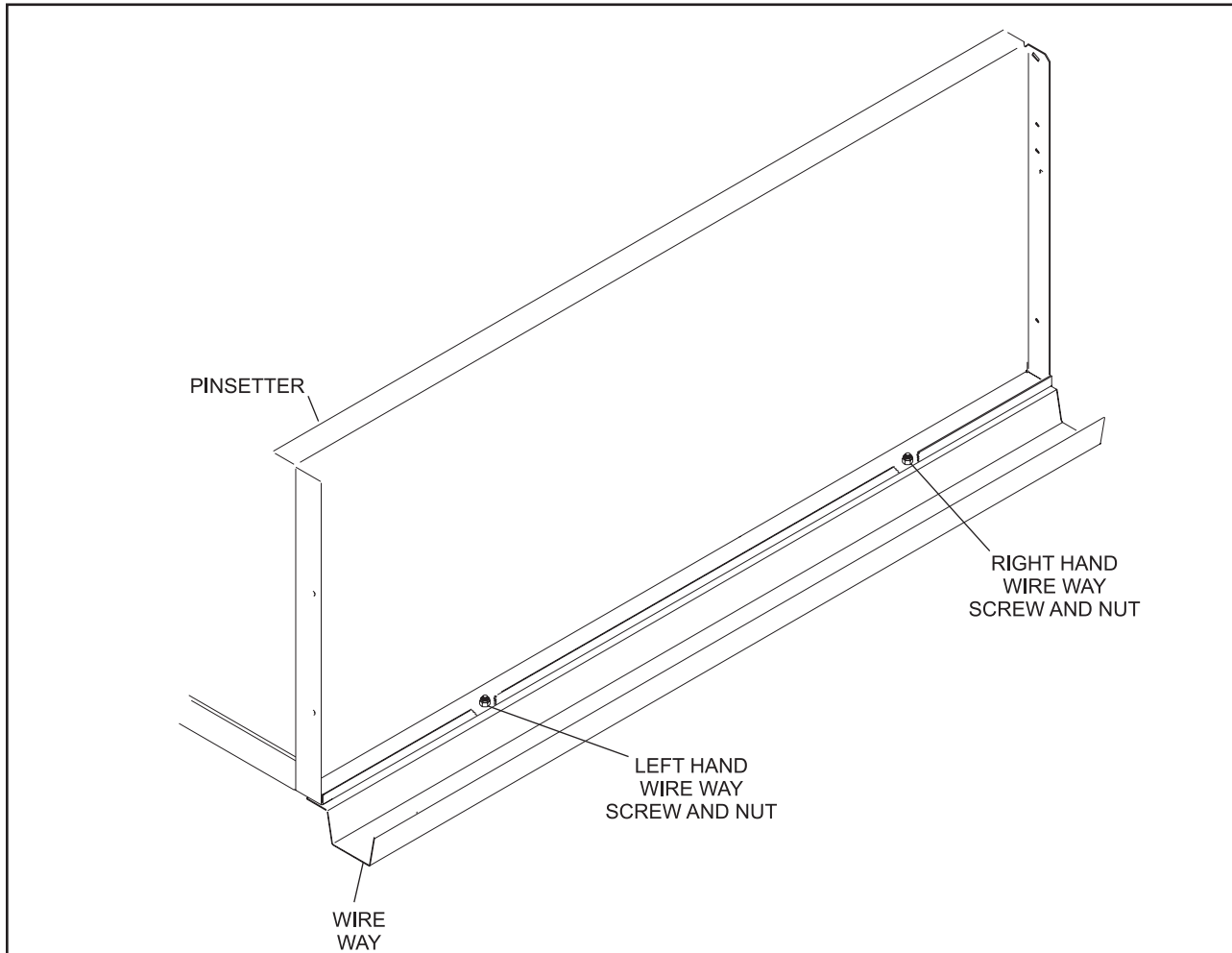
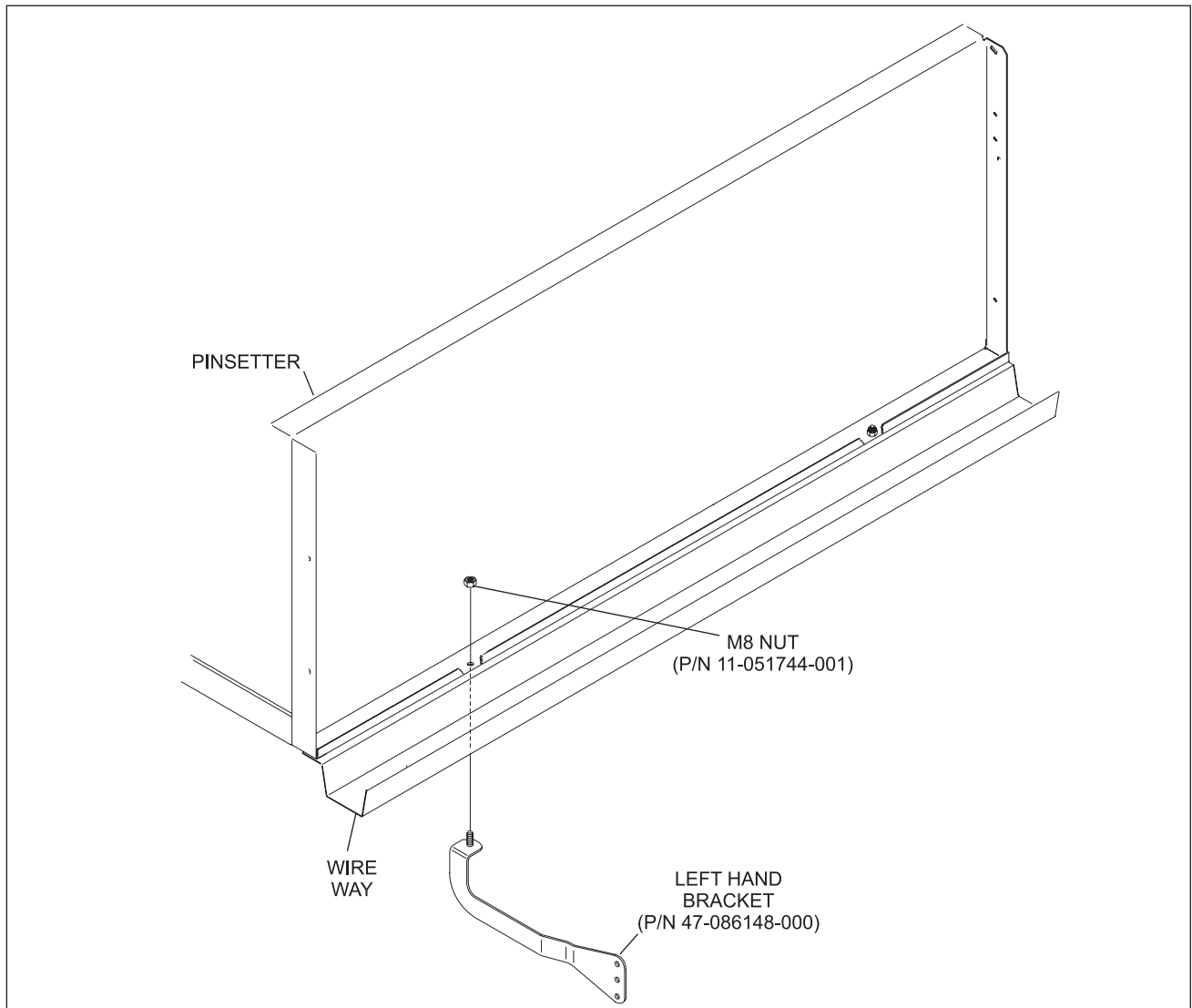


Figure 1

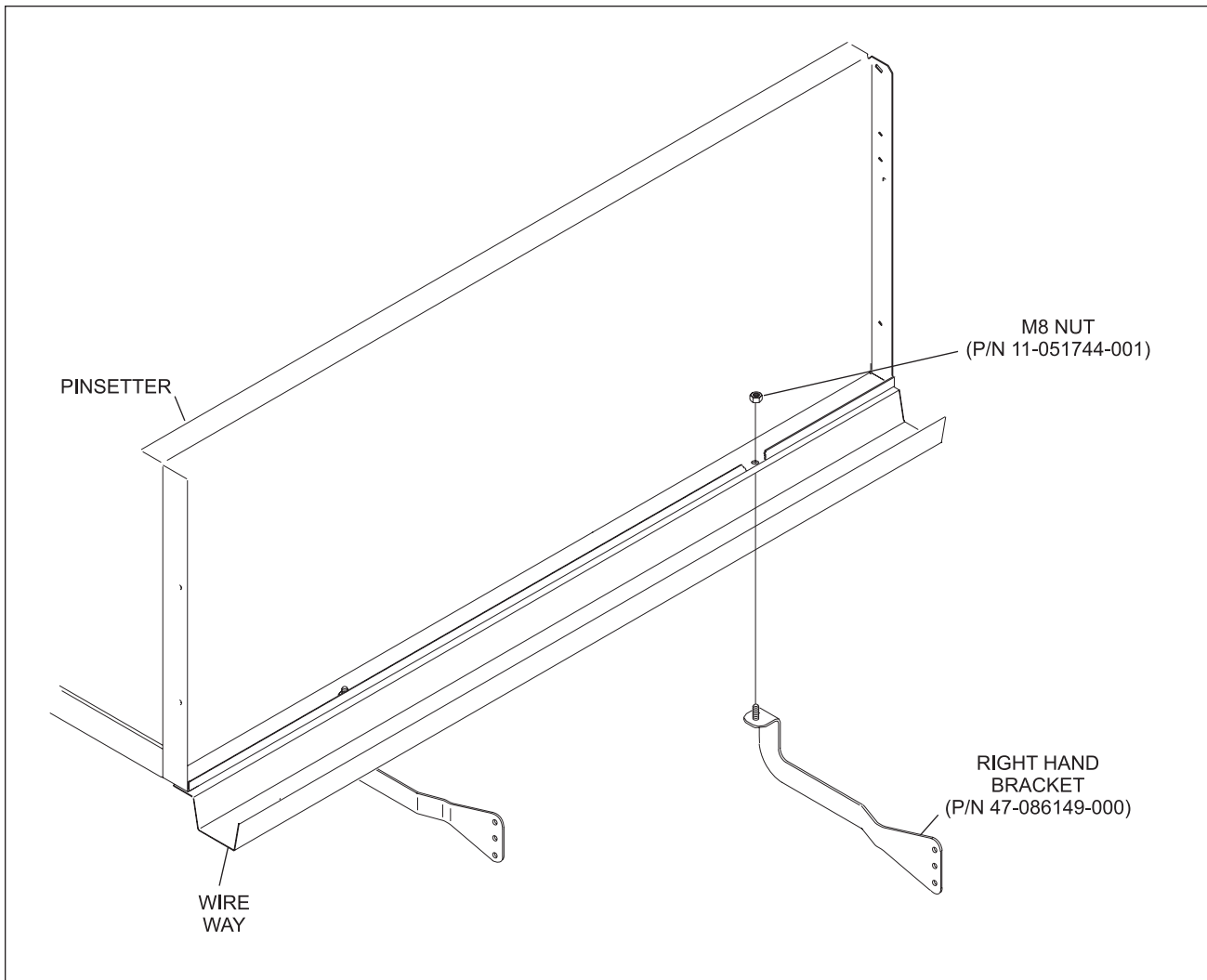
2. Insert the stud of Left Hand Bracket (47-086148-009) into the hole left by hardware removal in previous step and secure it with M8 nut (11-051744-001). Refer to *Figure 2*.



*Figure 2*

3. Remove the Right Hand side M8 screw and nut securing the the wire way to the pinsetter. Refer to *Figure 1*.

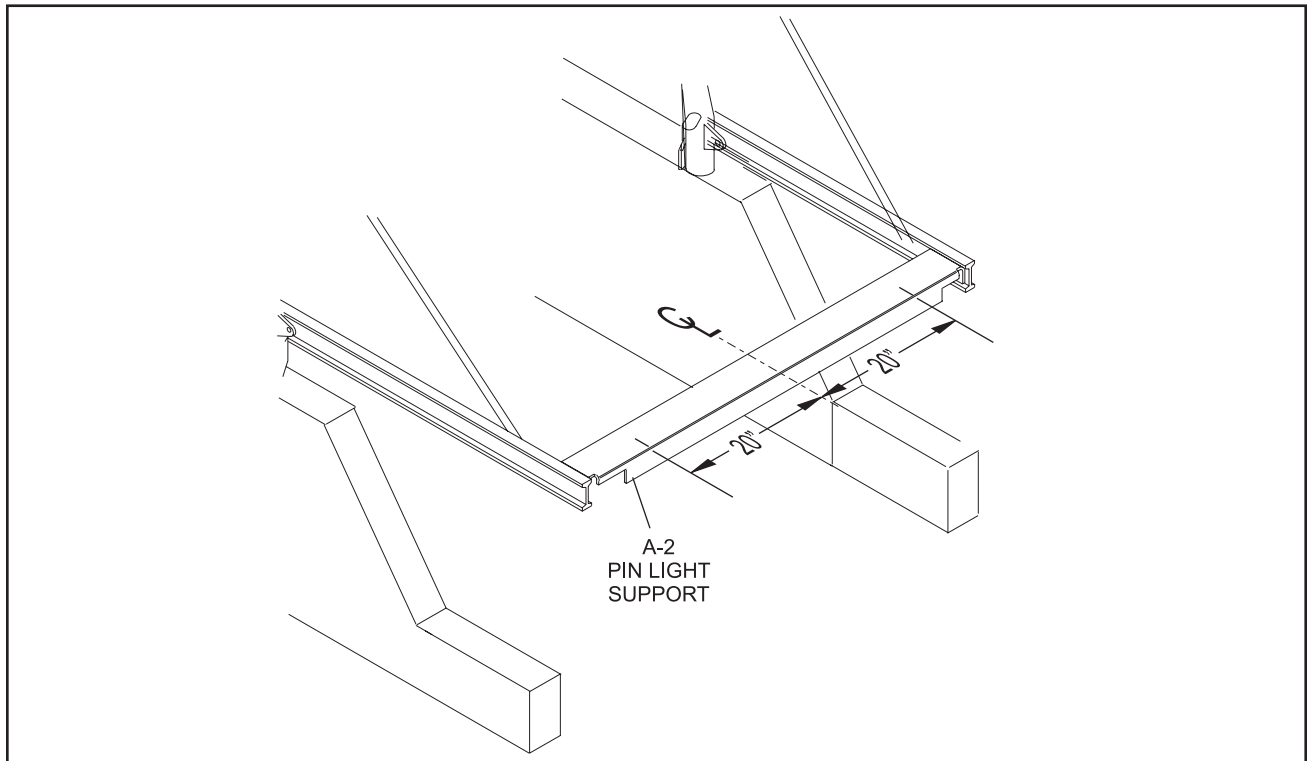
4. Insert the stud of Right Hand Bracket (47-086149-009) into the hole left by hardware removal in previous step and secure it with M8 nut (11-051744-001). Refer to *Figure 3*.



*Figure 3*

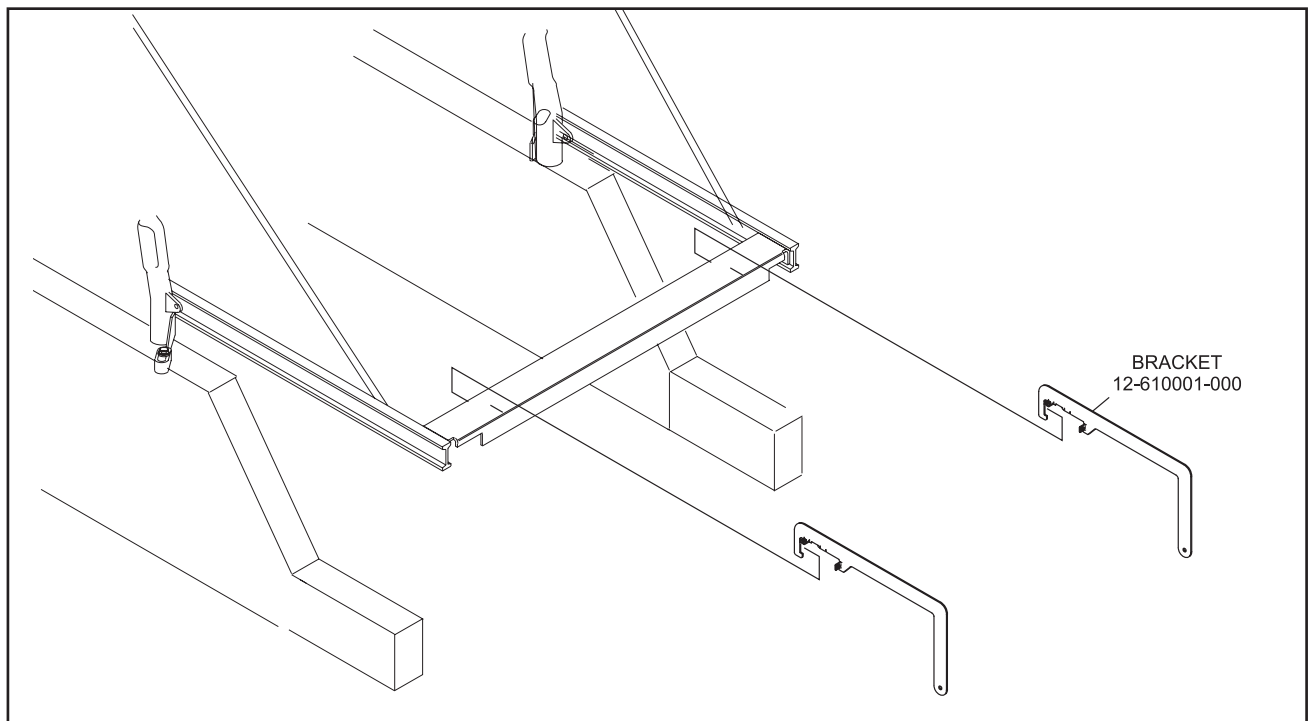
## A-2 LED PIN LIGHT BRACKETS

1. Find the center of the existing A-2 pin light support. Refer to *Figure 4*.



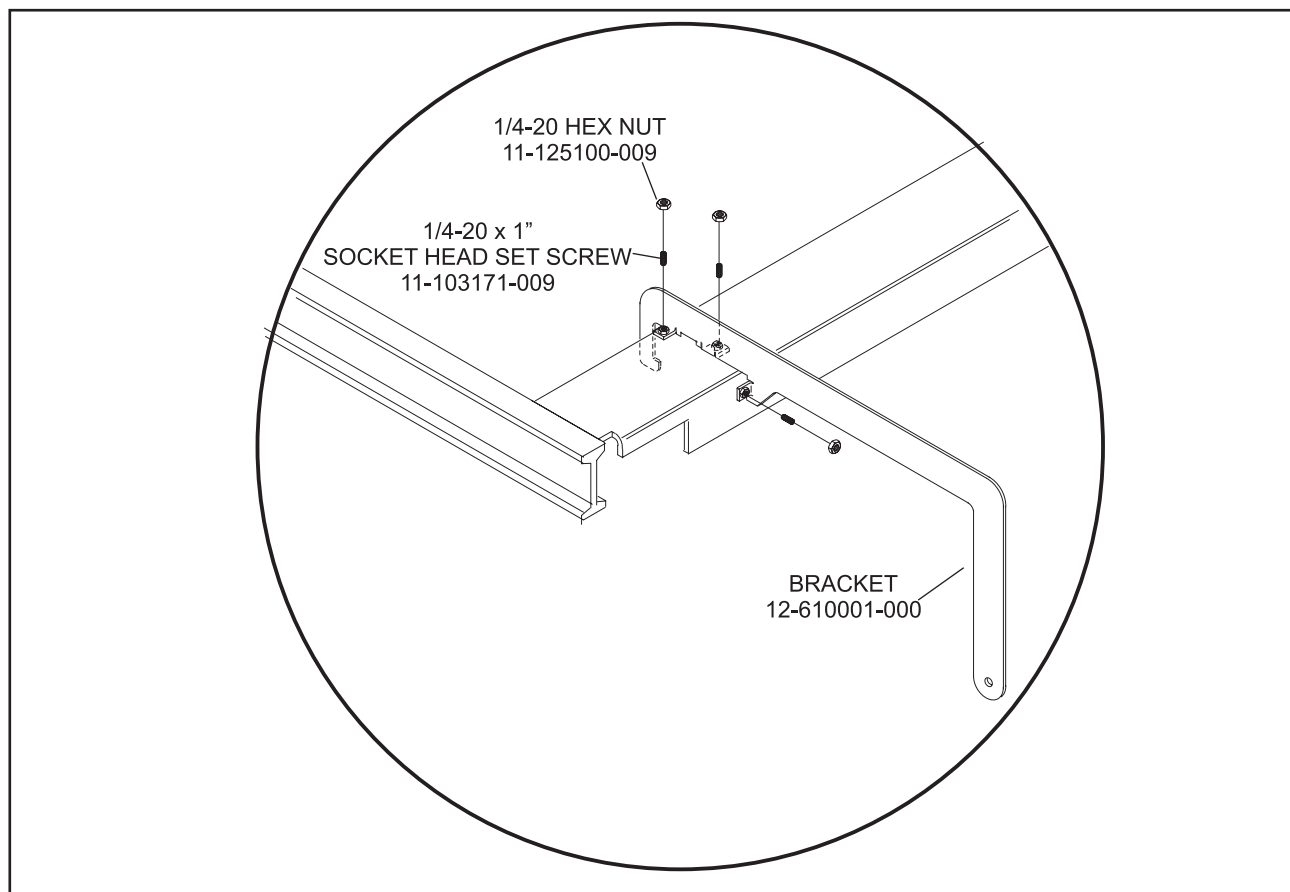
*Figure 4*

2. Position 1 bracket (12-610001-000) 20" to the left of the center line of the pin light support and one bracket 20" to the right of the center line of the pin light support. Bracket must extend toward foul line. Refer to *Figures 4 & 5*.



*Figure 5*

3. Thread a 1/4-20 x 1" socket head set screw (11-103171-009) in the nut on the front (toward the foul line) side and tighten to secure the bracket to the pin light support. Refer to *Figure 6*.



*Figure 6*

4. Thread a 1/4-20 hex nut (11-125100-009) onto the set screw and tighten to lock set screw.
5. Thread a 1/4-20 x 1" socket head set screw (11-103171-009) in each of the nuts on top of the bracket. Alternately tighten the set screws until the bracket is square and perpendicular to the pin light support.
6. Thread a 1/4-20 hex nut (11-125100-009) onto the set screw and tighten to lock set screw.

# LED PIN LIGHT

1. Loosely attach Pin Deck Light to brackets with (1) M6 Screw and (2) External Tooth Lockwashers on each end of the light. Refer to *Figure 7*.

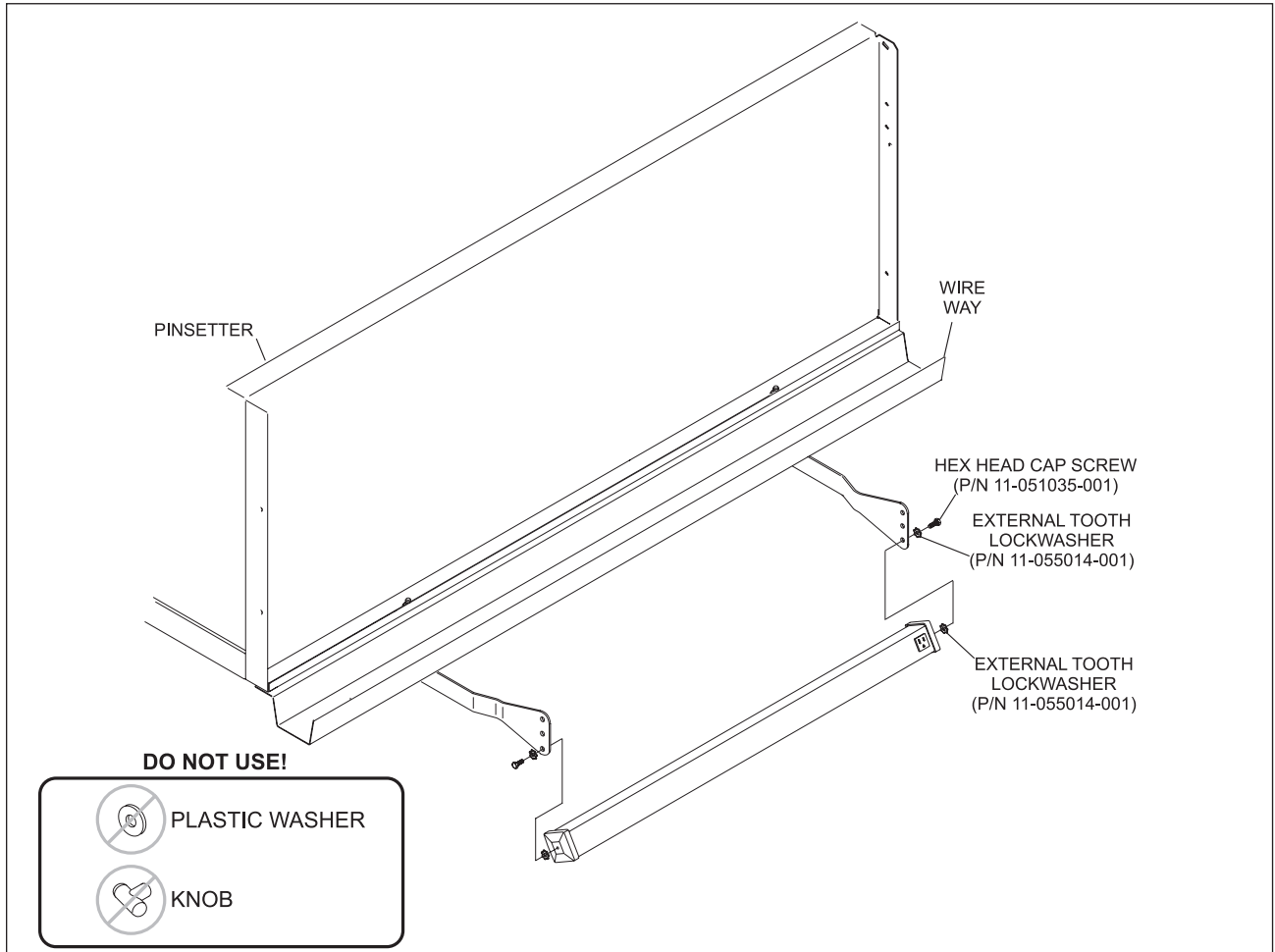


Figure 7

2. Adjust the angle of the light to the desired position and tighten the screws on both ends of the light.

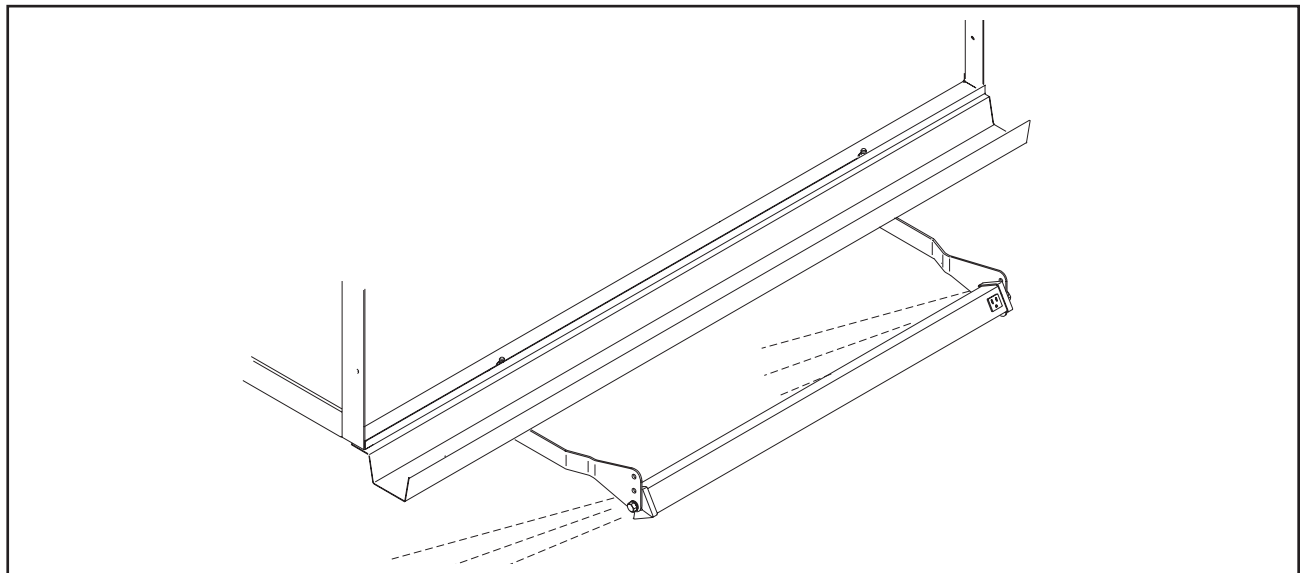


Figure 8

# CABLING & POWER

## Communication CABLES

1. Connect the male end of the 150' (45.72 m) home run cable to the "Communication Output" port on the controller (P/N 47-863003-000). Refer to *Figure 9*.

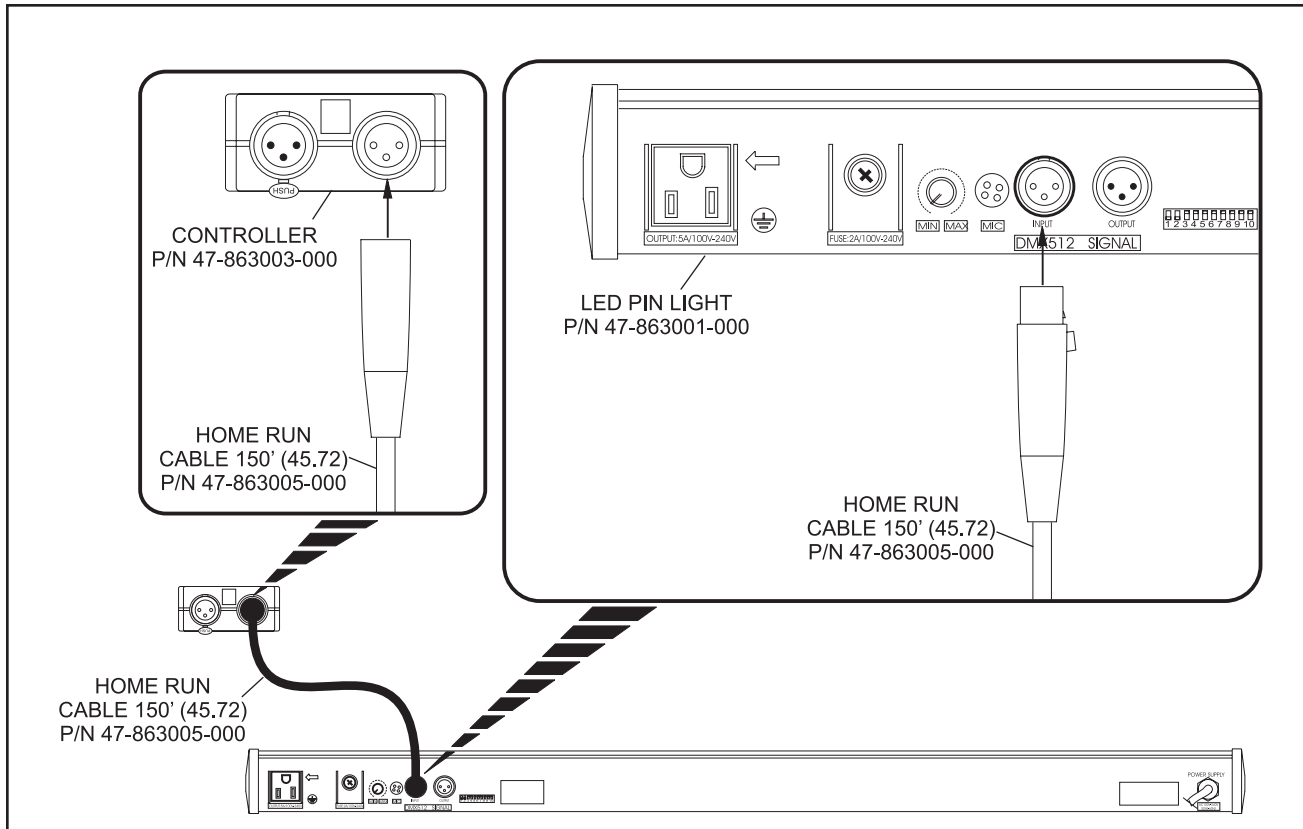


Figure 9

2. Connect the female end of the home run cable to the "Communication Input" port on the LED pin light on the first (or last) lane.

- Using a 10ft/3m cable, connect the first light to the second light, the second light to the third light, etc., until all the lights are chained together.

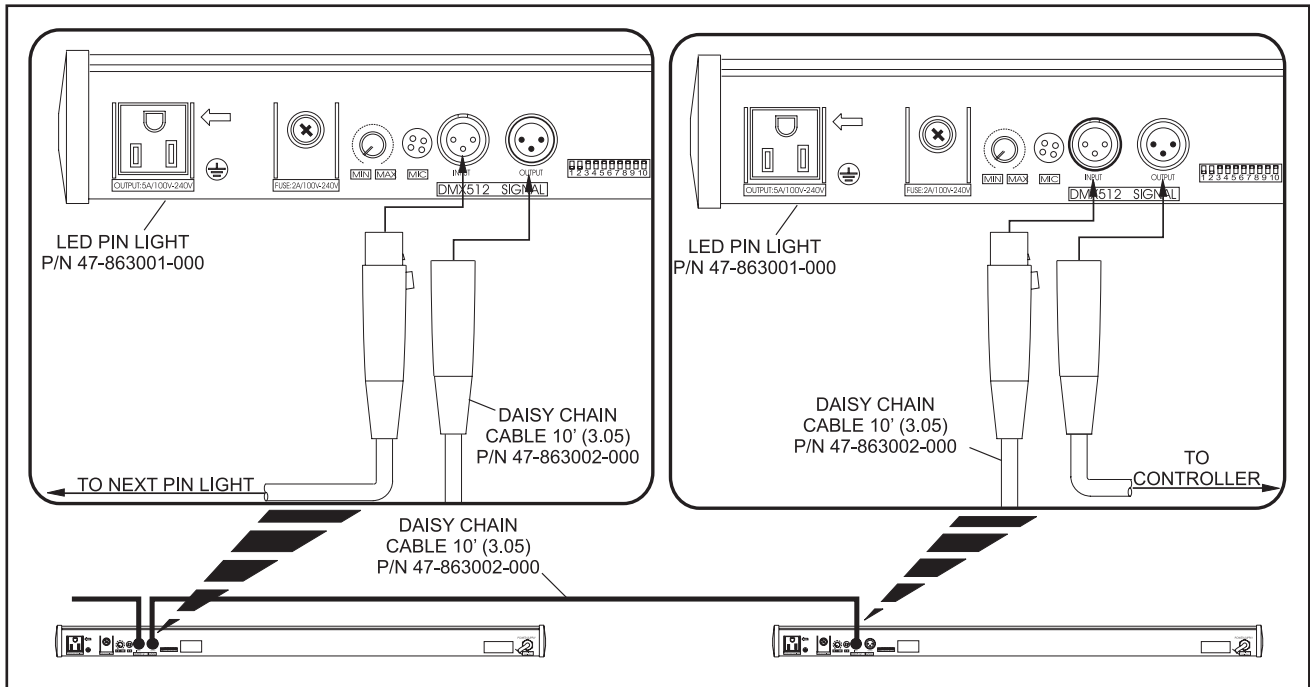


Figure 10

**i** **NOTE:** If there is a large gap between two lanes, the data cables can be chained together to create a longer cable.

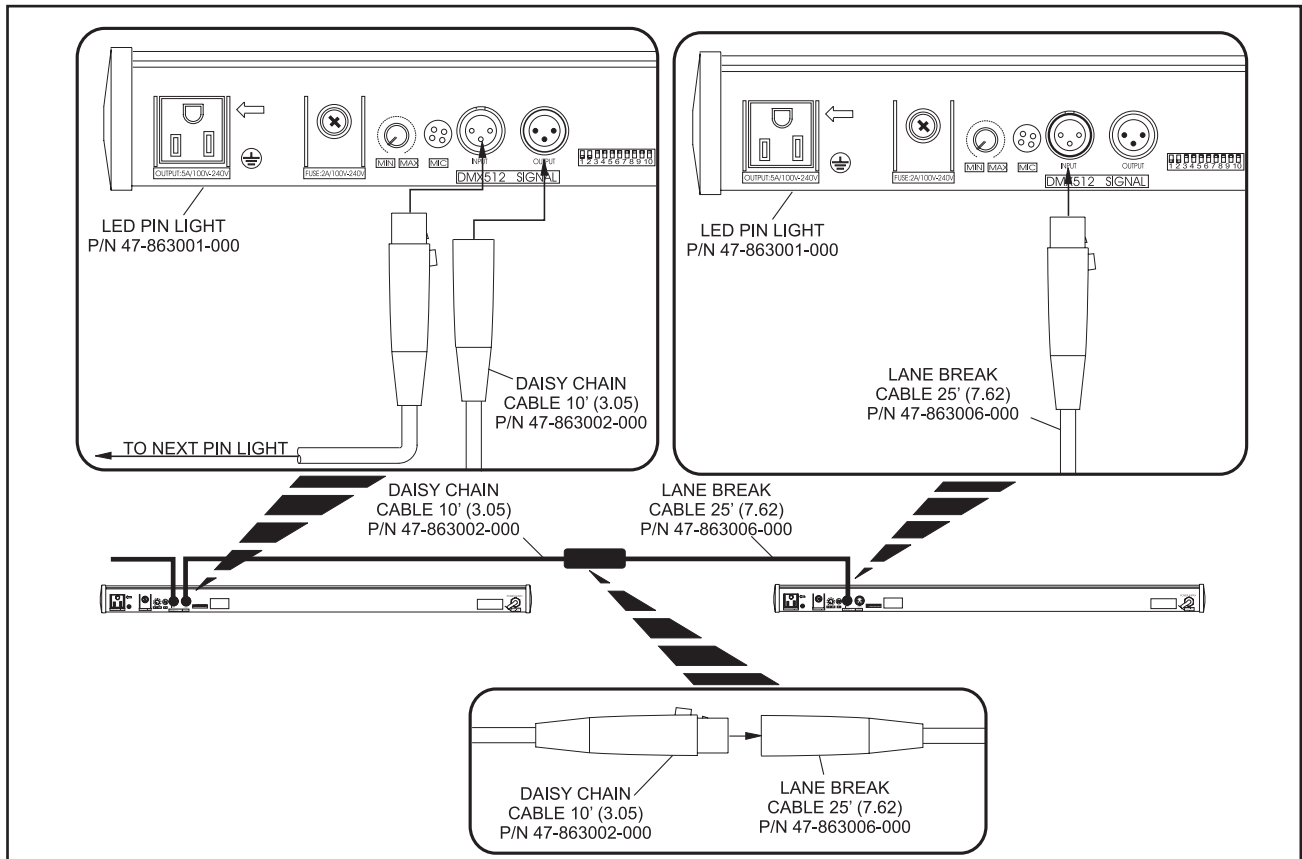


Figure 11

## Power

1. Starting at the first or last light, plug the light into a standard electrical outlet. An adapter may need to be used, but the light will support 90-240V 50/60 Hz.

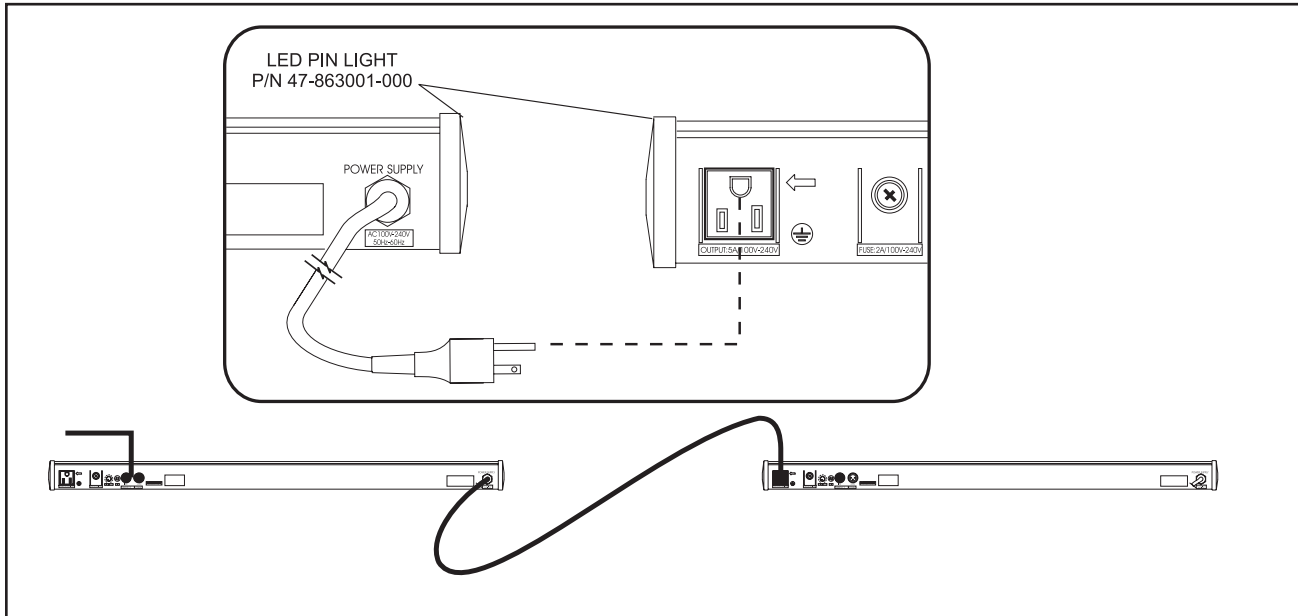


Figure 12

2. Plug the power cable from the light on the next lane into the power plug on the light on the previous lane. Up to 12 lights may be connected together.



**NOTE:** An outlet is required for every 12 LED pin Lights.

## ADDRESSING

### Operation

To turn on the controller, plug the supplied power supply into the "DC Voltage" port and make sure the switch on the box is set to "EXT" (external power supply) not "USB" (for connecting to a computer). In order to function properly, the controller must be set to EXT. When it is set correctly and plugged in, the light indicators on the controller will light up.

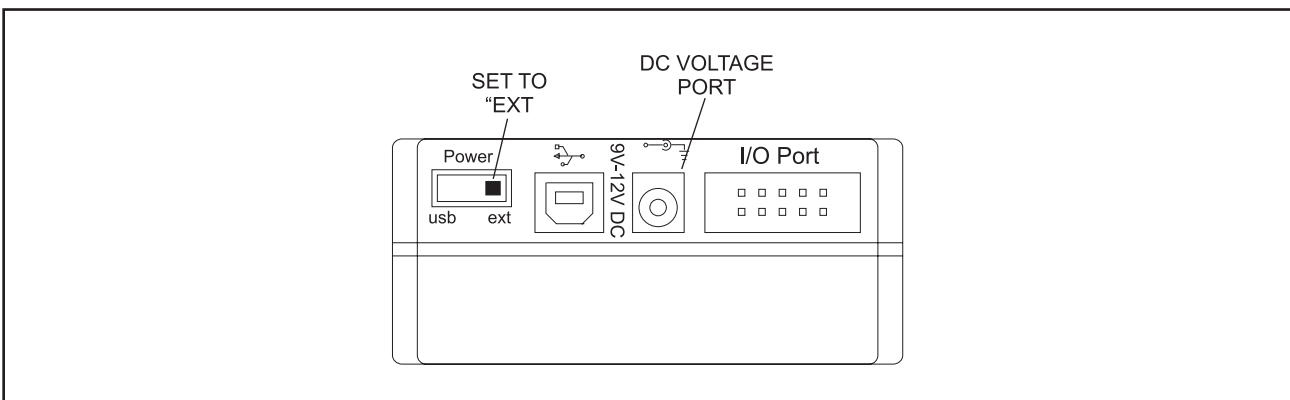


Figure 13

To operate the controller, use the + and – buttons to switch programs. When a program is active, it will continue to run until the controller box is unplugged or a different program is selected. By default, the controller will operate program 01 when it is turned on.

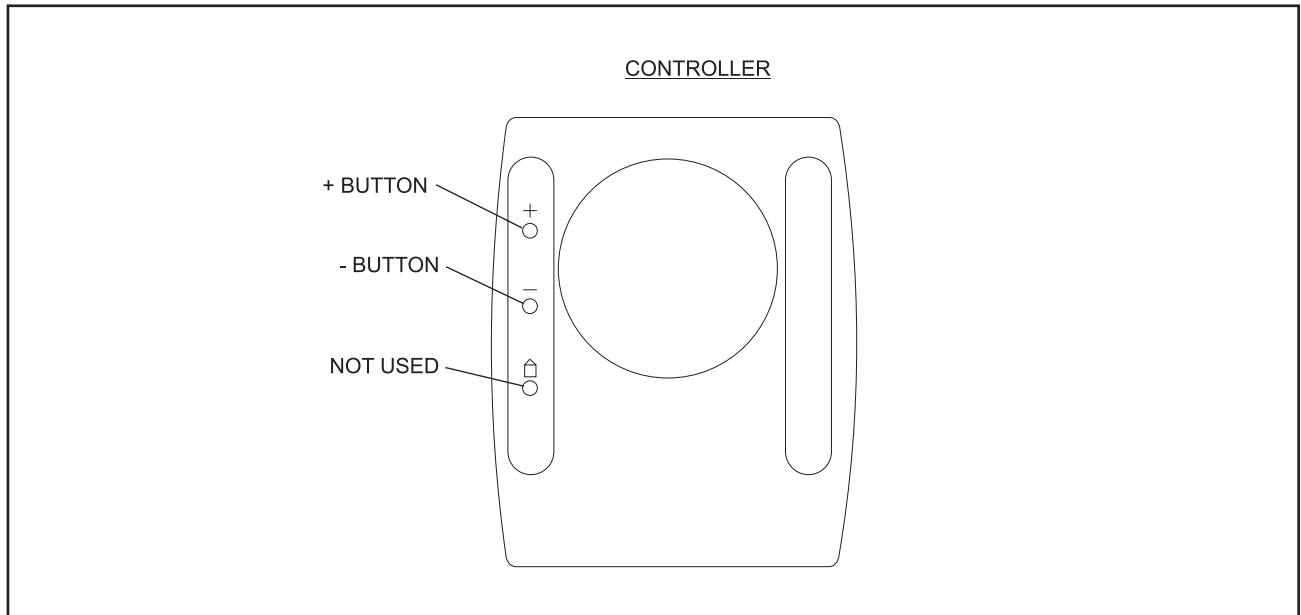


Figure 14

## Setting the Address of the LED Pin Light

Each light has 10 dip switches to set the address for each individual light. The ON position for all of the switches is toward the numbers and the off position is away from the numbers.

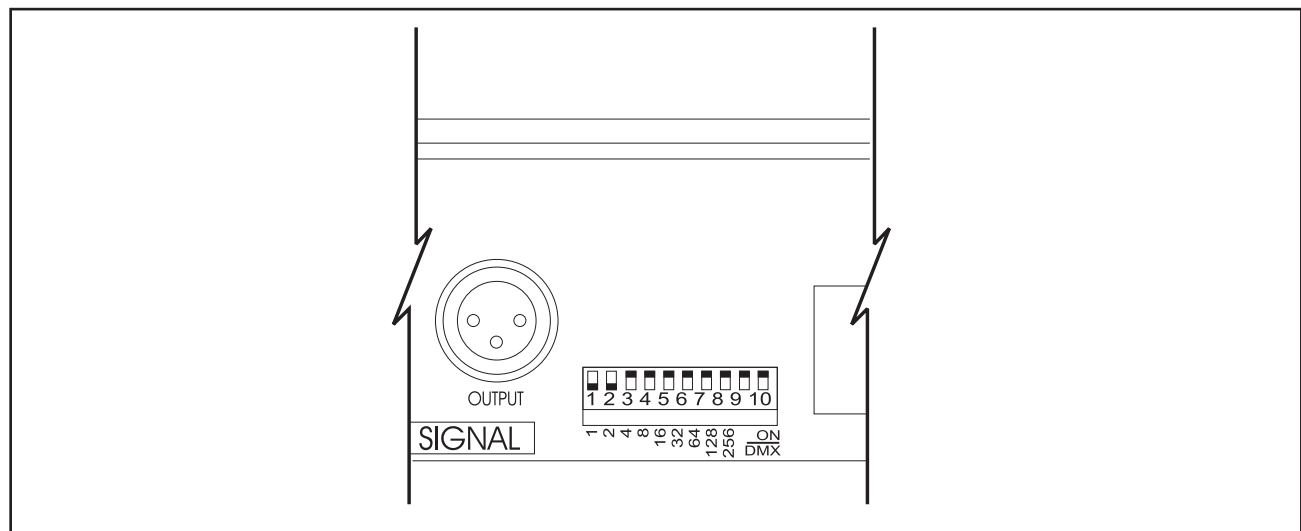


Figure 15

The **ON/DMX**, number 10 dip switch should always be set to the DMX position, ON.

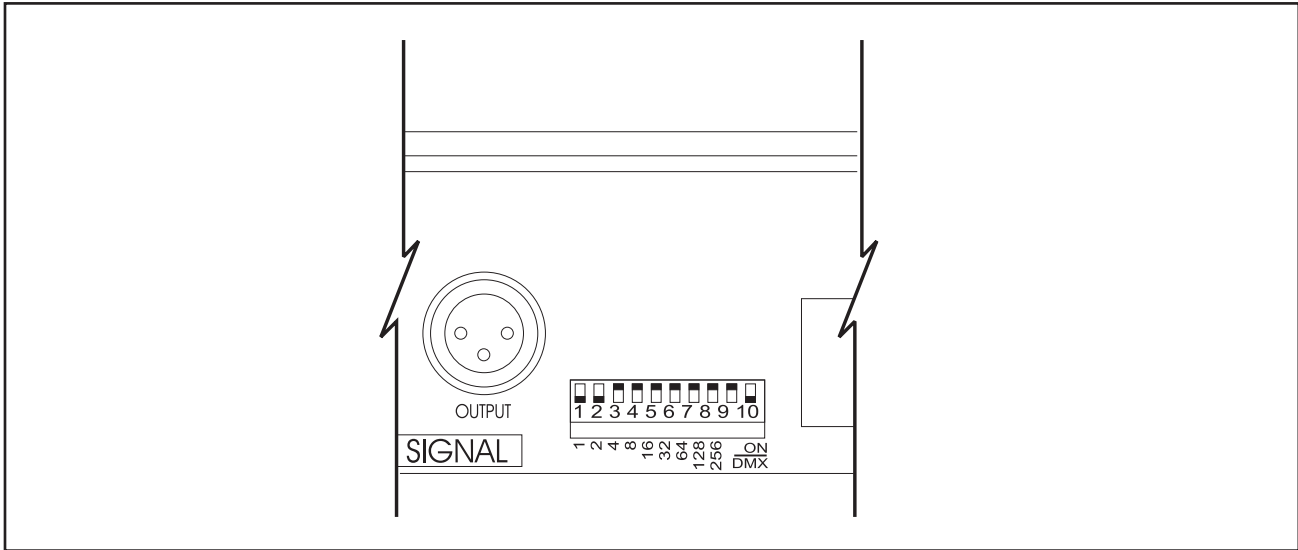


Figure 16

The first LED pin light and the last LED pin light address is 1.

The second LED pin light and the second from the last LED pin light address is 14.

The third LED pin light address and the third from the last LED pin light address is 27

The address's will increase by 13 for every LED pin light up to an address of 300 or 24 lanes. The nine dip switches are binary, 1, 2, 4, 8, 16, 32, 64, 128, and 256.

If the center has more than 24 lanes, lane 25 and the remaining lanes` will start over at address 1 and increase by 13 for each additional LED pin light.

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## DIP Switch Setting For 48 Lanes

### **48 Lanes**

Reference charts on proceeding page.

Lane	Address	DIP SWITCH or LED PINLIGHT									
		1	2	4	8	16	32	64	128	256	DMX
1	1	1	0	0	0	0	0	0	0	0	1
2	14	0	1	1	1	0	0	0	0	0	1
3	27	1	1	0	1	1	0	0	0	0	1
4	40	0	0	0	1	0	1	0	0	0	1
5	53	1	0	1	0	1	1	0	0	0	1
6	66	0	1	0	0	0	0	1	0	0	1
7	79	1	1	1	1	0	0	1	0	0	1
8	92	0	0	1	1	1	0	1	0	0	1
9	105	1	0	0	1	0	1	1	0	0	1
10	118	0	1	1	0	1	1	1	0	0	1
11	131	1	1	0	0	0	0	0	1	0	1
12	144	0	0	0	0	1	0	0	1	0	1
13	157	1	0	1	1	1	0	0	1	0	1
14	170	0	1	0	1	0	1	0	1	0	1
15	183	1	1	1	0	1	1	0	1	0	1
16	196	0	0	1	0	0	0	1	1	0	1
17	209	1	0	0	0	1	0	1	1	0	1
18	222	0	1	1	1	1	0	1	1	0	1
19	235	1	1	0	1	0	1	1	1	0	1
20	248	0	0	0	1	1	1	1	1	0	1
21	261	1	0	1	0	0	0	0	0	1	1
22	274	0	1	0	0	1	0	0	0	1	1
23	287	1	1	1	1	1	0	0	0	1	1
24	300	0	0	1	1	0	1	0	0	1	1

48	1	1	0	0	0	0	0	0	0	0	1
47	14	0	1	1	1	0	0	0	0	0	1
46	27	1	1	0	1	1	0	0	0	0	1
45	40	0	0	0	1	0	1	0	0	0	1
44	53	1	0	1	0	1	1	0	0	0	1
43	66	0	1	0	0	0	0	1	0	0	1
42	79	1	1	1	1	0	0	1	0	0	1
41	92	0	0	1	1	1	0	1	0	0	1
40	105	1	0	0	1	0	1	1	0	0	1
10	118	0	1	1	0	1	1	1	0	0	1
38	131	1	1	0	0	0	0	0	1	0	1
37	144	0	0	0	0	1	0	0	1	0	1
36	157	1	0	1	1	1	0	0	1	0	1
35	170	0	1	0	1	0	1	0	1	0	1
34	183	1	1	1	0	1	1	0	1	0	1
33	196	0	0	1	0	0	0	1	1	0	1
32	209	1	0	0	0	1	0	1	1	0	1
31	222	0	1	1	1	1	0	1	1	0	1
30	235	1	1	0	1	0	1	1	1	0	1
29	248	0	0	0	1	1	1	1	1	0	1
28	261	1	0	1	0	0	0	0	0	1	1
27	274	0	1	0	0	1	0	0	0	1	1
26	287	1	1	1	1	1	0	0	0	1	1
25	300	0	0	1	1	0	1	0	0	1	1