

# KOMATSU

## PC4000-6 Loading Shovel PC4000-6 Backhoe

### ENGINE POWER

1400 kW / 1875 HP @ 1800 rpm

### OPERATING WEIGHT

388 – 399 ton / 855,500 – 879,800 lb

### SHOVEL CAPACITY

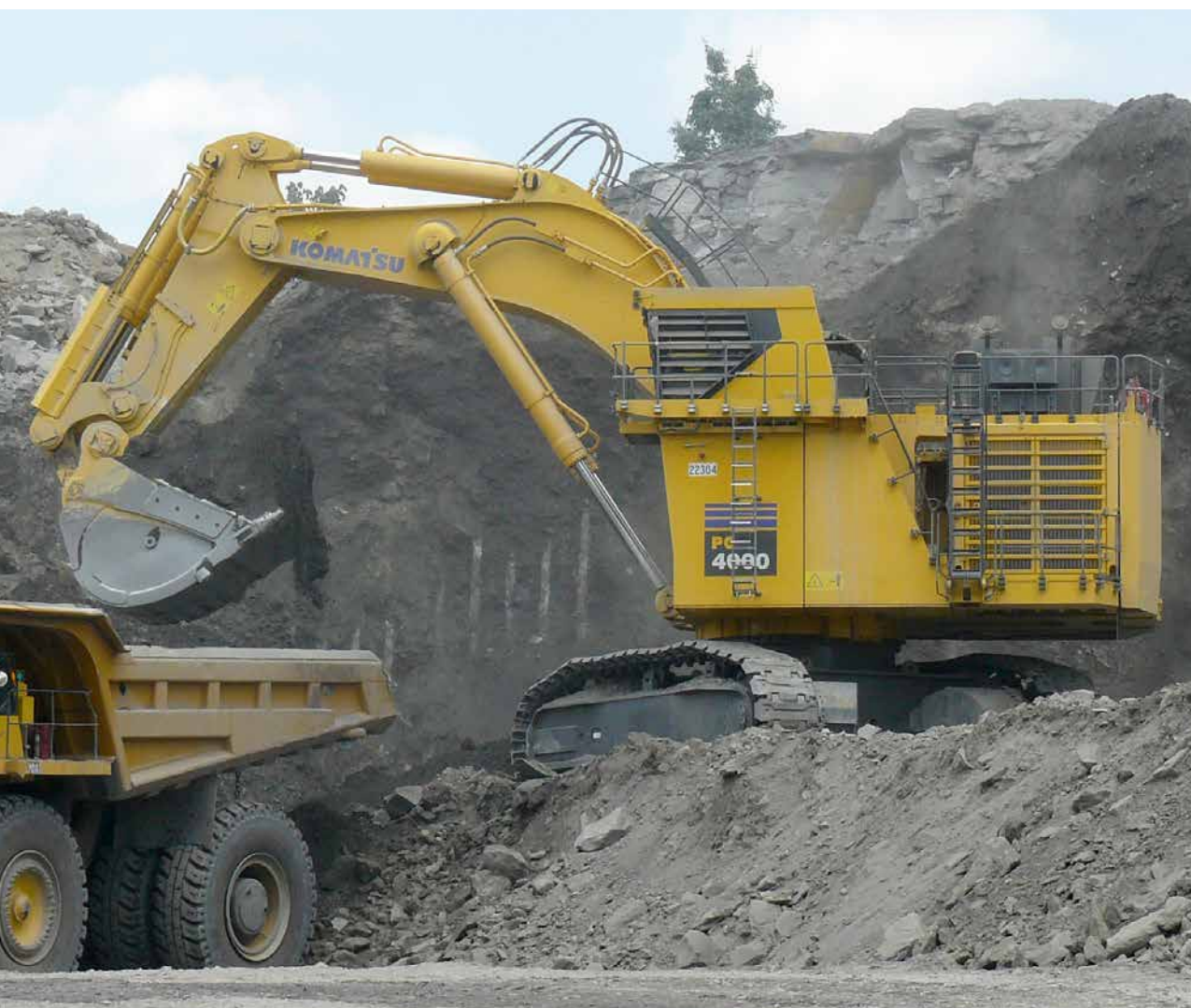
22 m<sup>3</sup> 29 yd<sup>3</sup> SAE 2:1 heaped

### BACKHOE CAPACITY

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

**PC**  
**4000**

HYDRAULIC EXCAVATOR



# WALK-AROUND



## ***Quality in Manufacturing***

Commitment to „Quality and Reliability“

- Quality management ISO 9001
- Environmental management ISO 14001
- Occupational health and safety management system BS OHSAS 18001:2007
- High consistent quality through continuous investment in personnel, design and manufacturing systems and processes

## ***Powerful Diesel Engine***

Version 1 – Komatsu SDA16V160 (Tier 1)

Version 2 – Komatsu SDA16V160E-2 (Tier 2)

- Rated 1400 kW (1875 HP) at 1800 rpm
- Electronic engine management
- Low engine emission levels meet EPA regulations
- Time saving Engine Oil Management System; Centinel, Engine Reserve Oil Supply and Eliminator Oil Filter System

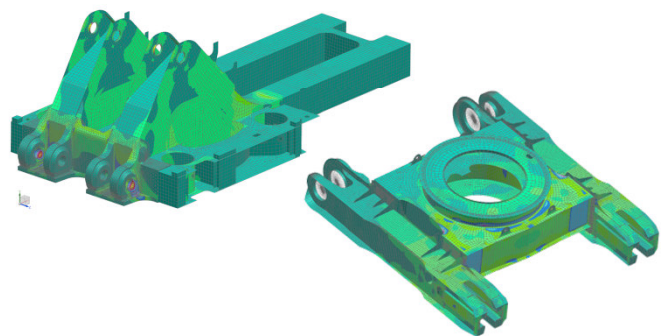
## ***Reliability and Durability***

Long life and low operating cost by design

- Robust structural design developed from field experience and finite element analysis

## ***Undercarriage***

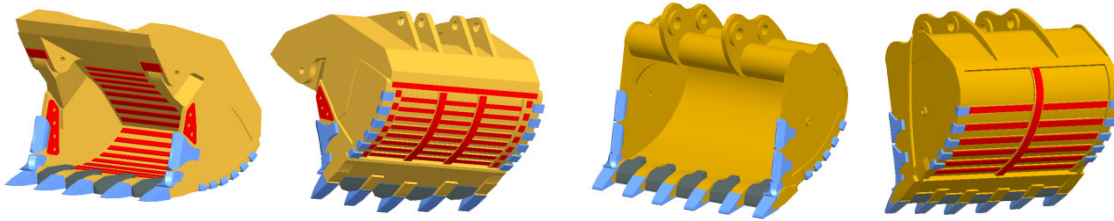
- Large diameter rollers, idlers and sprockets
- Large surface area and extensive precision hardening of all engaging components reduce track wear
- Hardened track link pin bores



### ***Productivity***

Designed for more tons per hour

- Powerful digging forces
- Ease of bucket filling
- Proven attachment design
- All cylinders mounted in the shadow of the attachment for protection
- Various buckets and wear packages to suit all material densities and properties



### ***Advanced Hydraulics***

Extended reliability and precise control

- Comprehensive monitored filtration
- Simple open circuit hydraulic system with high efficiency swing out oil coolers

### ***Large Comfortable Cab***

Comfortable for the whole day

- Komatsu low noise cab on multiple viscous mounts for reduced noise and vibration
- Large volume cab with full height front window
- Comprehensive climate control with pressurised filtered air ventilation and air conditioning
- High specification multi-adjustable air suspension seat plus trainer seat
- Well elevated operator position giving good all round view
- Large wash wiper covers windshield area for excellent visibility

### ***Easy and Safe Maintenance***

Simple, common-sense design provides easy access to all major components

- Generous access to all major service points from machinery house floor level
- Enclosed, walk-in machinery house with partition wall separating engine from pump area
- Automatic central lubrication
- KOMTRAX Plus electronic monitoring system providing real time information about the operating status of the machine
- Ground-level access to hydraulically powered swing down service arm with Wiggins connections
- Acknowledges EMESRT design philosophies

#### **MATCHES**

150 to 240 U.S. ton TRUCKS

#### **OPERATING WEIGHT**

Shovel 388-393 ton  
855,500-866,600 lb

Backhoe 394-399 ton  
868,800-879,800 lb

#### **BUCKET CAPACITY**

Shovel 22 m<sup>3</sup> 29 yd<sup>3</sup>  
Backhoe 22 m<sup>3</sup> 29 yd<sup>3</sup>



# SPECIFICATIONS



## DIESEL DRIVE

Version 1 – Tier 1 engine:

Model	Komatsu SDA16V160
Type	4-cycle, water-cooled, direct injection
Aspiration	Turbocharged and aftercooled
Number of cylinders	16
Rated power (SAE J1995)	1400 kW 1875 HP @ 1800 rpm
Governor	All-speed, electronic

Version 2 – Tier 2 engine:

Model	Komatsu SDA16V160E-2
Type	4-cycle, water-cooled, direct injection
Aspiration	Turbocharged and aftercooled
Number of cylinders	16
Rated power (SAE J1995)	1400 kW 1874 HP @ 1800 rpm
Governor	All-speed, electronic

The integrated engine oil and filter system combining the oil stabilising systems, Reserve and Centinel, with Eliminator oil filter extends the oil change interval up to 4.000 hours based on oil analysis. 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



## ELECTRIC DRIVE

Type	Squirrel cage induction motor
Power Output	1350 kW
Voltage	6.000 – 7.200 V*
Amperage (approximate)	145 A - 120 A
Start-up	Soft start
Frequency standard	60 Hz @ 1800 rpm
Frequency option	50 Hz @ 1500 rpm

\* Other voltages available on request



## ELECTRIC SYSTEM (Electric Version)

System	24 V
Batteries (series/parallel)	3 x 2 x 12 V
Alternator	260 A
Standard working lights	14 LED lights
Standard service lights	throughout the platform



## 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

Travel control	2 foot pedals
Gradeability	Up to 50 %
Travel speed (maximum)	2,1 km/h 1.3 mph
Service brake	Hydraulic brake
Parking brake	Wet, multiple-disk



## SWING SYSTEM

Hydraulic motors and drives	2
Swing brake, service	Hydraulic brake
Swing brake, parking	Wet, multiple-disc
Swing ring teeth	External
Swing speed (maximum)	4,0 rpm



## HYDRAULIC SYSTEM

The power train consists of one main drives. 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 (4 elements)	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 20 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.



## SERVICE CAPACITIES

Hydraulic oil tank	3.900 ltr / 1,030 U.S. gal
Hydraulic system	5.900 ltr / 1,559 U.S. gal
Fuel	6.400 ltr / 1,691 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



## 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 4000-6 D ... Quantity of gas 5,0-9,5 kg, CO <sub>2</sub> equivalent	7,15-13,59t
PC 4000-6 E ... Quantity of gas 7,4-11,9 kg, CO <sub>2</sub> equivalent	10,58-17,02t



## 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 electro-hydraulic 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 front window is a 19mm thick impact resistant window. A walkway is mounted in front of cabin.

Major cab engineering standards are:

- ISO 3449 Falling Objects Protection Structure (FOPS)
- ISO 6396 Noise in operator's cab is max. 75 dB(A)
- ISO 10263-4 Heating and air conditioning second heater or air conditioner as option



## KOMTRAX PLUS HEALTH MONITORING SYSTEM

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 W-LAN or Orbcomm satellite transmission (check for availability in your territory).



## OPERATING WEIGHTS (APPROXIMATE)

### PC 4000 Backhoe:

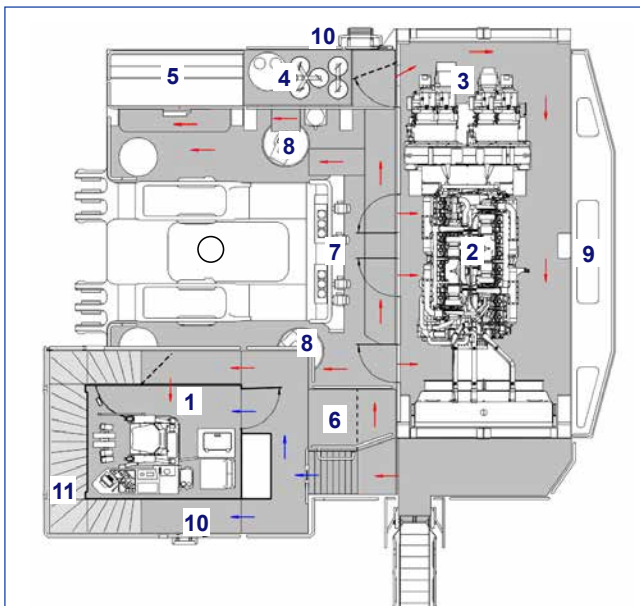
Operating weight including 9.750 mm 32'0" boom, 4.500 mm 14'9" stick, 22 m<sup>3</sup> (29 yd<sup>3</sup>) backhoe bucket, operator, lubricant, coolant, 1/3 fuel and standard equipment.

Shoe Width	Operating Weight	Ground Pressure
1200 mm 47"	394 t 868,800 lb	21,6 N/cm <sup>2</sup> 31.3 psi
1500 mm 59"	399 t 879,800 lb	17,5 N/cm <sup>2</sup> 25.4 psi

### PC 4000 Front Shovel:

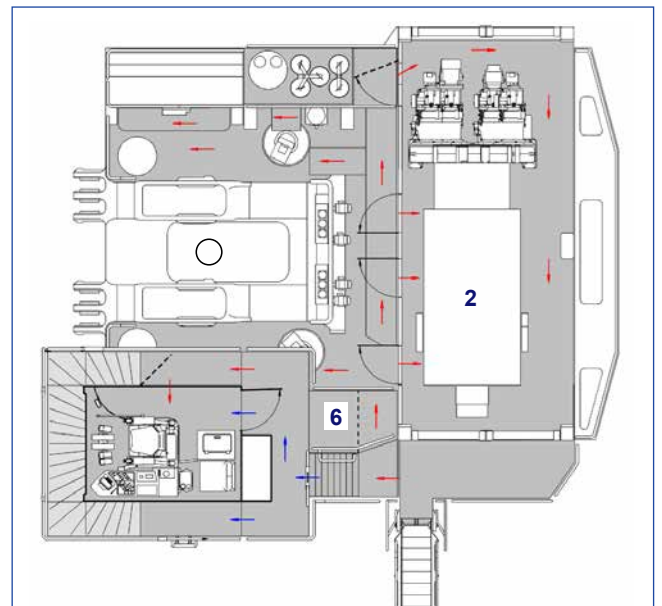
Operating weight including 7.150 mm 23'6" boom, 4.900 mm 16'1" stick, 22 m<sup>3</sup> (29 yd<sup>3</sup>) shovel bucket, operator, lubricant, coolant, 1/3 fuel and standard equipment.

Shoe Width	Operating Weight	Ground Pressure
1200 mm 47"	388 t 855,500 lb	21,3 N/cm <sup>2</sup> 30.9 psi
1500 mm 59"	393 t 866,600 lb	17,2 N/cm <sup>2</sup> 24.9 psi



### Diesel Drive

- |                     |                         |
|---------------------|-------------------------|
| 1 Cab               | 7 Valve Blocks          |
| 2 Diesel Engine     | 8 Swing Motors          |
| 3 Hydraulic Pumps   | 9 Counterweight         |
| 4 Hydraulic Tank    | 10 Secondary Egress     |
| 5 Hydraulic Coolers | 11 See-through Cat Walk |
| 6 Fuel Tank         |                         |

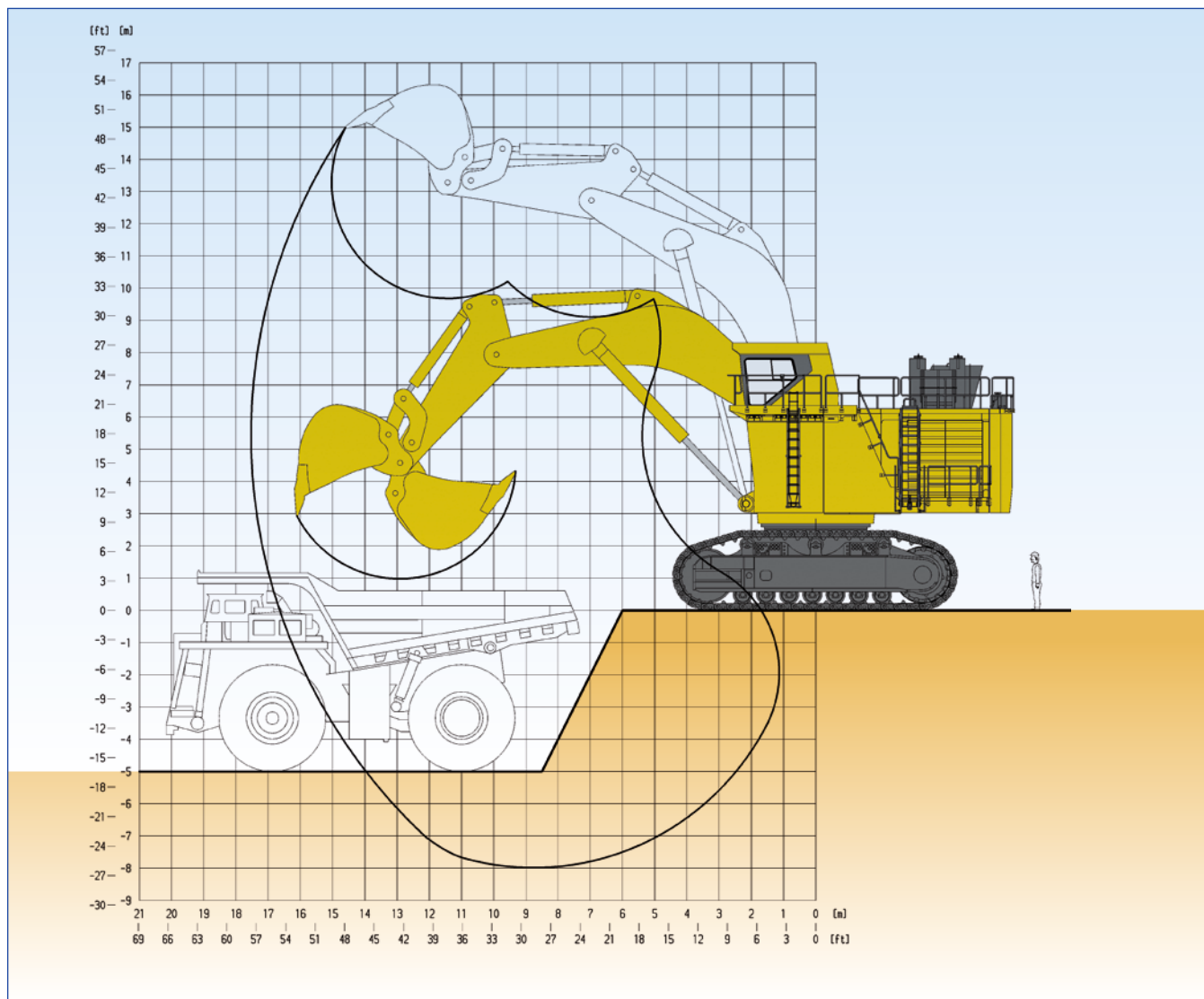


### Variation for Electric Drive Version

- |                                 |
|---------------------------------|
| 2 Electric Motors               |
| 6 High Voltage Electric Cabinet |

Walkways → Lower-Level  
→ Upper-Level

# PRODUCTIVITY-FEATURES


**BACKHOE ATTACHMENT**


Boom length	9.750 mm	32'0"
Stick length	4.500 mm	14'9"
Break-out force (ISO)	1.239 kN	278,490 lb
Tear-out force (ISO)	1.058 kN	237,810 lb

Max. digging height	15.000 mm	49'3"
Max. dumping height	9.700 mm	31'10"
Max. digging depth	8.000 mm	26'3"
Max. digging reach	17.500 mm	57'5"
Max. digging reach at ground level	16.650 mm	54'8"

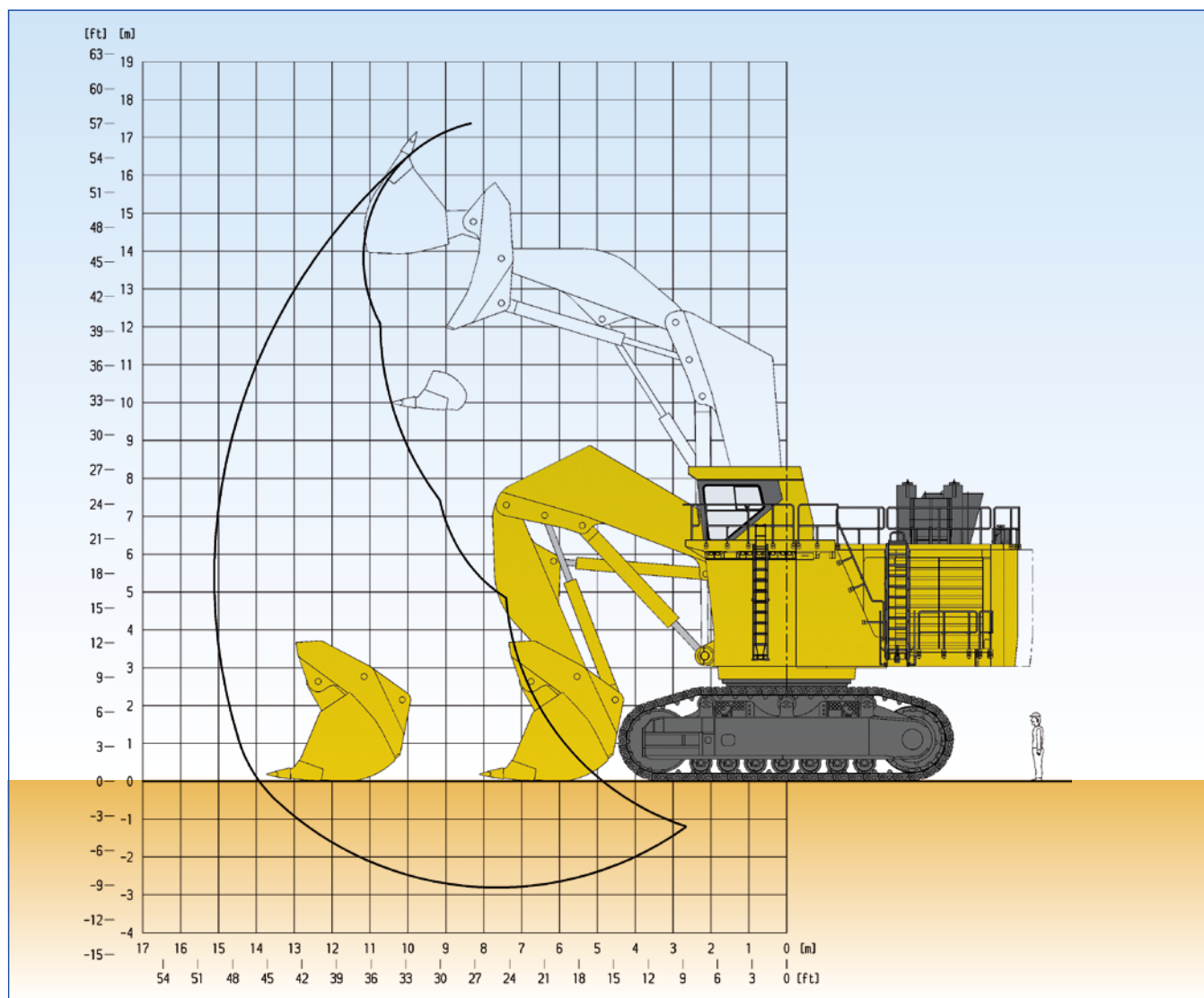
Bucket Capacity (Heaped 1:1) SAE		Width		Teeth	Wear Package acc. abrasiveness	GET System	Max. Material Density (Loose)	
cum	cuyd	mm	foot/inch	qty			t/cum	lb/cuyd
19,0	25.0	3.050	10'0"	5	heavy	Hensley XS 342 *	2,1	3,400
22,0	29.0	3.790	12'5"	6	standard	Hensley XS 342 *	1,8	3,000
23,0	30.0	3.790	12'5"	6	standard	Hensley XS 342 *	1,7	2,900

Alternative buckets on request

\*other systems on request



## FRONT SHOVEL ATTACHMENT



Boom length	7.150 mm	23'6"	Max. cutting height	17.400 mm	57'1"
Stick length	4.900 mm	16'1"	Max. dumping height	12.000 mm	39'4"
Break-out force (ISO)	1.349 kN	303,220 lb	Max. digging depth	2.900 mm	9'6"
Crowd force (ISO)	1.330 kN	298,950 lb	Max. digging reach	15.100 mm	49'6"
			Level crowd at ground level	5.700 mm	18'8"
			Bucket opening width	2.650 mm	8'8"

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
19,0	25.0	4.020	13'2"	5	heavy	Hensley XS 390 *	2,1	3,400
22,0	29.0	4.020	13'2"	5	standard	Hensley XS 390 *	1,8	3,000
23,0	30.0	4.020	13'2"	5	standard	Hensley XS 390 *	1,7	2,900
24,0	31.5	4.020	13'2"	5	light	Hensley XS 390 *	1,6	2,700

Alternative buckets on request

\*other systems on request



## STANDARD EQUIPMENT

### HYDRAULIC MINING SHOVEL

#### FRONT SHOVEL ATTACHMENT

- 7,15 m 23'6" boom
- 4,9 m 16'1" stick
- Set of cylinders
- 22 m<sup>3</sup> (29 yd<sup>3</sup>) (SAE 2:1) shovel bucket incl. standard wear package with hammerless GET system

OR

#### BACKHOE ATTACHMENT

- 9,75 m 32'0" boom
- 4,5 m 14'9" stick
- Set of cylinders
- 22 m<sup>3</sup> (29 yd<sup>3</sup>) (SAE 1:1) bucket incl. standard wear package with hammerless GET system

#### CRAWLER UNDERCARRIAGE

- Heavy-duty shovel type undercarriage
- Centre carbody
- 2 heavy box-type track frames
- 7 bottom rollers and 3 top rollers each side
- 1200 mm 47" cast steel track shoes
- Hydraulic track adjustment and parking brake

### SUPERSTRUCTURE

- Main frame mounted over an externally toothed swing circle carries the drive module
- Version 1 - Komatsu SDA16V160 Tier 1 diesel engine
- Version 2 - Komatsu SDA16V160E-2 Tier 2 certificated diesel engine
- Oil and fuel reservoirs
- Hydraulic components
- Counterweight

### LIGHTING

- 14 LED high performance working lights
- Service lights throughout the platform incl. emergency egresses

### OPERATOR CAB

- Enclosed steel cab mounted on viscous pads
- FOPS according ISO 3449
- Air-conditioning unit Sitrak
- Full suspension operator seat with belt
- Trainer 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 & aux port
- Internal and external sun blinds
- All windows tinted parsol green
- Impact resistant front window (19mm)
- Walkway in front of cab

### LUBRICATION AND SERVICE

- LINCOLN central lubrication for basic machine and 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

### ACCESSORIES INCLUDED

- Acoustic travel alarm
- Hydraulically actuated ground access ladder
- Electric air horn
- Engine turbo and exhaust pipe covers
- Engine oil management package (Centinel, Reserve & Eliminator systems)
- Service transfer oil pump
- Sidewalks and stairs are provided with skid-resistant plates
- Hand rails and steps on boom
- Tie off points on boom
- Engine emergency stop at ground level



## OPTIONAL EQUIPMENT

### ATTACHMENT/BUCKET

- Boom cylinder sliding guard
- Arm cylinder sliding guard
- Bucket cylinder sliding guard (BH)

### UNDERCARRIAGE

- 1.500 mm 59" track shoes

### POWER

- Electro drive various voltages
- Cable drum without cable
- Fire suppression system, Ansul (Agent LVS+Powder), diesel drive

### COLD WEATHER

- Cold weather package down to -40° C (diesel and electro drive)
- Arctic weather package down to -50° C (diesel and electro drive)
- Hotstart temperature treatment for ambient temperature down to -50° C (diesel and electro drive), external power source not included

### SPECIFIC HYDRAULIC OIL

- Biodegradable hydraulic oil

### MISCELLANEOUS

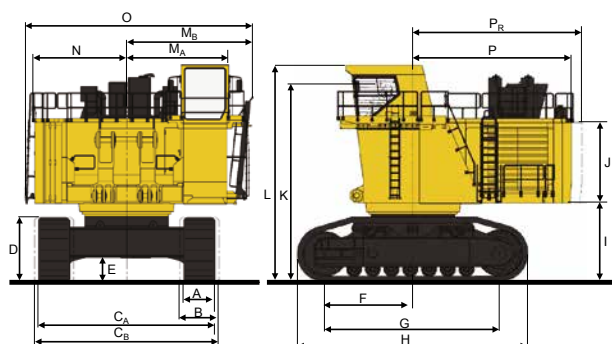
- Camera system acc. ISO5006
- Additional LED working lights
- Rotafare warning lights
- Additional cab A/C
- Additional independent cab heater
- Special painting



## DIMENSIONS

### BASIC MACHINE WITH COUNTERWEIGHT

A	1200 mm	3'11"	J	3085 mm	10'2"
B	1500 mm	4'11"	K	7600 mm	24'11"
C <sub>A</sub>	6750 mm	22'2"	L	8300 mm	27'3"
C <sub>B</sub>	7050 mm	23'2"	M <sub>A</sub>	3896 mm	12'9"
D	2480 mm	8'2"	M <sub>B</sub>	4840 mm	15'11"
E	930 mm	3'11"	N	3503 mm	11'6"
F	3380 mm	11'1"	O	8700 mm	28'7"
G	6700 mm	22'0"	P	6095 mm	20'0"
H	8842 mm	29'0"	P <sub>R</sub>	6500 mm	21'4"
I	3017 mm	9'11"			



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