Features in technological process of the hot reflux multi-function extraction and concentration unit:

1. Production time is shortened by 50%. In traditional process, after repeated extraction then concentration starts. But in this very process, two processes of extraction and concentration are grouped in the same unit and done at the same time, only (4-6) hours is needed to finish a batch production.

2. Saving steam by 60% or more. The secondary steam produced in the extracting tank works as the heating source of the concentrator, and medicinal liquid at a higher temperature flows into a concentrator, thus the heat energy consumption is greatly reduced.

3. Solvent input decreased by 60%. During the extraction process solvent is needed to added only for one time, and the solvent in dregs and medicinal liquid basically can recovered (with a loss rate below 5%), is utilized in the unit in circulation, so less solvent application, low consumption, and the cost of production declines substantially. The yield ratio of the extract can be increased by 10%-20% compared with the traditional technological process, and the effective ingredient content increases greatly.

When the extracted liquid is pumped into the concentrator through extracting and filtering tube, and the secondary steam effected during concentration is condensed to condensate and sent back to extracting tank and is used as heating source and the new solvent, so that a supplementary (or new) solvent large hot reflux extraction circulation is formed.

Therefore, the one-time input solvent can achieve large reflux extraction circulation, and a very high gradient between the concentration of solute in medicinal material and the concentration of solute in solvent is remained throughout. Thus the solute in the medicinal material is dissolved quickly until the extraction is completed.

This shows, the yield ratio of the extract and the effective components are obviously increased, which laid a good foundation for the qualitative and quantitative identification of drugs.

5. Multi purposes on one machine (separate extraction, single concentration, synchronous extraction and concentration ), compact structure, easy in operation. A set of equipment can be operated by one person, covering a small area, saving intermediate storage tank, sharing a heat exchanging equipment, so investment cost decreases.

6. Full set of equipment are made in high quality stainless steel, adopting fully sealed pipelining software technological process model, which can both reduce the environmental pollution, but also eliminate heavy metals and bacteria from infiltration, meeting fully the requirements of GMP.

7. Because the equipment run in the state of negative pressure, so the extraction temperature can be adjusted between 70-80 DEG C, as is extremely advantageous to the extraction of heat-sensitive drug and the drug susceptible to polymerization.
8. The condenser adopts the Military Industrial Technologies and special structure design, whose heat-exchanging efficiency is 2 to 3 times higher than that of the conventional products on the market.

9. In the plant operation, all of the condensate from the secondary vapors eventually return to the extraction tank acting as a supplementary solvent, the extract yield ratio will not be affected even if the material-losing happens during concentration process.