

KOMATSU®

PC4000-6 Super Shovel

OPERATING WEIGHT
385-397 ton **850,000-875,000 lb**

SHOVEL CAPACITY
22 m³ **29 yd³ SAE 2:1 heaped**

BACKHOE CAPACITY
22 m³ **29 yd³ SAE 1:1 heaped**

PC
4000

HYDRAULIC SHOVEL



Photo may include optional equipment.

WALK-AROUND

Komatsu Technology and Expertise

- Quality management ISO 9001 certified
- Environmental Management ISO 14001 certified
- High, consistent quality through continuous investment in personnel, design and manufacturing systems and processes

Reliability and Durability

Designed for lower operating costs

- Robust structural design developed from field experience and finite element analysis
- Extended life undercarriage wear parts
- Large diameter rollers, idlers and sprockets
- Large surface contact area with extensive precision hardening reduces wear
- Hardened track link pin bores

Productivity

Designed for more tons per hour

- Powerful digging forces
- Easy bucket filling
- Proven attachment design
- All cylinders mounted under the shovel attachment for additional protection
- Buckets and Wear Packages to suit all material densities and ground conditions

Advanced Hydraulics

Extended reliability and control

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



Large Comfortable Cab

Provides full shift comfort

- Komatsu low noise cab on multiple viscous mounts for reduced noise and vibration
- Large volume cab with full view front window (floor to ceiling) increases operator view
- Comprehensive climate control with pressurized, filtered air ventilation and air conditioning
- High specification multi-adjustable air suspension seat, redesigned for mining
- Well elevated operator position provides superior all around view

MATCHED FOR
150 to 240 U.S. ton
TRUCKS

SHOVEL AND BACKHOE
BUCKET CAPACITY
22 m³ 29 yd³



Photo may include optional equipment.

Powerful Diesel Engine

Komatsu SDA16V160 engine

- Rated 1400 kW **1875 HP**, at 1800 rpm
- Electronic engine management
- Low engine emission levels – meets EPA Tier 2 emission regulations
- Time saving oil management system as standard equipment; Centinel Engine Oil Management, Engine Reserve Oil Supply and Eliminator Oil Filter systems

Easy Maintenance

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

- Hydraulically operated ground access ladder
- Generous access to all major service points from machinery house floor level
- Enclosed, internally lit machinery house with wall separating engine from pump area
- Automatic central lubrication
- Vehicle Health Monitoring System (VHMS) provides real-time information about the operating systems of the machine
- Ground-level access to hydraulically operated drop-down service center with Wiggins connections

SPECIFICATIONS



DIESEL DRIVE

Model Komatsu SDA16V160
 Type 4-cycle, water-cooled, direct injection
 Aspiration Turbocharged and aftercooled
 Number of cylinders 16
 Rated power 1400 kW **1,875 HP** @ 1800 rpm
 (SAE 1995/J1349)
 Governor All-speed, electronic

The integrated engine oil and filter system combining the oil stabilizing systems, Reserve and Centinel, with the Eliminator self cleaning oil filter extends, with oil analysis, the oil change interval to 4000 hours. (not available in Australia)



ELECTRICAL SYSTEM

System 24 V
 Batteries (series/parallel) 2 x 3 x 12 V
 Alternator 260 A
 Standard working lights 8 Xenon lights
 Standard service lights 11 lights



HYDRAULIC SYSTEM

The power train consists of one main drive. Diesel engine or electric motor can be supplied. One gearbox drives four identical main pumps which draw hydraulic oil from an unpressurized hydraulic tank. Open circuit hydraulics provide maximum cooling and filtering efficiency.

Rated flow (total output) 4140 ltr/min **1,096 U.S. gpm**
 Relief valve setting 310 bar **4,495 psi**
 Swing flow rate 1590 ltr/min **420 U.S. gpm**

High pressure in-line filters 200 micron
 (one per pump located at the valve blocks)

Full flow return line filters (8 double elements) 10 micron
 (at head of hydraulic tank)

Case drain/by-pass return line filters 3 micron

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



DRIVES AND BRAKES

Travel control 2 foot pedals
 Gradeability Up to 50%
 Travel speed (maximum) 2.1 km/h **1.3 mph**
 Service brake Hydraulic
 Parking brake Wet, multiple-disc



SWING SYSTEM

Hydraulic motors and drives 2
 Swing brake, service Hydraulic
 Swing brake, parking Wet, multiple-disc
 Swing ring teeth External
 Swing speed (maximum) 4.0 rpm



COOLING SYSTEM

The high capacity engine radiators are cooled by hydraulically driven fans for superior cooling efficiency and require little maintenance. The hydraulic system includes two large swing-out vertical air-to-oil hydraulic coolers with temperature-regulated hydraulically driven fans.



ELECTRIC DRIVE

Type Squirrel-cage induction motor
 Power output 1350 kW
 Voltage 6600 V*
 Amperage (approximate) 145 A
 Start-up Soft start
 Frequency (standard) 50 Hz @ 1500 rpm
 Optional frequency 60 Hz @ 1800 rpm

*Other voltages available on request



UNDERCARRIAGE

Undercarriage consists of one center carbody and two track frames, each side attached by 62 high torque bolts.

Center frame H-type
 Track frame Steel box-section
 Track adjustment Automatic hydraulic type
 Number of shoes 49 each side
 Number of top rollers 3 each side
 Number of bottom rollers 7 each side



AUTOMATIC CENTRALIZED LUBRICATION

Two hydraulically powered Lincoln single line automatic lubrication systems are provided as standard, complete with time and volume variable controls. Activity and malfunction events are linked to the Vehicle Health Monitoring System (VHMS). The central lube grease system is supplied from a refillable 200 liter **53 gal.** barrel. A second, identical system supplies open gear lubricant to the swing ring teeth through a lube pinion. Replenishment of the barrels is through the service center.



SERVICE REFILL CAPACITIES

Hydraulic oil tank 3900 ltr **1,030 U.S. gal**
 Hydraulic system 5900 ltr **1,559 U.S. gal**
 Fuel 6400 ltr **1,691 U.S. gal**
 Engine coolant 475 ltr **125 U.S. gal**
 Engine oil 290 ltr **77 U.S. gal**
 Centinel engine oil make up tank 460 ltr **122 U.S. gal**



CAB

The large welded steel cab is mounted with 18 viscous damping pads and sound insulated. It is equipped with automatic climate control and is pressurized. The operator's seat is fully adjustable, air suspended, electrically heated and has a lap seat belt. There is a trainer's seat.

Low effort joystick controls are electric over hydraulic and foot controls are for front shovel clam, crawler and swing brake.

Full instrumentation and Vehicle Health Monitoring System (VHMS) are provided. Space in the console is provided for an additional monitor. AM/FM radio is included. The dual windshield wipers have two-speed and intermittent operation (water reservoir 7 liters **1.8 gal.**). Amenities include a wash basin with running water (water reservoir 50 liters **13 gal.**), refrigerator, and storage cabinets. Powered mirrors are adjustable from inside the cab.

There are left and right-hand sliding windows. All windows are tinted parsol green. External metal louvers are provided on the cab side windows.

Cab engineering standards are;

- ISO 3449 Falling Objects Protection Structure (FOPS) Level 2
- ISO 6396 Noise in operator's cab is 73 dB(A)
- ISO 2631-1/5349-1 Vibration and Shock
- Air conditioner 10 kW **34,120 Btu/hr**
- Heater/Defroster (Diesel version) 10 kW **34,120 Btu/hr**



VEHICLE MONITORING SYSTEM

Vehicle Health Monitoring System (VHMS) is designed for Komatsu mining equipment to provide real-time and stored information about the operating systems of the machine. A touch-sensitive flat screen color monitor gives a continuous display or can be activated to provide operator or service data. Non-serious and critical faults are automatically announced, while for major malfunctions the engine is also shut down.

The integrated digital storage provides a full event history, which can be downloaded by laptop computer or by wireless link. The ability to provide real-time service information as messages, snap-shot or trend data automatically to mine control programs can improve mechanical utilization and reduce costs.

(Electric drive version fitted with Electronic Control System (ECS) Health Monitor)

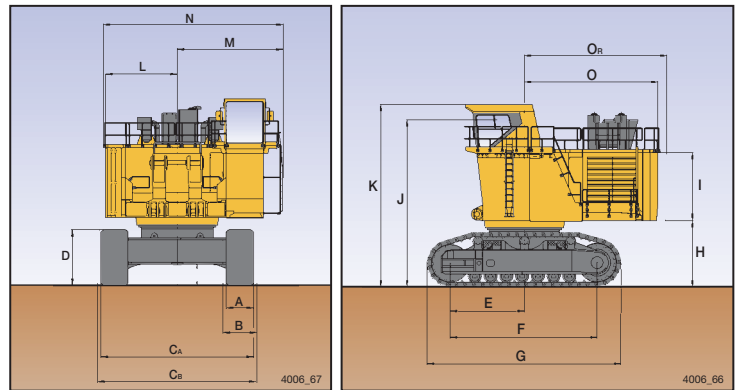


DIMENSIONS

BASIC MACHINE WITH COUNTERWEIGHT

A	1200 mm	47"	H	3017 mm	9'11"
B	1500 mm	59"	I	3085 mm	10'2"
C _A	6750 mm	22'2"	J	7600 mm	24'11"
C _B	7050 mm	23'2"	K	8300 mm	27'3"
D	2480 mm	8'2"	L	3175 mm	10'5"
E	3380 mm	11'1"	M	4700 mm	15'5"
F	6700 mm	22'0"	N	7975 mm	26'2"
G	8842 mm	29'0"	O	6095 mm	20'0"
			O _R	6500 mm	21'4"

Ground Clearance: 930 mm 3'0"



OPERATING WEIGHTS (APPROXIMATE)

PC 4000 Backhoe:

Operating weight including 9750 mm 32'0" boom, 4500 mm 14'9" stick, 22 m³ 29 yd³ backhoe bucket, operator, lubricant, coolant, full fuel tank and standard equipment.

Shoe Width	Operating Weight	Ground Pressure
1200 mm	392 t	2.19 kg/cm ²
47"	865,000 lb	31.2 psi
1500 mm	397 t	1.78 kg/cm ²
59"	875,000 lb	25.3 psi

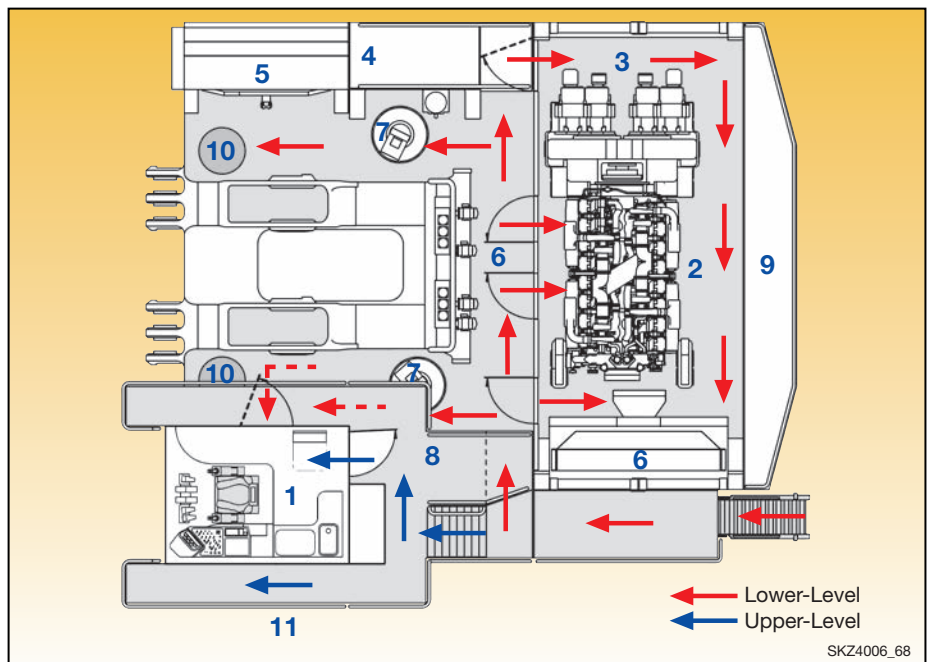
PC 4000 Front Shovel:

Operating weight including 7150 mm 23'6" boom, 4900 mm 16'1" stick, 22 m³ 29 yd³ shovel bucket, operator, lubricant, coolant, full fuel tank and standard equipment.

Shoe Width	Operating Weight	Ground Pressure
1200 mm	385 t	2.15 kg/cm ²
47"	850,000 lb	30.6 psi
1500 mm	390 t	1.75 kg/cm ²
59"	860,000 lb	24.8 psi

Explanation

- 1 Operator's Cab
- 2 Power Train
- 3 Hydraulic Pumps
- 4 Hydraulic Tank
- 5 Hydraulic Coolers
- 6 Valve Blocks
- 7 Swing Motor
- 8 Fuel Tank
- 9 Counterweight
- 10 Autolube System
- 11 Secondary Egress

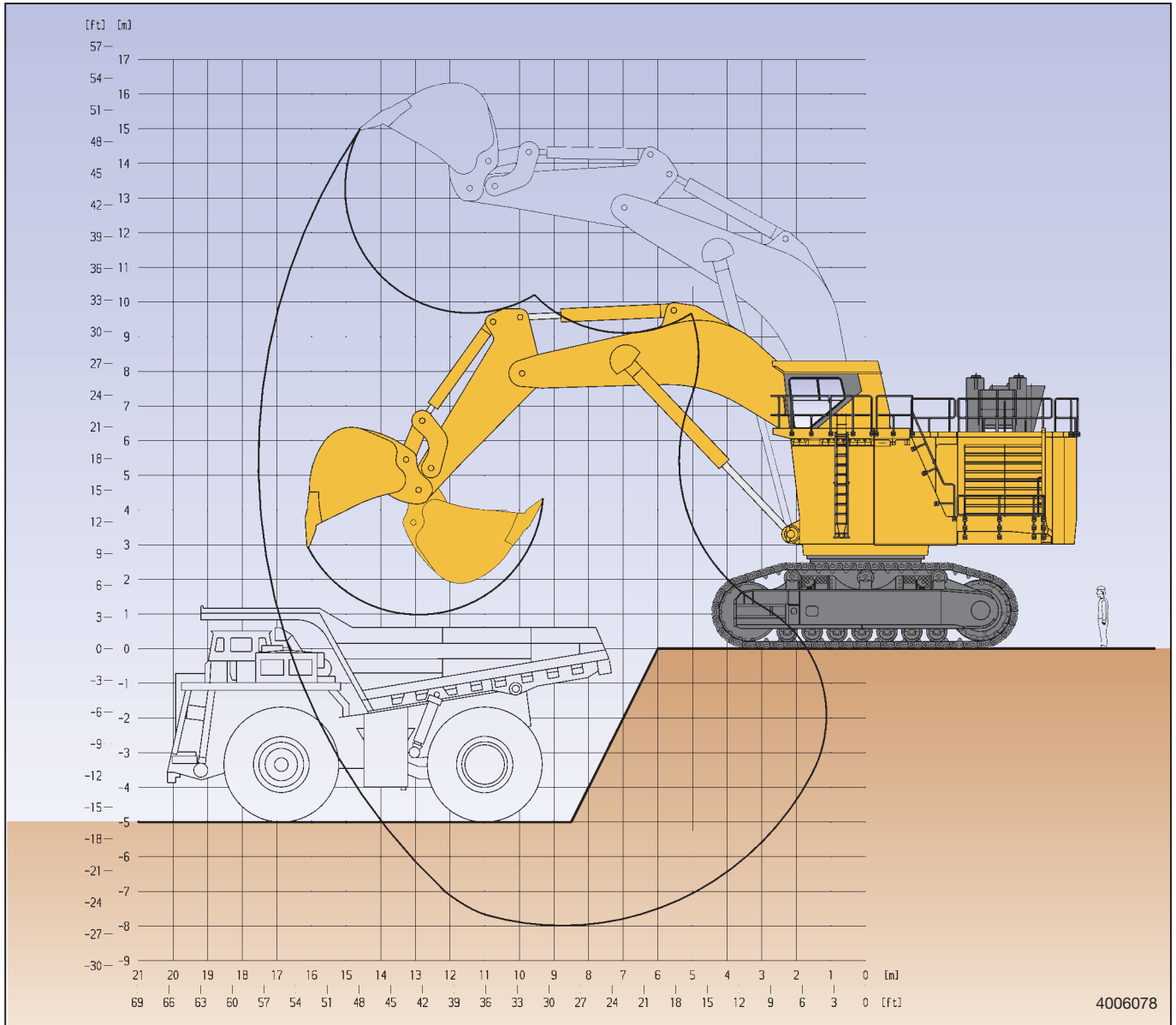


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PRODUCTIVITY FEATURES



BACKHOE BUCKET, STICK AND BOOM COMBINATION



4006078

Boom length	9750 mm	32'0"
Stick length	4500 mm	14'9"
Break-out force (SAE)	1155 kN	260,000 lb
Tear-out force (SAE)	1050 kN	236,000 lb

Max. digging depth	8000 mm	26'3"
Max. digging reach at ground level	16650 mm	54'8"

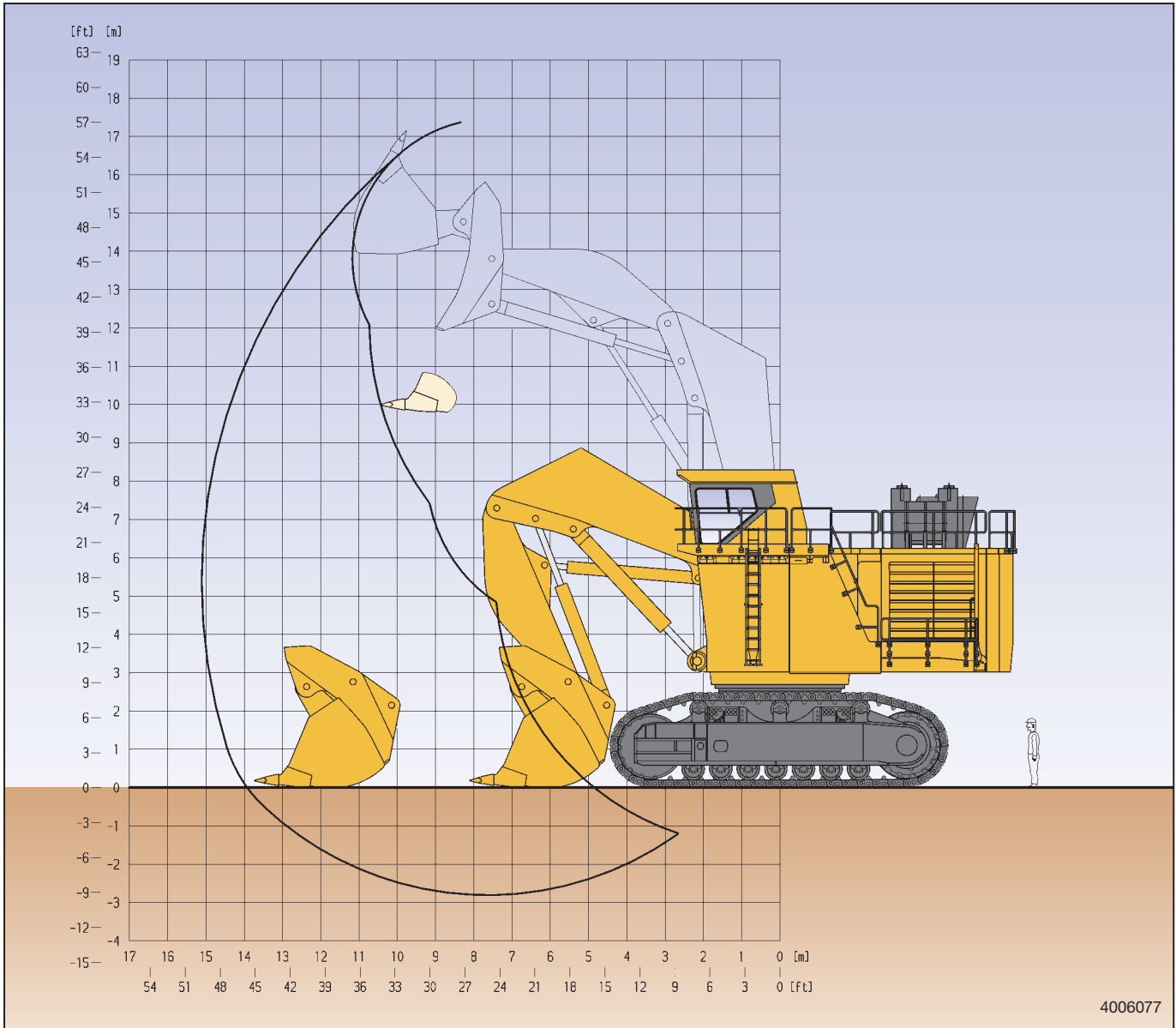
Bucket Capacity (Heaped 1:1) SAE	Width		Teeth qty	Weight*		Max. Material Density (Loose)		Wear Package	
	m ³	yd ³		mm	ft and in	t	lb		t/m ³
22	29	3790	12'5"	6	23.4	51,590	1.8	3,000	WP-2

Alternative buckets on request

* Weight includes Backhoe Bucket, Stick and Boom Combination



SHOVEL BUCKET, STICK AND BOOM COMBINATION



4006077

Boom length	7150 mm	23'6"
Stick length	4900 mm	16'1"
Break-out force (SAE)	1250 kN	280,000 lb
Crowd force (SAE)	1330 kN	300,000 lb

Max. dumping height	12000 mm	39'4"
Level crowd at ground level	5700 mm	18'8"

Bucket Capacity				Width		Teeth	Weight*		Max. Material Density (Loose)		Wear Package
SAE/CECE	Heaped 2:1		mm								
m ³	yd ³	m ³	yd ³								
22	29	25	32.7	4020	13'2"	5	38.8	85,500	1.8	3,000	WP-3

Alternative buckets on request

* Weight includes Shovel Bucket, Stick and Boom Combination



STANDARD EQUIPMENT

Hydraulic Mining Shovel with Diesel Drive will comprise:

● FRONT SHOVEL ATTACHMENT

7.15 m **23'6"** boom and 4.9 m **16'1"** stick complete with cylinders. 22 m³ **29 yd³** (SAE 2:1) shovel bucket with mechanical teeth and lip system.

OR

● BACKHOE ATTACHMENT

9.75 m **32'0"** boom and 4.5 m **14'9"** stick with 22 m³ **29 yd³** (SAE 1:1) bucket.

● CRAWLER UNDERCARRIAGE

Heavy-duty shovel type undercarriage consisting of a center carbody and 2 heavy box-type track frames, each having 7 bottom rollers, 3 top rollers, and 1200 mm **47"** cast steel track shoes. Hydraulic track adjustment and parking brake provided.

● SUPERSTRUCTURE

Main frame mounted over an externally toothed swing circle carries the main drive module, including Komatsu SDA16V160 diesel engine, oil and fuel reservoirs, counterweight, operator's cab and base.

● LIGHTING

8 Xenon high performance working lights.
11 service lights throughout platform.

● OPERATOR'S CAB

Fully enclosed steel cab which incorporates the ISO 3449 standard FOPS Level 2 structure and CARRIER SÜTRAK air-conditioning unit. Mounted on viscous pads. GRAMMER fully suspended seat with lap-belt. Fold-away trainer seat. Full selection of controls, switches, and Vehicle Health Monitoring System (VHMS). Joystick and pedal-operated controls are electric over hydraulic. Dual windshield wipers with two-speed and intermittent operation. (reservoir 7 ltr **1.8 gal**). AM-FM radio. Washbasin with running water (reservoir 50 ltr **13 gal**). Refrigerator and storage cabinets. Left and right-hand sliding windows. All windows tinted parsol green.

● LUBRICATION

LINCOLN central lubrication for basic machine, attachment, and bucket. 200 ltr **53 gal** refillable barrel from service center.

LINCOLN automatic pinion lubrication system for swing circle teeth with 200 ltr **53 gal** refillable barrel from service center.

Service center (diesel version only as standard) on hydraulic arm carrying WIGGINS fluid receiving connectors for filling of fuel, engine oil and coolant, hydraulic oil, grease, cabwater and the evacuation of coolant, and hydraulic and engine oils.

● ACCESSORIES

Acoustic travel alarm
Hydraulically actuated ground access ladder
Electric air horn
Emergency stops, ground level
Engine oil management system
(Centinel, Reserve & Eliminator Systems)



OPTIONAL EQUIPMENT

- 1500 mm **59"** track shoes
- Additional cab heater, -15°C **5°F**
- Cable reel (Electric Version)
- Drive motor protection, top
- Electric drive
- Fire suppression and detection system
- Kim Hotstart
- Lighting, extra or alternative
- Low temperature package
- Material for -40°C **-40°F** spec
- Oil for -25°C **-13°F** to +15°C **59°F**
- Oil for +5°C **41°F** to +55°C **131°F**
- Oil for Arctic, -40°C **-40°F** to +10°C **50°F**

- Protection, drive motor
- Rotoflare warning light
- Special painting and lettering
- Water separator

FRONT SHOVEL ATTACHMENT

- Arm cylinder sliding guard
- Boom cylinder sliding guard
- Bucket, 13.5 m³ **17.7 yd³**
- Handrails and step, boom
- Wear package #1, bucket
- Wear package #2, bucket
- Wear package #4, bucket

BACKHOE ATTACHMENT

- Bucket, 31.3 m³ **41 yd³**
- Bucket cylinder sliding guard
- Handrails and step, boom
- Wear package #1, bucket
- Wear package #3, bucket

