

# Fuel Preparation/Processing Facilities



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## Size Reduction and Classification

- Crushers from bench-top capabilities to 800 lb/h capacity
  - Bico Braun bench-type jaw crushers
  - Denver Equipment Co. pilot-scale jaw crusher (300 lb/h)
  - Energy Institute fabricated lump buster
  - American Pulverizer Co. pilot-scale roll crusher (350 lb/h)
- Straub adjustable plate mill (15-40 lb/h)
- Bench-top and pilot-scale pulverizers
  - Holmes Model 501XL-S pulverizer
  - American Pulverizer Co. Machine Number 15X9 hammermill
- Szegari 1S Recirculating Attritor Mill (bench scale)
- 2'x4' continuous ball mill (125 lb/h)
- 1'x2' continuous ball mill (15 lb/h)
- Booth Co. Model L-8 R-25-1 twin station batch ball mills (shot or rod)
- Bico Braun Standard Bond Work Index mill
- Hardgrove Grindability Index mill
- Variable speed air-swept pulverizer (350 lb/h)
- Retsch Model ZM 200 Ultra centrifugal mill
- Wiley Mill, Standard Model No. 3
- Derrick Model K-18 2-stage vibratory wet screener
- Gibson Equipment Co. Model TS-1 multi-sieve mechanical separator
- Tyler Ro-Tap machines
- Sonic sifter

## Overview

The EMS Energy Institute houses a suite of fuel preparation and processing equipment for cleaning coals, size reduction and classification of coal and biomass, and coal-water mixture (CWM) preparation. These facilities are used to prepare coal, biomass, or CWM samples that range in quantities from grams to barrels to tons for fundamental, applied, and demonstration-scale research and development.

## Key Equipment

The equipment ranges in size from bench-top units to large pilot-scale facilities. Historically the facilities were installed to clean coal, dewater fine coal streams, or crush, pulverize, or process coal into CWM for combustion/gasification/emissions studies. In addition, some of the facilities are used for preparing biomass samples for analysis and testing.



2'x4' continuous ball mill (125 lb/h)

## Coal-Water Mixture Preparation and Handling

- J.H. Day Co. variable speed ribbon mixer (350 lb capacity)
- Mixing tanks
- Mixers, electric and pneumatic
- Progressive cavity pumps
- Double-diaphragm pumps
- Mass flow meters



Pilot-scale crushers and pulverizers



Bench-top crushers and pulverizers