

World Leader in Nanomechanical Test Instruments

Hysitron Incorporated



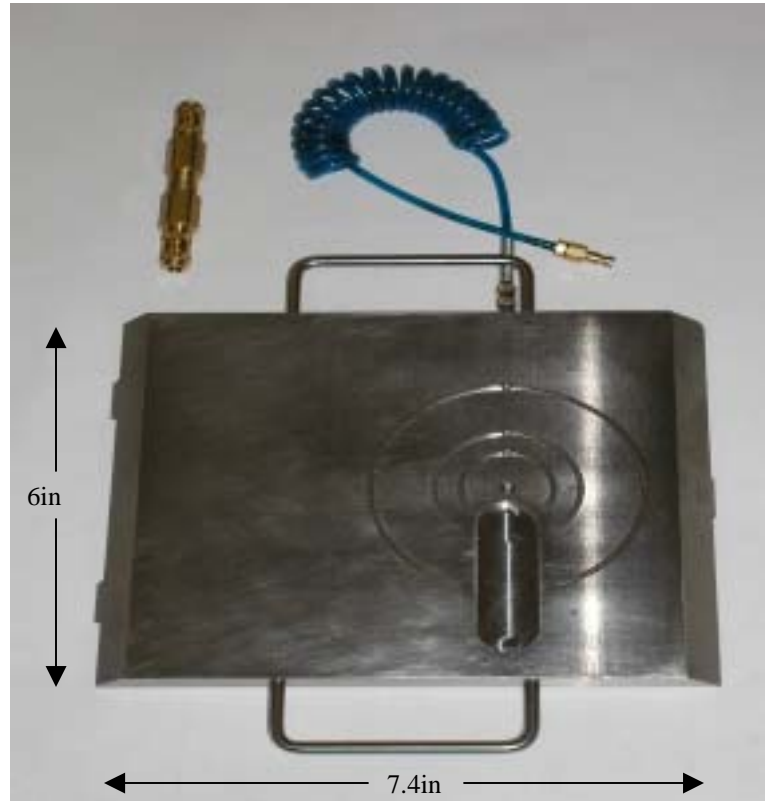
Vacuum Chuck for Hysitron TriboIndenter®

Introduction

Hysitron's vacuum chuck is ideal for securely holding large, flat, smooth samples in place during testing. This new method for securing samples eliminates all potential of magnetic interference as well as those cumbersome mechanical clip holders. Designed specifically for the semiconductor, hard disk drive industries and MEMS applications, the vacuum chuck is the right solution for any and all large flat samples. A large sample accessibility groove has been machined for ease of placing and removing samples for testing.

The Hysitron vacuum chuck is capable of securely holding samples from 0.25in (6.35mm) diameter up to a maximum sample size of 10in (254mm) diameter. When installed on Hysitron's standard X-Y translation stage, a test area of 18in² (11,613mm²) without manual repositioning of the sample is achieved.

The Hysitron vacuum chuck easily installs in minutes. A simple turn of the wrist, slide out the existing sample platform, slide in the vacuum chuck, connect the vacuum line to the back panel and to any existing vacuum line or the Leybold rotary vacuum pump and you instantly have a state of the art nanomechanical test instrument with the largest



The Hysitron Vacuum Chuck shown above with vacuum line and quick-connect connectors

sample test area and holding mechanism in the industry.

concentric vacuum rings for sample size flexibility.

Construction

Hysitron's vacuum chuck is machined out of 303 Stainless Steel to high precision tolerances. The sample area is machine ground and polished to a surface finish of 4 RMS to ensure proper vacuum pressure to your test samples. The vacuum chuck has 4

Applications

- Large wafer sample testing, semiconductor industry
- MEMS (Micro Electro-Mechanical Systems)
- Hard Disk Drive platters, hard drive industry
- Magnetically sensitive samples
- Polymer fabrication



(Application) 4 inch diameter hard disk platter

Features

- Largest sample mounting area in the industry
- Powerful vacuum for secure sample mounting
- Simple, easy to use vacuum chuck for quick loading and unloading of samples
- Machined sample pick-up groove for ease of sample placement and removal
- Modular lock-on design allows for quick and easy installation of vacuum chuck with no special tools or modifications to the motion stage
- Quick connect connectors for easy vacuum line connections
- Solid, non-magnetic stainless steel sample plate for no magnetic effect
- Quiet but powerful Leybold rotary vacuum pump
- 20 feet of vacuum tubing for convenient pump placement

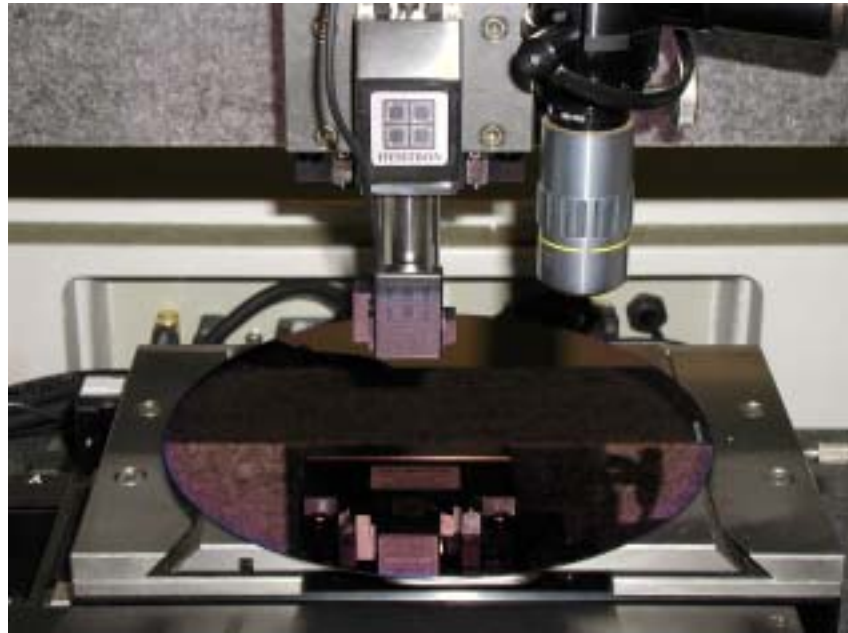
Specifications

Chuck

- Effective sample mounting area: .25in (6.35mm) diameter up to 10in (254mm) diameter
- 18in² (11,613mm²) test area
- 303 Stainless Steel
- Size: 7.420in x 6.000in x 0.500in (LWH)

Pump

- Pump speed at 50Hz: 2.7m³/h, at 60Hz: 3.3m³/h
- Pressure: $\leq 5 \times 10^{-4}$ mbar
- Motor speed: 1400rpm at 50Hz
- Noise: ≤ 47 dB
- Admissible ambient temperature: 10°C - 40°C
- Size, mm: W 127 x H 225 x L 383



(Application) The above picture shows the Hysitron vacuum chuck with a securely mounted, 8" diameter silicon wafer



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...Making a Point in the Nanomechanical Community...