

KOMATSU

PC4000-11 Loading Shovel PC4000-11 Backhoe

ENGINE POWER

1400 kW / 1875 HP @ 1800 rpm

OPERATING WEIGHT

393 – 409 ton / 866,400 – 901,700 lb

SHOVEL CAPACITY

22 m³ 29 yd³ SAE 2:1 heaped

BACKHOE CAPACITY

22 m³ 29 yd³ 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
- Energy DIN EN ISO 50001
- High consistent quality through continuous investments in personnel, design and manufacturing systems and processes

Powerful Diesel Engine

Version 1:

Komatsu SDA16V160E-2 Tier 2 engine

- Low engine emission level Tier 2 certified

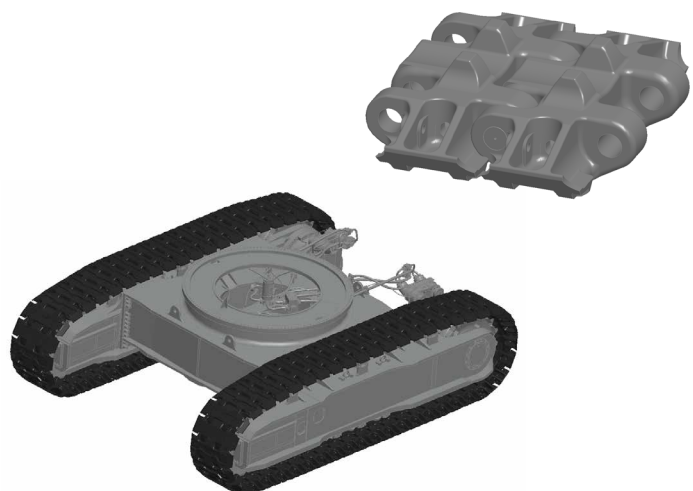
Version 2:

Komatsu SDA16V160E-3 Tier 4 engine

- Low engine emission level Tier 4 certified
- SCR system (selective catalytic reduction)
- Rated power: 1400 kW at 1800 rpm
- Electronic engine management
- Time saving Engine Oil Management System; Reserve Oil Supply and Eliminator Oil Filter System
- Higher fuel efficiency
- Extended service intervals

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



MATCHES

150 to 240 U.S. ton TRUCKS

OPERATING WEIGHT

Shovel 393-403 ton
866,400-888,500 lb

Backhoe 399-409 ton
879,600-901,700 lb

BUCKET CAPACITY

Shovel 22 m³ 29 yd³
Backhoe 22 m³ 29 yd³

Reliability and Durability

Long life and low operating cost by design

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

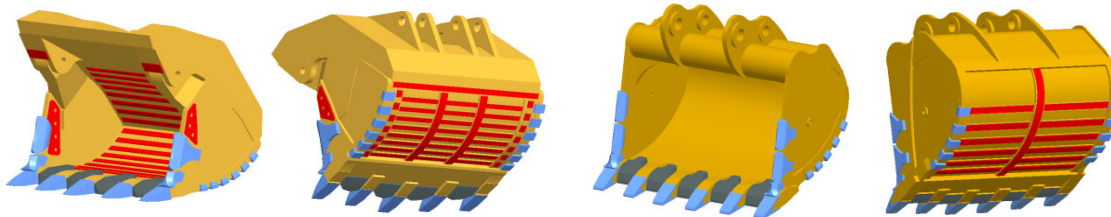
Access and Egress

- 45° stairway design
- 3 emergency egresses
 - Cab and machinery house
 - (two pieces flip down solid anti slip steel ladder)
 - Machinery house escape
- Illuminated accesses and egresses

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

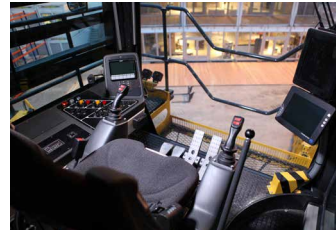
- Comprehensive monitored filtration
- Simple open circuit hydraulic system with high efficiency swing out oil coolers
- Parallel kinematic & float action

WALK-AROUND

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
- KomVision system provides 360° bird's-eye view of the machine and the surrounding



Komtrax Plus

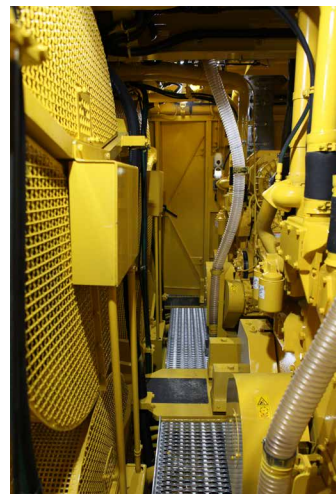
- Remote monitoring system with access to specific machine data
- Preventive maintenance scheduling
- Reporting information
- Data transfer via Satellite (Orbcom or Iridium)



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
- 1st stage fuel filter, separated from machinery house (easy to reach)
- Enclosed, walk-in machinery house with partition wall separating engine from pump area
- Automatic central lubrication, refillable via service arm
- Ground-level access to hydraulically powered swing down service arm with Wiggins connections
- Acknowledges EMESRT design philosophies
- Improved lean electrical system (redundant CANBUS); eliminates connection points for an easy trouble shooting
- Spacious pump compartment with head height clearance



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.



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



ENVIRONMENT

Vibration levels
 Hand-lever (ISO 5349-1)..... lower than 2,5m/s²
 Whole body vibration and shock (ISO 2631-1) below 0,5m/s²
 Contains fluorinated greenhouse gas HFC-134a (GWP 1430)
 PC 4000-11 D Quantity of gas 5,0-9,5 kg, CO₂ equivalent 7,15-13,59 t



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 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 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 Wi-Fi or Orbcmm satellite transmission (check for availability in your territory).



OPERATING WEIGHTS (APPROXIMATE)

PC4000 Backhoe:

Operating weight including 9.750 mm 32'0" boom, 4.500 mm 14'9" stick, 22 m³ (29 yd³) 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 ² 31.8 psi
1500 mm 59"	404 t 890,700 lb	17,7 N/cm ² 25.7 psi

Tier 4 Version:

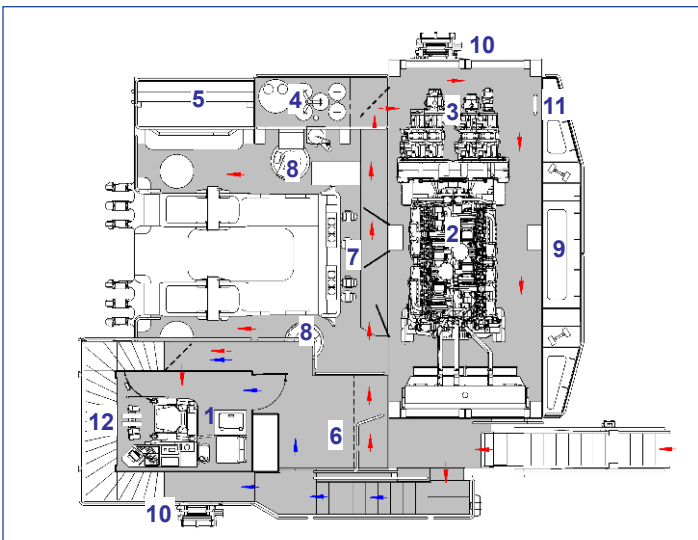
Shoe Width	Operating Weight	Ground Pressure
1200 mm 47"	404 t 890,700 lb	22,2 N/cm ² 32.2 psi
1500 mm 59"	409 t 901,700 lb	17,9 N/cm ² 26 psi

PC4000 Front Shovel:

Operating weight including 7.150 mm 23'6" boom, 4.900 mm 16'1" stick, 22 m³ (29 yd³) 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 ² 31.2 psi
1500 mm 59"	398 t 877,400 lb	17,5 N/cm ² 25.4 psi

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



Diesel Drive

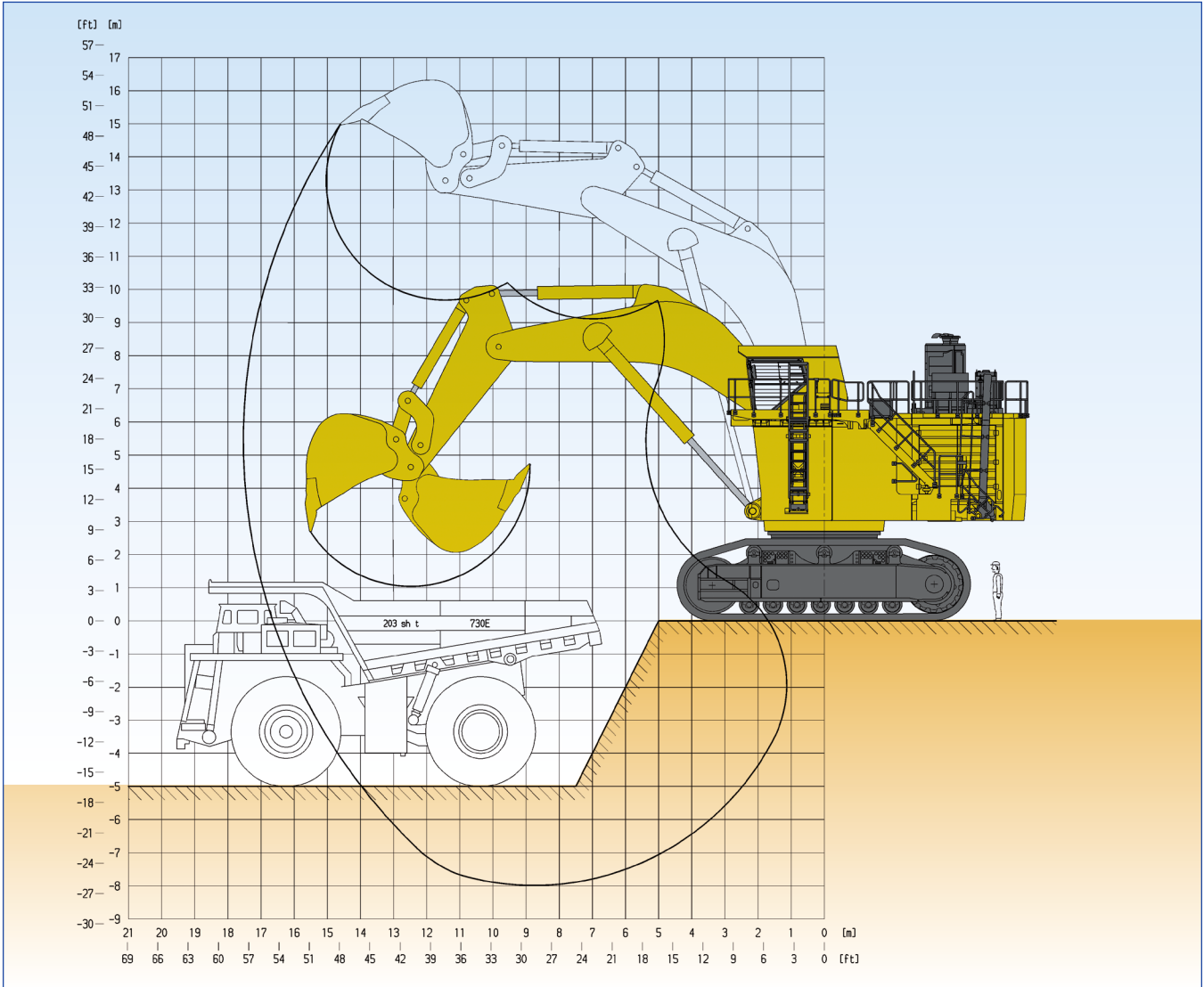
- 1 Cab
- 2 Diesel Engines
- 3 Hydraulic Pumps
- 4 Hydraulic Tank
- 5 Hydraulic Coolers
- 6 Fuel Tank
- 7 Valve Blocks
- 8 Swing Motors
- 9 Counterweight
- 10 Emergency swing ladder egress
- 11 Emergency access out of machinery house
- 12 See-through Cat Walk

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"

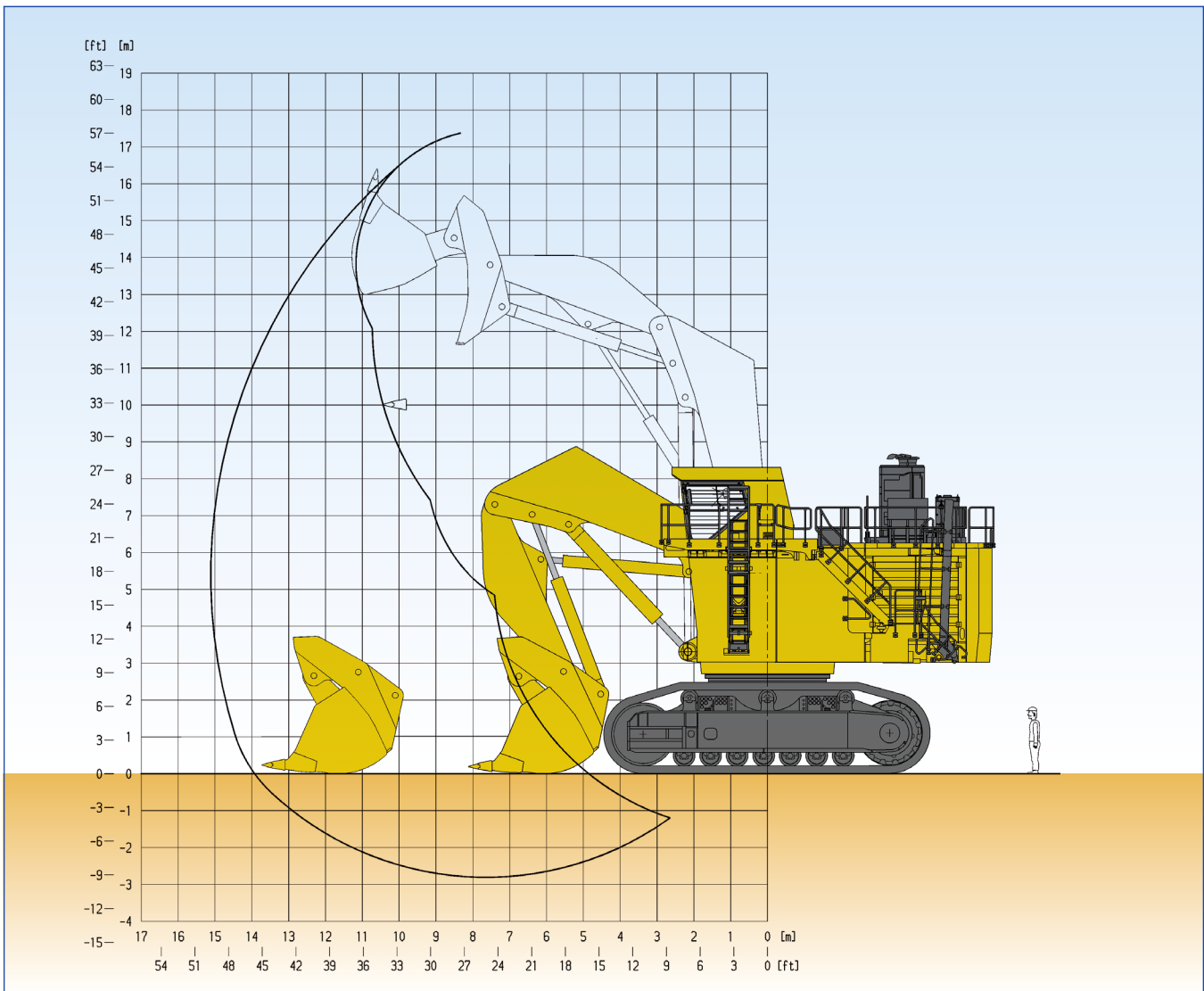
Bucket Capacity (Heaped 1:1) SAE		Width		Teeth	Wear Package acc. abrasiveness	GET System	Max. Material Density (Loose)	
cum	cuyd	mm	foot/inch	qty			t/cum	lb/cuyd
19,0	25.0	3.050	10'0"	5	heavy	Hensley XS 342 *	2,1	3,400
22,0	29.0	3.790	12'5"	6	standard	Hensley XS 342 *	1,8	3,000
23,0	30.0	3.790	12'5"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

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
- 22 m³ (29 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
- 2 heavy box-type track frames
- 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 Süttrak
- 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
- Additional cab A/C
- Additional cab heater

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 electric drive), external power source not included

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 (Centinel, Reserve & Eliminator systems)
- Service Monitor (incl. all relevant manuals)

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

Other Equipment

- Fire suppression system, Ansul (Agent LVS+Powder), diesel drive
- Special painting
- Biodegradable hydraulic oil

Further equipment on request

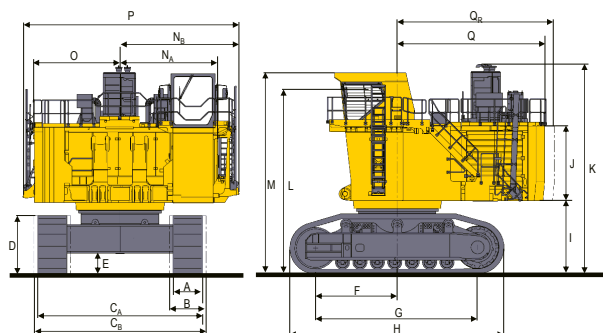
- Standard Equipment
- Optional Equipment



DIMENSIONS

BASIC MACHINE WITH COUNTERWEIGHT

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



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