

Coal cutter and crawler chains

In drill and blast operations in a coal mine, it is common practice to provide a second free-breaking face by cutting a horizontal slot in the face being blasted using a coal cutter. A chain comprising a number of pick boxes into which are inserted tungsten carbide tipped picks (cutting tools) performs the cutting. Cutting boxes are angled at five different angles (like the teeth of a saw) to provide a clearance for the chain to run in.

Once the coal face has been blasted, the broken coal is loaded into shuttle cars using gathering arm loaders. These loaders run on crawler chains (also known as cat-tracks) which consist of a number of interlinked segments or pads. These pads are hard wearing and provide excellent traction for the machine.



TYPES OF COAL CUTTER CHAINS

Pick screw type

This is the traditional type where cutter picks are held in place by a pick screw.

Quick release type

The quick-release coal cutter chain was developed by Grinaker-LTA Mining Products, and uses a quick release clip to secure the cutter pick in its pick box.

QUICK-RELEASE TYPE

There are several advantages with this type of arrangement:

- ¥ Pick screws have to be torqued up in order to secure the pick in the pick box. The pick screw often works loose and picks are lost or rendered ineffective. The quick-release system uses a securing clip which is simply knocked into its locating holes. The clip is always positioned on the front end of the pick box and is thus held in this position whilst cutting. The incidence of pick losses is greatly reduced or eliminated altogether
- ¥ When a pick has to be changed because it has become blunt or damaged, it is often very difficult to undo the pick screw. This results in lost time and production. With the quick-release system, changing a pick is quick and easy. Simply lever out the quick-release clip, replace the old pick with a new one and knock in the quick-release clip again
- ¥ No special tools are required to install or remove the quick-release clips.

LOADER CRAWLER CHAINS

Pads are cast in earth engaging steel with high grousers (26mm) to give extra grip and prolonged life.

Pads measure 310mm long x 105mm wide x 66mm high and are suitable for use on gathering arm loaders.



SPECIFICATIONS

Sizes			Lacing pattern		
Type	Raceway width (mm)	Gib width (mm)	Type	No. of boxes / arrowhead	No. of boxes / chain*
Pick screw - FBA	46.99	66.67	Pick screw - FBA	8 or 10	30, 36, 40 or 45
Pick screw - FBE	53.80	66.67	Pick screw - FBE	9 or 10	46, 48, 49, 50 or 51
Pick screw - FBEJ	53.80	74.61	Pick screw - FBEJ	10	44, 46, 48, 49 or 51
Quick release - FBAQR	46.99	66.67	Quick release - FBAQR	8 or 10	26, 30, 36, 38, 40 or 45
Quick release - FBBQR	50.55	65.09	Quick release - FBBQR	10	44, 46, 48, 49 or 51
Quick release - FBDQR	46.03	66.67	Quick release - FBDQR	10	44, 46, 48, 49 or 51
Quick release - FBEQR	53.80	66.67	Quick release - FBEQR	10	46, 48, 49, 50 or 51
Quick release - FBEJQR	53.80	74.61	Quick release - FBEJQR	9 or 10	44, 46, 48, 49 or 51

* Determined by the length of the coal cutter's jib.

ILLUSTRATION OF 10 BOX LACING PATTERN

Box no. 5										
Box no. 4										
Box no. 3										
Box no. 2										
Box no. 1										
Centre line of chain										
Box no. 1										
Box no. 2										
Box no. 3										
Box no. 4										
Box no. 5										

For 8 box pattern, leave out both no. 5 boxes, and for 9 box pattern, leave out one no. 1 box.



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