

Get The Lead Out

Leaded or Un-Leaded? No, we're not asking what kind of gas your car takes. We're asking you which type of manufacturing process you need.

In response to the European Union's efforts to reduce the amount of hazardous substances and obsolete electronic devices entering their landfill, American businesses may be forced to eliminate lead and other hazardous substances from their electronic products. It is imperative that each business finds out whether the broad-reaching directives passed by the EU in February 2003 will affect them.

What are the EU Directives that will affect us the most?

- By August 13, 2005, companies that sell electrical and electronic equipment bearing their tradename in the EU will have to arrange and pay for the collection, treatment, recycling, recovery and disposal of the used equipment.
- Starting July 1, 2006 companies will have to ensure that their electrical and electronic equipment sold in the EU does not contain lead, cadmium, mercury, hexavalent chromium, polybrominated biphenyls or polybrominated diphenyl ethers if placed on the market after this date.

Companies that do not comply with these directives are likely to be subject to penalties and may be prevented in the future from selling their products in the EU.

Where does it stand now?

The conversion to a lead-free product represents a massive change in the industry. Many experts think we haven't been given enough time to convert and that this movement is a time bomb waiting to explode. There has certainly been a lack of awareness and

direction on the lead-free subject. Schippers & Crew did a survey of a cross-section of our customers to find out what they are doing to prepare for the standard. These are the results we found:

Although 90% of our customers sell their products in Europe,

- Only 38% of our customers even knew about the directives.
- Only 24% of our customers are taking steps to become lead-free.

Most of the steps taken by this 24% are only educational at this point. The larger companies have committees who meet once or twice per week on the subject. Most customers surveyed had the opinion that the US would pressure the EU to extend the deadline.

Are you affected?

Answer the following questions to find out if your business will be affected by the EU Directives:

1. Do you sell products in European Union countries?
2. Does your product fall under any one of the following ten categories?
 - Large household appliances (e.g., refrigerators, microwaves)
 - Small household appliances (e.g., toasters, vacuum cleaners)
 - IT and telecommunication equipment (e.g., computers, telephones, printers)
 - Consumer equipment (e.g., radios, TV's)
 - Lighting equipment
 - Electrical and electronic tools (e.g., drills, saws, soldering irons)
 - Toys, leisure and sports equipment (e.g., video games, electric trains)

- Medical devices
- Monitoring and control instruments (e.g., smoke detectors, scales, thermostats)
- Automatic dispensers (e.g., vending machines)

If you answered Yes to both questions then these directives will apply to you. The only categories explicitly excluded are: devices intended specifically for military purposes; large-scale stationary industrial tools; implanted and infected medical devices; and devices that are part of another type of equipment not subject to the directive (e.g., car radios.) At this point there are no exceptions for small businesses.

Where do you start?

The steps required to conform with the directive will vary from business to business. In the design and manufacture of printed circuit board assemblies many factors will have to be taken into consideration. Most printed circuit boards are fabricated with a layer of lead-based plating—so new substances will need to be used. Many components contain lead in their packaging so each item will have to be reviewed to

evaluate its conformity. Even components that don't contain lead may not withstand the higher temperatures required for lead-free soldering processes. Switching from the current lead-based solder to a lead-free solder is just one of many steps.

You can find more information on the EU Directives by visiting these websites:

www.indium.com/documents/applicationnotes/pbfreefaq.pdf

www.dti.gov.uk/sustainability/pdfs/finalweee.pdf

www.dti.gov.uk/sustainability/pdfs/finalrohs.pdf

If you have any questions concerning lead-free, please contact paul@schippers.com or abdul@schippers.com



When you have a technical question and you can't seem to find the answer...



...ask the Engineer!

*Schippers & Crew,
Test Engineer, Jack Barke*

Q *Is there a way with In-Circuit Test to verify that a connector is installed with the correct orientation?*

A Yes & no. If the connector is asymmetrical, then a switch probe can be installed that will detect this. If it's symmetrical in shape this method won't work.

Q *How long does an in-circuit test take?*

A About 20 - 30 seconds.

Q *Our shop bench gets cluttered with large schematics and we need a good way of keeping these organized in the area. Any recommendation?*

A I like the Safco products for organizing drawing prints in the shop. Check out (draftingfurniture.com). There's some handy carts there like the Model 5059 Mobile Vertical File. Or if you want to get by really cheap there's Model 5016. It's a wall mount rack for hanging up drawings. Retail at 30 bucks plus shipping.

Email your questions to: jack@schippers.com

Meet Roy!

Roy Dredge recently joined schippers & Crew as our new Quality Control In-Charge!

He brings to our team over 15 years electronics experience in aerospace, medical and defense.



Aside from Electronics, Roy has many interests such as building hot rods and racing motorcycles. He's currently restoring a '72 Chevy Nova from the ground up. And, in 1991 Roy entered a 1/4 mile motorcycle speed competition. His 1200cc Katana was clocked at 145mph in only 10.08 seconds. Out of 300 other bikes Roy's was rated 12th fastest!

What's New

Schippers & Crew, Inc. announces addition of an Xeltek SUPERPRO 280U prototype programmer to our test department.



SUPERPRO 280U is a USB Interfaced Ultra-High speed Universal Device Programmer with advanced features to minimize Bounce noise and support 1.5V low voltage devices. SUPERPRO 280U supports over 8,000 devices from 80 IC manufacturers.

- Devices Supported:
EPROM, Paged EPROM, Parallel and Serial EEPROM, FPGA Configuration Serial PROM, FLASH Memory (NOR and NAND), BPROM, NVRAM, SPLD, CPLD, EPLD, Firmware HUB, Microcontroller, MCU, Standard Logic.
- Socket Adapters Supported:
DIP, SDIP, PLCC, JLCC, SOIC, QFP, TQFP, VQFP, TSOP, TSOPII, SOP, P SOP, TSSOP, SON, EBGA, FBGA, VFBGA, μBGA, CSP, SCSP, etc.

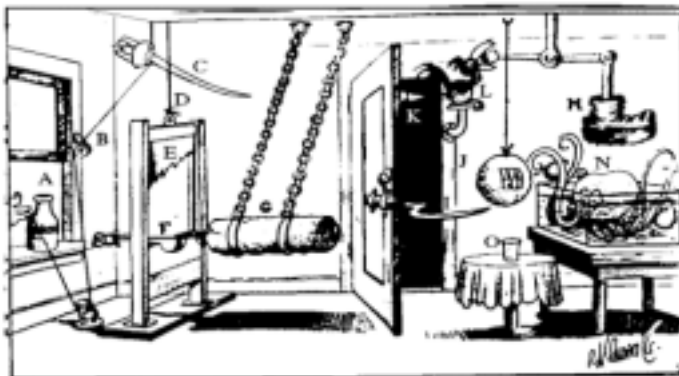
The addition of this unit will support growing demand from our customers to provide device programming on prototype and small production builds.

And a Little Engineering Humor . . .

❖ To the optimist, the glass is half full. To the pessimist, the glass is half empty. To the engineer, the glass is twice as big as it needs to be.

❖ **Q:** What is the difference between Mechanical Engineers and Civil Engineers?

A: Mechanical Engineers build weapons. Civil Engineers build targets.



❖ "Normal people ... believe that if it ain't broke, don't fix it. Engineers believe that if it ain't broke, it doesn't have enough features yet."

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