

DELKOR[®]



APIC JIG

For efficient gravity separation

Innovation out of tradition – It pays to talk to a specialist!

TAKRAF Group, through its established and well-known brands, TAKRAF and DELKOR, provides innovative technological solutions to the mining and associated industries. We leverage our experience, acquired over more than a century, to provide equipment, systems and services that best satisfy our clients' mining, comminution, material handling, liquid/solid separation and beneficiation requirements. Owners and operators around the world trust our engineered solutions to lower the total cost of ownership and reduce environmental impact by improving efficiency with safe and reliable equipment. For sustainable solutions backed by expert service you can rely on TAKRAF Group. Visit us at www.takraf.com.

We at TAKRAF Group are committed to environmental and social sustainability in all our business interactions and have adopted a Zero Harm approach under our global safety promise.

Owners and operators around the world are confident that TAKRAF Group provides the most suitable solution to their unique project requirements. We assist our clients in overcoming the most complicated challenges in transforming the resource industry towards a sustainable future. We focus on specific areas that are critical for reliable and sustainable operations, as it is here where we best support our clients with innovative solutions that save energy, lower environmental impact and meet or exceed operational requirements.

One focus area is liquid/solid separation, where we capitalize on our global DELKOR brand and its track record of thousands of successful installations. In line with our commitment to environmental sustainability, DELKOR dewatering and process equipment are specifically designed for the needs of the mining industry.

We leverage our global organization and aggregate our extensive expertise by offering a unique combination of both application experience and product based knowledge. Clients therefore benefit from direct technical discussions with our local specialists, who are able to draw upon this expertise and provide the most suitable local solution and service that enhances safety, improves sustainability, decreases costs and increases efficiency.

Our commitment is summarized by:

Safety | Reliability | Innovation | Sustainability



DELKOR APIC JIGS

The **DELKOR** Apic Jig is a gravity separator which separates valuable products from waste material, effectively based on their specific gravity difference to produce clean, salable products.

DELKOR's Jig technology and controls make jigs more effective in high density separations, and significant coal applications.

APPLICATIONS

- Any ore application with a moderate density difference and particle size.
- Recovering Ferroalloys from slag Ferrochrome (FeCr), Ferromanganese (FeMn), Silicomanganese (SiMn), Ferrovandium (FeV), Iron (Fe) amongst others.
- Upgrading ferrous ores like Iron Ore (Fe) and Manganese (Mn).
- Upgrading industrial minerals like Barites.
- Upgrading non-metallic minerals.
- Washing and sorting of wastes.
- Washing fine, medium and coarse Coal.

BENEFITS

- Copes with wide range of deslimed and non-deslimed feed and discharge rates.
- Does not require or consume heavy media.
- Efficiently deals with fine and coarse material as it handles an extended range of particle sizes.
- Effectively concentrates floats or sinks (heavies).
- Handles continually varying grades of feed.
- Very low operating costs.



INNOVATION & DEVELOPMENT

DELKOR APIC Jig is the best mechanical under-bed pulsed jig in the market. As a part of continuous improvement, many key features are added. Advanced process models for jig design, sizing and scaling based on batch test work (ASTRAD) are used to sizing and selection of APIC Jig.

- Comprehensive pulsation control to stabilize the jig pulse (JigScan, Electric Valves).
- Pin gate and shaft gate for fine particle removal.
- Oscillating and shaft gate for coarse and medium particle removal.

CONFIDENTLY PREDICTING JIG PERFORMANCE USING ASTRAD

Batch tests conducted on laboratory scale air-pulsed jigs can process small batches of material, such as those obtained from drill core samples. The novelty comes from using an advanced jig process model, ASTRAD, to link the results of batch and continuous jigs.

- Easy to restart and has a slower motion.
- Exhaust control gives a controlled suction - recovery of fines.
- Fast acting, butterfly valve control gives energetic and tailored pulse.
- Gate control gives smooth discharge & reduced "back mixing".
- Less maintenance and less sensitive to water quality.
- Less sensitive to feed variations.
- Lower OPEX.
- High separation densities and high throughput in one jig.
- Higher yields of concentrate.
- More operator-friendly.
- Open access for easy maintenance.
- Pulse control in the upward stroke can be modified from feed variations.



DELKOR APIC JIG / JIGSCAN DEVELOPMENT

The **DELKOR** Apic Jig is the key equipment around which the **DELKOR** process for coal cleaning, upgrading of ores and recovery of metal from slag is based. The jig was initially designed and produced by FCB in France and is now part of the **DELKOR** product range. Over decades it has been developed and proven in the industry and represents the current state-of-the-art in jigging technology.

The **DELKOR** Apic Jig today, while development and the acquisition of new technologies are ongoing to continuously extend its range of performances, represents a pinnacle of jigging technology worldwide.

APIC JIG AND JIGSCAN

The underbed air-pulsed **DELKOR** Apic Jig effectively produces clean, salable products from raw materials by separating particles of different densities. It can now be equipped with JigScan to further enhance performance and ease of operation. JigScan is a fully integrated automatic jig control system which:

- Automatically raises an alarm if separation efficiency drops.
- Automatically sequences start-ups and shut-downs to optimize production.
- Reduces or eliminates much of the operator attention needed for efficient operation of a jig.
- Provides improved control over product quality.
- Provides higher yields of 'on-specification' product.

JigScan has been used industrially in coal, ferrous ores and wastes industries.

HOW JIGSCAN WORKS

Particles of different densities in a homogeneous bed of solid material are stratified by water pulsed through the jig's bed plate. JigScan ensures that optimal stratification, steady product quality and highest possible yields are obtained by:

- Maintaining a steady water-pulse.
- Adjusting the pulsing energy function of the bed mass.
- Closely controlling the discharge of heavy material from the stratified bed.

Every time JigScan's high scan frequency control system reads the jig's sensors, it issues algorithm-based control commands. The system can control the jigging air pressure, the opening and closing times of the valves, the average water levels in the air chambers and the density cut-point at the jig discharge gate.

A measurement and graphical display can be provided of the water and air pressures in the jig, the variation in air pressure and the water velocity pulse waveform in each compartment and the variation in bed density during each pulse at a chosen position above the bed plate.



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