



WAFER HANDLING PLASMA

For more than twenty years, we have been developing innovative, highly efficient automation solutions that have proven themselves around the world. Thanks to our years of experience in basic technologies such as control technology, we can also turn highly complex customer requirements into solutions that pay off.

In this process step (ARC) the future solar cells in the inline or batch process are coated with silicon nitride, which gives it its typical blue colour. The passivation of the surfaces and volumes of the silicon wafers means the performance of the solar cell is significantly increased.

- High performance automation for loading and unloading of graphite process boats with > 2200 wafers/hr throughput and > 97% uptime
- Maximization of output and the most accurate adaption to production requirements thanks to modular configuration and options for increasing the throughput
- Over 10 years of outstanding quality and experience in automation of anti-reflective-coating process
- Largest installed base of automation systems for anti-reflective-coating process worldwide

Jonas & Redmann WHP

This system is for the fully automated loading and unloading of graphite process boats with crystalline silicon wafers for processing in a batch PECVD system. The accurate position in the graphite boats is essential for the flawless electric contact of the wafers and thus is the prerequisite for a stable PECVD process. Jonas & Redmann WHP has constituted „state-of-the-art“ in production cluster anti-reflective-coating with PECVD direct plasma for a decade. The new generation of Jonas & Redmann Wafer Handling Plasma - WHP is the result of continuous further development, it can be modularly configured and is optimally adapted to the performance of the process cluster. With this the basis for significant productivity increase was created.

Six-Axis Robot with Wafer Protecting Multiple Gripper - The wafers are automatically separated from the carrier in the machine and inserted in the boat using a six-axis robot.

Process Control - The system can be fitted with a measuring device for visual colour inspection and measuring sheet thickness.

Connection to Transport and Linkage System
 There is the option of connecting the system to a fully automatic Jonas & Redmann transport and linkage system.

MES Connection - The system can be optionally fitted with a MES connection. The usual standard interface protocols SECS/GEM and XML are available for this. All specified process parameters and measurement results are collected and linked to the relevant wafer ID. Information is transmitted to the production control system (material executing system, MES) using a specified interface.

TECHNICAL DATA	
throughput	2200 wafers/hr
uptime	> 97 %
breakage	0,08 %
wafer size	125 / 156
wafer thickness	130-240 µm
wafer input	automation carrier, carrier for wet chemical processing
wafer output	automation carrier, carrier for wet chemical processing
dimension (l/w/h)	4550/2000/3000 (WHP XXL, without boat changer)

OPTIONS	
boat type	<input type="checkbox"/>
boat changer	<input type="checkbox"/>
inspection system for colour and layer Thickness	<input type="checkbox"/>
MES connection	<input type="checkbox"/>
connection to fully automated transport and linkage system	<input type="checkbox"/>