

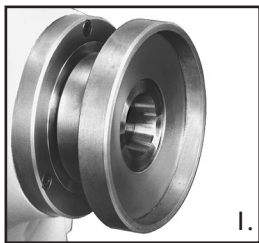
## Hardinge® Emergency Step Chucks

Hardinge Emergency Step Chucks are supplied with pin holes and pins for precision machining. This built-in feature will provide greater accuracy, convenience and precision results. All step chucks are shipped with a package of pins to be used when boring out step chucks. Pins are located on a diameter beyond the maximum rated capacity of the step chuck. This permits boring the step chuck to full capacity without cutting into pins. Pins can be used, removed and saved for future boring operations.

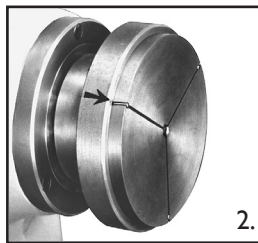
The instructions below illustrate a lathe with a 5C spindle. The method is the same for all Emergency Step Chucks (5C, 16C, 20C, 25C, etc). Closers are bolted onto the 16C, 20C, and 25C Spindles (A2-5, A2-6 and A2-8) whereas the 5C Closers are either threaded on or taper locked.

## Boring a Step Chuck to Size

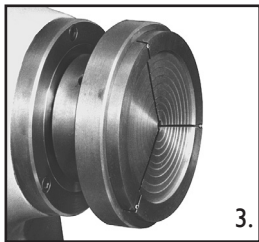
(5C spindle shown)



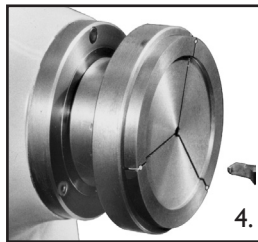
1.



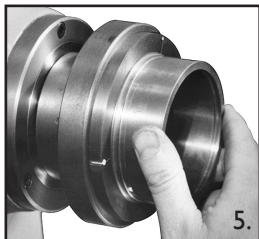
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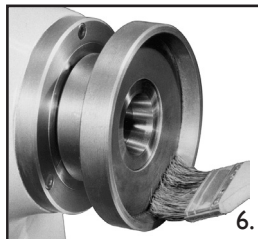
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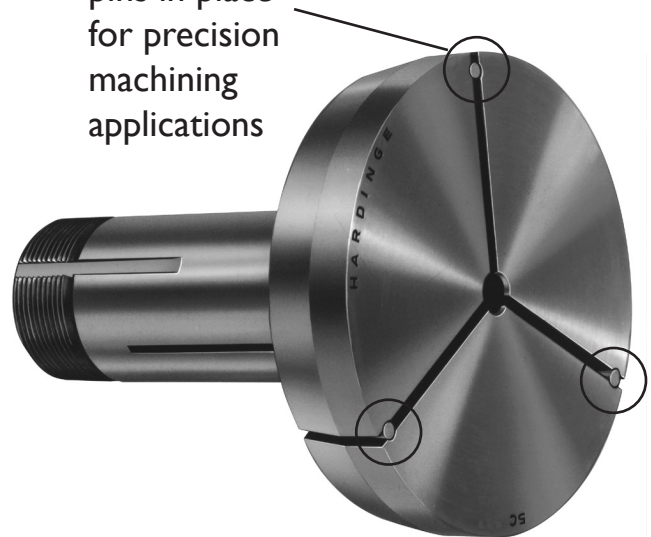


5.



6.

Bore with pins in place for precision machining applications



1. Clean the nose of the spindle. Apply a few drops of oil to the outside of the spindle. Clean the spindle bore of the step chuck closer. Apply the closer to the headstock spindle and tighten the closer with a spanner wrench using a Williams or Armstrong spanner wrench No. 460. Do not use a punch and hammer.
2. Clean the inside of headstock spindle and the outside of the step chuck. Apply the step chuck to the spindle and collet closer. Be sure that the pins are in place. Adjust the collet closer and close the step chuck.
3. Rough bore the step chuck to a size slightly **smaller than** the desired finished size using a sharp carbide boring tool. The step chuck may be rapidly bored by using the plunge-cut stepping method.
4. Finish bore to the exact size of the part to be held. Face the bottom of bore in the step chuck. If the section of the part to be held has a sharp corner, undercut the corner of the bore in the step chuck. Bore to the **exact size** of the diameter to be gripped.
5. Clean the bore of the step chuck. Use a precision air or mechanical gage to check the diameter of the bore. If a gage is not available, use the part as a gage. The part should fit into the step chuck like a good precision plug gage fit.
6. Remove the step chuck. Clean the step chuck closer and spindle. Wipe a few drops of oil on the angle of the step chuck closer and inside the spindle. Perform this operation occasionally during a production run to assure accuracy.
7. Remove the pins from the slots of the step chuck. Clean and deburr each slot of the step chuck removing all chips. Apply the step chuck to the machine spindle. Adjust the collet closer for tension and you are ready to run production.