World Class Friction Materials & Bonding Services
Friction Products & Bonding Services

The Industry Leader...

Midwest Brake has been a leading supplier of non asbestos industrial friction material and bonding technology since 1950. Our experience and proprietary processing techniques developed over 50 years have been refined and perfected to provide our customers with the best quality, most reliable friction materials and bonding services available in the market today.

Many of the recent innovations used in bonded industrial clutch and brake technology were originally developed and conceived by Midwest Brake. A dedication to continuous improvement and customer service support make us an ideal partner for your industrial braking solutions.

Proven Track Record for 50 Years...

As a market leader in the development and manufacture of non asbestos friction materials and bonded assemblies, the Midwest Brake has a proven track record in the development of innovative industrial braking technology. Nobody can match our experience when it comes to working with bonded friction material technology.

Quality You Can Depend On...

When it comes to quality friction material and bonded brake linings, you need a company that offers the experience necessary to deliver quality product order after order, year after year. As a full service manufacturer, Midwest Brake has complete control over the friction material, bonding and fabricating processes. Our strict quality control and stringent attention means consistent parts and reliability you can depend on.

Fast, Reliable Deliveries...

We have a modern, fully staffed manufacturing facility with large automated press capacity and processing machinery that enables us to meet deliveries quickly and reliably.

A Global Supplier...

Although we are primarily a North American based supplier, we market our products globally to many different countries and regions including Japan, Korea, Australia, England, Germany, Spain, Latin America, India and others.
Friction Products & Bonding Services

Large Diameter Bonding Capacity…

Midwest Brake is the clear choice for bonding and relining large diameter clutch plates and brake bands. Whether you have an 8000 ton forging press with 114” diameter clutch plates or need a 98” brake band lined with 3/4” friction material, we have the machinery and expertise to provide the highest quality bond available in the industry. When it comes to dealing with large mechanical clutch and brake parts, Midwest Brake is the only company you should trust.

Project Management…

Rather than outsource your part to several vendors, let Midwest Brake manage the manufacture of your entire part. Typical parts need gear cutting, welding, machining, stress relieving, inspection and other processes that take time and expend valuable resources. Midwest Brake has a complete staff of engineering, purchasing and logistics personnel skilled in handling the details of multiple process orders. Let Midwest Brake provide you with high quality, complete parts on time.

We Service Many Industries…

We successfully market our products and services to many diverse industries including industrial, metalforming, stamping, forging, machine tools, material handling, cranes, hoists, oil field, marine, off highway, paper, steel, mining and many others.
Large Stock of Industrial Friction Material

Midwest Brake® stocks a wide variety of non-asbestos, industrial friction material.

- **Flat Sheets**
  We offer a variety of 30” x 30” flat sheets varying thickness from 1/8” to 3”.

- **Flexible Woven Rolls**
  Flexible woven material supplied in rolls or segments 13” width from 1/8” up to 3/4” thickness.

- **Flexible Molded Rolls**
  Flexible molded material supplied in rolls or segments 13” width from 1/8” up to 1/2” thickness.
**Friction Products & Bonding Services**

**Friction Blocks & Bonded Assemblies**

Midwest Brake® manufactures complete bonded assemblies. If your part requires multiple processes to finish complete, we can provide your part finished to reduce costs.

- OEM Parts – Finished Assemblies
- Clutch & Brake Plates
- Integrally Molded Parts
- Fabrication & Machined Parts

Processes available are bonding, integrally molding, machining, heat treat, stress relieve, gear cutting, laser cutting, inspection and testing.

**Bonded Brake Band Assemblies**

We can manufacture brake bands complete to your specifications, prints or samples. We work with cast iron, ductile iron, rolled steel, and welded assemblies.

- OEM Supplier – New Brake Bands
- Finished Assemblies
- Fabrications or Cast Iron

Processes can include machining, welding and stress relieving. Whether your band is a one piece rolled steel, steel weldament or cast iron, Midwest Brake can fabricate the entire band, including clevis and pin arrangement.

Additionally, we will inspect and qualify the part to your specifications. We provide timely deliveries and will help you reduce your overall part cost.

**Bonded Clutch Plate Assemblies**

Midwest Brake® is a valued supplier to OEM customers who require high quality bonded clutch plate assemblies. Clutch plates are manufactured complete to print or sample. Whether you require one part or one thousand parts, Midwest Brake® can meet your requirements.

- OEM Supplier of Bonded Clutch Plates
- Machining, Bonding & Assembly
- High Quality Parts
- Inspection

Midwest Brake® offers machining, bonding, assembly and inspection services all in house.
**Industrial Bonding Services**

Midwest Brake® is the premier industrial brake bonding company in North America. With over 50 years of experience with thermal adhesive bonding technology, Midwest Brake® provides the highest quality, most reliable brake bond available in the industry.

- **Superior Bonding Technology**
- **High Quality Parts & Service**
- **Quick Turnaround**
- **Machining Services**

Our equipment incorporates state of the art controls into the process. We use a resin based thermal adhesive that assures high impact resistance and tensile strength that will perform under the most stringent conditions.

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**Relining & Remanufacturing**

1. **Inspection of Used Part**

Wear on all surfaces and gear teeth are checked and inspected. Parts are checked for cracks and structural integrity of part.

2. **Removal of Old Lining**

State of the art industrial debonding ovens are utilized to burn off used linings, adhesives, grease and oil. Fast and safe, your part is ready to be cleaned and prepared for bonding.

3. **Cleaning & Surface Preparation**

Cleaning the surface of your part, which is one of the most important steps to achieving a high quality bond, is accomplished through mechanically abrading and degreasing the surface.

4. **Bond New Lining**

New friction material is coated with a thermal adhesive. Proper cycle time, pressure and temperature is applied to complete the bonding process. Midwest Brake® utilizes state of the art bonding presses and equipment to monitor this process, which produces a high quality, consistent bond.

5. **Machining**

Midwest Brake® will machine clutch plates to an overall thickness upon request. Clutch plates are machined to +/- .002 parallel allowing for better surface contact, thus increasing the life and performance of the clutch or brake.

6. **Inspection & Documentation**

A strict quality control process is followed where every step is documented and checked during the processing of your part. Parts are given a final inspection, stamped, labeled and carefully packaged for shipping.
**Friction Products & Bonding Services**

**Bonding Technology**

**Thermal Adhesive Technology**
Midwest Brake® utilizes state of the art, thermal adhesive bonding technology. The highest quality adhesives are used to provide the strongest bond strength.

**Automated Bonding Press Technology**
State of the art bonding ovens and platen presses provide a quality bond that is consistent every time.

**Computer Controlled Automation**
All aspects of the bonding process are monitored and recorded by a computer controlled interface that records the cycle time, temperature and pressure during the bonding cycle. By insuring that the adhesive is properly cured and set, we set the standard in the industry for quality and reliability.

**Capacity**
Our equipment is state of the art and provides the ability to bond clutch plates up to 114” in diameter. With over 15 state of the art presses and ovens, Midwest Brake can accommodate all sizes of clutch plates and brake bands quickly and easily.

**Quality**
Only the highest quality industrial bonding adhesives and friction materials are used in our bonding process.

**Consistency**
Our quality control assures that the bond and friction material are manufactured to precise specifications 100% of the time. Lot numbers and batch numbers are stamped on the parts and recorded in the paperwork as part of our quality check. This provides additional assurance that every part that is approved and meets specifications.
## Bonding Versus Riveting

Bonding is more effective than riveting as a means of fastening friction material to an opposing mating surface. Bonding produces a higher tensile strength, reduces the chance of a lining failure and increases the uptime and reliability of your machinery.

- **Superior Structural Integrity**
- **Bonding Produces Higher Quality Parts**
- **Increased Friction Material Life**
- **Lower Life Cycle Costs**

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### Bonding

- Thermal adhesive contacts 100% of the plate surface.
- Structural fibers in the friction material remain intact.
- Thermal adhesive provides 100% surface contact on mating surface.
- Longer friction material surface life and no possibility of metal to metal contact.
- Clutch plate and brake band surface remain structurally sound.

### Riveting

- Riveted lining is attached only with the rivet and is thus a weak link.
- Drilled holes through the lining weaken the structural integrity of the lining.
- Riveted holes are counter sunk thus reduced surface area of friction material.
- Friction material exposes rivet head and leads to exposed rivets which can core or gouge.
- Multiple drilled holes in metal surface structurally weaken the integrity of the clutch plate of brake band.
**Black & Red**

Black & Red, commonly known as “B & R” in the industry, is different from most friction materials on the market today. The combination of “B & R” material fights surface deterioration and creates a consistent friction for the life of the plate.

The Black Material is formulated for superior wear resistance. Our Red Material is compounded with special resins and additives that allow the friction material to perform at a constant Coefficient Of Friction (COF) throughout the life of the clutch plate. The Red material acts as a scrubber block which cleans the wear surface when used in combination with our Black Material.

Most industrial brake linings use a single component material where high wear, glazing of the mating surface and heat are often characteristics of normal use. Dirt, grease, oil and other common contaminants in the operational environment contribute to accelerated surface deterioration by inhibiting the capability of the friction material to dissipate heat.

Midwest Brake® B & R friction technology fights friction surface deterioration, glazing and premature wear.
Bonded Clutch & Brake Plate Assemblies

If you are looking for a partner that can handle small and large quantities of bonded clutch plates, Midwest Brake has the experience necessary to handle your complete assembly from start to finish. We have experience with all types of plate assemblies.

- Steel Welded Plates
- Cast Iron Plates
- Laser Cut Plates
- Stamped Plates

Steel Welded Plates

We use only the highest quality steel and our welders produce consistent, high quality welds that offer superior strength and reliability.

We offer quality gear cutting for inner or outer hubs. We inspect our parts during various processing steps to confirm parts are within tolerance and to customer specifications.

Cast Iron Plates

We have an ample base of supply for high quality castings. Machining and gear cutting services are available and we produce accurate, consistent parts.

- Castings
- Machinings
- Gear Cutting

Laser Cut & Stamped Plates

If your parts need to be laser cut or stamped, Midwest Brake can meet your needs. We provide cost effective, high quality stampings and laser cut parts for leading original equipment manufacturers.
Industry Leader In Bonding Large Diameter Forging Plates

- Over 50 Years Experience
- Highest Quality In Industry
- Technology Leader

Midwest Brake is the industry leader for large bonded clutch and brake plate assemblies. We can accommodate the largest plates of up to 114" in diameter or larger.

To produce a high quality bond on a large diameter plate, you must have the experience, personnel and equipment necessary to do the job right. Midwest Brake is the only company that can consistently produce a high quality bond, quickly and reliably.

Midwest Brake is a trusted source that can be relied on for using only the highest quality materials and consistent processing techniques to insure safe operation and trouble free operation of your machinery.
**Friction Products & Bonding Services**

**Bonded Brake Bands**

- Steel and Cast Iron Brake Bands
- Single, Two and Three Piece Designs
- Finished Assemblies
- Bonding Services for Large & Small Sizes

**Riveted and Bolted Brake Bands**

Midwest Brake® will provide riveted or bolted linings, completely finished, inspected and painted brake band assemblies that conform to special Marine or ABS certifications, welding certifications, etc.

We have experience handling large quantities of brake bands and meeting expected deliveries. Our quality and inspection will meet specifications, provide superior workmanship and reduce defects. We utilize molded and woven linings and can machine the lining for rivet holes, countersinking and meet other dimensional requirements.
**Friction Blocks**

Midwest Brake® has extensive experience manufacturing high quality, dimensionally accurate friction blocks. Our blocks utilize high strength fibers, binders and resins to provide added strength and durability and are proven in the toughest of applications.

- Molded Blocks
- Machined Blocks
- Cushioned Style Blocks
- Tolerances +/- .002

**Molded Blocks**

Midwest Brake holds tight tolerances, +/- .002 on molded friction blocks. We can machine, grind and machine precision grooves on all different sizes of round, square, snowman style, and triangles of virtually any size up to three inches thick.

**Cushioned Style Blocks**

Midwest Brake developed the cushioned style block to help with machines that develop a lot impact and shock during engagement. By using a propriety cushion sandwiched between two molded blocks, the cushioned style block has more resistance to shearing and premature failure.

**Gear Tooth Facings**

Our gear tooth facings hold the tightest gear tooth tolerances available in the industry. With a number of well designed friction materials that offer higher strength and durability, we can provide consistent parts that outperform the competition.
Full Machining Services

Midwest Brake® provides a full machine shop to complement our unique products and services. Additionally, we can manufacture custom and production machined parts. We can provide the highest quality machining performance and controlled tolerances. Our services include:

- CNC Programmable Machines
- Hurco* Machining Centers
- Cincinnati* Lathes
- Vertical Turning Lathes
- Engine Lathes

• Clutch & Brake Parts
• Flywheels
• Brake Wheels
• Brake Hubs
• Shafts
• Pressure Plates
• Machine Parts
Friction Products & Bonding Services

Midwest Brake® Is Your One Source For Press Parts and Services

• Cast or Forged Parts Available
• Housings
• Weld Repair
• Spare Parts
• Rush Repair Service Available

Fabricated & Machined Parts

• Pressure Plates
• Brake Hubs
• Clutch Hubs

• New Parts Manufactured
• Quality Parts
• On Time Deliveries

CNC Machining of Brake Housing

Large Turning Capacity

Machining Flywheel Belt Grooves to Midwest Brake® Specifications

CNC Machining Capabilities