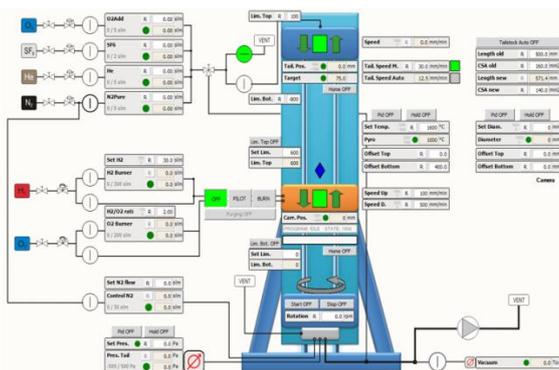


Introduction & Application

VSL-11 vertical glass working lathe is developed for jacketing preforms in vertical position, or for stretching preforms and tubes. As vertical has specific advantages over horizontal jacketing when very precise core concentricity is required, it is strongly suggested in fabrication of polarization maintaining fiber preforms, as well as in fabrication of low birefringence preforms.

Description

VSL-11 vertical jacketing lathe frame is made of welded steel profiles, to provide a sturdy, vibration-free base. Lathe bed is fixed to this frame in exact vertical position. The bed has two movable headstocks, top and bottom. Sturdy carriage is installed on high precision linear guides. Both headstocks and the carriage are driven by AC brushless servo motors, with drives connected to control system by EtherCAT interface. Position of each headstock and carriage is detected by absolute linear position sensors. Headstocks are equipped with a suitable scroll chuck, for heavy preforms a pneumatically operated model is used. Lathe can be equipped by a circular metal burner,



quasi-circular quartz tip burner or Optacore's MCF-35 MCVD furnace. One of the headstocks is equipped by a rotary seal (RSN-01 recommended) while the other is equipped by a simple soot box and tube pressure control (option). Pyrometer or IR scanner is added for preform or tube temperature control, and CCD camera-based vision system can be installed for PID tube diameter control or precise stretching of tubes and rods. Both headstocks are protected by heatshields and carriage is equipped with large exhaust ducts, to remove hot gases in axial direction, to prevent overheating.

Control system

VSL-11 is operated by WinMCVD Windows-based control system and software (ask for specifications).

Specifications

| | |
|-------------------------------|--|
| Total lathe height | 4046 mm |
| Lathe base | 1600 x 1600 mm |
| Bed length | 2900 mm |
| Distance between chuck tips | 1600 mm |
| Chuck axis above bed | 340 mm |
| Preform diameter | 15 - 80 mm standard |
| Burner H2/O2 flow | Standard 300/150 slm |
| Vacuum pump | Included |
| Preform gases, MFC controlled | O ₂ , N ₂ , option: SF ₆ , He |
| Temperature control | IR Pyrometer, PID closed loop |

