



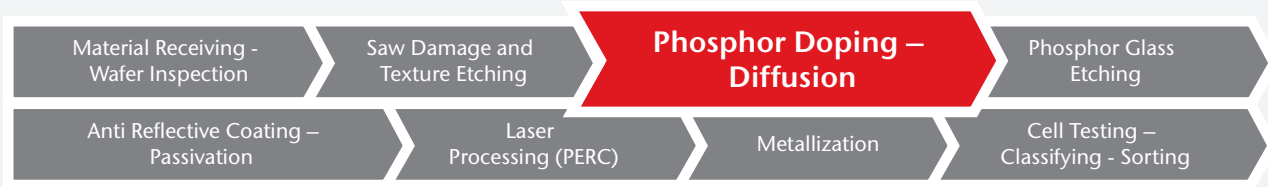
WAFER HANDLING DIFFUSION HIGH THROUGHPUT WHD HTP 10000

For more than 17 years, Jonas & Redmann has been delivering best-in-class automated loading and unloading equipment for the key process steps in crystalline silicon solar cell manufacturing. Today, our WHD system is the industry standard for automating batch-type tube diffusion systems.

The Jonas & Redmann Wafer Handling Diffusion High Throughput (boat loader/ unloader) is designed for the fully automatic loading and unloading of process boats, used in batch-type tube furnaces for diffusion (e.g. POCl_3 , BBr_3 , BCl_3) in the solar cell mass production. Generating emitters with high resistance in the process step Diffusion, is very important for the future function of the solar cell. The Jonas & Redmann WHD HTP serves high quality process results by a very precise and gentle crystalline silicon wafer handling.

- best-in-class tool with highest capacity (wafer/ hour) available on the market
- based on long-time proven concepts and established reliable handling devices
- reliable monitoring of operating sequence to prevent failure (e.g. by wafer breakage)
- proprietary handling technology that ensures a lowest breakage rate
- connectable with all tube diffusion furnaces on the market

Machine platform for automated loading and unloading of batch process equipment



The system is available in numerous different versions and can be configured to meet the specific process and capacity requirements, as well as varying degrees of automation.

WHD			WHD HTP		
inline		STA	inline		STA
1:1	TWIN		1:1	TWIN	
up to 4,000 w/ hr	up to 4,000 w/ hr	up to 4,000 w/ hr	up to 10,000 w/ hr	up to 10,000 w/ hr	up to 10,000 w/ hr

	configuration	options
material input/output	wafer carrier (e.g. Jonas & Redmann Automation Carrier)	interlinking to automated carrier transport
process control/measurement		sheet resistance measurement others on request
software	standard HMI, operator language English	customized operator language MES connection, e.g. Secs GEM, XML according Semi PV02
furnace interface	perfect adaption to all furnaces available on the market e.g. Centrotherm, China SC, Tempres	
boat handling	boat changer stand alone / manual boat loading TWIN module (2-furnace interface) TRIPLE module (3-furnace interface) trolley	
boat type	500 slots half pitch	other s on request
wafer transfer	back-to-back diamond	square full pitch
wafer format	156 mm	other wafer formats available on request (up to 163 mm)