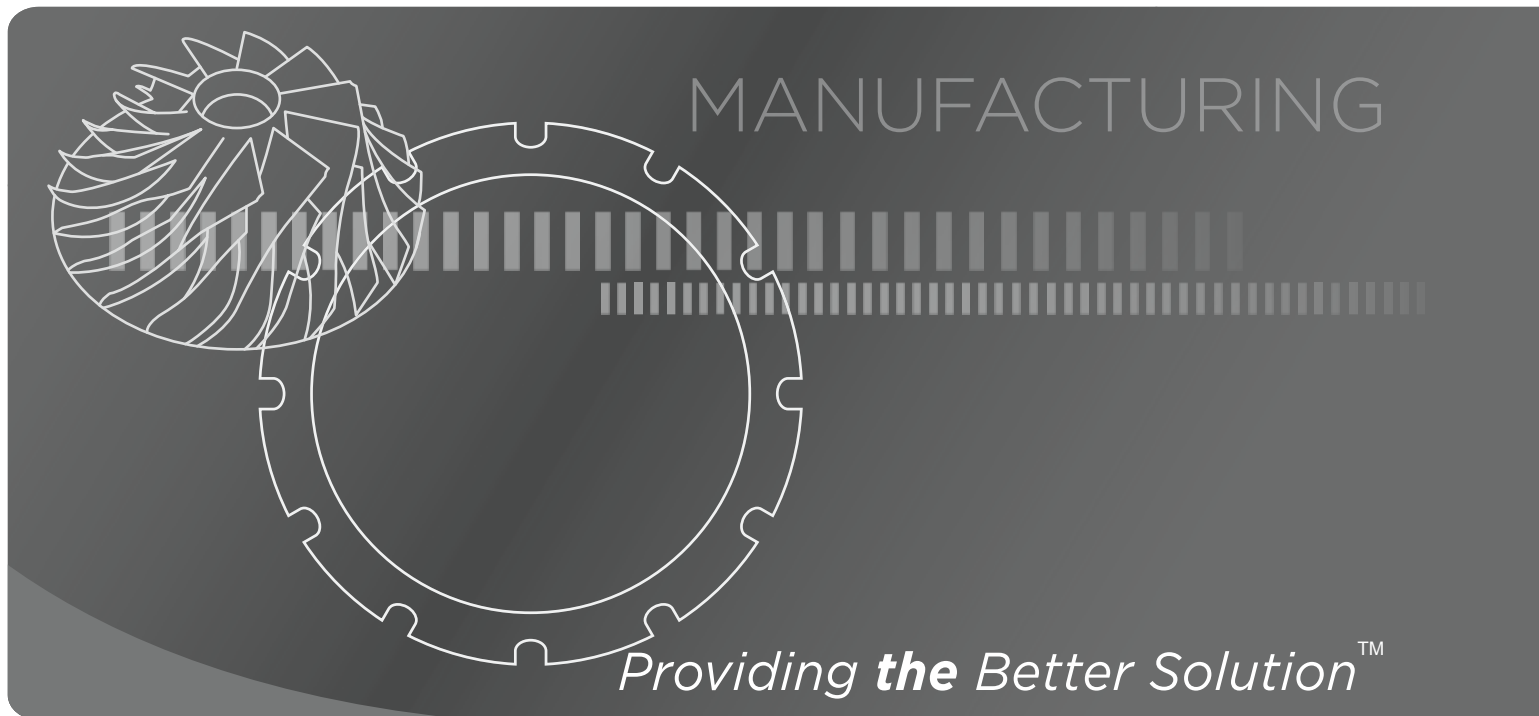


Hydraulic Expansion

Arbors, Chucks, Specialty Fixtures & Gauges



Build to Print

Rhinestahl AMG specializes in build to print as well as custom designed projects. Rhinestahl AMG can manufacture your hydraulic tooling, specialty fixtures and gauges quickly and within budget. Our design group can take your manufacturing problem and turn it into a productive solution. Rhinestahl AMG capacity and capability provide our customers with a broad range of outsourced manufacturing possibilities.

Engineering

Rhinestahl AMG hydraulic arbors, chucks, specialty fixtures and gauges are custom designed to meet the customer's specific design requirements and needs. Please furnish the following information with your inquiry:

Part Print

Part Print of sketch showing diameters or surfaces to be located and their tolerances.

Operation

Type of operation: turning, grinding, inspection, balancing, etc. Also, please identify all surfaces and operations to be performed.

Mounting

Information such as flange, between centers, machine taper, etc. and make or model of machine.

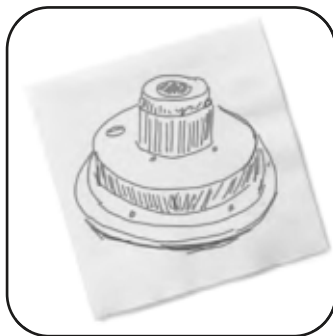
Actuation

Specify type of actuation desired, manual or power.

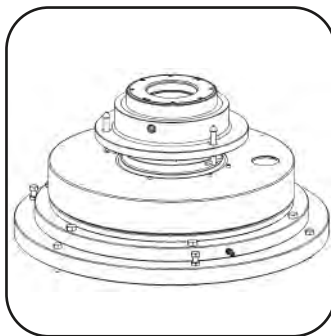
Tolerance

Specify T.I.R. tolerance required on all locating surfaces.

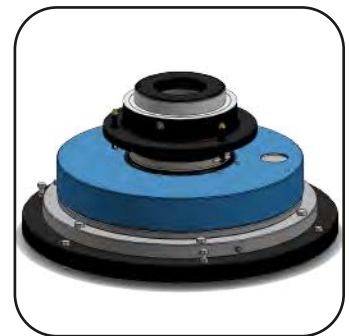
All of your inquiries will be carefully analyzed from original concept thru Design and Modeling to provide you a "BETTER SOLUTION" for your precision tooling need. Providing a finished tool that comes in within budget, on time and performs as required to allow you to meet your manufacturing need.



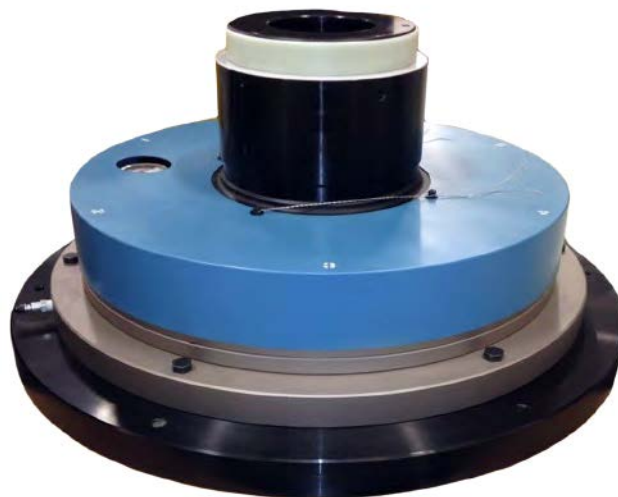
Concept



Design



Model



Finished Tool



Operating Principles

Rhinestahl AMG precision arbors, chucks and specialty fixtures operate in the same basic principle. The part is installed into the arbor, chuck or fixture. The arbor, chuck or fixture is actuated by turning an Actuation Screw that activates a Self Contained Hydraulic System to grip the part with equalized pressure, centralizing the part around its true part centerline. Grip force is exerted equally 360 degrees around the part that the arbor, chuck or fixture was engineered to grip.

A counter-clockwise turn of the Actuate Screw releases the part. Dirt/Chips and or any other foreign material are minimized as the system is self-contained and sealed. Distortion of the part is not an issue as the arbor/chuck or fixture is designed to the specific part in which the arbor, chuck or fixture is gripping. The Hydraulic Chamber under the Expanded Sleeve performs as a dampener to reduce both Tool Chatter and Wear.

Applications

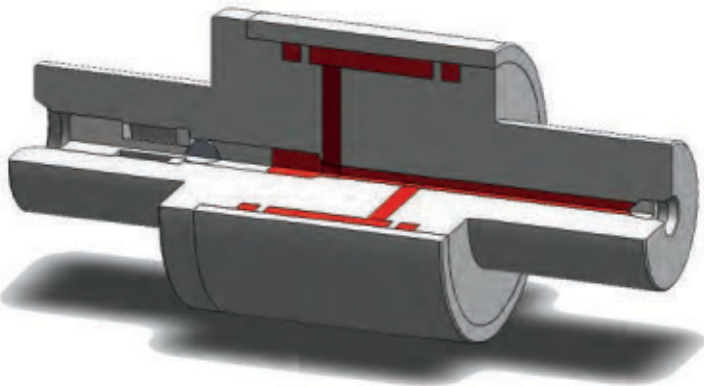
Rhinestahl AMG precision hydraulic arbors, chucks and specialty fixtures are used where accurate centering, repeatability and positive clamping are a necessity. Operation is fast and reliable on automatic equipment as well as general purpose machinery. Rhinestahl AMG expansion arbors and chucks are designed to accurately locate and securely hold parts in place while performing a variety of operations. The expansion or contraction is obtained by hydraulic pressure which expands or contracts the steel sleeve within the elastic limits of the metal. The hydraulic pressure ensures that the sleeve expands or contracts uniformly around the axial centerline of the work piece resulting in true, absolute centering and positive clamping.

Rhinestahl AMG arbors and chucks provide the ultimate in accuracy and are manufactured to exacting standards and precision tolerances. All units are precision ground within .0002 T.I.R. as standard and up to .000025 T.I.R. for critical applications.

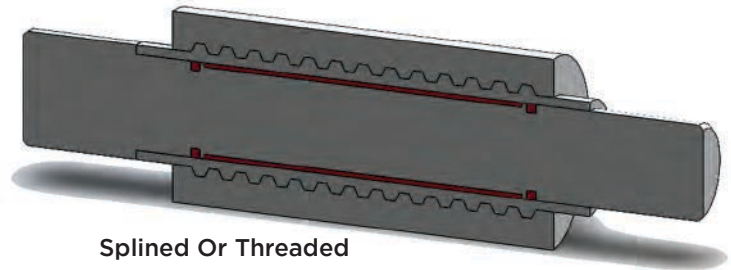


Actuation

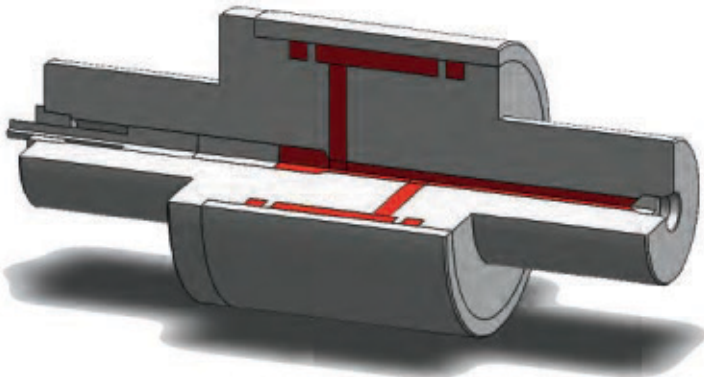
There are numerous methods of actuation. The most common method is manual via an actuator screw which can be located at the most convenient place to suit the application. The actuator may also be operated from an external source such as an air cylinder for automatic power actuation. A few examples are shown below.



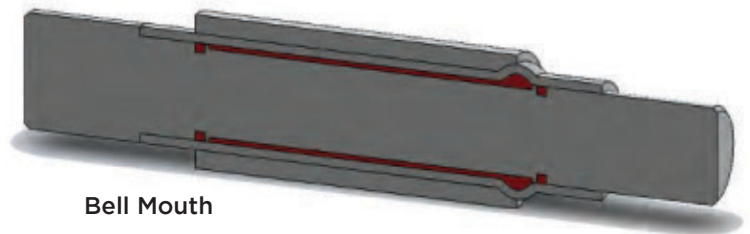
Arbor Manually Actuated From End



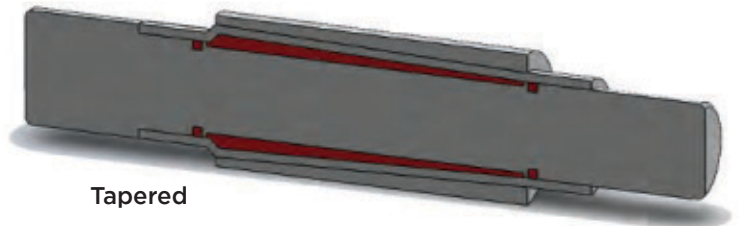
Splined Or Threaded



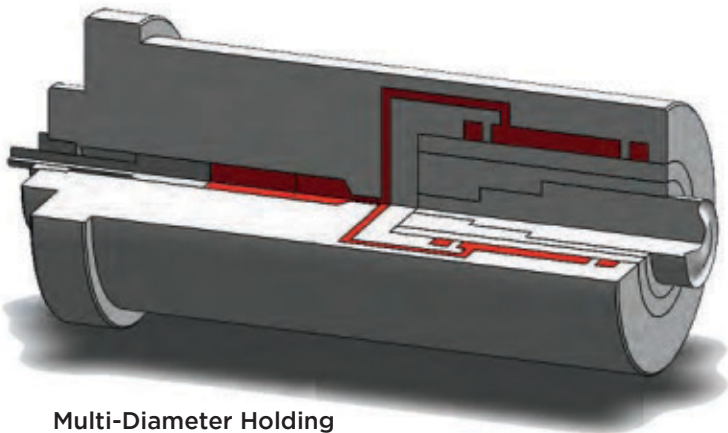
Arbor Power Actuated From End



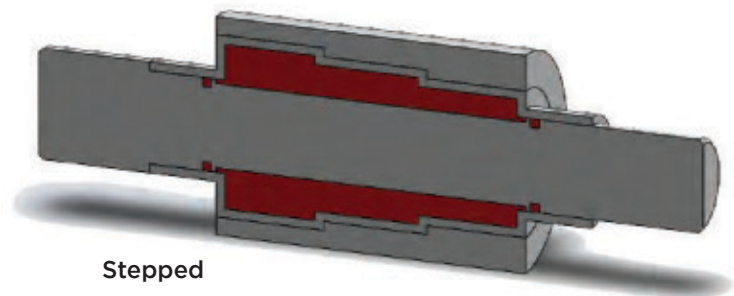
Bell Mouth



Tapered



Multi-Diameter Holding



Stepped

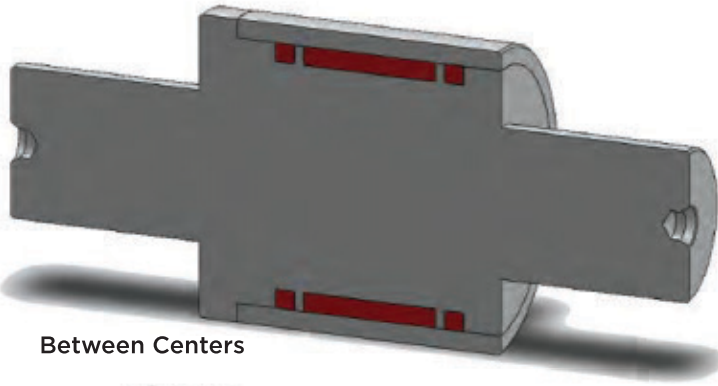
Centering

Rhinestahl AMG precision hydraulic arbors, chucks and specialty fixtures locate uniformly around the axial centerline of the work piece assuring positive centering regardless of part shape as shown in the illustrations. The sleeve expands or contracts to the workpiece conforming completely to its shape regardless of inaccuracies due to part tolerance or any of the other conditions shown. Parts of various sizes and shapes are also accommodated, such as splines or threaded parts.

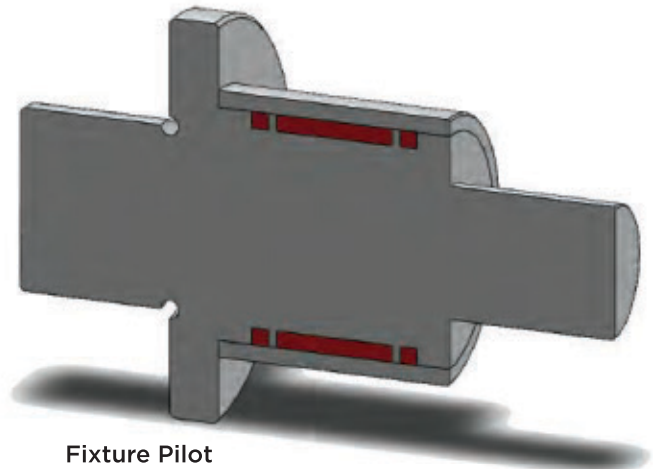
MANUFACTURING

Machine Adaptability

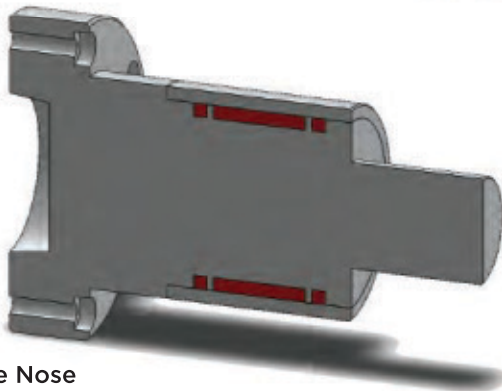
Rhinestahl AMG arbors and chucks can be mounted in virtually unlimited applications from machine spindle to set ups.



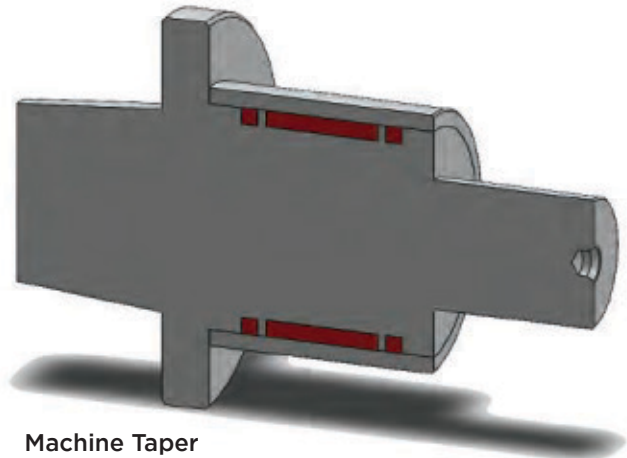
Between Centers



Fixture Pilot



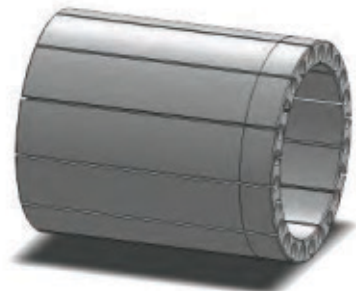
Spindle Nose



Machine Taper

Split Transfer Sleeves

With the use of precision split transfer sleeves, several parts with various inside or outside diameters may be held from one basic arbor or chuck. These transfer sleeves fit to the arbor or chuck with ease to ensure interchanging ability. This way you get the same positive centering and accuracy as the basic arbor or chuck itself.



Transfer Sleeve
Slip Fit on
Basic Arbor





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