



Micro Multi Gravity Separator

Designed specifically as an affordable and portable solution for the laboratory testing of gravity separation using smaller weights of mineral samples

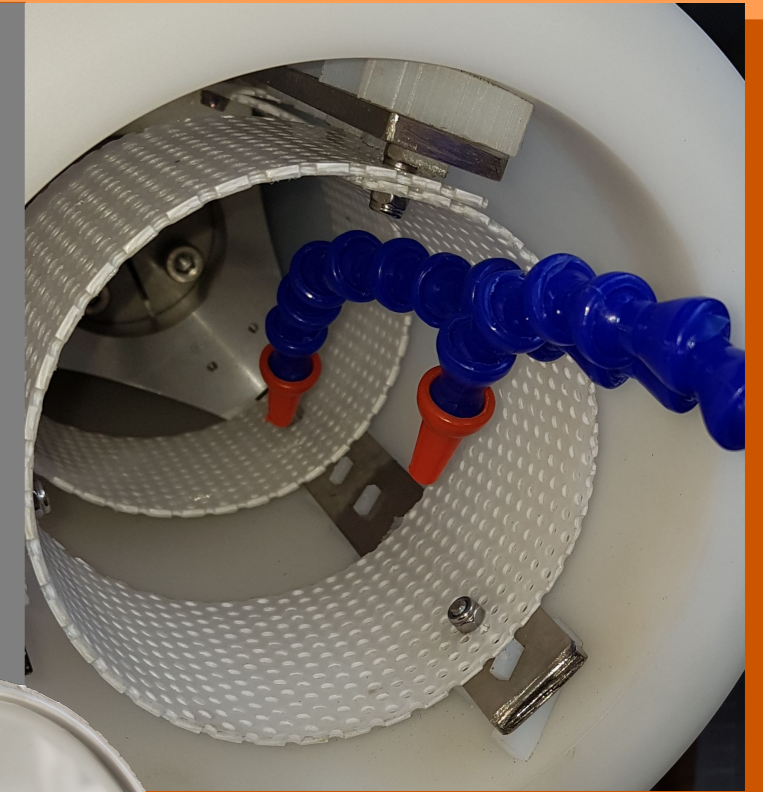
The **Micro MGS** is a miniaturized version of a proven production method. Like the larger members of the **Gravity Mining Family**, the Micro Multi Gravity Separator (Micro MGS) operates on a similar principle to a shaking table to separate and upgrade very fine materials. MGS' subtle centrifugal force simulates **enhanced gravity**, pinning heavier materials to the wall of the drum, while lighter tailings are agitated by the shaking motion and washed away.

The Micro MGS was designed specifically to allow rapid test results to be produced from **very limited sized samples**. Scoping tests can usually be carried out with as little as 10 kg of sample with more detailed grade and recovery optimization work from c.75 kg of sample. Alternatively, the **small size and affordable cost** means that it can be sent to the mine site, avoiding the need for the shipment of high value precious metal ores.

The benefits of using an MGS system in a gravity circuit are typically:

- Delivers very **high grade and recovery** from fine and ultrafine material
- **Sustainable, chemical free** processing
- Suitable for concentrating many valuable metal bearing ores
- Flexible solution
- *Can be used to produce saleable grade concentrate from low grade tailings in one step, or*
- *Can be used in a two stage process either as a rougher finisher to optimize capacity and recovery*

Micro MGS' miniaturized scraper blade system performs well giving results very comparable to the larger MGS machines



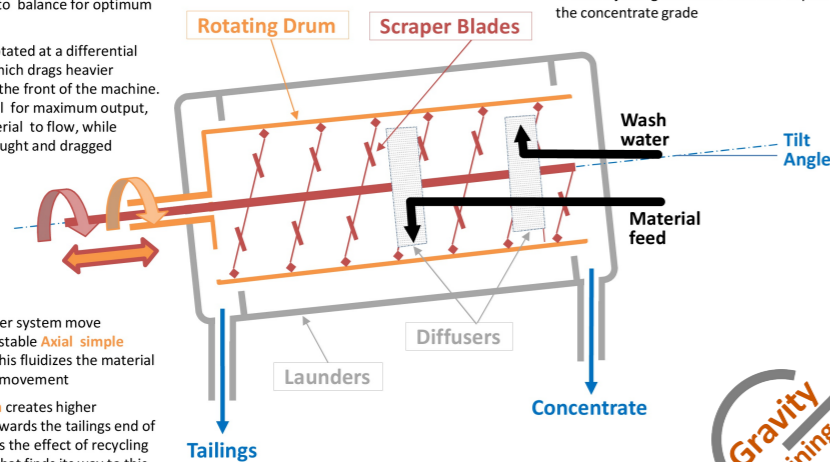
How the Gravity Mining - Multi Gravity Separator works

Drum Rotation - Slurry is fed to the mid point of the drum as it rotates. The subtle centrifugal force capitalizes on small differences in Specific Gravity keeping heavier materials in place to be dragged forward by the scraper blades. Lighter materials flow with the wash water to the rear of the drum. Rotation speed is variable (100-180 RPM) allowing flows to balance for optimum recovery and grade

Scraper blades are rotated at a differential speed to the drum which drags heavier materials forward to the front of the machine. Blade design is critical for maximum output, allowing lighter material to flow, while heavier material is caught and dragged forward

Tilt Angle of the drum is adjustable and creates a natural gravity bias for the material and wash water

Wash Water combined with natural gravity and the drum tilt angle creates a flow carrying less dense tailings to the back of the drum. Adjusting the water flow can impact the concentrate grade



The Drum and Scraper system move together in an adjustable **Axial simple harmonic motion**. This fluidizes the material allowing directional movement

MGS' **Tapered Drum** creates higher centrifugal forces towards the tailings end of the machine, this has the effect of recycling any heavy material that finds its way to this end of the machine



Note: Prototype machine shown without final guard design

Micro MGS' mechanical system is ultra simple allowing easy access for occasional maintenance





Micro MGS technical specifications

Capacity	10-25 Kg/hr (dry basis - material dependent)
Feed Particle size range	500-1 micron
Feed Pulp Density	10% to 50% solids w/w
Packed dimensions	700*1100*600 mm
Gross Packed weight	50Kg
Nett weight	35 Kg
Electrical standard	IP66
Power requirements	
Drum Drive Electric Motor	0.25 kw variable speed
Shake Drive Electric Motor	0.18 kw variable speed
Drive System	Belt
Rotational Speed	100-280 rpm infinitely variable
Shake Frequency	5.8 Hz std (4.0 and 4.8 Hz optional)
Shake Amplitude	12.5 mm std. (10,15 or 20 mm optional)
Tilt Angle	7.5 degrees std. (0-9 degrees optional)
Wash Water	0-10 litres/min