

# Vernier Go Direct® Sensor Cart Accessory Kit

## Order Code GDX-CART-AK

The Go Direct Sensor Cart Accessory Kit is a collection of additional hardware for use with the Sensor Cart.



### What's Included

- Hoop spring bumper (heavy)
- Hoop spring bumper (light)
- Masses (4 hex)
- Magnetic disk bumper for force sensor (2)
- Clay-holder bumper (2)
- Clay (one stick)
- Additional metal hook and nut for force sensor (3)
- Additional flat-top rubber bumper (3)
- Additional anti-roll pegs (3)

### Use Cases for Additional Hardware

#### Hoop Springs

Hoop spring bumpers are designed for collisions between carts and against fixed objects. The springs spread out a collision in time so that there is a clear distinction of before, during, and after the collision, both visually and in collected data.

Attach the hoop spring to the force sensor on the Go Direct Sensor Cart. Light and heavy springs allow for different collisions. To configure cart-on-cart collisions, attach a rubber bumper to one cart and a spring on the other.

Orient the hoop so that it is horizontal, and tighten one plastic nut against the hex barrel of the force sensor. Never remove the hex barrel of the force sensor.

#### Masses

The four 125 g masses are used to change the mass of the cart for dynamics experiments. The cart mass is nominally 280 g, but additions such as magnetic or hook-and-pile tabs will increase the total mass. It is best to weigh the cart as used when the mass is important. The masses can be used one at a time or in combination on either cart. The mass trays on the sides allow the addition of masses without removing other accessories. It is not necessary to keep the carts balanced with the same mass on each side.

#### Magnetic Disk Bumper

The magnetic disk bumper is used with the force sensor on the Go Direct Sensor Cart for elastic collisions where the force record is of interest.

#### Replacement Parts: Hook, Bumper, and Pegs

The hook, rubber bumper, and anti-roll peg parts are identical to those included with the Go Direct Sensor Cart.

### Warranty

Warranty information for this product can be found on the Support tab at [www.vernier.com/gdx-cart-ak](http://www.vernier.com/gdx-cart-ak)

General warranty information can be found at [www.vernier.com/warranty](http://www.vernier.com/warranty)

**Note:** Vernier products are for educational use only.



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