

MOUNTAINEER® SIZER



Pennsylvania
Crusher



The Most Choices, The Most Experience





Whether in the Appalachians, top & right views, or China, lower view, the Mountaineer Sizer has demonstrated its ability to size coal, industrial minerals, rocks, lateritic ores and other minerals with great efficiency and reliability, while keeping maintenance costs at a minimum.

THE MOUNTAINEER SIZER

Our Sizer provides exceptional service for primary or secondary size reduction of coal, rock, sticky clays, and non-metallic minerals with compressive strengths below 30,000 psi. It has rapidly found acceptance in coal prep plants and mineral processing industries in the U.S. as well as overseas.

Using two synchronized rolls, it sizes in two stages. The teeth first grab and shear the large lumps, then pull the midsize lumps between the rolls with further shearing action. Depending on tooth style, roll configuration and roll speed, each tooth presents itself numerous times per minute, producing a cubical product with minimum fines. Occasional oversize pieces do not impede crushing, and reduction ratios are typically 4:1.

Though its initial cost is relatively low, it can replace larger, more costly crushers, with no need for expensive foundations. For example, it provides greater capacity than a gyratory crusher but in a far smaller space. Its low head room enables it to fit readily above ground or underground. Having four retractable wheels, it is also capable of being rolled out from under the feed point to enable servicing.



Our CS Center Sizer rolls rotate toward each other, producing sizes of minus 3 inches and larger. The rolls of our SS Side Sizer rotate outward, producing sizes of minus 2 to 3 inches. As to capacities, it's important to note that Pennsylvania® is conservative with its capacity and output size statements; if we state that a given machine will produce a given capacity of a material at a given size, then it will in fact deliver that capacity and size.

Depending on your application, we will recommend rolls with rock teeth, coal teeth or toothed rolls.

At left is a Side Sizer with toothed segments. Suspended above the sizer for comparison is a Center Sizer roll shaft with ROM coal teeth.

OTHER ADVANTAGES

Our Sizer combines low headroom with a small footprint and operates with low noise levels. Sizing is mainly by shear, and the slow speed of the rolls minimizes energy cost and results in an absolute minimum of fines and reduced wear. Undersize material passes immediately through the rolls with no waste of energy, eliminating the need to pre-screen. The Mountaineer therefore requires minimum power per ton of crushed material, typically in the 0.15 to 0.5 hp/tph range.

We've kept the Mountaineer maintenance-friendly by incorporating commercially available components and by using a minimum of custom parts. For example, the drive system employs off-the-shelf components mounted on a common frame.

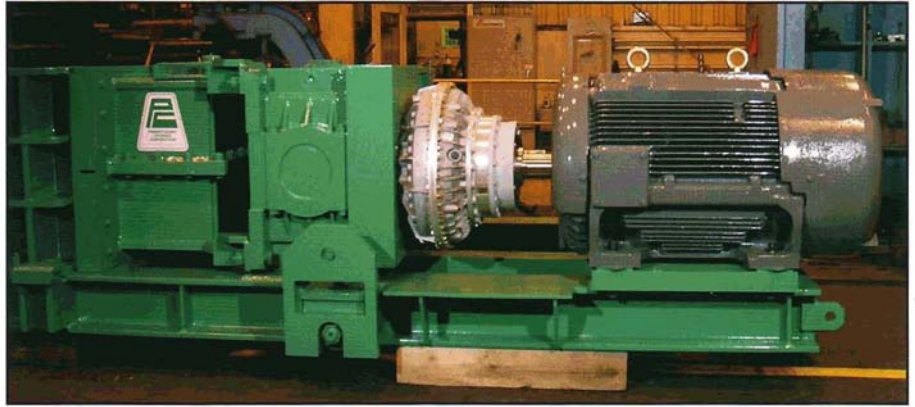
FLEXIBLE DESIGN, ROBUST CONSTRUCTION

The Mountaineer's modular design achieves different capacities merely by altering the length of the frame and rolls. Fabricated of heavy steel plates, this frame is bolted and reinforced with numerous stiffeners, then lined with thick steel plates. Joints are machined, and the upper and lower end-frames have a wedge notch to facilitate disassembly.



DRIVE COMPONENTS

From right to left: electric motor, fluid coupling, speed reducer and link gears, all mounted with the Sizer on a common frame. This expedites alignment, provides ready access and avoids massive, overhung loads as seen on other makes. To keep costs low and simplify maintenance, most of these drive components are not custom designs.



Right: Low headroom. We've designed the Mountaineer Sizer to go wherever you need size reduction, whether above ground or underground.

Bottom right: Our sizer, located just above the conveyor, is adaptable to a variety of plant layouts.



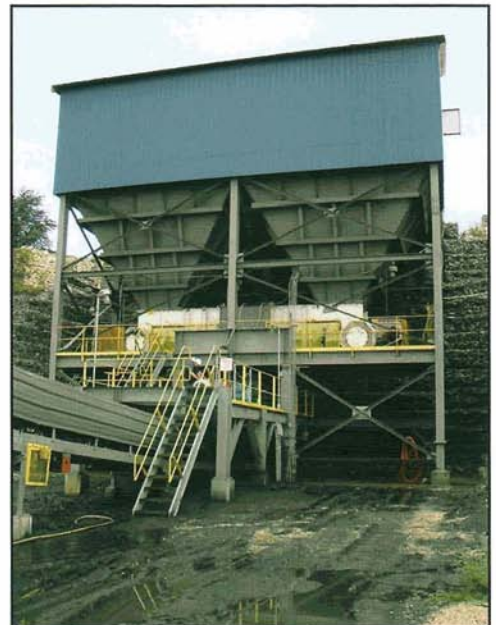
Side Sizer



Center Sizer



Tooth arrangements. The rolls rotate outward on the Side Sizer, while they rotate inward on the Center Sizer models. Typically there are ten to twelve teeth per segment for the Side Sizer and three to six teeth per hub for the Center Sizer.

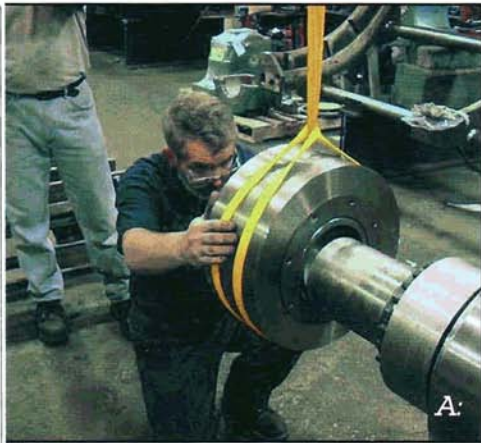




Top: Overhead view of the Mountaineer Sizer located at a large eastern coal mine. All components are mounted securely on a common structural steel frame. This expedites drive alignment and produces a very compact installation.

Center photos: Feeding techniques vary from one installation to another. Our sizer can be fed from one or from both sides.

Left: Typical sizer installation.



A:



B:



C:



D:



▲ At a U.S. coal prep plant, this shows how easy it is to access all components. This installation employs rails that enable the Sizer to be retracted to be fully clear of the feed chute.

◀ The same load-out installation, located at the base of the mountain. The Mountaineer Sizer is located on the middle level. Coal is introduced into the system from a bench above this structure. The conveyor in foreground takes it to a loading station for shipment by rail.

A: Rotor shaft bearings are spherical, roller type, self-aligning and grease lubricated. Automatic grease systems are available.

B: Side sizer hubs are bored & keyed to slide onto the forged steel shaft. Replaceable toothed segments are bolted onto the hub and are easily accessible.

C: Hubs are secured on the shaft by a superbolt tensioner which is threaded onto the shaft and held by individual bolts pressing against a hardened washer with a force of 800,000 pounds.

D: Near each corner of the base frame are maintenance boxes in which retractable steel wheels are mounted. This sensible feature enables the machine to be easily withdrawn from its working position for servicing of the reducer, fluid coupling, link gears, motor and wear components.



Above: At this coal mine, the Mountaineer Center Sizer in the foreground was chosen to replace a coal breaker, similar to the sixty-year old Pennsylvania® Bradford Breaker shown above and behind it. Note the compact design and simplicity of installation that is typical for our Sizer.

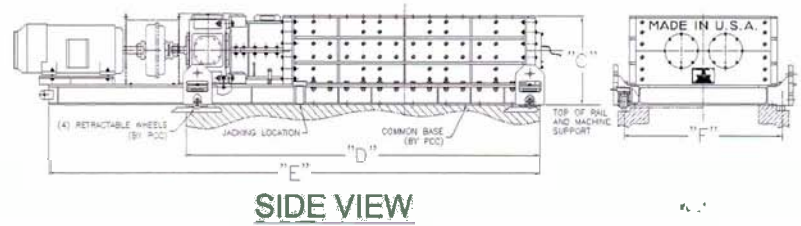
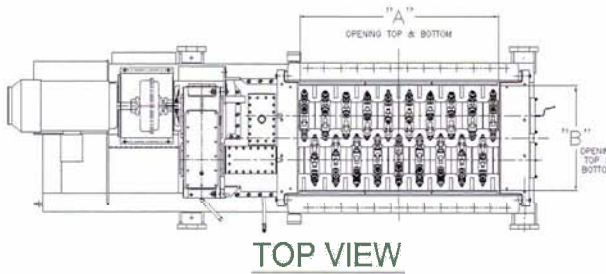
Left: 16 inch+ rock is grabbed by the teeth, sized and exits the rolls almost instantly. Dry timber and other friable materials are handled just as easily. Should it ever occur, very large pieces such as the 30" diameter rock shown in lower photo are crushed by chipping away pieces until small enough to be grabbed and crushed by the teeth.

APPLICATION ENGINEERING

We're experienced in crushing applications for coal mining and coal preparation, industrial minerals mining and processing, and other non-metallic mining and processing systems in the U.S., Russia, Indonesia, China and elsewhere. When recommending a crusher model and size we can draw on our extensive data base of size reduction results from many hundreds of installation around the world, and from different deposits and/or seams within the various mining regions. We can also advise on feed and discharge arrangements to help ensure the most efficient layout.

For a review of your sizing requirements, please call, E-mail or write for further information or for a list of Mountaineer Sizer installations. If you wish to visit a site, please let us know in time to arrange a visit to an operating plant.

Mountaineer® Sizer Dimensions & Technical Data



British Imperial System

MODEL	A (in)	B (in)	C (in)	D (in)	E (in)	F (in)	Max Feed Size (1) (in)	Motor Power (hp)	Weight (2) (ton)
5010	30	62	40	100	155	71	24	up to 350	14.0
5020	60			130	192				17.2
5025	75			145	207				18.8
5030	90			160	222				20.3
6510	40	80	51	115	189	90	30	up to 450	23.9
6520	80			155	229				27.9
6530	120			195	269				31.9
8013	60	93	59	145	223	103	40	up to 800	36.3
8020	90			175	253				41.9
8030	135			220	298				47.5
10010	60	108	63	152	223	119	48	up to 1,000	49.5
10020	90			175	253				57.0
10030	135			220	298				64.8

International (metric) System (mm)

MODEL	A (mm)	B (mm)	C (mm)	D (mm)	E (mm)	F (mm)	Max Feed Size (1) (mm)	Motor Power (kW)	Weight (2) (t)
5010	765	1,580	1,015	2,540	3,940	1,815	600	Up to 260	12.7
5020	1,525			3,305	4,880				15.6
5025	1,905			3,685	5,260				17.0
5030	2,290			4,065	5,640				18.4
6510	1,015	2,035	1,300	2,920	4,810	2,295	750	Up to 335	21.7
6520	2,035			3,940	5,825				25.3
6530	3,050			4,955	6,840				28.9
8013	1,525	2,350	1,500	3,685	5,664	2,615	1,000	Up to 600	32.9
8020	2,290			4,445	6,425				38.0
8030	3,430			5,590	7,570				43.1
10010	1,525	2,755	1,600	3,865	5,665	3,020	1,200	Up to 750	44.9
10020	2,290			4,445	6,425				51.7
10030	3,430			5,590	7,570				58.8

For larger capacity models, please send application data directly to PCC Broomall Office for Quotation. NOTES: (1) Maximum feed size depends on tooth design and configuration. (2) Total weight with drive motor. (3) All values are approximate and subject to final design. Certified drawings will be supplied to buyers. (4) Sizer performance, throughput rate, and required motor power depend on the input material, input size distribution, input maximum size, and output size specifications. (5) Standard designs allow throughput rates of 10,000 tons per hour or higher depending on model, material specifications and output size distribution.

Pennsylvania
Crusher



The Most Choices, The Most Experience

Pennsylvania Crusher Corporation
600 Abbott Drive • Box 100 • Broomall, PA 19008-0100 USA
Phone: 610-544-7200 • Fax: 610-543-0190
See our web site: www.penncrusher.com
E-mail: sizer@penncrusher.com

© Pennsylvania Crusher Corporation, 2007 A K-Tron Company
Printed in U.S.A. Bulletin 8501 07-1-1.5M



Made in
U.S.A.