

KOMATSU®

PC4000 Super Shovel

OPERATING WEIGHT
380–395 ton **838,000–870,000 lb**

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

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



HYDRAULIC SHOVEL

Photo may include optional equipment.

WALK AROUND

Komatsu Technology and Expertise

Machines innovatively developed for high production, safety, and with environmental responsibility.

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

Sustained High Production

Designed for more tons per hour

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

Time-Proven Structures

Extended structural reliability is proven

- Robust structural design developed from field experience and finite analysis expertise
- Optimum use of castings at key points throughout the structure of the machine



Extended Life Undercarriage

Lower operating costs

- Big diameter rollers, idlers, and sprockets
- Large surface area and detailed hardening reduces wear
- Hardened track link pin bores

Large Comfortable Cab

- Low internal noise level
- New generation viscous cab mounts
- Comprehensive climate control with pressurized filtered air ventilation and air conditioning
- High specification multi-adjustable air suspension seat for full shift comfort
- Well elevated giving good all round view

MATCHED FOR
165–255 ST TRUCKS

SHOVEL BUCKET
22 m³ 29 yd³ SAE 2:1 heaped

BREAKOUT FORCE
1250 kN 280,000 lb

CROWD FORCE
1330 kN 300,000 lb



Photo may include optional equipment.

VHMS Vehicle Health Monitoring System

Provides real time and stored information about the operating status of the machine

- Touch controlled color monitor screen with continuous display
- Service messages in data, snap-shot and trend analysis format with battery back-up security
- Automatic engine shut-down for critical malfunctions
- Data download capable, either to a laptop computer or by wireless link

Powerful Diesel Engine

Single Komatsu SDA16V160.

- Rated 1400 kW 1875 HP at 1800 rpm
- Electronic engine management
- Time saving options are standard: Centinel Engine Oil Management System, Engine Reserve Oil Supply System, and Eliminator Oil Filter System
- Low engine emission levels meet EPA Tier 1

Easy Maintenance

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

- Generous walk-through gangways throughout the platform and around the power train
- Enclosed, internally lit, engine and pump house
- Automatic central lubrication
- Swing-out hydraulic oil coolers enable complete and regular service
- Ground-level access to hydraulically powered swing-down service arm 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 extends service intervals. This combines the oil stabilizing systems, Reserve and Centinel, with the Eliminator self cleaning oil filter to extend, with oil analysis, the oil change interval to 4000 hours.

The high capacity engine radiator is cooled by a hydraulically driven fan for superior cooling efficiency and requiring little maintenance.



ELECTRIC SYSTEM

System 24 V
 Batteries (series/parallel) 4 x 12 V
 Alternator 225 A
 Standard working lights 8 Xenon lights
 Standard service lights 11 lights

Optional lighting upon request



UNDERCARRIAGE

Undercarriage consists of one center carbody and two track frames, each attached by four large diameter hardened pins.

Center frame H-type
 Track frames Steel box-section



CRAWLER ASSEMBLY

Track adjustment Automatic hydraulic type
 Number of track shoes 47 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 70%
 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



ELECTRIC DRIVE

Type Squirrel-cage induction motor
 Power output 1350 kW
 Voltage 6600 V*
 Amperage (approximate) 150 A
 Frequency (standard) 50 Hz @ 1500 rpm
 Optional frequency 60 Hz @ 1800 rpm

*Other voltages available on request



HYDRAULIC SYSTEM

The power train consists of one main drive. Diesel engine or electric motor can be supplied. One gearbox drives four identical 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 **1,094 gpm**
 Relief valve setting 310 bar **4,495 psi**
 Swing flow rate 1590 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 double elements) 10 microns
 at head of hydraulic tank

Case drain return line filters (one double element) 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 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.



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 VHMS. 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 (diesel version). Electric Version only fitted with Wiggins connections.



SERVICE CAPACITIES

| | | |
|--|-----------|-----------------------|
| Hydraulic oil tank | .3900 ltr | 1,030 U.S. gal |
| Hydraulic system | .5900 ltr | 1,560 U.S. gal |
| Fuel | .6400 ltr | 1,690 U.S. gal |
| Engine coolant | .475 ltr | 125 U.S. gal |
| Engine oil | .290 ltr | 76 U.S. gal |
| Centinel engine oil make up tank | .580 ltr | 153 U.S. gal |

CAB

The large welded steel cab incorporating the ISO 3449 FOPS structure is vibration isolated with 18 viscous combination pads and sound insulated to below 70db(A). It is equipped with automatic climate control and is pressurized. The operators seat is air suspended, electrically heated and has a lap seat belt. There is a fold away trainer's seat.

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

Full instrumentation and VHMS are provided. Space in the console is provided for an additional monitor. AM/FM radio is fitted. The windshield wash wiper has two speeds with 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.

Working lights and powered mirrors are adjusted from inside the cab. There are left and right hand sliding windows. All windows are tinted par-sol green. External metal louvers are provided on cab side windows.

Air Conditioner10 kW **34,120 Btu**
 Heater/Defroster10 kW **34,120 Btu**

VEHICLE HEALTH MONITORING SYSTEM

VHMS is designed for Komatsu mining equipment to provide real time and stored information about the status of the operating machine. A touch controlled 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 down loaded by laptop computer or by wireless link.

The ability to provide real time service information as messages, snapshot or trend data automatically to mine control programs can improve availability and reduce costs.

The comprehensive diagnostic data will assist in predicting or reducing downtime.

OPERATING WEIGHTS

PC 4000 Backhoe:

Operating weight including 9750 mm **32'0"** boom, 4500 mm **14'9"** stick, 22 m³ **29.0 yd³** backhoe bucket, operator, lubricant, coolant, full fuel tank, and standard equipment.

| Shoe Width | Operating Weight | Ground Pressure |
|----------------|----------------------------|-------------------------------|
| 1200 mm 47" | 390 t 860,000 lb | 23.2 N/cm2 33.0 psi |
| 1500 mm 59" | 395 t 870,000 lb | 18.8 N/cm2 26.8 psi |

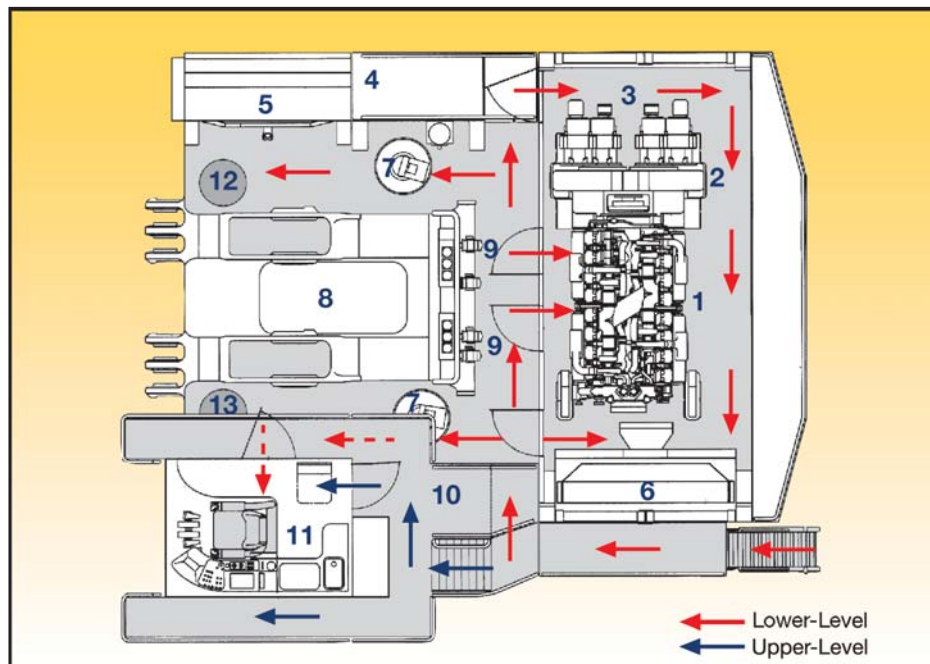
PC 4000 Front Shovel:

Operating weight including 7150 mm **23'6"** boom, 4900 mm **16'1"** stick, 22 m³ **29.0 yd³** shovel bucket, operator, lubricant, coolant, full fuel tank, and standard equipment.

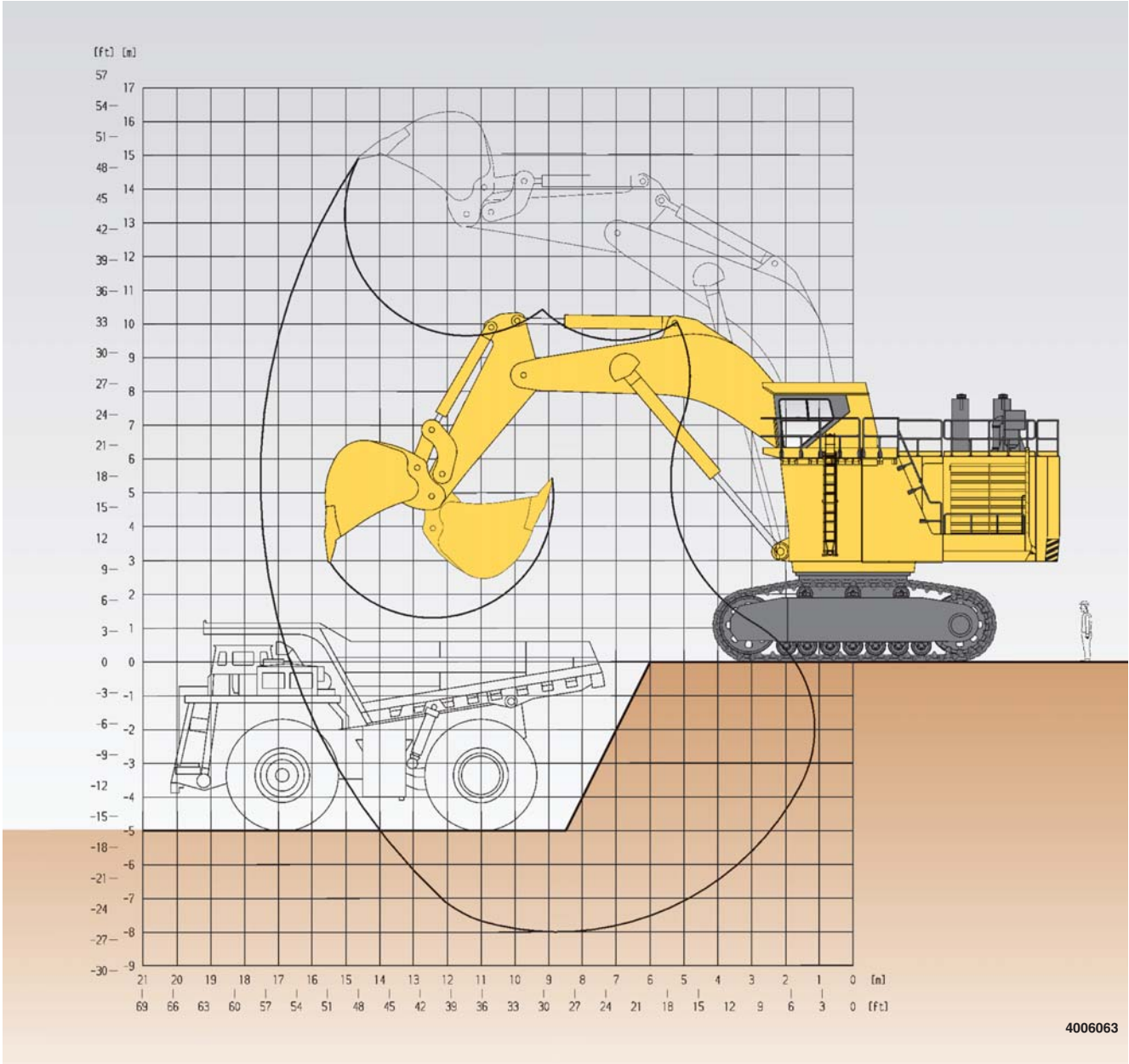
| Shoe Width | Operating Weight | Ground Pressure |
|----------------|----------------------------|-------------------------------|
| 1200 mm 47" | 380 t 838,000 lb | 22.6 N/cm2 32.2 psi |
| 1500 mm 59" | 385 t 850,000 lb | 18.4 N/cm2 26.1 psi |

Explanation

- 1 Diesel Engine
- 2 Pump Drive Gearbox
- 3 Hydraulic Pumps
- 4 Hydraulic Oil Tank
- 5 Hydraulic Oil Cooler
- 6 Engine Radiator
- 7 Swing Motors
- 8 Main Rotating Joint
- 9 Control Valves
- 10 Fuel Tank
- 11 Operators Cab
- 12 Central Lubrication Barrel
- 13 Pinion Grease Barrel



PRODUCTIVITY FEATURES



4006063

DIGGING FORCES

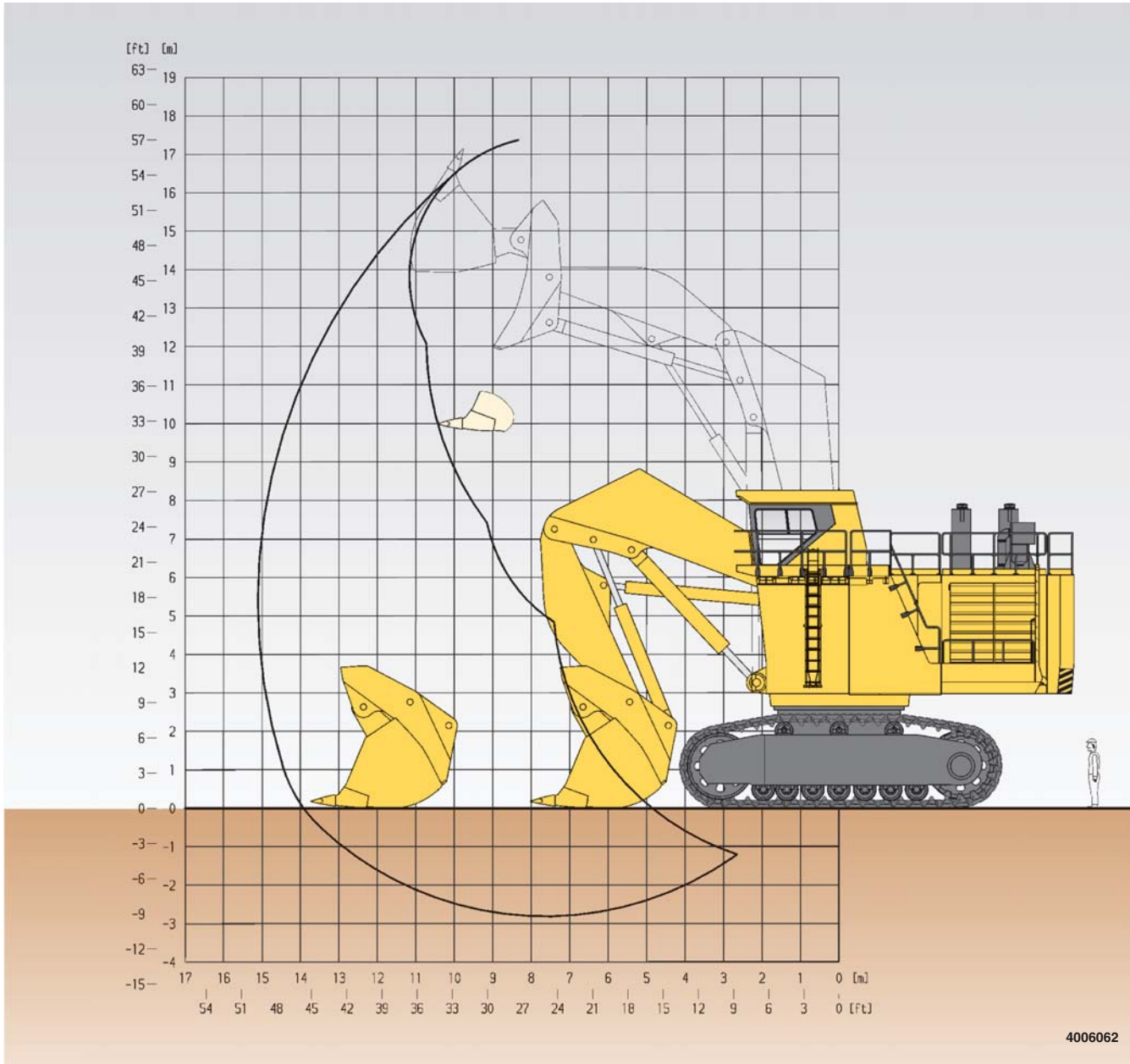
| | | |
|-----------------|---------|-------------------|
| Break-out force | 1155 kN | 260,000 lb |
| Tear-out force | 1050 kN | 236,000 lb |

| | | |
|---|----------|--------------|
| Maximum reach at ground level | 16600 mm | 54'6" |
| Maximum digging depth | 8000 mm | 26'3" |

BACKHOE BUCKET, STICK AND BOOM COMBINATION

| Bucket Capacity | Width | Teeth | Weight | Boom Length |
|--------------------------------------|---------|-------|-----------------------------|---|
| SAE Heaped 1 : 1 | 3800 mm | 6 | Including Wear Package-2 | 9750 mm |
| | | | | 32'0" |
| 22 m ³ 29 yd ³ | 12'6" | | 23.3 t 51,400 lb | Stick Length 4500 mm |
| | | | | 14'9" |
| | | | | Material weight to 1.8 t/m ³ 3000 lb/yd ³ |

Alternative buckets/wear packages are available



4006062



DIGGING FORCES

| | | |
|-----------------|---------|-------------------|
| Break-out force | 1250 kN | 280,000 lb |
| Crowd force | 1330 kN | 300,000 lb |

| | | |
|-----------------------------|----------|--------------|
| Level crowd at ground level | 5600 mm | 18'4" |
| Maximum dumping height | 12000 mm | 39'4" |



SHOVEL BUCKET, STICK AND BOOM COMBINATION

| Bucket Capacity | | Width | Teeth | Weight | Boom Length |
|--|--------------|-------------------------|--------------------------------------|-------------------------|--|
| SAE/CECE Heaped 2 : 1 | Heaped 1 : 1 | | | 4000 mm 13'2" | 5 |
| 22 m ³ 29 yd³ | | 32.7 t 72,100 lb | Stick Length 4900 mm 16'1" | | |
| 25 m ³ 32.7 yd³ | | | | | Material density to 1.8 t/m ³ 3000 lb/yd³ |

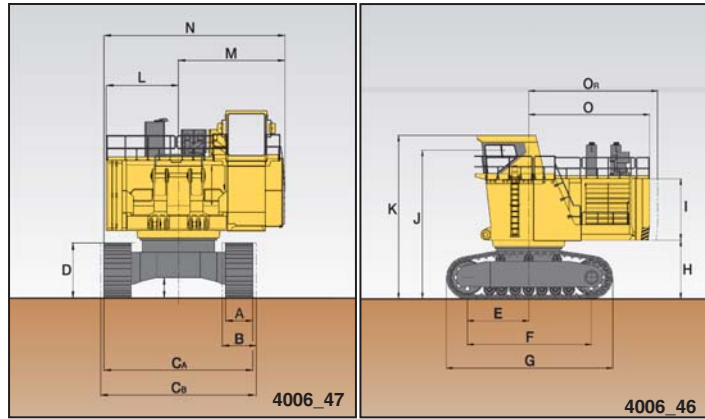
Alternative buckets/wear packages are available



DIMENSIONS

| | | | | | |
|----------------|---------|-------|----------------|---------|-------|
| A | 1200 mm | 47" | H | 2980 mm | 9'9" |
| B | 1500 mm | 59" | I | 3085 mm | 10'1" |
| C _A | 6550 mm | 21'6" | J | 7500 mm | 24'7" |
| C _B | 6850 mm | 22'6" | K | 8260 mm | 27'1" |
| D | 2435 mm | 8'0" | L | 3175 mm | 10'5" |
| E | 3085 mm | 10'1" | M | 4475 mm | 14'8" |
| F | 6245 mm | 20'6" | N | 7650 mm | 25'1" |
| G | 8375 mm | 27'6" | O | 6095 mm | 20'0" |
| | | | O _R | 6500 mm | 21'4" |

Ground Clearance:915 mm 3'0"



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. 22.0 m³ **29.0 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 22.0 m³ **29.0 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, operators cab and base.

LIGHTING

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

OPERATORS CAB

Fully enclosed steel cab which incorporates the ISO 3449 standard FOPS structure and CARRIER SÜTRAK air-conditioning unit. Mounted on viscous pads. GRAMMER fully suspended seat with seat belt. Fold-away auxiliary seat. Full selection of controls, switches, and VHMS (Vehicle Health Monitoring System). Joystick and pedal-operated controls are electric over hydraulic. Windshield wash wiper 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.

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

WIGGINS service center mounted on a hydraulically powered swing-down arm for fill of fuel, engine oil and coolant, hydraulic oil, grease, cab water, and the evacuation of coolant, and hydraulic and engine oils.

ACCESSORIES

- Acoustic travel alarm
- Hydraulically actuated ground access ladder
- Electric air horn



OPTIONAL EQUIPMENT

- 1500 mm **59"** track shoes
- Cable reel (electric version)
- Electric drive

- Extra or alternative lighting
- Fire suppression system
- Generator set
- Low temperature package

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KOMATSU®

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