



Cat[®] Rock Straight System

CONTINUOUS HARD ROCK LONGWALL MINING

Fully Mechanized Continuous Hard Rock Longwall Mining for Low Seam Deposits

The Cat[®] Rock Straight System is a fully mechanized longwall system adopted to hard rock conditions for continuous mining of flat and tabular deposits and reefs. The Rock Straight System combines the use of a hard rock shearer (Hard Rock Miner HRM220), a hard rock chain conveyor (Hard Rock Conveyor HRC30) and hydraulic roof support (Hard Rock Roof Support HRS1220). It features the adaptation of the newly developed “Cat Activated Undercutting Technology” and has been particularly designed for the extraction of bedded hard rock deposits (e.g. copper, gold).

The Rock Straight System particularly provides economical cutting in the mining of thin seams and narrow veins, especially when selective mining of ore is required.

Rock Straight System Specifications

Hard Rock Miner (HRM220)



Seam Range	1.3-2.0 m	4.2-6.6 ft
Typical Machine Length	6.8 m	22 ft 4 in
Installed Power Hydraulic System	55 kW	73.7 hp
Cutting Units	2	2
Installed Power per Cutting Unit	132 kW	177 hp
Installed Power Electrical System	319 kW	427.6 hp
Cutting Head Diameter	1270 mm	50 in
Cutting Depth (up to)	100 mm	3.93 in
Cutting Drum Speed	60 rpm	60 rpm
Body Height	1200 mm	47.2 in
Machine Weight (approximately)	41.0 tonnes	45.2 tons
Operating Voltage	1,000 V; 50 Hz, 3 AC	1,000 V; 50 Hz; 3 AC

Hard Rock Conveyor (HRC30)



Chain Length (up to)	100 m	328 ft
Line Pan Length	2615 mm	102.95 in
Line Pan Width	1756 mm	69.13 in
Line Pan Height	280 mm	11.02 in
Apron Plate Spacing	4 × 108 mm	4 × 4.25 in
Apron Plate Chain Diameter	30 mm × 108 mm	1.18 in × 4.25 in
Chain Speed	0.7 m/sec	2.3 ft/sec
Capacity per Hour	160 tonnes	176 tons

Rock Straight System – Continuous Hard Rock Longwall Mining

Hard Rock Roof Support (HRS1220)



Height Closed	1060 mm	41.73 in
Height Extended	2150 mm	84.64 in
DA (double-acting) Ram Stroke	625 mm	24.60 in
Leg Centers Distance (vertical to face)	1440/1660 mm	56.69/65.35 in
Canopy Width	1600 mm	62.99 in
Main Canopy Length	4240 mm	166.93 in
Swivel Canopy Length	1500 mm	59.05 in
Canopy Extension Length	1500 mm	59.05 in
Base Width	1300 mm	51.18 in
Bearing Surface Base	35 360 cm ²	38.061 ft ²
Distance Roof Support Centers	1760 mm	69.29 in
Support Resistance (at height 1600 mm/62.99 in)		
Setting Load at 320 bar (4,641 psi)	2209 kN	320.38 psi
Yield Load at 415 bar (6,019 psi)	2599 kN	376.95 psi
Load at the End of Swivel Canopy	100 kN	14.50 psi
Weight (with swivel canopy)	9.3 tonnes	10.25 tons

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