

# Collision Cart

ME-9454



## Features

1	Low-friction Retractable Ball-Bearing Wheels	6	Two Mounting Holes
2	ABS End Caps	7	Accessory Tray
3	Magnets in both end caps (not shown)	8	Hook and Loop (Velcro <sup>®</sup> ) Tabs (each end cap)
4	Upper Tie Point (each end cap)	9	Lower Tie Point (each end cap)
5	Slot for Cart Picket Fence (ME-9804)		

## Accessories

Please see the PASCO catalog or the PASCO web site at

[www.pasco.com](http://www.pasco.com)

for information about accessories such as tracks, springs, bumpers, pulleys, masses, and special attachments that are designed to be used with the Collision Cart.

## Introduction

The Collision Cart is a 500 gram cart with an aluminum body and ABS (acrylonitrile butadiene styrene) end caps. It has two magnets in each end cap. It also has “hook-and-loop” (Velcro<sup>®</sup>) tabs on each end cap for inelastic collision studies. The magnets can be used for elastic collisions studies. Both ends of the Collision Cart have convenient tie points at the top and the bottom. On the top of the Collision Cart is an accessory tray that can hold extra masses. The tray has threaded holes for attaching PASCO accessories such as a Cart Adapter that can be used to

mount a Motion Sensor, and slots for holding a Cart Picket Fence.

## Other Features

The Collision Cart has ball-bearing wheels that are designed with narrow edges to minimize friction. The cart has a spring suspension system that prevents damage to the wheels and internal components if the cart is dropped or stepped on. Collision Carts can be stacked for easy storage.

## Usage

The following illustrations show a few of the ways that the Collision Cart is used. See the PASCO web site at [www.pasco.com](http://www.pasco.com) for more information.

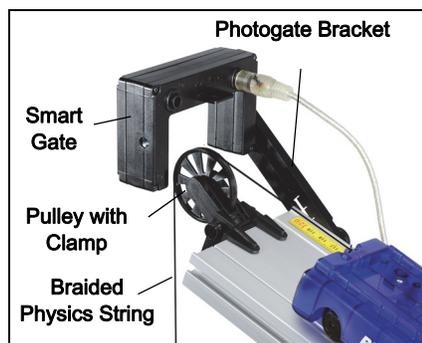
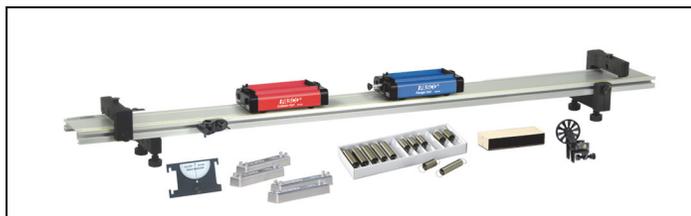
### Plunger Cart

The PASCO ME-9430 Plunger Cart is a “twin” of the Collision Cart but it is blue and has a spring plunger. The different colors make it easier to keep track of the carts in collisions studies.



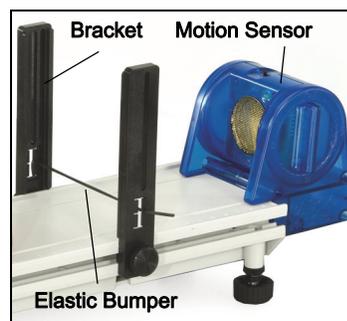
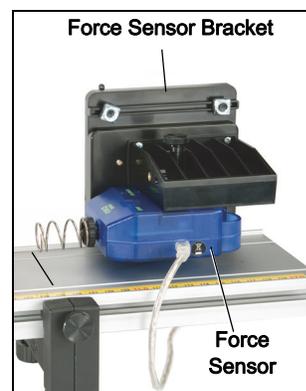
### Collision Cart Dynamics Systems

Collision Carts are included in bundles with tracks, adjustable feet, end stops, a track pivot clamp a friction block, and other accessories such as mass bars, springs, photogate brackets, “cart picket fences”, and a pulley with clamp.



### Brackets and Bumpers

There are a variety of accessories that fit onto a Collision Cart or onto a track for use with a Collision Cart.



### Experiments

For experiment ideas, see the instruction manuals for the PASCO Basic Dynamics Systems or the Standard Dynamics Systems.

### Caution

Each magnet assembly consists of a foam insert attached to a neodymium magnet. Although only the north end of the magnet is exposed, they can still be a hazard. Do not hold the end cap close to computer disks, monitors, or television sets.

## Other Accessories

Equipment Suggested	Model Number
Cart Masses, 250 g (2)	ME-6567A
Friction Block	ME-9807
Stopwatch	ME-1234
Pulley with Clamp	ME-9448B
Hooked Mass Set	SE-8959
Physics String	SE-8050
Triple-Beam Balance	SE-8723
Meter Stick	SE-8827
30 Meter Measuring Tape	SE-8712A

For information about the suggested equipment and other items for use with the Collision Cart, see the PASCO catalog or the PASCO web site at

[www.pasco.com](http://www.pasco.com)

## Technical Support

For assistance with any PASCO product, contact PASCO at:

Address: PASCO scientific  
10101 Foothills Blvd.  
Roseville, CA 95747-7100

Phone: 916-462-8384 (worldwide)  
800-772-8700 (U.S.)

Web: [www.pasco.com](http://www.pasco.com)

Email: [support@pasco.com](mailto:support@pasco.com)

## More Information

For more information about the latest revision of this Instruction Manual, visit:

[www.pasco.com/manuals](http://www.pasco.com/manuals)

and enter the Product Number.

For information about the Collision Carts or any PASCO product, what software to use, and what other accessories are available, check the PASCO web site.

## Warranty, Copyright, and Trademarks

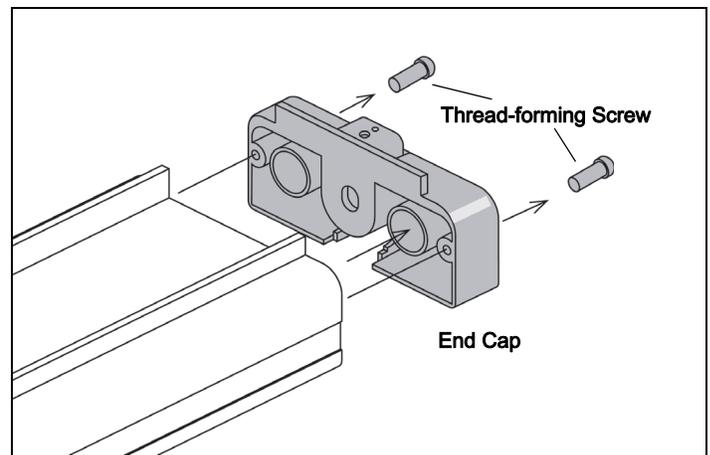
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## Appendix

### Replacing the Wheel-Axle Assemblies (PASCO ME-6957A - set of four)

Warning! When the baseplate is removed, the wheel-axle assemblies may pop upward because they are supported on compressed springs. Pull the baseplate with one hand and cover the wheel-axle area with the other hand. This will help keep the wheel-axle assembly from popping out.

1. Using a Phillips screwdriver, remove the screws from an end cap



NOTE: The screws that connect the end cap to the body of the Collision Cart are thread-forming screws and may require substantial force to remove and reinstall. A #1 Phillips point screwdriver is recommended.

2. Position the Collision Cart with the baseplate facing upward.
3. Begin to slide the baseplate out of the cart. Be careful to "catch" each wheel-axle assembly as it is uncovered.

4. With the car in a stable position, lift the wheel-axle assemblies from the grooves.

NOTE: Be sure to keep the components such as springs and magnets in their proper orientation. Rearranging or moving any items could change the operational capability of the Collision Cart.

5. Place the new wheel-axle assemblies over the suspension springs.
6. Push the rear axle down against the springs first, and slide the baseplate back into a position that covers the wheel-axle assembly.
7. Push the front axle down next, and slide the baseplate all the way back into its original position.
8. Replace the end cap with the two screws.

