

# Centerline Inc

**Precision Spindle Engineering**  
**2110 N Ash – Ponca City, OK 74601**  
**800 696 2865 – [info@centerline-inc.com](mailto:info@centerline-inc.com)**  
**[www.centerline-inc.com](http://www.centerline-inc.com)**

- Ⓒ **Spindle Repair**
- Ⓒ **Precision Machining and Grinding**
- Ⓒ **New Spindle and Accessories Sales**
- Ⓒ **Maintenance Training Programs**
- Ⓒ **Spindle Engineering and Manufacturing**



# Spindle Repair

## Spindle Types

*Centerline repairs belt driven, motorized, high frequency milling spindles, lathe spindles, grinding spindles*



# Balancing

- ③ ***Dynamic and Static balance to G0.4 quality standard.***
- ③ ***State of the Art equipment to balance from less than 1/2lbs to 200lbs rotating mass.***
- ③ ***Balancing full assemblies***



# Analysis

Ⓒ *Vibration Analysis*

Ⓒ *Failure Analysis*



# New Sales



## SycoTec

*High Frequency Spindles, Drives and Accessories*



## Alfred Jäger

*High Frequency Spindles, Drives and Accessories*



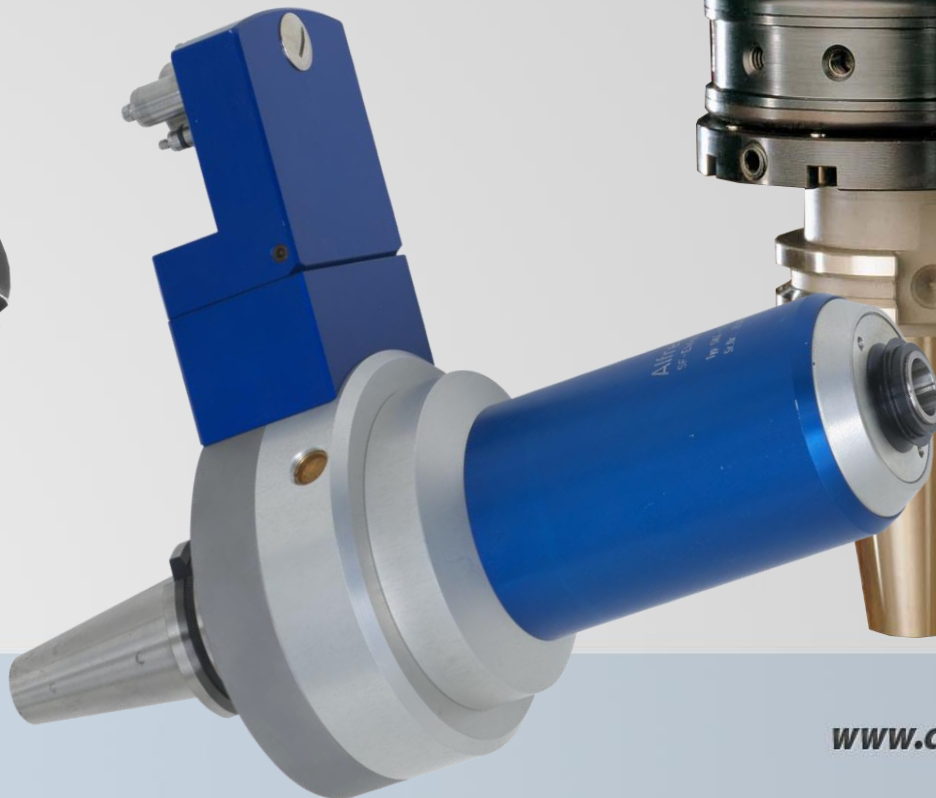
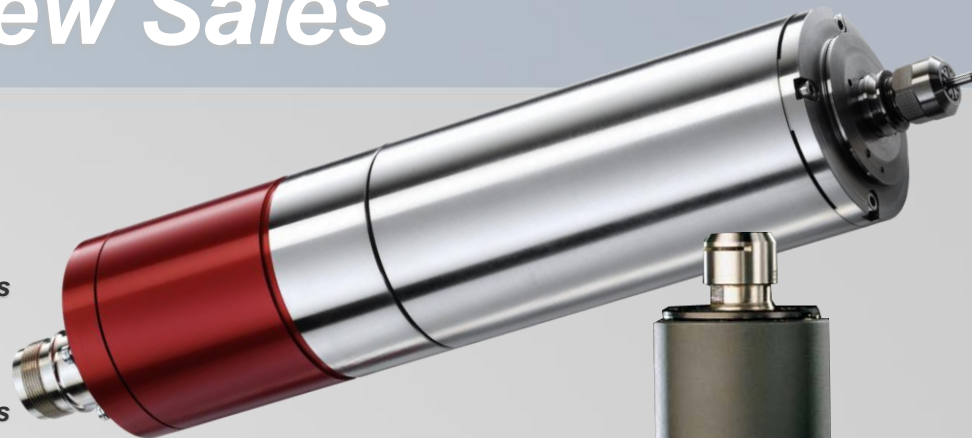
## Henninger

*Speeders, Angle Heads, Center Grinders, Tool and Work Holding Solutions*



## Ortlieb

*Tool and Work Holding Solutions*



Centerline Inc

[www.centerline-inc.com](http://www.centerline-inc.com)

# Engineering and Historical Data

## Ⓢ Improve Performance

*Application Specific Improvements, re: increase stiffness, improve finish, run faster, improve sealing system. Identify problems and engineer solutions. Centerline uses AutoDesk's AutoCAD for engineering and archiving technical drawings.*

## Ⓢ Track History

*Centerline's custom spindle repair software systems keep track of critical repair details including incoming and final QC inspection spindle performance data.*

The screenshot displays the AutoCAD Mechanical Power Pack interface. The main window shows a detailed cross-sectional technical drawing of a mechanical power pack. Below the main drawing, there are two smaller views: a circular end view on the left and a detailed view of a spindle component labeled 'CAT 41' on the right. The software interface includes a menu bar, a toolbar, and a command line at the bottom. A 'Work Order 11680' form is overlaid on the right side of the screen, containing various fields for project information, dates, and shipping details.

Work Order 11680				
Project	Select	BOEING (KS) CINCINNATI No 10	Work Order #	11680
Spindle Type	Cincinnati No 10 (A)			
Contact	Bill Goheen	Sales Rep	Mike Engster	
Log In Date	3/30/2009	Log Out Date		
Received Date	3/30/2009	Promised RTS		
EPA Date		Quoted RTS	6/4/2009	
Shipping		Ship Date		
Tracking/Waybill Number				
(EPA - Earliest Possible Assembly)		(RTS - Ready To Ship)		
Serial #	C9812	New Spindle	NO	
Boeing Spindle Id	0	Reference #	S147003	
PO #	S147003	Priority	STND	
<b>Repair Specific Info</b>				
[customer provided info : Remove cartridge from carrier and do full QC (generate full report, cartridge should be good) and go over the carrier for repair (suspected short in windings)]				
<b>Incoming Inspection</b>				



# Equipment

## Ⓢ **Spindle Repair**

*Clean Assembly Room, Presses to 150 tons, Highest Precision Instruments and Measuring Equipment . Spindle Repair Master Technicians and Apprentice system assures unmatched quality*

## Ⓢ **Spindle Testing**

*Full Quality Control Testing Stations including full electrical, lubrication, pneumatic and hydraulic capabilities*

## Ⓢ **Balancing/Vibration Analysis**

*Highly skilled technicians using Schunk, Hoffmann, IFM, and IRD equipment*

## Ⓢ **Machining**

*Lathes, mills, and extremely skilled operators holding the tightest tolerances*

## Ⓢ **Grinding**

*ID, OD taper grinding on Two Kellenberger 1000U Universal Precision Grinders, G&N Surface Grinder, Heninger Center Grinder, and extremely skilled operators holding the tightest tolerances*



# Manufacturing

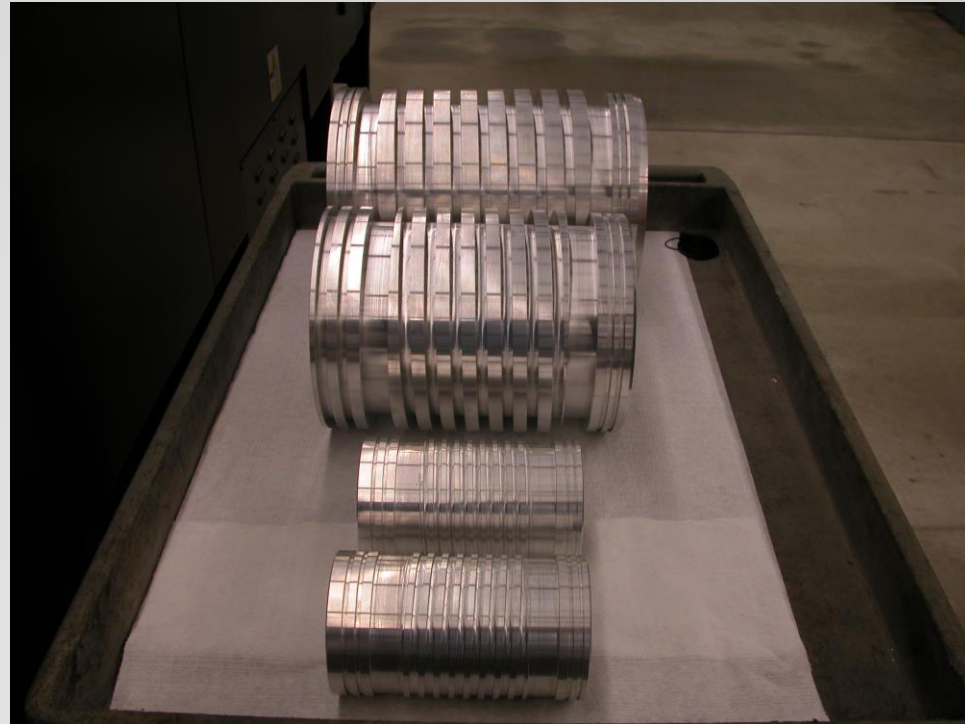
## © **Spindle Repair Support**

*Centerline's manufacturing capabilities provide parts for repair when the OEM is out of stock, too expensive, part is no longer available, and/or lead time and/or cost is prohibitive.*

## © **Custom Manufacturing**

*Diverse, specialized and capable equipment range makes Centerline a unique and highly qualified manufacturing option in the machine tool spindle industry as well as any other industry requiring the utmost in quality.*

## © **Our specialty lies in high precision cylindrical parts.**





# Manufacturing Range



## Up to

*Turnings 60 inches between centers up to 32 inches diameter, Grinding up to 32 inch lengths and up to 12 inches diameter*



## Tolerances/Precision

*In our Temperature controlled environment 5 $\mu$ m (0.0002in) tolerances on an ID/OD diameter after grinding are common.*



# Customer References

- © **Vought Aircraft**
- © **Triumph Aerostructures**
- © **Spirit Aerosystems**
- © **Boeing**
- © **UTC Aerospace**
- © **Pratt & Whitney**
- © **Aisin Automotive**
- © **Apex Tool Group**
- © **Regal Cutting Tools**
- © **Kennametal**
- © **Fiat Chrysler (FCA)**
- © **Delphi Diesel**
- © **Robert Bosch**
- © **Thyssenkrupp**
- © **Martinrea Honsel**
- © **Nexteer**
- © **Grupo Antolin (Magna, Intier)**
- © **Varel International**
- © **Kolbenschmidt de MX**
- © **TRW (Freños y Mecanismos)**

