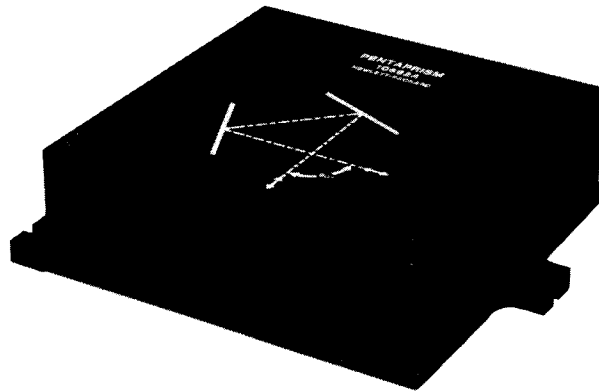




OPERATING NOTE

PENTAPRISM 10692A



DESCRIPTION

The Model 10692A Pentaprism is a completely passive device used to bend an optical path at a defined 90° angle (± 2 arcseconds). It establishes a right angle reference for measurement of squareness between two machine tool axes using the 5526A Option 30 series straightness optics. However, it can also be used with many other types of optical tooling.

The pentaprism mount and base are designed to minimize the set-up fixturing required for measurement of orthogonality between axes on a machine tool.

SPECIFICATIONS

Angle:

$90^\circ \pm 2$ Arcseconds

(Each pentaprism has its angle specified to within .1 arcseconds)

Clear Aperture:

2.8 inches x .312 inches

(71.12 mm x 7.92 mm)

Weight:

2 pounds 12 ounces (1248 gms)

Dimensions:

See dimensional drawing.

CERTIFICATION

The Hewlett-Packard Company certifies that this instrument was thoroughly tested and inspected and found to meet its published specifications when it was shipped from the factory. The Hewlett-Packard Company further certifies that its calibration measurements are traceable to the U.S. National Bureau of Standards to the extent allowed by the Bureau's calibration facility.

WARRANTY

This Hewlett-Packard product is warranted against defects in material and workmanship for a period of 90 days from date of shipment. Hewlett-Packard will repair or, at its option, replace, without charge, any parts which prove to be defective during the warranty period. Warranty service will be performed on-site at the customer's facility in the United States, Canada, Western Europe and in other countries near designated Hewlett-Packard service facilities, provided that the customer's facilities are accessible and regularly served by suitable public transportation. **BREAKAGE OF THE GLASS PRISM IS SPECIFICALLY NOT COVERED UNDER THE TERMS OF THIS WARRANTY.**

NO OTHER WARRANTIES ARE EXPRESSED OR IMPLIED, INCLUDING BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. HEWLETT-PACKARD IS NOT LIABLE FOR CONSEQUENTIAL DAMAGES.

WARNING**LASER BEAM**

This unit is used in a system that emits laser light. The power output of the HP laser is low in comparison to most other lasers, either continuous wave or pulsed, but due to the high brilliance factor, the output beam of any laser should never be allowed to strike the eye directly. It is the considered opinion of Hewlett-Packard Company that the light beam from this device presents NO hazard to health and safety. However, the existence of newly enacted federal regulations with respect to laser devices together with the lack of any widely accepted standards of laser power safety thresholds requires the insertion of this cautionary statement.

CAUTION**BREAKAGE**

The glass portion of the pentaprism is precision ground, expensive, and nonrepairable. Use extreme care in handling the unit to minimize the chance of breakage.

INSTALLATION

The Pentaprism can be mounted in either of two methods: 1) by means of the mounting post, and 2) by means of the mounting plate. Refer to the following mounting illustrations.

The mounting post can be threaded firmly into one of three, large threaded holes on the Pentaprism Assembly. One hole is on the bottom of the assembly, and the other two holes are located on the sides opposite the aperture windows. The mounting post must be suitably clamped in the desired location on the work surface.

If the mounting plate is to be used, attach the plate, in any of four possible orientations, to the bottom of the Pentaprism Assembly. Use the three screws that are provided, and the three threaded mounting holes at the bottom edges of the Pentaprism Assembly. Be sure that the raised mounting pads on the mounting plate face away from the Pentaprism Assembly.

CAUTION

Do not mount the Pentaprism Assembly by means of the three threaded holes that do not have raised mounting pads. Do not clamp the Pentaprism Assembly. To do so may damage the Pentaprism.

The mounting plate, with the Pentaprism Assembly attached, must be mounted in the desired location on the work surface by means of the three mounting ears on the mounting plate.

ALIGNMENT

The Pentaprism provides a precise 90 degree bend of the laser beam and the unit must be mounted parallel to the laser beam path; the beam will otherwise be distorted. To check for proper alignment, block the laser beam path, where it exits the Pentaprism aperture window, with a white card or paper. The Pentaprism is aligned correctly if the beam reflection from the paper appears spherical. **DO NOT OBSERVE THE LASER BEAM DIRECTLY. ALWAYS OBSERVE THE REFLECTED BEAM FROM THE CARD OR PAPER.**

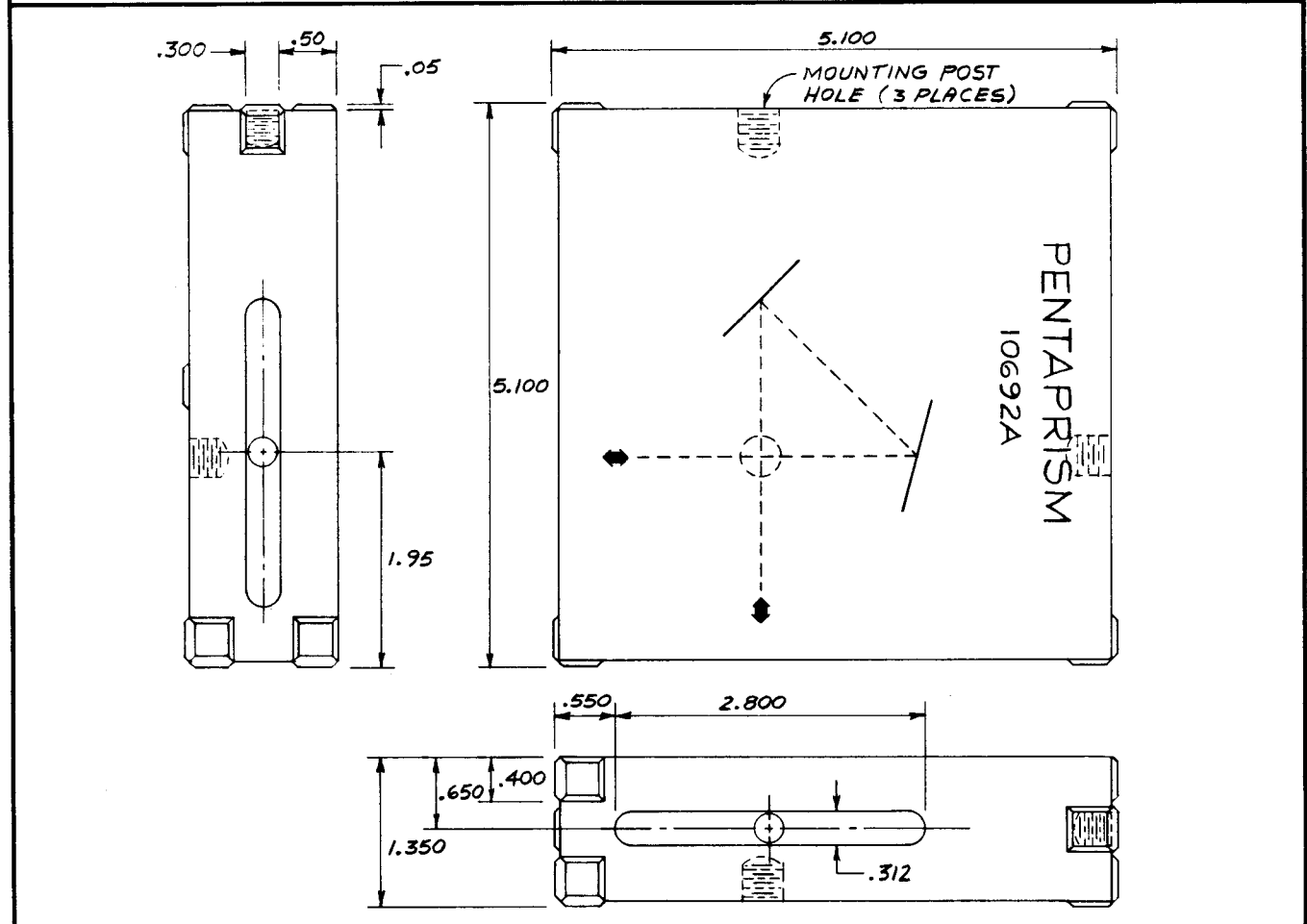
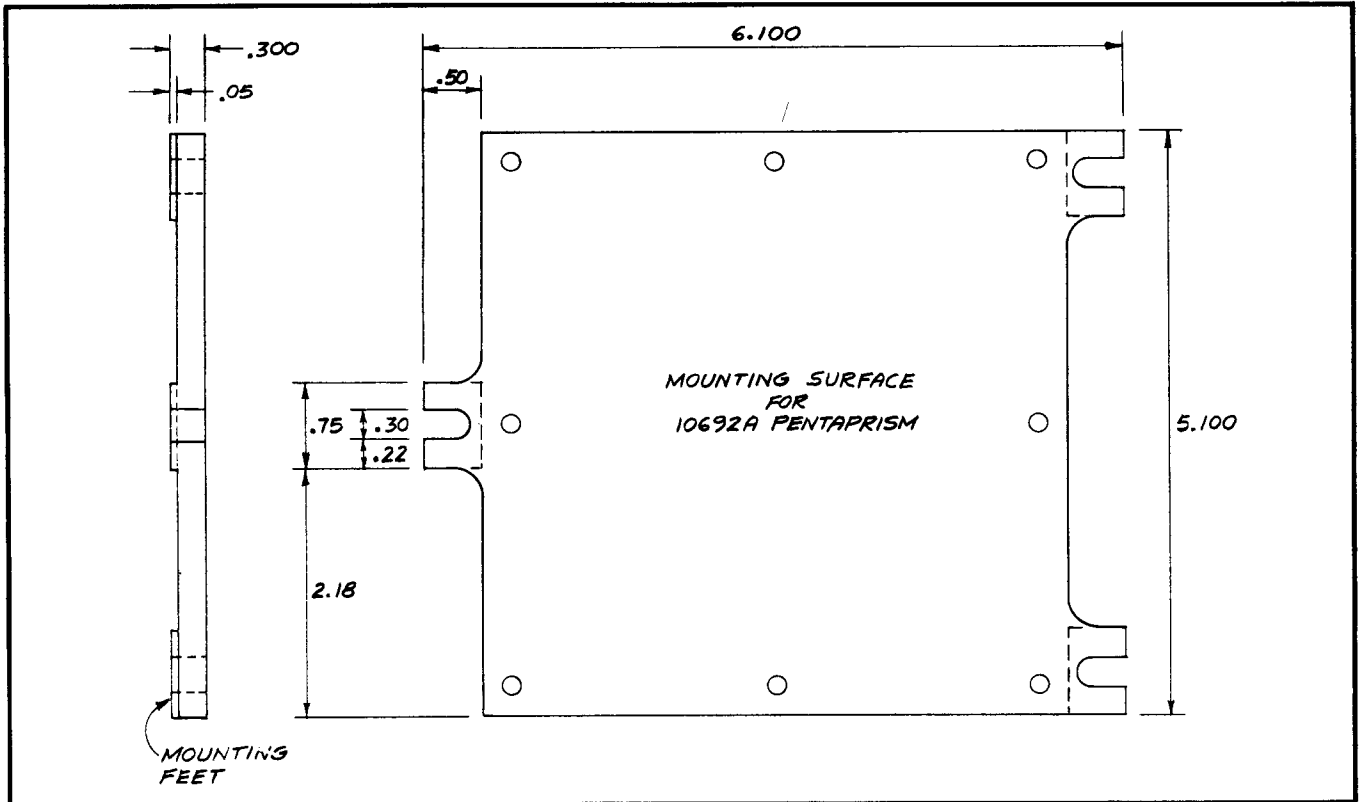
Alignment of the Pentaprism for squareness measurements is covered in the Operator Handbook Supplement for Straightness Interferometers, 5526A Options 030, 031, and 032 (Manual Part No. 05526-90022) and in the Laser Measurement/Calculator Systems, Option 200 Series, Manual (Manual Part No. 05526-90027, pages 34-44).

STORAGE

When the pentaprism is not in use, store the unit in the supplied wooden box. Ensure that the two aperture covers (Part No. 10692-40001) are installed.

SERVICE

If the glass prism becomes loose in its shock mountings, return the Pentaprism, in packaging similar to the original, to Hewlett-Packard Company, Santa Clara Division, for remounting. The glass prism is non-repairable. If the user breaks the glass prism, order a replacement unit. If the prism is broken in shipment, file a claim with the carrier. In either case, breakage of the glass prism is not covered under warranty. Replacement covers, mounting post, etc. can be ordered from the nearest Hewlett-Packard Sales and Service Office. Replaceable parts are listed in the following table.



Mounting and Dimensions

Replaceable Parts

Part Number	Quantity	Description
2940-0157	1	SCREW, HEX SOCKET
4208-0087	1	PAD, FOAM (BOTTOM)
8710-0096	1	HEX KEY .109 AF
8710-0098	1	.188 ALLEN WRENCH
9211-1826	1	CASE-WOOD
9220-1981	1	PAD, FOAM (TOP)
9220-2324	1	PAD, FOAM (CENTER)
10550-20006	1	MOUNTING POST
10692-20004	1	PLATE, MOUNTING
10692-40001	1	COVER, APERTURE
10692-60001	1	PENTAPRISM ASSEMBLY