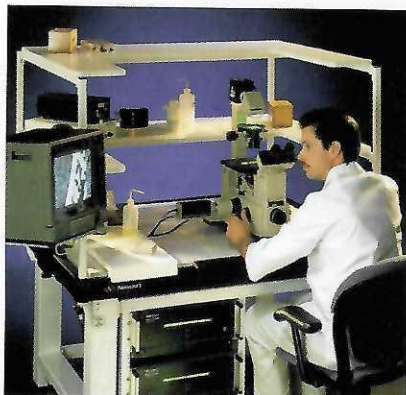


## VH IsoStation™ Series Vibration Isolation Workstations

### Key Features

- Honeycomb Platforms
- Hybrid Chamber Design
- Laminar Flow Damping
- Wide Valve offering
- Horizontal Pendulum Isolation
- "Z-Bar" Tubular Frame



Newport VH Vibration Isolation Workstation provides unsurpassed pneumatic vibration isolation for platform loads up to 2000 lbs. Featuring Newport's unique Stabilizer™ hybrid chamber isolators, these workstations offer the best vertical isolation available. Tubular steel frames will not collect dust like cheaper channel materials. For platforms with moving loads, Damping versions provide high damping and fast settling with very little compromise of isolation properties. The isolator valves and plumbing of each workstation comes pre-assembled so you can quickly set up your system.

### High Resolution Systems—"A" Series Stabilizer™ Isolators

In many high resolution systems, such as interferometers, profilers and AFMs, very low level vibration noise is the ultimate measurement limitation. Our "A" Series light load isolators offer the same advanced hybrid chamber technology developed for the research grade I-2000 isolators. The vibration isolation provided by this system is unsurpassed for this size range of pneumatic isolator. The "A" series is the best choice for most high resolution applications.

### High Throughput Systems—"B" version Damping Isolators

Building on the unique Stabilizer technology, Damping offers increased damping and reduced platform settling time. The "B" Series should be selected for high resolution systems with an increased requirement for releveling speed and stability as loads are moved across the platform. Damping versions incorporate our high gain valves and constrict the airflow through damping element by 50%. Custom Damping designs can be tuned for specific isolation and moving load requirements.

### High Throughput Systems—"C" version HD Damping with horizontal damping

Systems with high acceleration horizontal loads require increased isolator damping. Based on Newport's long experience manufacturing fast motion air bearing and linear stages, version "C" adds high horizontal damping to the standard Stabilizer and Damping design elements. Newport horizontal pendulum isolation systems provide superior isolation at low vibration levels over friction prone gimbaled and bearing systems. The unique horizontal damping system dissipates stage motion energy with very little compromise of isolation.

OPTICAL TABLES

BREADBOARDS & GRID  
PLATFORMSHONEYCOMB, GRANITE &  
RIGID STRUCTURES

ISOLATORS

WORKSTATIONS &  
ISOLATED PLATFORMSSTRUCTURAL RAILS &  
CARRIERSTESTING, ANALYSIS  
& DESIGN

TECHNICAL REFERENCE



## Elastomeric and Air Mounts

Non-leveling mounts are available for systems requiring less vibration isolation. The NewDamp Series elastomers and SLM air mounts are an economical choice for a wide range of applications. The highly damped NewDamp elastomers can also be used for very high acceleration moving stage applications. Newport's unique CNF type ND20 elastomeric isolators ensure that the workstation's natural frequency remains constant during payload weight changes.

## The Z-Bar Tubular Frame

The "Z-Bar" tubular frame offers the highest rigidity to eliminate frame structural resonances. Far more rigid than sheet stock rolled frames, the VH tubular construction is also easier to clean and does not have crevices to collect contaminants. The VH frame comes standard in powder coat cleanroom white; black frames or custom colors are also available. For nonstandard frame sizes, panel skins or other features please contact our Custom Products Group.

## Honeycomb Platforms

Honeycomb platforms come standard on Newport workstations. The lightweight honeycomb construction is far superior to granite or steel plate platforms and much easier to assemble and move. A wide variety are offered from our highly damped RG breadboards to our industrial IG Series. All breadboards are offered with and without tapped holes; non-conductive white laminate and electrostatic dissipative tops are also available. Our Custom Products Group can also provide granite, Super-Invar or many other material constructions.

## Platform Docking and other custom machinery requirements

Many advanced inspection and manufacturing systems require very precise payload positioning during wafer loading/unloading. The Newport OEM engineering group offers pressurized docking systems as well as regulated and unregulated gravity docking systems. Diaphragms of varying stiffness and advanced valve designs are used to tune the system to specific machinery needs.

## Ergonomic Options

Newport offers the widest variety of workstation options available including equipment shelves, sliding shelves and 19 in. instrument racks. Microscopy accessories include microscope shelves, support rails and arm rests. Computer accessories include monitor arms, keyboard shelves and cable management systems. Finally, for more specific applications, we offer a wide variety of custom dust cover, light-proof and acoustic enclosures.



4 in. Breadboards



2 in. Breadboards

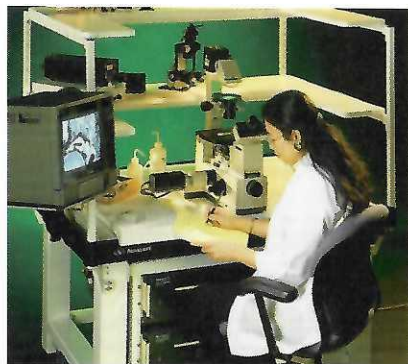


Laminated worksurfaces

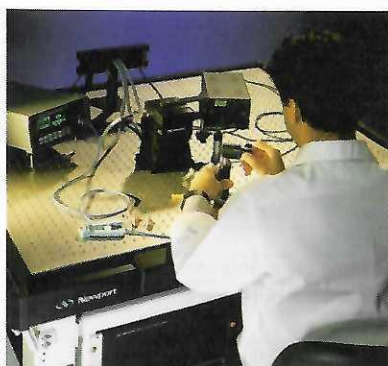


Stainless steel electropolished cleanroom option.





*IsoStation provides the most advanced ergonomic microscope workstation.*



*Precision assembly requires the best in workstation technology.*



## Features and Benefits

| Application                   | Features/Benefits  |
|-------------------------------|--|
| Semiconductor Equipment       | <ul style="list-style-type: none"> <li>• Optical/Interferometric Inspection</li> <li>• Profilers/AFMs</li> <li>• Mask Aligners</li> <li>• Wafer Probers</li> </ul>                   |
| Data Storage Equipment        | <ul style="list-style-type: none"> <li>• Optical/Interferometric Inspection</li> <li>• Pole Tip Measurements</li> <li>• Spin Stands/Servo Writers</li> <li>• CD Mastering</li> </ul> |
| Bio-Physical Measurements     | <ul style="list-style-type: none"> <li>• Electrophysiology</li> <li>• Cell Microinjection</li> <li>• In Vitro Fertilization</li> <li>• Microscopy</li> </ul>                         |
| Industrial Metrology and Test | <ul style="list-style-type: none"> <li>• Form and Contour Measurements</li> <li>• Video Metrology</li> <li>• Tool Makers Microscopes</li> </ul>                                      |

## Specifications

### Damping Selector Chart

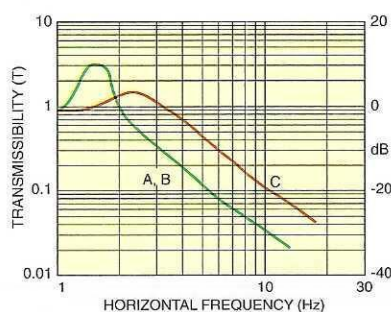
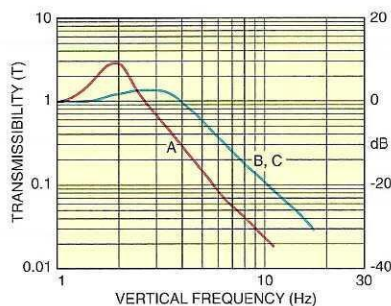
| Isolator Design       | Payload Requirements                             |
|-----------------------|--|
| "A" Series Stabilizer | High-resolution systems low load movement        |
| "B" Series Damping    | High-resolution systems with faster moving loads |
| "C" Series HD Damping | Motion systems with high horizontal acceleration |

## VH Workstation Isolation System

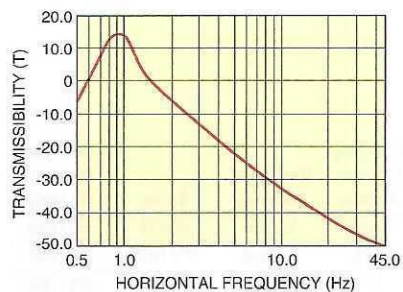
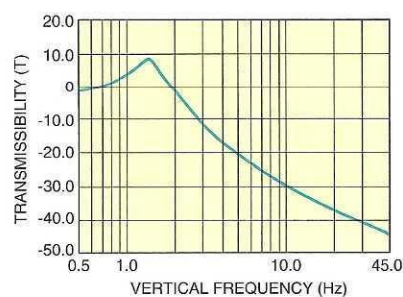
| Model        | Vertical Isolation, Res* (Hz) | Vertical Isolation, 5Hz* (%) | Vertical Isolation, 10Hz* (%) | Horizontal Isolation, Res* (Hz) | Horizontal Isolation, 5Hz* (%) | Horizontal Isolation, 10Hz* (%) | Isolation, Amplification at Resonance, Vert. (dB) | Isolation, Amplification at Resonance, Horz. (dB) | Damping Element Airflow | Horizontal Damping | Valve   | Load per Isolator [lb (kg)] |
|--------------|-------------------------------|------------------------------|-------------------------------|---------------------------------|--------------------------------|---------------------------------|---|---|-------------------------|--------------------|---------|-----------------------------|
| 325A Series  | 1.5                           | 90                           | 98                            | 1.2                             | 90                             | 98                              | 9   | 13  | Normal                  | Normal             | IPV-S2  | 325 (150)                   |
| 325B Series  | 1.9                           | 85                           | 95                            | 1.2                             | 90                             | 98                              | 6   | 13  | 50%                     | Normal             | IPV-HG2 | 325 (150)                   |
| 325C Series  | 1.9                           | 85                           | 95                            | 1.7                             | 85                             | 92                              | 6   | 8   | 50%                     | Enhanced           | IPV-HG2 | 325 (150)                   |
| I-500 Series | 1.5                           | 87                           | 95                            | 1.3                             | 84                             | 95                              | 9   | 12  | 75 %                    | Enhanced           | IPV-S2  | 500 (225)                   |

\* Nominal resonance peak, isolation and damping at full rated load

## VH I-325 Series



## VH I-500 Series



## Specifications

## Physical Characteristics

|                                    |   |
|------------------------------------|---|
| Max. Gross Load (with 4 isolators) | 1300 lb (590 kg) - 2000 lb (909 kg) at 80 PSIG  |
| Air Pressure Requirement           | 90 PSIG max.  |
| Standard Workstation Dimensions    | 30 x 30 in. (750 x 750 mm), 30 x 36 in. (750 x 900 mm), 30 x 48 in. (750 x 1200 mm), 30 x 60 in. (750 x 1500 mm), 36 x 36 in. (900 x 900 mm), 30 x 48 in. (900 x 1200 mm), or 36 x 60 in. (900 x 1500 mm) |
| Height of Isolated Frame           | 27.9 in. (709 mm) (nominal)   |
| Height of Non-isolated Frame       | 27.2 in. (691 mm) (nominal)   |

## Support Ring

|                           |  |
|---------------------------|--|
| Support Ring Construction | Aluminum/steel; scratch resistant finish |
| Maximum Load Capacity     | 300 lb (136 kg)                          |

## Support Ring Mounts

|                       |   |
|-----------------------|---|
| Maximum Load Capacity | 35 lb & 840 in./lb (in all possible positions)  |
| Construction          | Aluminum; black anodized finish   |
| Hole Pattern          | 1/4-20 on 1 in. or M6 x 1.0 on 25 mm centers<br>Side: 4 columns of 2 rows on outer surface<br>Top: 4 columns of 2 rows of holes |

## Equipment Shelves

|                        |  |
|------------------------|--|
| Material               | White Formica-covered composite material               |
| Load Capability        | 75 lb (34 kg) uniformly distributed                    |
| Dimensions             | U-shaped. Sides 8 in. deep. Back: 14 in. deep          |
| Spacing from Table Top | 13 in. -2 in./+12 in. (adjustable in 2 in. increments) |

## Sliding Shelves

|                  |   |
|------------------|---|
| Material         | White formica/press-board; white edge treatment |
| Shelf Dimensions | 30 or 36 in. x 6, 10, 14, or 21 in.             |

## Instrument Rack

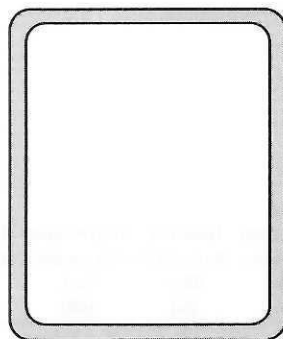
|                   |  |
|-------------------|--|
| Load Capacity     | 75 lb (34 kg)  |
| Natural Frequency | >50 Hz (fully loaded)  |
| Capacity          | Two #13 panels (7 x 19 in.); or Three #12 panels (5.25 x 19 in.); or One #14 (8.75 x 19 in.) and one #12 |

## Monitor Arm

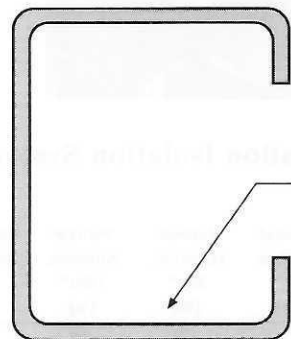
|                  |                            |
|------------------|----------------------------|
| Load Capacity    | 50 lb (23 kg)              |
| Dimensions       | 12 x 12 in. (305 x 305 mm) |
| Keyboard Support | 9.5 in. (240 mm) extended  |

## Frame Crosssections

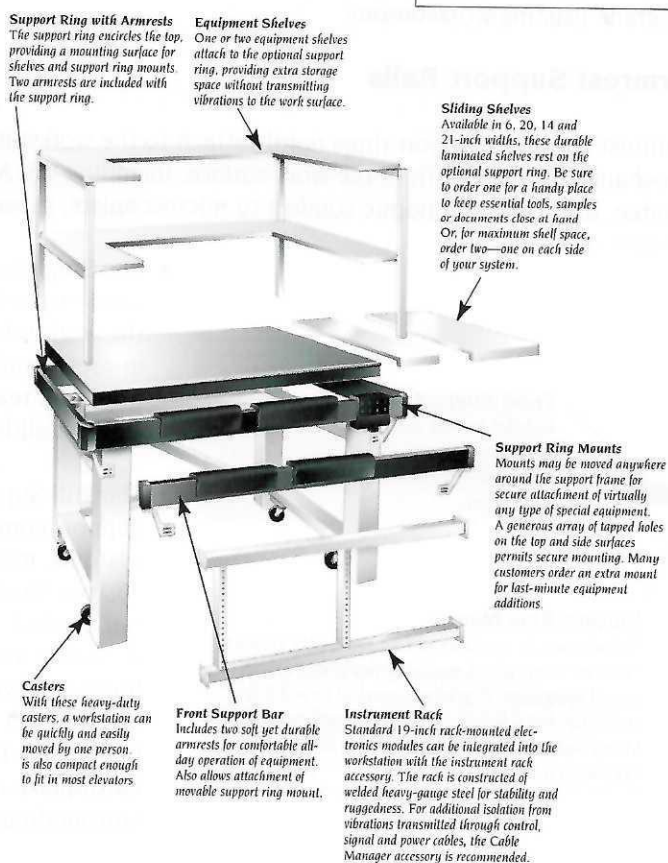
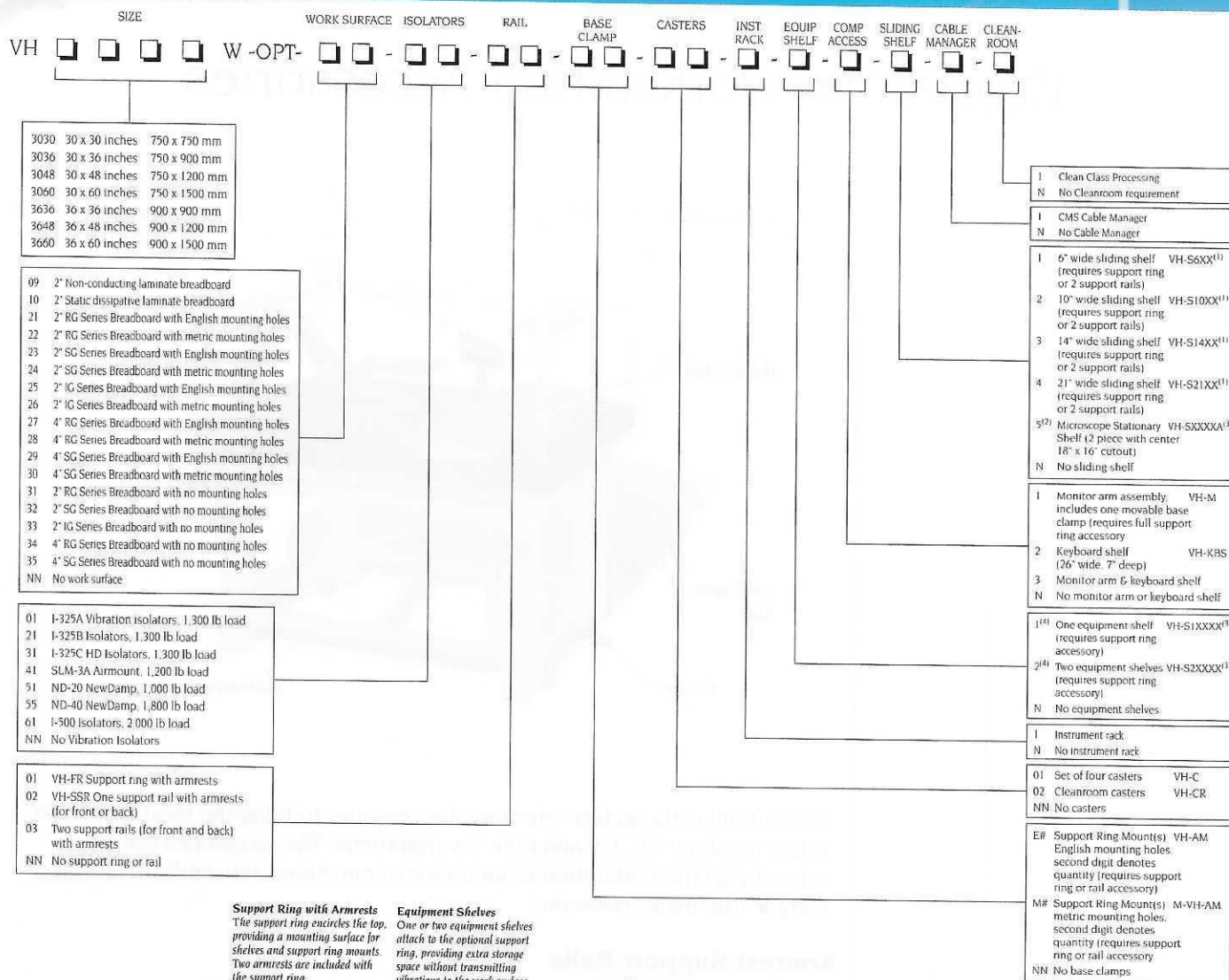
Newport Tubular Design



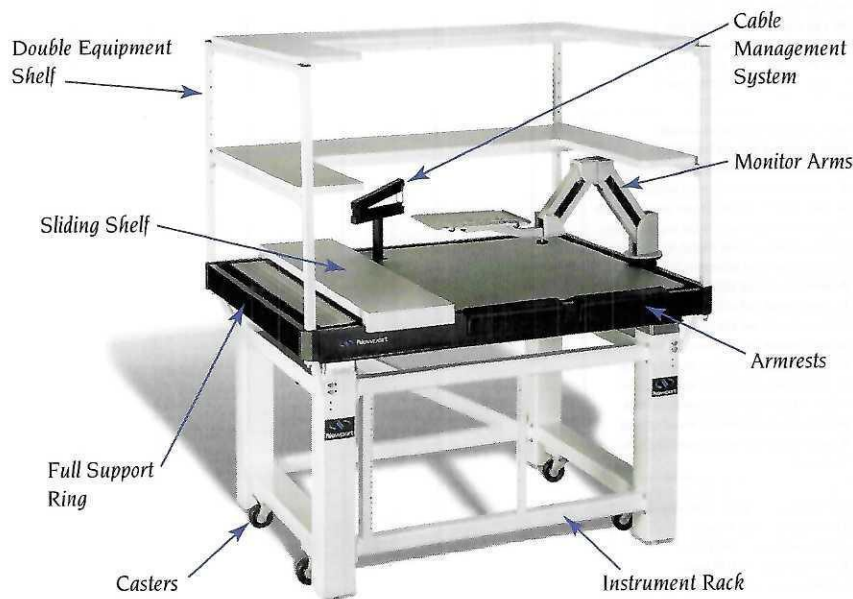
Competitive Channel Design

Collects  
Dust





# Ergonomic Workstation Accessories



Newport offers the widest selection of accessories to bring the most ergonomic utility out of our VH, LW and Elite 3 workstations. The accessories can be ordered with the workstation as an option or purchased separately to retrofit or upgrade existing workstations.

## Armrest Support Rails

Armrest rails and support rings rigidly attach to the workstation frame and are mechanically isolated from the work surface. Including the Armrests free of charge, they offer ergonomic comfort to microscopists, assembly and test technicians.



### Support Ring with Armrests

The support ring encircles the top, providing a mounting surface for shelves and support ring mounts. Two armrests are included with the support ring.

### Front Support Bar

Includes two soft yet durable armrests for comfortable all-day operation of equipment. Also allows attachment of movable support ring mount.

### Support Ring Mounts

Mounts may be moved anywhere around the support frame for secure attachment of virtually any type of special equipment. A generous array of tapped holes on the top and side surfaces permits secure mounting. Many customers order an extra mount for last-minute equipment additions.

- The Single Support Rail can be used on the front and/or rear of the workstation to support armrests and keyboard shelves; front and rear configurations will support sliding shelves.
- The Full Support Ring will support complete shelving systems, monitor arms and custom structures using our X95 rail products. The aluminum ring is coated with a scratch resistant finish and will support up to 300 lbs (135 kg). As an added benefit the ring provides some earthquake restraint by surrounding the breadboard.





Microscope stationary shelf



## Equipment Shelves

A variety of shelving systems are available to ergonomically place instruments in easy reach of the workstation operator. These shelves are mechanically isolated from the work surface to minimize vibration.

- The Single Equipment Shelf and Double Equipment Shelf stand on the full support ring and provide convenient storage and location of up to 75 lbs. (34 kg) of equipment. The wrap around "U" design increases shelf space but leaves the center clear for microscopes and other tall instruments. Made of scratch resistant Formica, the shelf at back of the "U" is 14 in. deep, the sides are 8 in. wide. The shelves are adjustable in 2 in. increment heights from 12 in. to 24 in.

## Sliding Shelves

- Sliding Shelves rest on a double rail or ring to provide increased equipment space over the isolated work surface. These Formica® shelves slide on the rails using nylon bearings and can be easily repositioned to maximize workstation flexibility. Stationary shelves cover the entire worksurface and include a cutout in the center for microscope placement. These are available in select sizes.



Single Support Rail with Armrests

Support Ring with Armrests

### Sliding Shelves

Available in 6, 10, 14 and 21-inch widths, these durable laminated shelves rest on the optional support ring. Be sure to order one for a handy place to keep essential tools, samples or documents close at hand. Or, for maximum shelf space, order two—one on each side of your system.



### Equipment Shelves

One or two equipment shelves attach to the optional support ring, providing extra storage space without transmitting vibrations to the work surface.

Support Ring

## Computer Accessories

A variety of computer accessories are available with Newport workstations.

- Monitor Arms attach to the full ring and will support instrument loads up to 50 lbs (23 kg). The monitor platform measures 12 in. x 12 in. (300 x 300 mm).



## Cable Management System

Poor cable management is the primary problem in many vibration isolation systems. Cables brought to the isolated work surface can short the floating platform to ground and introduce high levels of vibration. The Newport Cable Management System secures cabling in a foam grip and can mount to the breadboard or frame. When used with a proper service loop in the cable, most cable induced vibration noise can be avoided.



- The Keyboard Shelf offers a 26 in. wide by 8 in. deep surface to support both a keyboard and track ball or small mouse pad.



### Support Ring Mounts

Mounts may be moved anywhere around the support frame for secure attachment of virtually any type of special equipment. A generous array of tapped holes on the top and side surfaces permits secure mounting. Many customers order an extra mount for last-minute equipment additions.

### Instrument Rack

Standard 19-inch rack-mounted electronics modules can be integrated into the work-station with the instrument rack accessory. The rack is constructed of welded heavy-gauge steel for stability and ruggedness. For additional isolation from vibrations transmitted through control, signal and power cables, the Cable Manager accessory is recommended.

### Casters

With these heavy-duty casters, a workstation can be quickly and easily moved by one person. IsoStation is also compact enough to fit in most elevators.