Smarter Clamping Starts at the Core

Discover how Gleason's reengineered segmented collets optimize ID workholding with advanced materials, broader expansion ranges, and proven long-term durability

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Modular workholding device with segmented collet.

Benefits

- Industry standard, compatible with most common workholding devices.
- Standard version from 20–120 mm in very fine increments of 0.25 mm.
- Large expansion areas thanks to highly flexible vulcanization between the segments.
- Vibration damping through vulcanized segments.
- Concentricity accuracy of ≤ 0.005 mm.
- Pull back feature to ensure positive seating.
- Auto load compatible.

The latest generation of segment collets from Gleason ensures exceptionally accurate and reliable clamping in the part bore, while the new segment clamping sleeves' universality enables clamping a wide range of components.

Flexibility Is Key

Adaptability and flexible production are now possible even for small batch sizes. The frequent changeover between workpiece types shows the weaknesses of conventional fixtures for clamping on the inside diameter, which are often not flexible or sufficiently reliable.

Workholding systems that use segmented collets that expand to exert a centering and clamping effect in the diameter of the workpiece bore are among the best solutions available for flexible production environments. Workholding systems with segmented collets show their strengths equally with small batches and a large variety of parts. As a single collet can accommodate a whole range of different bore diameters within its clamping range, its use results in greater flexibility and simultaneous cost savings, as both equipment costs and non-productive times are reduced almost automatically.

Segmented collets usually consist of an assembly with segments made of high-strength steel, which are joined with vulcanized high-tech elastomer using an injection molding process. This combination provides a larger expansion range than steel alone and also dampens vibrations. The expansion (chucked) or contraction (de-chucked) of segmented collets is usually carried out with an expander, which is actuated by a draw rod within the production machine. When the drawbar is actuated, the expander causes the segmented collets to expand and exerts a particularly rigid clamping effect via the end face, respectively, a pulling effect on the workpiece.

Blue Means Precision

Gleason segmented collets are recognizable by the typical blue color of the high-tech elastomer and can be used on workholding devices from all common manufacturers. The standard product line of segmented collets covers a range from 20–120 mm in fine increments of 0.25 mm, with an excellent concentricity of ≤ 0.005 mm. Additionally, Gleason manufactures clamping collets according to customer specifications on request.

Reliability Rethought

To minimize or ideally eliminate the occurrence of excessive wear, fatigue and runout, Gleason segmented collets are designed from the ground up: In addition to finite element analysis, the most rigorous life cycle testing using specific test fixtures is employed to perform actual chucking/de-chucking cycles of the prototypes, simulating many times the average life expectancy of a segment collets—with more than 1 million clamping cycles. The results of the long-term tests speak for themselves: No signs of fatigue with a constant concentricity error of ≤ 0.005 mm.

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