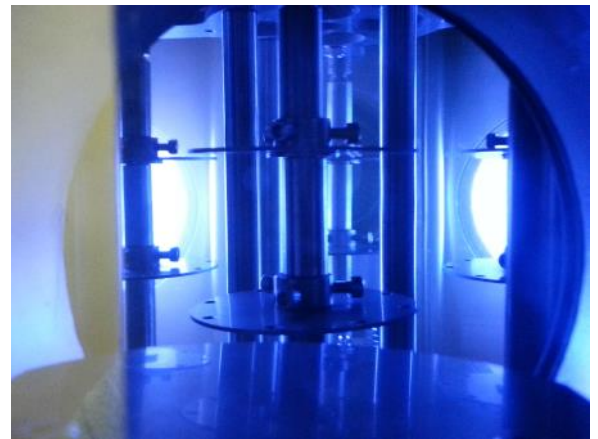
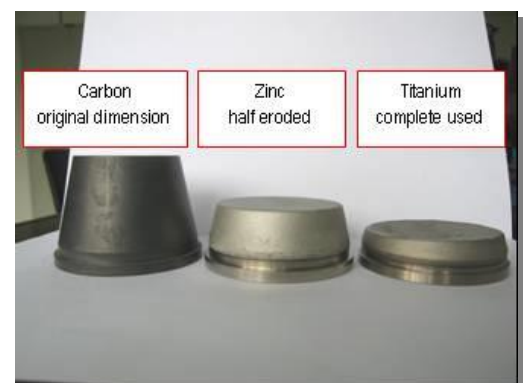
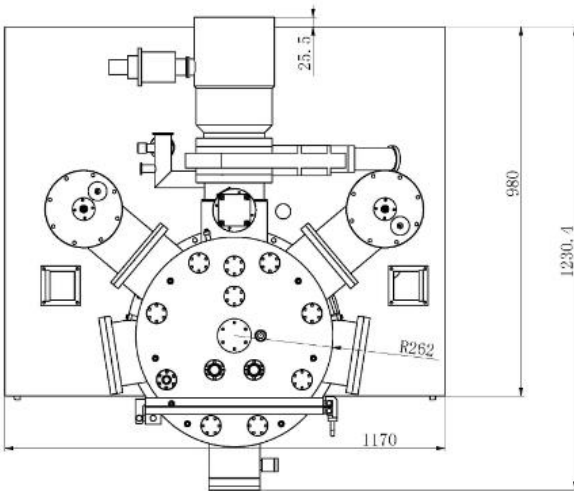
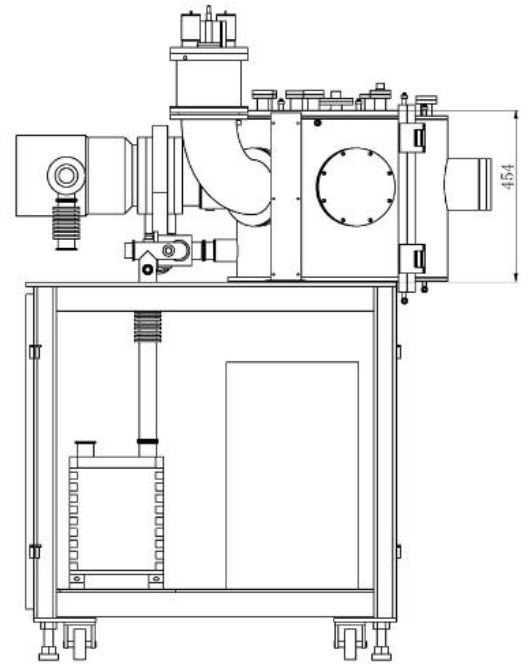
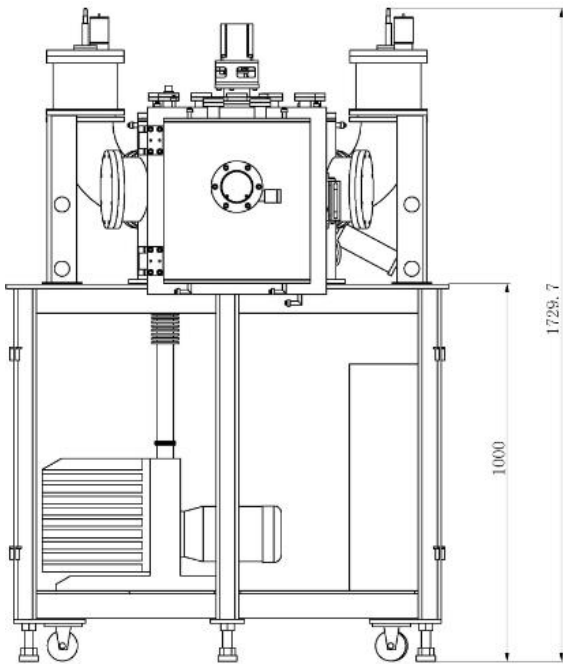


## DF500 DC-FCVA PVD System



<b>Model</b>	<b>DF 500</b>
<b>Chamber</b>	SS 304 steel $\Phi 500\text{mm} \times 450\text{mm}$ ; Double-wall with water cooling
<b>Pumping System</b>	Turbo-molecular pump 1300L/s and rotary pump 9L/s, throttle valve, pneumatic gate valve, foreline valve, roughing valve and venting valve
<b>Ultimate Pressure</b>	Better than $8 \times 10^{-5}$ Pa; From Atm. to $10^{-4}$ Pa $\leq 30\text{min}$
<b>Vacuum Measurement</b>	2 thermal gauges and 1 ion gauge with control displayer
<b>Gas Feeding</b>	2 MFCs 100SCCM with controller (optional for 4)
<b>Substrate Structure</b>	4 sets of double rotary substrate holders (can be tailor made)
<b>Substrate Rotation</b>	Satellite rotation with adjustable speed of 0-10RPM
<b>Chmber Heating</b>	PID temperature from RT to $350^{\circ}\text{C} \pm 2^{\circ}\text{C}$ by inserting heating bars with power $\geq 2\text{kW}$
<b>Substrate Bias</b>	DC output (20V-100V), Pulse output (100V-1000V, 40kHz, 10%-80%) or DC superposed Pulse output
<b>DC-FCVA Source</b>	2 sets for DC FCVA arc sources (optional for 4 sets) 90° electromagnetic filter with scanning coil for vertical arc beam swaying Cathode dimension: Bottom $\Phi 71\text{mm} \times$ Height $50\text{mm} \times$ Top $\Phi 50\text{mm}$ ; Auto electromechanical triggering ; Arc discharge voltage: 30V-70V; Arc current: 20A-100A;
<b>Interlock &amp; Protection</b>	Vacuum & cooling water interlock, over-current & over-voltage protection
<b>Applications</b>	Reactive deposition for nano-structured, nano-composited and multilayer of conductive, semi-conductive, insulating and opto-electrical films



The system has equipped with 2 sets of DC filtered cathodic vacuum arc DC-FCVA sources (able to install 4 sets) for thin film deposition. The DC-FCVA sources are used for high ionization ion reactive deposition. Two sources can be flexible operated under different discharge current to control the composition percentage during the deposition process. There also have 2 MFCs (optional for 4) to handle 2 types of gas species for reactive deposition. In additions, there are 4 revolution stages that the workpieces can be subjected to double rotary to achieve high uniform deposition where the treatment zone is upto  $\geq 150\text{mm}$ . The ambient temperature of the chamber can be heated up to  $\sim 350^\circ\text{C}$  and the workpieces can be Pulse/DC biased to obtain coatings with desirable properties.