OKKIO 6 (P/N: 288300013)

THE OKKIO 6 (P/N: 288300013) CAMERA IS USED TO REPLACE Q-VISION CAMERA, T-VISION AND M-VISION CAMERAS.

PRIOR TO REPLACING ANY OF THE ELECTRONIC/ELECTRICAL COMPONENTS USED IN THE SCORING SYSTEM MAKE SURE THE POWER TO THE LANE CONTROL BOX (VDB, RDB, 3QT, 4HD-HUB, 5HD-HUB) IS DISCONNECTED FROM THE UNIT.

REMOVE ANY EXTERNAL POWER SUPPLY USED BY THE SPECIFIC COMPONENT BEING WORKED ON.

FAILURE TO DISCONNECT ELECTRICAL POWER SOURCES CAN RESULT IN HARM/INJURY TO PERSONNEL, AS WELL AS POSSIBLE DAMAGE TO THE EQUIPMENT.

REMOVING THE CAMERA: NOTE: Prior to touching the camera board/components, make sure that you discharge yourself of any static electricity accumulated in you. This can be done by touching the metal side of the camera assembly mounting frame.

1. Disconnect the power from the Lane Control Box (VDB, RDB, 3QT, 4HD-HUB, 5HD-HUB).
2. Remove the cover from the Camera Assembly.
3. Using the correct size slotted screw driver open terminals 5, 6, 7, and 8 on the terminal strip where the camera is connected.
4. If a single camera is installed on the lane pair, the terminal strip in use should be the terminal strip located on the approach end of the camera board and on the even lane side of the camera board.
5. Remove the camera retaining nut (or bolt) located under the mounting bracket.
6. Remove the faulty unit and place aside.

INSTALLING THE REPLACEMENT CAMERA:

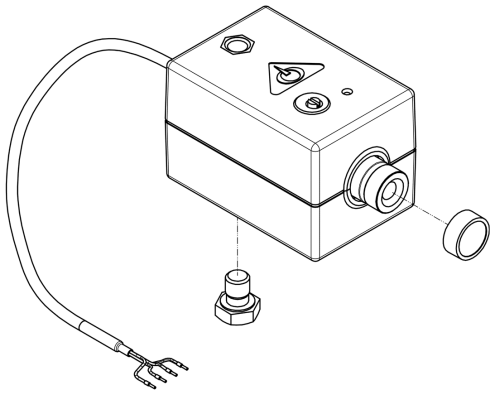

Fig. 1

1. Place a hex bolt into the hole in the camera mounting base then place the OKKIO V (or OKKIO IV) camera and lightly tight up the hex bolt into the OKKIO V (or OKKIO IV) camera. DO NOT TIGHTEN FULLY.
2. Connect the four conductors for the camera into the terminal strip from where the faulty camera was removed. Make sure to give each of the four conductors a light tug to ensure that they are properly "seated" in their respective terminal slots.
3. Make sure the camera connections are correct (each wire color of the camera cable has its location described on the label on the right side of the camera body), and the terminals are tightened accordingly. (Fig. 2).

Fig. 2

4. Visually align the camera lens so that it is aimed at a point midway between the two head pins of the lane pair.
5. Re-connect the power to the Lane Control Box and wait for the unit to fully boot up.
6. If a unit boots up with an error code see the section for errors according to the model of camera assembly that is installed.
7. After Lane Control Box boots up open the pair of lanes where the OKKIO 6 was installed.
   - Make sure that both lanes are turned on.
   - Make sure that the lanes are ready for a bowler to throw a ball.
   - Make sure that both light fixtures for each of the two lanes in the pair have the same type/style of light bulb.
   - Make sure, if any light shading device is on the front of the light fixture, the device is set on both lanes so as to show the same amount of light from each.

Follow one of the next procedures, according on which model of camera assembly installed.

REPLACING A Q-VISION

If the camera assembly is a Q-Vision check the LED on the OKKIO 6 camera:

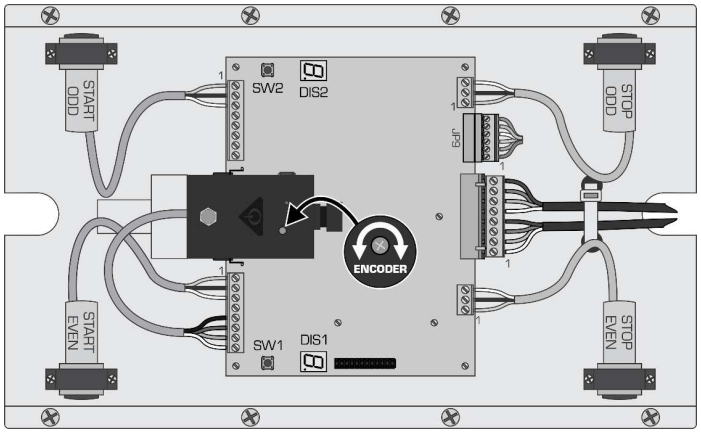

Fig. 3

- **GREEN**: the OKKIO 6 camera is operating in automatic light regulation.
- **RED**: there could be different reasons that can cause the LED on the OKKIO 6 camera to be red:
  - The OKKIO 6 camera is operating in manual mode;
  - The Q-Vision is not completely boot up;
  - The Q-Vision is in error; check the state of the lane on the lane monitor;

If the LED on the OKKIO 6 camera is RED, the Q-Vision reports no errors and the lane boot up correctly, the OKKIO 6 camera is operating in manual mode. If the OKKIO 6 camera has to operate in automatic mode slowly rotate counter-clockwise the encoder, using a screwdriver, until the LED becomes GREEN.

When the LED is flashing, it means that there is communication between the OKKIO 6 camera and the camera board.

Q-VISION ERRORS DURING LANE CONTROL BOX BOOT:

1. Errors during boot up of the Lane Control Box are going to most likely be caused by either a faulty replacement unit, a board incorrectly replaced, or an issue with a setting in ConquerorPRO.
2. Errors caused by the replacement of this part are most likely to be errors of the Error 2XX variety displayed on the lane monitor during the diagnostic on the “TEST QVis” line or on the “CAMERA” line of the control box diagnostic test.
3. Unplug the Lane Control Box, verify that the camera has been replaced correctly – use a working lane to compare, if necessary.
4. Verify that the lane set up is correct: Q-Vision is correctly selected for the center equipment installed.
5. Upload programs to the lane pair and if error returns/continues, contact QubicaAMF Technical Support**.**

REPLACING A T-VISION OR AN M-VISION

If the camera assembly is a T-Vision or an M-Vision the LED on the OKKIO 6 is RED. Normally the LED is solid, but when rotating the encoder it flashes to advise that the movement of the encoder has been detected.

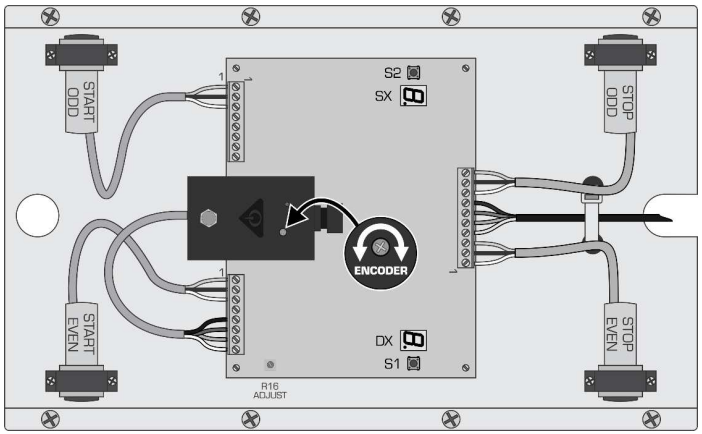

Fig. 4

Follow this procedure in order to correctly calibrate the OKKIO 6 camera:

1. Is mandatory to re set the encoder on the camera board:
   - Perfectly cover the lens of the camera with your hand or placing the cap (if previously removed, the camera is shipped with the cap mounted over the lens of the camera).
   - By staying behind the camera press the S2 button and read the value on the SX display. If the value on the display is 1 or 2 go to the step 2 of the procedure, otherwise continue with the following steps.
   - Keep pressed the S2 button.
   - Slowly turn counterclockwise the encoder until the LED stop flashing.
   - Turn slowly clockwise R16 until appears the first 1 on the SX display. The best value is the first 1, but also the first 2 could be suitable. Make small adjustment and give the board 5-10 seconds to evaluate the effect of the change and display a new value.
2. Release the S2 button when finished and remove the cap from the lens of the camera.
3. On the camera board press the S1 button and look at the DX display adjacent to it to read a numerical value. The value should be between 5 and 8. **Fig. 4**
4. If LED display number indicated is outside the range of 5-8 it will be necessary to adjust the encoder of the camera, located on the upper side of the OKKIO V camera.
   - If the LED displayed number is low, rotate the encoder in the “open” direction (clockwise).
   - If the LED displayed number is high, rotate the encoder in the “close” direction (counterclockwise).
   - Slowly adjust the encoder and give the board 5-10 seconds to evaluate the effect of the change and display a new value.

- Continue making changes until you achieve a level of 5-8. The best value is 5, but if glow light are installed in the center, this value has to be set to 8.

T-VISION AND M-VISION ERRORS DURING LANE CONTROL BOX BOOT:

1. Errors during boot up of the Lane Control Box are going to most likely be caused by either a faulty replacement unit, a board incorrectly replaced, or an issue with a setting in ConquerorPRO.
2. Errors caused by the replacement of this part are most likely to be errors of the Error 2XX variety displayed on the lane monitor during the diagnostic on the "TEST TV" line or on the "CAMERA" line of the control box diagnostic test.
3. Unplug the Lane Control Box, verify that the camera has been replaced correctly – use a working lane to compare, if necessary.
4. Verify that the lane set up is correct: T Vision or M Vision is correctly selected for the center equipment installed.
5. Upload to the lane pair and if error returns/continues, contact QubicaAMF Technical Support.

CALIBRATING/SETTING VALUES

The following procedure is the same with all the QubicaAMF camera assembly models.

1. First item to be done is to open the pair of lanes for scoring where the camera was replaced.
2. Make sure that all the 10 pins are present on both lanes.
3. In the ConquerorPRO program, navigate to the pinsetter and camera parameters page. To navigate to this section from the ConquerorPRO Main Menu select "SET UP"; "TECHNICAL SET UP" and finally "PINSETTER AND CAMERA".

Fig. 5

4. In the "Select the destination lane" window select either of the two lanes of the pair that just had the camera replaced and press *OK*.

Fig. 6

5. When the page loads, you will be viewing the pinsetter parameters page; click on the "Camera Parameters" tab.

Fig. 7

6. Click on the *Image* button to acquire the camera image.

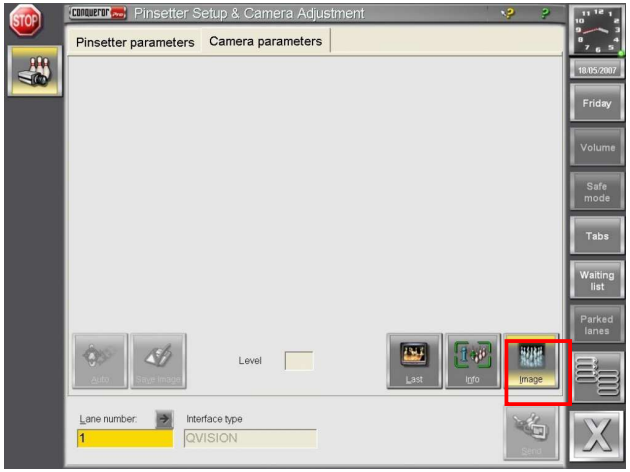

Fig. 8

7. Check that the acquired image is correctly centered between the two lanes. If not:
   - Go to the camera assembly;
   - Visually align the camera lens so that it is aimed at a point midway between the two head pins of the lane pair;
   - Repeat this procedure from step 6;
8. If the acquired image is correctly centered:
   - Go to the camera assembly;
   - Tighten fully the hex bolt;
   - Place the cover over the camera assembly;
   - Return to the front desk and continue this procedure.
9. Click on the *Image* button to acquire the camera image. **(Fig. 8)**
10. Once the image has been acquired, click on the *Auto* button (if highlighted) to perform an automatic calibration of the pin positions.

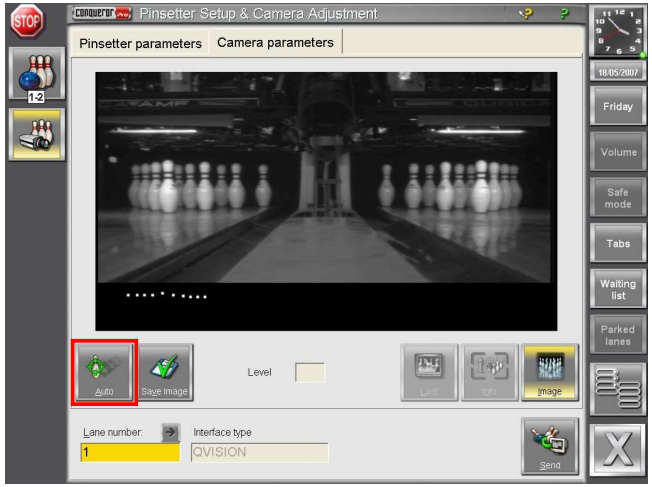

Fig. 9

However the *Auto* button is not enabled, which may be caused by light conditions or by the camera position, the system is still able to read the pin information correctly. In this case you can perform the pin calibration manually by selecting a single pin target and moving it on to the center of the pin head. Repeat the same procedure for all the ten targets.

11. Press the *Send* button to store the pins position in the Lane Control Box memory.

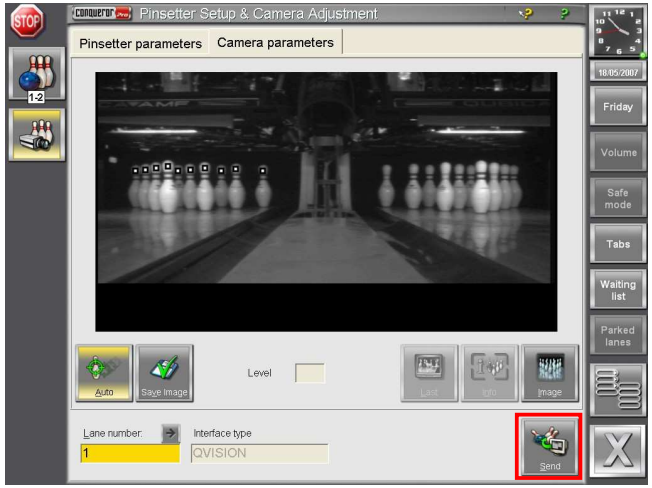

Fig. 10

12. Now you can repeat the same procedure with the other lane, by pressing on the lane number arrow button to select the lane where you want to calibrate the pin positions.

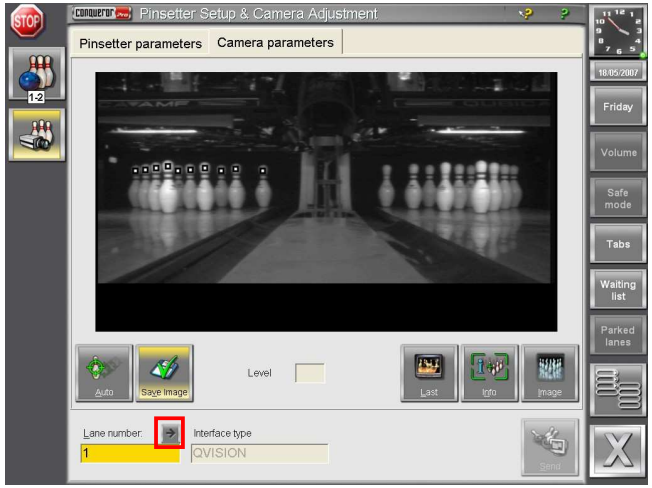

Fig. 11

13. Now go to the lane and throw a few balls to make sure that it scores correctly..