How it Works

A chuck is a clamp used to hold the workpiece. Haas lathes use either a hydraulic chuck or a manual chuck.

**Hydraulic chucks** use a center drawnut to pull or push a sliding wedge mechanism, which moves the master jaws in or out. Attached to the master jaws are removable jaws that clamp the workpiece. T-nuts tighten each removable jaw's serrated face to a matching surface on the master jaw. You can attach the removable jaws at different points along the master jaws' travel to adjust them for different sizes of material.

**Manual chucks** use a removable tool to turn an internal cam, which moves the top jaws in or out. The removable top jaws are fixed to the chuck's master jaws with mounting bolts. You can adjust the chuck for material size only with the removable tool.

There are two types of chuck top jaws: hardened pre-formed jaws, or soft jaws. You must cut soft jaws to fit the workpiece.

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Section 1

Symptom: Part moving in the chuck. Low clamp force.

Probable Cause: No lubrication.

Corrective Action:

Grease the chuck. Lack of lubrication can greatly reduce the clamp force in a chuck. Refer to the diy.haascnc.com for a video on proper chuck maintenance.

Section 2

Symptom: Part moving in the chuck. Low clamp force. Finish issue or taper in the part.

Probable Cause: Incorrect hydraulic pressure.

Corrective Action:

Set the hydraulic pressure correctly for the size and material you are cutting.

Too low of pressure can cause the workpiece to spin or pull out of the chuck.

Too high of pressure can cause the chuck jaws to “heel” on the part allowing it to move creating finish issues. High pressure may also cause the part to be deformed.
### Section 3

#### Symptom:
Part moving in the chuck. Low clamp force. Finish issue or taper in the part.

#### Probable Cause:
Incorrect chuck setup.

#### Corrective Action:
Select the correct jaw type for the material being used.

- Rough, unfinished bar stock is held better with hard jaws.
- Clean or turned stock is held better with soft jaws.

Jaw marks can also be reduced or eliminated with soft jaws.

Refer to [diy.haascnc.com](http://diy.haascnc.com) for information on how to properly cut soft jaws.

Use a feeler gauge to check for gaps between the chuck jaws and the work piece when clamped. Make sure the jaws grip the part in the middle of the jaw stroke.

Use a spud or boring ring to properly load the chuck before cutting soft jaws.
Section 4

Symptom: Finish issue or taper in the part.

Probable Cause: Loose or damaged jaws.

Corrective Action:

Remove the workpiece and clamp the chuck. Check each chuck jaw for motion, there should be none.

If there is motion, check if it is in the master jaw or in the removable jaw.

- If there is motion in the master jaw, the chuck is damaged.
- If there is motion in the removable jaw, inspect the bolt length and T-nut.