

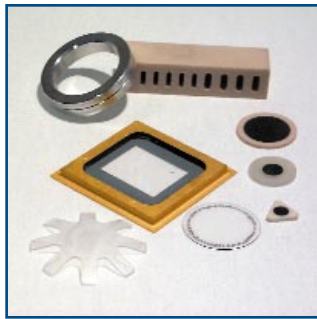


PR HOFFMANN



Industry Leaders

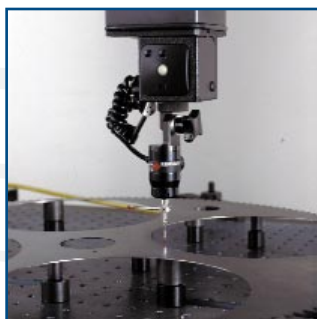
For over 60 years, PR Hoffman has provided innovative products to the world's leading, high-tech industries.



Semiconductors, quartz, ceramics, electronics, metalworking, optics, electro-optics, glass, medical – if your industry requires parts with flat, parallel surfaces and precise tolerances for thickness and surface finish, you'll find a need for PR Hoffman Machine Products.



A relentless commitment to quality and customer satisfaction begins with engineering and continues through manufacturing, shipping and follow-up after delivery. Our employees are dedicated to continuous improvement and innovation. PR Hoffman operates only state-of-the-art equipment, from our milling machines to our coordinate measuring machine, installed on its own inertia base with accuracy to .0001".



We'll meet your needs –

- double-sided lapping and polishing machines
- lapping and polishing carriers
- conditioning brushes
- single-sided/waxless mount polishing templates
- lapping plates
- conditioning gears

Our international sales force, combined with our progressive manufacturing facility, is trained to react immediately to each of our customers' needs.

Most of all, PR Hoffman is committed to adding value and reducing customers' costs throughout the world.

Machines



The thinnest, flattest, most parallel parts manufactured today are made by using PR Hoffman double-sided lapping and polishing machines.

Computerized recipes control downforce, acceleration ramps, automatic self-flattening plate control, and digital sizing critical to achieving ever tighter requirements.

Thin and fragile parts are best processed by the unique three-way precision controlled PR Hoffman **Servo RS™** Series of machines (models 1500, 1900, and 3100). This family of machines has both symmetrical and asymmetrical removal capabilities.

Asymmetrical capabilities include the removal of material from one side of a substrate while minimally affecting the opposite side of the product. These innovative processes allow removal ratios as great as 90:1.

Applications for these unique processes include silicon wafers, Epi wafers, SOI, hybrid material combinations, fusion bonded wafers, quartz and sapphire crystals, and other semiconductor materials.

For unbeatable value in a large machine, our customers choose the PR Hoffman 4800 Series of double-sided lapping and polishing machine. Our economically priced PR-1 and PR-2 Series machines provide unequalled performance and value. Simple, rugged, and affordable, these models are well suited for moderately thin parts. Available options such as slurry delivery systems and sizing systems increase versatility and production for nearly any part requirement.



Machines
Technology

Carriers

Lapping & Polishing

Carriers

PR Hoffman's versatile manufacturing capabilities enable us to manufacture carriers for all double-sided lapping and polishing machines.

Standard carriers in a variety of thicknesses are offered in materials which include spring steel, stainless steel, FR-4/G-10, PVC, phenolic, Lexan® and vinyl.



PR Hoffman Insert Carriers feature specially formulated materials which work in unison to protect the edge of the wafer, while providing the strength and durability of traditional steel carriers. This patented design uses a high quality steel, uniquely prepared to create a lasting bond with the plastic that is molded into each work hole. This type of carrier is commonly used for processing 100mm, 125mm, 150mm, 200mm and 300mm silicon and other semiconductor wafers.

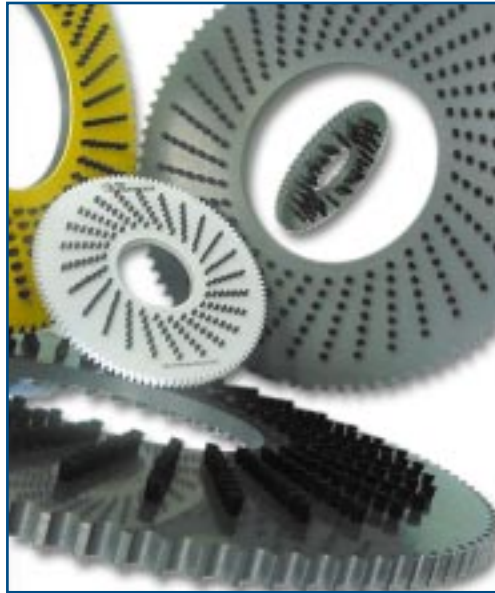
Carriers can be custom designed to meet your exact specifications. All carriers are manufactured to exacting tolerances to ensure the highest quality for optimum performance.

Conditioning Brushes



Improve your polishing process by removing embedded materials from the surface of polishing pads by using our conditioning brushes. Significant process stability and pad life improvements can be achieved by using PR Hoffman's conditioning brushes on a frequent, fixed schedule.

Each brush carrier is uniquely designed for your custom polishing application. This type of conditioning brush is commonly used by manufacturers of hard-disk substrates, silicon, GaAs, glass, optics, quartz, and other single and double-sided applications.



Like our lapping carriers, these conditioning brushes are available for all double-sided lapping and polishing machines. We can also design single-sided brushes for all machines.

Each brush will be custom designed based on your application and pad requirements.

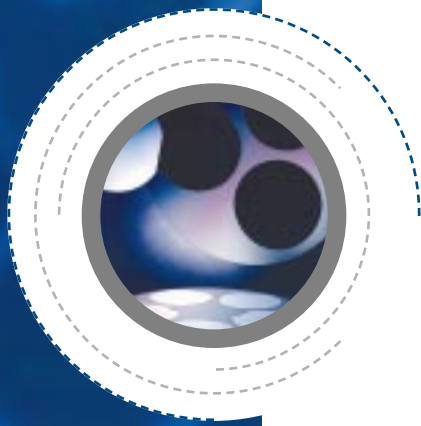
Conditioning Brushes
Process Improvement



**PR
HOFFMAN**
An Amtech Systems Inc. Company

Five Polishing Templates

Single-Sided Polishing



Polishing Templates

When you purchase your polishing templates from PR Hoffman, you can be secure knowing that you're dealing with the preferred industry supplier of single-sided, waxless mount polishing templates. Our templates are supplied to glass, silicon, GaAs, SOI and other substrate material manufacturers around the globe.



Our polishing templates reflect our sensitivity to the needs of the semiconductor industry and its very specific needs. The concerns of flatness, cleanliness and consistency are foremost in our material selection and manufacturing methods. PR Hoffman polishing templates are proven to be resilient and produce measurable flatter wafers. They are manufactured in a clean, climate-controlled environment under tightly-controlled laboratory conditions.



Our professional engineering staff will review your wafer information (diameter, initial and final thickness, removal rates, etc.) and will design a template to meet your specific application requirements.

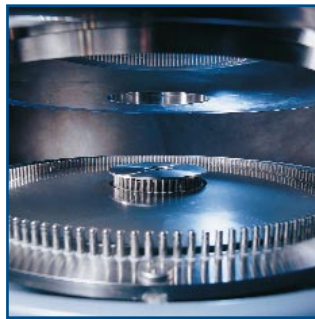
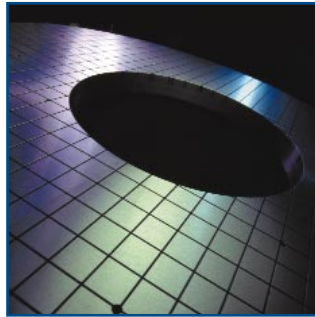
Plates, Gears and Parts

High-quality lapping plates and conditioning gears, manufactured at the most technologically advanced foundries are available in a variety of metallurgies. Optional hardening and tempering services are available for custom applications.

You can receive detailed metallurgical certifications with each set of lap plates which specify the physical and chemical properties of the plates, along with a photograph of the microstructure of the cast metal.

To condition the surface of the lap plates, PR Hoffman also manufactures a complete line of conditioning gears. These are offered in a variety of metallurgies for a wide range of machines.

All of our replacement parts are made by skilled craftsmen who operate the industry's most advanced machining equipment to produce long-lasting, precision parts.



Lapping Plates,
Conditioning Gears and Spare Parts



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Committed to
adding value and
reducing customers'
costs throughout
the world.



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