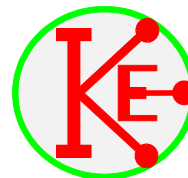


Balancing Wine Bottle.



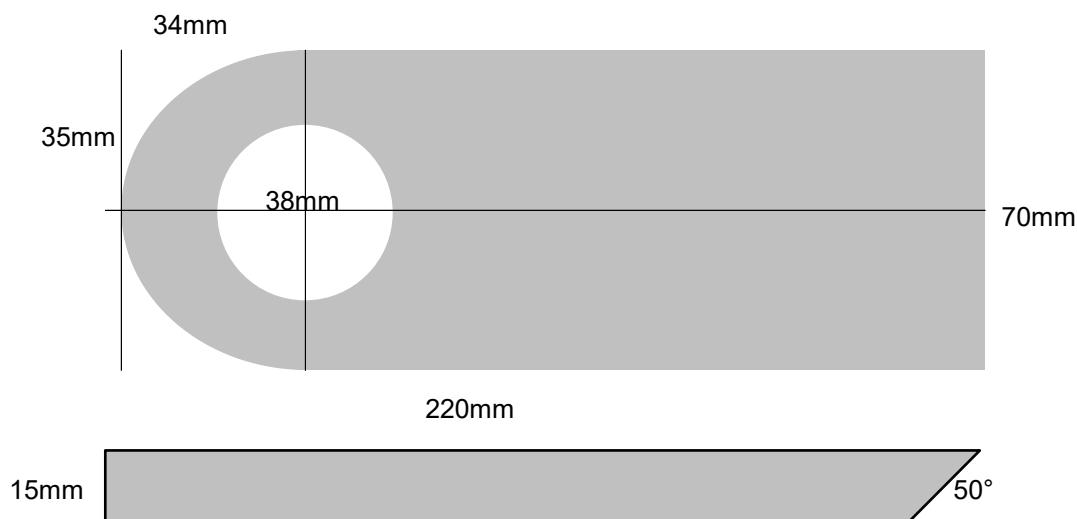
Materials

The support was made from a piece of soft wood 15mm thick, 70mm wide and 220mm long.

A 50° mitre cut is made at one of the long ends.

It is important that the surface of the mitre cut is flat to ensure stability.

A 38mm diameter hole was cut 34mm from the other long end.



Setting Up.

It is recommended that initial trials are made with an empty wine bottle and then retested with the wine bottle refilled with water, just in case there is a problem!

Place the mitred end on a solid flat surface (e.g. a table top), so that the wood is at an angle of 50° to the surface. Put the neck of the bottle through the hole, and carefully adjust the position of the neck in the hole until the bottle balances

NOTE: Since the Centre of Mass of this arrangement is above the support, it is not unconditionally stable, and if displaced too far, it will topple over!

Modifications

Using thicker the wood, the more stable the arrangement will be, though the angle of the mitre cut may need to be changed (45°)

Changing the width of the wood should not alter the stability or balance point.

Use better quality wood (e.g. hard woods like mahogany etc), stained, varnished or polished.

Changing the length will affect the balance point and will also need a change in the mitre angle.

It should be remembered that the centre of mass of the bottle and support must be above where the support rests on the flat surface.

An interesting variant would be to make the support from clear plastic - the bottle could then appear to hover above the flat surface!