



## 14CM Series Continuous Miner Product Overview





## 14CM Series

The Joy 14CM continuous miner product line has been developed to meet the high productivity requirements of today's underground mining industry and is the product of choice

**Built to withstand rigorous conditions**

for the world's top producing mines. Joy continuous miners provide the ideal combination of cutting power, proven components and reliability for lower to mid-seam applications in a variety of materials. Built to withstand rigorous conditions, the 14CM offers optimum service life and return on investment.

The basic elements of each continuous miner are similar in design, following field proven philosophies perfected by Joy Global over the years. Each machine employs Joy Global's multi-motor concept with outboard access to motors, gearcases, controllers and other major components. The philosophy calls for the isolation of major components for easier troubleshooting and maintenance. The continuous miners use individual motors with direct drive transmissions to power the cutter, traction, gathering and hydraulic systems. This permits service or repair to be completed quickly and easily, thus reducing downtime and maintenance costs.

### Wethead Cutterhead Systems

The Wethead continuous miner cutterhead from Joy Global incorporates a fine water spray behind each cutting bit on the cutter drums. Acting as both a cooling and wetting agent, the water reduces the potential for frictional ignitions and also reduces respirable dust levels. The water spray acts as both a cooling and wetting agent in order to address both issues at the same time. The sprays also provide lubrication that substantially improves bit life. The Wethead does all this while potentially consuming less water than the standard miner dust sprays.

### Application Specific Cutting

*A wide variety of cutting options...*



The 14CM is available in solid head or Ripperveyor models and in drum diameters ranging from 30 to 44 inches or 762 to 1117 mm. The cutting system can be sized to match seam conditions. Rated cutting power as high as 590 hp (440 kW) is available within this product line.



### SmartConveyor

SmartConveyor incorporates the latest sound abatement technologies to reduce sound output while improving maintainability. "Underground results show a 45% and 65% noise exposure reduction for the operator" when compared to a standard machine. (Mining Engineering, 2011, Vol. 63, No. 7, p. 83) SmartConveyor combines multiple technologies such as Joy Global's patented Dual Sprocket Conveyor Chain and auto-tensioning features to improve the operating environment. SmartConveyor is currently available as an option on all continuous miner models.

### Smartzone Proximity System

The Smartzone Proximity System is an integrated training device that helps teach personnel to operate a continuous miner from safe working zones, and to otherwise stay clear of danger zones. Its unique ability to track, recognize and log operator movement around the machine provides an additional layer of analysis for in depth training initiatives. The Smartzone Proximity System option is currently available on all continuous miner models.

### Total Control

*The latest in VFD technology...*

Today's 14CM traction system builds on years of field-tested performance to offer even more durability and continuous miner maneuverability. Patented Optidrive AC electronics are coupled to a compact all-gear transmission that provides smooth and reliable performance. Cutter motor feedback control loops and an electronic traction motor differential optimize sump performance in even the most demanding of applications. Various track frame widths are available to reduce ground bearing pressure and better suit specific floor conditions and entry widths.



## Joy Global History

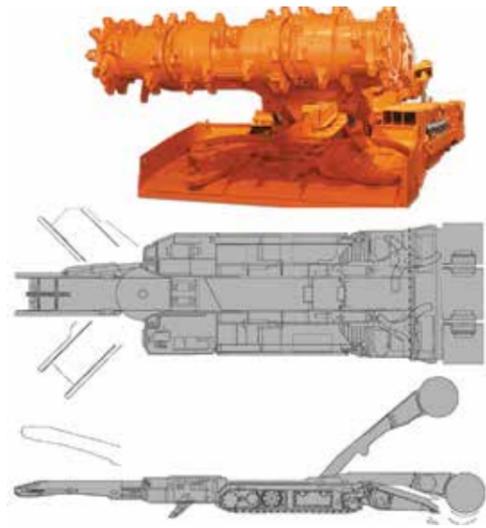
*Tradition in Quality & Pride...*

With over 6,000 continuous miners shipped since 1948, Joy Global leads the mining industry with innovations that increase productivity and improve operator safety. Innovations such as air scrubbers, Wethead cutterhead drums, AC traction motors, noise reducing conveyor systems, and hydraulics manifolds are just a few examples. All are industry firsts from Joy Global, the world leader in underground mining innovations.





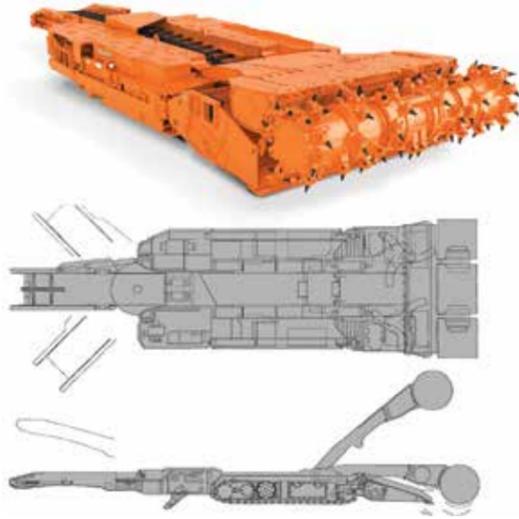
# Joy 14CM10 & 14CM9 Continuous Miner



		14CM10AA		14CM9A	
Loading Rate		10-21 ton/min	9-19 tonne/min	10-21 ton/min	9-19 tonne/min
Cutter Head Diameter (Optional)		30 in (28 in)	763 mm (711 mm)	34 in (32 in)	865 mm (813 mm)
Conveyor	Width	30 in	762 mm	30 in	762 mm
	Chassis Depth	8 in	203 mm	8 in	203 mm
	Chain Pitch	3 ¼ in	83 mm	3 ¼ in	82 mm
	Speed Options	402 fpm 475 fpm	123 m/min 145 m/min	402 fpm 475 fpm	123 m/min 145 m/min
Crawler Chain	Width	20 in	508 mm	20 in	508 mm
	Pitch	7 in	178 mm	7 in	178 mm
Cutter Drums	Joy Bit Blocks, Spacing	2 ¼ in	57 mm	2 ¼ in	57 mm
	Cutting Width	10 ft 10 in	3302 mm	11 ft 0 in	3350 mm
Ground Pressure		26.8 psi	184 kPa	25.4 psi	175 kPa
Weight		118,000 lbs	53,636 kg	112,000 lbs	53,636 kg
Maximum Cutting Height		122 in	3099 mm	91 ½ in	2324 mm
Minimum Cutting Height		38 in	965 mm	32 in	812 mm
Basic Chassis Height		28 ½ in	725 mm	25 ½ in	648 mm
Height at Boom Pivot		28 ½ in	725 mm	28 ¼ in	718 mm
Ground Clearance		6 in	152 mm	6 in	152 mm
Sump Range		0-25 fpm	0-7.6 m/min	0-25 fpm	0-7.6 m/min
Tram Speed	Slow	15 fpm	4.6 m/min	15 fpm	4.6 m/min
	Intermediate	30 fpm	9.1 m/min	30 fpm	9.1 m/min
	High	65 fpm	19.8 m/min	65 fpm	19.8 m/min
	Turbo	85 fpm	26 m/min	85 fpm	26 m/min
Gathering Arm Speed		51 or 60 rpm	51 or 60 rpm	45 or 54 rpm	45 or 54 rpm
Cutter Speed		81 fpm	81 m/min	64 rpm	64 rpm
Bit Tip Speed		593 fpm	180 m/min	640 fpm	197 m/min
Motors (Water Cooled)					
950 Volt, 60 Hz					
Cutter - 2		165 hp	123 kW	201 hp	150 kW
Pump - 1		40 hp	30 kW	40 hp	30 kW
Gathering Head - 2		67 hp	50 kW	67 hp	50 kW
Traction (Optidrive) - 2		80 hp	60 kW	80 hp	60 kW
Total Power (Optidrive)		664 hp	496 kW	736 hp	550 kW

# Joy 14CM15 Continuous Miner

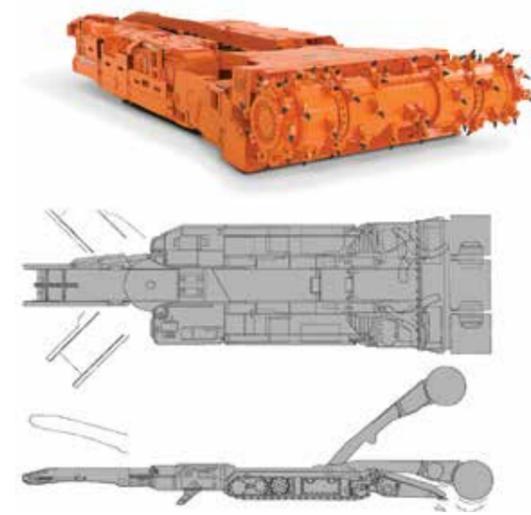
	14CM15CC		14CM15C		14CM15B		14CM15D		14CM15E	
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Loading Rate		11-31 ton/min	10-28 tonne/min								
Cutter Head Diameter (Optional)		38 in	965 mm	38 in	965 mm	38 in	965 mm	44 in	1118 mm	44 in	1118 mm
Conveyor	Width	38 in	965 mm								
	Chassis Depth	8 in	203 mm								
	Chain Pitch	3 ¼ in	83 mm								
	Speed Options	402 fpm 475 fpm	123 m/min 145 m/min								
Crawler Chain	Width	20 in	508 mm								
	Pitch	7 in	178 mm								
Cutter Drums	Joy Bit Blocks, Spacing	2 ¼ in	57 mm								
	Cutting Width	10 ft 10 in	3302 mm	11 ft 6 in	3505 mm	11 ft 6 in	3505 mm	11 ft 6 in	3505 mm	10 ft 6 in	3505 mm
Ground Pressure	Weight	28.2 psi 124,000 lbs	194 kPa 55k kg	28.4 psi 125,000 lbs	196 kPa 55,000 kg	28.4 psi 125,000 lbs	196 kPa 55,000 kg	28.9 psi 127,000 lbs	199 kPa 57,727 kg	29.1 psi 128,000 lbs	200 kPa 58,181 kg
	Maximum Cutting Height	91 ½ in	2324 mm	120 in	3048 mm	122 in	3099 mm	126 in	3200 mm	1296 in	3277 mm
Minimum Cutting Height		38 in	965 mm	36 in	914 mm	36 in	914 mm	45 in	1143 mm	48 in	1219 mm
Basic Chassis Height	Height at Boom Pivot	25 ½ in	648 mm	25 ½ in	648 mm	28 ½ in	724 mm	28 ½ in	724 mm	31 ½ in	800 mm
	Ground Clearance	28 ¼ in	718 mm	28 ¼ in	718 mm	31 ¼ in	794 mm	31 ¼ in	794 mm	34 ¼ in	870 mm
		6 in	152 mm	9 in	152 mm	9 in	229 mm	9 in	229 mm	12 in	305 mm
Sump Range		0-25 fpm	0-7.6 m/min								
Tram Speed	Slow	15 fpm	4.6 m/min								
	Intermediate	30 fpm	9.1 m/min								
	High	65 fpm	19.8 m/min								
	Turbo	85 fpm	26 m/min								
Gathering Arm Speed		45 or 54 rpm	45 or 54 rpm	45 or 54 rpm	45 or 54 rpm	45 or 54 rpm	45 or 54 rpm	45 or 54 rpm	45 or 54 rpm	45 or 54 rpm	45 or 54 rpm
Cutter Speed		64 fpm	64 m/min								
Bit Tip Speed		608 fpm	185 m/min	608 fpm	185 m/min	608 fpm	185 m/min	690 fpm	210 m/min	690 fpm	210 m/min
Motors (Water Cooled)											
950 Volt, 60 Hz											
	Cutter - 2	235 hp	175 kW								
	Pump - 1	40 hp	30 kW								
	Gathering Head - 2	67 hp	50 kW								
	Traction (Optidrive) - 2	80 hp	60 kW								
	Total Power (Optidrive)	804 hp	600 kW								
950/1050 Volt, 50 Hz											
	Cutter - 2	228 hp	170 kW								
	Pump - 1	54 hp	40 kW								
	Gathering Head - 2	60 hp	45 kW								
	Traction (Optidrive) - 2	80 hp	60 kW								
	Total Power (Optidrive)	790 hp	590 kW								

# Joy 14CM27 Continuous Miner

14CM27



Loading Rate		15-40 ton/min	17-36 tonne/min
Cutter Head Diameter		44 in	1118 mm
Optional		39 in	1000 mm
Conveyor	Width	38 in	965 mm
	Chassis Depth	12 in	300 mm
	Chain Pitch	3 ¼ in	83 mm
	Speed	475 fpm	145 m/min
Crawler Chain	Width	22 in	560 mm
	Pitch	7 ¼ in	184 mm
Cutter Drums	Joy Bit Blocks, Spacing	3 ¾ in	95 mm
	Cutting Width	11 ft 6 in	3500 mm
Ground Pressure	Weight	30 psi	207 kPa
		148,000 lbs	67,272 kg
Maximum Cutting Height		11 ft 2 in	3400 mm
	Minimum Cutting Height	39 in	1000 mm
Basic Chassis Height		44 in	1118 mm
	Optional	39 in	1000 mm
Height at Boom Pivot			
	Ground Clearance	8 or 12 in	200 or 300 mm
Sump Range		0-25 fpm	0-7.6 m/min
Tram Speed	Slow	15 fpm	4.6 m/min
	Intermediate	45 fpm	13.7 m/min
	Standard	65 fpm	19.8 m/min
	High (Optional)	85 fpm	26 m/min
Gathering Arm Speed		54 rpm	54 rpm
Cutter Speed		60 fpm	60 m/min
Bit Tip Speed		691 fpm	3.51 m/s
	Optional	618 fpm	3.14 m/s
Motors (Water Cooled)			
950 Volt, 60 Hz			
	Cutter - 2	268 hp	185 kW
	Pump - 1	54 hp	40 kW
	Gathering Head - 2	67 hp	50 kW
	Traction (Optidrive) - 2	80 hp	60 kW
	Total Power (Optidrive)	884 hp	630 kW
950/1050 Volt, 50 Hz			
	Cutter - 2	248 hp	185 kW
	Pump - 1	54 hp	40 kW
	Gathering Head - 2	60 hp	45 kW
	Traction (Optidrive) - 2	80 hp	60 kW
	Total Power (Optidrive)	830 hp	620 kW
2300 Volt, 60 Hz			
	Cutter - 2	295 hp	220 kW
	Pump - 1	47 hp	35 kW
	Gathering Head - 2	67 hp	50 kW
	Traction (Optidrive) - 2	80 hp	60 kW
	Total Power (Optidrive)	931 hp	695 kW

## Smart Services

Smart Services from Joy Global combine all of Joy Global's value-added offerings into one package, under one roof as an integrated

reliability and asset management, advanced training and integration of mining processes/system optimization with 24-hour support.\*

strategy, which brings together all of the innovative people, services and products that Joy Global has to offer.\*

Joy Global service facilities have given world class service a new home.

Our service strategies are delivering responsive and competitive service solutions, meeting the needs of our customers and driving unprecedented value in our customers' operations. At the core of Joy Global's Smart Services vision is our Performance Life Cycle Management (PLCM)

Performance Life Cycle Management focuses these services, to align with our customers' needs, cultivating a zero harm mentality and delivering the highest productivity at the lowest cost per ton, from the time you receive your new equipment for the entire life cycle of the equipment.

solution to our customers. The facilities and services feature technological advancements in prognostics, remote health monitoring,



Health Management - State of the art predictive software analyzes the data streamed from your machines. The software predicts malfunctions, failures or process gaps at the earliest instance.

- Application Optimization
- 24/7 Product Support
- Health Management
- Performance Life Cycle Management
- Advanced Technical Training
- Technology Products
- Genuine Service Products
- Reliability
- Asset Revitalization & Rebuilds
- 24/7 Parts & Logistics
- Interactive Information Delivery

\*All services are not yet available in all regions of the world.