

the **smartHinge** explained:

Traditionally a box hinge is made from sheet material, is 'L' shaped and has a separate 'quadrant' stay to create the 'stop' just past vertical - typically around 95°. Basically it can be described as a simple butt hinge with an extension forwards at one end to accommodate the ends of the stay. The stay has also to be accommodated in the body of the box sides when the lid is closed, and this material has to be removed before the hinge can be fitted. All told this is a fussy process and lining up the lid with the base of the box is notoriously difficult.

The holy grail of box hinges is one that isn't 'L' shaped - a 'siderail' hinge - and doesn't have a separate stay, so the 'stop' is incorporated into the knuckle. If the leaves are also round-ended this is then a hinge that can be fitted with only 4 routed passes, one at each end of the back of base and lid, and simply screwed in place. If the hinges [and the box] are accurately made the lining up of lid and base is assured. There is only one hinge commercially available that achieves this with no compromise: mine, the **smartHinge**, which is why it has proved so popular with high-end makers all over the world, and presumably why LINLEY chose to copy it.

When I first introduced the **smartHinge** early in 2011, my friend Robert Ingham [incidentally David Linley's teacher at Parnham] reviewed them in the UK's leading woodworking magazine, Furniture & Cabinetmaking, and for the reasons I've explained above he referred to them as the "Rolls Royce" of box hinges. He also remarked in that review: "Why hasn't someone thought of this before?" The answer to that is actually simple: it certainly has been thought of - but although the format is obvious, avoiding as it does an 'L' shaped format and a separate stay, for a variety of reasons such hinges are extremely difficult to produce in quantity efficiently and accurately. So the idea, although an excellent one, has been dismissed many times as being too hard to make, and therefore impractical/unprofitable.

But I have persevered: I have avoided going to the far east as so many others have preferring to support a British company. The way to arrive at the right solution to the complex manufacturing and quality issues involved in bringing a product like this to market is to stay local, in the UK, and deal directly with the manufacturer. This I have done, working along the way with a number of manufacturers - after a long search and a huge amount of hard work I have found the right company and the **smartWare** range, including the **smartLock**, is now being successfully produced in the West Midlands by an excellent, small family company. This is now the 3rd UK manufacturer I've used - the 5,000+ pairs I've sold so far is a small fraction of what I could have sold because of the challenging manufacturing requirements.

When properly made the four main features that make the **smartHinge** such an excellent hinge are:

- very accurate and consistent leaf width: 7.96 ± 0.03 mm. This makes the lining up of the lid and base, absolutely essential on a high quality box, very easy to achieve. The leaves on the Chinese copies I was sent by James Oliver in 2014 varied from 7.95 to 7.77, often between the two leaves on a single hinge, and even along a single leaf. This is way too loose a fit, and with too much variation, for them to be fitted reliably and repeatably without the need for time-consuming and fiddly adjustments each and every time.
- very accurate and consistent stop angle: $93^\circ \pm 1^\circ$. This stops the lid just beyond vertical, which is all that's needed - it looks right and it means that even a substantial lid can be safely supported. Because of the small diameter involved and the very tight tolerances required, this is not easily achieved ... your copies come nowhere close with far too much variation, with most opening way too far - on some as much as 120° . On a box with a heavy lid such as your 'diamond' jewellery box, this puts a huge strain on the hinges - see more on this below.
- unique uneven 3 finger knuckle format: this offers the maximum possible strength and security.
- very easy to fit: only 4 routed mortices, then the hinges can be screwed in place with all alignments assured.