

**KOMATSU**<sup>®</sup>

# CRAWLER DOZER

**D61EX-23M0**

**NET HORSEPOWER**

168 hp a 2,200 rpm  
125 kW a 2,200 rpm

**OPERATING WEIGHT**

19,770 kg

**BLADE CAPACITY**

3.8 m<sup>3</sup>



ORIGIN BRAZIL / KDB

Photos of the equipment are referential, may include optional equipment

# D61EX-23M0

## WALK-AROUND

**ENGINE  
POWER  
168 hp**



Image model may include optional equipment.

### **NET HORSEPOWER**

168 hp a 2,200 rpm  
125 kW a 2,200 rpm

### **OPERATING WEIGHT**

19,770 kg

### **BLADE CAPACITY**

Hydraulic tilt and angle blade.  
3.8 m<sup>3</sup>

## REAL SOLUTIONS TO RECONCILE THE EXPLOITATION OF THE PLANET'S NATURAL RESOURCES WITH THE CONSERVATION OF THE ENVIRONMENT

» **Komatsu SAA6D107E-1 turbocharged, after-cooled diesel engine** provides an output of 168 hp (125 kW) with excellent productivity.

» **The engine has gull-wing side covers** for increased safety and easy maintenance.

» **The high capacity hydraulic tilt and angle blade** combines power with extraordinary productivity.

» **Blade hydraulic tilt lines** are completely protected.

### OUTSTANDING PRODUCTIVITY & FUEL ECONOMY

**ecot3**

» **New power and economy modes:**

» Full power when you need it and Economy mode to save fuel in less demanding operations.

» **New engine and hydrostatic pump control technology** improves operational efficiency and lowers fuel consumption.

» **Komatsu integrated design** seeks to add the maximum value, reliability, and versatility. Hydraulics, power train, frame and all other major components are engineered by Komatsu. In this machine, the components are designed to work together for higher production, greater reliability and more versatility.

» **Electronically controlled, hydraulically-driven fan** reduces fuel consumption and operating noise levels.

» **Rear hydraulic (Optional)**

» **Machine rear view monitoring system (optional)**

» **Advanced diagnostic system** continuously monitors machine operation and vital systems to identify machine issues and assist with troubleshooting.

#### » **KOMTRAX**

» Komtrax equipped machines can send multiple data, such as location, SMR and operation maps to a secure website using wireless technology. Fault codes, warning messages, maintenance alerts and fuel level are also recorded, among other information.

#### » **Integrated ROPS cab features:**

- Large, quiet and pressurized cab.
- Excellent visibility with integrated ROPS structure.

#### » **Improved durability**

- Heavy-plate steel used throughout the structure.
- Dozer frame with full steel castings.
- New heavy duty final drives with triple labyrinth seals.
- Exclusive components manufactured and designed by Komatsu.

» **Self-adjusting idler support** provides constant and even idler tension, reducing vibration and noise levels while increasing undercarriage life.

» **Power angle tilt (PAT) dozer** with manually adjustable blade pitch increases productivity in a variety of applications.

#### » **Complete operator blade control**

- Palm command control system (PCCS).
- Electronic proportional control (EPC).
- Adjustable quick shift and variable shift modes.
- New blade angle switch.

#### » **New and more efficient HST with electronic control**

- Customizable quick shift (3 speed) settings for the operator.
- Variable speed selection (20 speeds).
- Low speed matching technology (more efficiency in pump discharge and engine speed).

#### » **Large color monitor**

- 7" high-resolution color monitor for easy reading.
- ECO guidance (operations focused on fuel economy).
- On-board diagnostics.

» **Optimum conditions for Topcon<sup>®</sup> machine control (optional).** Bolt-on finishing kit (optional) makes machine Topcon<sup>®</sup> plug-and-play.

# BLADE VISIBILITY

## THE BEST VIEW OF THE BLADE



### »Unrivalled blade visibility

»The D61EX-23M0 incorporates Komatsu's super-slant nose design. Komatsu's innovative design provides excellent blade visibility for improved machine control and increased efficiency and productivity. This is the first crawler dozer of this type with this feature.



Image model may include optional equipment.

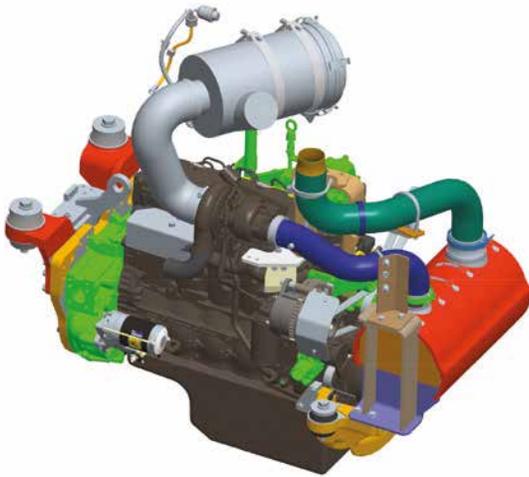
# PRODUCTIVITY FEATURES

## »ENGINE

»The Komatsu SAA6D107E-1 engine delivers 168 hp (125 kW) at 2,200 rpm. The engine power, together with the new features of the D61EX-23M0, ensures efficient fuel consumption, making it ideal for leveling and rolling operations.

»The engine is turbocharged and features direct fuel injection and air-to-air after cooling to ensure maximum power with minimum consumption.

»To minimize noise and vibration, the engine is mounted to the main frame with rubber cushions.



## »Hydraulically-driven cooling fan

»Fan rotation is automatically controlled depending on coolant and hydraulic oil temperature, saving fuel consumption and providing great productivity with a quiet operating environment.

## WORK EQUIPMENT

### »Large capacity blade

»Its high productivity is also due to the blade capacity of 3.8 m<sup>3</sup> (power angle tilt dozer). To increase its durability, high resistance steel was added to the traction on the front and side of the blade.

## UNDERCARRIAGE

### »Undercarriage with long tracks and low center of gravity

»The Komatsu design offers excellent stability and leveling ability. Thanks to the use of oil seals created for large tractors, the seal life is greater.

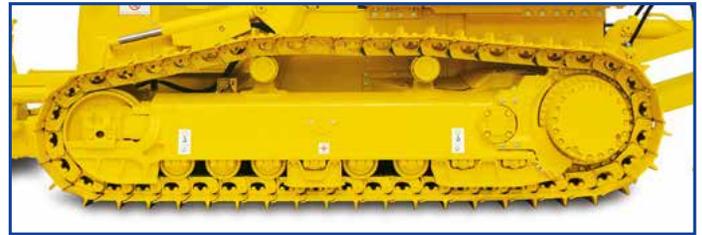


Image model may include optional equipment.

### »High efficiency fuel filter

»The new high efficiency fuel filter improves the reliability of the fuel system. Since it is double type, it has twice the capacity.



### »New HST technology

»The D61EX-23M0 incorporates new engine and hydrostatic transmission pump control technology to improve operational efficiency and reduce fuel consumption to levels lower than a conventional HST control system. Since it has two operation modes: P (power) and E (economy) (Komatsu exclusive feature), fuel consumption is reduced by up to 10% when using the economy mode (depending on work condition requirements) and even 20% in light load operations, compared to the previous model.

»The new HST transmission allows sharp turns in various working conditions, even under load. The counter rotation is available with minimum turning radius, providing excellent maneuverability in narrow places.

### »Variable mode and new customizable quick shift mode

»The D61EX-23M0 crawler dozer offers two gearshift modes: variable and the new customizable quick shift. Variable shift mode provides 20 gradual speed settings for the operator, while the new customizable quick shift mode provides 3 speed settings; all can be selected on the monitor to obtain the appropriate speed for different operator preferences.

### »Single pedal (Decelerator/Brake pedal) to control speed during operations

»Machine operation becomes simpler, since braking function has been integrated into decelerator pedal. Machine travel speed including/excluding engine speed can be controlled by using only one pedal. Pedal operation function can be changed using the mode selector switch.



### »Decelerator mode

»The pedal can lower the engine rpm and vehicle travel speed. Usually it can be used for all applications.

### »Braking mode

»The pedal can decelerate vehicle travel speed, keeping high engine rpm. This mode can be useful to maintain work equipment controllability and force, even during braking.

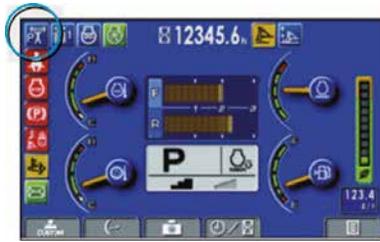


Image model may include optional equipment.

# WORKING ENVIRONMENT

## »Selectable working mode

»Working mode E is used for general dozing applications, at an appropriate speed and power, while reducing fuel consumption and CO<sup>2</sup> emissions.



»Working mode P is designed for operations that require more power and maximum production. The working mode is easily switched on the monitor panel, depending on the work at hand.

## •E mode (economy mode)

»With E mode, the engine outputs enough power to perform most general dozing applications without delivering unnecessary power. This mode allows for energy-saving operations and is suitable for applications that do not require much power such as leveling, downhill dozing and light-load work.

## •P mode (power mode)

»With P mode, the engine outputs its full power, allowing the machine to perform large production, heavy-load, or uphill work.

## OTHER FEATURES

### »Power angle tilt (PAT) dozer with adjustable pitch

»A power angle tilt dozer blade with highly durable box-structure frame is available for the EX machines. The hydraulic blade tilt and angle functions and manually adjustable blade pitch increase versatility and productivity in a variety of applications. This PAT dozer assembly is tested with the most demanding standards.



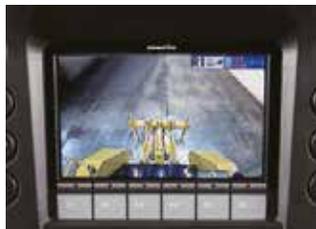
### »Secondary engine shutdown switch

»A new secondary switch has been added, next to the front console, to shut down the engine.



### »Rear view monitoring system

»On the large LCD color monitor, the operator can view the areas directly behind the machine through one camera. This camera can be synchronized with reverse travel operations.



### »ECO guidance

»In order to promote operation optimization, the following 4 recommendations are displayed to improve fuel saving operations:



1. Avoid excessive engine idling.
2. Use economy mode to save fuel.
3. Avoid hydraulic relief pressure.
4. Avoid overload.

»The operator can access the ECO guidance menu to check the operation records, Eco guidance records, and average fuel consumption logs.



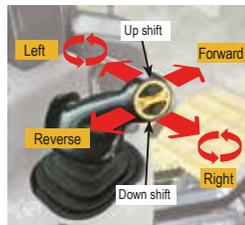
### »New integrated ROPS cab

»The Roll-Over Protective Structure ROPS is integrated to the new cab design, which is wider, deeper and taller. High rigidity and superb sealing performance greatly reduce noise and vibration perceived by the operator and minimize the entry of dust into the cab. Larger glass area improves visibility of the blade, sides, and rear of the machine. The cab meets ROPS and FOPS Level 2 standards.



### »Palm command control system (PCCS)

»Palm command travel joystick provides the operator with a relaxed posture and an extremely precise control. Transmission shifting is simplified with thumb push buttons.



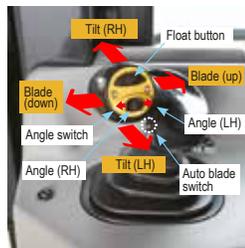
### »Air suspension seat

»The seat has several adjustment levels so that different operators can adjust it according to their convenience.



### »Electronic controlled hydraulic system (EPC)

»The blade control lever uses an EPC valve and joystick, similar to the travel control joystick. EPC control combined with the highly reliable Komatsu hydraulic system enables an extremely precise control. A switch is used to adjust the angle of the PAT blade. Additionally, the set includes a button to activate float function.



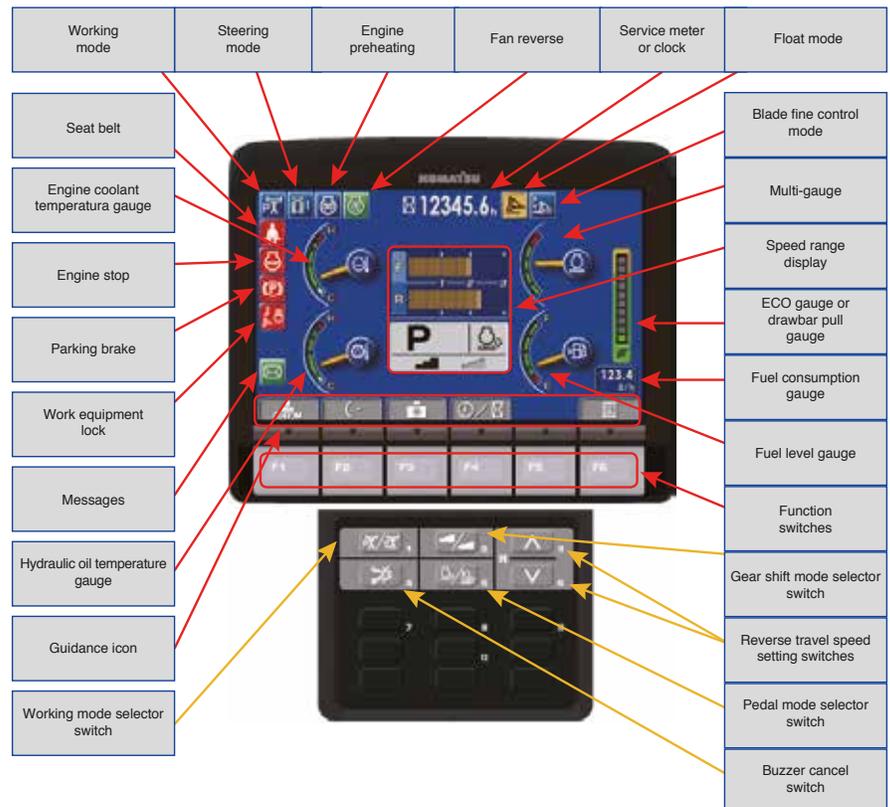
### »Auxiliary input plug (12 V x 2)

»By connecting an auxiliary device to this plug input, the operator can hear warning sounds through the speakers installed in the cab.



### »Large multilingual LCD color monitor

»A large user-friendly color monitor allows accurate and smooth work. Excellent screen visibility is achieved by the use of a TFT liquid crystal display that can easily be read from various angles and lighting conditions. In addition, the monitor has easy-to-use buttons and function keys that facilitate multi-function operations. Data can be displayed in different languages which can be adjusted locally.



# MAINTENANCE & DURABILITY FEATURES

»Performing preventive maintenance is the best way to ensure that your equipment has a long life. That's why Komatsu has designed the D61EX-23M0 with conveniently located maintenance points to make necessary inspections and maintenance quick and easy.

## »Hydraulically-driven "Swing-up" fan

»The D61EX-23M0 crawler dozer uses a "Swing-up" fan with a gas strut-assisted lift locking system to provide easy access to the radiator (side-by-side), oil cooler, and air cooler. The articulated feature allows easy access to the cooling core. The fan can also operate in "cleaning" mode, where it rotates in the reverse direction and helps to clear off objects in front of the cooling areas.



## »Daily checks

»All daily checks can be performed efficiently from the left side of the machine.



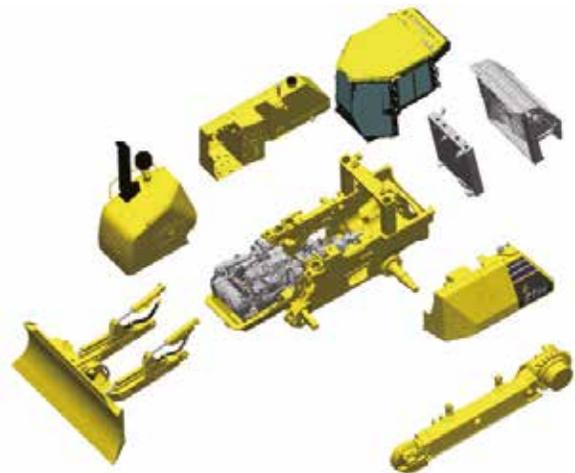
## »Self-adjusting idler support

»The self-adjusting idler support provides constant and even tension on idler guide plates, reducing noise and vibration and increasing undercarriage life.



## »Modular design

»One of the design goals in developing the D61EX-23M0 was to manufacture a more durable machine. This was achieved by reducing component complexity and using a strong modular design for increased serviceability and durability. Steel castings reduce the number of welds, improving rigidity and strength.



# SPECIFICATIONS



## ENGINE

MODEL	Komatsu SAA6D107E-1.	
TYPE	4-cycle, water-cooled, direct injection.	
NUMBER OF CYLINDERS	6.	
ASPIRATION	Turbocharged, air-to-air aftercooled.	
BORE X STROKE	<b>107 mm x 124 mm.</b>	
PISTON DISPLACEMENT	<b>6.69 L.</b>	
GOVERNOR	All-speed, electronic.	
HORSEPOWER		
SAE J1995	Gross <b>127 kW</b> (170 hp).	
(ISO 14396)	<b>126 kW</b> (169 hp).	
ISO 9249/SAE J 1349*	Net <b>125 kW</b> (168 hp).	
RATED RPM	2,200 rpm.	
FAN DRIVE TYPE	Hydraulic.	
LUBRICATION SYSTEM		
METHOD	Gear pump, forced lubrication.	
FILTER	Full-flow.	
U.S. EPA Tier 3 emissions certified.		

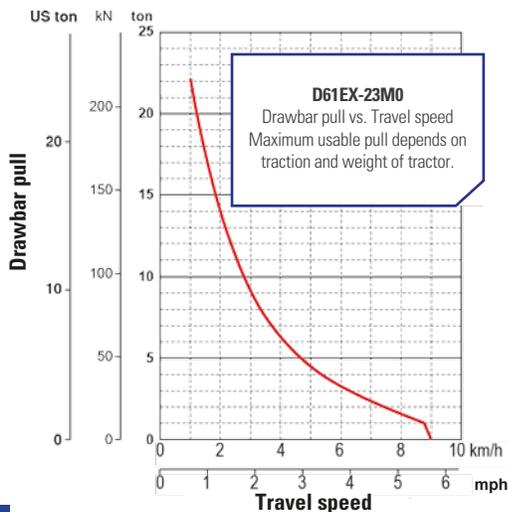


## HYDROSTATIC TRANSMISSION

Dual-path, hydrostatic transmission provides several speed options from 0 to 9 km/h. The variable capacity travel motors allow the operator to select the optimum speed to match specific jobs. It also has a travel control lock lever and neutral switch.

Travel speed (quick shift mode)*	Forward	Reverse
<b>1st</b>	<b>0 - 3.4 km/h</b>	<b>0 - 4.1 km/h</b>
<b>2nd</b>	<b>0 - 5.6 km/h</b>	<b>0 - 6.5 km/h</b>
<b>3rd</b>	<b>0 - 9.0 km/h</b>	<b>0 - 9.0 km/h</b>
Travel speed (variable shift mode)*	Forward	Reverse
	<b>0 - 9.0 km/h</b>	<b>0 - 9.0 km/h</b>

\*Quick shift speeds can be adjusted in the monitor.



## FINAL DRIVES

In-shoe mounted axial piston type travel motors with integrated two-stage planetary gear reduction. Compact in-shoe mount reduces risk of damage by debris. Bolt-on sprocket for easy replacement.



## STEERING SYSTEM

PCCS joystick control for all directional movements. Pushing the joystick forward resulting in forward machine travel, while pulling it back word reverses the machine. Simply tilt the joystick to the left or right to make a turn.

MINIMUM TURNING RADIUS*	D61EX-23M0	<b>2.1 m</b>
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\*According to the measurement of the track marks on the ground.



## UNDERCARRIAGE

SUSPENSION	Oscillating equalizer bar and pivot shaf.
TRACK FRAME	Monocoque, large section, durable construction
ROLLERS AND IDLERS	Lubricated track rollers.
LUBRICATED TRACKS	Track tension is easily adjusted by using a grease pump.
TRACK SHOES	Lubricated shoes. Unique seals prevent the entry of foreign abrasive materials into the pin and bushing assemblies, which extends the service life of the entire undercarriage. Track tension is easily adjusted by using a grease pump.

	<b>D61EX-23M0</b>
Number of track rollers (each side)	<b>8</b>
Type of shoes (standard)	<b>Single grouser</b>
Number of shoes (each side)	<b>46</b>
Grouser height	<b>57.5 cm</b>
Shoe width (standard)	<b>600 mm</b>
Ground contact area	<b>37,980 cm<sup>2</sup></b>
Ground pressure (with dozer and ROPS cab)	<b>50.4 kPa 0.51 kgf/cm<sup>2</sup></b>
Track gauge	<b>1,900 mm</b>
Length of track on ground	<b>3,165 mm</b>



## SERVICE REFILL CAPACITIES

COOLANT	<b>40 L</b>
FUEL TANK	<b>372 L</b>
ENGINE	<b>27 L</b>
HYDRAULIC TANK	<b>101 L</b>
FINAL DRIVE (EACH SIDE)	<b>8.1 L</b>



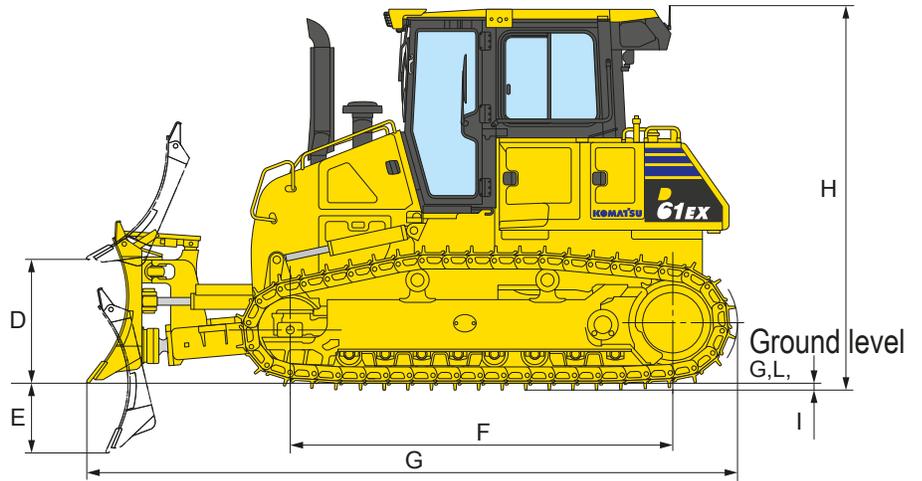
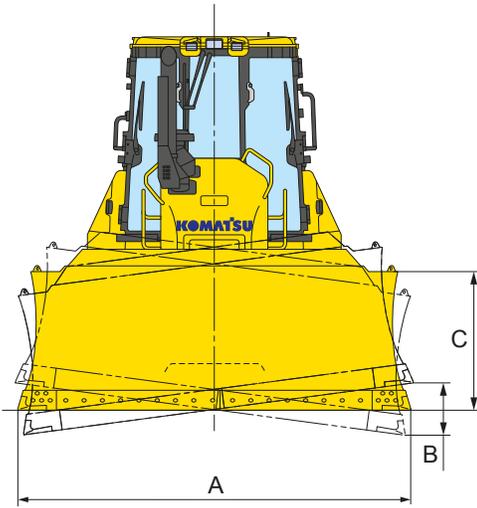
## OPERATING WEIGHT

Including power angle tilt dozer, ROPS cab, operator, standard equipment, rated capacity of lubricant, hydraulic control unit, coolant, full fuel tank and rear ripper.

D61EX-23M0	<b>19,770 kg</b>
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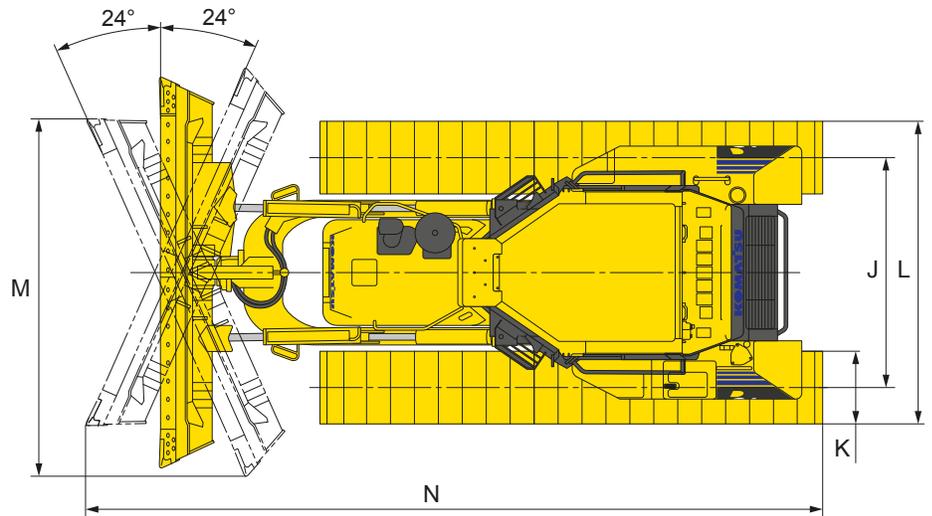


## DIMENSIONS



D61EX-23M0	
A	3,860 mm
B	535 mm
C	1,155 mm
D	1,025 mm
E	580 mm
F	3,165 mm
G	5,480 mm
H	3,180 mm
I	57.5 mm
J	1,900 mm
K	600 mm
L	2,500 mm
M	3,530 mm
N	6,220 mm

Ground clearance 390 mm





## HYDRAULIC SYSTEM

Closed-center load sensing system (CLSS) designed for precise and efficient control, even in simultaneous operations.

### Hydraulic control unit:

All spool control valves are mounted on the outside of the hydraulic tank. Piston-type hydraulic pump with capacity (discharge flow) of 171 ltr/min at rated engine rpm.

RELIEF VALVE SETTING 27.4 Mpa 280 kg/cm<sup>2</sup>.  
HYDRAULIC CYLINDERS Double-acting, piston type.

	Number of cylinders	Bore
Blade lift	2	100 mm
Blade tilt	1	120 mm
Blade angle	2	110 mm

### Hydraulic oil capacity (refill):

POWER ANGLE TILT DOZER 101 L

### Control valves:

3-spool control valve for power angle tilt dozer.

#### POSITIONS:

BLADE LIFT Raise, hold, lower, and float.  
BLADE TILT Right, hold, and left.  
BLADE ANGLE Right, hold, and left.

### Additional control valve required for scarifier

#### POSITIONS:

SCARIFIER LIFT Raise, hold, and lower.

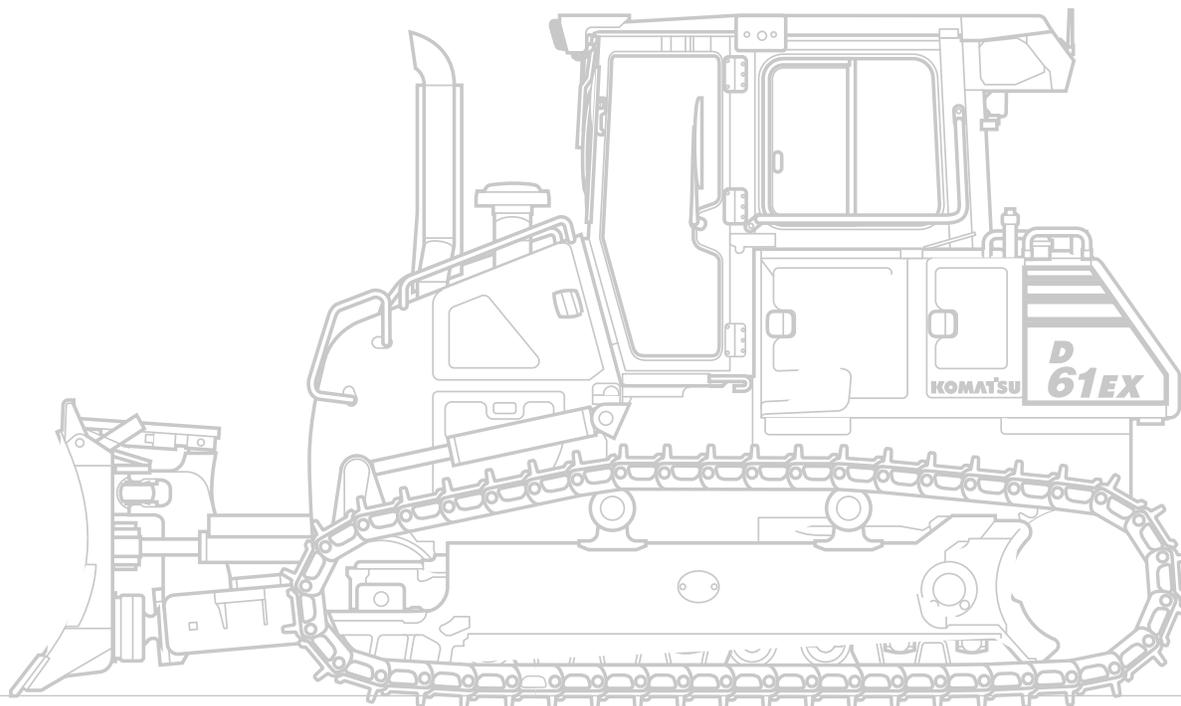


## BLADE EQUIPMENT

Blade capacities are based on the recommendations of SAE J1265.

High tensile strength steel is used in blades to provide greater durability and strength to construction equipment.

D61EX-23M0	Overall length with blade (mm)	Blade capacity (m <sup>3</sup> )	Blade width x height	Max. lift above ground (mm)	Max. digging ground (mm)	Max. tilt adjustment (mm)
Dozer	5,480	3.8	3,860 x 1,155	1,025	580	515





## STANDARD EQUIPMENT FOR BASE MACHINE

- »Air cleaner, double element with service indicator.
- »Alternator, 60 A/24 V.
- »Backup alarm.
- »Batteries, 170 Ah 12 V x 2.
- »Battery disconnect switch.
- »Blade lift cylinders.
- »Color monitor, LCD.
- »Decelerator pedal (single pedal).
- »Engine hood.
- »Intake pipe with precleaner.
- »Engine, swing open side cover.
- »Engine shutdown secondary switch.
- »Front pull hook.
- »High mount footrests.
- »Horn, warning buzzer.
- »Hydraulic driven radiator cooling fan with reverse clean mode.
- »KOMTRAX® Level 4.
- »Filler caps locks and covers.
- »Muffler with curved exhaust pipe.
- »Radiator mask, heavy-duty hinge.
- »Radiator reserve tank.
- »ROPS cab\*.
- »Air conditioning.
- »Cab accessories
  - 12 V auxiliary plug (2 ports).
  - Cup holder.
  - Rearview mirror.
  - AM/FM radio w/remote AUX plug (3.5 mm).
- »Work lights
  - 3 front, cab mounted.
  - 2 rear, cab mounted.
- »Seat, air suspension, fabric.
- »Seat belt, 78 mm, retractable.
- »Seat belt indicator.
- »Sealed electrical connectors.
- »Side by side rear mounted cooling system.
- »Starting motor, 5.5 kW/24 V.
- »Hydrostatic steering system.
- »Track roller guards, center and end sections.
- »Single grouser shoe, 600 mm.
- »Transmission with variable and customizable Quickshift.
- »Hydrostatic transmission.
- »Reinforced underguards
  - Engine.
  - Transmission.
- »Water separator.
- »PAT dozer 3.8 m3 (SAE).

The cab meets ROPS and FOPS level 2 standards.



## OPTIONAL EQUIPMENT

- »Enhanced provision for Topcon.
- »Drawbar, long type.
- »Hydraulics for rear equipment.
- »Rear view monitoring (1 camera).
- »Track roller guard, full length.

### Multi-shank ripper

WEIGHT	<b>1,757 kg</b>
BEAM LENGTH	<b>2,170 mm</b>
MAXIMUM LIFT ABOVE GROUND	<b>560 mm</b>
MAXIMUM DIGGING DEPTH	<b>665 mm</b>



**Optional equipment may not be available in your country.  
Please contact your Distributor for further information.**



# SATELLITE MONITORING SYSTEM

KOMTRAX is a revolutionary tracking system designed to save time and money. Nowadays, the equipment can be tracked anytime and anywhere. This valuable data, received via the KOMTRAX website, can be used to optimize planning of the movements and performance of the equipment.

## FEATURES

### » LOCATION

KOMTRAX uses a satellite positioning network to inform the location of the equipment.

### » GEOFENCE

In partnership with their Komatsu Distributor, owners can create virtual fences (Geo) to receive alerts when the equipment enters or leaves the designated range for operations.

### » SERVICE METER READING

Daily report of the equipment's working hours, which allows planning maintenance and replacement of components.

### » KOMTRAX OPERATION MAPS

In the operation maps you can check the times of the day when the equipment is in operation and if the workers are

performing their duties in the stipulated times.

### » FUEL MEASUREMENT LEVEL

Shows the amount of fuel at the end of the working day.

### » WATER TEMPERATURE DAILY RECORD

Constant record of the increase of engine water temperature with a daily report at the end of the day.

### » CAUTIONS

If a light turns on in the cab of the equipment it indicates that a problem occurs. From the website of the application you can review the reason for the problem, the time it occurred and a record number will be generated.

### » ABNORMALITY CODES

Abnormality codes are transmitted to the Komatsu Distributor for troubleshooting before technicians arrive at the workplace. An email notification is also sent with the code of what happened.

### » NOTICE OF MAINTENANCE REPLACEMENT

The system generates alerts to inform that the equipment requires change of elements like filters and oil.

### » EQUIPMENT KEY HOURS

Detailed information on key equipment hours such as excavation, moving, digging, alleviating and elevation. This can help to monitor and compare equipment performance, in addition to working hours and idle times.

# KOMTRAX



## FEATURES

### » **LOADING FREQUENCY**

Information on the load factor of the equipment to know if it is performing a light, medium or heavy work.

### » **ANTI-THEFT ENGINE LOCK**

KOMTRAX has a system to lock and unlock the motor of the equipment, which will allow the operation only on preset days, hours and areas.

### » **FUEL CONSUMPTION**

On new Komatsu equipment, you can get the actual status of the fuel gallons consumed, besides an average of the fuel spent per hour during the period of operation.

### » **MONTHLY AND ANNUAL DATA REPORTS**

KOMTRAX generates summaries of all critical system data to help with analysis of fleet utilization, equipment scheduling, future equipment purchases, labor costs, etc.

**Check with your Komatsu dealer for the information available for your model and service availability in your country.**



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