

MODULAR COAL WASHERY

UAIL offers the Coal industry the very latest and best technology in coal processing through the HM Modular Coal Washery – with capacities up to 150 TPF.

In line with our commitment to offer customers the very latest, we have forged a synergetic partnership with Ingwenya Mineral Processing (Pty) Ltd, based in South Africa. This enables us extend our expertise across a vast range of technologies like:

- Design & Construction of Modular Coal Washing Plants
- Operation & Maintenance of Coal Processing Facilities
- Pre-Feasibility & Feasibility Studies
- Due Diligence Investigations
- Plant Design & Design Reviews
- Manufacture & Installation of a wide range of associated equipment
- General Plant Consultation
- Trouble shooting
- Equipment Selection

The HM Modular Coal Washery packs in a host of advantages like:

- Pre-engineered equipment
- Smaller Footprint
- Shorter completion time compared to conventional prep plants
- Lower Capital Costs
- Efficiency and Reliability
- Ability to easily relocate
- Flexibility for modular expansion



VIBRATING SCREENS

UAIL offers high performance and reliable Vibrating Screens for the mineral recovery sector. Special arrangements with industry leaders like Screen Doctor, South Africa enables us to source and supply the latest in Vibrating Screens to suit varied applications.

Designed and engineered with high levels of customization to meet your specific needs and applications, Ingwenya Mineral Tech offers a full range of light and heavy duty Vibrating Screens to handle various materials.

Vibrating Screens from Ingwenya Mineral Tech are available in various options:

Suspensions: Springs, Rubber & Screen Mounts

Screening Surfaces: Woven Wire, Wedge Wire; Poly Panels & Rubber Panels

Deck Frames: Runner or Box type

Exciters: 2 or 4 vibrator motors & geared exciters

Liners: Hard wearing plate, Polyurethane, HDPE & Rubber lined plate

Fabrication: GR300WA, 3CR12, 304 and 316 Stainless steel

Protection Coatings: Enamel Painting, Powder Coating or Hot Dip Galvanizing

Vibrating Screens from Ingwenya Mineral Tech are suitable for a wide range of applications like:

Mining: Coal, Gold, Platinum, Diamonds, Iron Ore, Chrome & other base metals

Industrial: Foundries, Glass, Recycling, Chemical, Food Industry

Other Services on offer are:

Vibration Motors

Vibration Monitoring

FEA Analysis

Modal Analysis



THE MULTIPOLE CIRCUIT OFFERS SEVERAL ADVANTAGES:

- Higher capacities for smaller units
- Lower capital expenditure for new installations
- Available in options like Direct drive, Chain drive and V-belt drive
- In most cases only a primary unit is required with no secondary unit, resulting in further reduction in capital and operational costs
- Higher concentrate densities are achieved
- Handles much higher magnetic as well as non-magnetic loading in the feed
- Stronger magnetic field and higher gradient than conventional Interpole types
- Secondary magnetic separators can be removed in old plants if Multipole is installed in Primary application
- Enables circuit simplification with consequent reduction in capital and operating costs of the dilute medium circuit
- Higher efficiencies
- Can recover magnetic particles from slurries with very low concentration
- Wear wrap can be fitted for increased drum assembly life
- Tank drum position can be easily adjusted horizontally and vertically during operation
- Tank has revolutionary counterweight orifice design for easy operation and reduced magnetic losses
- Contains large arc magnet (135 degrees) for increased efficiency
- Life guarantee for Magnet provided extreme temperatures are avoided
- Drum assembly can be lubricated while in operation
- Removable trash screen for enhanced drum protection.

We also offer different types of Magnetic Separators based on the nature of Tank Style. They are:

- Concurrent style tank
- Counter Rotation style tank
- Counter Current style tank

UAIL can also provide customized solutions to meet specific requirements of your application. Please get in touch with us for expert opinion and professional advice from our experienced application engineers.

MAGNETIC SEPARATORS

UAIL offers high performance and reliable Magnetic Separators for the mineral recovery sector. We manufacture Magnetic Separators at our plants in India in line with design and quality standards specified by Malvern Engineering Works, South Africa.

Malvern Engineering Works, established way back in 1947, has an impressive track record in offering products and services to the South African mining industry and enjoys a large market share in the area of Low Intensity Magnetic Separators.

Wet Low Intensity Magnetic Separator

The Wet Drum Magnetic Separator is a low intensity separator used in the recovery of magnetic susceptible material from non-magnetic susceptible material - primarily Magnetite and Ferrosilicon - in dense media applications. The unit is most effective in a Primary application with high throughput and recovery.

Wet Drum Separators find use in a wide variety of applications like magnetic media recovery, purification of solids carried in liquid suspension and iron ore concentration.

We offer two types of Magnetic Separators based on the nature of magnetic circuit. They are:

Interpole: This design offers the magnetic circuit in an axial interpole configuration with

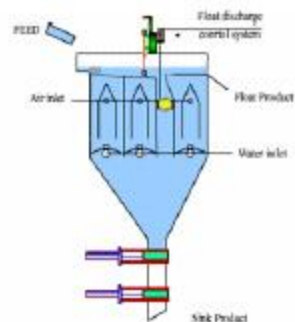


JIGGING MACHINES

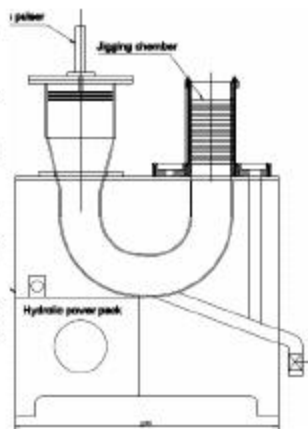
Jigging Machines for Coal & Minerals are specialty offerings from Ingwenya Mineral Tech – with the IMT Underpulsated PLC Controlled Jig is entirely manufactured in India and has a number of improved process and mechanical features.

The special design of the IMT Underpulsated PLC Controlled Jig ensures top class performance. Our design includes:

- Under bed Jigging Air Pulsation System.
- The intermittent supply and exhaust of Jigging Air into the Air Chamber beneath the Jigging Bed is controlled electro - pneumatically through a Piston Valve System.
- The frequency of air intake and exhaust Piston Type Air Valve can be controlled through PLC based on the characteristics of Raw Coal and Mineral Ore.
- As the feed advances along with the Jig Pulsation of water, it gets stratified in Density Layers.
- The heavy fraction of the stratified feed material is sensed by hydrodynamically designed Float Sensors, which operate in tandem with Ultra-sonic Sensors, and senses the heights of the bed of stratified heavy feed layers.
- The heavy stratified fractions sensed by the Float Sensors are discharged through electro-hydraulically controlled Discharge Gate System.
- The IMT Coal Jig provides three options for heavy settled material discharge – Rotary Valve System, Gate Valve System & Dewatering Bucket Elevator.
- The various features of the Jig are integrated and controlled through PLC and Beneficiation Program developed for specific raw material characteristics.
- The IMT Coal Jig can handle coal of various size fractions - Coarse Fractions like 125 -13mm, 100-13mm, 75-13/0.5mm & 50 -13/0.5mm besides Fines Fractions like 30-0.5mm, 25-0.5mm, 20-0.5mm & 16/13-0.5mm.
- The IMT Coal Jig capacity ranges from 50 to 1000 TPH and can handle Iron / Manganese Ore / Slag in Lump and Fines ranging from 20/18-8mm and 8/6-0.3mm respectively with a capacity range of 50 - 500 TPH.
- Laboratory and Pilot scale Jigs are available.



Working process of IMT Underpulsating Jig



DUAL EXTRACTION COLUMN FLOTATION CELL

The DEC Flotation column is a high efficiency flotation cell which treats slurry feeds with a wide range of particles sizes and will float up to 1.5 mm (12 Tyler) particles with ease, at high metallurgical efficiency. The DEC Flotation column combines low capital cost and high throughput design with a unique bubble generator to offer the advantages of low power and water usage whilst acting as both a Rougher and a Scavenger in one compact unit.

The design is anti-choking and provides a simple restart after a power or plant outage. DEC Flotation column is the smart way to float coal, phosphate, iron ore and other minerals, efficiently and economically.

DEC Flotation columns perform well in recovering phosphate in normal phosphate beneficiation plants, and can also be used in secondary recovery operations to produce low cost saleable phosphate from tailings dumps and tailings ponds.

DEC Flotation columns are effective in reducing silica, magnesium (dolomite), aluminium and iron content of phosphate ores and offer a way to upgrade low grade phosphate ore to saleable high grade phosphate rock suitable for phosphoric acid manufacture.

DEC Flotation columns have been proven to reduce the silica content of iron ore, to below 3% %, whilst improving the iron ore grade from 58-61% to 64-66%, so that high silica iron ores can be upgraded to produce saleable iron ore.

DEC Flotation columns are very effective in coal processing and typically will reduce ash contents of 20-45% ash to below 10%. DEC Flotation columns have been proven in the treatment of both mined coal and in secondary recovery plants, where saleable coal can be produced at low cost.

DEC - High Efficiency Flotation offers many advantages over mechanical and other column flotation cells.



Pilot Scale DEC



Lab Scale DEC

COAL WASHERIES

UAIL leverages its experience in the domain of coal preparation to offer effective solutions in the area of Conventional Coal Washeries.

The **manufacturer** coal preparation division has rich experience in projects that involve construction and technical renovation, besides expertise in the design and consultancy for new coal preparation plants.

we have experienced and highly skilled personnel for the design of preparation plants to produce both power-generation coal as well as metallurgical and coking coal. What's more, we also bring in expertise in the analysis of coal quality and selection of the most suitable technical process.

Thanks to modern manufacturing facilities at Bangalore, we have the wherewithal to manufacture equipments necessary for coal preparation plants.

These include:

Heavy Media Coal Preparation plants

Improved Pulsated Jigging plants

DEC Flotation Columns

Vibrating Screens

Magnetic Separators

