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Turn-Key Ore Processors, Components, Pricing, and Specifications

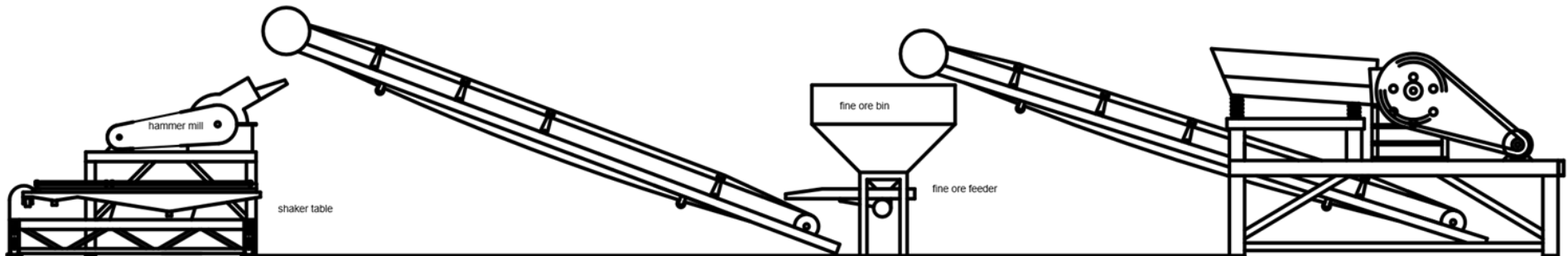



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To view video demonstrations of equipment in this brochure, click on boxes labeled 

Mt. Baker Mining and Metals, LLC
Phone: (360)-595-4445
Email: info@mbmmlc.com

Overview

Mt. Baker Mining and Metal's turn-key ore processors are designed for hands-free operation, without the need for leaching, mercury, or floatation. All components of the processor are mechanical, and do not require electronics or computers for operation. This is accomplished by crushing and grinding the raw ore through a jaw crusher and hammer mill, and using gravity separation on a concentrating shaker table to separate the precious metals from the waste. When operated properly, 95% of the free milling gold to <325 mesh is captured, with documented recovery of gold as fine as 400 mesh. The ore follows a five step process for recovery, outlined below.

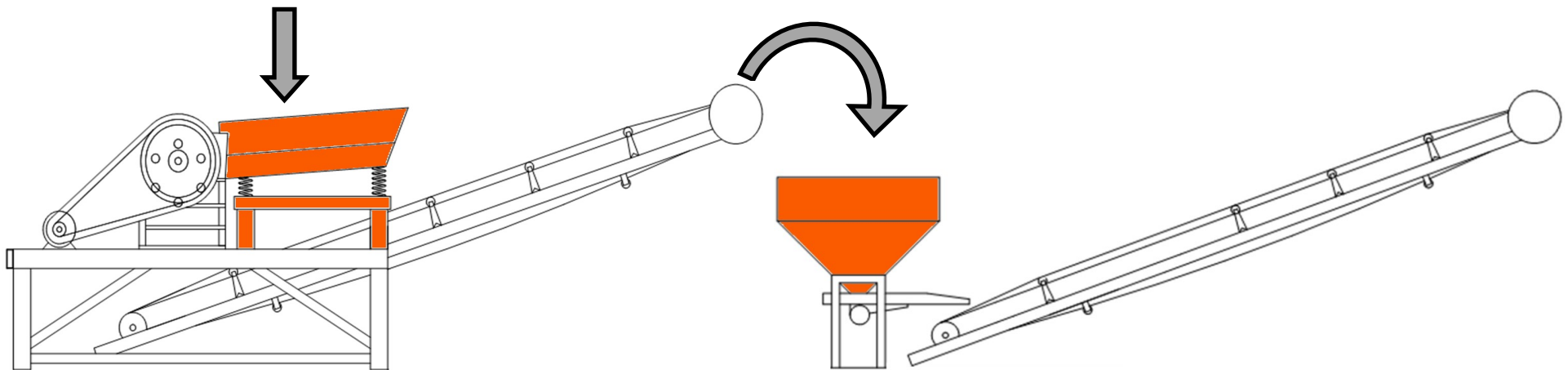
[Video: Complete Gold Recovery Processing Line](#)

Step 1: Ore Loaded in Jaw Crusher Module

The jaw crusher module is comprised of a vibrating ore hopper, a jaw crusher, and a 16" wide inclined conveyor belt, all integrated on a structural steel stand. Ore is loaded via a backhoe or loader bucket into the vibrating ore hopper, which feeds the jaw crusher. Material is crushed, typically to <1", and feeds onto the conveyor belt, which carries it to the next module.

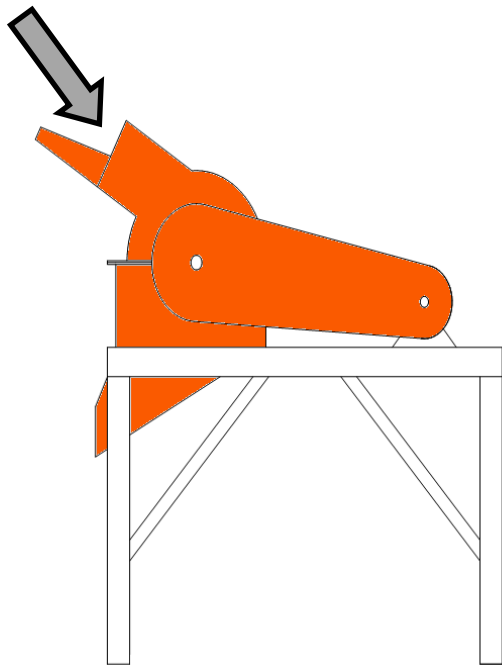
Step 2: Crushed Material Runs Though Fine Ore Hopper Module

The fine ore hopper/feeder module consists of a 1+ cubic yard fine ore hopper, electromagnetic metering feeder, 16" wide inclined conveyor belt, all integrated on a structural steel stand. Crushed material flows into the fine ore hopper, where it feeds into the mag feeder. Contents are smoothly metered onto the conveyor belt, providing a consistent feed rate to the hammer mill.



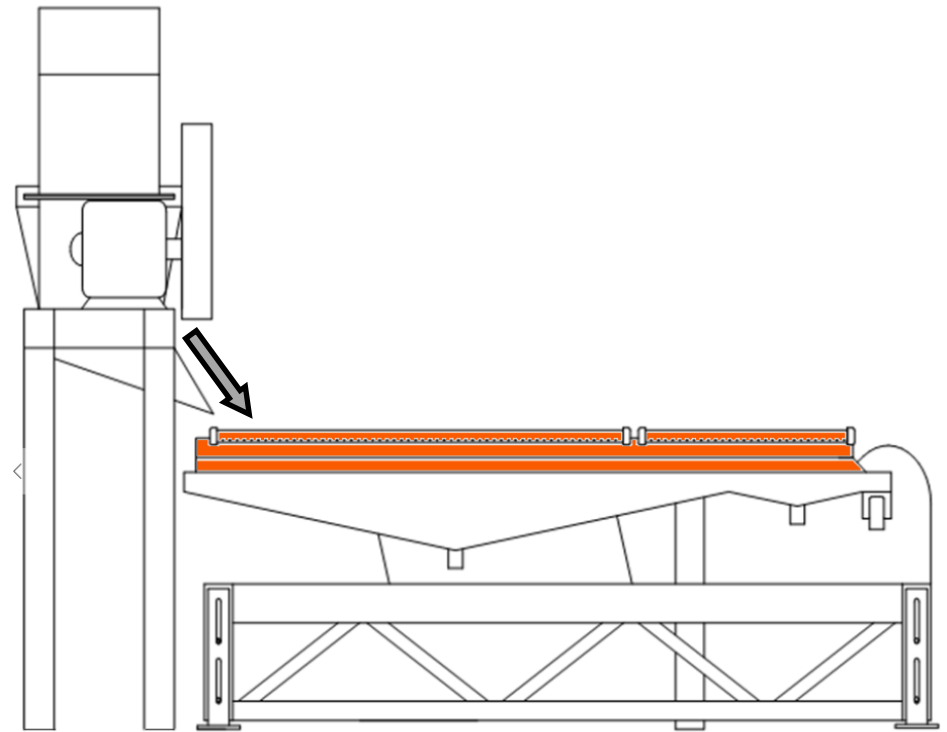
Step 3: Ore Pulverized Through Hammer Mill

Hammer mills provide the final step in grinding the material for gravity separation on the shaker table. Each hammer mill has high chrome hammers, AR400 liners and screens, and can be run wet or dry. The discharge material is fine, typically with 70% passing 20 mesh at rated throughput.



Step 4: Material Run Across Shaker Table

Slurried material from the hammer mill feeds onto the shaker table. The shaker table uses a ramp and plateau built into the top, based on an old Deister patent. This allows a cleaner cut between high density material, lower density material, and waste products. Only the most dense material will climb the ramp in the table grooves up to the next plateau. The less dense material forms a band at the base of the ramp and reports to middlings, while the lighter waste material stays behind and reports to the tailings.



Step 5 (optional): Use a Spiral Classifier on Shaker Table Tailings

Depending on the liberation size of the ore, it may be beneficial to classify the tailings (waste material) with a spiral classifier. Fine gold particles can be trapped in ore which needs further pulverizing in the hammer mill, and a spiral classifier is effective at separating oversize material with potential gold values from the smaller, waste material. The oversize material is augered up and out the top, while a port on the side of the spiral classifier dispenses the waste. The size of separation can be adjusted, based on water flow and pool size of the water in the bottom of the classifier.



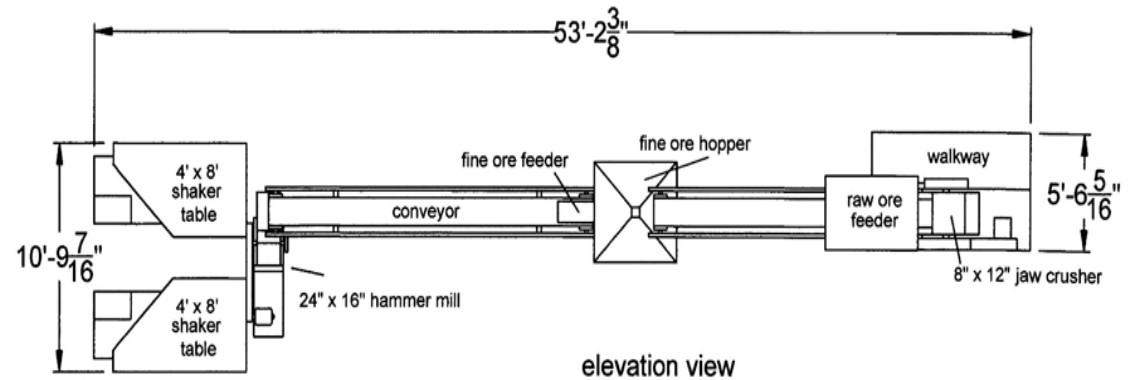
Additional Notes and Recommendations

All components of Mt. Baker Mining and Metals' turn-key ore processors are industrial grade, and designed for long term use. When used with a hammer mill, the best application is as a pilot plant or for processing a limited tonnage of ore (1,000s of tons rather than 10,000s of tons). The hammer mill is the limiting factor for long-term, permanent installations, as it is a high-wear, high maintenance machine. A ball mill is a logical and more permanent upgrade that can be installed later, to replace the hammer mill. With a ball mill, the turn-key ore processor is suited to run for 10,000s of tons with only routine maintenance.

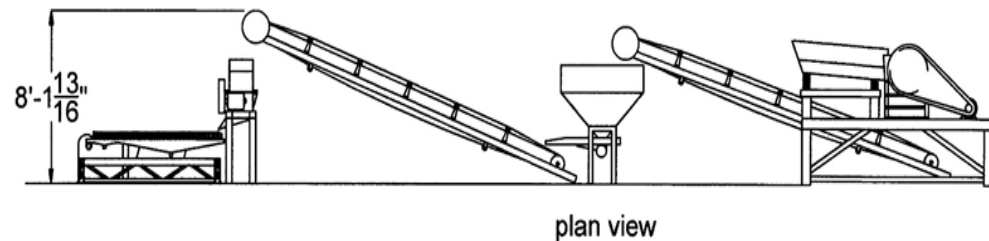
We recommend potential buyers to get qualified assistance, other than Mt. Baker Mining and Metals, in the areas of mill design/operation, engineering and electrical wiring to assure a smooth start-up and safe operation.

Turn-Key Ore Processors

- ✓ Turn-key ore processors integrate a jaw crusher module, fine ore hopper/feeder module, hammer mill, and shaker table
- ✓ Processor operates with mechanical crushing and grinding of ore with gravity recovery of gold and
- ✓ Recovery of 95% of the free milling gold down to 325 mesh, without mercury, leaching, or flotation
- ✓ Built into structural framework on skids which allow ease of operation, with no anchoring needed
- ✓ No computers or electronic controls



Video: Complete Gold Recovery Processing Line



Specifications and Pricing

Turn-Key Ore Processor	Jaw Crusher Module	Fine Ore Hopper/Feeder Module	Hammer Mill	Shaker Table	Weight (lbs)	Total Power (kW)	Price
1 Ton/Hour	6" x 10"	2 TPH	16" x 12"	4' x 8' table	9,000	24	\$56,900
2 Ton/Hour	8" x 12"	2 TPH	24" x 16"	Two 4' x 8' tables	16,500	38.5	\$79,900
4-5 Ton/Hour	10" x 16"	5 TPH	Two 24" x 16"	Four 4' x 8' tables	21,500	47	\$124,900

** All prices listed in USD. For all machinery, the electric control panel, starter, breaker, and wiring to be provided by customer

Jaw Crusher Modules



Video: 16" x 24" Jaw Crusher Module

- ✓ Turn-key jaw crusher system, powered with three phase electric motors
- ✓ Includes a 1 yard vibrating feeder/hopper, a jaw crusher, and a transfer conveyor to move the discharge of the jaw crusher, all on a structural steel framework with skids
- ✓ Jaw crusher module is the first component of our turn-key ore processors
- ✓ Most commonly used in processing quarry gravel, broken concrete and demolition waste, and scrap quartz/granite countertop material

Specifications and Pricing

Jaw Size	Tons Per Hour	Feed Size	Dis-charge Size	Weight (lbs)	Total Power (kW)	Price
6" x 10"	1 - 3	5.5"	3/4" - 2"	4,000	8	\$20,900
8" x 12"	2 - 6	7.5"	3/4" - 2.5"	5,000	9.5	\$22,600
10" x 16"	5 - 20	9"	1" - 3"	9,000	17	\$29,300

Fine Ore Hopper Modules



- ✓ Prevents surges of material from clogging the system, by holding excess material in the hopper, and metering out contents in a controlled way
- ✓ Includes a 1 yard ore hopper, an electromagnetic feeder, and a transfer conveyor to move the discharge of the hopper, all on a structural steel framework with skids
- ✓ Fine ore hopper/feeder module is second component of our turn-key ore processors
- ✓ Most commonly used to feed a hammer mill or ball mill for pulverizing ore, but useful for feeding any free-flowing material

Specifications and Pricing

Capacity	Hopper Size	Max Feed Size	Dis-charge Size	Weight (lbs)	Total Power (kW)	Price
2 ton/hour	1 cubic yard	<1"	<1"	1,400	3	\$9,800
5 ton/hour	1 cubic yard	<1"	<1"	1,500	3.5	\$11,900

Hammer Mills



Shaker Tables



- ✓ Complete and ready to run including hammer mill, inlet chute, belts, motor, full enclosure guards, on a steel skid
- ✓ Industrial grade, with replaceable high-chrome hammers, AR400 case liners, and AR400 screens
- ✓ Hammers can be rotated for additional life
- ✓ Different screens available for varying discharge sizes
- ✓ High throughput with a small footprint
- ✓ Runs both wet and dry

Specifications and Pricing

Hammer Mill Size	Tons/hour with <3/4"	Max Feed Size	Dis-charge Size	Weight (lbs)	Price
16" x 12"	1	<2.5"	70% passing	1,600	\$7,500
24" x 16"	2	<3.5"	70% passing	3,000	\$13,900

- ✓ High-grade gold concentrate; 95% of the free gold at >325 mesh with minimal contamination
- ✓ Utilizes ramp and plateau system (old Deister patent) with specially designed table grooves for maximum recovery
- ✓ Sulfide middlings with values and other dense material recovered with little contamination
- ✓ Separate discharge for tailing (waste) product

Specifications and Pricing

Shaker Table Size	Capacity (lbs/hr)	Motor, 120V Single Phase	Weight (lbs)	Price
2' x 4'	300 - 500	1/2 hp, 120V	300 lbs	\$6,900
4' x 8'	2,000 - 2,500	1/2 hp, 120V	750 lbs	\$12,900

Spare Parts

Jaw Crushers

Jaw Size	Jaw plates	Belts	Toggle Plates
6" x 10"	\$425	\$275	\$550
8" x 12"	\$550	\$275	\$550
10" x 16"	\$1,325	\$340	\$625



Hammer Mills

Hammer Mill Size	Pillow Block Bearings (set of 2)	Hammers, full set (every 40 hours)	AR400 Screens (every 120 hours)	AR400 Liners (250+ hours)	Rotor Assembly w/Hammers
16" x 12"	\$190	\$395	\$675	\$800	\$2,550
24" x 16"	\$230	\$545	\$775	\$925	\$3,950



★ Lower wear components of turn-key ore processors are engineered to last 10,000+ tons without issue. This includes shaker tables, ore hoppers, electromagnetic feeders, and conveyors. If you would like more information regarding maintenance costs, recommended spare parts, or configuration of machinery, we are happy to answer any questions and provide recommendations.