

# ORION STREET JOURNAL

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QUARTERLY

ORION INDUSTRIES INCORPORATED

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EMI/RFI Shielding Laminates • Insulators • Seals and Gaskets • Screens

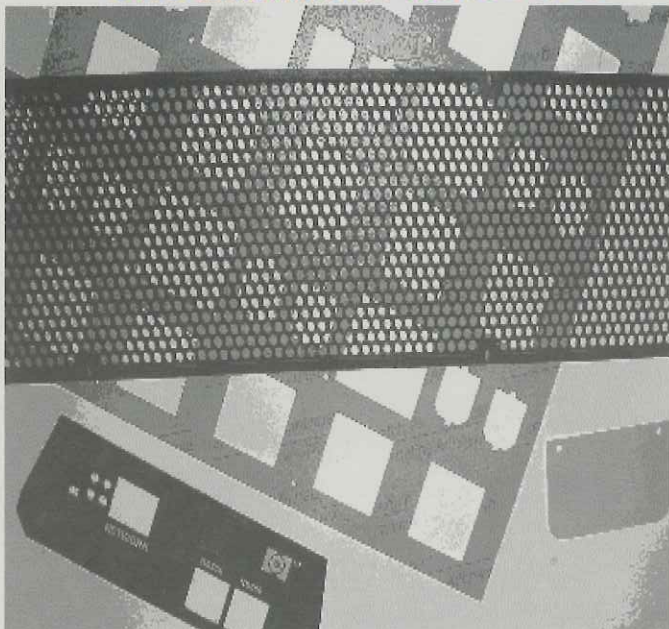
ISO 9001



A3744

Precision Die Cutting • Laminating • Adhesives • Screen Printing/Hot Stamping

## CNC Machined Plastic Parts



Drilled holes can be as small as 0.010" in diameter with tolerances well within 0.005"

Over the past several years, ORION® has been supplying customers with one of its lesser-known services: **CNC Drilling & Routing**. Primarily used in the manufacture of circuit boards, this technology lends itself well to high precision manufacture of electronic insulators and plastic parts.

When people think of routers, most think of a standard woodworking router found at a local home center. This type of home-use router typically ranges from 1-3 HP and can turn bits up to 25K rpm, in two standard shank sizes of 1/4" and 1/2". The router we use is quite different. Each spindle is mounted on a stationary gantry, and can move up or down. The table below moves on precision ball screws, and can maintain consistent position, within a few thousandths of an inch. The spindles can turn up to 60K rpm.

### **Benefits over steel rule die cutting:**

The drilling and routing process allows us to hold tolerances which are much closer than steel rule die cutting, and to cut materials which are either too thick or too hard for die cutting.

Routers are the workhorses of the printed circuit board industry. These machines drill all of the tiny holes for components and rout out perimeters of the boards found in any electronic item. Primarily, this equipment is capable of cutting plastics like G-10/FR-4, polycarbonate, PVC, ABS, and others with thickness ranging from 0.010" to 0.5". Its array of speeds and feeds allows efficient material removal over a wide range of material characteristics.



ORION's CNC Drilling & Routing machine is ideal for high precision manufacture of electronic insulators and plastic parts.

This process is beneficial for parts with lots of holes, which would require expensive tooling to produce. It allows us to drill holes that are much smaller and cleaner than those which are die cut. Typically, holes can be drilled from 0.010" to 0.277" in diameter with position tolerances well within 0.005". In most cases, internal features require a 0.032" minimum radius at the corners.

Unlike our Waterjet Machining Center which is ideal for lower volume and prototype runs, CNC machining is better suited for a full range of production quantities. Parts can be nested on sheets, and cut with up to 4 heads at a time to greatly increase production throughput and reduce costs to our customers.

*It is through this continued effort to expand our capabilities that ORION remains a leader in the custom fabrication of electronic materials.*

ORION is a registered trademark of Orion Industries Incorporated. ORION provides custom designs and manufacturing for EMI/RFI shielding, insulating, screening and sealing needs.



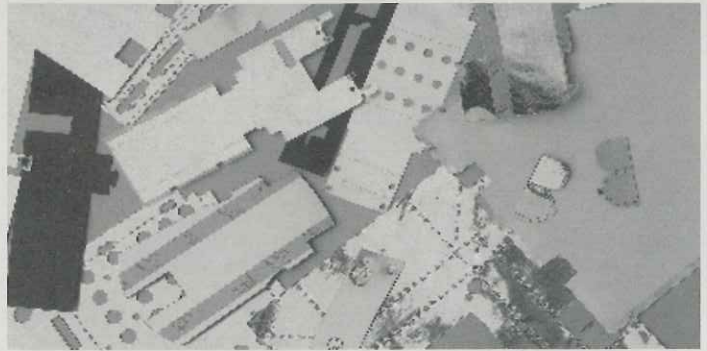
**ORION Exhibiting At The**  
**2004 IEEE EMC SYMPOSIUM**  
**August 9-13, 2004**  
**Santa Clara Convention Center**  
**Santa Clara, California**

**BOOTH #519**

ORION will be joining over 300 exhibitors at this year's IEEE Symposium on Electromagnetic Compatibility. The symposium combines many technical programs, workshops and tutorials along with trade show demonstrations, for a complete high powered, educational exhibition. The Institute of Electrical and Electronics Engineers (IEEE) is the world's largest professional engineering organization with over 350,000 members.

This exciting symposium is being held in Santa Clara, California in the heart of Silicon Valley, famous for its history, cultural attractions and technological institutions. It is the home of many high-tech companies serving the telecommunications, medical, computer and military industries, which is why ORION will be there! It is also an ideal location for vacationing families. A number of tours will be offered for the spouses and children of attendees to experience the many local attractions in the San Francisco Bay Area. (Sign ups are on a first come, first served basis so look into this as soon as you and your families arrive).

Peter Smith, Sales Engineer and Larry Bonney, Engineering Manager will be on site to demonstrate our latest products and capabilities in shielding laminates and thermal materials. We invite you to visit them at Booth #519.



ORION specializes in designing laminated shields and applying selective die cutting techniques for cost effective solutions. Our laminates use various insulating materials combined with aluminum, copper or tin plated copper.

**Advantages of Laminates:**

- Lower cost than spray shielding
- Effective
- Recyclable
- Lower tooling cost
- Insulating capabilities
- Scratch resistant
- Short lead times
- Prototypes

**OEM New England**  
**Design & Manufacturing Trade Show**  
**September 15-16, 2004**  
**10:00 am to 4:00 pm**  
**Worcester Centrum Centre**  
**Worcester, MA**  
**Booth #419**

The OEM New England Trade Show is coming to the Worcester Centrum Centre in Worcester, MA this fall - and ORION will be there! We are exhibiting for the first time in this exciting design and manufacturing venue, in the Medical OEM Suppliers Pavilion. Please mark your calendar for September 15th and 16th to visit us in Booth #419.

From design to prototype to production... ORION manufactures solutions



**Insulating**



**Sealing**



**EMI/RFI Shielding**



**Thermal Transfer**



**Screening Laminates**

ORION uses quality materials to produce high quality parts.

