

Note on the 1.9M Slip Rings

D. Carter February 2013

The new 1.9m slip rings failed on 17/2/2013. The fault symptom was no power to the dome control unit (orange box next to the shutters). The fault was traced to there being no continuity between the 220 power supply cable on the dome to the neutral connection on the controller power strip (Live connection was OK).

Figure 1 shows the slip ring “dolly” in a section of track. Note that the track moves with the dome and the dolly is secured and stationary on the dome wall. The two chains provide lateral support to allow the dolly some degree of freedom of movement. The dolly fits quite snugly in the track and has a number of guide wheels, such that there is very little lateral or up/down movement of the dolly inside the track



Figure 1: slip ring track with dolly inserted

We found the slip ring dolly (figure 2) very loose – it could be moved up and down inside the track. This is the first obvious fault – figure 3 shows that there is very little play for the dolly to move laterally or up/down in the track.

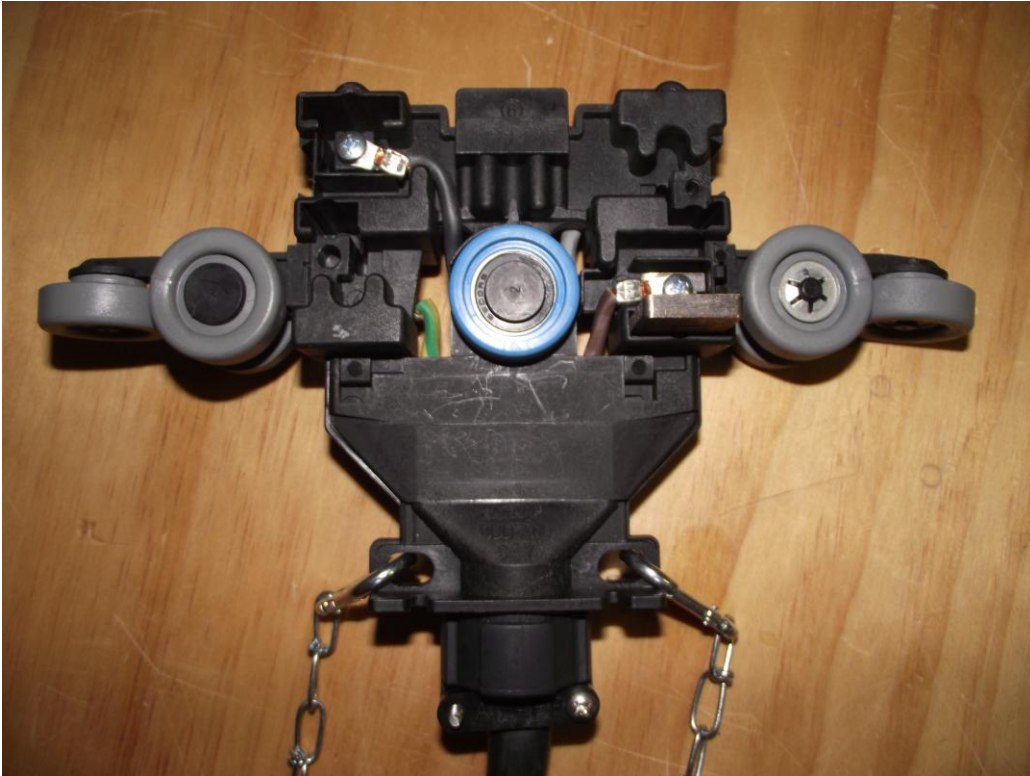


Figure 2: Slip ring dolly showing guide wheels and one contact brush

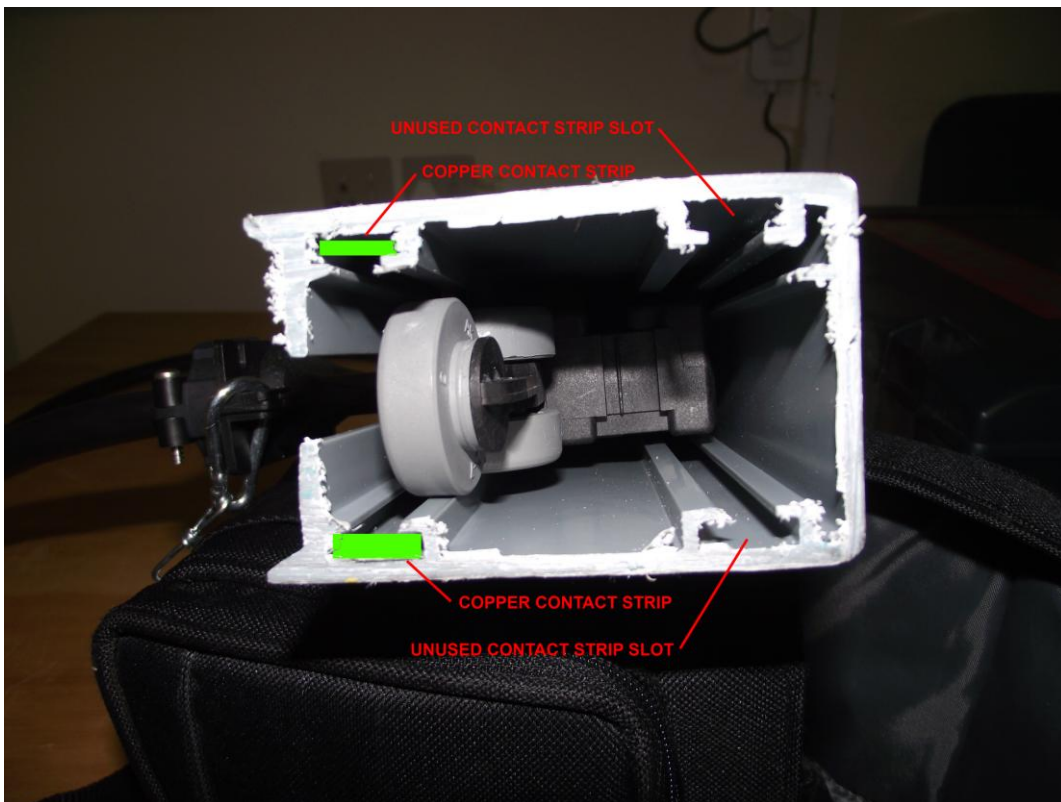


Figure 3: Dolly inside track

Figure 3 shows the dolly inside a section of track. The slots containing the contact strips are highlighted green. The track can handle four contact strips – the upper slots are not populated/used in the 1.9M installation



Figure 4: Dolly showing one springloaded contact.