

PR HOFFMAN MACHINE PRODUCTS:

Innovations in Flatness

Since 1938

# ***Servo* RS™ 3100 Series**

Double-Sided Planetary Lapping/Polishing Machine



453 LINCOLN ST.  
CARLISLE, PA 17013 USA  
TEL: 1 717-243-9900 FAX: 1 717-243-4542

[WWW.PRHOFFMAN.COM](http://WWW.PRHOFFMAN.COM)

## PR HOFFMAN MACHINE PRODUCTS:

# **Servo RS**<sup>TM</sup> 3100 Series

## Double-Sided Planetary Lapping/Polishing Machine



The PR Hoffman **Servo RS**<sup>TM</sup> 3100 Series double side lapping and polishing machine can be adapted to finish many different materials. With a 10.45" [265.4mm] wide plate track and optional counter-rotating bottom plate, users can expect high throughput and fast processing of hard materials, while maintaining the control and finesse necessary for thin and fragile parts. The planetary action simultaneously removes equal amounts of material from both sides of the pieces.

All **Servo RS**<sup>TM</sup> lapping and polishing machines include complimentary setup, install, training, and a one year warranty. PR Hoffman will work with you to customize a machine to best to meet your processing requirements through the addition of a wide variety of options and accessories.

### Standard Features

- Standard cast iron lapping plates with stainless steel, pin-drive ring and center gears
- Top plate downforce is controlled by a servo driven ball screw with load cell feedback, providing for precise control of the load on the parts
- Self-aligning, swivel-mounted top plate for even load distribution
- Smooth, gentle speed control reduces stress on parts and carriers
- Ramp steps up to 3 minutes long get the process up to speed gently
- Retractable Ring Gear makes unloading parts easier
- Windows<sup>®</sup> PC with touchscreen HMI:
  - Allows the operator to easily select from up to 31 active (and unlimited archived) 14-step recipes
  - Provides quick and easy access to full machine manual, complete with drawings, operating instructions, maintenance guide, troubleshooting, and more
- Proprietary PLC board and RecWork<sup>TM</sup> software interface:
  - Fully programmable process speeds, loads, and times
  - Automatic speed calculation for symmetrical removal
  - High/Low plate flattening modes with programmable autocycle functionality
- Full slurry system, including slurry tank, mixer, and variable speed, reversible, peristaltic slurry feed pump
- Flush water system for automatic inclusion in process and with hand-held sprayer



RecWork<sup>TM</sup> Software Interface

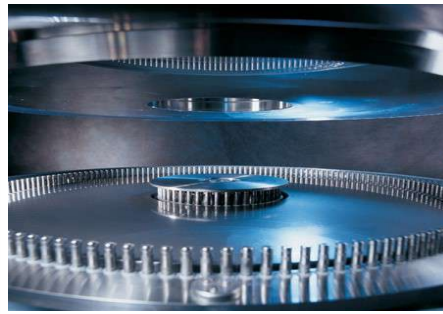


Retracted Pin-Drive Ring Gear

Your Success = Our Success

[WWW.PRHOFFMAN.COM](http://WWW.PRHOFFMAN.COM)

## **Servo RS™** 3100 4-Way Option



- Our optional 4-way design adds a counter-rotating bottom plate motion that significantly increases surface speeds for high throughput applications and processing of hard materials such as sapphire, fused silica, ceramics and silicon carbide.
- The new 4-way machine design platform is an extension of the 3-way family of **Servo RS™** machines, which are industry proven for more than two decades.

### Available Options

- A wide variety of plate configurations are available to best match the machine to your application requirements.
- Digital sizing control is an accurate and reliable tool for thickness control. It is fully integrated into the operator interface and can be set to stop the machine when it reaches a target thickness or a desired amount of removal. It also includes part out of carrier and crash protection capabilities.
- Part out of carrier and crash protection will stop the machine in the event of even the slightest upward movement of the top plate during a run. This feature is available where the precision guarantee of the digital sizing control is not needed.
- Stainless steel roller drive pins improve performance and reduce cost of ownership by providing smoother runs and reducing wear on carrier teeth.
- Liquid-heated/cooled bottom plate is available to maintain consistent process temperature.
- Heater/Chiller unit is available for use with heated/cooled bottom plate or for slurry chilling.
- PR Hoffman offers a wide range of tools, accessories, and consumables to help you get the most out of your new machine.

Contact our Engineering department to discuss options and customizations not listed.



We help you select the right pad and slurry for your material and process.



PR Hoffman designs and manufactures customized carriers for your process.



**Servo RS™ 3100 Series**

Since 1938

**Double-Sided Planetary Lapping/Polishing Machine**

| <b>3100 Specifications</b>                            |  |   |           |  |
|---|--|---|-----------|--|
| <b>Carriers:</b>                                      | Tooth Type:  | 60 Tooth Sprocket Type                                |           |  |
|   | No. of Carriers:   | 5   |           |  |
|   | Max Part Circle:   | 10.9"   | [276.8mm] |  |
|   | Root Dia:  | 11.6"   | [294.6mm] |  |
| <b>Floor Space:</b>                                   | Left to Right:   | 75"   | [191cm]   |  |
|   | Front to Back:   | 44"   | [112cm]   |  |
|   | Height (Min. Ceiling):   | 95"   | [241cm]   |  |
|   | Shipping Height (Crated):                                      | 92.5"   | [235cm]   |  |
| <b>Plates:</b>  | OD:  | 31.4"   | [797.6mm] |  |
|   | ID:  | 10.5"   | [266.7mm] |  |
|   | Track Width:   | 10.45"  | [265.4mm] |  |
| <b>Electric Utility:</b>                              | Top Plate Drive:   | 5.0 HP Servo  | [3.73 KW] |  |
|   | Bottom Plate Drive<br>(4-Way, Optional)                        | 5.0 HP Servo  | [3.73 KW] |  |
|   | Ring Gear Drive:   | 1.0 HP Servo  | [0.75 KW] |  |
|   | Center Gear Drive:   | 1.0 HP Servo  | [0.75 KW] |  |
|   | Standard Voltage and<br>Required Service:<br>(3-Way, Standard) | 480 VAC, 60 Hz, 3 phase, 20 amps                      |           |  |
|   |  | 380 VAC, 50 Hz, 3 phase, 25 amps                      |           |  |
|   |  | <i>Optional: 208/230 VAC, 60 Hz, 3 phase, 40 amps</i> |           |  |
|   | Standard Voltage and<br>Required Service:<br>(4-Way, Optional) | 480 VAC, 60 Hz, 3 phase, 30 amps                      |           |  |
| 380 VAC, 50 Hz, 3 phase, 40 amps                      |  |   |           |  |
| <i>Optional: 208/230 VAC, 60 Hz, 3 phase, 60 amps</i> |  |   |           |  |
| <b>Weight:</b>  | Machine weight:<br>(3-Way, Standard)                           | 4,400 pounds  | [1996 kg] |  |
|   | Shipping weight:<br>(3-Way, Standard)                          | 4,850 pounds  | [2200 kg] |  |
|   | Machine weight:<br>(4-Way, Standard)                           | 4,650 pounds  | [2109 kg] |  |
|   | Shipping weight:<br>(4-Way, Standard)                          | 5,100 pounds  | [2313 kg] |  |

**Contact us :****[prhoff@prhoffman.com](mailto:prhoff@prhoffman.com)****+1 (717) 243-9900****Your Success = Our Success**

Revised Aug. 2019

453 Lincoln Street, CARLISLE, PA, USA 17013  
TEL: 1 717-243-9900 FAX: 1 717-243-4542[WWW.PRHOFFMAN.COM](http://WWW.PRHOFFMAN.COM)