

## Shims trim weight from Superjumbo jet

Use of light-but-durable shims help the Airbus A380 double-decker airliner shed 17.5 lb/plane. The Superjumbo jet will take off weighing more than 1.2 million lb. But every pound carries a premium. Even the laminated shims got scrutinized for weight. (Laminated shims are ultrathin sheets used individually or several together to fill gaps or spaces between machined components.)

Stainless-steel shims are strong and fire resistant, but they are also heavy. Airbus eventually went with X.fiber, a family of materials from **Lameco** in Santa Monica that are light but with heat resistances close to that of steel.

X.fiber shims are made of woven sheets of various combinations of glass, ceramics, carbon, and aramide. Proprietary blends of epoxide or kyanite hold them together. They come in thicknesses of 0.002, 0.003, and 0.004 in. Glass and ceramic shims are inherently nonflammable, and carbon and aramide-based shims are rendered fire resistant by the lamination process.

Airbus figures that for every 10 flights,



the new shims save the fuel needed to carry one passenger (175 lb). The company says the shims save 0.125 gallons/100 flight miles. The laminated shims also save time in assembly because they peel by hand. And they are reusable, unlike metal shims. Plus, the new shims don't cause finger cuts, a frequent problem with metal versions. **MD**

**Switching to nonmetallic shims shaves 17.5 lb from every A380 jet airliner.**

### MAKE CONTACT

**Lameco**, [lamecogroup.com/en](http://lamecogroup.com/en)

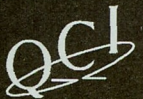
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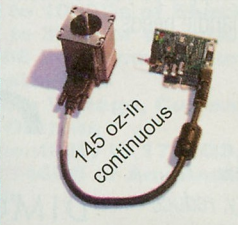
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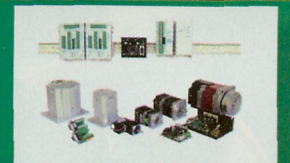
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