

Reliable solutions

EX1200-7

HCME Mining Dealer Meeting 2019



Peter van der Staaij Technical Sales Manager

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E 1200

Introducing the NEW EX1200-7

Hitachi's EX-7 series integrates intelligence, safety, and ultimate efficiency, refined from more than 100 years of expertise.

HITAC

The EX1200-7 is a unique excavator within the Hitachi range, adapting to many different operations. At its core lies clever and complex engineering; on the surface is a beautifully simple, operator-friendly machine.

Basic Specifications



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Model

EX1200-7B EX1200-7 Cummins QSK23C, US EPA Tier4 Final Cummins QSK23C, FCO

Rated Power

SAE J1995, gross:	567 kW (760 HP) at 1800 min ⁻¹ (rpm)
Max. Torque:	3 468 N⋅m (354 kgf⋅m) at 1 350 min-1 (rpm)

Operating Weight:

EX1200-7B (T4F)	LD
	BE
EX1200-7 (FCO)	LD
	BE

118 000 kg 119 000 kg 117 000 kg 117 000 kg

Bucket Capacity

LD:	6.5 m ³ (ISO 7546 Heaped 2:1)
BE:	7.0 m ³ (ISO 7451 Heaped 1:1)

Maximum Excavating Forces

LD:	Arm crowd force on ground: 585 kN (59 700 kgf)
	Bucket digging force: 709 kN (72 300 kgf)
BE:	Arm crowd force: 438 kN (44 700 kgf)
	Bucket diaging force: 569 kN (58 000 kgf)



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LOADING SHOVEL



	Bud ISO	ket capacity 7456 (Heaped 2:1)	6.5 m³		
	A	Min. digging distance	4 510		
	В	Min. level crowding distance	6 580		
	С	Level crowding distance	4 370		
	D	Max. digging reach	11 500		
Ł	E	Max. cutting height	12 4 10		
J	E'	Max. dumping height	8 750		
	F	Max. digging depth	4 780		
	G	Working radius at max. dumping height	6 140		
	Н	Max, bucket opening width	1 880		
	Arm (grour	crowding force on rd	585 kN (59 700 kgf)		
	Buck	et digging force	709 kN (72 300 kgf)		

BACKHOE



-	Min. swing radius	6 770		
:	Max, vertical wall	4 440		
17	Min. level crowding distance	4 210		
Bucket digging force (ISO)*		569 KN		
		58 000 kgf		
Arm crowd force (ISO)*		438 KN		
		44 700 kgf		

Dimensions

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	EX1200-7	EX1200-7		EX1200-7	EX1200-7
	Cummins T4F	Cummins FCO		Cummins T4F	Cummins FCO
Cabin	×	×	Radiator Fan Motor	Δ^2	Δ^2
Seat	×	×	Oil cooler fan motor	0	0
Monitor Display	×	×	Pump Transmission	– –	
Air Conditioner	×	×	Oil Cooler	×	×
Engine	×	×	SCR System	×	
Engine Oil Filter	×	0	Counterweight	×	×
Stage 1 Filter	×	×	Main Frame	×	×
Stage 2 Filter	×	—	Engine Bed	×	×
Air Cleaner	0	0	Radiator		
Muffler	×	×	Fuel Cooler		
Pump Transmission	Δ^1	Δ^1	Swing Bearing	0	
Main Pump	0	0	Track Link	<u>0</u>	
Fan Pump	×	×	Front Idler	<u>0</u>	
Control Valve	×	×	Upper Roller	0	
Swing Transmission	0	0	Lower Roller	()
Swing Motor	×	×	Cylinder	()
Center Joint	0	0		-	
Travel Transmission	0	0			
Travel Motor	0	0			

O = EX1200-6 parts are interchangeable with EX1200-7

X = EX1200-6 parts are not interchangeable with EX1200-7

¹ Transmission is interchangeable; pump is not interchangeable

² EX1200-6 oil cooler motor is interchangeable with EX1200-7 radiator fan motor



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MAIN MENU







EX1200

SPECIFICATIONS & ENGINE

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Stage 5 Emission regulations for Mining are different than for Construction.

Emission stage	Engine sub- category	Power range	Engine ignition type	co	нс	NOx	PM mass	PN	А
		kW		g/kWh	g/kWh	g/kWh	g/kWh	#/kWh	
Stage V	NRE-v-1	-1	CT	8,00	(HC+NOx≤7,50)		0.401)		1.10
Stage V	NRE-c-1	0~1~0	CI				0,40	-	1,10
Stace V	NRE-v-2	8<₽<10	CI	6.60	(HC+NOx≤7,50)		<mark>0</mark> ,40	_	1,10
Sugev	NRE-c-2	0_1 <13		0,00					
Stage V	NRE-v-3	19 <u>≤</u> P<37	CI	5,00	(HC+NOx≤4,70)		0,015	1x1012	1,10
Stage V	NRE-c-3							1310	
Stage V	NRE-v-4	37 <p<56< td=""><td rowspan="2">CI</td><td rowspan="2">5,00</td><td colspan="2" rowspan="2">(HC+NOx≤4,70)</td><td>0.015</td><td>1x10¹²</td><td>1,10</td></p<56<>	CI	5,00	(HC+NOx≤4,70)		0.015	1x10 ¹²	1,10
Suger	NRE-c-4	0.31.00					0,010	INIO	
Stage V	NRE-v-5	56 <p<130< td=""><td>a11</td><td>5.00</td><td>0.19</td><td>0.40</td><td>0.015</td><td>1x1012</td><td>1.10</td></p<130<>	a11	5.00	0.19	0.40	0.015	1x1012	1.10
Stage V	NRE-c-5	50 <u>5</u> F<150	an	5,00	0,19	0,40	0,015	1X10	1,10
Stage V	NRE-v-6	120-7-560	e11	3.50	0.10	0.40	0.015	1×10 ¹²	1.10
Stage V	NRE-c-6	13021 2000	an	5,50	0,19	0,40	0,015	1110	1,10
Stage V	NRE-v-7	P>560	-11	3 50	0.19	3.50	0.045		6.00
	NRE-c-7	P~300	an	3,30	0,19	3,30	0,043	-	0,00

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Tier 4 Final & FCO Calibration

Both Cummins engine options are available as either T4F (EPA Tier 4 Final) or FCO (Fuel Consumption Optimization) configuration.





FUEL CONSUMPTION OPTIMIZATION TECHNOLOGIES



FCO Technologies



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Up to 6% Reduction in Fuel Consumption*

The EX-7 series features three new sustainability technologies:

- BE bucket capacity $6.7m3 \rightarrow 7.0m3$
- Improve the hydraulic system control
- Efficient cooling package.

These technologies reduce fuel consumption by up to 6%*.



* comparison of Cummins engine configuration against EX1200-6



EX1200-7B fuel consumption working in the US



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HIOS IIIB Hydraulic System

The EX1200-7 features a highly efficient HIOS (Human & Intelligent Operation System) IIIB hydraulic system, which employs three pumps and two control valves to reduce fuel consumption and increase speed of front attachment operations, maximizing productivity. Same system as the ZX-6 Large excavators.



FOUR FRONT ATTACHMENT OPERATIONS ARE BOOSTED BY THE HIOS IIIB HYDRAULIC SYSTEM

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Regeneration Circuit for Boom

The EX1200-7 control valve contains a flow recycle valve to regenerate oil flow and lower pump load. This optimizes energy use by reducing engine power consumption without affecting boom lower performance.





Regeneration Circuit for Arm & Bucket(New)

The EX1200-7 arm and bucket also feature regeneration valves to recycle oil through arm and bucket cylinder rods, optimizing fuel consumption and increasing operating speed when rolling in the bucket and arm.





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Hydraulic Radiator Fan Motor & Oil Cooler

The radiator fan is now driven by a hydraulic motor from the direct belt drive. The larger oil cooler fan can now operate at lower speeds, conserving energy while maintaining optimal temperature. The fan also no longer requires a fan belt, saving maintenance time.





FCO Technologies



Hydraulic Oil Cooler with Variable Fan Speed (New)

Fan speed increases in high-load operating conditions to lower oil temperature, and helps hydraulic devices by doing the following:

- Prevents heat distortion to hydraulic devices and prevents operational defects due to seizure
- Improves lubrication of internal sliding parts and extends working life of hydraulic devices by reducing wear.





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Auto Idle Control

When Auto Idle is activated and all control levers are in neutral, engine speed is reduced to Auto Idle speed after three seconds to lower fuel consumption and noise levels.



WHEN AUTO IDLE IS ACTIVATED AND LEVERS ARE IN NEUTRAL, ENGINE SPEED WILL AUTOMATICALLY REDUCE AFTER THREE SECONDS

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Shutdown Control(New)

When Auto Shutdown is activated, the machine is automatically switched to "soft key off" status to prevent unnecessary fuel burn. When in Auto Shutdown, the key must be turned to ACC or lower to reset status before turning the machine on.



PERIOD OF INACTIVITY (seconds)

Shutdown Control is set to OFF by default, and will reset to OFF once restarted.

The default effective time is 10 minutes, but can be set to multiple other options between 1 and 30 minutes.



RELIABILITY & DURABILITY





Reliable solution

Structural Improvements (New)

The EX1200-7 center track frame's swing circle has been upgraded from a cast structure to forged structure, and top plate thickness has increased from 50mm to 55mm for increased strength and durability.



CENTER TRACK FRAME



Top plate thickness: 55 mm (vs. 50 mm on EX1200-5)

THICKENED TOP PLATE

Reliability & Durability

Floating Pins

Floating pins at the boom top and linkage reduce wear and prevent dirt contamination. Thrust plates bolted to the arm and bucket allow for easy part replacement.







In Line Delivery Filter

In line delivery filter is fitted between the hydraulic main pump and control valves to minimize debris circulation damage in the rare instance of internal failure.



Contamination Sensors

Contamination sensors on all main hydraulic pumps, center joint, and swing motor can detect contaminants that may cause damage to the hydraulic system. The sensors alert the operator of potential contaminants and record the fault code in the DLU (Data Logging Unit), with the capability to remotely advise maintenance personnel.



CONTAMINATION SENSOR



CONTAMINATION SENSOR CONTROLLER IN CAB







Yamada Auto-Iubrication system

The auto-lubrication system is provided standard for front attachment and swing circle to simplify daily maintenance. Bucket pins are not included in the system.

An electric grease gun is provided standard with hose reel for lubrication of the bucket pins.



Yamada grease pump with hose reel



Lincoln valves

Reliability & Durability



Optional Grease System

An optional automatic lubrication system is provided for the EX1200-7 BE front attachment option. This system enables automatic lubrication to all grease points in the superstructure including the bucket pins. The optional system comes with:

- 95-liter grease tank (EX1200-6:20L)
- High capacity Lincoln grease pump
- In line grease filter
- Independent grease injectors with hose reels for undercarriage lubrication.
- Fast fill

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LARGE SIZED GREASE PUMP
(Lincoln Flow Master)
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HOSE REEL





GREASE FILTER

GREASE INJECTOR (SLV)



Rearranged Hydraulic Hoses

Hose connections between the boom and main piping have been changed from an arch configuration to underslung configuration, removing need for clamps, reducing deflection and improving both Mean Time to Repair and Mean Time Between Failure.

EX1200-5

- Hoses more prone to deflection
 due to increased hose load
 - Clamp separates hoses



EX1200-7

- Hoses less prone to deflection due to decreased hose load
 - No clamping required





Durable Upper Rollers

Where competitors use single support rollers and/or only two upper rollers, the EX1200-7 features upper rollers at three locations on each side of the machine. Better support for shoes and rollers improves durability against material buildup on side frames.



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EX1200-7



Oil Filled Idlers and Rollers

Oil is retained by a floating seal on the idlers and rollers to eliminate the need for lubrication and reduce maintenance costs.







UPPER ROLLER



LOWER ROLLER

FRONT IDLER



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Improved Undercarriage Design

Side track frames are now constructed with a 22mm thickness steel box structure rather than 15mm. The travel devices and travel motor are completely covered to minimize damage caused by rough surfaces.





STRENGTHENED SIDE TRACK FRAME The box-section side track frame utilizes thicker plates.

RUGGED TRAVEL DEVICES

The travel devices are compact-designed to reduce damage for higher mobility, reducing downtime.



Track Center-Frame Protective Cover

Optional track center-frame protective cover prevents foreign objects from entering the track frame, protecting important components when working in soft ground. The cover is bolted into place so it won't be dislodged in operation, but is easy to remove for maintenance.





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Full Track Guards

Guards protect the lower rollers from damage and keep out rocks, preventing undercarriage overload and minimizing wear.



MENU EX1200-7 HITACHI



Safety



Engine Stop Switches(New)

The cab's operating station features a push button type engine stop switch which stops the engine. Push button type engine stop switches are also conveniently located near maintenance points. When switches are engaged, the engine won't start and maintenance can be performed safely.



ENGINE STOP SWITCH IN PUMP ROOM



ENGINE STOP SWITCH IN CAB

IMPORTANT:

This button should <u>not</u> be used in normal operations as it will initiate a shutdown sequence.

Safety



Protective & Supportive Cab

The EX1200-7 cab has undergone rigorous testing to be certified to ISO 10262 as a Level II Compliant Cab. The sturdy top guard structure provides protection from falling objects equivalent to boulders from above the machine. 10 fluid-filled elastic mounts support the cab to reduce shock and vibration from the machine and mounts are easily replaceable without need to remove the entire cab.



Name Standard Details OPG ISO 10262 **Operator Protective Guards** Structure for protecting against falling and flying This standard is specific to hydraulic excavators and stipulates 'top guards' and 'front guards'. 'Top guard' is a objects structure designed to protect against objects falling toward the operator's head. Energy absorption is set at Level I: 1,365J and Level II: 11,600J. This means that the protective structure entity will not penetrate into the DLV even when these amounts of energy are applied. 'Front guard' is a structure designed to protect against objects flying toward the operator from a frontal direction. Energy absorption is set at Level I: 700J and Level II: 5,800J. This means that the protective structure entity will not penetrate into the DLV even when these amounts of energy are applied.




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Handrails and Walkways

Handrails and anti-slip surfaces meet ISO standard 2867 and provide safe access to all areas of the machine for operation and inspection.





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Dual Isolator Switch(New)

The EX1200-7 is equipped with a standard dual isolator switch for both the engine starter and the battery, which aids in safely troubleshooting and downloading machine information.









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Travel Motion Alarm

Travel motion alarm is installed on the EX1200-7 to notify personnel when the excavator is traveling, increasing safety.





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Rear View Camera

A rear view camera located on the counterweight allows the operator to check behind the machine with a 220° field of view. The LCD monitor located in the cab shows the camera without need to switch between status icon displays.





Slide Ladder

Slide ladder is included as a standard feature to allow easy access to the machine.





Aerial Angle

Aerial Angle provides a bird's eye view around the machine from the cab for extra visibility and safety.





OPERABILITY & PRODUCTIVITY



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CONFIDENTIAL

Passes to Dump Trucks

The EX1200-7 is optimally matched to 40 tonne, 60 tonne and 100 tonne class trucks.

	40 tonne class truck	60 tonne class truck	100 tonne class truck*
Payload	40 tonnes	60 tonnes	100 tonnes
BE Backhoe 7.0 m ³	3 loads	5 loads	8 loads
	1 000 tonnes/hr	1 260 tonnes/hr	1 270 tonnes/hr
Loading Shovel 6.5 m ³	4 loads	6 loads	10 loads
	950 tonnes/hr	1 030 tonnes/hr	1 190 tonnes/hr



Larger BE Bucket (Upgraded)

BE bucket capacity has increased from 6.7m³ to 7.0m³ for optimized matching to the 60 tonne class dump truck and better productivity.





Improved Cab Structure(Upgraded)

Cab window reinforcements have been improved (side 4mm \rightarrow 8.8mm) to reduce cab noise. The RHS window now has two rails rather than four to allow for better visibility. Cab noise: 72dB(A) in the cab with max engine speed under no load. (Tier 4 Final model)

*Noise level of EX-6 is 75 dB(A) in the cab; on max.

engine speed under no-load condition



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12V power supply

Large storage space



Operability & Productivity

Ergonomic Cab Layout

The clean and ergonomic cab layout places operating controls in easy reach of the operator, reducing fatigue and improving efficiency and consistency. The cab amenities create a comfortable and productive operating environment and include:

Drink holder

- Hot and cool box
- Drink holder
- 12V power supply
- Large storage space
- Drink holder with hot and cold function
- Dome light linked to door
- Small caddy
- Audio Input









Hydraulic Joystick Levers

Short-stroke hydraulic joystick levers provide intuitive control, allowing for precise operation and consistent loading.





Heated Air Suspension Seat

The heated air suspension seat provides complete comfort and automatically adjusts according to operator weight.





HEATED AIR SUSPENSION SEAT



Improved Multifunctional Screen (Upgraded)

An improved 7-inch high definition multifunctional screen shows machine status and rear view at a single glance. 32 languages are supported for the display.



EX1200-7



Monitor Display Layout (Upgraded)

The monitor display gives a comprehensive snapshot of important information with a clear and simple layout.





Convenient Console Switches(Upgraded)

The RHS console features frequently used switches for ease of operation. Less frequently used switches are arranged on the LHS console.



Auto-Leveling Mechanism

One lever operation enables automatic boom-arm-bucket coordination for easy level digging. Additional digging force is exerted at the end of the digging motion, where power is most needed.



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Auto leveling oil flow and Digging force



Combined Swing Operation

Engine-Pump Control (E-P Control) directs available engine power to front attachment, swing and travel operations. This increases machine productivity and utilizes all energy produced.



Reliable Cab Air Conditioner

Climate-controlled air conditioning with enhanced cooling capacity creates a comfortable and productive environment. New venting design improves air flow and control for the operator.







Roll-Up Screen for Cab Windows

Front and side cab windows include the option of a roll-up screen. And it has 40% visual ray transparency







Auto Power Lift (BH front only)

When load to the hydraulic system becomes excessive while the boom is being lifted, an automatic change in the main relief pressure setting will enable lifting power to increase for better productivity.



Auto Travel Speed Shift

If traction demand is increased when the EX1200-7 is traveling at high speed then the speed mode will automatically shift down, returning to high speed once traction is reduced.



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Boom Digging Priority

Boom digging can be configured to prioritize between more powerful digging or more comfortable operation to maximize productivity in any situation.





OFF Powerful mode Much lifting and pulling of the body so there is more vibration and shock.





Increased Fuel Tank Capacity (Upgraded)

Fuel tank capacity has been increased from 1 550L to 1 700L, enabling the machine to operate under an engine load factor of 80% for up to 12 continuous hours.





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MAINTAINABILITY

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Maintainability



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On Board Maintenance Scheduler(New)

Hydraulic oil and filter replacement intervals are automatically prompted by the machine and can also be manually adjusted by the operator.







On Board Error Code Monitoring (New)

While the EX-6 series required technicians to translate signals from the electric box to identify error codes, the EX-7 conveniently displays error codes on the cab monitor.

メイン 11200-04 11202-04 11303-03 11304-04 11405-02 CLEAR	*	ECO) ^{⊠ 50.0} h 10:00
メイン 11200-04 11202-04 11303-03 11304-04 11405-02 CLEAR	4	*	
11200-04 11202-04 11303-03 11304-04 11405-02 CLEAR	メイン		
11303-03 11304-04 11405-02	1120	0-04	11202-04
CLEAR	1140	5-02	11304-04
	ť		CLEAR
	****		VOL HIMININI



Access Around the Machine(Upgraded)

Walkways and steps are designed for easy machine maintenance. A centralized filter system places the most accessed filters in convenient locations.





Fast-Filling System

A centralized retractable fast-fill panel provides easy access to lubrication ports from ground level. For fuel and grease (Lincoln Flow Master system only).





Air Cleaner Dust Ejector System

The EX1200-7 air cleaner includes a cyclone type pre-cleaner to filter out dust and debris, and discharge waste through a dust ejector fitted to the muffler. This design reduces maintenance time and increases machine reliability.





Operating and Maintenance Lights

Working, maintenance and access LED lights have great visibility and long replacement life.

STD:2 LED light OPT: Additional 2LED light





LEFT SIDE LIGHT(STD) RIGHT SIDE LIGHT (OPTIONAL)

Maintainability



Easy Cleaning of Coolers and Filters

Radiator, oil cooler and intercoolers are arranged in parallel for easy maintenance access.



AIR CONDITIONER CONDENSER SWINGS OPEN FOR EASY CLEANING AIR CONDITIONER FILTER IS LOCATED OUTSIDE CAB DOOR SIDE BEHIND OPERATOR SEAT FOR EASY MAINTENANCE



Reverse Fan(New)

The radiator and oil cooler fans can rotate in reverse to reject dust, reducing clogging of the radiator core, oil cooler core and front screen.







Fuel Filters(Upgraded)

The EX1200-7 FCO Stage 1 fuel filter now has a maximum replacement life of 500 hours, 250 hours more than the EX1200-6. In low grade fuel regions, a Stage 0 filter can be added to avoid shortened Stage 1 filter replacement life.

The EX1200-7 Tier 4 Final model features both a Stage 1 and Stage 2 filter with 500 hours replacement life. Maintenance time for both engine configurations is reduced.

		FUEL FILTER CHANGE INTERVAL			
		Stage 0	Stage 1	Stage 2	
			(Picture is -7 model's filter)		
EX1200-6	T2	OPT (250h) respond to low grade fuel region	250h	-	
EX1200-7	T2 (FCO)	OPT (250h) respond to low grade fuel region	500h	-	
	T4F	-	500h	500h	

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Maintainability



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Other Maintenance Friendly Features



GROUND ACCESS DRAIN PORTS



AUTO TENSION ALTERNATOR BELT



CONTROLLERS ON TOP OF CAB (IN CABINET)



HYDROPHILIC SELF CLEANING PAINTING
Thank You

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