

Dealing with Touch Sense Issues

Generally, Touch Sense issues can come down to just a few items to check and be aware of.

1. **Material Being Welded.** If you start to have touch issues, where the system is faulting out due to no touch detected: it can be mill scale on your parts or dirty or oily parts. All of these can cause weld problems along with touch sense problems.
2. **Type of Water Used for Water Cooled Torches.** Be aware of the type of water and other additives you use in the cooler - like antifreeze, if needed. It must be a very low conductivity type, and safe for the entire welding system. Distilled or deionized water should be used (regardless of if additives are needed) because of the environment you are in. **DO NOT use normal tap water.** Normal tap water will have contaminants in it, and algae will form quickly causing false touches, give you a Touch Sense error and plug the water ports going through the torch. An error will occur once the Touch Sense circuit goes hot, and it immediately senses a touch (short circuit) through the water to the torch goose neck and body of torch.
3. **Tip of Wire Condition.** A wire cutter should be part of the system, so there is always a clean-cut wire to use for Touch Sense. Without a wire cutter, a person will have to contend with burn back, having a blob on the end of the wire, or glass on the end of the wire. That would depend on wire chemistry for the glass type coating on the end of the wire. All of these are issues to be aware of for touch sense.
4. **Wire Brake.** The weld torch should have a wire brake built in. Not having one can cause inconsistencies in the touches, even after using a wire cutter, due to the wire flipping and pushed or pulled in the liner from one point to the other during robot motion.
5. **Cast.** Wire cast is when the wire has a very tight loop in the wire, usually caused by being at the end of the spool. Wire cast can also be caused by the drive rolls or something else in the feeding system. Wire can come out of the torch, and immediately start to wrap in a tight circle. Even after holding the wire with a wire brake and cutting it to the proper length, the wire can still have a curve to it. If it is a

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consistent problem, a wire straightener can be installed into the feeding system. This will help tremendously with consistent touches. As mentioned above, this can be a big issue with wire flip during motion - amplified more when there is a tight cast to the wire and no brake.

A little care and time in setting things up correctly the first time can save a lot of time and headache later.