

47x30 inch top

# VIBRAPLANE<sup>®</sup>

## NEW MODEL

# 1201

### VIBRATION-FREE TABLE

A high performance omni directional stable vibration isolation table for micro precision equipment.

#### FEATURES

- Vertical air suspension
- Kinematic horizontal isolation (U.S. Pat No. 4223762)
- Ultra low natural frequency
- 12 dB/octave isolation rate
- Automatic levelling
- 5 standard sizes
- 4 standard tabletop materials

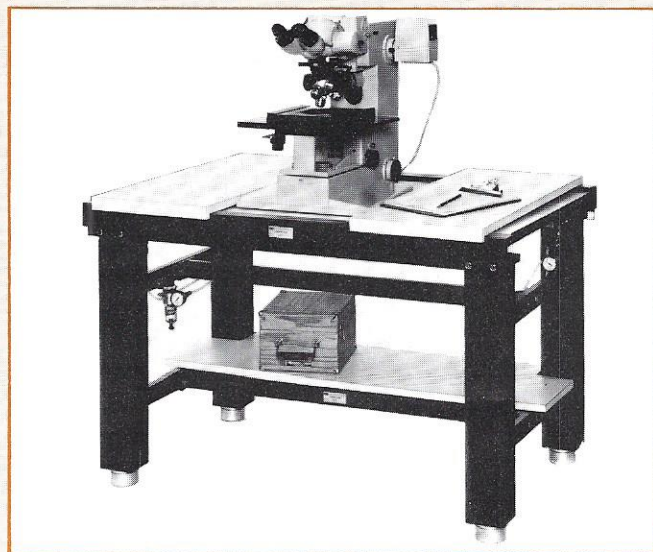
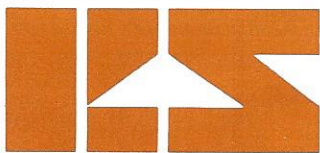
**THE VIBRAPLANE 1201 VIBRATION-FREE TABLE** is specifically designed to permit reliable operation of sensitive instruments and equipment near continuous and transient vibration disturbances encountered in industrial areas. Typical applications are isolating microscopes, balances, and electro optical systems used in research, quality control, and precision manufacturing.

**HIGH EFFICIENCY VIBRAPLANE ISOLATION** is achieved by utilizing the ideal low stiffness, high mobility properties of air in combination with KSI's proprietary internal damping orifice construction, and a high mechanical impedance damped, rigid inertia mass to support the equipment. The 1201's undamped reference natural frequency is located at 1 Hz for light loads, slightly lower for heavy loads. Above 2 Hz the theoretical isolation rate is 12 dB/octave; i.e., 75% reduction for each doubling of frequency. High efficiency isolation, approaching 99%, is therefore achieved in industrial buildings and high performance clean rooms where troublesome vibrations typically occur between 8 to 20 Hz.

The 1201's isolation performance is maximized by careful attention to detail. Steel tabletops and all structural bolted joints and accessory connections in the table system are VIBRADAMPED with KSI energy dissipative viscoelastic damping laminations to preclude structural ringing in the table support structure and accessories. In addition, mechanical screw jack levelling is incorporated in the bottom of each table leg to permit equalizing the airspring piston extension at the top of each leg, for optimum performance on non level floors.

**THE 1201 IS AN ACTIVE SERVO-CONTROLLED AUTOMATIC LEVELLING SYSTEM** for maximum utility and convenience of operation. The tabletop is maintained at a preset zero-deflection level independent of load addition or removal by means of three KSI Vibralevel servo valves that bleed or feed air from a pressurized air source as required. A conventional coil spring, passive isolation system would require 10" deflection space to provide the same isolation performance. The 1201 requires very little air, and may be operated by connection to a standard Nitrogen cylinder or any 80 psi compressed dry air source.

**KINETIC  
SYSTEMS**



Model 1201 Vibration-Free Table with optional elbow rest guard rails, sliding shelves, fixed shelf under, kinematic feet & pistons. UEM microscope courtesy of Carl Zeiss, Inc.

**THE 1201 GROSS LOAD CAPACITY** is 1300 lbs when operated at 80 psi. The 80 psi NET working load is 1300 lbs less the weight of the tabletop, and ranges from 700 to 1000 lbs depending on tabletop size. If the 1201 is operated at less than maximum load rating then a proportionately lower pressure air source can be used. Refer to specifications and consult KSI for higher load requirements.

#### HORIZONTAL VIBRATION ISOLATION

Omnidirectional vibration isolation is enhanced for extra-sensitive equipment, or where excessive horizontal vibration disturbances are experienced, by the unique Kinematic Horizontal Isolation Pistons, which are standard on all 1201 tables. These patented Kinematic Pistons provide an uncoupled horizontal natural frequency between 2 to 2.5 Hz. If additional horizontal isolation is required optional Kinematic Horizontal Isolation Feet (KF) may be added externally under the standard mechanical levelling feet. This combination provides effective two stage horizontal isolation with an uncoupled natural frequency between 1.4 to 1.6 Hz.

#### OPTIONS AND ACCESSORIES:

Multiple purpose Elbow Rest Guard Rails (GR) are optionally available to protect the front and rear edges of the floating tabletop, provide an up limit stop, and support a fixed tabletop or Sliding Shelves (SS) spaced above the floating tabletop. The Sliding Shelves are a convenience for supporting accessories or sample specimens, and can be arranged to serve as a fixed tabletop with a variable open island for the isolated equipment on the floating tabletop. Also available is an optional Fixed Shelf beneath the floating tabletop for storage or support of auxiliary equipment, etc.

**TECHNICAL ASSISTANCE** will be provided by KSI personnel for the selection and application of standard or custom designed VIBRAPLANE isolation tables, platforms or air-mounts on request.

**The Quality Leader in Vibration Isolation**



## SPECIFICATIONS

Model & Size No.	Tabletop Code	Tabletop Dimensions (in. x in.)	Height (in.)	80 psi Net Load (lbs)
1201-00	(Note 1)	(custom)	28 (no top)	1300
1201-01		30 x 35	29	1000
1201-02		30 x 47	29	900
1201-03		30 x 59	29	800
1201-04		30 x 71	29	700
1201-05		30 x 41	29	950

Complete table identification is:

Model No. + Size No. + Tabletop Code.

### 1. TABLETOP MATERIAL/FINISH CODES:

- 00 No tabletop (leg stand only).
- 01 Tabletop per customer specification.
- 10 1" VIBRADAMPED steel, painted black (40.8 lbs/sq ft).
- 11 1" VIBRADAMPED steel, white plastic top lamination.
- 12 1" VIBRADAMPED steel, magnetic stainless top lamination.
- 30 4" VT gray granite (57 lbs/sq ft).

2. Tabulated heights are with 1" steel tabletops. Height is incrementally greater for thicker tabletops; e.g., add 3" for -30 granite top. Standard mechanical levelling feet provide +1", -.5" additional height adjustment for non level floor installations. Kinematic Feet (KF) option adds 1.4 in.

3. Tabulated net loads are the 1201's gross load capacity of 1300 lbs less weight of 1" steel tabletops. For -30 granite tops reduce net load by 17 lbs/sq ft. Table systems similar to 1201 but with higher gross load capacities are available as follows:

Model 1202	2800 lbs
Model 1212	3200 lbs
Model 1203	4800 lbs
Model 1213	6400 lbs

### 4. OPTIONS & ACCESSORIES:

- 24" deep tabletop. Add 10 to size no.; e.g., 1201-11 is 24"x35", 1201-12 is 24"x47", etc.
- 36" deep tabletop. Add 20 to size no.; e.g., 1201-21 is 36"x35", 1201-22 is 36"x47", etc.
- 48" deep tabletop. Add 30 to size no.; e.g., 1201-31 is 48"x35", 1201-32 is 48"x47", etc.
- GR Guard Rail, elbow rest.
- SS Sliding Shelf, over GR. Specify 10", 12", or 14" wide.
- SC Sliding Shelf, custom size up to 24" wide.
- FS Fixed Shelf, under tabletop, 12" or 15" deep.
- FC Fixed Shelf, custom for 36" or 48" deep tabletop.
- KF Kinematic Feet.
- HE Height Extension, 5" for standup operation.
- RB Rear Braces.

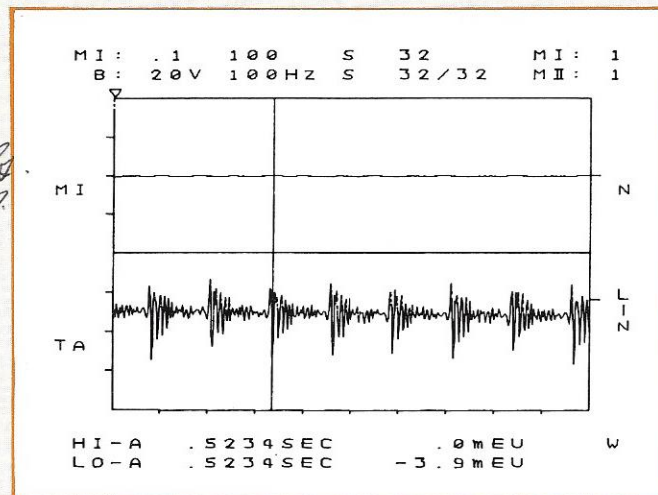


FIGURE 1.

Comparative vibration of 1201 tabletop and adjacent floor with punchpress operating 12 ft away. Horizontal scale is .15 sec per div; vertical scale is .004g per div. Spectrum analysis of floor shows significant frequencies and amplitudes 5 to 100 Hz and up. Table response is negligible.

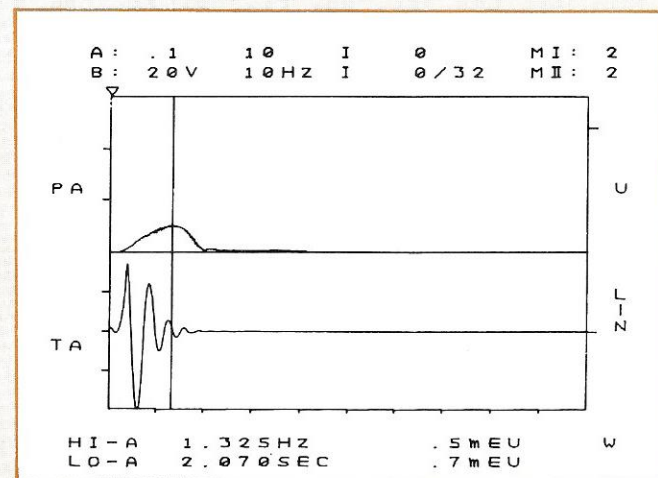


FIGURE 2.

Free vibration response of 1201 tabletop showing 25% critical damping rate and 1.3 Hz natural frequency. Horizontal scale of spectrum analysis in upper graph is frequency with 1 Hz per div. Time scale of bottom graph is 1.5 sec per div.

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