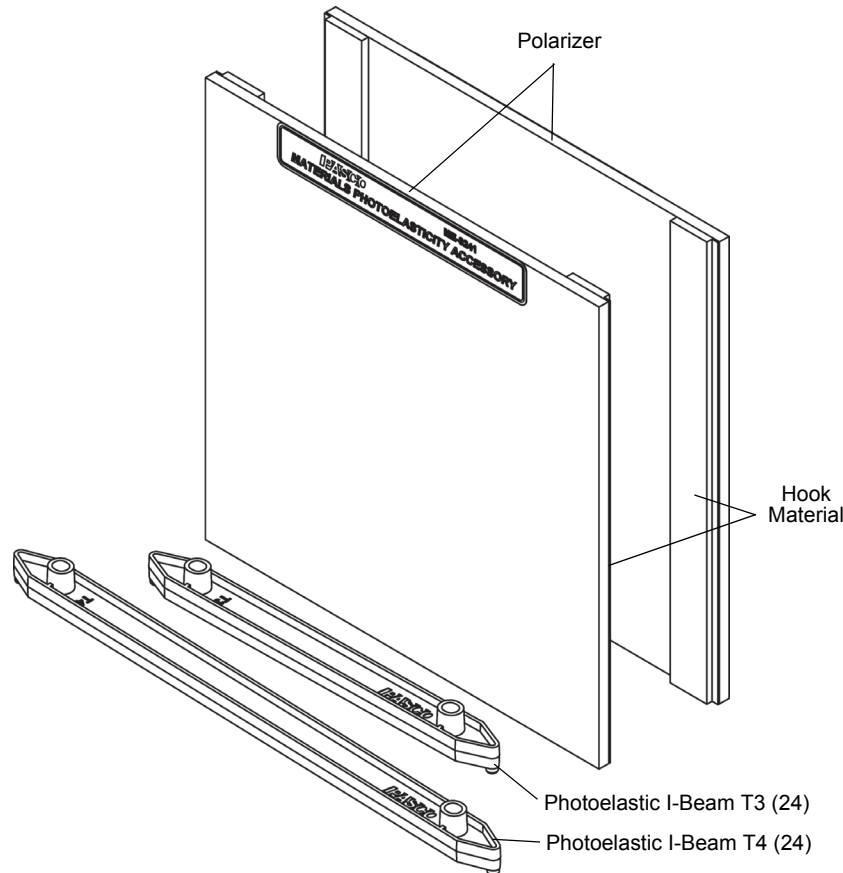


Materials Photoelasticity Accessory

ME-8241

For Use with the Materials Testing Machine (ME-8236)



Included Items	Model
Materials Photoelasticity Accessory	ME-8241
Photoelastic I-Beam Set	ME-7011

Required Items*
Materials Testing Machine (ME-8236)
PASCO Interface (PASPORT compatible)
PASCO Data Collection Software

*See the PASCO catalog or web site at WWW.PASCO.COM

Recommended Items*
Materials Bending Accessory (ME-8237)
Materials Coupon Adapter (ME-8238)
Materials Structures Beam Adapter (ME-8242)
Plastic Coupons (AP-8222)

Introduction

The Materials Photoelasticity Accessory is designed to work with the PASCO Materials Testing Machine (ME-8236), part of the Materials Testing System (ME-8230). The Materials Testing Machine is a device for measuring force and displacement for various materials as the materials are stretched, compressed, sheared, or bent. The Materials Test-

ing Machine has a built-in load cell (strain gauge transducer) capable of measuring up to 7100 newtons (N) of force (1600 pounds), and an optical encoder module that measures displacement of the load bar. Force data from the load cell and displacement data from the encoder module can be recorded, displayed, and analyzed by a PASCO Interface with PASCO Data Acquisition Software. The sensor cable from the Materials Testing Machine connects to a PASPORT input port.

Materials Photoelasticity Accessory (ME-8241)

Samples of clear plastic that are viewed through crossed polarizers reveal patterns of different colors that show stress distribution. The Materials Photoelasticity Accessory is designed to work with the Materials Testing Machine to demonstrate the photo-elastic phenomenon in clear plastic samples.

The Materials Photoelasticity Accessory consists of two rectangles of polarizer material that can be attached to the front and back of the Velcro loop material on the Load Bar of the Materials Testing Machine using the hook material on the polarizers. The accessory also includes clear Photoelastic I-Beams, 24 each of two sizes (#3 I-Beam, 11.5 cm, and #4 I-Beam 17 cm).

Operation

Caution: Be sure to wear adequate eye protection when using the Materials Testing Machine or its accessories.

To place the polarizers on the load bar, align a polarizer with the load bar and press the edges of the polarizer so that the hook material adheres to the loop material on the load bar. Repeat the process with the second polarizer on the other side of the load bar.

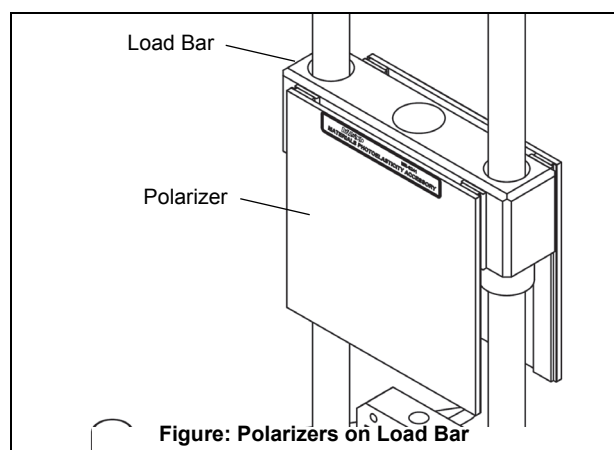


Figure: Polarizers on Load Bar

Place a light source so that it shines through the polarizers from behind.

Basic operation involves mounting the item to be tested onto the Materials Testing Machine, connecting the Materials Testing Machine to an interface for data recording, and then turning the crank.

For example, the Materials Structure Beam Adapter (ME-8242) can be used to mount a clear Photoelastic I-Beam for tension and compression studies. The Materials Bending Accessory (ME-8237) can be used to apply force at the middle of a beam. The Materials Coupon Adapter (ME-8238) can be used to mount clear plastic coupon, such as those in the AP-8222 Plastic Coupons set.

Experiment Guide

NOTE: An Experiment Guide in electronic format for the Materials Testing System is available to download from www.pasco.com.

Enter “Materials Testing System” in the Search window and look for the down-loadable file(s) under “Resources”.

Other Equipment

Other accessories are available separately for the Material Testing Machine. Please see the PASCO web site at www.pasco.com for more information..

Technical Support

For assistance with any PASCO product, contact PASCO at:

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

Phone: +1 916-786-3800 (worldwide)
800-772-8700 (U.S.)

E-mail: support@pasco.com

For the latest information about the Materials Photoelasticity Accessory, the Materials Testing System, or the replacement items and accessories, go to the PASCO web site at www.pasco.com and enter the model number or the model name in the search window.

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