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.

**Build to Print**

Hydraulic Expansion

Arbors, Chucks, Specialty Fixtures & Gauges

**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 prints of sketch showing diameters or surfaces to be located and their tolerances.

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  - 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.

- **Actuation**
  - Specify type of actuation desired, manual or power.

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  - 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.

**Rhinestahl AMG**

Advanced Manufacturing Group

Providing the Better Solution™

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Applications
Rhines tahl AMG precision hydraulic arbors, chucks and specialty fixtures are used where accurate centering, repeatability and positive clamping are required. Operation is fast and reliable on automatic equipment as well as general purpose machinery. Rhines tahl AMG expansion arbors and chucks are designed to accurately locate and securely hold parts in place while permitting a variety of work operations to be performed. Equalized pressure, centralizing 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 sleeve expands or contracts around the workpiece conforming to the workpiece 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.

Operating Principles
Rhines tahl AMG precision arbors, chucks and specialty fixtures operate in the same manner where accuracy, centering, and positive clamping are required. 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 free part centercircle. Grip forces are exerted equally 360 degrees around the part that the arbor, chuck or fixture was engineered to grip.

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.

Centering
Rhines tahl AMG precision hydraulic arbors, chucks and specialty fixtures locate 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.

Machine Adaptability
Rhines tahl AMG arbors and chucks can be used for both manual and automatic applications from machine spindle to set-ups.

Applications
Rhines tahl AMG precision hydraulic arbors, chucks and specialty fixtures are used where accurate centering, repeatability and positive clamping are required.
Operating Principles

Rhinestahl AMG precision arbors, chucks and specialty fixtures operate in the same manner. Accurately locate and securely hold parts in place while performing a variety of operations. The expansion or contraction is obtained by hydraulic pressure which ensures that the sleeve conforms to the workpiece 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 tolerances or any of the other conditions shown. Parts of various sizes and shapes are also accommodated, such as splines or threaded parts.

Applications

Rhinestahl AMG precision hydraulic arbors, chucks and specialty fixtures are used where accurate centering, repeatable centerline location 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. Accuracy in locating parts is obtained by hydraulic pressure which expands or contracts the steel sleeve within the elastic limits of the metal. The hydraulic pressure ensures the sleeve expands or contracts uniformly around the axial centerline of the workpiece resulting in positive centering and positive clamping.

Actuation

There are numerous methods of actuation. The most common method is manual via an actuator screw that activates a Self Contained Hydraulic System to grip the part with equalized pressure, centralizing the part around its true part centerline. Grips forces are exerted equally 360 degrees around the part that the arbor, chuck or fixture was engined 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 sleeve is equalized pressure, centralizing the part around its true part centerline. Grip force is completely to its shape 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 tolerances or any of the other conditions shown. Parts of various sizes and shapes are also accommodated, such as splines or threaded parts.

Centering

Rhinestahl AMG precision hydraulic arbors, chucks and specialty fixtures locate the part in 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.

Machine Adaptability

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

Multi-Diameter Holding

Arbor Manually Actuated From End

Arbor Power Actuated From End

Spindled Or Threaded

Belt Mouth

Screw

Tapered

Rhinestahl AMG

Stepped

Transfer Sleeve

Basic Arbor

Transfer Sleeve

Spline Nose

Machine Taper

Bellmouth/Cabinet

Flatloc Inlet

Machine Taper

Threaded or Slotted

Basic Arbor

Arbor Manually Actuated From End

Arbor Power Actuated From End

Split Transfer Sleeves

With the use of transfer split transfer sleeves the basic bore 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 interchange ability. This way you get the same positive centering and accuracy as the basic arbor or chuck itself.
Operating Principles
Rhinestahl AMG precision arbors, chucks and specialty fixtures operate in the same manner as the basic 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 designed to ensure that the part that the arbor, chuck or fixture was gripping is gripping. A counter-clockwise turn of the Actuate Screw releases the part. Dirt/Chips and or any other foreign material are prevented from entering the system by the use of precleaned, precut precision split transfer sleeves fit to the arbor or chuck with ease for multi-diameter holding. 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.

Applications
Rhinestahl AMG precision hydraulic arbors, chucks and specialty fixtures are used where accurate centering, repeatability and clamping is 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 accuracy locate and securely hold parts in place while performing a variety of machining operations. Performance is obtained by hydraulic pressure which expands or contracts the steel sleeve within the elastic limits of the metal. The hydraulic pressure ensures the sleeve expands or contracts uniformly around the axial centerline of the work piece resulting in multi-diameter holding, equalized centering and positive clamping.

Actuation
There are numerous methods of actuation. The most common method is manual via the actuation screw or an air cylinder for automatic power actuation. The actuator may also be operated from an external source such as a hand crank. 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.

Centering
Rhinestahl AMG precision hydraulic arbors, chucks and specialty fixtures locate the work piece assuming 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.

Machine Adaptability
Rhinestahl AMG arbors and chucks can be easily adapted for almost any application from machine spindle to set ups.

Multi-Diameter Holding
Arbor Manually Activated From End
Arbor Power Activated From End
Screw Releases the Part
Dirt/Chips and or any other foreign material are prevented from entering the system by the use of precleaned, precut precision split transfer sleeves fit to the arbor or chuck with ease. 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.

Split Transfer Sleeves
With the use of precision split transfer sleeves the 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.

Bellmouth Caustic
Flatten Pile
Machine Taper
Transfer Sleeve Grip Pin Basic Arbor
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