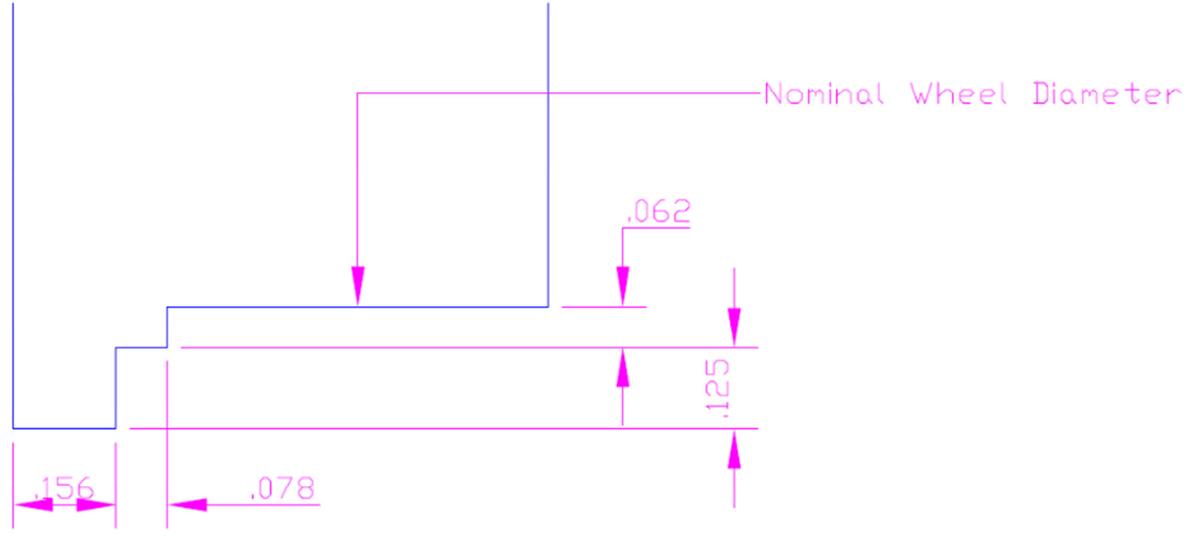
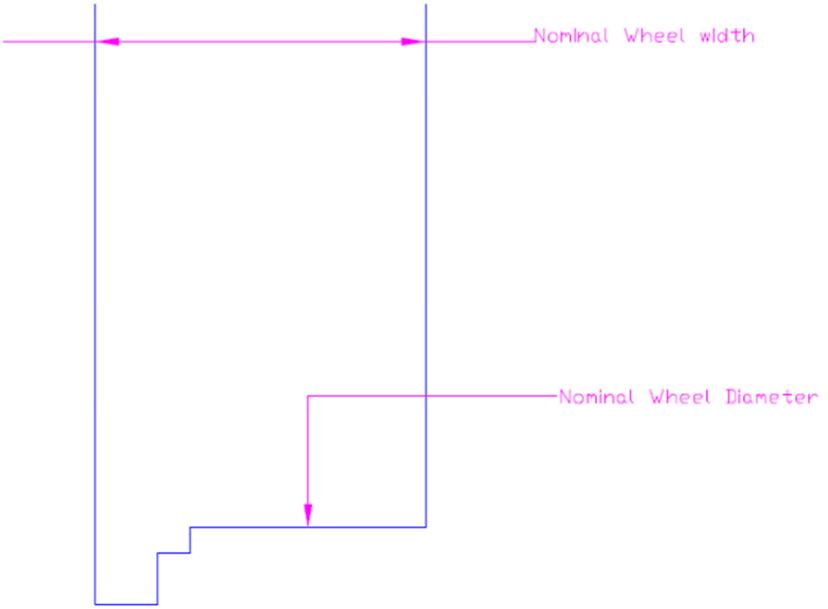
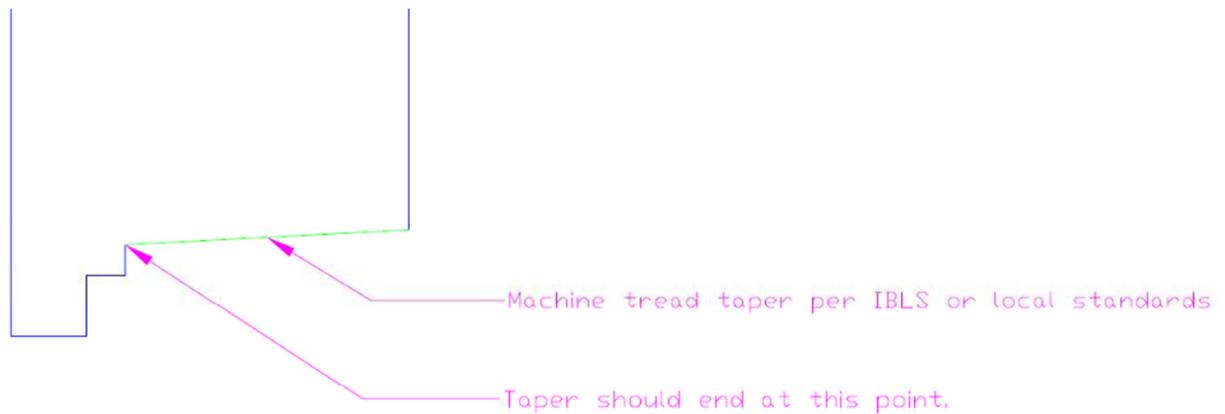


This is my experience on machining wheels using flange form tools. There are many ways to accomplish machining wheels, and the use of a form tool is the method that works best for me. I am always available to provide any help or recommendations, and I welcome your feedback, recommendations, and project status.

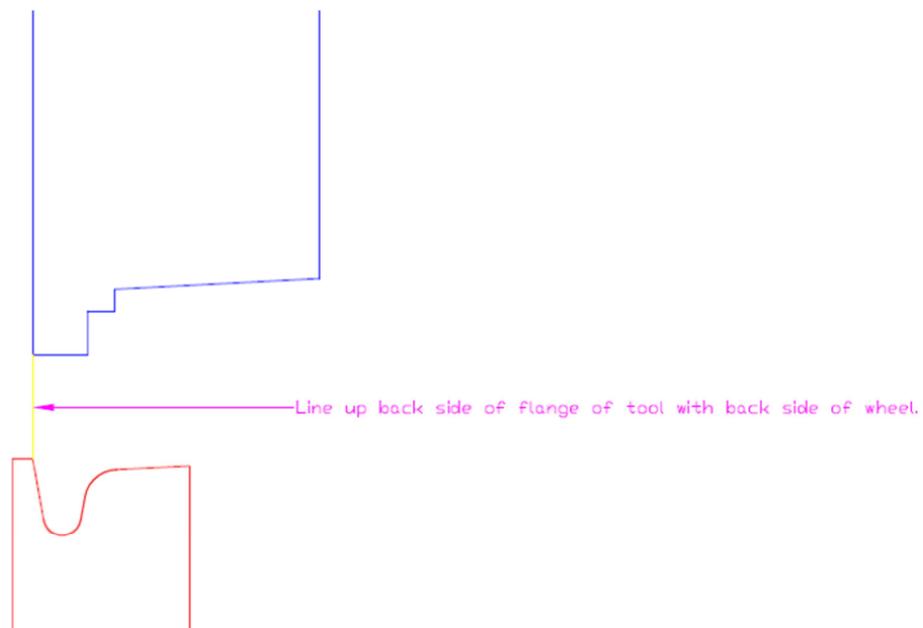
1. I start machining wheels by placing the wheel casting in the lathe using a 4-jaw chuck with the back facing out to face the back side of the wheel. I find the center of the wheel using the hub and inner surface of the rim.
2. Once I am satisfied the wheel is centered and flat against the jaws (unless you need a spacer to keep it lined up in a vertical plane), I face the back of the wheel as much as necessary to the reference dimension of the hub or spoke depending on the reference drawings.
3. After I face the back as necessary, I bore the axle hole in accordance with the reference drawings.
4. Once that step is complete, I remove the wheel from the lathe and machine the remaining wheels to this point.
5. Place the wheel casting back in the 4-jaw chuck with the machined surface against the jaws.
6. Face the front of the wheel to the width dimensions of the hub and wheel per reference drawing.
7. Once the wheel is faced to the thickness per the reference drawings, remove the wheel from the lathe and machine the remaining wheels to this point.
8. Once Step 7 is complete, I place an arbor in the lathe that the wheel will be placed on for final machining in the lathe. This arbor needs to be machined and indicated so that wheel after machining will be concentric with axle bore.
9. Place the wheel on the arbor and secure it.
10. Rough the thread and flange as per attached drawing below.



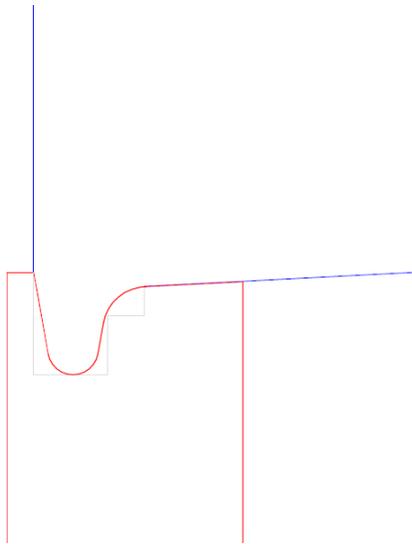
11. Once the wheel thread and flange are roughed to above dimensions, I machine the taper of tread on the wheel per IBLS or local standards. See below figure.



12. Once the wheel tread taper is machined, place the form tool in the tool holder and ensure the tool is straight or parallel to the wheel face. Line up the back side of the tool flange with the back side of the wheel. See below figure.



13. With the lathe running in its slowest range (the slower the spindle speed the better), slowly advance the tool into the wheel. The feed rate will have to be judged by feel. Don't force the tool but advance as necessary to prevent chatter. Advance the tool until the crown of the flange is formed and the thread taper of the tool meets and blends with the thread taper of the wheel. See below figure.



14. Back out the tool and move to the next wheel.