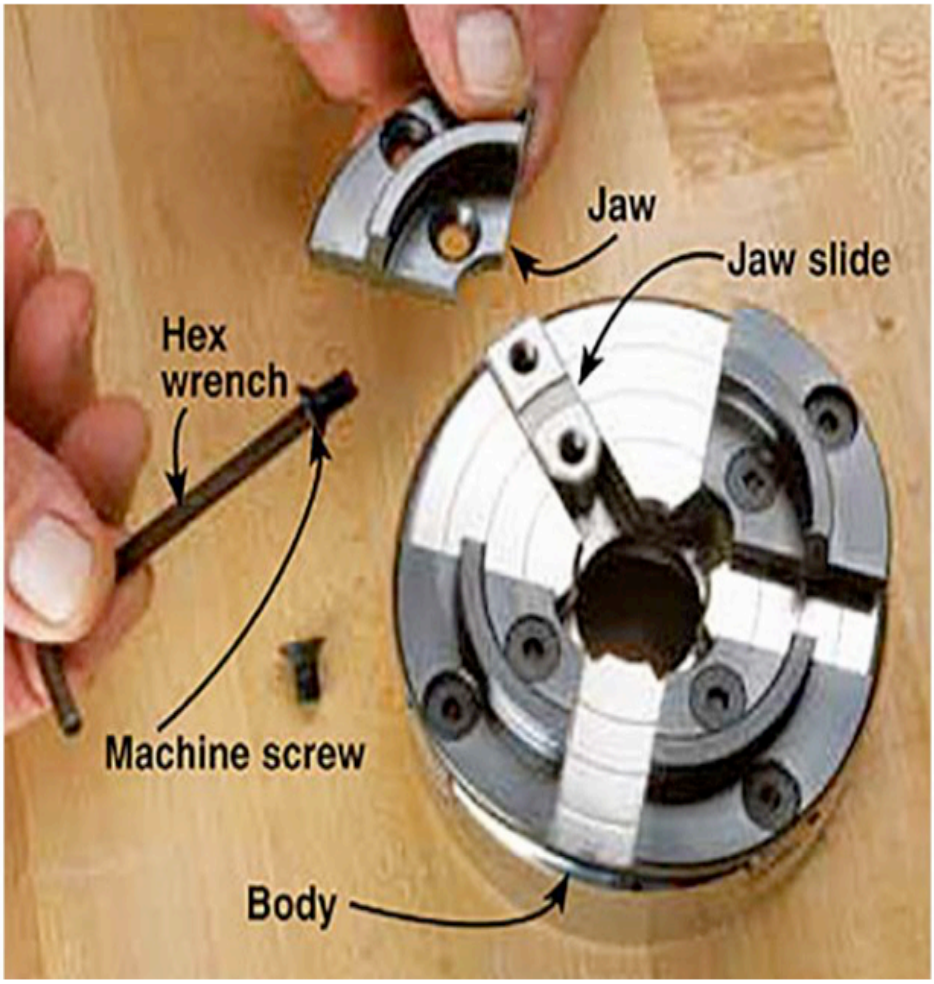
Four-Jaw Lathe Chuck

With prices ranging from about $35 up to $280, you're probably asking yourself why you should buy a four-jaw chuck for your lathe. Here are some of the best reasons:

- Chucks provide quick, accurate, and positive centering of bowl blanks and standard turning squares.
- There's no need to glue a waste block to your turning blank or give up bowl-blank thickness to accommodate the screws needed to fasten it to a faceplate.
- When using a chuck to turn a bowl from green stock, you can rough it out, remove it from the lathe, and then later remount it with greater ease and convenience than with faceplate mounting.
- Accessory chuck jaws are available to hold work as small as a ¼ "-diameter tenon on a miniature vessel and as large as the rim of an 18"-diameter platter.
- You can turn a bowl and finish it inside and out with little or no trace of how it was held on the lathe.



How a chuck works

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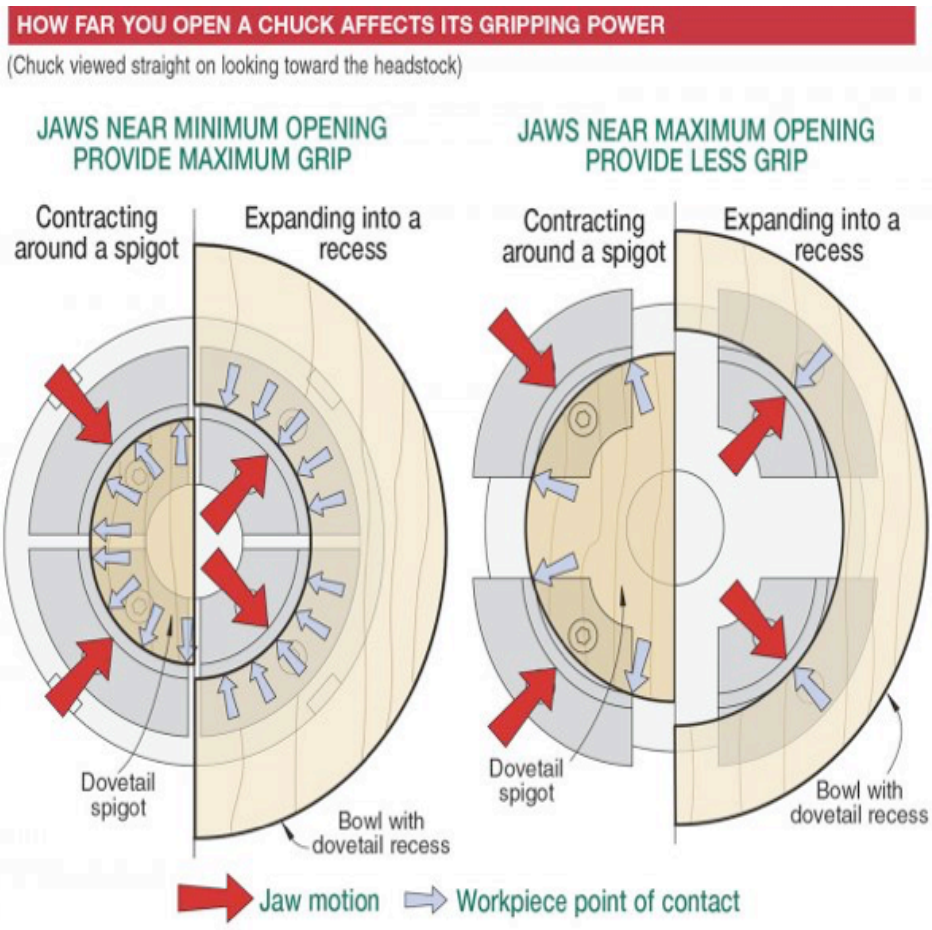
A chuck consists of a body, jaw slides, and jaws. Internal spiral gearing moves all four jaws simultaneously, keeping them equidistant from the center of the chuck body. The jaws operate with twin levers or a single key. Lever action requires either the simultaneous use of both hands, or temporarily locking the lathe spindle to adjust the chuck with one lever. Single-key chucks offer the advantage of one-hand operation without the necessity of locking the lathe spindle. One-hand tightening or loosening leaves the other hand free to control stock when mounting it or a finished piece when removing it from the chuck.



How a chuck grips

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Chuck jaws either contract around a turned spigot (round tenon) or expand into a hollowed-out recess. In contracting mode, the jaws commonly supplied with chucks grip spigots from 1 ½ " to 3" in diameter. These same jaws expand into turned recesses from 2" to 3 ½ " in diameter.

Because chuck jaws form a circle when completely closed, they make continuous contact when contracting around a spigot or expanding into a recess that is just slightly larger than the diameter of the circle, as shown *above left.* This provides the greatest holding power and safest operation. As the jaws approach their maximum open position they make only point contact with the workpiece, as shown *above right.* Gripping only at these points (eight in contracting mode, or four in expanding mode) is less secure and risks marring the wood. Manufacturers offer accessory jaws to cover a wide range of gripping diameters.