PC3000-6
Mining Shovel

Photo may include optional equipment.
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

Advanced Hydraulics
Extended reliability and control
• Electronic pump management
• Comprehensive monitored filtration
• Simple, open-circuit hydraulic system with high efficiency swing-out oil coolers

Reliability and Durability
Designed for lower operating costs
• Robust structural design developed from field experience and finite element analysis
• 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 protection
• Buckets and Wear Packages to suit all material densities and ground conditions
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

Powerful Diesel Engine
Komatsu SSA12V159 engine
- Rated 940 kW **1260 HP**, at 1800 rpm
- Electronic engine management
- Low engine emission levels – meets EPA Tier 2 emission regulations
- Optional time saving oil management system; 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; 60° angle with located bottom step
- 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
- Electronic Text Monitoring (ETM) system provides real-time information on the operating status of the machine
- Ground-level access to hydraulically operated drop-down service center with Wiggins connections
## PC3000-6 Hydraulic Shovel

### SPECIFICATIONS

#### DIESEL DRIVE
- Model: Komatsu SSA12V159
- Type: 4-cycle, water-cooled, direct injection
- Aspiration: Turbocharged and aftercooled
- Number of cylinders: 12
- Rated power: 940 kW (1,260 HP @ 1,800 rpm) (SAE 1985/J1349)
- Governor: All-speed, electronic

Optional engine oil management system:
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.

#### ELECTRIC DRIVE
- Type: Squirrel-cage induction motor
- Power output: 900 kW
- Voltage: 6600 V*
- Amperage (approximate): 96 A
- Frequency (standard): 50 Hz @ 1500 rpm
- Optional frequency: 60 Hz @ 1800 rpm

*Other voltages available on request

#### UNDERCARRIAGE
- The undercarriage consists of one center carbody and two track frames, each side attached by 38 high torque bolts.
- Center frame: Steel box-section
- Track frame: H-type
- Track adjustment: Automatic hydraulic type
- Number of shoes: 46 each side
- Number of top rollers: 3 each side
- Number of bottom rollers: 7 each side

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

- Main hydraulic pumps: 3 x 910 ltr/min 3 x 240 U.S. gpm
- Relief valve setting: 310 bar, 4,495 psi
- Swing flow rate: 800 ltr/min 211 U.S. gpm
- High pressure in-line filters: 200 micron

Full flow return line filters (3) (10 micron) and leakage line filter (3 micron) all with monitored 200 micron bypass filters.

The three-circuit Hydropilot system features electronic engine and pump management to optimize hydraulic power for smooth hydraulic action, fast response, simple system layout and a reduced number of components. Filtration is at the oil intake to pumps, valve blocks, heat exchangers and oil tank.

#### ELECTRICAL SYSTEM
- System: 24 V
- Batteries (series/parallel): 4 x 12 V
- Alternator: 150 A
- Standard working lights: 8 Xenon lights
- Service lights: 8 lights

#### DRIVES AND BRAKES
- Travel control: 2 foot pedals
- Gradeability: Up to 57%
- Travel speed (maximum): 2.4 km/h 1.5 mph
- Service brake: Hydraulic
- Parking brake: Wet, multiple-disc

#### SWING SYSTEM
- Hydraulic motors and drives: 1
- Swing brake, service: Hydraulic
- Swing brake, parking: Wet, multiple-disc
- Swing ring teeth: External
- Swing speed (maximum): 4.6 rpm

#### LUBRICATION
- 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.

#### COOLING SYSTEM
- The high capacity engine radiator is cooled by a mechanically driven fan for superior cooling efficiency and requires little maintenance. The hydraulic system includes two large swing-out vertical air-to-oil hydraulic coolers with temperature-regulated hydraulically driven fan.

#### SERVICE REFILL CAPACITIES
- Hydraulic oil tank: 2900 ltr 765 U.S. gal
- Hydraulic system: 4400 ltr 1,160 U.S. gal
- Fuel: 4500 ltr 1,190 U.S. gal
- Engine coolant: 360 ltr 95 U.S. gal
- Engine oil: 190 ltr 50 U.S. gal

#### CAB
- The large welded steel cab incorporating the ISO 3449 FOPS Level 2 structure is vibration isolated with 15 viscous combination pads and sound insulated to 75 dB(A). It is equipped with automatic climate control and is pressurized. The operator’s seat is air suspended, electrically heated and has a lap seat belt. There is a trainer seat with belt.
- Low effort joystick controls are hydraulic with foot controls for front shovel clam, crawler and swing brake.
- Full instrumentation and Electronic Text Monitoring (ETM) are provided. AM/FM radio with CD player is included. Dual windshield wipers are synchronized with two-speed and intermittent operation.
- 2 heated rearview mirrors are externally mounted. External metal sun louvers and internal pull-down sun blinds. Left-hand sliding window. All windows are tinted parsol green.
VEHICLE MONITORING SYSTEM

The Electronic Text Monitoring (ETM) system, mounted in the operator's console, continuously monitors the performance of the engine, gearbox, autolube and hydraulic systems. Fault messages are immediately available to the operator via a digital display and in the event of critical malfunctions the engine is also shut down.

The digital storage provides failure summary and analysis, which can be downloaded by laptop computer. This data will assist in predicting or reducing downtime.

DIMENSIONS

BASIC MACHINE WITH COUNTERWEIGHT

<table>
<thead>
<tr>
<th>A</th>
<th>800 mm</th>
<th>2'7&quot;</th>
<th>I</th>
<th>2670 mm</th>
<th>8'9&quot;</th>
</tr>
</thead>
<tbody>
<tr>
<td>B</td>
<td>1000 mm</td>
<td>3'3&quot;</td>
<td>J</td>
<td>2610 mm</td>
<td>8'7&quot;</td>
</tr>
<tr>
<td>Cₐ</td>
<td>5600 mm</td>
<td>18'4&quot;</td>
<td>K</td>
<td>6685 mm</td>
<td>21'11&quot;</td>
</tr>
<tr>
<td>C₈</td>
<td>5800 mm</td>
<td>19'0&quot;</td>
<td>L</td>
<td>7485 mm</td>
<td>24'7&quot;</td>
</tr>
<tr>
<td>D</td>
<td>2160 mm</td>
<td>7'1&quot;</td>
<td>M</td>
<td>3010 mm</td>
<td>9'11&quot;</td>
</tr>
<tr>
<td>E</td>
<td>920 mm</td>
<td>3'0&quot;</td>
<td>N</td>
<td>3060 mm</td>
<td>10'1&quot;</td>
</tr>
<tr>
<td>F</td>
<td>3000 mm</td>
<td>9'10&quot;</td>
<td>O</td>
<td>6800 mm</td>
<td>22'6&quot;</td>
</tr>
<tr>
<td>G</td>
<td>6000 mm</td>
<td>19'8&quot;</td>
<td>P</td>
<td>5950 mm</td>
<td>19'6&quot;</td>
</tr>
<tr>
<td>H</td>
<td>7910 mm</td>
<td>25'11&quot;</td>
<td>Pₚ</td>
<td>6410 mm</td>
<td>21'0&quot;</td>
</tr>
</tbody>
</table>

Ground Clearance: 920 mm 3'0"

OPERATING WEIGHTS (APPROXIMATE)

PC 3000 Backhoe:
Operating weight including 8600 mm 28'3" boom, 4000 mm 13'1" stick, 15 m³ 19.5 yd³ backhoe bucket, operator, lubricant, coolant, full fuel tank and standard equipment.

<table>
<thead>
<tr>
<th>Shoe Width</th>
<th>Operating Weight</th>
<th>Ground Pressure</th>
</tr>
</thead>
<tbody>
<tr>
<td>800 mm 31&quot;</td>
<td>256 t 564,500 lb</td>
<td>24.0 N/cm² 34.8 psi</td>
</tr>
<tr>
<td>1000 mm 39&quot;</td>
<td>265 t 584,300 lb</td>
<td>19.9 N/cm² 28.9 psi</td>
</tr>
</tbody>
</table>

PC 3000 Front Shovel:
Operating weight including 6000 mm 19'8" boom, 4300 mm 14'1" stick, 15 m³ 19.5 yd³ shovel bucket, operator, lubricant, coolant, full fuel tank and standard equipment.

<table>
<thead>
<tr>
<th>Shoe Width</th>
<th>Operating Weight</th>
<th>Ground Pressure</th>
</tr>
</thead>
<tbody>
<tr>
<td>800 mm 31&quot;</td>
<td>252 t 555,700 lb</td>
<td>23.6 N/cm² 34.2 psi</td>
</tr>
<tr>
<td>1000 mm 39&quot;</td>
<td>261 t 575,500 lb</td>
<td>19.6 N/cm² 28.4 psi</td>
</tr>
</tbody>
</table>

Explanation
1 Cab
2 Power Train
3 Hydraulic Cooler
4 Hydraulic Reservoir
5 Valve Blocks
6 Swing Motor
7 Fuel Tank
8 Counterweight
9 Autolube Systems

Variation for Electric
Drive Version
Walkways
Lower-Level
Upper-Level
Electric Cabinet

Diesel

Electric
**PC3000-6 HYDRAULIC SHOVEL**

**PRODUCTIVITY FEATURES**

**BACKHOE BUCKET, STICK AND BOOM COMBINATION**

<table>
<thead>
<tr>
<th>Feature</th>
<th>Spec 1</th>
<th>Spec 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Boom length</td>
<td>8600 mm (28'3&quot;)</td>
<td>14100 mm (46'3&quot;)</td>
</tr>
<tr>
<td>Stick length</td>
<td>4000 mm (13'1&quot;)</td>
<td>9000 mm (29'6&quot;)</td>
</tr>
<tr>
<td>Break-out force (SAE)</td>
<td>850 kN (191,000 lb)</td>
<td>7900 mm (25'11&quot;)</td>
</tr>
<tr>
<td>Tear-out force (SAE)</td>
<td>800 kN (179,800 lb)</td>
<td>16200 mm (53'2&quot;)</td>
</tr>
<tr>
<td>Max. digging height</td>
<td>14100 mm (46'3&quot;)</td>
<td>16200 mm (53'2&quot;)</td>
</tr>
<tr>
<td>Max. dumping height</td>
<td>9000 mm (29'6&quot;)</td>
<td>15600 mm (51'2&quot;)</td>
</tr>
<tr>
<td>Max. digging depth</td>
<td>7900 mm (25'11&quot;)</td>
<td>15600 mm (51'2&quot;)</td>
</tr>
<tr>
<td>Max. digging reach</td>
<td>16200 mm (53'2&quot;)</td>
<td></td>
</tr>
<tr>
<td>Max. digging reach at ground</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Bucket Capacity**

<table>
<thead>
<tr>
<th>Capacity</th>
<th>Width</th>
<th>Teeth qty</th>
<th>Weight*</th>
<th>Material Density (Loose)</th>
<th>Wear Package</th>
<th>Mining Uses</th>
</tr>
</thead>
<tbody>
<tr>
<td>12.0</td>
<td>15.7</td>
<td>5</td>
<td>15.2</td>
<td>33,500</td>
<td>WP-3</td>
<td>Heavy Duty</td>
</tr>
<tr>
<td>15.0</td>
<td>19.5</td>
<td>5</td>
<td>15.6</td>
<td>34,400</td>
<td>WP-2</td>
<td>Standard Mining</td>
</tr>
</tbody>
</table>

*Weight includes Backhoe Bucket, Stick and Boom Combination

Alternative buckets on request.

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Alternative buckets on request.
### SHOVEL BUCKET, STICK AND BOOM COMBINATION

**PC3000-6 HYDRAULIC SHOVEL**

**Boom length** 6000 mm 19'8"

**Stick length** 4300 mm 14'1"

**Break-out force (SAE)** 1000 kN 225,000 lb

**Crowd force (SAE)** 1100 kN 247,500 lb

<table>
<thead>
<tr>
<th>Bucket Capacity</th>
<th>Width</th>
<th>Teeth</th>
<th>Weight*</th>
<th>Max. Material Density (Loose)</th>
<th>Wear Package</th>
<th>Recommended Mining Uses</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Heaped 2:1) SAE</td>
<td>mm</td>
<td>qty</td>
<td>t</td>
<td>t/m³</td>
<td>lb/yd³</td>
<td>t</td>
</tr>
<tr>
<td>15.0</td>
<td>3790</td>
<td>12'5&quot;</td>
<td>6</td>
<td>23.1</td>
<td>51,000</td>
<td>1.8</td>
</tr>
<tr>
<td>16.0</td>
<td>3790</td>
<td>12'5&quot;</td>
<td>6</td>
<td>23.6</td>
<td>52,000</td>
<td>1.7</td>
</tr>
</tbody>
</table>

**Max. cutting height** 15100 mm 49'6"

**Max. dumping height** 10200 mm 33'6"

**Max. digging depth** 3300 mm 10'10"

**Max. digging reach** 13300 mm 43'8"

**Level crowd at ground level** 4700 mm 15'5"

**Bucket opening width** 2330 mm 7'8"

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**
  6.0 m 19'8" boom and 4.3 m 14'1" stick complete with cylinders. 15 m³ 19.5 yd³ (SAE 2:1) shovel bucket with mechanical teeth and lip system.

  OR

- **BACKHOE ATTACHMENT**
  8.6 m 28'3" boom and 4.0 m 13'1" stick with 15 m³ 19.5 yd³ (SAE 1:1) bucket with mechanical teeth and lip system.

- **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 800 mm 31" cast steel track shoes. Hydraulic track adjustment and parking brake provided.

- **SUPERSTRUCTURE**
  The main frame mounted over an externally toothed swing circle carries the main drive module, including Komatsu SSA12V159 diesel engine, oil and fuel reservoirs, counterweight, operator’s cab and base.

- **LIGHTING**
  8 Xenon high performance working lights. 8 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 full suspension operator’s seat with lap-belt. A trainers seat with belt. Full selection of controls, switches, and Electronic Text Monitoring (ETM). Joystick and pedal-operated controls are hydraulic. Dual synchronized windshield wipers with two-speed and intermittent operation (reservoir 7 ltr 1.8 gal). AM-FM radio, with CD player. External metal sun louvers and internal blinds. Left-hand sliding windows. All windows tinted parasol 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. 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, and the evacuation of coolant, and hydraulic and engine oils.

- **ACCESSORIES**
  Acoustic travel alarm
  Electric air horn
  Emergency stops, ground level
  Hydraulic cooler, 55°C 131°F
  Hydraulically actuated ground access ladder
  Oil service transfer pump

OPTIONAL EQUIPMENT

- 1000 mm 39" track shoes
- 4400 L 1,160 U.S. gal biodegradable hydraulic oil
- Centinel and Reserve system
- Drive motor protection, bottom
- Electric drive
- Eliminator filter
- Engine oil management package (Centinel, Reserve & Eliminator systems)
- Fire suppression and detection system
- Lighting, extra or alternative
- Low temperature package
- Material for -50°C -58°F
- 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
- Rotoflare warning light
- Special painting and lettering
- Water separator

FRONT SHOVEL ATTACHMENT
- Arm cylinder sliding guard
- Boom cylinder sliding guard
- Bucket, 16.0 m³ 20.9 yd³
- Handrails and step, boom
- Wear package #1, bucket
- Wear package #2, bucket
- Wear package #4, bucket

BACKHOE ATTACHMENT
- Boom cylinder sliding guard
- Handrails and step, boom
- Wear package #1, bucket
- Wear package #3, bucket

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