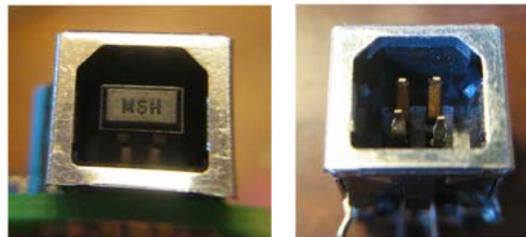


## USB Port Enforcement on Sharp Shape Foot Scanners

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This is an improvement to our foot scanners. This feature is available to the scanners that are shipped after July 15, 2013. The scanners include new, upgraded, and repaired foot scanners.

**The problem:** A good Type-B USB receptacle is shown on the left in Figure 1. The photo on the right shows a damaged receptacle that was replaced from one of our scanners. The center piece made out of plastic is missing. This scanner malfunctions randomly. Note that there is a polarity (smaller upper end) on the components. It is used to prevent wrong connections.



Normal USB Jack      Damaged Jack

Figure 1. Comparison of the good and the bad USB receptacles

**Understanding of the problem:** We used to think that the problem was caused by wrong direction of plug-in, or someone stepped on, or tripped on the USB cable. Later a customer told us that some users move the scanners around in their office. The pulling and wiggling force caused their problem. To treat this problem, we added a new feature as shown below.

**The improvement:** We provide a Teflon clip as pointed by the red arrow in Figure 2. The location of the clip is also shown by the red arrow. When we ship the scanner, we will install the clip on that location. For shipping requirements, we are not able to put the cable in that clip. We have to ship the cable unattached. When the end-user receives the scanner, he/she need to loosen that screw, insert the USB cable and tie it with the screw to the same location, as shown in Figure 2 and Figure 3.



Figure 2. Teflon clip and the location of the clip

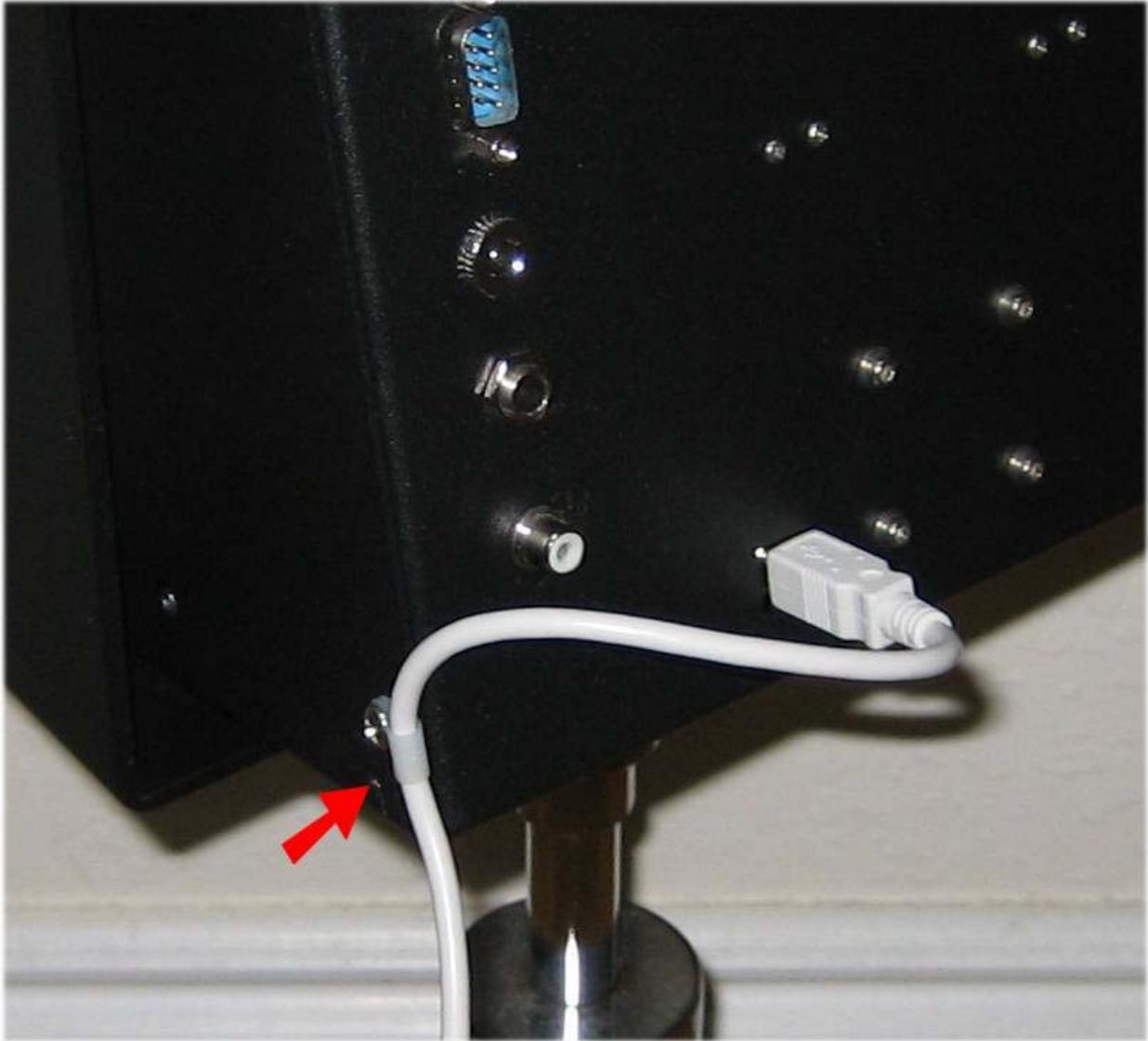


Figure 3. Close-up view of the Teflon clip and the location of the clip

Figure 3 illustrates the close-up view of the Teflon clip and the location of the clip.

It is a little hard to describe how strong the improvement is, but it is a significant improvement. The current approach resists regular pulling and wiggling forces such as moving the scanner around the office, because the forces are distributed to the Teflon clip.

Ten-pound stress test has been made (please refer to Figure 4). It is impossible for the USB port to hold that weight without the improvement.

Off course, if a person steps on or trips on the USB cable, there might be damages depending on how strong the force is.



Figure 4. Ten-pound stress test

We advise our customers to use gentle force to plug the cable into the scanners. Please match the genders and directions of the USB cable and receptacles. Please use caution when move the scanner around and when use the scanner during the scan process.

If you have any questions, please contact us at [sharpshape@comcast.net](mailto:sharpshape@comcast.net). -- End of File --