

AQUA REGIA REFINING

Gold and Silver Puification Equipment

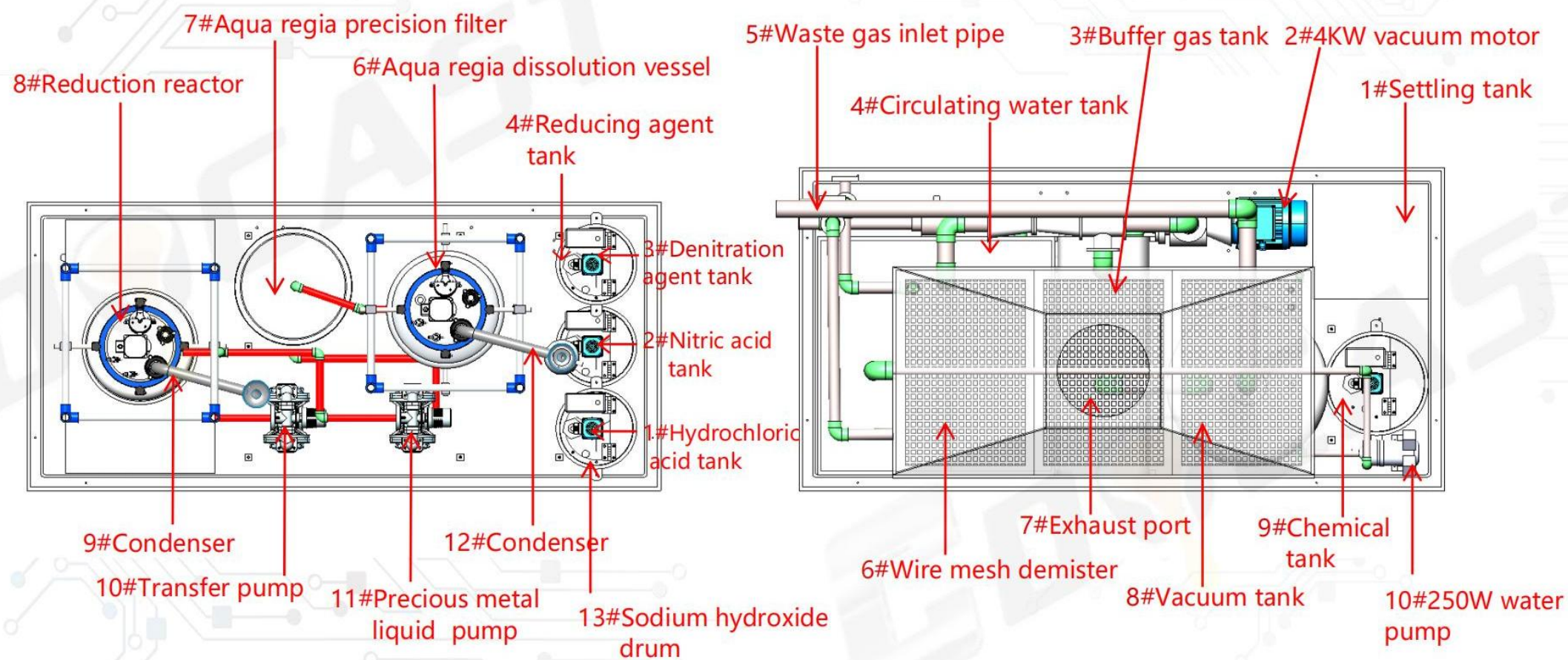


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Platinum and Palladium Purification Equipment



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Comparison Table

Feature	Aqua Regia Method	Electrolysis Method
Process Type	Chemical dissolution	Electrochemical process
Chemicals Used	HNO ₃ + HCl (3:1 ratio)	Acidic/alkaline electrolyte (e.g., H ₂ SO ₄)
Suitable Metals	Au, Pt, Pd	Au, Ag, Pt (varies by setup)
Purity Achievable	99.5%-99.99%	99.9%-99.999%
Speed	Fast (hours)	Slow (days for large batches)
Energy Consumption	Low (room temp.)	High (requires electricity)
Waste Production	Toxic fumes (NO _x , Cl ₂), acidic waste	Less chemical waste, metal sludge
Safety Concerns	Highly corrosive, toxic gases	Electrical hazards, electrolyte handling
Equipment Cost	Low (glassware, fume hood)	High (power supply, specialized cells)
Scalability	Suitable for small-medium batches	Better for industrial-scale production
Byproduct Recovery	Requires additional steps	Easier (e.g., anode slime collection)
Skill Requirement	Moderate (acid handling experience)	High (electrochemistry knowledge)

Features

- High Efficiency – Effectively dissolves gold, platinum, and palladium, even in small quantities.
- Versatility – Suitable for refining scrap jewelry, electronic waste, and industrial catalysts.
- Precision – Allows selective precipitation of pure metals (e.g., gold can be isolated using reducing agents like sodium metabisulfite).
- Cost-Effective – Lower initial setup cost compared to electrolytic systems.

Application

