

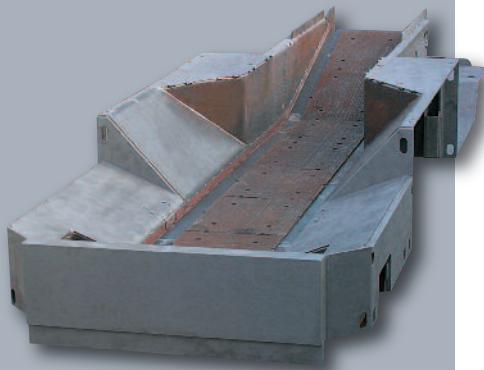
CRAWLER-MOUNTED FEEDER-BREAKERS

For Underground Mining



 **McLanahan**[®]

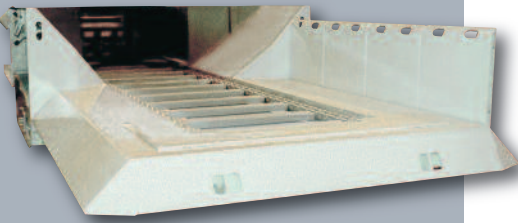
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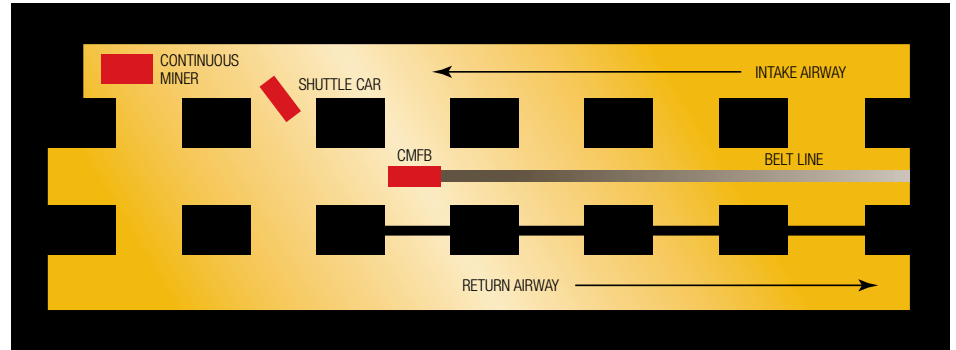
Frame

Crawler-Mounted Feeder-Breakers (CMFBs) for underground mining are designed to be an integral part of your mining operation as they allow for all parts of an underground “Room & Pillar” system to be more efficient at material recovery, hauling, crushing and conveying. CMFBs provide surge capacity, complete size reduction and meter material onto conveyance systems at a steady rate.

Since its first Feeder-Breaker in 1984 and first Crawler-Mounted Feeder-Breaker in 1991, McLanahan has set the pace in customer focused innovation. McLanahan was the first manufacturer to eliminate shear pins and chain drives, and incorporate a magnetic coupling in a direct, alignment-free drive. The user friendly design offers easy access to replaceable components and allows for removal of shaft assemblies in one piece.



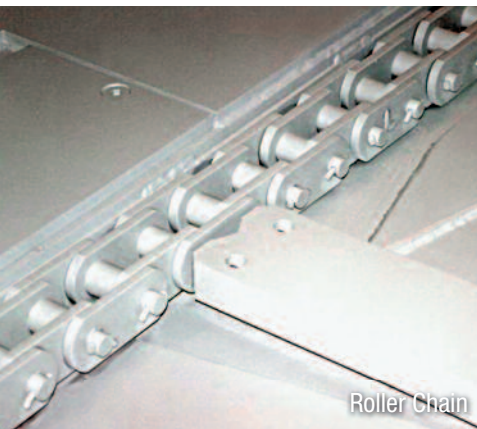
Feed End



Because each mining application is different, every McLanahan CMFB is custom designed to meet mine conditions and operator preference while ensuring the maximum return on investment through a trouble-free design. McLanahan CMFBs are available in two configurations: Low Vein (LV) for ceilings as low as 32" (812mm) or High Vein (HV).

FRAME

McLanahan's Crawler Mounted Feeder-Breakers start with solid frame construction. Pieces and shapes are burned from full sheets of steel plate on our plasma tables. The pieces are then bent where appropriate and fully welded and joined by steel cross members to form the frame. Thick replaceable A.R. liners cover the top deck and A.R. sideliners are used along the chain runs to protect the base frame. McLanahan CMFBs are designed to process tough applications day in and day out.



Roller Chain

FEED END & HOPPER

Feed end and hopper configurations on McLanahan CMFBs are designed to accept mined material in accordance with the type of haulage equipment (scoop, shuttle car, ram car, etc.) and capacity requirements. Many designs are available to accommodate end, side or 3-way dumping with variations of each, including swing gates and more.



Conveyor Belt

CONVEYOR SYSTEM

The conveyor system on McLanahan CMFBs drags material to the Breaker Roll and meters the crushed product onto the conveyor belt. Heavy-duty, solid steel flight bars are pin-mounted to 3-1/2" (88.9mm) pitch engineering class roller chain. The positive drag power of this system allows drivers to dump without "jogging" their loads, reducing cycle time back to the miner.

Chain tension is adjusted via a hydraulic cylinder and hand pump. Steel shims are used to hold the setting.

BREAKER ROLL

McLanahan Breaker Rolls are designed to fracture or break material, rather than crush or pulverize. Because the Breaker Roll rotates in the same direction as material flow, each piece is simultaneously subjected to the force of one or more pick points in order to break it along inherent fracture planes. Depending upon the type of material, a Breaker Roll with replaceable carbide picks or wide faced (chisel) teeth can be used. An optional flywheel creates additional breaking power at slower rotational speeds. This helps the breaker pull through surges or crush harder material without stalling.

CONVEYOR DRIVE OPTIONS

McLanahan offers direct alignment free conveyor drives via hydraulic or electro-mechanical systems. Compact Hydraulic Drives provide a natural cushioning effect to withstand “shock-loading” to the conveyor system. A two speed drive is standard and variable speed is available as an option. The electro-mechanical drive uses a magnetic, torque-limiting coupling to provide protection to the conveyor system. Both hydraulic and electro-mechanical drives provide an optional automatic reversing feature to clear blockages or remove tramp materials. Under a blockage situation, the conveyor drive reverses, then automatically starts forward again. This process is repeated until the blockage is eliminated or the number of attempts “times-out”.

HYDRAULICS & ELECTRONICS

McLanahan uses PLC logic, designed by our in-house electrical engineering group, to control every function of the CMFB. Panels are rated for either non-hazardous or hazardous areas. Standard panel arrangement includes push button controls. An optional touch-screen panel is available.

Our hydraulic systems are designed to endure continuous use and punishing environments. On board heat exchangers and filtration systems ensure proper operation. A low oil and high temperature switch, pressure gauges and test ports all assist in trouble-shooting.

BREAKER ROLL DRIVE

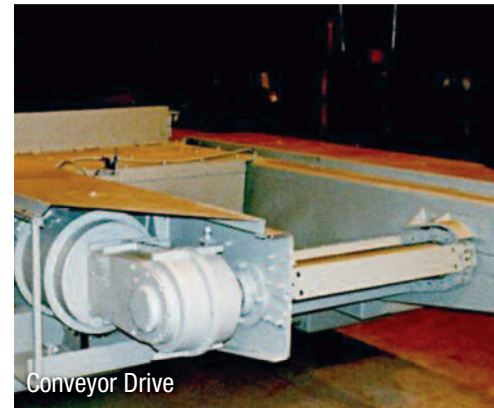
The breaker roll or pick roll is driven by an electro-mechanical method that includes a motor and shaft-mounted reducer. A torque limiting magnetic coupling is used between the motor and reducer to eliminate damage to the breaker drive and assembly. This alignment free drive method eliminates old fashioned chains and sprockets and their associated maintenance problems. Flange block bearing housings are bolted to the side of the frame in an adjustable bolting pattern that provides 2" (50mm) increments of product size adjustment. McLanahan developed the incorporation of magnetic couplings, one of the most significant CMFB innovations in the last 15 years. Magnetic couplings have no mating surfaces, eliminating the need for replacement parts. They are alignment free and do not utilize fluid or shear pins.

BELT TAIL PULLEY

McLanahan also developed the integrated belt tail pulley assembly, the other most significant innovation in CMFBs in the last 15 years. This innovation has simplified underground operations by providing a seamless transition from CMFB to conveyor belts. The CMFB is now able to pull the belt-line as the mine face advances, limiting downtime during belt moves. McLanahan is able to accommodate many different transition styles to suit the mine conditions, while pulling belt in excess of 15,000 feet (457m).



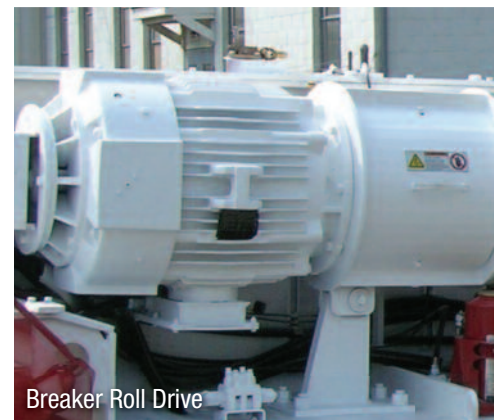
Breaker Roll



Conveyor Drive



Control Panel



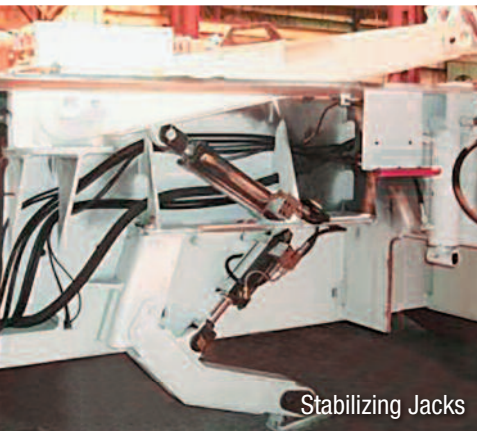
Breaker Roll Drive



Belt Tail Pulley



Crawler Tracks



Stabilizing Jacks



Lube System



Fire Suppression System

CRAWLERS

The key to its ability to incorporate belt tail pulley assemblies is the powerful crawlers that provide over 75,000 pounds (34,019kg) of pull force. Known for their superior ability to tram over rough terrain and steep slopes, McLanahan CMFBs can go where no others have gone before. Crawler tracks are available in 15" or 18" (381mm or 457mm) pad widths and all crawler drives incorporate free-wheeling ability.

CUSTOM OPTIONS

Every McLanahan CMFB is designed to specific mine conditions and operator preference.

Stabilizing Jacks

Stabilizing jacks provide a sure footed system to counteract belt forces and aggressive "bumping" by haulage operators.

Lube Systems

As a standard, lubrication lines on each side of the machine are banked to a common manifold and labeled to ensure your maintenance is made easier. Optional automatic lubrication systems are modular, consisting of a pump and reservoir that feeds divider valves. Whether using the standard manifold or the modular auto-lube system, each is strategically placed on the unit for easy access.

Fire Suppression Systems

Manual or automatic fire suppression systems cover all aspects of the CMFB where a fire could occur and conform with current U.S. Mine Health & Safety Administration guidance for control and installation.

Additional Features

Going beyond what is considered "normal", McLanahan can provide a variety of support systems, including dust suppression, lighting packages, alarms, horns, power take offs for hydraulic and/or electrical equipment, welding outlets, interlocks on access doors and so much more. Safety is paramount on McLanahan equipment, and at the minimum, E-stops are provided on both sides of every machine.

Offering The Widest Range Of Processing Equipment Available From A Single Manufacturer

Bulk Material Handling | Contaminant Removal | Crushing | Feed Preparation
Density Separation | Dewatering | Fines Recovery | Lab Testing | Mixing/Blending
Sampling | Sand Processing | Scrubbing | Sizing/Screening | Washing/Classifying
Water Management

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