

# Multi-Gravity Separation Systems

## Salter Cyclones Multi-Gravity Separators recover and upgrade heavy minerals otherwise lost to tailings

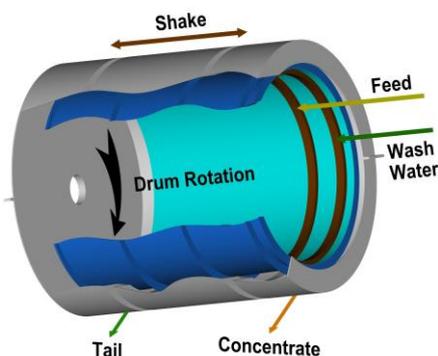
Our separation systems can be found in applications ranging from the recovery of precious metals and base metal minerals (tin, chromium, copper, zinc etc), to upgrading industrial minerals such as barites, celestite and fluorspar. In addition previously untreatable coal fines and waste materials are able to be cleaned without the use of reagents.

### Typical Applications

- Base Metal Oxides
- Sulphides
- Precious Metals
- Industrial Minerals
- Coal
- Tailing Deposits



*SCMG1 Laboratory  
Multi-Gravity Separator*



*SCMG2 Full Scale Multi-Gravity Separator*

### MULTI- GRAVITY SEPARATION

Multi-Gravity or Enhanced Gravity Separation gives unrivalled efficiency in the continuous recovery and upgrading of mineral values contained in fine and ultra-fine particles. It is unique in enabling the production of high grade concentrates at high recovery from low-grade tailings and middling streams.

The operating principle may be likened to powerful, compact shaking tables. However, in the MGS the normally horizontal separating surface of a shaking table is wrapped into a conical drum which, when rapidly rotated, develops an enhanced gravitational field ideal for the recovery of ultra-fine heavy particles.

Slurry is fed into the MGS towards the centre of each drum. Wash water is added close to the outer end. Heavy particles are separated from lighter particles within a dynamic thin film of water under a force many times greater than gravity alone, assisted by the shake motion.

The heavy particles are pinned to the drum surface whilst the light, lower density, particles are carried away by the wash water to discharge at the 'tail' outlet. The heavy particles are carried towards the outer end of the drum by a unique scraper system and discharge at the 'concentrate' outlet. The washwater gives the concentrate a final wash before discharge.

## Operational benefits and design features

- Robust and field-proven design
- Fine and ultra-fine separation from 100µm to 5µm
- Energy Efficient
- Minimum Maintenance
- Minimum supervision required
- Requires no chemical or physical reagents
- High grade concentrate capability

Three multi-gravity separator models are currently available - the compact SCMG1 laboratory/pilot plant MGS, the full scale SCMG2 and the SCMG3 designed to treat a capacity, typically, 25% higher than the SCMG2. The SCMG2 and SCMG3 are equipped with double drums and proprietary gearbox drive technology which offers:

- **Improved reliability**
- **Minimal maintenance**
- **Compact design**
- **Sealed for life lubrication**

SCMG3 Full Scale Multi-Gravity Separator



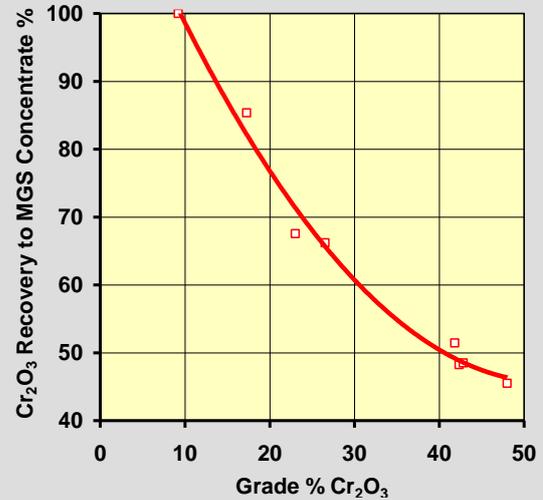
### FULL TECHNICAL SUPPORT

After a thorough assessment of a project, we will recommend trials to fine-tune this technology to the exact processing requirement. These trials may include laboratory, pilot plant and full-scale studies either on-site or at our own facilities or a combination of both.

© Salter Cyclones Ltd 2023

The above information is offered as a guide only. No warranty or guarantee, expressed or implied, is made regarding the capacity, performance or suitability of the product.

Grade vs Recovery for Chromite sample



## Models – Comparison by Size

Model	SCMG1	SCMG2	SCMG3
<b>Dimensions mm</b>			
Length	1643	4242	5026
Width	858	1540	1848
Max Height @ 10°	1445	2160	2500
<b>Weights kg</b>			
Total Weight	350	3050	4525
<b>Capacity mt/h solids*</b>			
Heavy Minerals	0.2	4.0	5.0
Coal	0.6	8.0	10.0
Operating Power kW	1.0	3.3	4.5
* Quoted capacities are maximum, dependent on mineral characteristics and required split to concentrate			

For more information on this or any other Salter Cyclones product, please contact :

Salter Cyclones Ltd, Cheltenham Film & Photographic Studios, Hatherley Lane, Cheltenham GL51 6PN  
United Kingdom

Tel: + 44 1242 697771

Email: [sales@saltercyclones.com](mailto:sales@saltercyclones.com)

[www.saltercyclones.com](http://www.saltercyclones.com)