Electromagnet

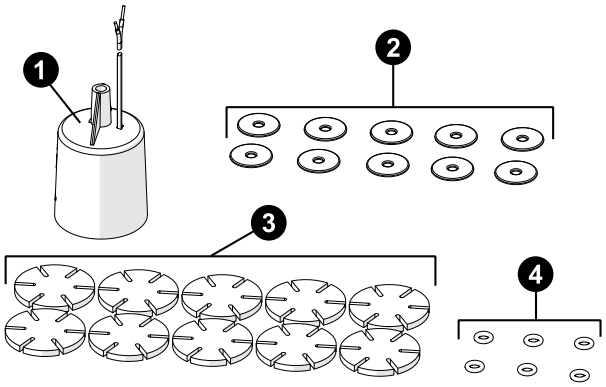
ME-7027

Introduction

The Electromagnet is designed to be attached to a PASCO Structures set via the provided cord. When attached in this way and provided with power from a Power Output Module (PS-3324) that is plugged into a //control.Node (PS-3232), the Electromagnet allows a crane or similar motorized structure to pick up iron objects and move them to another location. Mylar stickers and washers are provided to allow the magnet to lift non-ferrous objects.

Components

Included equipment:



1. Electromagnet
2. 10× washers
3. 50× Mylar stickers (5 sheets of 10)
4. 6× O-rings
5. Roll of braided cord (not pictured)

Required equipment:

- Power Output Module (PS-3324)
- //control.Node (PS-3232)

Setup

Attaching the string

1. Cut a length of the provided cord appropriate for your experiment.
2. Insert one end of the length of cord into the hole at the top of the Electromagnet's shaft. Draw the end of the length of cord through the hole on the side of the shaft.
3. Tie a knot in the end of the length of cord, ensuring that the end cannot slip back out of the shaft. You should now be able to hold the magnet up via length of cord.
4. Attach the other end of the cord to the structure to which the Electromagnet will be attached. For more precise guidelines, see the instructions for your experiment of choice.

Attaching the O-rings

The included O-rings are used to hold the cable of the Electromagnet against the length of braided cord. This prevents the cables from becoming tangled in the structure and damaged during operation. To insert an O-ring:

1. Create a knot in the length of cord at the desired position of the O-ring. The knot should be large enough that the O-ring cannot slide over it.
2. Insert the O-ring onto the end of the string opposite the Electromagnet. Allow the O-ring to rest on top of the knot.
3. Pull the cable of the Electromagnet up through the O-ring so that it runs parallel to the cord.

> **IMPORTANT:** Do NOT pull too hard! Excessive force may damage the Electromagnet.

At least two O-rings will be required to properly secure the cord and cable together.

Powering the Electromagnet

The Electromagnet's cable is designed to connect to the Power Output Module (PS-3324). This board is designed to connect to the Power Out port on a //control.Node (PS-3232) and can be programmed to provide power to connected devices. The bare wires at the end of the Electromagnet's cable plug into the terminal block of either channel of the board.

Note that, in order to use the Electromagnet, you will need to use PASCO Capstone or SPARKvue to send power to the channel on the Power Output Module to which the Electromagnet is connected. For more information on using the board in this way, see the Power Output Module manual, the PASCO Capstone or SPARKvue online help, and the instructions for your experiment.

Using the washers and stickers

The Electromagnet can be made to lift an object which is not made of metal using the washers and Mylar stickers. To do this:

1. Place a single washer flush to a flat surface on the object to be lifted.

> **NOTE:** If the object to be lifted is particularly heavy, multiple washers stacked on top of each other may be needed to properly lift the object.

2. Remove a single Mylar sticker from the sticker sheet.
3. Apply the sticker to the surface of the object such that the washer is held in place in the center of the sticker.

When powered, the Electromagnet can be used to attract the washer, which will in turn pull upward on the object to which it is attached. The practical result of this is that the attached object will be lifted by the Electromagnet.

Technical support

Need more help? Our knowledgeable and friendly Technical Support staff is ready to answer your questions or walk you through any issues.

Chat pasco.com

Phone 1-800-772-8700 x1004 (USA)
+1 916 462 8384 (outside USA)

Email support@pasco.com

Limited warranty

For a description of the product warranty, see the Warranty and Returns page at www.pasco.com/legal.

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Product end-of-life disposal

This electronic product is subject to disposal and recycling regulations that vary by country and region. It is your responsibility to recycle your electronic equipment per your local environmental laws and regulations to ensure that it will be recycled in a manner that protects human health and the environment. To find out where you can drop off your waste equipment for recycling, please contact your local waste recycle or disposal service, or the place where you purchased the product. The European Union WEEE (Waste Electronic and Electrical Equipment) symbol on the product or its packaging indicates that this product must not be disposed of in a standard waste container.

CE statement

This device has been tested and found to comply with the essential requirements and other relevant provisions of the applicable EU Directives.