

Birla Precision: Spring Jaw Chuck

You mention a Spring-Jaw chuck. How does it function?

This is somewhat of a second cousin to the Diaphragm Chuck. It operates in much the same fashion. An air or hydraulic cylinder provides a push on the bar, which forces open the Spring Jaws. When the pressure is released, the jaws return and grip the work piece. Here too, the gripping power is about 90 percent of that required to release the jaws. The main difference between the Diaphragm Chuck and Spring Jaw Chuck is that In Spring Jaw Chucks each individual Jaw has an ability to apply independent clamping force on workpiece whereas Diaphragm Chuck is a solid disc. For this reason, the spring-jaw chuck can better accommodate some variations in work pieces and it does a better job of naturally squaring the workpiece as it is gripped. The Spring-jaw chuck is often used to hold gears.

The Jaws are equipped with pins to locate on the pitch diameter of the gear as shown in Fig A. Another variation is the use of Spring Jaws to hold cages. FIG.B

Types of Medium Gear Production, Spring Jaw Chucks Based on operating System are

- Air Drawbar operated
- Hydraulic Drawbar operated
- Manually operated

Main Advantages of Spring Jaw Chucks are

1. Accurate holding from the pitch line of gears.
2. Errors Average out.
3. Universal.
4. Two level, double diaphragm effect chucking possible with standard chuck.
5. Jaws act independently. FIG. C



6. Jaws, Cages, Locating Pins and End Stops are ...ALL INTER-CHANGEABLE.
7. Cages can be furnished for other chucks.
8. Chucks for all Bevels- Spur, Spiral, Hypoid etc.

SINGE ROW TYPE

Special locating pins hold this part securely for deep hole grind. Special pins are available for soft tooth gears.

Gear Chucks (Spring Jaw Type)

Model	: Gear Range(Pitch Dia)
GCS 200	: 25-125 mm
GCS 280	: 100- 200 mm
GCS 370	: 190-290 mm
GCS 455	: 280- 380mm

SPRING JAW ARE AUTOMATICALLY SELF - COMPENSATING

Each Jaw will operate independently thus giving accurate location from all

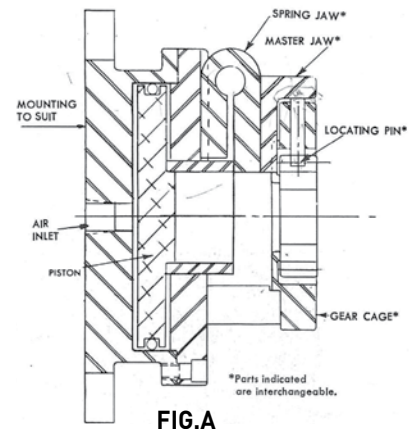
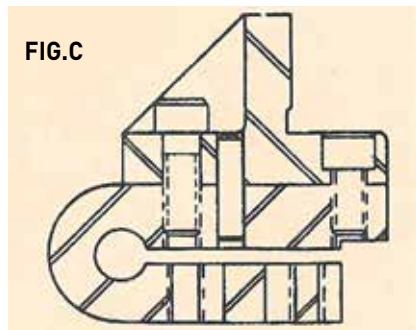
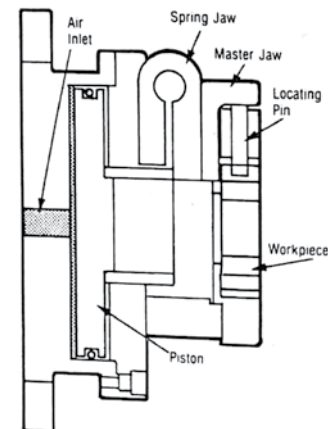


FIG.A

segments even though there might be out-of-roundness due to distortion in heat treating or machining. "Averaging out" the errors improves the quality of gears at no extra cost.

If gear teeth are to be ground on later operations, a Gear Chuck should be used to grind the bore so that grinding allowance will be uniform on the teeth when they are ground to prevent burning or cracking – thus running the part on the last operation.



Cages for Existing Chucks

A variety of cages can be furnished for all chucks. Send us your problems, along with gear details drawing and machine details.



FIG.B

For more information
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