

TECHNICAL BULLETIN 12

DATE: 28 March 2024

PRODUCTS:

- Low-Light HD USB Camera (BR-100126)
- Camera Tilt System (BR-101856)
- Mount for USB Camera (SKU: BR-100254)
- BlueROV2 (BR-100415, BR-100196)
- BlueROV2 Electronics Enclosure (BR-100656-001, BR-100656-002)

SUBJECT: Low-Light HD USB Camera Failures due to mount

SUMMARY:

In November of 2021, our camera supplier updated the PCB layout of the Low-Light USB camera, moving several components to the front of the board alongside the lens. At this time, the plastic mount that holds the camera was only partially updated to include clearance for the new layout.

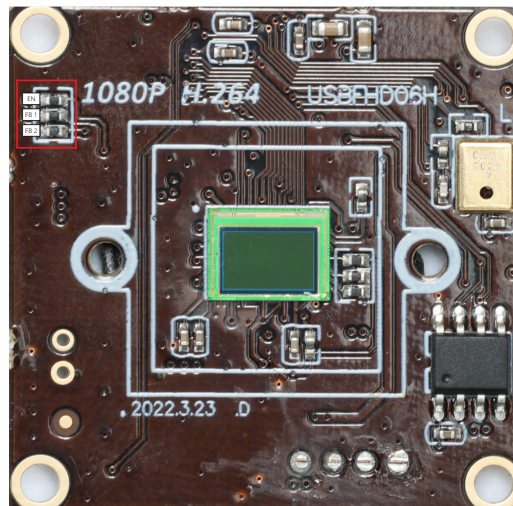


Figure 1: Feedback and enable resistors on new camera revision

Three resistors on the left side of the camera were not accommodated (marked by the red box in Figure 1 above), and as a result, when mounted, the camera would press directly on these (very small) parts. Depending on the torque used to fasten the camera to the mount, some or all of these resistors could crack, leading to the camera's failure. Figure 2 illustrates the mark that these resistors would make on the mount.

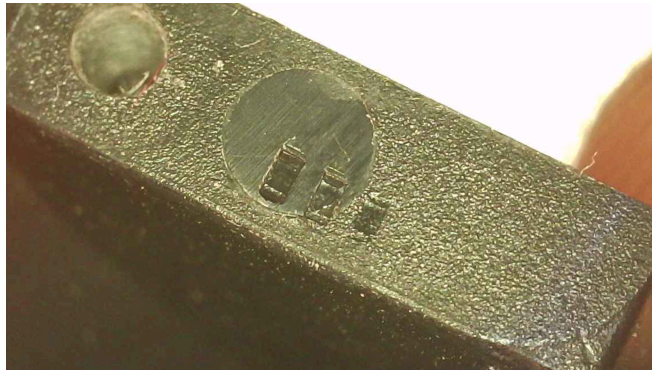


Figure 2: Evidence of the resistor interference on the camera mount

The cracking of the resistors is highly variable and is likely dependent on the installation torque of the screws and variations in the assembly height of the resistors. If the resistors don't crack immediately on installation, it's possible that they could crack at any time due to temperature changes within the ROV enclosure.



Figure 3: Damaged 0402 size 100k resistors reading open circuit

IDENTIFICATION: Camera issues or nonfunctional camera.

CUSTOMER ACTION: Rework the mount and replace the camera as follows:

1. Use the [support form](#) (problem with a product) to contact the Technical Support team for a replacement camera.
2. Open the electronics enclosure.
3. Unfasten the four camera bolts with a 1.5 mm Hex Driver.

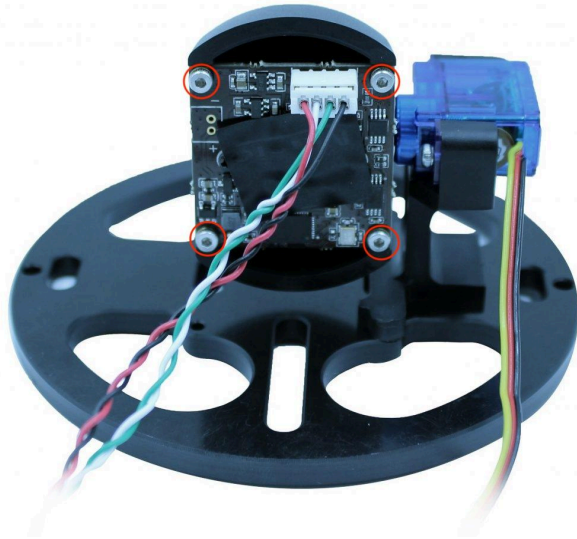


Figure 4. Mounted Camera with mounting bolts identified

4. Unfasten the servo arm screw #000 Phillips Screwdriver (or similar small size) to remove the mount from the servo.



Figure 5: Removing camera mount

5. Clip at least 1-2 mm of material from the surface shown in Figure 6 to achieve the result shown in Figure 7, then fasten the camera into the mount with the remaining three fasteners.



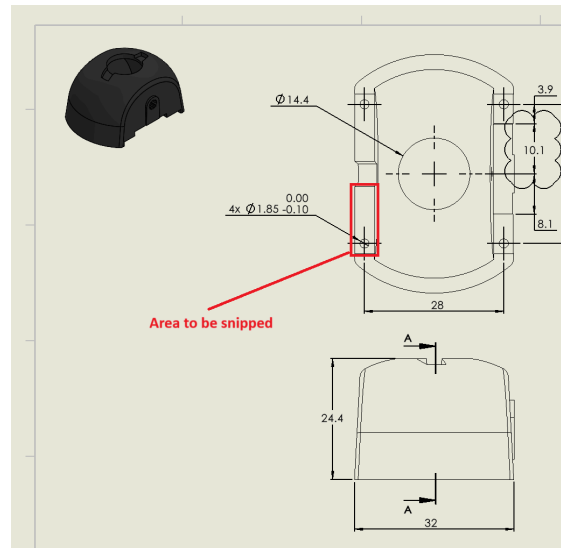


Figure 6: Area to be clipped highlighted on drawing

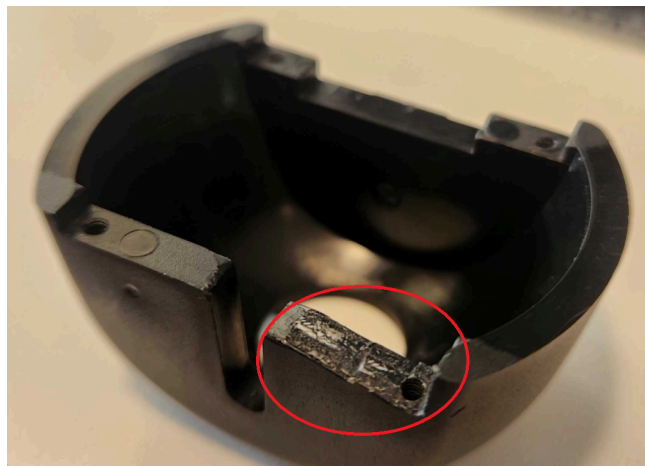


Figure 7: Camera mount after clipping

6. Reinstall the mount on the servo, taking care to mount it in the same position that it was removed from on the servo horn.
7. Replace the camera with a new unit.

BLUE ROBOTICS ACTION:

This technical bulletin is being released ASAP, as we've reviewed numerous failed cameras and are confident that this is the root cause of most customer camera issues. Inventory of camera mounts / ROVs are being reworked and tested for functionality, resulting in a short pause in sales of associated hardware. An updated mount with the appropriate clearance is being prepared for use in all future orders. We'll continue to monitor the situation closely!