PASSIVE ATTACHMENTS

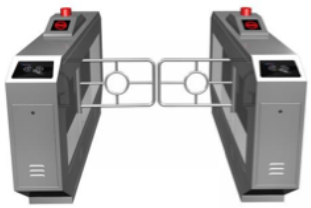
By Droids Robotics

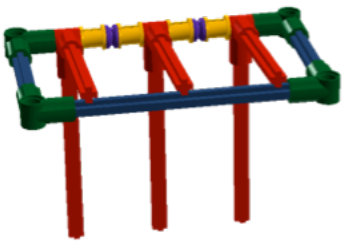
Passive vs. Motorized
A passive attachment is one that does not require motor power to activate. In contrast, a motorized attachment must be connected to a motor. A passive attachment can **sometimes** be easier to put on and take off as a result.

Passive Attachment Examples:

A **carabiner** is clip that opens one way and shuts once the item is in. It is often used by people hiking/camping. Building one out of LEGO can be very useful for picking up items with hoops.

A **one-way gate** only goes in one way and hence traps the items inside. You can find such gates in real life on farms, subways, etc.





Pneumatics can be triggered by pushing a switch. Small air tanks store air and, when triggered, can be used to push, pull, lift, etc. If you are interested in learning about pneumatics, we recommend that you purchase the Pneumatic Add on Set from LEGO Education.
The set has all the parts you need as well as many samples in the instruction booklet.

Rubber bands can be used to build many passively-triggered attachments. In this example, the rubber bands attached to a lever arm allow the wheels to bend back and go over barriers on the ground and then return back down after the robot has passed the barriers.

Gravity can useful for some attachments. As you drive off, a lever arm can fall down.

Droids Robotics use all these techniques. You can watch them all being used here: https://youtu.be/dJSeMeAGmXE

How do you learn to build attachments?

Building cool attachments is about playing with the LEGO and experimenting. The best way to get better at building is to try your ideas. There is no one perfect way to complete any mission. Bring your own team's creativity! You will also find that you will get better at building as you become a more experienced team.

However, since many people ask us if there is a good reference, we believe that the following books (non-FLL) will help you with your Technic building skills and give you inspiration.

All books by Yoshihito Isogawa
Unofficial LEGO Technic Builder's Guide by Pawel "Sariel" Kmiec