

Choosing the right hardware

Part 1: hinges

In the first of a new series of four articles about selecting and fitting the right hardware, we ask Peter Sefton for advice on a range of the most commonly available hinges

Hinges can be broken down into various types ranging from those with one or two pivot points, through to those with multiple pivot points. Cranked hinges for off-set alignment or concealed hinges for a minimal look both have distinct features, but when should they be used and how should they be installed to gain the best results? In short, there is no quick answer and many of the hinges readily available can be used in more than one way as long as two main parameters are observed: loading and alignment. In this and successive articles I will endeavour to share with you some of the lessons I have learned selecting and using the right hardware for the job.

Peter Sefton

Peter teaches furniture making for all abilities on both long and short courses. For more information visit www.peterseftonfurnitureschool.com.



IMAGES: PETER SEFTON. MAIN IMAGE: GUY/ANTHONY BAILEY

Butt hinges

The most commonly used hinges in furniture and cabinetmaking are single pivot point butt hinges, used on cabinet doors and boxes. Butt hinges are one of the most basic types. There are several different ways to use them and they are available in various materials. Brass is the most traditional, but for a more contemporary look, I would

specify stainless steel, nickel plated, aluminium or even silver.

Pressed hinges are cheaper to buy but do not have either the quality feel or the accuracy of manufacture that good-quality solid drawn hinges have. Solid drawn refers to the process undertaken when they are being made; the brass is drawn through a die to produce its cross-section.

Butt hinges come in various qualities, ranging from a pressed hinge through to the best quality solid drawn or extruded type

Suppliers

Pressed hinge

www.isaacclord.co.uk
Product No: 183875
Price: £1.15 inc. VAT.

Solid drawn hinge

www.martin.co.uk
Product No: 02040500
Price: £8.53 inc. VAT.

► Positioning butt hinges

The centre of the pivoting pin is all-important to the working of the hinge and how far the door can open before stopping against the cabinet. If it's not fitted correctly i.e. if the hinge leaf is cut into the hinge recesses or mortises too deeply, the hinge may bind.

There are three main ways to set a hinge into the door and cabinet and success is all about the centre of the pivot point; the position of the knuckle determines the movement of the door in relation to the cabinet. The most commonly used approach is to set the butt hinge into the door and carcass to equal depths, with the hinge set in just less than the distance from the edge of the flap or leaf, to just short of the pin centre.

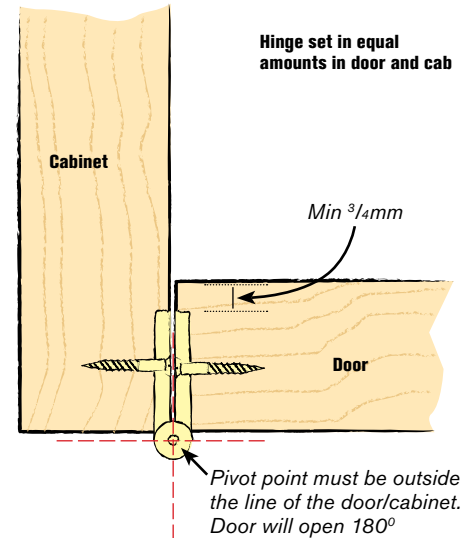
The second way is to feather the hinge. In this method all the knuckle is set into the door stile and the leaf that's attached to the cabinet is chopped in on an angle (or feathered).



The hinge knuckle that protrudes can be softened by filing and rounding off



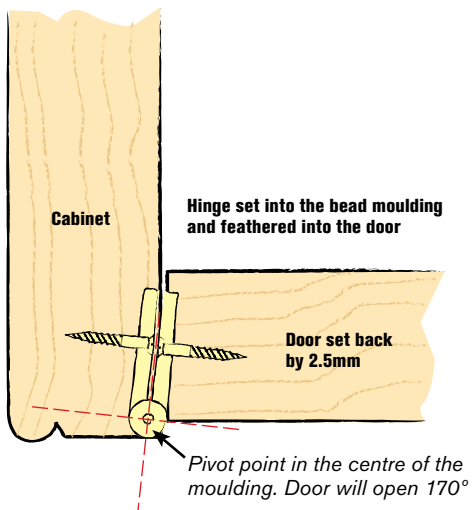
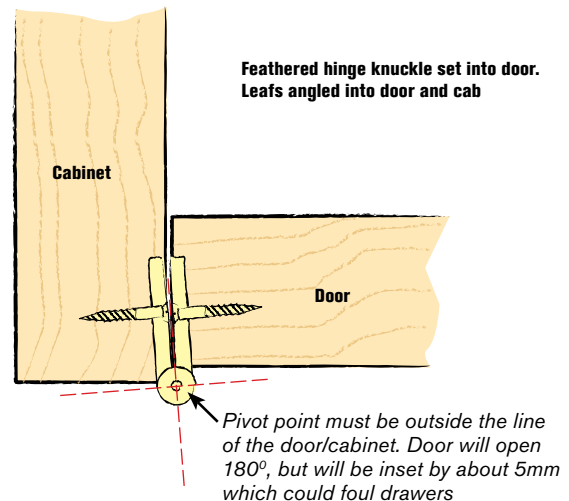
The door opens to 180° and is flush with the inside of the cabinet



Feathering gives a clean looking line on the outside of the carcass and is used in the highest quality work



The door opens to 180° and is inset by 4-5mm



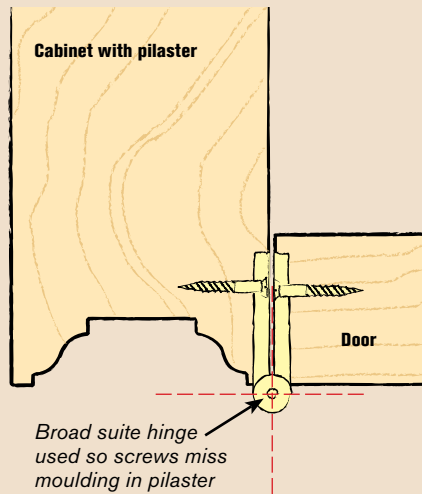
The third and most difficult to fit is when the butt hinge knuckle is set into a bead moulding in the carcass and the unsightly hinge knuckle is disguised within the moulding



Different types of butt hinges

The standard butt hinge we commonly use is a 'narrow suite', but you can also buy 'broad suite' hinges, if you need to span a moulding or other unusual projects. Good quality butt hinges tend to have an odd number of knuckles and I always like to see three knuckles fixed to the cabinet and two to the door i.e. the strongest part of the hinge fixed to the strongest part of the construction.

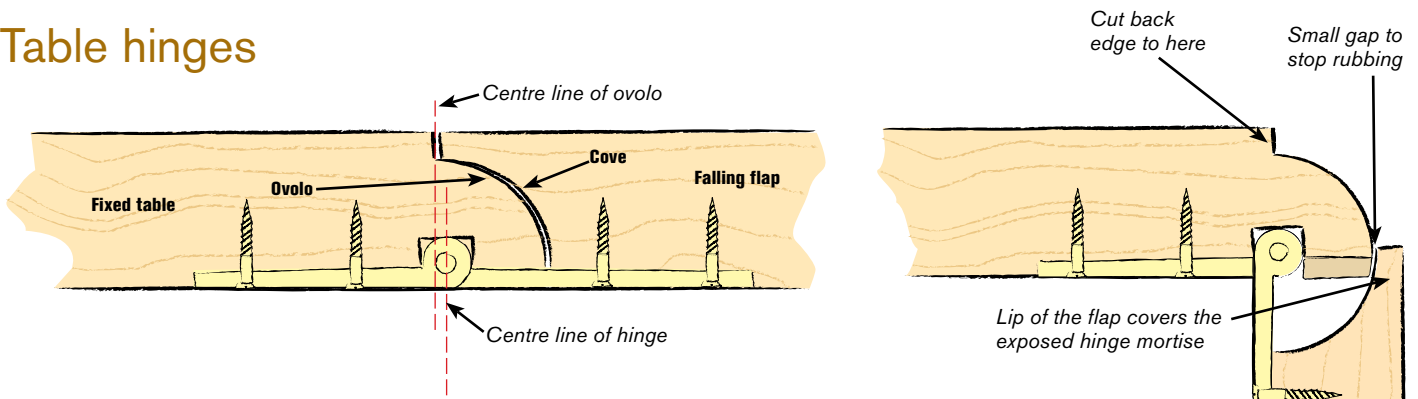
I also like to see brass screws within brass hinges and to see slotted screws used in quality work with screw heads lining up along the length of the hinge.



If you've enjoyed this article on hardware, you'll find related articles on the Woodworkers Institute website – www.woodworkersinstitute.com



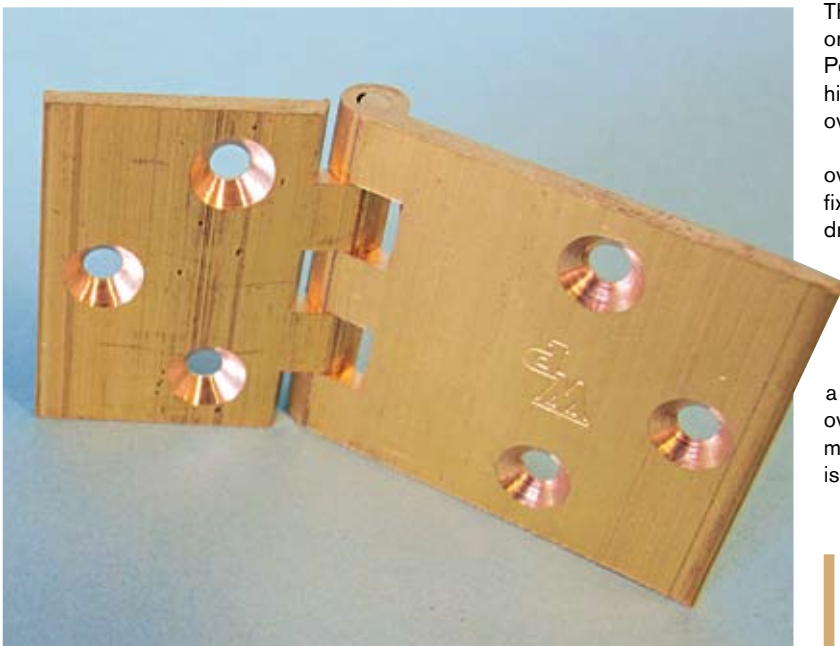
Table hinges



The table or rule joint hinge is used on traditional gate leg, sofa and Pembroke tables, where a fall flap is hinged and a matched rule joint or ovolo and cove, are moulded.

The larger hinge leaf spans the ovolo moulding to allow sufficient fixing to the falling table flap. The drawing shows the centre line of the hinge just forward of the centre of the ovolo, which allows the falling flap's moulding to clear and not rub on the table top's moulding.

If the moulding is extended on by a couple of mm past the centre of the ovolo, this will help disguise the hinge mortise from being seen when the flap is down.



The table hinge has one leaf larger than the other and the countersink holes are on the opposite side to the knuckle

Suppliers

Table hinge supplier

www.martin.co.uk

Product No: 301B

Price: £19.68 inc. VAT

Box hinges



Box hinges shown are quadrant, stopped butt, SmartHinge and Neat hinge

Box hinges come with a few options. The quadrant hinge is tricky to fit and a little unsightly.

The stopped butt hinge has a similar fitting procedure to that of a butt hinge on a door, although with tighter tolerances between the two closing surfaces, otherwise the box lid will appear to be leaning forward. These stopped hinges can be used on larger boxes or a small

blanket style chest, although a torsion hinge may be a safer choice for blanket boxes, as they prevent the box lid from rapidly closing.

For small show boxes there is now a selection of discrete hinges specifically designed for the purpose. Based on the traditional rail hinge, these are available in brass or nickel and silver. They are easy to fit and are routed into the box sides – they hold the box open at 93°.

Suppliers

Quadrant hinge

www.martin.co.uk
Product No: 216
Price: £6.94 inc. VAT.

Stopped butt hinge

www.classichandtools.com
Product No: JB107
Price: £42.92 inc. VAT.

SmartHinge

www.fine-boxes.com/smarthinges
Product No: SmartHinge
Price: £39.50 inc. VAT.

Neat hinge

www.hawthornecrafts.com/box-hardware
Product No: Neat hinge
Price: £35 (nickel), £25 (brass), £55.50 (silver) inc. VAT.

PRODUCT REVIEW

Spiral down-cut router cutter

I use a 7.94mm ($\frac{5}{16}$ in) spiral down-cut router cutter from **Wealden** Cutters to fit the SmartHinge, it gives a very clean finish with no need for sanding. They are recommended for use on hand held routers and CNC. The cutter is made from micro-grain carbide, which gives a sharper cutting edge when being ground and a much-improved finish for us.



I use a spiral down-cut router cutter to fit my SmartHinges

Suppliers

Spiral down

www.wealdentool.com
Product no: T2D7937
Price: £53.00 inc. VAT.

Fitting a SmartHinge

I cut my hinges in using a router table with the cutter height set to half the thickness of the knuckle. The fence should be set so that it will cut the grooves to take the hinges in the centre of the sides of the box (the box side shown is 12mm thick).

I make a spacer 34mm wide and push this up against the router cutter and place a stop up against the side of the 34mm spacer. This sets the router to cut a groove length which allows the knuckle to protrude just past the back of the box when fitted, with the centre of the pin being in line with the back of the box.

Use the 34mm spacer to make

your first pair of cuts. Now place the stop on the opposite side of the cutter for the other two cuts.

The hinge has three knuckles. Place the leaf with the two knuckles into the base of the box and drill a suitable sized pilot hole just forward of the centre of the screw hole – this will pull the hinge tight up against the routed slot.



Setting the cutter height to the leaf thickness



The hinge is ready for screwing in and the box needs sanding and finishing

Pivot hinge

Either centre or offset/cranked are very good to use when the knuckles of a butt hinge would detract from the furniture design. They are routed into the top and bottom of the door and are essential when the cabinet is pyramid shaped or it has curved edge doors, as the centre points of all hinges must be plumb with each other.

As with all unusual hinging jobs, I would draw this out full size before fitting, as the cabinet side often needs to be scolloped out to accept the throw of the door's leading edge.



Examples of brass centre hinge

Suppliers

Brass Centre Hinge

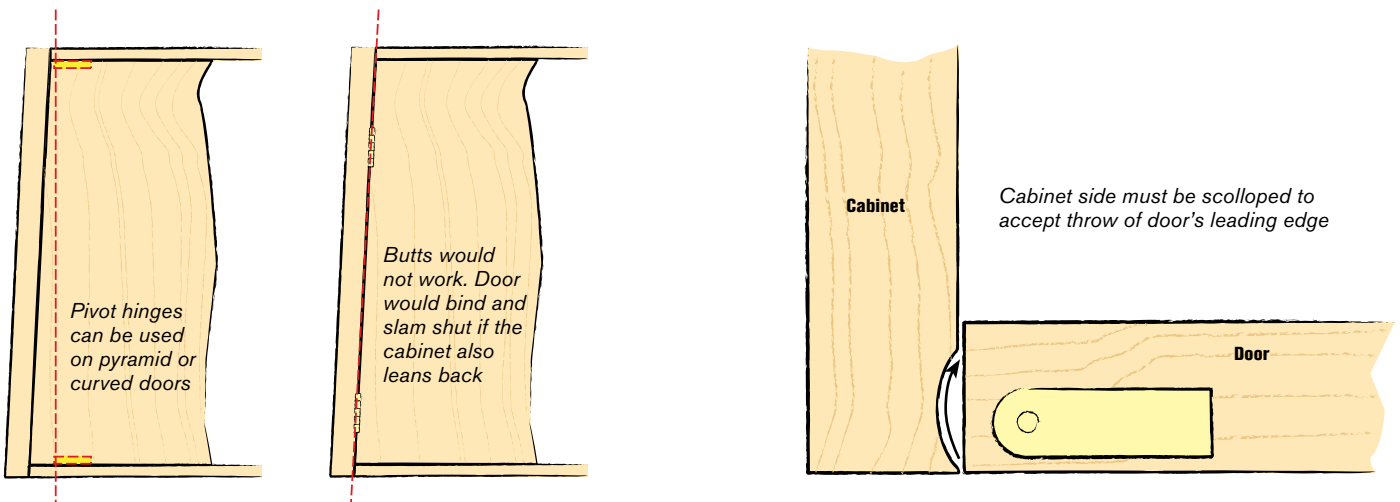
www.isaacclord.co.uk
Product No: 22012 Price:
£3.47 inc VAT

Sanderson L Hinge

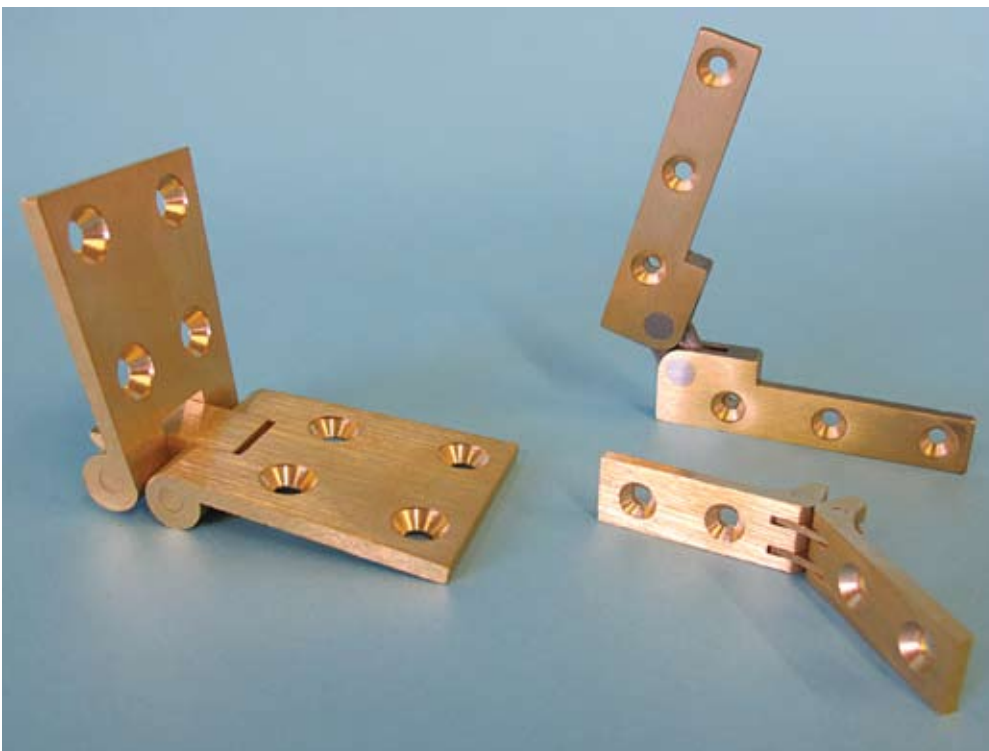
www.classichandtools.com
Product No: 707961
Price: £54.52 inc VAT

Brusso Pivot Hinge

www.classichandtools.com
Product No: ST185
Price: £39.28 inc VAT.



Hinges with two pivot points



Hinges with two pivot points are generally used when a flush surface needs to be hinged back on itself

Suppliers

Card table hinge (side mount)

www.martin.co.uk
Product No: 2228SAN/A
Price: £22.98 inc. VAT.

Card table hinge (top mount)

Product No: 250
Price: £19.12 inc. VAT.

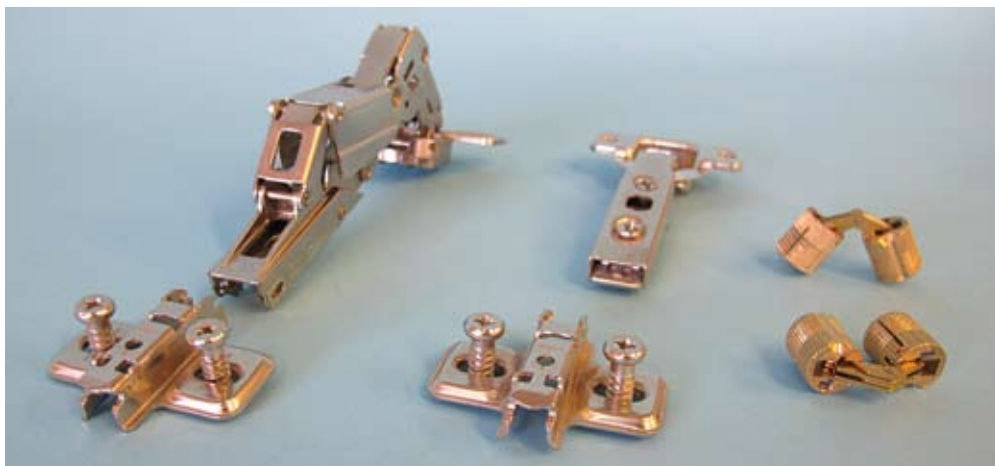
Counter flap hinge

www.martin.co.uk
Product No: 218B
Price: £34.97 inc. VAT.

Loading & fixing

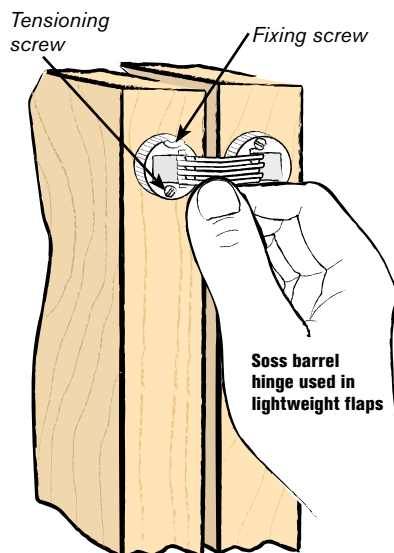
All hinges need to be suitably sized for your project. Butt hinges are available between 25mm-100mm long but the standard sizes for furniture making tend to be within 38mm-65mm, depending on the size and weight of the door to be fitted. Any screws used would need to be put into a suitable material, e.g. an MDF veneered door must have a solid timber lipping for the hinge to be chopped into, and to provide a secure screw fixing.

Hinges with multiple pivot points



Concealed hinges: Blum 170° and 110° with the Soss barrel hinge

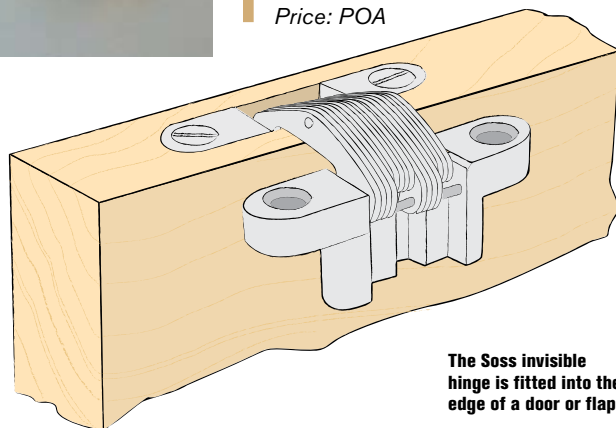
The Soss or invisible hinge was invented by Joseph Soss in 1903. It is used in situations where the hinge



does not want to be seen. There are many sizes available from small hinges for furniture work through to heavy duty fire-resistant ones for large doors.

The two Soss hinges I talk about here are the most commonly used in furniture making. Firstly the single barrel style, which is not recommended for vertical or load-bearing situations, can be used between the leaves of a flip-top table or lightweight flush-fitting flaps.

The single barrel style is easily fitted with a drill; the hinge is pushed in and screwed into position, secured by the tightening of the tensioning screw. The cylinders can also be secured by the installation of a wood screw in the groove on the exposed end. They are made of solid brass and have brass link plates between the pivot points, which allow them to open flaps to 180°.



The Soss invisible hinge is fitted into the edge of a door or flap

The stronger Soss hinge, which I believe is better, is the invisible hinge, which requires routing into the edges of the doors or flaps. It's physically bigger than the barrel hinge, it is longer and has four fixing screws each and more link plates, which increases its rigidity and allows less flex or slack between components. All in all it makes for a stronger and more accurate fixing.

Concealed or kitchen hinges

This type of hinge is useful for self-assembly of furniture and kitchen cabinets as they are easily adjustable laterally, horizontally and vertically.

The biggest players in the European marketplace are Blum and Hettich who supply a vast range of hinges with soft and sprung closers. They are designed for overlay, twin and inset doors, allowing doors to open between 95° to 170°.

When ordering, don't forget to include the mounting plate, which is usually supplied with chipboard screws and fixed to the cabinet side. They have an allowance to be moved up and down by 2 or 3mm. The hinge is sunk into the back of the door using a 35mm Forstner bit. The hinge is fixed by either a couple of wood screws or a clever lever for the Blum Inserta style. Although easy to install the concealed hinge is prone to sagging if the loading has not been accurately assessed. This requires you to take into consideration the width of the door as well as the height. All of the suppliers I have dealt with supply information to make this straightforward. Should you need to use this type of hinge on a curved door you will need to create a flat area where the cup sits into the back of the door. *F&C*



Concealed or kitchen hinges are used in mass production and knock down furniture as seen in this kitchen cabinet

In the second part of this series Peter discusses the various types of locks available and suggests some tips to make sure you make the right choice