

Metso:Outotec

Lokotrack LT220GP

Technical Specification



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Lokotrack LT220GP Mobile Crushing Unit

Lokotrack LT220GP is a track-mounted, self-propelled diesel engine powered secondary crushing unit. The machine can be equipped either with a Belt feeder or a Pre-screen feed system.

Main Dimensions with Belt Feeder



Main dimensions with Belt feeder – Operating		
Length	16 800 mm	55 ft 1 in
Length with extended main conveyor (optional)	18 300 mm	60 ft
Width	3 600 mm	11 ft 9 in
Height	5 200 mm	17 ft
Weight without options	38 500 kg	85 000 lbs

Main dimensions with Belt feeder – Transport*		
Length	18 100 mm	59 ft 5 in
Length with extended main conveyor (optional)	20 000 mm	65 ft 7 in
Width	3 000 mm	9 ft 10 in
Height	3 400 mm	11 ft 2 in
Weight without options	38 500 kg	85 000 lbs

**Transport drawings should be used for transport permits.*

Main Dimensions with Pre-Screen



Main dimensions with Pre-Screen – Operating		
Length	17 300 mm	56 ft 9 in
Length with extended main conveyor (optional)	18 800 mm	61 ft 8 in
Width	4 300 mm	14 ft
Width with side conveyor (optional)	8 300 mm	27 ft
Height	5 200 mm	17 ft
Weight without options	42 000 kg	92 600 lbs

Main dimensions with Pre-Screen – Transport*		
Length	18 900 mm	62 ft
Length with extended main conveyor (optional)	20 800 mm	68 ft 3 in
Width	3 000 mm	9 ft 10 in
Height	3 500 mm	11 ft 6 in
Weight without options	42 000 kg	92 600 lbs

**Transport drawings should be used for transport permits.*

Belt Feeder

Belt feeder transfers the material into the crusher ensuring an even and continuous material flow. It is equipped with a large feed hopper which makes it suitable to be fed by an excavator or a wheel loader.

Feed Hopper		
Volume	9.5 m ³	12.5 yd ³
Feeding height	2 720 mm	8 ft 11 in
Feeding height when rear plate is removed	2 420 mm	7 ft 11 in
Feeding width, rear	2 650 mm	8 ft 8 in
Feeding width, side	4 500 mm	14 ft 9 in
Material	Wear resistant steel	
Belt Feeder H12-7		
Belt width	1 200 mm	3 ft 11 in
Belt type	EP630/4 8+3 Y	
Conveyor length (c-c)	7 m	23 ft
Belt speed	Max 1 m/s (Adjustable)	Max 3.3 ft/s
Drive	Hydraulic	
Metal detector	2 detector coils. Top coil can be repositioned	

Service platforms are located on the right side of the Belt feeder. Platforms on the left side are available as an option. Belt feeder along with service platforms can be hydraulically lowered for transport and raised for operation.

Pre-Screen

Pre-screen feed system includes a lifting conveyor, prescreen and a by-pass hopper. Service platforms are located on both sides of the machine. Pre-screen along with lifting conveyor and platforms can be hydraulically lowered for transport and raised for operation. Side conveyor is available as an option.

Lifting Conveyor

Lifting conveyor and pre-screen transfer the material into the crusher ensuring an even and continuous material flow. Lifting conveyor can be equipped with feed hopper extensions to be fed by an excavator.

Feed Hopper		
Volume	3.5 m ³	4.5 yd ³
Volume with hopper extensions (optional)	6 m ³	8 yd ³
Feeding height	3 500 mm	11 ft 6 in
Feeding height with hopper extensions (optional)	3 950 mm	13 ft
Feeding width, rear	1 850 mm	6 ft 1 in
Feeding width, rear with hopper extensions (optional)	2 600 mm	8 ft 6 in
Feeding width, side	3 000 mm	9 ft 10 in
Material	Wear resistant steel	
Lifting Conveyor H12-5		
Belt width	1 200 mm	3 ft 11 in
Belt type	EP630/4 8+3 Y	
Conveyor length (c-c)	5.3 m	17 ft
Belt speed	Max 1 m/s (Adjustable)	Max 3.3 ft/s
Drive	Hydraulic	
Metal detector	2 detector coils. Top coil can be repositioned	

Pre-Screen

Pre-screen increases the machine output significantly because the small in-feed can by-pass the crusher and continue further in the process.

Pre-Screen		
Type	TK12-26-2V	
Stroke	10 mm	2/5 in
Rotation speed, nominal	900 rpm	
Acceleration	4.5g	
Top deck	Side tensioned wear steel	
Top deck screening area	2.2 m ² (1220 mm x 1830 mm)	2.7 yd ² (4' x 6')
2 nd deck	End tensioned steel wire cloth	
2 nd deck screening area	1.8 m ² (1220 mm x 1520 mm)	2.2 yd ² (4' x 5')
Vibrating machinery	Metso heavy-duty machinery with oil bath-lubricated gear	
Drive	Hydraulic	

By-pass Hopper

By-pass hopper transfers the pre-screened material either to main conveyor, side conveyor or both. The arrangement can be manually changed. By-pass hopper parts in contact with the material flow are made of wear-resistant steel

Pre-Screen material guiding			
1 st deck oversize to	Crusher		
2 nd deck oversize to	Crusher	Main conveyor	Side conveyor
2 nd deck undersize to		Main conveyor	Side conveyor

Side Conveyor (optional)

Side conveyor transfers pre-screened material to a stockpile on the side of the machine. Side conveyor can be hydraulically folded for transport.

Side Conveyor H6.5-6		
Belt width	650 mm	26 ft
Belt type	EP400/3 3+1.5 Y	
Conveyor length (c-c)	6.8 m	22 ft 3 in
Discharge height	3 300 mm (Adjustable)	10 ft 10 in
Belt speed	1.8 m/s	6 ft/s
Drive	Hydraulic	

Cone Crusher

Lokotrack LT220GP is equipped with GP220 cone crusher. The crusher cavity and stroke can be altered according to the application requirements.

Cone Crusher GP220 in Lokotrack						
Feed size, maximum						
Cavity	Extra Coarse Large Setting (EC-LS)		204 mm	8.03 in		
	Extra Coarse (EC)		204 mm	8.03 in		
	Coarse (C)		172 mm	6.77 in		
Setting range						
Stroke options*	EC-LS		EC		C	
	mm	in	mm	in	mm	in
18 mm 0.7 in	13 – 51	0.51 - 2	9 – 41	0.35 – 1.61	9 – 36	0.35 – 1.42
25 mm 0.98 in	17 – 48	0.67 – 1.89	13 – 38	0.51 – 1.5	12 – 32	0.47 – 1.26
28 mm 1.1 in	19 – 46	0.75 – 1.18	15 – 36	0.59 – 1.42	13 – 31	0.51 – 1.22
32 mm 1.26 in	22 – 44	0.87 – 1.73	18 – 34	0.71 – 1.38	15 – 29	0.59 – 1.14
36 mm 1.42 in	24 – 42	0.94 – 1.65	20 – 32	0.79 – 1.26	16 – 27	0.63 – 1.06
Nominal power		132 – 200 kW**		177 – 270 HP		
Rotation speed		1100 – 1300 rpm				
Material level control		An ultrasonic sensor to control the material level in the crusher cavity by stop/start control of primary unit's feeder.				
Lubrication oil tank		290 litres		77 US gal		
Lubrication oil		Mineral oil as default (Synthetic oil available as an option)				
Tooling		Certified toolkit for crusher service is included				
Optional equipment		Lubrication oil electric heating				

*Bigger stroke increases the capacity but reduces the setting range of the crusher

**Depends on stroke

Main Conveyor

Main conveyor transfers the crushed material from the crusher to the stockpile or to the next stage of the process. Main conveyor can be equipped with hydraulic height adjustment which allows conveyor to be lowered to the ground level for easy access below the engine. Dust encapsulation from the crusher to the end of engine module is included as standard.

Main Conveyor H12-10		
Belt width	1200 mm	3 ft 11 in
Belt type	EP500/3 5+1.5 Y	
Length (c-c)	10.2 m	33 ft 6 in
Discharge height	3 000 mm	9 ft 10 in
Discharge height with hydraulic height adjustment	up to 3 200 mm	10 ft 6 in
Belt speed	1.8 m/s	6 ft/s
Drive	Hydraulic	
Optional equipment	Hydraulic height adjustment	
	Dust encapsulation	
	Discharge hood	
	Special scraper	

Extended main conveyor is always equipped with hydraulic height adjustment.

Extended Main Conveyor H12-12		
Belt width	1 200 mm	3 ft 11 in
Belt type	EP500/3 5+1.5 Y	
Length (c-c)	12 m	39 ft 4 in
Discharge height	up to 3 900 mm (adjustable)	up to 12 ft 10 in
Belt speed	1.8 m/s	6 ft/s
Drive	Hydraulic	
Optional equipment	Dust encapsulation	
	Discharge hood	
	Special scraper	

Engine and Transmission

The operating power of Lokotrack LT220GP is generated by diesel engine. Power unit includes a diesel engine, cooler assembly, gearbox, two (2) hydraulic main pumps and pump for cooler fan, electric charger and two batteries. The crusher is driven from the gearbox via V-belts. Heavy duty air filtration with cycloid pre-cleaner for engine air intake is included as standard.

Engine and Transmission		
Engine type	Caterpillar C9.3B	
• Maximum output	310 kW	415 hp
• Maximum speed	1 800 rpm	
Emission class	TIER3/Stage III A	
	Stage V (TIER 4F)	
Electrification	Alternator 24 V 115 A, batteries 2 x 12V /174 Ah	
Fuel tank volume	790 l	210 US gal
Exhaust fluid tank volume (Stage V / TIER 4F)	65 l	17 US gal
Hydraulic tank volume	215 l	57 US gal
Optional equipment	Fuel filling pump (optional)	
	Fuel operated pre-heater for diesel engine	
	Electric pre-heater for diesel engine	
	Filter cartridge kit	

Hydraulic pumps are installed directly into the gearbox. With load sensing pumps the hydraulic system can adapt to a varying load situation in which case the power loss will be minimized during lower load situations.

Hydraulic pumps		Generates flow for
Load sensing / Variable displacement	100 cc	Main valve group controlling: Main conveyor, track drive, cylinder functions, high pressure water pump (option) and hydraulic power take-off (can be used for optional generator) Hydraulic functions of the crusher and its lubrication device: Crusher setting control, lubrication pump, lubrication oil cooling fan and hydraulic heating
Variable displacement	100 cc	Lifting conveyor motor (Electric displacement control)
Load sensing / Variable displacement	45 cc	Pre-Screen machinery and side conveyor motor
Variable displacement	45 cc	Cooler fan motor with electric pressure control. (Directional valve for reverse flow function)
The gearbox includes its own hydraulics to control the clutch and lubrication		

Control Unit and Electrification

The crushing process is controlled by IC860 Intelligent Control system including fully automatic process control, single button process start / stop and advanced fault diagnostics.

Control Unit

Main control panel is mounted on the side of the Lokotrack including the following functions.

- Process start/stop
- Work lights on/off
- Emergency stop -switch
- Display
- Switches for optional equipment
 - Hydraulic take off (used for generator)
 - Water pump

Other Electrics

Emergency stop -switches

- In the control center
- In the hydraulic center
- On the side of the engine center
- On the Lokotrack frame, both sides
- At lifting conveyor drive end, both sides
- In the drive control box
- In the radio control box (optional)
- Safety wires on both sides of the main conveyor
- At the side conveyor (if machine is equipped with side conveyor)

LED work lights

- At telescopic mast next to the crusher
 - 2 x 40W
- Additional lights (optional)
 - At discharge end of the machine (2 x 10W)
 - At the rear end of the machine (2 x 10W)

Moving Performance and Undercarriage

The Lokotrack is equipped with hydraulic driven heavy duty crawling tracks. Track chain is grease tensioned.

Moving Performance and Undercarriage		
Travelling speed	0 – 1 km/h, 1.7 km/h	0 – 0.6 mi/h, 1 mi/h
Tractive effort	300 kN	66 000 lbs
Gradeability	15 deg	27 %
Lateral inclination, maximum	5 deg	9 %
Ground pressure	135 - 145 kPa	20 - 21 psi
Ground clearance	240 mm	9 in
Track shoe width	400 mm	16 in
Track length (c-c)	3800 mm	12 ft 6 in
Final drive max torque	51 kNm	38 kip ft

Optional Equipment List

Feed hopper extensions

With extended feed hopper walls, it is possible to feed the lifting conveyor by an excavator.

Lubrication oil by-pass filter

Lubrication oil by-pass filter is used for crusher oil maintenance by effectively reducing oil contamination. The benefit is the increased uptime for production machinery and extended service life for crusher lubrication system components.

Lubrication oil electric heater

Additional heater for lubrication oil to speed up heating process. Hydraulic generator or external power supply is required. 400 V or 460 V

Climate kit

Climate kits include set of oils best fitted to specified temperatures. Cold climate kit includes electric and fuel -operated engine heaters.

Standard	-20...+35 °C	-5...+95 °F
Hot	-10...+50 °C	+15...+120 °F
Cold	-30...+30 °C	

Filter cartridge kit

Includes one of each changeable filter for the unit. (Complete set)

Fuel operated pre-heater for diesel engine

For warming up the engine in cold ambient conditions. Type: Webasto Thermo 50. Fuel consumption 0.35 - 0.7 l/h (0.09 - 0.18 gal/h)

Electric pre-heater for diesel engine

For warming up the engine in cold ambient conditions. Type: Defa block heater. Requires external power supply 240 V, 1.5 kW.

Hydraulic oil heater

For warming up the hydraulic oil. 230 V

Hydraulic oil by-pass filter

For extending the life of hydraulic components and improving the system reliability. Small side flow from hydraulic pump is lead to by-pass filter to improve hydraulic oil cleanliness.

Main conveyor height adjustment

For adjusting the main conveyor discharge height hydraulically. Extended main conveyor is always equipped with height adjustment mechanism.

Dust encapsulation

Includes aluminum sheet covers for discharge end of main conveyor.

Discharge hood

Includes aluminum/rubber discharge hood at the discharge point of main conveyor.

Additional scraper

Carving multiblade cleaner with chain extortor for efficient removal of the fine material from the surface of the main conveyor.

Interlocking cable

For connecting Lokotrack LT220GP with primary Lokotrack unit. Secondary unit crusher material level will be controlled by automatic start/stop of the feeder of the primary unit.

Hydraulic generator

Hydraulic generator provides electricity for maintenance tools. It can also be used for heating lubrication oil if the option Lubrication oil electric heater is selected. Note: Hydraulic power take-off is reserved for generator use.

Generator type	HG 10 kVA 400 V
Additional outlet	2 pcs 230 VAC for hand tools (Not available for UK/USA)

Hydraulic power take-off

For connecting the auxiliary hydraulic equipment to the hydraulic system. Includes quick couplings. Cannot be used simultaneously with the hydraulic generator.

Water pump

Water spraying system is used for binding dust particles at the discharge end of lifting and main conveyors as well as under the crusher. Water hoses, nozzles and dividing block are included by default. Hydraulic high-pressure water pump can be selected as an option. Requires water supply of 300 l/h at 2-3 bar.

Fuel pump

Electrically (24 VDC) driven fuel filling pump that can be controlled by a switch in the maintenance control panel next to the pump. The fuel pump has a protection for the overfilling. Includes 4 m fuel hose. Pump capacity: 80 l/min

Fuel truck connection

For when refueling is done by a fuel truck. Includes connection pipe from fuel tank to the ground level and filter at the tank.

Additional lights

Additional LED lights are located at discharge and feed end of the machine.

Service kit

Includes a set of spare parts e.g. fuses, relays, bulbs, seals etc. for first service of the unit.

Remote radio control

Handheld radio transmitter to remote control equipment and process

Enables the remote control of following functions

- Rpm adjustment of diesel engine
- Lokotrack movements (tracks)
- LT process controls
- Remote stop switch

Frequency 429 / 434 / 458 MHz (other frequencies on request)

- Transmitter and receiver units
- Integrated battery charger (2 pcs batteries)
- Electrification (key switch for radio control)
- Track control radio

NOTE! Remote radio control always requires a permit from local authorities

Remote IC system (ICr)

Metso ICr provides process information and control for the operator

Excavator set

- Color display in excavator cabin
- Wireless connection to excavator cabin (Bluetooth)
- Wireless interlocking between the units (2.4GHz)
- Crusher setting adjustment

Includes display, cables, brackets and radio.

Lokotrack set

- Wireless interlocking between the units (2.4GHz)
- Crusher setting adjustment

Includes cables and radios

Metso Metrics

Remote communication device on Lokotrack crushing and screening equipment to enable easy and secured transmission of key operational and maintenance data. Information measured and recorded include machines utilization rates, production levels, as well as energy usage and fuel consumption among others.

Safety package

Lokotrack Safety Package is used for limiting the access to working area. Contains traffic cones, plastic chains, warning signs and mounting parts.

Finishing

Finishing is done according to high internal quality standards. Painting requirements are mainly based on ISO 12944 -series standard. Level of corrosion prevention is class C3 medium, and verification is done to ISO 9227 (neutral salt spray test) 240h. Final paint is a high-volume single coat polyurethane (PUR) type of paint with low VOC- emissions for environment. All edges and welding seams are paint brushed before spraying for maximum durability.

Machined surfaces are treated with Tectyl 506 agent. Rods of hydraulic cylinders are chrome plated and treated with low viscosity protection oil before shipment.

Safety labels

Safety labels and stickers conform either to ISO or ANSI standards depending on destination country.

Documentation

Two sets of printed instruction manuals and spare parts catalogs including electronic format in USB-memory stick. Documents delivered in selected language. Additional sets of printed instructions manuals or spare parts catalogs for surcharge.

Warranty

Standard warranty for new Metso Outotec aggregates equipment is 12 months or 2 000 hours from the date of registration, whichever comes first. Spare part warranty is 12 months from the delivery or 1 000 hours, whichever comes first.