

PR HOFFMAN MACHINE PRODUCTS  
**Machine Options**

Double-Sided Planetary Lapping/Polishing Machines

Innovations in Flatness  
 Since 1938

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**MACHINE PRODUCTS**  
 Double-Sided Planetary Lapping/Polishing Machines

	PR-1	PR-2	1500	1900	3100	5400	6600	Mark-IV
<b>Machine Options:</b>								
Counter-Rotating Bottom Plate (4-Way)	N/A		o	o	o	N/A		s
Dual Motor for Ring and Center Gear	o		N/A					
Top Plate Drive	o	o	s	s	s	s	s	s
Stainless Steel Ring and Center Gear	o	o	o	o	s	s	s	s
Stainless Steel Roller Pins		N/A			o	o	o	N/A
Top Plate Lifter	o (Standard 85T)		N/A					
Abrasive Distribution System	o	o	s	s	s	s	s	s
Water Sprayer	o	o	s	s	s	s	s	s
<b>Plate Options:</b>								
Serrated Plates (All Types)	o	o	o	o	o	o	o	N/A
Ductile Martensite Plates	o	o	o	o	o	o	o	N/A
Stainless Steel Clad Cast Iron Plates		N/A				o	o	s
Stainless Steel Plates	o	o	o	o	o	o	o	o
Light Weight Plates	o		N/A					
Cooled/Heated Plates	o	N/A	Bottom Plate Only		o	o	o	N/A
<b>Measurement System:</b>								
Automatic Sizing Control	o	o	o	o	o	o	o	o
Digital Sizing Control	o	o	o	o	o	o	o	o
Part out of Carrier and Crash Protection	o	o	o	o	o	o	o	o
Dial Indicator Thickness Measuring Gauge	o	o	N/A					
<b>Accessories:</b>								
Heat Exchanger for Water Cooling/Heating	o	N/A	o	o	o	o	o	N/A
Flatness Gauge	o	o	o	o	o	o	o	o
Conditioning Gears/Sprockets	o	o	o	o	o	o	o	N/A
Carriers	o	o	o	o	o	o	o	o
Brush Carriers	o	o	o	o	o	o	o	o
Diamond Conditioning Carriers	o	N/A	o	o	o	o	o	o
Diamond Conditioning Hand Tool	o	o	N/A					

o - Optional Feature  
 s - Standard Feature

More options available on our website:  
[www.prhoffman.com/machines.html](http://www.prhoffman.com/machines.html)

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 Your Success = Our Success

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PR HOFFMAN MACHINE PRODUCTS  
**Machines Overview**  
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PR HOFFMAN MACHINE PRODUCTS  
**PR Series Overview**  
 Proven Reliability



**PR Hoffman Machines: Industry Leaders**

PR Hoffman provides innovative products to the world's leading high-tech manufacturers of parts requiring flat, parallel surfaces. Customers in the semiconductor, electronics, ceramics, optics, quartz, glass, medical and electro-optics industries rely on our machines for precise, consistent control of dimensional and geometric tolerances and surface finish.

**Two Machine Lines Customized for any Process**



**PR Series—Proven Reliability**

These machines save on space while providing consistent results for your R&D and small-part or small-batch production. Our low-cost PR Series machines have been adopted in many industries and have been a workhorse of the industry since 1950.



**ServoRS™ Series—Precision Control**

Our most advanced machine series can process parts up to 30" (762 mm) in diameter and as thin as 0.0015" (0.038 mm). The programmable independent control of rotation and downforce and the ability to save recipes provide process flexibility and consistency.

**PR Series - Simple, Reliable, Economical**



The PR Series machines offer double-sided lapping and polishing for parts up to 6.6" (167.6 mm) in diameter. Four carrier configurations cover nearly all small part sizes, and the servo motor controls (on the PR-1) ensure soft ramp-up and slow down for gentle processing. Touchscreen controls (available on the PR-1 only) display motor output, as well as ring gear, center gear, and carrier orbit speeds, allowing closer monitoring, superior control, and greater consistency of the process.

The dual motor version of the PR-1 machine, with separate motors driving the ring and center gears, allows greater control of the machine dynamics. This control enables in-process plate flattening and superior part flatness, resulting in improved quality, less down-time, longer plate/pad life, and greatly reduced cost of ownership.

- Space-saving design: Small footprint allows the PR Series to fit almost anywhere
- Economical: The low cost, proven performance, and reliability of the PR Series machines allow our customers to achieve a low cost of ownership
- Versatile design: Part diameters can range up to 6.6" (167.6 mm) in diameter and as thin as 0.003" (0.076 mm)
- Easily paired with ServoRS™ Series or similar large machines: The PR Series fits into any lineup and can be used for rough or fine lapping, grinding, or polishing.



**PR-1**

- Optional dual motor for greater control and improved cost of ownership
- Simple, rugged design for reduced downtime and maintenance cost
- Stationary bottom plate for better precision and fewer defects



**PR-2**

- Table top design well-suited for laboratories and research & development
- Ideal for small, thin parts
- Soft-start variable speed drive for gentle part handling

**ServoRS™—Precision Control**



The ServoRS™ line consists of double-sided lapping and polishing machines suited for nearly all applications requiring parts to be made flat and parallel. Our machines can apply downforces ranging from 15 lbs (6.8 kg) to 2200 lbs (1000 kg) to easily accommodate thin, fragile parts as well as parts requiring more aggressive processing. The integrated touchscreen Windows PC allows access to machine manuals, schematics and technical information in situ and offers storage for all your recipes with easy access right at the operator's control terminal.


All of our ServoRS™ machines come standard with servo motor drives, capable of the smooth, soft starts and stops required to manage thin or fragile parts. All machines (excluding Mark-IV) have a retractable ring gear to ease in the removal of delicate, hard to handle parts. Our standard multi-step programming format enables extensive flexibility in ramping up speeds and loads for a process recipe perfectly suited to your parts.


For a full list of optional features see the back page of this brochure or visit: [www.prhoffman.com/machines.html](http://www.prhoffman.com/machines.html)



**1500 / 1900 ServoRS™**

The 1500 and 1900 ServoRS™ machines are known for their versatility in part processing. These machines can process very thin parts down to 0.0015" (0.038 mm) and can apply as little as 15 lbs (6.8 kg) of downforce, ideal for processing fragile parts. Both machines have standard 3-way or optional 4-way motion control.


 Able to process parts down to 0.0015" (0.038 mm) thick


 3-way or 4-way motion control options



**3100 ServoRS™**

The 3100 ServoRS™ is a mid-sized machine with sprocket pin drive that reduces maintenance cost by allowing for the replacement of individual pins rather than a complete machined gear. The maximum downforce available is 550 lbs (249.5 kg), double the force of the 1500 and 1900 machines, for greater part capacity and more aggressive processes. The 3100 has standard 3-way or optional 4-way motion control.


 Excellent process capacity with double the downforce of 1500 and 1900


 3-way or 4-way motion control options

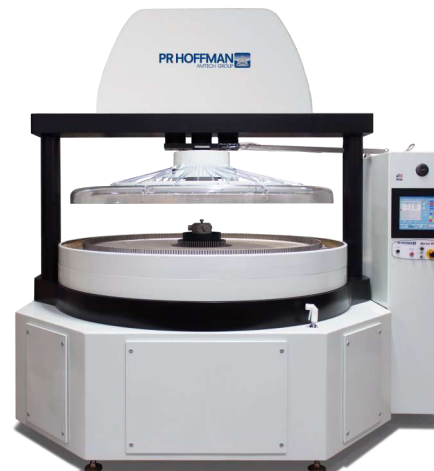


**5400 ServoRS™**

The 5400 ServoRS™ machine has a large 53.5" (1359 mm) plate that can process parts up to 19.2" (488 mm) in diameter. Its downforce can range from 50 lbs to 2200 lbs (23 kg - 1000 kg) which gives the user great versatility in part processing. The 5400 comes standard with a sprocket pin drive that reduces maintenance cost by allowing for the replacement of individual pins rather than a complete machined gear.


 Ø53.5" (1359 mm) plate to process parts up to 19.2" (488 mm) in dia.


 Downforce of 50-2200 lbs (23-1000 kg) for broad process versatility



**6600 ServoRS™**

The 6600 ServoRS™ is our largest machine with a 66" (1676 mm) plate capable of processing parts up to 25.6" (650.2 mm) in diameter. The plate and sub-plate are thick and heavy to maintain a flatter and more stable lapping or polishing surface. The 6600 comes standard with a sprocket pin drive that reduces maintenance cost by allowing for the replacement of individual pins rather than a complete machined gear.


 Ø66" (1676 mm) plate to process parts up to 25.6" (650 mm) in dia.


 Downforce of 50 - 2200 lbs (23 - 1000 kg) for broad process versatility



**Mark-IV ServoRS™**

The Mark-IV ServoRS™ machine has a standard counter-rotating bottom plate and outboard driven idler pinions in order to accommodate very large parts in a compact footprint. The 66" (1676 mm) plate is capable of processing parts up to 30" (762 mm) in diameter. Additionally, the Mark-IV can be reconfigured for different carrier sizes by a simple repositioning of the outboard pinions. Such changeovers can be performed with minimal downtime.

 Largest part size capacity up to 30" (762 mm) in diameter

 Switch between two carrier sizes on one machine with minimal downtime

# PR HOFFMAN MACHINE PRODUCTS

# Machine Specifications

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	Carrier Teeth and Type	Standard Lap Plate Diameter Nominal ID x OD	Number of Carriers	Carrier Root Diameter	Maximum Part Circle	Recommended Min Work Thickness	Nominal Downforce	Drive Power	Standard Voltages	Required Service	Dimensions Length x Width x Height	Approximate Machine Weight	
<b>PR-2</b>	32T Gear	Ø 3.5" x 6.9" (Ø 88.9 mm x 175.3 mm)	5	2.5" (63.5 mm)	Ø 2.1" (Ø 53.3 mm)	0.003" (0.076 mm)	3.5 - 3.75 lbs (1.6 - 1.7 kg)	1/17 HP (0.04 KW)	115 VAC, 60Hz, 1-Ph 220 VAC, 50Hz, 1-Ph	15 Amps	12" x 12" x 16" (0.31 m x 0.31 m x 0.41 m)	96 lbs (43.5 kg)	
<b>PR-1</b>	32T Gear	Ø 11" x 14.4" (Ø 279.4 mm x 365.8 mm)	13	2.5" (63.5 mm)	Ø 2.1" (Ø 53.3 mm)	0.003" (0.076 mm)	19 - 27 lbs (8.6 - 12.2 kg)	1.0 HP (0.75 Kw)	208 / 230 VAC, 60Hz, 1-Ph	15 Amps Single Motor	46" x 26" x 50" (1.2 m x 0.66 m x 1.3 m)	880 lbs (399.2 kg)	
	50T Gear	Ø 9.4" x 14.3" (Ø 238.8 mm x 363.2 mm)	8	4" (101.6 mm)	Ø 3.6" (Ø 91.4 mm)	0.005" (0.127 mm)	24 - 36 lbs (10.9 - 16.3 kg)						2 x 0.5 HP (0.75Kw total)
	66T Gear	Ø 6.8" x 14.3" (Ø 172.7 mm x 363.2 mm)	5	5.3" (134.6 mm)	Ø 5" (Ø 127 mm)	0.008" (0.203 mm)	6 - 44 lbs (2.7 - 20.0 kg)	1.5 HP (1.125 KW)		2 x 0.75 HP (1.125Kw total)		1150 lbs (521.6 kg)	
	85T Gear	Ø 7.0" x 18.8" (Ø 177.8 mm x 477.5 mm)	5	6.9" (175.3 mm)	Ø 6.6" (Ø 167.6 mm)	0.010" (0.254 mm)	10 - 80 lbs (4.5 - 36 kg)						
<b>1500</b>	32T Gear	Ø 9.8" x 13.8" (Ø 248.9 mm x 350.5 mm)	12	2.5" (63.5 mm)	Ø 2.1" (Ø 53.3 mm)	0.0015" (0.038 mm)	15 - 200 lbs (6.8 - 90.7 kg)	TP / CG / RG: 1 HP (0.75 Kw)	<b>3-Way</b>		56" x 37" x 86" (1.4 m x 0.94 m x 2.2 m)	1980 lbs (898 kg)	
	50T Gear	Ø 8.7" x 15" (Ø 221 mm x 381 mm)	8	4" (101.6 mm)	Ø 3.6" (Ø 91.4 mm)	0.004" (0.102 mm)			208 / 230 VAC 60Hz 3-Ph	15 Amps			
	66T Gear	Ø 6.2" x 14.8" (Ø 157.5 mm x 375.9 mm)	5	5.3" (134.6 mm)	Ø 5" (Ø 127 mm)	0.005" (0.127 mm)			380 VAC, 50 Hz, 3-Ph	10 Amps			
<b>1900</b>	85T Gear	Ø 6.8" x 19.1" (172.7 mm x 485.4 mm)	5	6.9" (175.3 mm)	Ø 6.6" (Ø 167.6 mm)	0.008" (0.203 mm)	15 - 275 lbs (6.8 - 124.7 kg)	TP: 2 HP (1.5 Kw) CG / RG: 1 HP (0.75 Kw)	<b>3-Way</b>		56" x 37" x 86" (1.4 m x 0.94 m x 2.2 m)	2090 lbs (948 kg)	
									208 / 230 VAC, 60Hz, 3-Ph	20 Amps			
									480 VAC, 60Hz, 3-Ph	10 Amps			
									380 VAC, 50 Hz, 3-Ph	12 Amps			
									<b>4-Way</b>				2340 lbs (1061.4 kg)
									208 / 230 VAC, 60Hz, 3-Ph	30 Amps			
480 VAC, 60Hz, 3-Ph	15 Amps												
TP / BP: 2 HP (1.5 Kw) CG / RG: 1 HP (0.75 Kw)	380 VAC, 50 Hz, 3-Ph	18 Amps											
<b>3100</b>	60ST Sprocket (Pin Drive)	Ø 10.5" x 31.4" (Ø 266.7 mm x 797.6 mm)	5	11.6" (294.6 mm)	Ø 10.9" (Ø 276.9 mm)	0.010" (0.254 mm)	15 - 530 lbs (6.8 - 240.4 kg)	TP: 5 HP (3.7 Kw) CG / RG: 1 HP (0.75 Kw)	<b>3-Way</b>		74" x 44" x 93.5" (1.9 m x 1.1 m x 2.4 m)	4400 lbs (1995.8 kg)	
									208 / 230 VAC, 60Hz, 3-Ph	40 Amps			
									480 VAC, 60Hz, 3-Ph	20 Amps			
									380 VAC, 50 Hz, 3-Ph	25 Amps			
									<b>4-Way</b>				4650 lbs (2109.2 kg)
									208 / 230 VAC, 60Hz, 3-Ph	60 Amps			
480 VAC, 60Hz, 3-Ph	30 Amps												
TP / BP: 5 HP (3.7 Kw) CG / RG: 1 HP (0.75 Kw)	380 VAC, 50 Hz, 3-Ph	40 Amps											
<b>5400</b>	100ST Sprocket (Pin Drive)	Ø 17" x 53.5" (Ø 431.8 mm x 1358.9 mm)	5	19.7" (500.4 mm)	Ø 19.2" (Ø 487.7 mm)	0.010" (0.254 mm)	50 - 2200 lbs (22.7 - 997.9 kg)	TP: 20 HP (15 Kw) CG: 5 HP (3.7 Kw) RG: 7.5 HP (5.6 Kw)	<b>3-Way</b>		106" x 74" x 117" (2.7 m x 1.9 m x 3 m)	15200 lbs (6894.6 kg)	
									480 VAC, 60Hz, 3-Ph	50 Amps			
									380 VAC, 50 Hz, 3-Ph	60 Amps			
		(Optional: 208 / 230 / 380 VAC 3-Ph)	(Optional Contact Factory ~100 Amps)	*Shipping Height is 100" (2.5 m)									
<b>6600</b>	140ST Sprocket (Pin Drive)	Ø 18.83" x 66" (Ø 478.3 mm x 1676.4 mm)	4	27.7" (703.6 mm)	Ø 26.72" (Ø 678.7 mm)	0.025" (0.635 mm)	150 - 2200 lbs (68 - 997.9 kg)	TP: 20 HP (15 Kw) CG: 5 HP (3.7 Kw) RG: 7.5 HP (5.6 Kw)	<b>3-Way</b>		121" x 89" x 117" (3.1 m x 2.3 m x 3 m)	18000 lbs (8165 kg)	
									480 VAC, 60Hz, 3-Ph	50 Amps			
									380 VAC, 50 Hz, 3-Ph	60 Amps			
		(Optional: 208 / 230 VAC, 60 Hz, 3-Ph)	(Optional Contact Factory ~100 Amps)	*Shipping Height is 100" (2.5 m)									
<b>Mark-IV</b>	178T Gear	Ø 18.8" x 66" (Ø 477.5 mm x 1676.4 mm)	4	27.7" (703.6 mm)	Ø 26.3" (Ø 668 mm)	0.108" (2.74 mm)	150 - 2000 lbs (68 - 907.2 kg)	TP: 10 HP (7.5 Kw) CG: 5 HP (3.7 Kw) BP: 10 HP (7.5 Kw)	<b>3-Way</b>		106" x 74" x 117" (2.7 m x 1.9 m x 3 m)	15200 lbs (6894.6 kg)	
				31.5" (800.1 mm)	Ø 30.0" (Ø 762 mm)				480 VAC, 60Hz, 3-Ph	50 Amps			
				380 VAC, 50 Hz, 3-Ph	60 Amps								
		(Optional: 208 / 230 / 380 VAC 3-Ph)	(Optional Contact Factory ~100 Amps)	*Shipping Height is 100" (2.5 m)									

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