



PIN-PADDLE MIXER/UNLOADER

For Conditioning High-Calcium Ash

Pin-Paddle
Mixer/Unloader



Powder River Basin coal and emissions control equipment (e.g. dry scrubbers) will increase the amount of calcium compounds in fly ash. These calcium compounds quickly setup and harden in the presence of moisture, creating a significant challenge for industry standard methods of conditioning ash for disposal:

- Cement-like buildup
- Inadequate mixing resulting in dusty or sloppy discharge
- Decreased throughput capacity
- Increased power consumption
- Frequent, intensive maintenance

United Conveyor Corporation offers three Pin-Paddle Mixer/Unloaders that are specifically designed to condition high calcium ash. The pin-paddle design reduces buildup and maintenance frequency, time and expense.

OPERATION

The UCC Pin-Paddle Mixer/Unloader solves the calcium compound challenges with its unique design and operation:

- Paddles push material forward through the mixer/unloader
- Fast, counter-rotating shafts and pins create turbulent mixing while lifting the material to expose the ash for optimal wetting and mixing
- Nozzles are designed for improved water penetration into the bed of the material
 - Nozzles can be independently controlled to allow precise water discharge during start up, mixing and shut down
 - Cleaning chains generate contact against the material and pin-paddles to reduce buildup during each cycle stop reducing maintenance frequency



PIN-PADDLE MIXER/UNLOADER For Conditioning High-Calcium Ash

ADVANTAGES

■ Prevents High Calcium Material Buildup

- › UCC patent-pending cleaning chains reduce buildup on the pins and paddles during each operational cycle
- › Ultra high molecular weight polyethylene (UHMW PE) material resists buildup on shaft and pin covers. This material is available as an optional mixing chamber lining
- › High penetration nozzles reduce material buildup in the machine while delivering optimal mixing

■ Higher Throughput Capacity and Performance

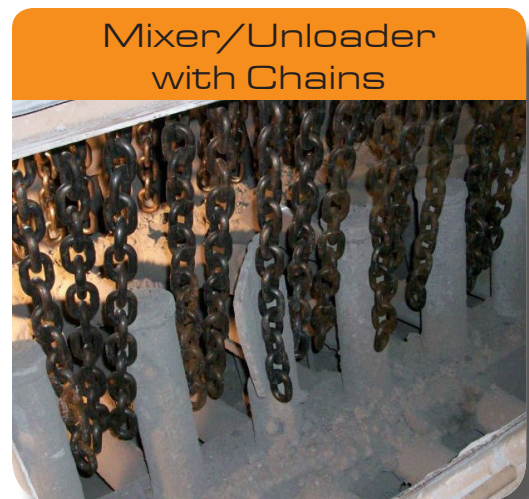
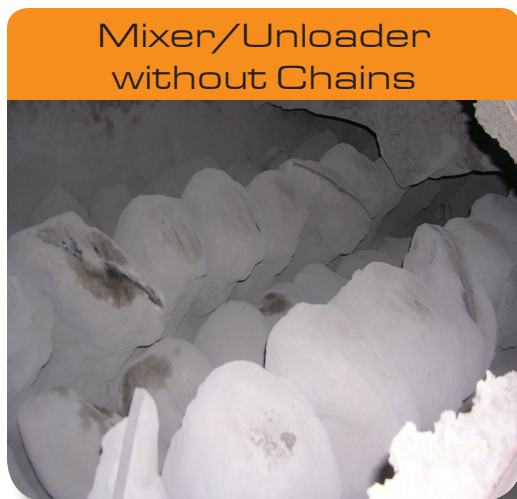
- › Optional cleaning chains improve mixer/unloader throughput by up to 100%
- › Less buildup significantly lowers start-up current requirement which minimizes wear and tear and extends machine life

■ Uniform Conditioning of Materials

- › Spray nozzles are designed for optimum water delivery and mixing
- › Spray nozzles are located at the highest point of the cover, minimizing the potential for plugging
- › Spray nozzles can be replaced from outside the mixer/unloader
- › Optional washout headers are available on 4050 and 6050 mixer/unloaders

■ Easy Installation on Existing Mixer/Unloaders

- › Cleaning chains are offered as a retrofit kit or as an optional feature on 4050 and 6050 mixer/unloaders



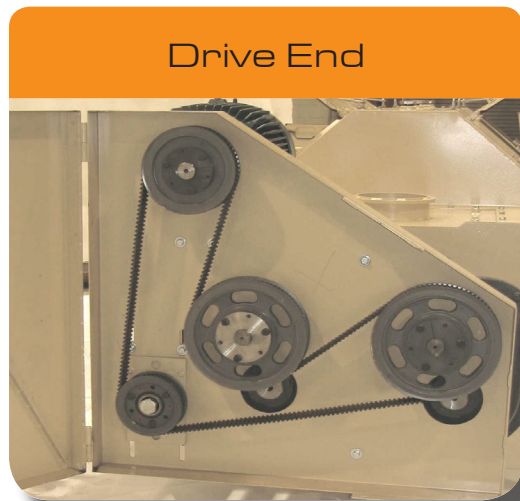
ADVANTAGES (cont.)

■ Low Maintenance Design

- › Cleaning chains greatly reduce frequent cleaning of material buildup; In some cases manual cleaning can be eliminated
- › Pins have wear-resistant 600 BHN DURITE® H caps; paddles are 304 stainless steel for corrosion resistance
- › Toothed drive belt is used for smooth, quiet, low-maintenance power transmission without the need for lubrication
- › Even distribution of power between shafts minimizes shaft stress and deflection
- › No need for high cost, high maintenance timing gears
- › UCC self-adjusting, spring-loaded floating seals eliminate manual packing gland adjustment; packings maintain shaft contact to prevent leakage and extend packing life

■ Easy Access

- › Domed cover design maximizes access space and is away from material to minimize buildup
- › Large door over discharge allows easy checking of ash/water mixture



The Solution for Conditioning High-Calcium Ash

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SPECIFICATIONS

| Model No. | 6050 | 4050 | 2560 |
|---|---|--|---|
| Discharge Capacity | up to 300 TPH (272 mTPH) | up to 150 TPH (136 mTPH) | up to 75 TPH (68 mTPH) |
| Volumetric Capacity | 12,000 ft ³ /hr (340 m ³ /hr) | 6,000 ft ³ /hr (170 m ³ /hr) | 3,000 ft ³ /hr (85 m ³ /hr) |
| Pin-Paddle Rotation Speed | 50 RPM | 50 RPM | 60 RPM |
| Motor | 60 HP (45 kW) | 40 HP (30 kW) | 25 HP (18 kW) |
| Paddle Diameter (feeding) | 29" | 22" | 20-1/4" |
| Weight (lbs) | 12,500 | 9,500 | 5,000 |
| Distance from center of ash inlet flange to center of ash outlet flange | 106-13/16" to 126-5/16" | 115-3/4" to 131-3/4" | 102" |
| Mixer Body | 3/8" Carbon Steel | 3/8" Carbon Steel | 3/8" Carbon Steel |
| Feeding Paddles | Tivar Clad AR500 | AR500 | AR500 |
| Mixing Paddles | 304 Stainless Steel | 304 Stainless Steel | 304 Stainless Steel |
| Mixing Pins | UHMW-PE Pin Cover DURITE® H Wear Cap | UHMW-PE Pin Cover DURITE® H Wear Cap | UHMW-PE Pin Cover DURITE® H Wear Cap |

ORDERING INFORMATION

| Model No. | 6050 | 4050 | 2560 |
|---|-----------|-----------|-----------|
| Please reference UCC drawings for current product information on mixer/unloader options and retrofit kits | 5-6100-88 | 5-6200-74 | 5-5100-53 |

UNITED CONVEYOR CORPORATION