

# Coal Preparation Solutions



**WESTECH<sup>®</sup>**

# Equipment for Clean Coal



WesTech's complete line of heavy duty thickeners offer the most advanced design for use in the coal preparation industry. WesTech process equipment is engineered and manufactured to the highest standard of quality and offers the precision and durability required to minimize down-time. WesTech custom designs each project utilizing customer specifications, standard methods, and computer software for sizing and drafting, but more importantly WesTech listens to specific customer and plant needs for individual process flow sheets. The result is proven technology and cost-effective design supplied to meet your specific needs.



## High Rate Thickeners

High rate thickener units are provided in sizes typically ranging from 5 ft. to 328 ft. in diameter, and can accommodate drive head torques of up to four million foot pounds. The configuration of these units is flexible, based upon plant requirements.



## Shaft Type Units

Shaft driven coal thickeners can be truss or beam supported for paste and other heavy duty applications. A heavy duty drive unit with a precision bearing and gear transmits torque through a steel center shaft to the rake arms. Equipped with a Torkmatic™ drive control, the WesTech drive unit senses increasing torque due to overload conditions and will sound an alarm to alert the operating staff. The shaft drive unit may be equipped with a rake lifting device, which provides added mechanism protection in an overload condition.

## Cage Drive Units

Cage drive units are suitable for larger thickeners and can provide the torque encountered in heavy duty coal preparation and tailings thickening. The cage drive is supported by a steel center column. WesTech cage drive units are also equipped with a Torkmatic™ torque control and can be designed with lifting capabilities.



## Horizontal Belt Filters

WesTech's horizontal belt filters provide a continuous vacuum on a horizontal plane. Slurries are fed onto a filter cloth supported by a traveling drainage belt. The horizontal belt filter is especially adapted for applications where low cake moisture is desirable.

# Paste Thickening

## Paste Thickeners

WesTech Paste Thickeners dewater tailings to non-settling, pumpable concentrations that release little or no water. This high-solids underflow provides maximum water recovery and allows the solids to be deposited sub-surface or stacked for disposal in an existing containment pond. Paste thickening can be an adjunct to high rate thickeners. WesTech Deep Bed™ Paste Thickeners produce the highest possible underflow concentrations with diameters to 24 m (79 ft.). WesTech High Density Paste Thickeners are designed for lower paste concentrations and larger throughput rates with diameters to 50 m (164 ft.). WesTech Paste Thickeners are state-of-the-art designs that can process 10 to 1,000 MTPH solids. Key points of consideration are:

- Solids concentrations which approach the limit of pumping
- Designs range from elevated tanks with cone angles of 30° to 60° to on-the-ground large diameter tanks
- Drives designed to handle the thickest possible paste in excess of 6,000,000 ft.-lbs. torque
- Bridge accessible drives for easy maintenance



## Thickened Tailings

Paste, also called “thickened tailings,” is a non-settling, high solids suspension that offers advantages for handling tailings including:

- Ability to stack tailings, eliminating tailings dams
- Extend the life of existing tailings dams
- Water recovery at the thickener with less evaporation and seepage lost from tailings ponds
- Improved recoveries in red mud decanters and washers
- Backfill for underground mine productivity and tailings disposal
- Alternative to high capital and operation cost



## Heavy Duty Drive Units

WesTech heavy duty drive units are specifically engineered for the high torque requirements of paste thickeners. These units incorporate the following features:

- Multiple pinions driving the main gear
- Hardened forged alloy steel gears
- Planetary or cycloidal reducers with a guaranteed 500% overload capacity
- Specialized gear housings for high torque and thrust loads
- Specialized seal to prevent the infiltration of corrosive gases
- Oil or grease lubrication as preferred by the customer



# Process Equipment and Accessories



## High Capacity Disc Filters

WesTech's high capacity disc filters offer exceptionally large filtration area per square foot of floor space and provide the latest innovation in disc filter center barrel design. The split center barrel design with offset flow tubes allows the WesTech design to increase filtrate removal, reduce wear on each flow tube, and provide a stronger, more efficient snap-blow.



## Acid Mine Drainage Systems

- PLC-based control systems with remote monitoring
- Decarbonation via mechanical aeration
- Iron oxidation via mechanical aeration
- High Density Sludge (HDS) system for acid neutralization and metals removal
- Sludge pumping to mine disposal



## Replacement or Retrofits

WesTech provides replacement and retrofit drives, refurbishment or replacement of existing thickener and minerals processing equipment, and complete field services to meet start-up deadlines and avoid unnecessary production downtime. WesTech heavy duty drives are designed to fit up as direct replacement for the drive units of any manufacturer, and can be ordered on a fast-track delivery and installation schedule.

...Call today to discuss your process equipment needs.

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