

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 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
- 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

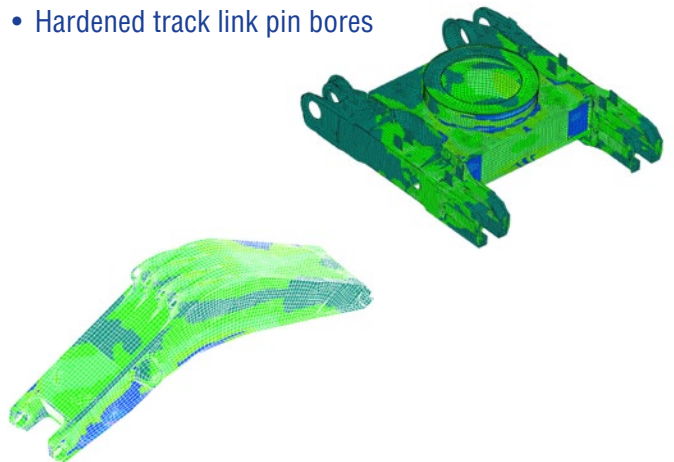
Reliability and Durability

Long life and low operating cost by design

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

Undercarriage

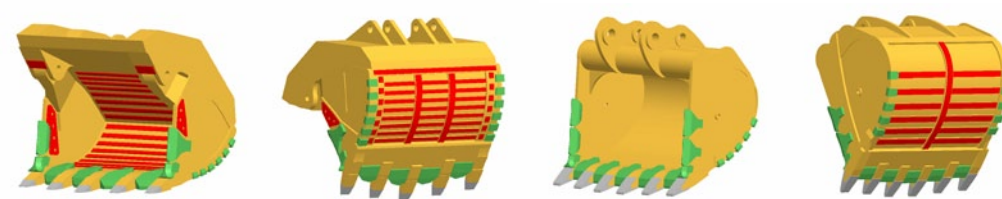
- Large diameter rollers, idlers and sprockets
- Large surface area and extensive precision hardening of all engaging components reduce track wear
- Hardened track link pin bores



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 engines 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 m³ / 29 yd³

Backhoe 22 m³ / 29 yd³

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 1400 kW (1875 HP) @ 1800 rpm
(SAE 1995/J1349)

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 1400 kW (1875 HP) @ 1800 rpm
(SAE 1995/J1349)

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 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 Xenon Lights
Standard service lights Throughout platform



ELECTRIC DRIVE

Type Squirrel-cage induction motor
Power output 1350 kW
Voltage 6000 – 7200 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 Xenon Lights
Standard service lights Throughout 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-disc



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



HYDRAULICS

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 (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 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	6.400 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



OPERATOR CAB

The large and comfortable cab is mounted on 18 viscous damping pads and sound insulated. The cab has an 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 lap 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 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. A walkway is mounted in front of cabin.

Major cab engineering standards are:

- ISO 3449 Falling Objects Protection Structure
- ISO 6396 Noise in operator's cab is 75 dB(A)
- ISO 2631-1 Whole body vibration and shock below 0,5 m/s²
- ISO 5349-1 Hand-lever vibration lower 2,5 m/s²
- 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:

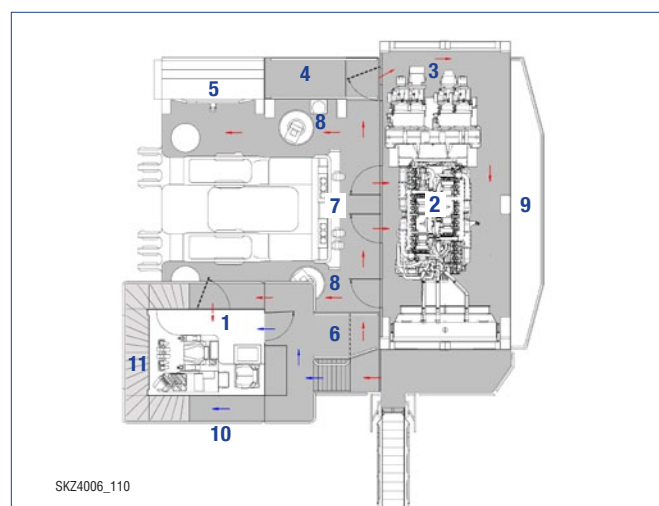
Operating weight including 9.750 mm / 32'0" boom, 4.500 mm / 14'9" stick, 22 m³ / 29.0 yd³ backhoe bucket, operator, lubricant, coolant, 1/3 fuel and standard equipment.

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

PC 4000 Front Shovel:

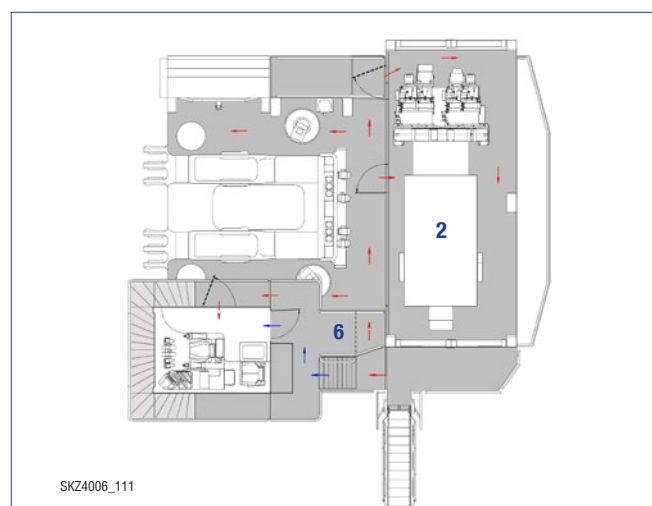
Operating weight including 7.150 mm / 23'6" boom, 4.900 mm / 16'1" stick, 22 m³ / 29.0 yd³ shovel bucket, operator, lubricant, coolant, 1/3 fuel and standard equipment.

Shoe Width	Operating Weight	Ground Pressure
1.200 mm 47"	388 t 855,500 lb	21,3 N/cm ² 30.9 psi
1.500 mm 59"	393 t 866,600 lb	17,2 N/cm ² 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 Cab Walk |
| 6 Fuel Tank | |



Variation for Electric Drive Version

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

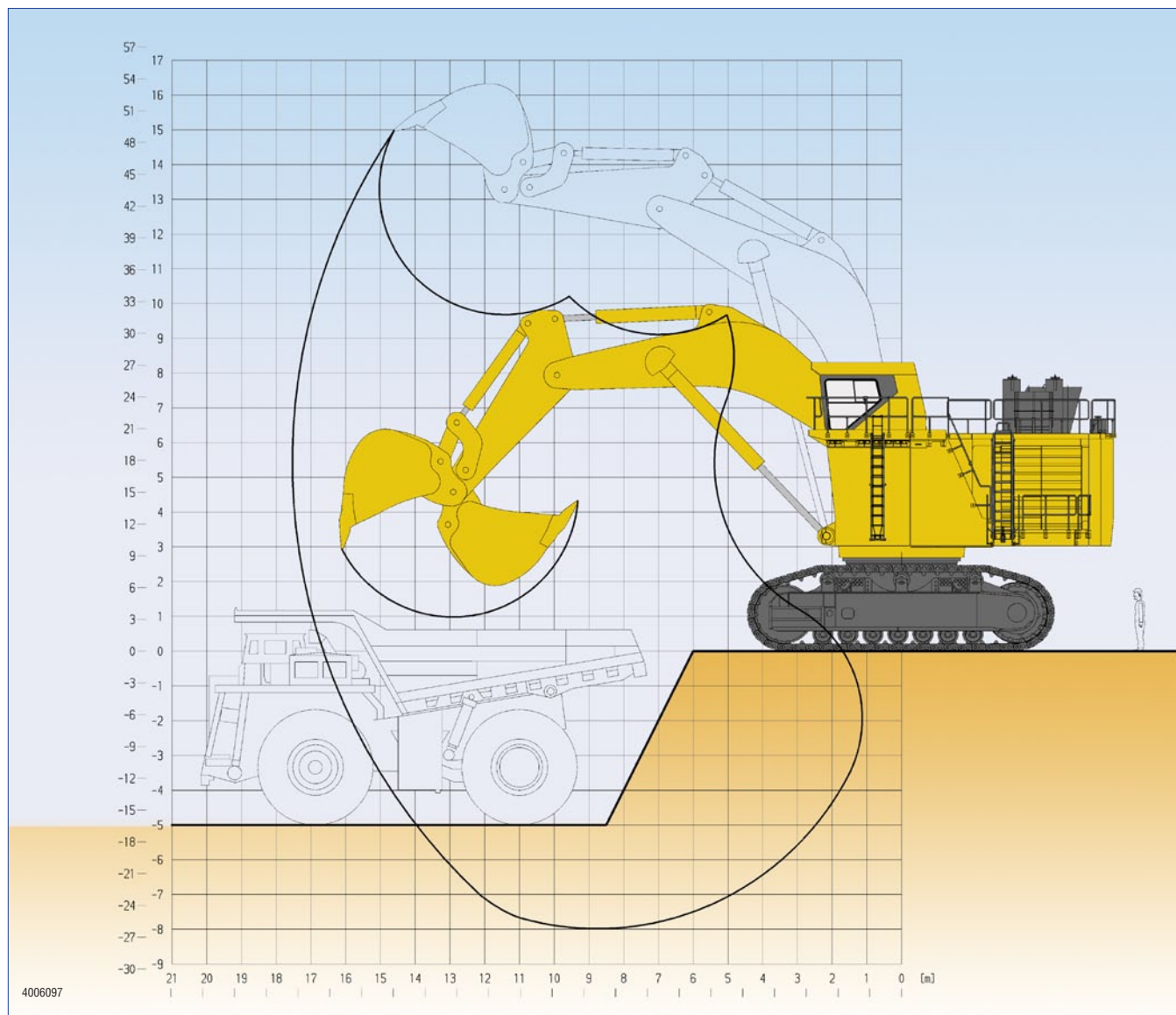
Walkways

- ← Lower-Level
← Upper-Level

PRODUCTIVITY-FEATURES



BACKHOE ATTACHMENT



Boom length	9.750 mm	32'0"	Max. digging height	15.000 mm	49'3"
Stick length	4.500 mm	14'9"	Max. dumping height	9.700 mm	31'10"
Break-out force (SAE)	1.155 kN	250,000 lb	Max. digging depth	8.000 mm	26'3"
Tear-out force (SAE)	1.050 kN	235,000 lb	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)	Weight		Max. Material Density (Loose)	
cum	cuyd	mm	foot/inch	qty		t	lb	t/cum	lb/cuyd
19,0	25.0	3.050	10'0"	5	3	22,4	49,390	2,1	3,400
22,0	29.0	3.790	12'5"	6	2	23,0	50,700	1,8	3,000
23,0	30.0	3.790	12'5"	6	2	23,4	51,600	1,7	2,900

*) WP 1 Light abrasive

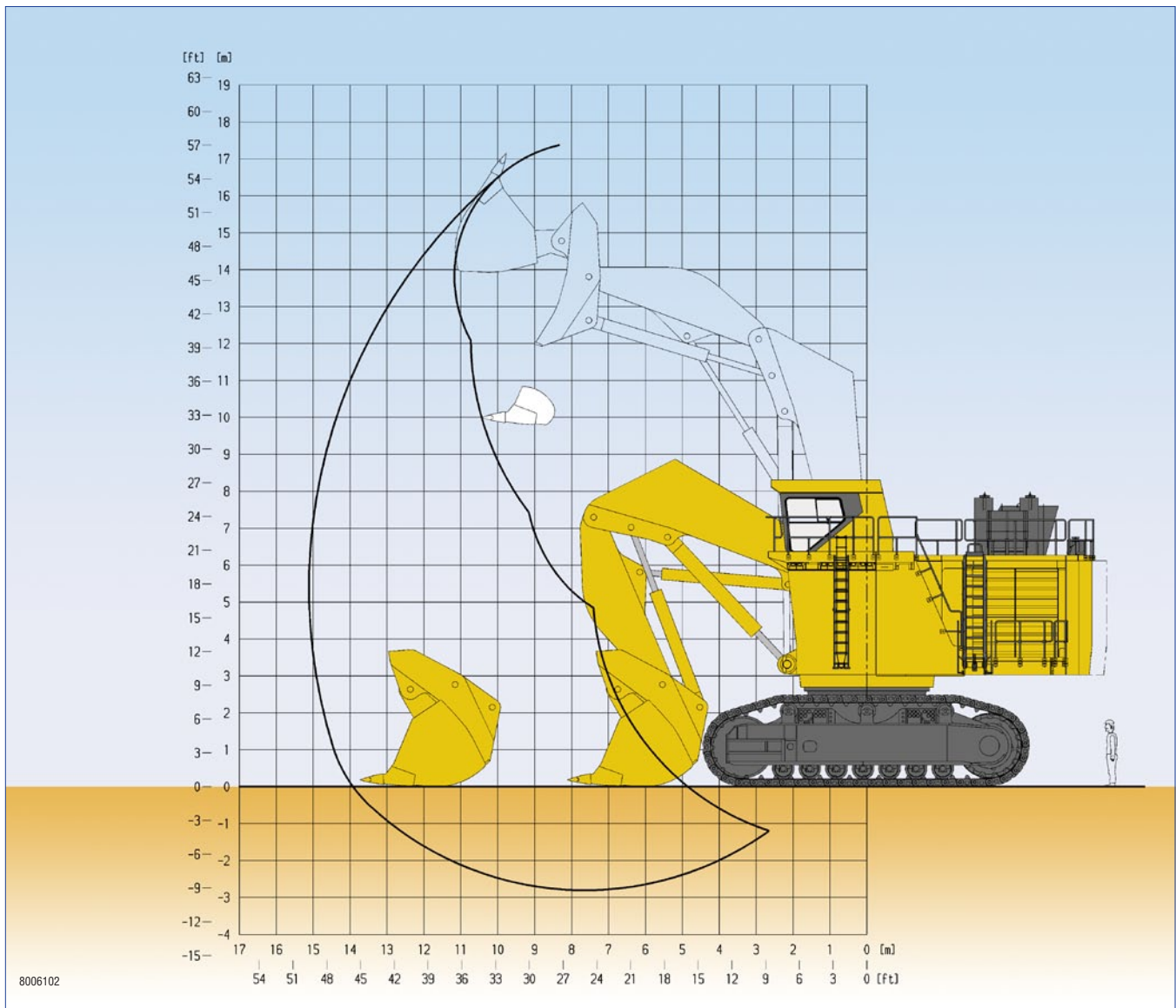
WP 2 Medium abrasive

WP 3 Severe abrasive

Alternative buckets 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 (SAE)	1.250 kN	280,000 lb	Max. digging depth	2.900 mm	9'6"
Crowd force (SAE)	1.330 kN	300,000 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 2:1) SAE		Width		Teeth	Wear Package (*)	Weight		Max. Material Density (Loose)	
cum	cuyd	mm	foot/inch	qty		t	lb	t/cum	lb/cuyd
19,0	25.0	4.020	13'2"	5	3	35,0	77,180	2,1	3,400
22,0	29.0	4.020	13'2"	5	2	34,5	76,100	1,8	3,000
23,0	30.0	4.020	13'2"	5	2	34,7	76,510	1,7	2,900
24,0	31.5	4.020	13'2"	5	2	35,8	78,940	1,6	2,700

*) WP 1 Light abrasive

WP 2 Medium abrasive

WP 3 Severe abrasive

Alternative buckets 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 m³ / 29 yd³ (SAE 2:1) shovel bucket incl. standard wear package (WP2) with hammerless GET system

OR

BACKHOE ATTACHMENT

- 9,75 m / 32'0" boom
- 4,5 m / 14'9" stick
- Set of cylinders
- 22 m³ / 29 yd³ (SAE 1:1) bucket incl. standard wear package (WP2) 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 Xenon high performance working lights
- Service lights throughout platform

OPERATOR CAB

- Enclosed steel cab mounted on viscous pads
- FOPS according ISO 3449
- Air-conditioning unit Sūtrak
- 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

- Internal and external sun blinds
- All windows tinted parsol green
- Walkway in front of cab

LUBRICATION AND SERVICE

- 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

ACCESSORIES INCLUDED

- Acoustic travel alarm
- Hydraulically actuated ground access ladder
- Electric horn
- Engine turbo and exhaust pipes cover
- 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



OPTIONAL EQUIPMENT

ATTACHMENT/BUCKET

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

UNDERCARRIAGE

- 1.500 mm / 59" track shoes

POWER

- Electro drive various voltages
- Cable reel (electric 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)
- KIM 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

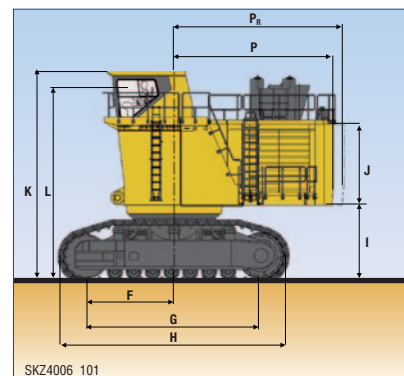
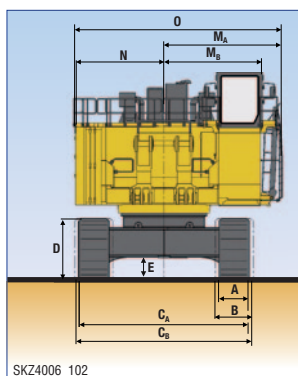
- Fire suppression system
- Camera system acc. ISO5006
- 19 mm thick impact resistant front window
- Engine emergency stop at ground level
- Additional lighting
- Additional cab A/C
- Additional cab heater
- Special painting



DIMENSIONS

BASIC MACHINE WITH COUNTERWEIGHT

A	1200 mm	3'11"	I	3017 mm	9'11"
B	1500 mm	4'11"	J	3085 mm	10'2"
C _A	6750 mm	22'2"	K	7600 mm	24'11"
C _B	7050 mm	23'2"	L	8300 mm	27'3"
D	2480 mm	8'2"	M _A	4700 mm	15'5"
E	930 mm	3'1"	M _B	3896 mm	12'9"
F	3380 mm	11'1"	N	3503 mm	11'6"
G	6700 mm	22'0"	O	8300 mm	27'3"
H	8842 mm	29'	P	6095 mm	20'
			P _R	6500 mm	21'4"



QE550047 02

© 2013 Komatsu Printed in Germany

KOMATSU®

KOMATSU MINING GERMANY GMBH
BUSCHERHOFSTRASSE 10
D-40599 DÜSSELDORF
PHONE +49 (0) 211/7109-0
FAX +49 (0) 211/715822

www.komatsu-mining.de

شرکت بهراد تهران (با مسئولیت محدود)

نمایندگی انحصاری ماشین آلات معدنی، بیل های حفاری هیدرولیک کوماتسو آلمان
تهران، خیابان ولیعصر، بلوار اسفندیار، پلاک ۷۰، واحد ۱، کدپستی ۱۹۶۸۶۵۳۵۱۱
تلفن ۰۲۱-۸۸۷۷۴۹۰۰ / ۸۸۷۸۳۰۳۹ / ۸۸۷۸۲۳۷۱ فکس ۰۲۱-۸۸۸۸۱۳۳۶
info@behradtehran.com

Materials and specifications are subject to change without notice.
Komatsu is a trademark of Komatsu Ltd. Japan