Lithium Polymer Battery Fabrication & Equipment

**Step 1 Electrode Sheet Preparation**

- **Furnace** to sinter raw active material (Cathode & Anode)
- **Milling Machine** to mill material
- **Mixer** to mixing active, conductive and binder material into paste in vacuum
- **Coater** to coat paste on current collector and attached **Heater** to dry it
- **Rolling Press** to roll the electrode to proper thickness (Calendering is optional after this step)

**Step 2 Cell Assembly**

- **Stacking Method**
  - **Mould Cutting Machine** to cut electrode sheet to mould size
  - **Manual Stacking Machine** to stack layers in form of Positive + Separator + Negative
- **Winding Method**
  - **Slitting Machine** to slit electrode sheet to strip
  - **Winding Machine** to wind strips in form of Positive + Separator + Negative
  - **Ultrasonic Welding Machine** to weld positive and negative tab onto the cell
  - **Short-circuit Detector** to test if the cell has short-circuit
  - **Vacuum Oven** to dry the cell if no short-circuit

**Step 3 Case Formation & Sealing**

- **Cup Forming Machine** to punch cup-shape and gas receiver on Aluminum Sheet and then place cell into the cup
- **Top & Side Heat Sealing Machine** to seal the top and one side after double-up
- **Electrolyte Filling System** to fill electrolyte in vacuum / glove box
- **Vacuum Primary-sealing Machine** to seal another side under vacuum after electrolyte is filled
- **Battery Analyzer** to Charge/Discharge the cell to do battery formation and drive the useless gas caused by electrode chem. Reaction into gas receiver
- **Cutting off the gas receiver and Vacuum Sealing Machine** do final sealing on the cutting edge under vacuum
- Optional step like case edge folding & trim

**Step 4 Battery Testing**

- **Battery Analyzer** to test the battery’s performance and **Impedance Tester** to measure battery’s internal resistance.