



# PERMA/flo ASH MIXER

## Effective Ash Conditioning

Ash mixers, also known as ash conditioners or unloaders, are used to mix dry ash and water together to provide a moistened product that can be handled in a dust free state. The volume of coal combustion by-product (ash) generated today by industrial plants is over 125 million tons per year. Since this ash can contain high values of such substances as sulfur and lime, extreme care must be taken to ensure it is properly mixed. In addition, wet ash disposal pose other significant challenges, including tightening regulatory requirements, service interruptions and reliability concerns.

### Design and Use

Clyde Bergemann has developed its PERMA/flo Ash Mixer to handle a variety of ash products and provide reliable mixing for the loading of open top trucks. To get a consistent and reliable mix the metered control of ash and water into the mixing section is critical. The Clyde Bergemann PERMA/flo Ash Mixer can be equipped with our PERMA/flo eXTreme rotary valve sized to meter the flow of ash for the rated capacity of the machine.

The material enters the mixing section via a rotary feeder (or other flow control device) at the same time water enters via a spay header at a controlled flow rate. The twin counter-rotating shafts with removable

paddles (and optional pins), thoroughly mix and move the material at a low speed to reduce wear. This insures a complete and controlled mixing prior to discharge. These features allow for precisely conditioned, dust free, material with minimum water usage, minimal wear, and minimum operator involvement.

### Construction

The PERMA/flo Ash Mixer is engineered for heavy usage and long life. The twin shaft paddles are constructed of abrasion resistant materials arranged in a variable pitch configuration. Paddles and optional pins are bolted for ease of replacement. Counter rotating shafts are connected at the opposite end of the drive by spur gears (providing opposite rotation in relation to each other) and all inner surfaces are smooth and accurate to assure even tolerances between paddles and the mixing surface.





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The fabricated outer shell of carbon steel plate is seal welded to produce a water and dust tight shell. Additionally, all water spray piping and nozzles are shop installed.

Ease of operation and maintenance are also obvious in the mixer construction. The housing features quick release clamps and gasketed covers for ease of inspection and maintenance. While outboard mounted, precision bearings assure free running operation and ease of access to the packing glands and shaft seals.

### For mixing materials such as:

- Fly ash
- Bottom ash
- PRB ash
- By-product waste
- PAC ash
- Biomass waste ash

### Optional Features:

- Stainless steel mixing tub
- Nonstick tub liner, mixer paddles
- Mixer pins
- Elevated mix hood
- External water supply header
- Drive mounted on inlet side of mixer
- Control panel, mixer feeder, and inlet valve

### Standard models and mixing rates:

- CB100: 75-100 tons per hour
- CB150: 125-150 tons per hour
- CB200: 175-200 tons per hour
- CB250: 225-250 tons per hour

## Benefits

- Heavy usage design
- Minimum water usage
- Skid mounted design
- Reliable mixing
- Low speed mixing



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