

Spinning

also known as spin forming or spinning or metal turning most commonly, *it is a material working process by which a disc or tube of metal is rotated at high speed and formed into an axially symmetric part*. Spinning can be performed by normal or CNC lathe. Metal spinning does not involve removal of material, as in conventional wood or metal turning, but forming (moulding) of sheet material over a present shape.

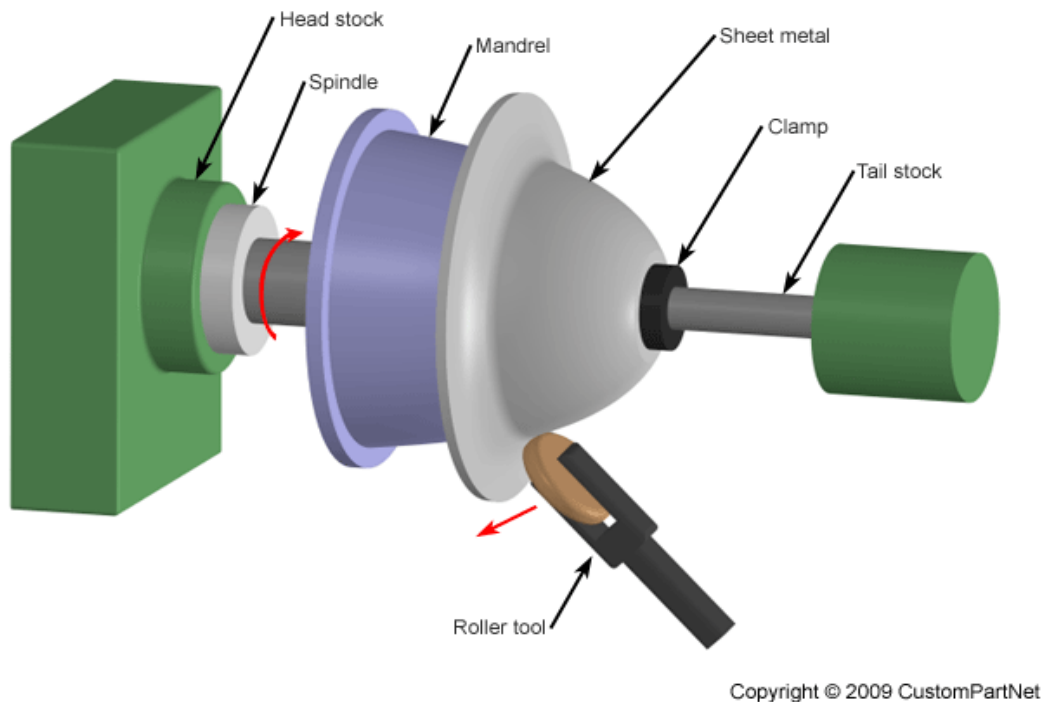


Fig. 4 Spinning working

The spinning process is fairly simple. A formed block is mounted in the drive section of a lathe. A pre-sized metal disk is then clamped against the block by a pressure pad, which is attached to the tailstock. The block and workpiece are then rotated together at high speeds. A localized force is then applied to the workpiece to cause it to flow over the block. The force is usually applied via various tools. Simple workpieces are just removed from the block, but more complex shapes may require a multi-piece block

The basic hand metal spinning tool is called a spoon, though many other tools can be used to effect of varied results. Spinning tools can be made of hardened steel for using with aluminium or solid brass for spinning stainless steel or mild steel.

Advantages & disadvantages

Several operations can be performed in one set-up. Work pieces may have re-entrant profiles and the profile in relation to the center line almost unrestricted. Forming parameters and part geometry can be change quickly, at less cost than other metal forming techniques. Tooling and production costs are also relatively low.

Other forming methods generally have a higher fixed cost, but a lower variable cost with metal spinning. As machinery for commercial applications has improved, parts are being spin with thicker materials in excess of (25mm) thick steel. Conventional spinning also wastes a considerably smaller amount of material than other methods.