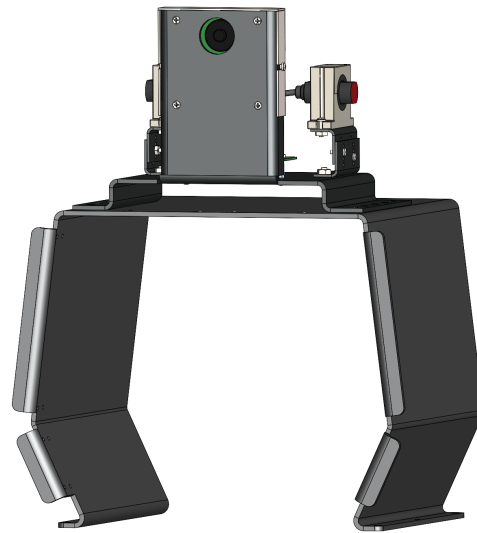




AUTOMATIC SCORING




SURFACE BALL RETURNS

Installation manual for PinCams
installed on a tunnel with surface ball returns

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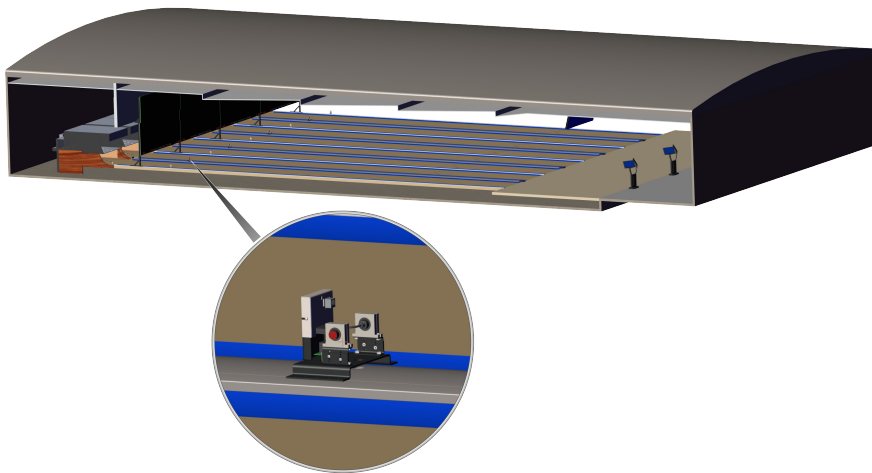
 SteltronicUSA.com

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SURFACE BALL RETURNS

OVERVIEW



A typical installation of the PinCam bowling pins detection device is normally installed on the ball return capping, and this is because the ball return system is underground and you can't see the bowling ball returning to the bowler. In the sample image to the left, an illustration of an 8 lane bowling center with the PinCam is installed on the ball return capping.

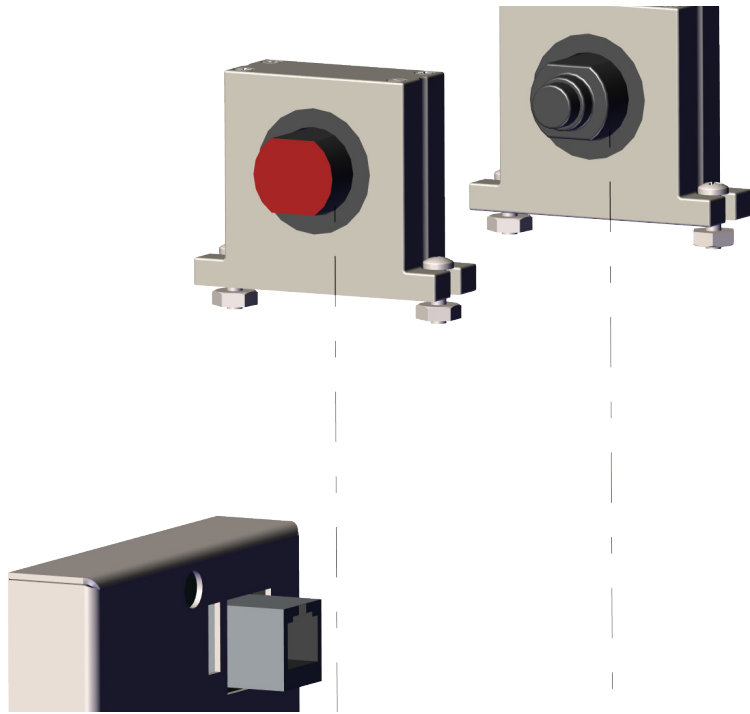


When the bowling center has pinsetters that require a PinCam to detect the bowling pins for scoring purposes, and the bowling center ball return system has surface ball returns, the Steltronic PinCam has to be installed using a tunnel system.

This allows the bowling ball to travel above ground on the ball return track, and the Steltronic PinCam is mounted on top of the tunnel as seen here to the left.



INSTALLATION PROCEDURES



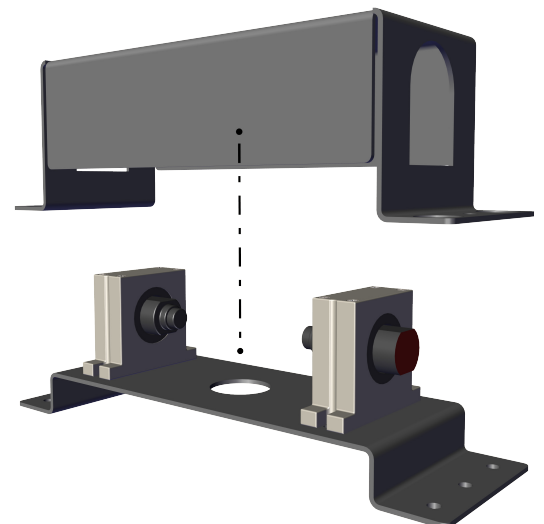
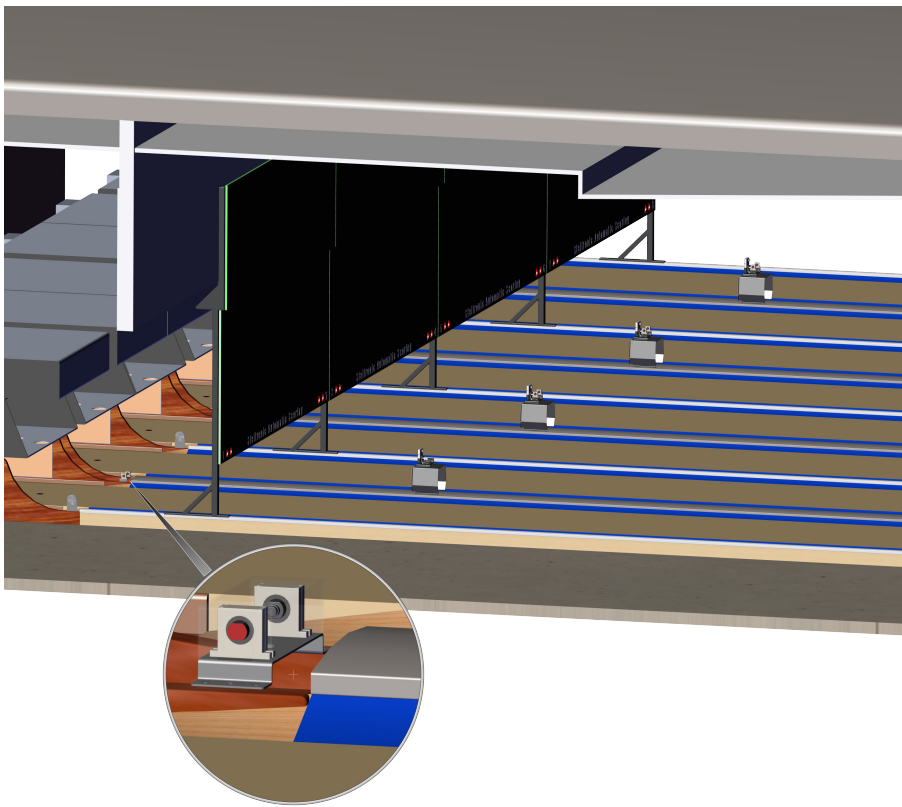
The PinCam also has infrared sensors that detect a bowling ball. When the bowling ball breaks the “infrared beam”, this informs the scoring system that a ball was rolled, and then to detect the standing pins for a score.

Since the sensors are normally mounted on the PinCam baseplate, this presents a problem when the PinCam is mounted on top of the tunnel, now it’s impossible for the bowling ball to break the beam of the infrared sensor.

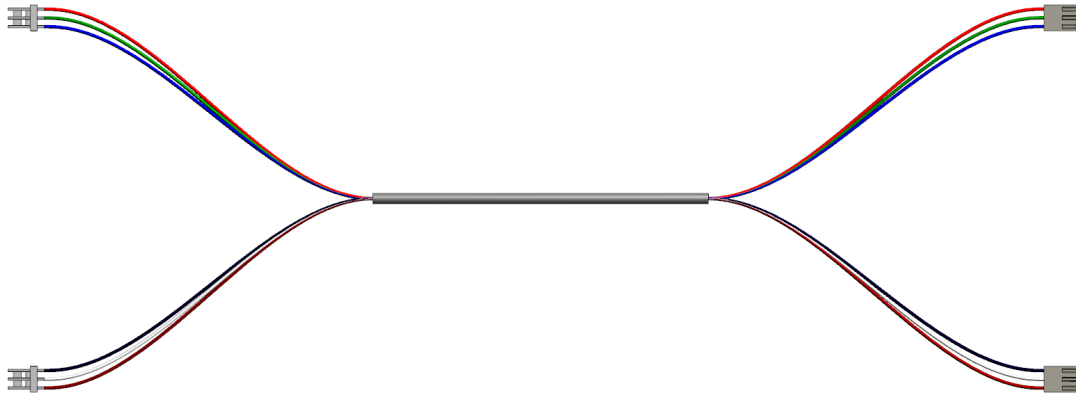
This means the sensors have to be removed from the PinCam baseplate and relocated for the bowling ball to be able to break the sensor beam.

Steltronic has provided a bracket and cover that will allow the sensors to be relocated under the ball return drop sweep, which is located in between both of the pinsetter kickbacks.

However, it is preferable to mount the sensors in a location that is in front of the rake or sweep assembly so that the motion of the rake or sweep does not interfere with the scoring system thinking that a bowling ball was rolled 3X.



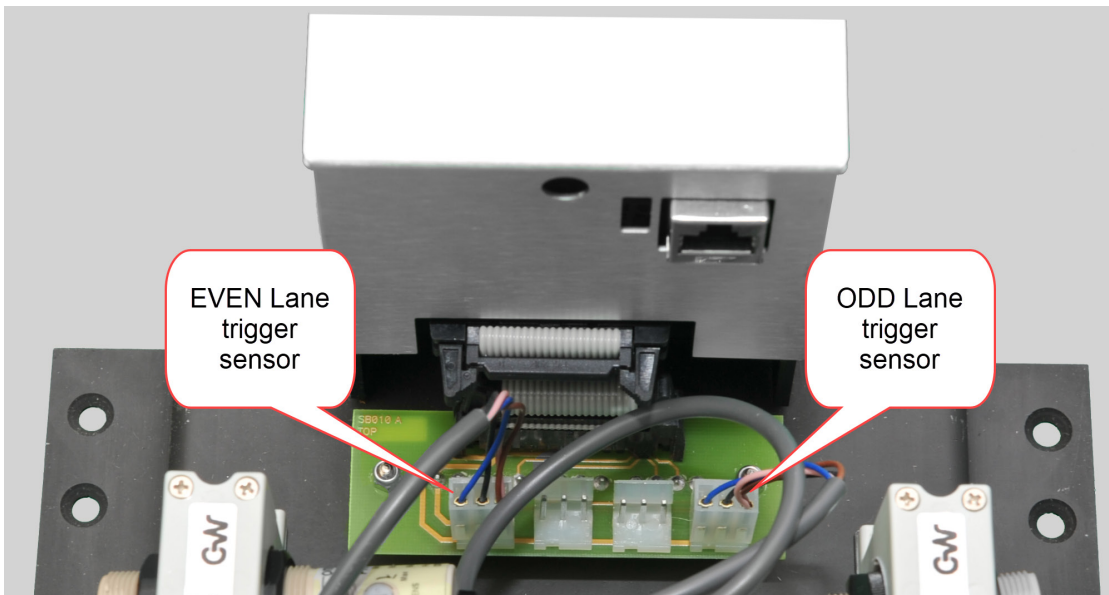
SENSORS RELOCATION CABLE INSTALLATION



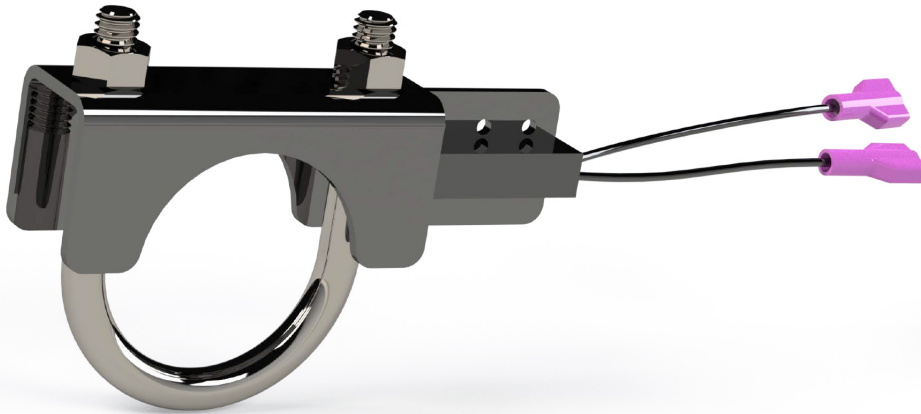
When you have installed the sensors onto the new bracket and mounted them under the ball return tracks, you need to connect these sensors back onto the PinCam.

Using the cable (PN: 716030) make sure you install this cable that has the MALE pins closest to the sensors, and FEMALE connections will be connected to the PinCam PCB.

We recommend the RED GREEN and BLUE wires be connected to the ODD lane sensor, and then back at the PinCam, connect the cable with the RED GREEN and BLUE connector to the odd lane PCB trigger sensor connections.



BRUNSWICK A OR A-2

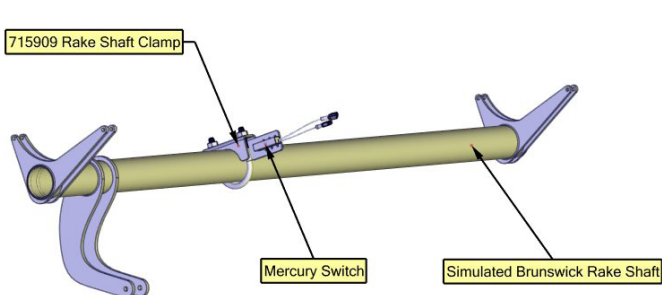


If the sensors are relocated to an area that is behind the rake, you will need to install a mercury switch to disable the sensors when the rake is sweeping pins.

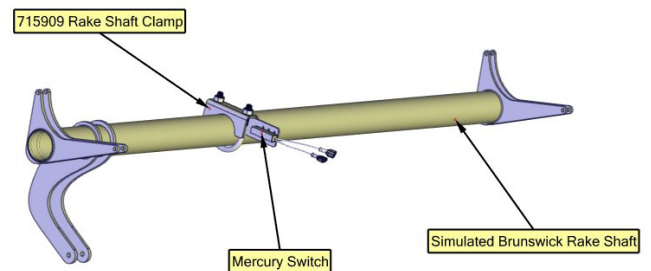
If your bowling center has Brunswick A or A-2 pinsetters, an additional mercury switch needs to be installed on the rake shaft.

The main purpose of this mercury switch is to send a signal to the infrared sensor to be disabled when the pinsetter rake/sweep would sweep the deadwood.

Therefore we need to disable the sensor when the rake/sweep passes and breaks the beam of the sensor.



Mercury switch installed with rake UP and pinsetter at zero degrees.



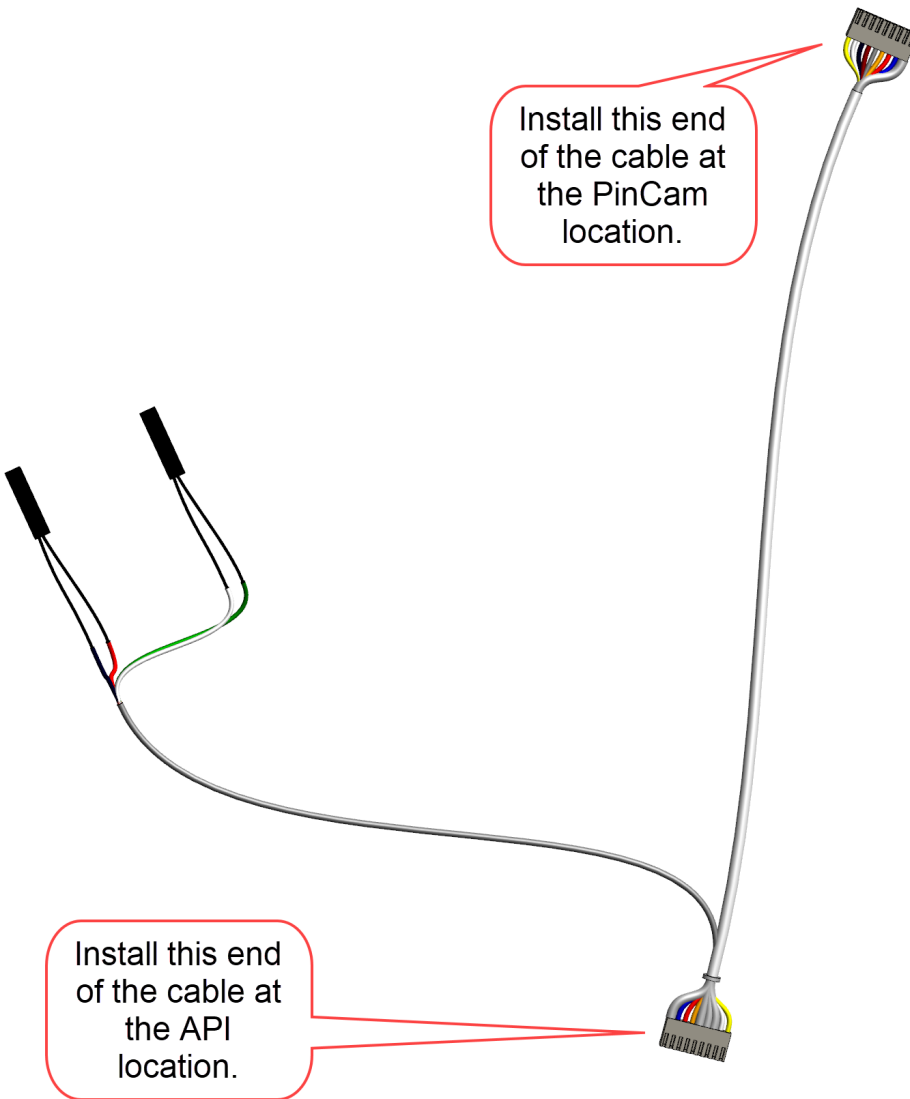
Mercury switch installed with rake DOWN and pinsetter at zero degrees.

When installing the mercury switch, the pinsetter needs to be at ZERO degrees with the rake in the upward position. The mercury switch should be installed with the wires pointed forward in the direction of the bowlers at the approach.

When the rake is UP, install the u-bolt clamp on the rake shaft, so that you have an open continuity on the two wires of the mercury switch. When the rake is down, there should be a contact closure between the two mercury switch wires.



CAMERA CABLE INSTALLATION



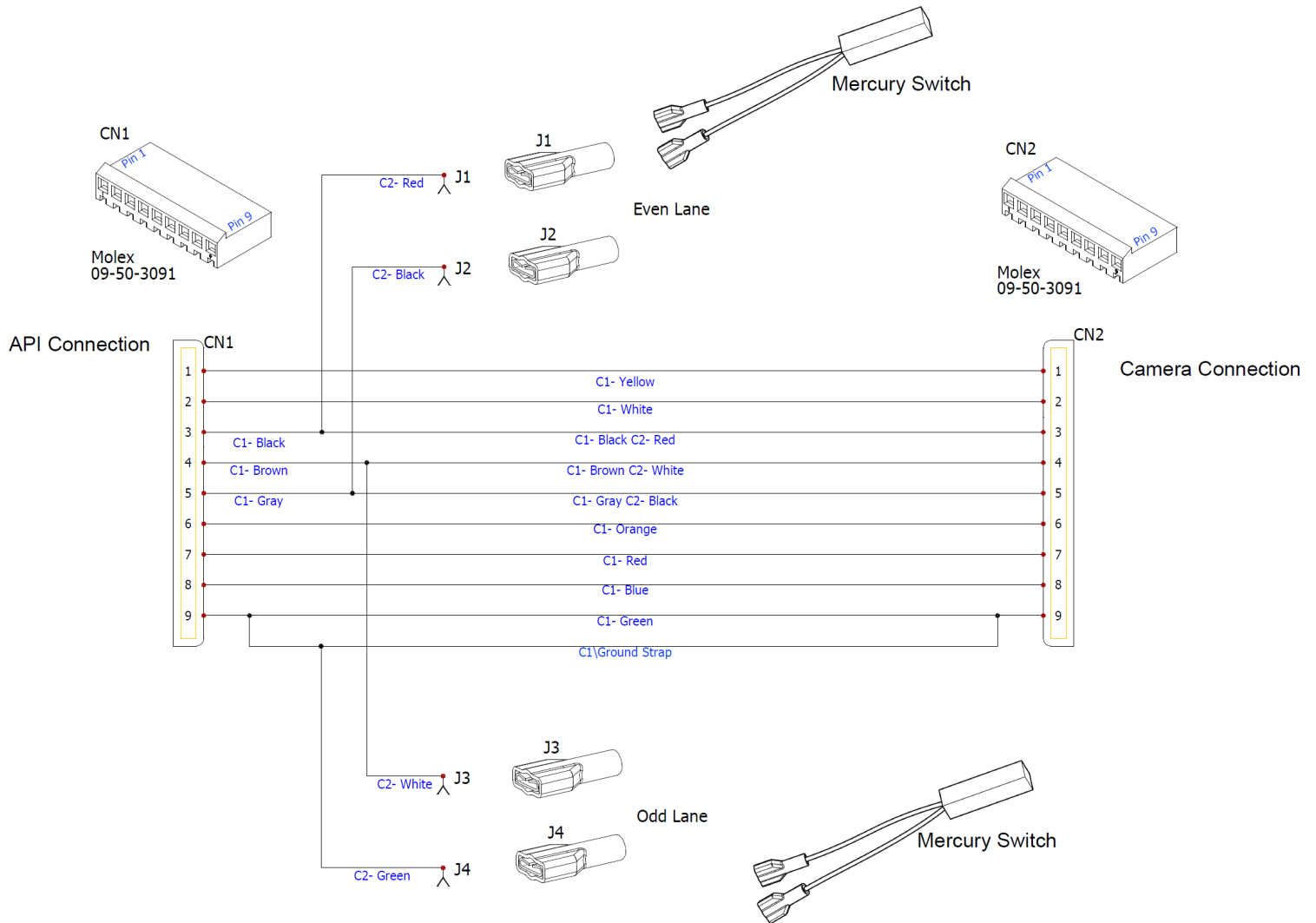
Steltronic has also supplied a special camera cable that has extra connections for the mercury switches. When you install the camera cable (PN - 716005-SPECIAL), please make sure you have installed the cable that has the quick disconnects closest to the API on the curtain wall.

Odd Lane Mercury Switch:
When connecting the mercury switch to the camera cable, the ODD lane mercury switch should be connected to the white and green wires on the camera cable with quick disconnects.

Even Lane Mercury Switch:
When connecting the mercury switch to the camera cable, the EVEN lane mercury switch should be connected to the red and black wires on the camera cable with quick disconnects.



MERCURY SWITCH CABLES INSTALLATION



Odd Lane Mercury Switch: When connecting the mercury switch to the camera cable, the ODD lane mercury switch should be connected to the white and green wires on the camera cable with quick disconnects.

Even Lane Mercury Switch: When connecting the mercury switch to the camera cable, the EVEN lane mercury switch should be connected to the red and black wires on the camera cable with quick disconnects.



PINCAM FIRMWARE SETTINGS

When the PinCam camera is installed on the tunnel, the PinCam settings need to be modified. This will inform the PinCam that

1. First, please verify the firmware in the PinCam is on version "DE". If you do not have version DE, please contact tech support.
2. Second, using the PinCam client software, change the Installed Banks to "Overlane_1". This will inform the PinCam has been installed much higher (on the tunnel) than a standard camera installation.

PinCam client 1.5.0.0 - FW version: DE

The screenshot displays the PinCam client software interface. The top right corner shows a window title bar with a close button and a tab labeled 'Banks'. Below the title bar, there are four tabs: 'Ext settings', 'LAN settings', 'Focus', and 'Banks'. The 'Banks' tab is active and highlighted with a red box. A red arrow points to the 'Active bank' dropdown menu, which is currently set to 'OVERLANE_1'. The dropdown menu is open, showing the following options: 'OVERLANE_1', 'STANDARD', 'MENDES MAG TEK', and 'OVERLANE_1'. Below the dropdown menu are two buttons: 'Apply' and 'Read'. The 'Installed banks' field is set to '3'. Below the 'Banks' tab, there are three tabs: 'Sensor regs', 'White corr.', and 'Tools'. The 'Sensor regs' tab is active. It shows a grid of 16 checkboxes (8 columns by 2 rows) labeled with register addresses from 15 to 0. Below the grid are two buttons: 'Apply' and 'Read'. At the bottom of the interface, there is a 'Connection' section with a 'Connect to ->' field set to '10.11.253.227' and a 'Port:' field. A 'REBOOT' button is also visible. The bottom left corner shows a 'Connection succeeded' message.

Ext settings LAN settings Focus Banks

Nominal positions banks

Installed banks: 3

Active bank:

OVERLANE_1
STANDARD
MENDES MAG TEK
OVERLANE_1

Apply Read

Sensor regs White corr. Tools

0x register address

15	14	13	12	11	10	9	8
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7	6	5	4	3	2	1	0
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Apply Read

Show nominal positions

Connection

Connect to -> 10.11.253.227

REBOOT Port:

Process left Calibrate left Get last read left Grab image left Save current image Get last full image Stop live

Process right Calibrate right Get last read right Grab image right Load saved image Upload firmware

Connection succeeded

