



Merrill Crowe Circuit Model Pricing

CONTACT US

Phone: 310-830-6601

FAX: 310-830-9336

Email: info@sepor.com
& services@sepor.com

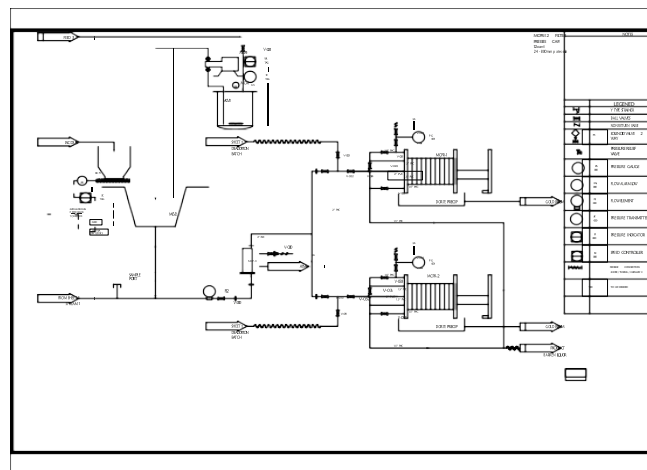
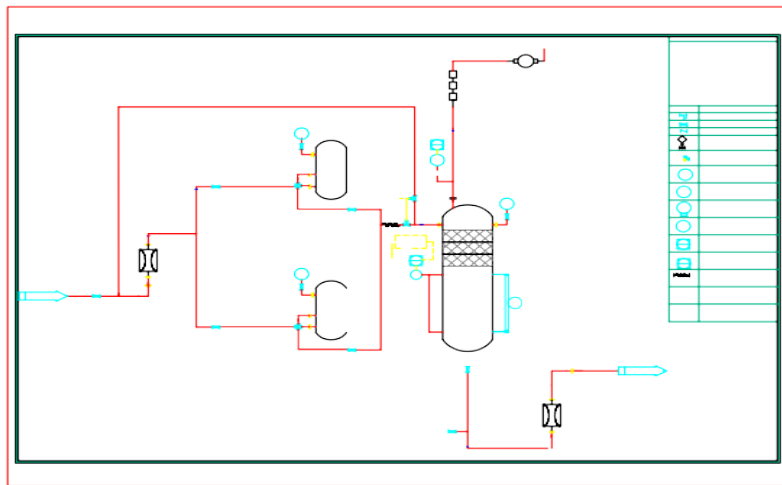
LOCATIONS

WEST COAST

718 N. Fries Avenue
Wilmington, CA 90744

EAST COAST

3740 NW 124th Ave
Coral Springs, FL 33065



The Merrill-Crowe gold recovery process removes precious metals from a cyanide solution by zinc precipitation.

The pregnant solution is first clarified through filters such as horizontal leaf type clarifiers.

By using a precoat system (with diatomaceous earth) an extremely clear solution can be produced. The specific design criteria for these types of filters vary with the turbidity of the leach solutions. To avoid major upsets in the circuit, two filters should be online while another is being cleaned,

precoated, and readied to go online as the next filter goes out of service. The solids removed by these filters are of no value and are backflushed to tails.



The vacuum system removes oxygen from the solution in a packed tower. Solution is percolated through a packing bed while under a

vacuum. Flashing water vapor strips oxygen from the solution. Special attention must be paid to eliminating any air leaking into the tower, as this can decrease the efficiency of the vacuum system. Solution exits from the bottom of the tower and results in a very low net suction head on the precipitate feed pumps. A careful selection of these pumps will avoid cavitation and the tendency to pull air back into the solution. It should also be noted that these pumps will require liquid seal in the packing area so that air does not leak into the back solution. Zinc feed addition utilizes a zinc feeder with an auger and moving side walls to avoid bridging of the material. Using a cone bottom tank with a steady head tank for zinc mixing solution (usually a cyanide solution) will assure that no air will leak into the system. With a rich pregnant solution, the zinc will be better utilized, and conversely, with a weak pregnant solution it will be less utilized.

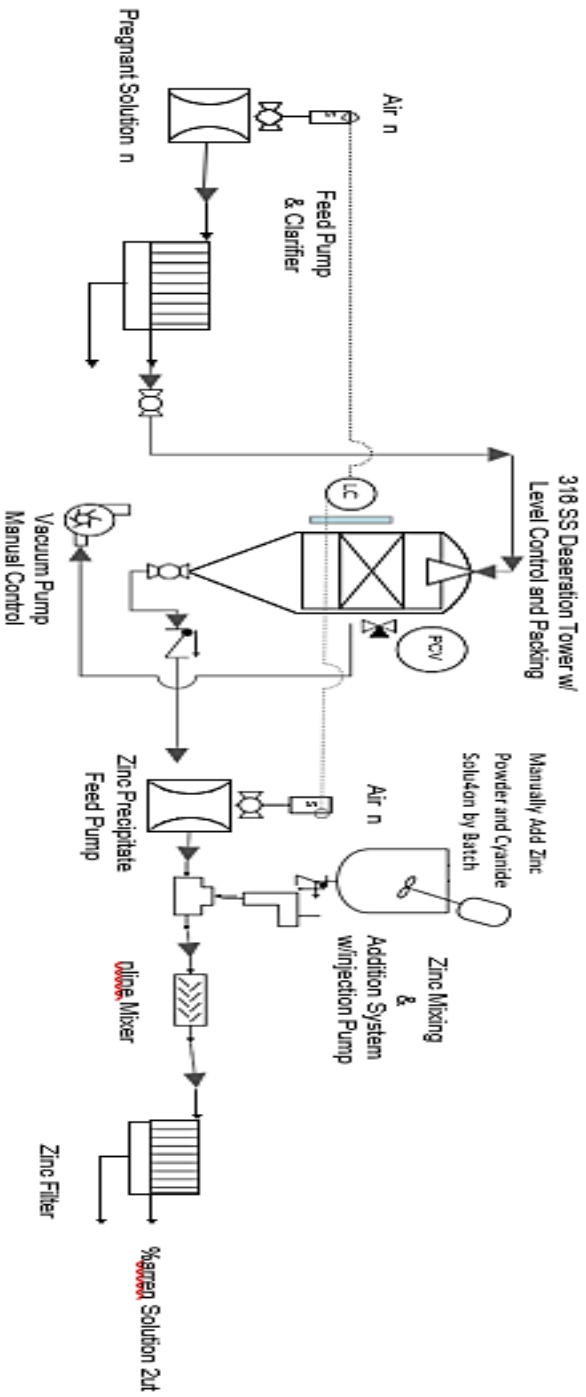


Using lead nitrate in the zinc system can activate the zinc. It must be used in low to prevent blinding off the surface of the zinc and prevent precipitation of the precious metals. Excessive use of lead nitrate can form a lead hydroxide gel and blind the filters.

Zinc must be added at a constant rate. A variable speed feeder is recommended for this application. The Zinc must be kept dry to keep it free flowing. The zinc solution is added to the line between the deaeration tower and the precipitate feed pumps.

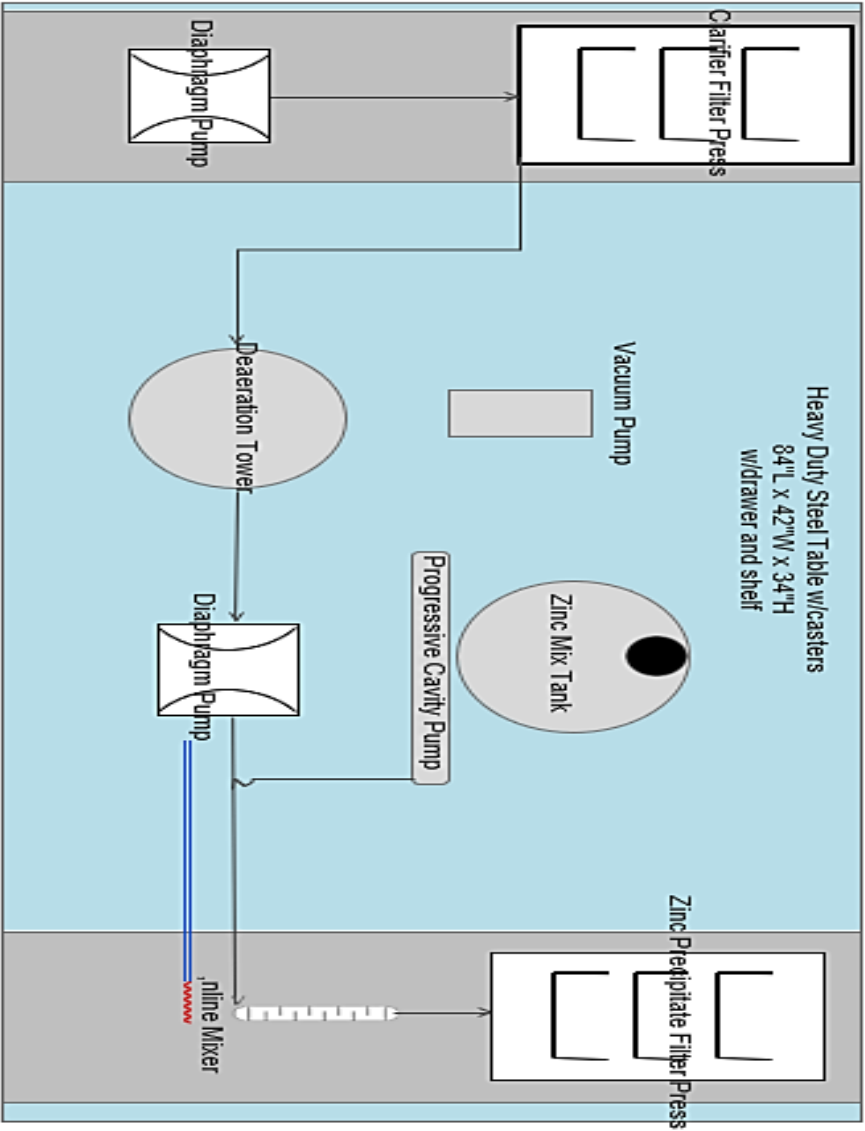
Final filtration of the precious metals is accomplished with the precipitate filter feed pumps and filter presses. The feed pumps must have submerged liquid seals over the packing area or flushed double mechanical seals and have a low NPSH requirement. Most filters are either the plate and frame type or the recessed plate type. Filter cake is collected in the chambers in the chambers between the plates and can be air blown to remove a substantial amount of water.


Sepor Bench Scale Merrill Crowe Circuit
Capacity ~ 1 to 5 Liter per Minute



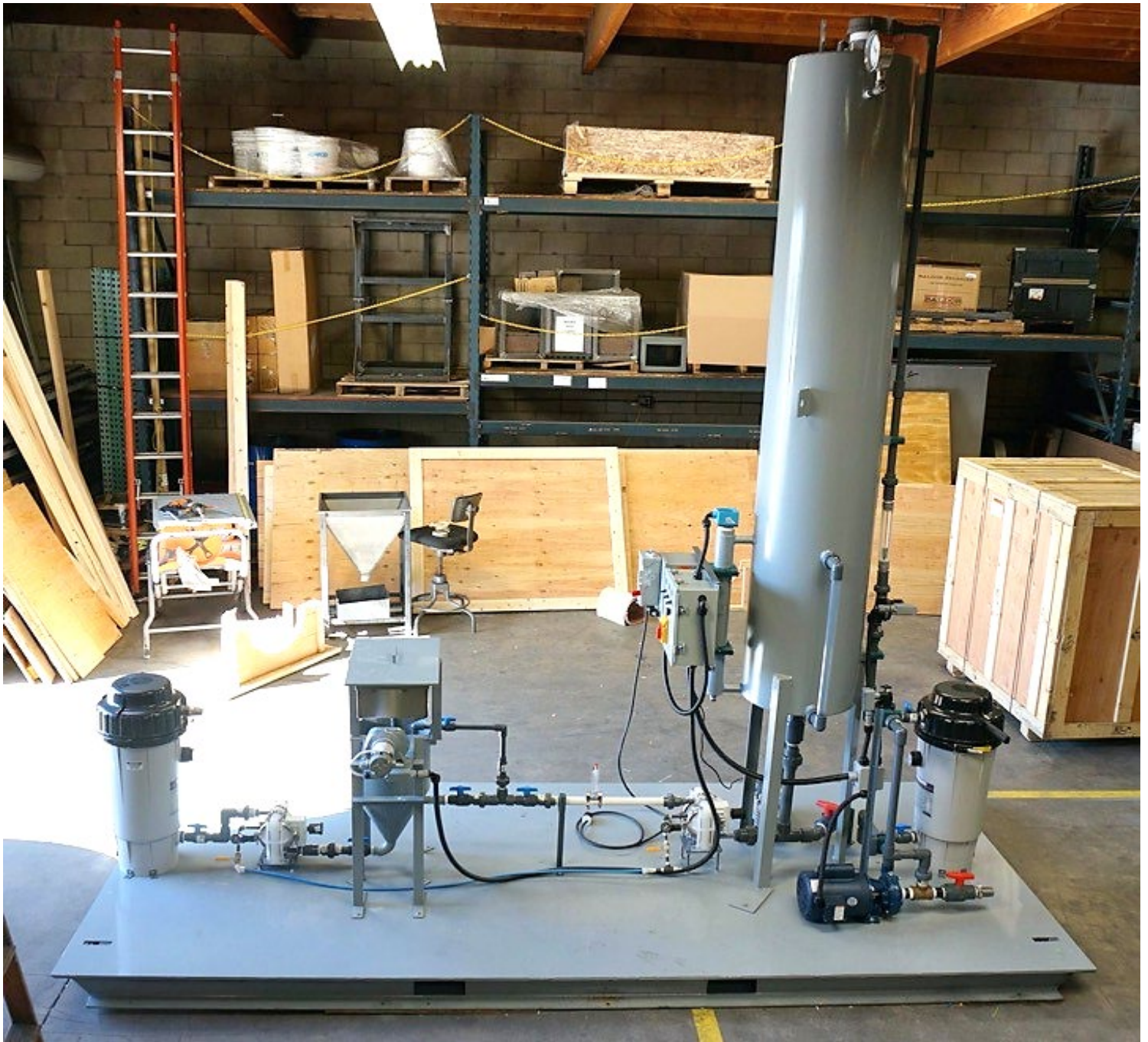
	This drawing is the property of Sepor Inc. Any reproduction or distribution to 3rd parties is strictly prohibited without written permission from Sepor Inc.
	Project: Bench Scale Merrill Crowe
Authorized: _____ Checked: _____	Drawing Title: General Flowchart
Approved: _____	Drawn by: TJM
Rev: 1	Date: 28-May-20
DRG NO.: 1	

Plan View
Bench Scale Merrill Crowe Circuit



		Project:	
		Bench Scale Merrill Crowe	
This drawing is the property of Sepor Inc. Any reproduction or distribution to 3rd parties is strictly prohibited without written permission from Sepor Inc.		Approved:	
Drawn by: T.M.		Drawing Title: Layout - Plan View	
Rev: 1		Date: 28-May-20	
Rev: 1		DRG NO.: 2	

Budgetary Price - US\$75,000.00



65 TPD University Demo Model

These small units are excellent for demonstrating Merrill Crowe concepts to students and operators. For full operational use, it is best to add redundant clarifiers and filter presses.

Budgetary Price - US\$100,000

300 solution tonnes per day

This plant will process approximately 12 to 15 m³/hr of clean (<50 ppm TSS), precious metal (PM) bearing cyanide solution. It includes 2 canister type clarifier filters (1 in use/1 standby), a 30" diameter vacuum deaeration vessel complete with packing and spray nozzle, a 1/5 hp zinc screw feeder and a zinc precipitation injection system with a 1/3 hp progressive cavity VFD controlled pump. The zinc slurry is injected into the pressure side of the precipitate filter feed pump. All major solution/slurry pumps are air-driven double diaphragm pumps that require up to 60 cfm compressed air with a minimum pressure of 65 psi (compressor not included). This includes the clarifier feed pump and the zinc filtration feed pump. A 2.5 hp lubricated rotary vane vacuum pump with a VFD pulls the required vacuum on the deaeration tower to reduce dissolved oxygen levels to below 1 ppm in solution prior to zinc addition. One 630 mm filter press with 5 ft³ of filter capacity is included in the base price. Duplicate filter presses (1 in use/1 standby) are required for the circuit to operate 24 hours per day. The system comes with one (1) diatomaceous earth mix tank and pump for clarifier and filter precoat.

The basic price for this circuit is \$285,000.

OPTIONS:

- Extra 630 mm Filter Press for continuous operation: \$57,000
- Lead salt addition system: \$11,000.00
- Automated Control System, including level sensors with feedback control to feed pump VFDs: US\$90,000 (requires switching from air driven pumps to VFD controlled hose pumps)



300 TPD Production Plant

Budgetary Price - \$285,000.00

600 solution tonnes per day

The plant is designed to process 25 m³/hr of clean (<50 ppm TSS) PM bearing cyanide solution. It includes 2 canister type clarifier filters (1 in use/1 standby), a 36" diameter vacuum deaeration vessel complete with packing and spray nozzle, a 1/2 hp zinc screw feeder and a zinc precipitation injection system with a 1/2 hp progressive cavity VFD controlled pump. The zinc slurry is injected into the pressure side of the precipitate filter feed pump. All major solution/slurry pumps are hose pumps that are controlled by level sensors in the deaeration vessel and pressure sensors on the zinc precipitate filters that provide feedback to the pump VFDs. This includes the clarifier feed pump and the zinc filtration feed pump. A 5 hp lubricated rotary vane vacuum pump with a VFD pulls the required vacuum on the deaeration tower to reduce dissolved oxygen levels to below 1 ppm in solution prior to zinc addition. Three 800 mm filter press with 12 ft³ of filter capacity are included in the base price to permit the unit to operate around the clock and assume that 2 units are operating with one unit on standby. The system comes with two (2) diatomaceous earth mix tanks and pumps, one for the clarifiers and one for the zinc precipitate filters precoat.

The basic price for this system is \$499,000.

OPTIONS:

- Replace canister type clarifier filters with filter presses (required if TSS > 50 ppm)
US \$125,000
- Lead salt addition system: US \$11,000

Merrill Crowe Information QUESTIONNAIRE

Date: _____

COMPANY NAME: _____

CONTACT INFORMATION: _____

ADDRESS: _____

EMAIL: _____

PHONE: _____

FAX: _____

WEBSITE: _____

CONTACT NAME: _____

PREFERRED METHOD OF CONTACT: PHONE _____ EMAIL _____

HAVE YOU PURCHASED FROM SEPOR BEFORE? _____ YES _____ NO

SITE DETAILS

COUNTRY: _____ CITY: _____

SITE DETAILS

BRIEF CLIMATE DESCRIPTION: (Information on temperature range, rainfall, humidity, or other pertinent information)

WILL THE UNIT BE INDOOR OR OUTDOOR? _____ INDOOR _____ OUTDOOR

3 PH AVAILABLE? _____ YES _____ NO

VOLTAGE: _____

ARE OUTAGEES COMMON? _____ YES _____ NO

OTHER UTILITIES: IS COMPRESSES AIR AVAILABLE: IF SO, WHAT CTM AT WHAT PRESSURE?

OPERATIONAL DETAILS: (Brief description of process that is producing the pregnant feed Soln ie is it from a milling/leaching process with thickeners? From a heap leach operation? Is it a non-cyanide bearing solution?)

Soln CHESMETRY:

pH		
TSS		PPM
TDS		PPM
Au		PPM
Ag		PPM

OTHER MATRIX COMPONENTS & CONCENTRATIONS: (Copper or any other metals that might be present in significant concentrations that could impact zinc consumption)

DESIRED Soln FEED RATE: _____ GPM

We intend to operate the unit:

HOURS PER DAY: _____

DAYS PER WEEK: _____

WEEKS PER YEAR: _____

RETURN COMPLETED PDF TO INFO@SEPOR.COM