

# KOMATSU

## PC4000-11

*Loading Shovel & Backhoe*

Australia & New Zealand Specifications

**HYDRAULIC EXCAVATOR**



PC4000-11

**ENGINE POWER**

1400 kW / 1875 HP @ 1800 rpm

**OPERATING WEIGHT**

393 – 409 tonnes / 866,400 - 901,700 lb

**SHOVEL CAPACITY**

22 m<sup>3</sup> 29 yd<sup>3</sup> SAE 2:1 heaped

**BACKHOE CAPACITY**

23 m<sup>3</sup> 30 yd<sup>3</sup> SAE 1:1 heaped

# WALK-AROUND

## Productivity on demand

### POWERFUL & ENVIRONMENTAL FRIENDLY

- Strong 1400kW@1800rpm with immense digging forces to get your job done
- Fuel efficient high performance 60 litre Komatsu SDA16V160E-2 or SDA16V160E-3 engines that meet the low engine emission levels Tier2 or Tier4 final
- Various high productivity bucket options available to suit all material densities and properties

### MAXIMIZED EFFICIENCY

- Large fuel tank for 24hrs non-stop operation
- Optimized Swing Motors to reduce cycle time
- Long lasting, compact and electronically controlled Komatsu double pumps to guarantee efficient oil flow
- Advanced hydraulics system with monitored fine filtration to prevent contamination within the system
- "PLM ready" option available to speed up PLM installation time and reduce costs

### TOUGH & RELIABLE

- Robust undercarriage design to suit toughest mining applications
- Proven steel structure and attachment design developed from field experience and finite element analysis for long lasting machine life operation
- Simplified System (SFS) to improve electronic reliability and ease maintenance
- Service friendly machine layout to fasten the conduct of a safe maintenance

### FIRST CLASS COMFORT

- Generous designed, damped and sound insulated cabin with huge windows, a comfortable operator seat and several amenities to make operator's workplace pleasant
- Latest KomtraxPlus version with to the second precise machine health data, reporting functions and various download/transfer options

### SAFETY FIRST

- 45° stairway access design and 3 emergency egress options to ensure a safe descent of all personnel in case of emergency
- 3-Camera-System on board for better all-around sight, KomVision 360° Bird-Eye-View Camera System optionally available





**MATCHES****ENGINE POWER**

1400 kW / 1875 HP @ 1800 rpm

**OPERATING WEIGHT**

393 – 409 tonnes / 866,400 - 901,700 lb

**SHOVEL CAPACITY**

22 m<sup>3</sup> 29 yd<sup>3</sup> SAE 2:1 heaped

**BACKHOE CAPACITY**

23 m<sup>3</sup> 30 yd<sup>3</sup> SAE 1:1 heaped



# POWERFUL & ENVIRONMENTAL FRIENDLY

## High performance Komatsu engine

Choose from fuel efficient single stage turbocharged and aftercooled Komatsu SDA16V160E-2 Tier 2 or Komatsu SDA16V160E-3 Tier4 final engines. Both engines have a rated power of 1400kW @ 1800rpm. The Tier4 engine with Diesel Exhaust Fluid (DEF) tank and selective catalytic reduction (SCR) system reduces roughly 14x the amount of NoX and PM Emission of a Tier1 engine.







### Market leading digging forces

Experience the immense crowd/tier-out and breakout forces to loosen and load even difficult material. Benefit from the proven attachment design to work under harshest conditions and get your job easily done.

### Various large buckets

Choose from a range of various buckets and wear package options. Work together with the Komatsu Application team to optimize your bucket.





# MAXIMIZED EFFICIENCY

PC4000-11







#### **Compact and reliable Komatsu double pumps**

With a max. working pressure of 315 bar, 4 identical Komatsu swash plate double pumps (Type PV375+375) delivering a total of 4140 l/min. Supplementary pumps are end-mounted.

The pumps are field proven and satisfy of long lifetime, reduced hydraulic working temperature to improve machine component life and smooth operation.

#### **Optimized swing motors**

With variable swing motors Komatsu achieves quick cycle times.

The oil distribution (Qmax to Qmin) within the system is optimized for your “swing and lift” movements.

The system works automatically and is electronically controlled.

The optimized swing motors not only have an impact on the swing speed of the machine but improves oil flow into the attachment leading to a quicker achieved clearance height.





# TOUGH & RELIABLE

## Durable and robust steel structure design

Komatsu's hydraulic mining excavators are manufactured and designed in accordance with the highest quality, environmental and health and safety standards. Superstructure, attachment and undercarriage are welded in the Duesseldorf factory from the scratch and have proven an excellent steel structure integrity in the field. All larger Komatsu mining excavators have large diameter rollers, idlers and sprockets to withstand severest ground conditions. In addition a large surface area and extensive precision hardening of all engaging components reduce track wear. Also track link pin bores are hardened.







### Simplified electro-hydraulic system to increase reliability and serviceability

The Simplified System (SFS) replaces the former X2 switch box design and sits in the switch cabinet underneath the operator's cabin. It means a radical reduction of controllers, relays, wiring and circuit breakers to reduce electronic downtime which increases MTTR. Improved Service Monitor functions help to carry out the commissioning and maintenance quickly and effortlessly.

55% less controllers  
59% less relays  
32% less circuit breaker  
all integrated in **ONE** spot



# FIRST-CLASS COMFORT

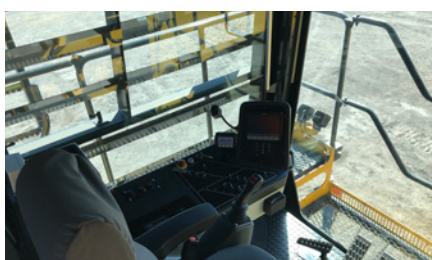


## High-quality interior and focus on operator comfort

The large and comfortable cab is mounted on 18 viscous damping pads and is sound insulated. The cabin has automatic climate control and is pressurised. The operator seat is air suspended, electrically heated and has a two-point seatbelt offering multiple adjustments. The passenger seat is also equipped with a seat belt. Low-effort joystick controls are electrohydraulic with foot pedals for front shovel clam, crawler and swing brake. All windows are tinted parsol green safety glass with external steel louvers. The cab has a special penetration proof front window (acc. DIN EN1063, resistance classification BR2-S) to increase the safety level of the operator.

## KomtraxPlus 2 for quick machine health monitoring

KOMTRAX Plus is designed for Komatsu mining equipment to provide real time information about the operating status of the machine via a coloured display. The integrated digital storage provides a full event history and trend data, which can be downloaded by laptop. Optionally available are Wi-Fi or Orbcmm satellite transmission (check for availability in your territory). KomtraxPlus 2 upgrades the market leading KomtraxPlus system to second by second sample rates to the equipment care website. Furthermore improved Service Monitor functions decrease trouble shooting time.





# SAFETY FIRST

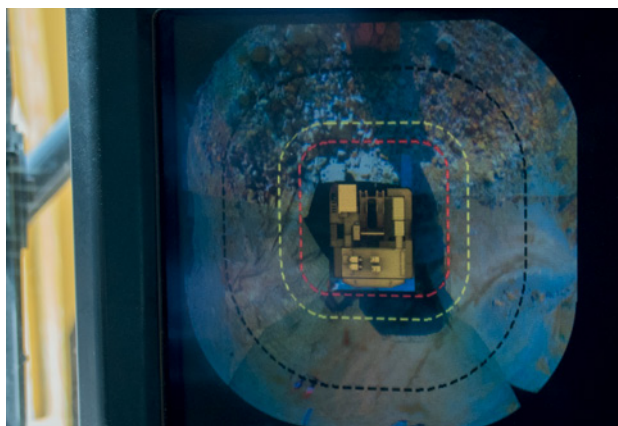


## Safe machine access and egress

With a generous, safe 45° access ladder from ground to cabin and a service oriented machine layout the PC4000 incorporates the latest Komatsu safety updates. The design is influenced by the industry leading EMESRT recommendations – incl. 3 advanced emergency egress possibilities with a 360° track clearance. Numerous working and service LED lights will give your personnel safe operation on and around the machine.

## Your environment always in view

With a 3-camera / 3-monitor system as a standard you immediately can overlook your rear machine working environment. If you prefer more of a 360° birds-eye-view of your machine's environment, you can go with the optional "KomVision" system which empowers you to have your operation surrounding within one glance – wrapped up in one giant screen.





# SPECIFICATIONS



## DIESEL DRIVE

Version 1: Tier 2 engine

Model.....Komatsu SDA16V160E-2

Type.....4-cycle, water-cooled, direct injection

Aspiration.....Turbocharged and aftercooled

Number of cylinders.....16

Rated power.....1400 kW 1875 HP @ 1800 rpm  
(SAE J1995)

Governor.....All-speed, electronic

Version 2: Tier 4 engine

Model.....Komatsu SDA16V160E-3

Type.....4-cycle, water-cooled, direct injection

Aspiration.....Turbocharged and aftercooled

Number of cylinders.....16

Rated power.....1400 kW 1875 HP @ 1800 rpm  
(SAE J1995)

Governor.....All-speed, electronic

The Engine meets EPA T4 final low emissions level by using Selective Catalytic Reduction and High Pressure Common Rail Injection System.

The integrated engine oil and filter system combining the oil stabilising systems, Reserve and Eliminator oil filter extends the oil change interval up to 1.000 hours. The high capacity Mesabi engine radiators are cooled by a hydraulically driven fan for superior cooling efficiency.



## ELECTRIC SYSTEM (Diesel Version)

System.....24 V

Batteries (series/parallel).....2 x 2 x 12 V

Alternator.....260 A

Standard working lights.....14 LED lights

Standard service lights..... Throughout the platform  
incl. emergency egresses and stairways



## UNDERCARRIAGE

Track adjustment.....Automatic hydraulic type

Number of track shoes.....49 each side

Number of top rollers.....3 each side

Number of bottom rollers.....7 each side



## TRAVEL AND BRAKE SYSTEMS

Gradeability..... Up to 50 %

Travel speed (maximum).....2,1 km/h 1.3 mph

Service brake.....Hydraulic brake

Parking brake.....Multiple-disc



## SWING SYSTEM

Hydraulic motors and drives.....2

Swing brake, service.....Hydraulic brake

Swing brake, parking.....Multiple-disc

Swing ring teeth..... External

Swing speed (maximum).....4.0 rpm



## HYDRAULIC SYSTEM

The power train consists of one main drive. One gearbox drives four identical pumps which draw hydraulic oil from an unpressurised hydraulic tank. Open circuit hydraulics provide maximum cooling and filtering efficiency.

Rated flow (total output).....4.140 ltr/min / 1,096 gpm

Relief valve setting.....310 bar / 4,495 psi

Swing flow rate.....1.590 ltr/min / 420 gpm

High pressure in line filters.....200 microns  
one per pump located at the valve blocks

Full flow return line filters.....10 microns  
at head of hydraulic tank

Case drain/by-pass return line filters.....3 microns

The four-circuit system features a load-limiting governor with oil delivery summation to the working circuits and incorporates pressure cut-off control. Hydropilot prioritises hydraulic flow giving smooth hydraulic response, simple hydraulic system layout, and a reduced number of components. The hydraulic system includes large swing-out vertical air-to-oil hydraulic coolers with temperature-regulated hydraulically driven fans.



## AUTOMATIC CENTRALISED LUBRICATION

Two hydraulically powered Lincoln single line automatic lubrication systems are provided as standard, complete with time and volume variable controls. The central lube grease system is supplied from a refillable 200 litre (53 gal.) barrel. A second, identical system supplies open gear lubricant to the swing ring teeth through a lube pinion. Replenishment of the containers is through the Wiggins connections on the service arm.



## ENVIRONMENT

Vibration levels

Hand-lever (ISO 5349-1)..... lower than 2,5m/s<sup>2</sup>

Whole body vibration and shock (ISO 2631-1).....below 0,5m/s<sup>2</sup>

Contains fluorinated greenhouse gas HFC-134a (GWP 1430)

PC 4000-11 D Quantity of gas 5,0-9,5 kg, CO<sub>2</sub> equivalent

7,15-13,59 t



## SERVICE CAPACITIES

Hydraulic oil tank.....3,900 ltr / 1,030 U.S. gal

Hydraulic system.....5,900 ltr / 1,559 U.S. gal

Fuel.....6,910 ltr / 1,826 U.S. gal

Engine Coolant.....475 ltr / 125 U.S. gal

Engine Oil.....290 ltr / 77 U.S. gal

### Reserve engine oil

make up tank.....460 ltr / 122 U.S. gal

Lubrication system (total).....400 ltr / 106 U.S. gal

### DEF (Diesel Exhaust Fluid)

tank (only Tier 4 Engine).....587 ltr / 155 U.S. gal





## OPERATOR CAB

The large and comfortable cab is mounted on 18 viscous damping pads and sound insulated. The cab has automatic climate control and is pressurised. The operator's seat is air suspended, electrically heated and has a lap seat belt and offers multiple adjustments. The trainer seat is also equipped with a seat belt. Low-effort joystick controls are electrohydraulic with foot controls for front shovel clam, crawler and swing brake. Full instrumentation, KOMTRAX Plus and an AM/FM radio with MP3 ready CD player with AUX in is fitted. The windshield wash wiper has two speeds and intermittent operation. Amenities include a refrigerator and storage cabinets. Powered and heated mirrors are adjusted from inside the cab. External metal sun blinds on the cab side window and internal roller blinds on all windows are standard. The left hand window is an emergency exit. All windows are tinted parsol green. The cab is equipped with a special penetration proof front window (acc. DIN EN 1063, resistance classification BR2-S) to increase the safety level of the operator. A walkway is mounted around the cab.

Major cab engineering standards are:

- ISO 10262 Falling Objects Protection Structure (FOPS)
- ISO 6396 Noise in operator's cab in max. 75 dB(A)
- ISO 102636-4 Heating and air conditioning second heater or air conditioner as option.

second heater or air conditioner as option



## KOMTRAX PLUS 2 HEALTH MONITORING SYSTEM

Two hydraulically powered Lincoln single line automatic lubrication systems are provided as standard, complete with time and volume variable controls. The central lube grease system is supplied from a refillable 200 litre (53 gal.) barrel. A second, identical system supplies open gear lubricant to the swing ring teeth through a lube pinion. Replenishment of the containers is through the Wiggins connections on the service arm.



## OPERATING WEIGHTS (APPROXIMATELY)

### PC4000 Backhoe:

Operating weight including 9.750 mm 32'0" boom, 4.500 mm 14'9" stick, 23 m<sup>3</sup> (30 yd<sup>3</sup>) backhoe bucket, operator, lubricant, coolant, 1/3 fuel and standard equipment.

#### Tier 2 Version:

Shoe Width	Operating Weight	Ground Pressure
1200 mm 47"	399 t 879,600 lb	21,9 N/cm <sup>2</sup> 31.8 psi
1500 mm 59"	404 t 890,700 lb	17,7 N/cm <sup>2</sup> 25.7 psi

#### Tier 4 Version:

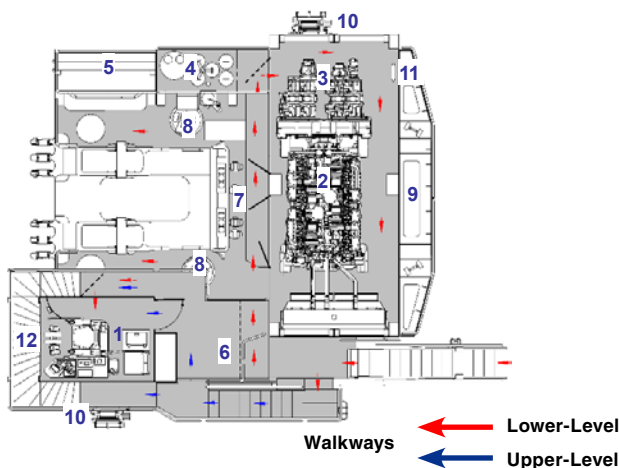
Shoe Width	Operating Weight	Ground Pressure
1200 mm 47"	404 t 890,700 lb	22,2 N/cm <sup>2</sup> 32.2 psi
1500 mm 59"	409 t 901,700 lb	17,7 N/cm <sup>2</sup> 26 psi

### PC4000 Front Shovel:

Operating weight including 7.150 mm 23'6" boom, 4.900 mm 16'1" stick, 22 m<sup>3</sup> (29 yd<sup>3</sup>) shovel bucket, operator, lubricant, coolant, 1/3 fuel and standard equipment.

Shoe Width	Operating Weight	Ground Pressure
1200 mm 47"	393 t 866,400 lb	21,5 N/cm <sup>2</sup> 31.2 psi
1500 mm 59"	398 t 877,400 lb	17,5 N/cm <sup>2</sup> 25.4 psi

Shoe Width	Operating Weight	Ground Pressure
1200 mm 47"	398 t 877,400 lb	21,8 N/cm <sup>2</sup> 31.6 psi
1500 mm 59"	403 t 888,500 lb	17,7 N/cm <sup>2</sup> 25.7 psi



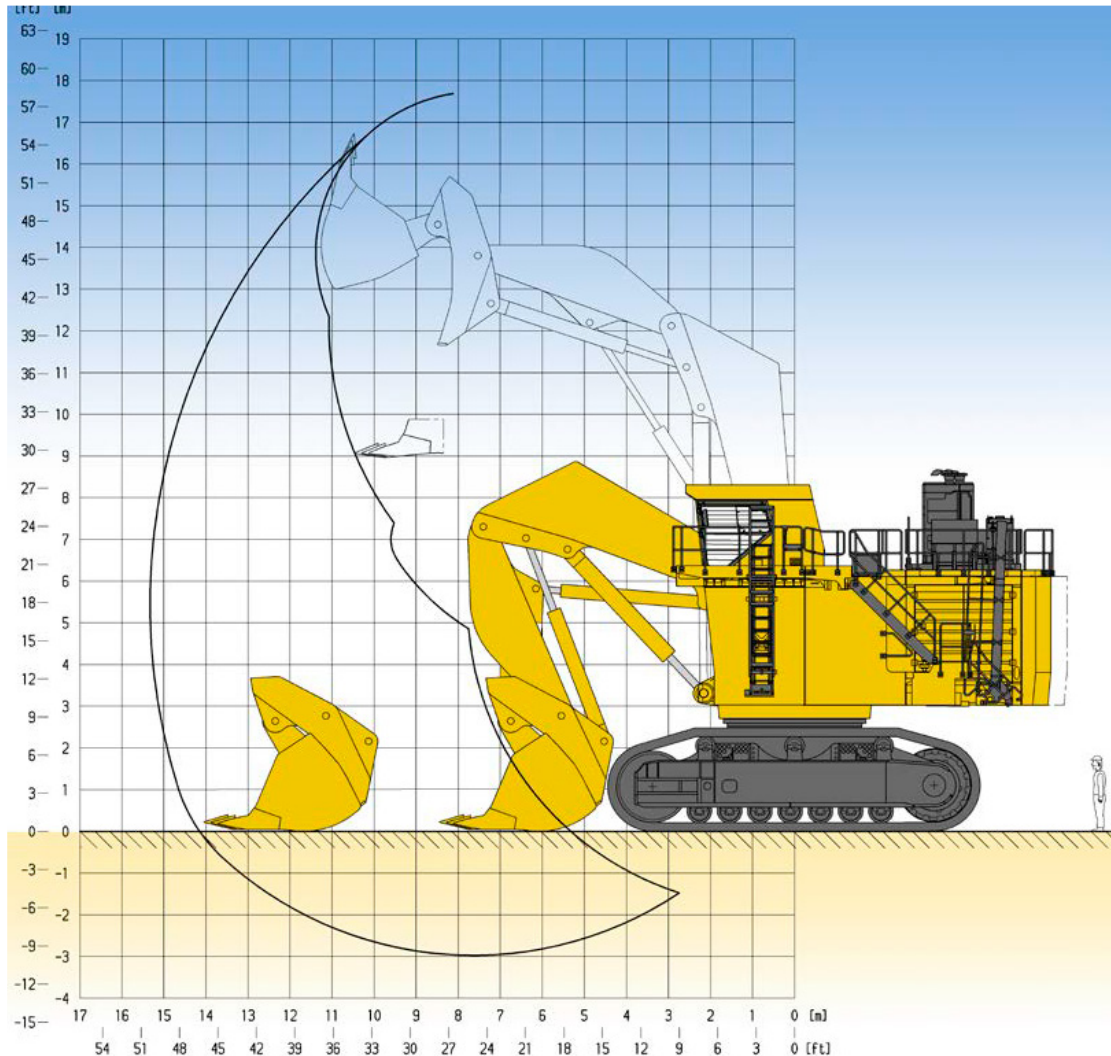
### Diesel Drive

- 1 Cab
- 2 Diesel Engines
- 3 Hydraulic Pumps
- 4 Hydraulik Tank
- 5 Hydraulic Coolers
- 6 Fuel Tank
- 7 Valve Blocks
- 8 Swing Motors
- 9 Counterweight
- 10 Emergency swing ladder egress
- 11 Emergency access out of machinery house
- 12 See-through Cat Walk



# PRODUCTIVITY FEATURES

## FRONT SHOVEL ATTACHMENT



### FRONT SHOVEL ATTACHMENT

Boom length ..... 7,150 mm (23'6")  
 Max. cutting height ..... 17,690 mm (58'0")  
 Max. digging depth ..... 2,970 mm (9'9")  
 Break-out force (ISO) ..... 1,349 kN (303,220 lb)  
 Stick length ..... 4,900 mm (16'1")  
 Max. dumping height ..... 11,710 mm (38'5")  
 Max. digging reach ..... 15,330 mm (50'4")  
 Crowd force (ISO) ..... 1,330 kN (298,950 lb)

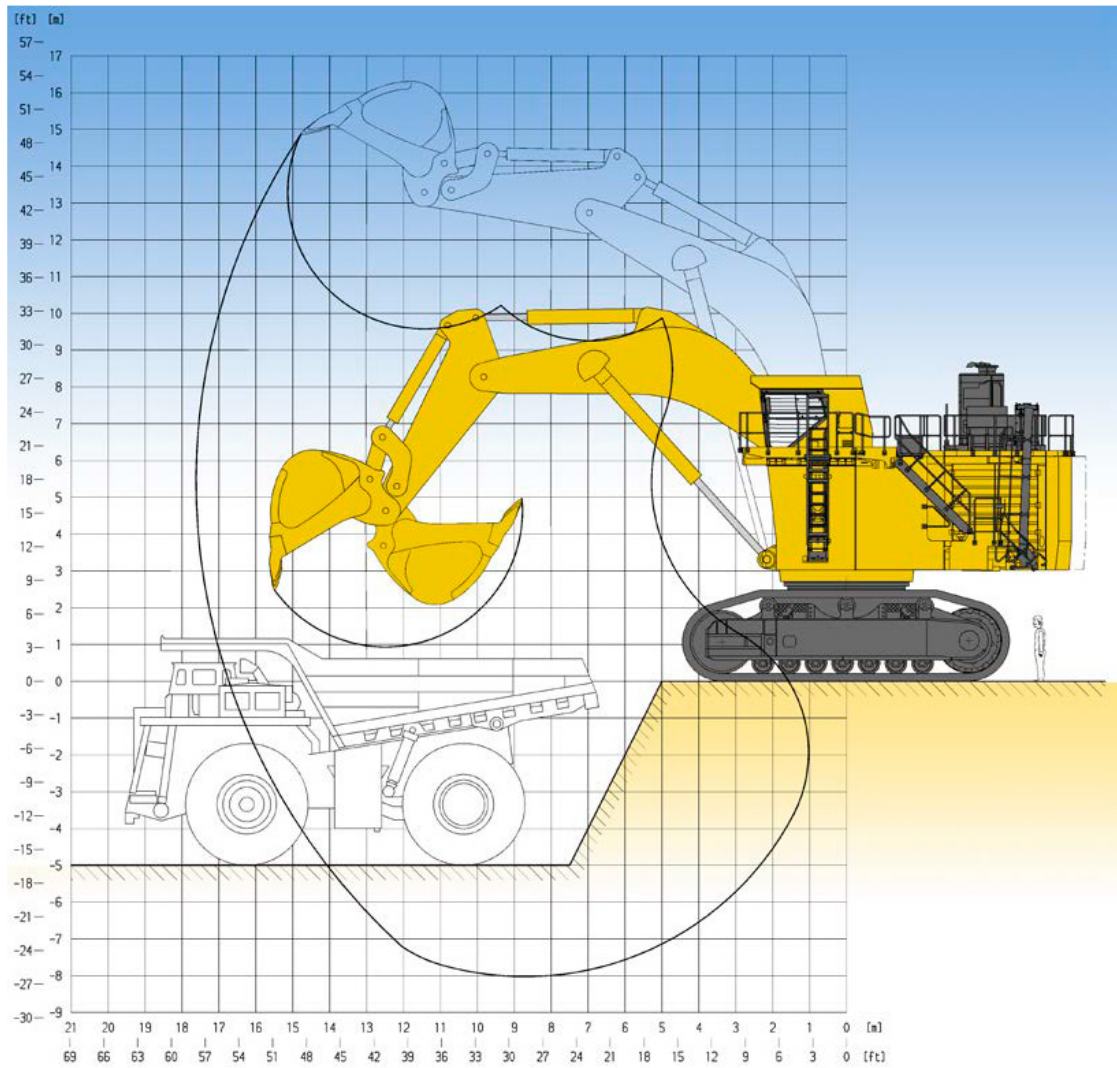
Bucket Capacity (Heaped 1:2) SAE		Width		Teeth	Wear Package acc. abrasiveness	GET System	Max Material Density (Loose)	
cum	cuyd	mm	foot/inch	QTY			t/cum	lb/cuyd
22,0	29,0	4.020	13'2"	5	Standard	Hensley XS 390*	1,8	3,000

Alternative buckets on request

\*Other systems on request



BACKHOE ATTACHMENT



BACKHOE ATTACHMENT

Boom length.....9,750 mm (32'0")  
Max. cutting height ..... 14,880 mm (48'10")  
Max. digging depth..... 8,000 mm (26'3")  
Break-out force (ISO) ..... 1,239 kN (278,490 lb)  
Stick length.....4,500 mm (14'9")  
Max. dumping height .....9,610 mm (31'6")  
Max. digging reach..... 17,610 mm (57'9")  
Tear-out force (ISO)..... 1,058 KN (237,810 lb)

Bucket Capacity (Heaped 1:1) SAE		Width		Teeth	Wear Package acc.	GET System	Max Material Density (Loose)	
cum	cuyd	mm	foot/inch	QTY	abrasiveness		t/cum	lb/cuyd
23,0	30,0	4.020	13'2"	5	Standard	Hensley XS 390*	1,8	3,000

Alternative buckets on request

\*Other systems on request



# STANDARDS AND OPTIONS

## FACTORY STANDARDS AND OPTIONS (AUSTRALIA)

### FRONT SHOVEL ATTACHMENT

- 7,15 m 23'6" boom, 4,9 m 16'1" stick
- 22 m³ (29 yd³) (SAE 2:1) shovel bucket incl. standard wear package with Hammerless GET system
- Alternative buckets and GETs
- Boom cylinder sliding guard
- Stick cylinder sliding guard

### BACKHOE ATTACHMENT

- 9,75 m 33'0" boom, 4,5 m 14'9" stick
- 23 m³ (30 yd³) (SAE 1:1) shovel bucket incl. standard wear package with Hammerless GET system
- Alternative buckets and GETs
- Buckets cylinder sliding guard

### CRAWLER UNDERCARRIAGE

- Heavy-duty shovel type undercarriage
- Centre carbody
- 7 bottom rollers and 3 top rollers each side
- 1200 mm 47" cast steel track shoes
- 1500 mm 59" cast steel track shoes
- Hydraulic track adjustment and parking brake
- Drive gear box protection
- Travel motor protection

### SUPERSTRUCTURE

- Main frame mounted over an externally toothed swing circle carries the drive module
- Diesel Engine:  
Version 1: Komatsu SDA16V160E-2 Tier 2  
Version 2: Komatsu SDA16V160E-3 Tier 4
- Electric drive various voltages
- Cable drum without cable

### LIGHTING

- 14 LED high performance working lights
- Service lights throughout the platform incl. emergency egresses and stairways
- Rotafare warning lights

### OPERATOR CAB

- Enclosed steel cab mounted on viscous pads
- FOPS according ISO 10262
- Air-conditioning unit Sūtrak
- Full suspension operator seat with belt
- Controls ergonomic
- KOMTRAX Plus (Monitoring System)
- Joysticks are electro-hydraulic
- 1 large parallel windshield wash wiper
- AM-FM radio with MP3 ready CD player and AUX in
- Internal and external sun blinds
- Impact resistant front window (19mm)
- All windows tinted parsol green
- Walkway around the cab

### SERVICE AND LUBRICATION

- LINCOLN central lubrication for basic machine, attachment and bucket
- LINCOLN automatic pinion lubrication system for swing circle teeth
- WIGGINS service arm carrying fluid receiving connectors for filling of fuel, engine oil and coolant, hydraulic oil, grease, and the evacuation of coolant, hydraulic and engine oils
- Service transfer oil pump
- Engine oil management package (Reserve & Eliminator systems)
- Service Monitor (incl. all relevant manuals)

### OPERATOR CAB SAFETY FEATURES

#### Access and egress system

- 45° stairway design
- Hydraulically operated (two switches)
- Equipped with hand rails up to cab
- All steps with antislip edge
- Illuminated system

#### Emergency egress system

- Two pieces flip down solid antislip steel ladder
- Easy release with foot lever
- One system on cab site (illuminated)
- One system on opposite site (illuminated)
- One machinery house escape system (ladder + hatch)
- Acoustic travel alarm
- Electric air horn
- Engine turbo and exhaust pipe covers
- Engine emergency stop at ground level
- Camera system acc. ISO5006
- Sidewalks and stairs are provided with skid-resistant plates
- Hand rails and steps on boom;
- Tie off points on boom

#### Further equipment on request

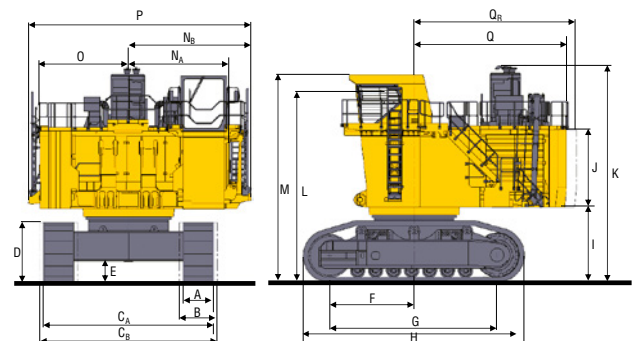
- Standard Equipment
- Optional Equipment



## DIMENSIONS

### BASIC MACHINE WITH COUNTERWEIGHT

<b>A</b>	1200mm	3'11"	<b>J</b>	3085mm	10'2"
<b>B</b>	1500mm	4'11"	<b>K</b>	8670mm	28'5"
<b>C<sub>A</sub></b>	6750mm	22'2"	<b>L</b>	7600mm	24'11"
<b>C<sub>B</sub></b>	7050mm	23'2"	<b>M</b>	8310mm	27'3"
<b>D</b>	2480mm	8'2"	<b>N<sub>A</sub></b>	4032mm	13'3"
<b>E</b>	930mm	3'11"	<b>N<sub>B</sub></b>	4882mm	15'11"
<b>F</b>	3380mm	11'1"	<b>O</b>	3505mm	11'6"
<b>G</b>	6700mm	22'0"	<b>P</b>	8700mm	20'0"
<b>H</b>	8842mm	29'0"	<b>Q</b>	6095mm	25'2"
<b>I</b>	3020mm	9'11"	<b>Q<sub>R</sub></b>	6500mm	21'4"



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