

SHRINK FORGING COSTS

IMPROVE ACCURACY

Working on the radial stretch forming principle, an automated expander is used to create highly accurate ring forgings. The importance of accuracy can hardly be overestimated.

Materials include virtually all high-strength alloys and other formable super-metals. The accuracy of the expander eliminates the need for excess material to provide for heavy machining of the ID's of the forgings. Allowances for machining formerly ran as high as 1/2" per surface. The ovality of forgings produced by conventional mandreling process could produce as much as 200 lb of scrap. The newer ring rolling mill process is even more efficient with less material input, but is still not perfect.

When expanders are used in conjunction with ring forging process, exceptional parts are made.

SAVE TIME

Machining time is a given, but less heats are also a benefit. The expander is fast enough to stretch a ring and save 20% of the heats required. Some profiled parts can be partially formed on the expander.

IMPROVE QUALITY

Another benefit is the improved quality of the forging. The rough rings are formed in a method that allows localized thinning. The segmented dies operate in a manner that draws from the entire body of the ring. Grain structure and other material properties can be improved along with relieving stress.



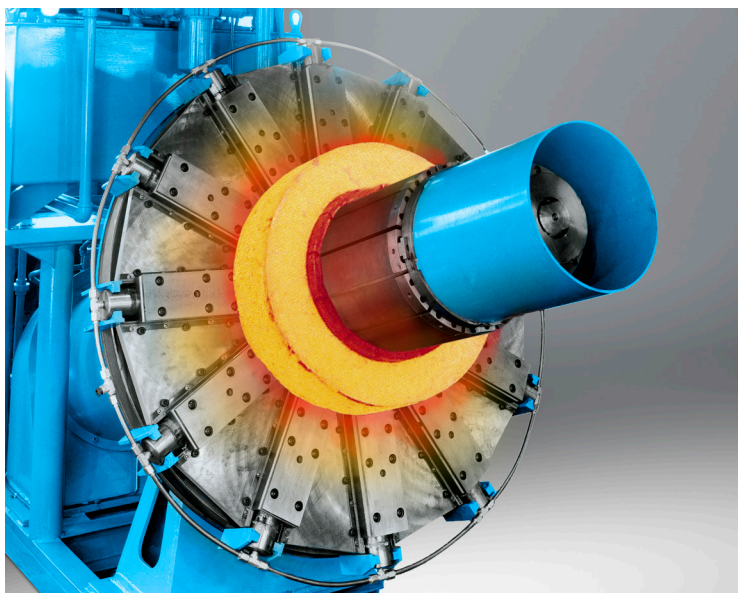


EXPANDING

Sizing Ring Forgings

MACHINE FEATURES

- Water Cooled Jaws
- 50 to 5,000+ tons of force
- Tooling for different diameters is easily changed
- User friendly controller
- Recipe driven for process control
- Predictive Spring-back
- New Safety features
- Tool Change options



WHY GROTNES ?

- 120+ years of history
- Process knowledge from around the world
- Investment in R&D and Continuous Improvement
- A true partner in manufacturing

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