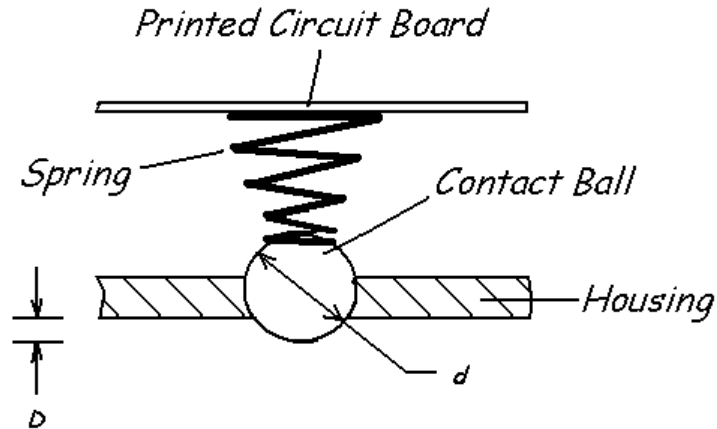


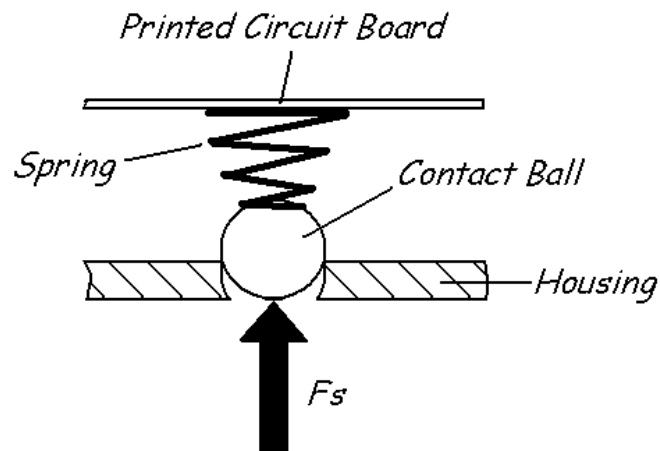
Contact Stack

The contact stack is shown in the figure below. Each contact point is a nickel plated ball bearing that seats in the plastic housing when the device is not resting on an *Open Dots*® surface.



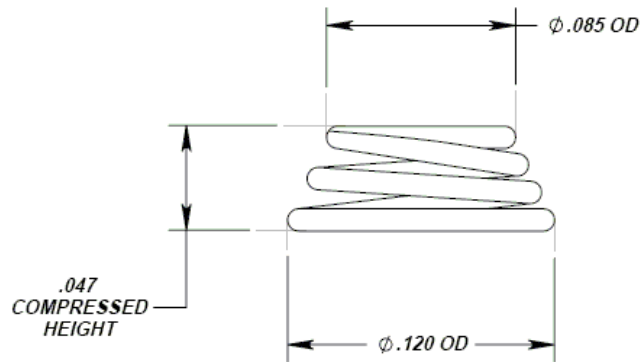
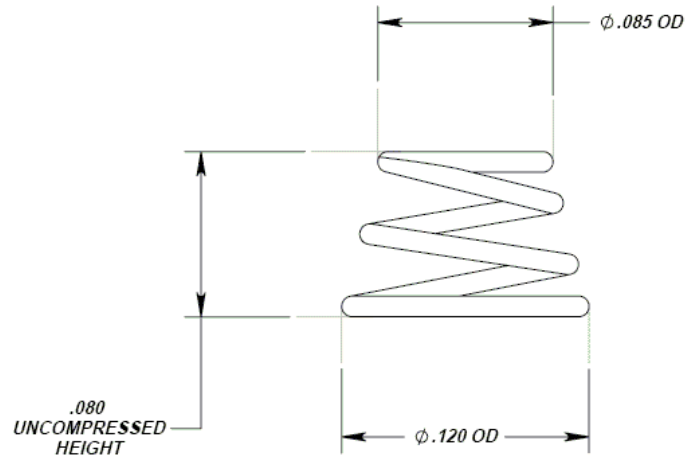
When the device is not resting on a pad, the contacts protrude from the plane of the surface a distance D . In this position, the spring shall seat the contact into the plastic housing such as to create a seal preventing contaminants from entering the housing.

When the device is resting on a charging pad, the ball contact is displaced into the housing against the force of the spring. In this case, the ball contact travels into the housing so its surface is flush with the bottom surface of the housing.



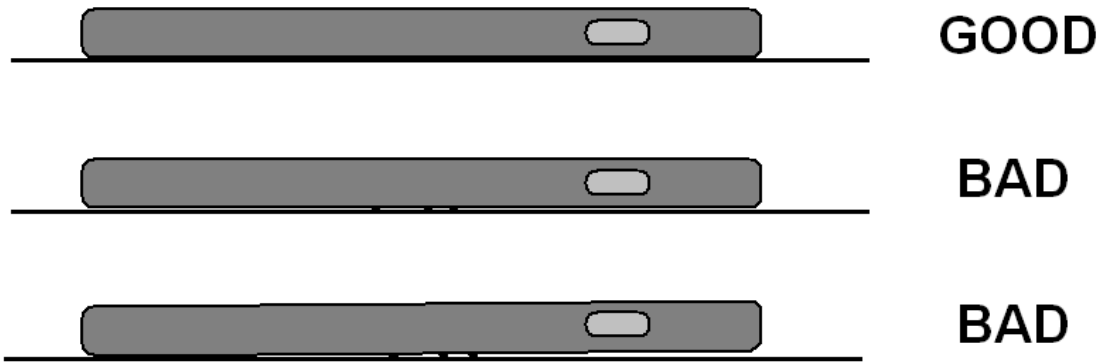
By design, magnets (mounted in housing) pull the bottom surface of the housing firmly against the charging surface. The amount of force required to press each ball contact against its spring to this position is F_s .

The spring material is recommended as phosphor-bronze.



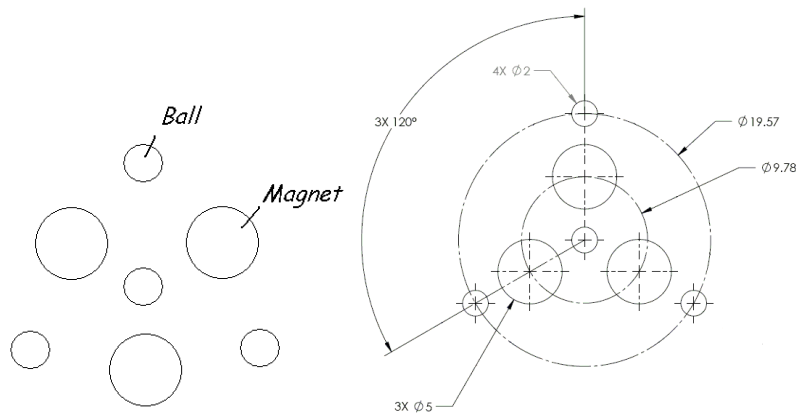
SPRING SHOWN IN
COMPRESSED CONDITION

When the device rests on an Open Dots surface, the springs must allow the balls to be displaced so that their surface is flush with the outer surface of the housing ($D=0$).

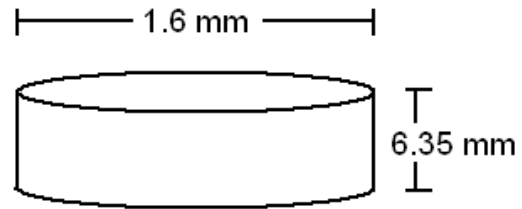


The *Open Dots*[®] specification recommends that magnets are used in all designs so as to fully deflect the contacts to the flush position, and also to give a tactile feel. In those cases where magnets cannot be used, the spring force will have to be such that the weight of the device is sufficient to deflect the contact points to the fully flush position.

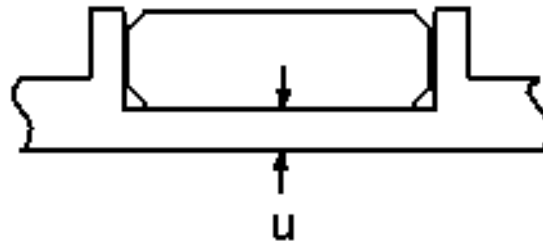
Open Dots[®] recommends that three magnets are used in the positions shown below.



In this case, the magnets can be grade N42 neodymium iron boron magnets sized as shown below.



It has been found that if the magnet housing is as shown below, the magnetic field strength is safe for credit cards.



If more magnetic force is desired, more magnets can be added.

It is important to note that magnets can interfere with the operation of devices depending on their location with respect to certain components or sensors within the device.