

Vex Solenoid Mount  
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With the addition of pneumatics having no motor penalty in the Tipping Point season, many teams are utilizing these pistons for the competitive advantage. A major flaw with pneumatics in VEX is the intermingling between SMC parts and the proprietary system vex uses. Parts designed by SMC were not made with VEX as its first priority, this means they do not have VEX compatible mounting points for these solenoids. What teams like us have done in the past is to simply zip tie the solenoids onto the metal.

This solution although, quick and simple, presents a few minor challenges. First of all, zip ties are not always the best solution as the innate shape of the solenoids may cause it to slide out of the zip tie. Another major problem with the zip tie method is its lack of flexibility. Because the zip ties will take the most optimal path, it may sometimes angle the solenoid in an undesired orientation. Pneumatic tubing must be routed efficiently to reduce the amount of air wasted and the solenoid will require multiple zip ties in order to face it in the right direction. This process may be visually unappealing as well and wastes unnecessary zip ties.

Our solution is to make a part that utilizes the screw holes that allow for the solenoid to be mounted towards the metal. This part will allow for a 2-axis of rotation in which the solenoid can be angled in the desired direction. In addition, the mount will be sturdy enough to hold and maintain that solenoid at its desired angle. We designed it by utilizing the two inserts built into the solenoid and replacing the metal mounting plate made by SMC. The solenoid mount will slide over the solenoid and be screwed to ensure security.

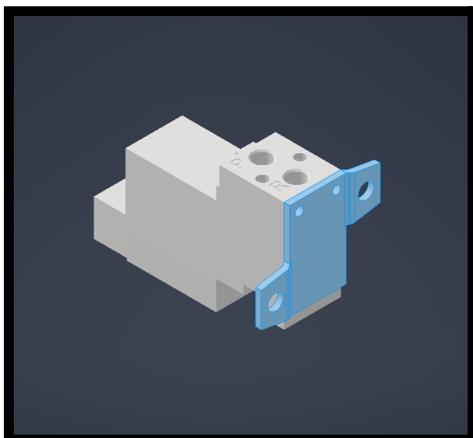


Figure 1.1: Standard solenoid, highlighted part is SMC's mounting plate

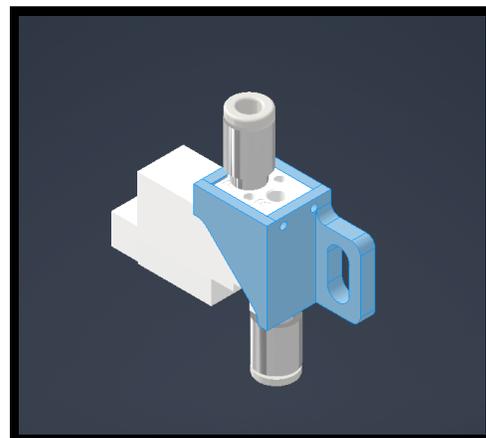


Figure 1.2: Solenoid with custom VEX Solenoid Mount