

KOMATSU®

NET HORSEPOWER
97 kW **130 HP** @ 2200 rpm

OPERATING WEIGHT
D51EX-22: 12720 kg **28,043 lb**
D51PX-22: 13220 kg **29,145 lb**

D51EX-22 **D51PX-22** **With Hydrostatic Transmission (HST)** **and PLUS Undercarriage**

D
51

CRAWLER DOZER



Photos may include optional equipment

WALK-AROUND

All-around Visibility

- Super-slant nose design
- Cab-forward design
- Integrated ROPS/FOPS (Level 2)

Increased Productivity

- Highest HP in its class
- Electronically-controlled hydraulically-driven fan
- Oscillating track frame with in-shoe final drive
- High capacity Power Angle Tilt dozer blade

Easy Operation/Increased Operator Comfort

- Hydrostatic Transmission (HST) with electronic control
- Palm Command Control System (PCCS)
- New cab damper mounting system
- Large and quiet pressurized cab

Improved Durability

- Heavy-plate steel used throughout
- Dozer frame with full steel castings
- Modular design
- Parallel Link Undercarriage System (PLUS)

Easy Maintenance

- Electronic monitor panel with on-board diagnostics
- Rear-mount radiator with swing-up hydraulically-driven fan
- Ground-level daily service checks
- KOMTRAX®



KOMTRAX®

KOMTRAX equipped machines can send location, SMR and operation maps to a secure website utilizing wireless technology. Machines also relay error codes, cautions, maintenance items, fuel levels, and much more.

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See what you have

Unrivaled Blade Visibility

The D51EX/PX-22 incorporates Komatsu's **super-slant nose** design. Komatsu's innovative design provides excellent blade visibility for improved machine control and increased efficiency and productivity.

ve been missing!



OPERATOR COMFORT

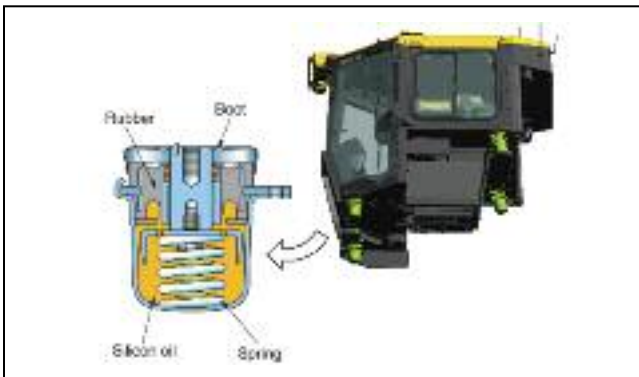


HST with Electronic Control

The D51 is equipped with a Komatsu-designed Hydrostatic Transmission (HST) that allows Quick-Shift or variable speed selection. The HST consists of dual-path closed-circuits with two variable displacement piston pumps and two variable displacement travel motors. Hydrostatic steering eliminates steering clutches and brakes, providing smooth powerful turns. Fully electronic control provides full automatic shifting and enables smooth control. Engine speed is controlled using an electronic fuel control dial.

Comfortable Ride with Cab Damper Mounting

The D51's cab mount uses a cab damper system that provides excellent shock and vibration absorption which conventional mounting systems are unable to match. The silicon oil filled cab damper mount helps to isolate the cab from the machine body, suppressing vibration and providing a quiet, comfortable operating environment.



Palm Command Proportional Pressure Control (PPC)

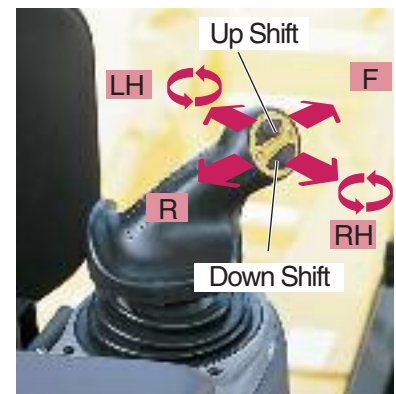
PPC-controlled palm command joystick provides blade control. Combined with the highly reliable Komatsu hydraulic system, precise control is the result.

Closed-center Load Sensing System (CLSS) Hydraulic System

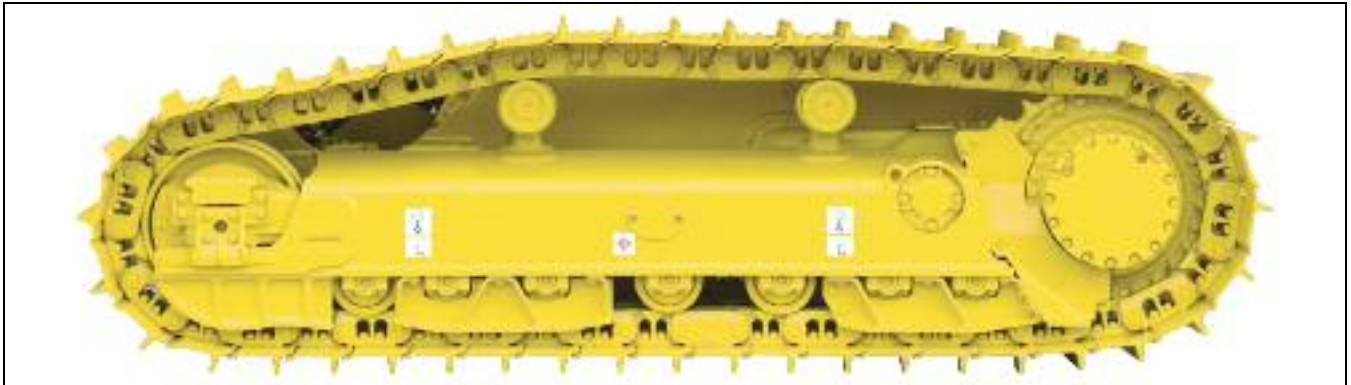
With CLSS hydraulics, blade lever stroke is directly proportional to blade speed, regardless of the load and travel speed. This results in superb fine controllability.

Palm Command Control System (PCCS)

The low-effort PCCS joystick controls all directional movements including machine travel speed as well as counter-rotation.



DURABILITY FEATURES



Heavy-duty Undercarriage

Large link, large bushing diameter, and wider sprocket teeth extend undercarriage life. The two-carrier roller design maintains track tension and alignment.

Parallel Link Undercarriage System (PLUS)

Komatsu's new Parallel Link Undercarriage System (PLUS) provides less downtime plus longer wear with up to 40% lower undercarriage maintenance costs. Rotating bushings eliminate the cost and downtime for bushing turns, and strengthened rollers and links increase wear life up to two times. With PLUS, individual links can be replaced and no costly track tools are required. The track frames accommodate both PLUS and conventional systems.

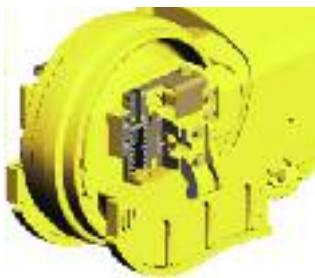


Monocoque Track Frame

Komatsu's monocoque track frame design using thicker box section material and fewer welded components provides increased rigidity and strength.

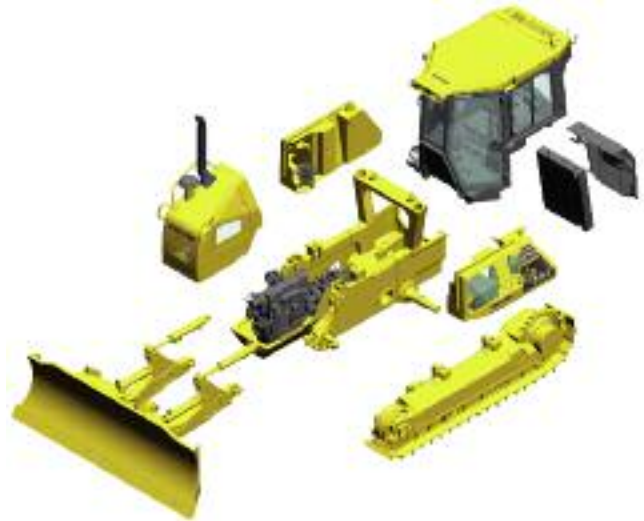
Self-adjusting Idler Support

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 behind the creation of the D51 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.



One-piece Nose Guard

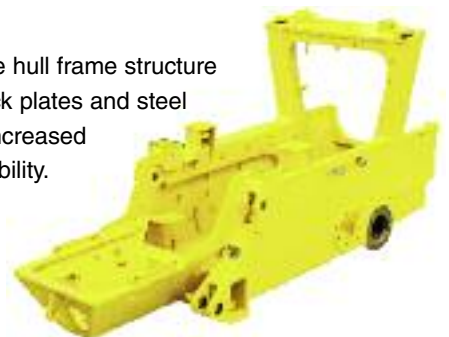
Simplified high-rigidity structure with thicker plates reduces vibration and noise.

Dozer Frame

Steel castings reduce the number of welds, improving C-frame rigidity and strength.

Mainframe

High-rigidity simple hull frame structure combined with thick plates and steel castings provide increased reliability and durability.



PRODUCTIVITY FEATURES



ecology & economy - technology 3

This engine is EPA Tier 3, EU Stage 3A and Japan emissions certified; "ecot3" - ecology and economy combine with Komatsu technology to create a high performance engine without sacrificing power or productivity.

Fuel Efficient Electronic Controlled Engine

The Komatsu SAA6D107E-1 engine delivers a net output of 97 kW **130 HP** at 2200 rpm. The powerful Komatsu engine incorporated into the D51-22 makes this dozer fuel efficient and the logical choice in both grading and dozing operations. The engine is turbocharged and features direct fuel injection and air-to-air aftercooling to maximize power, fuel efficiency, and emission compliance. To minimize noise and vibration, the engine is iso-mounted to the main frame.

Hydraulically-driven Cooling Fan

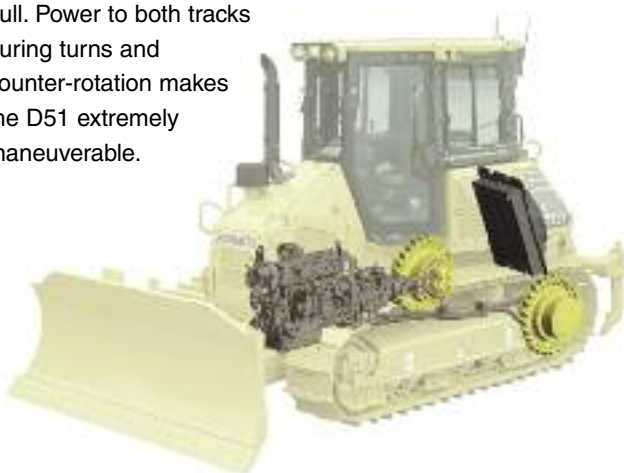
The engine cooling fan rotation speed and direction is electronically controlled. The fan rotation speed depends on engine coolant and hydraulic oil temperatures; the higher the temperature, the higher the fan speed. This system increases fuel efficiency, reduces operating noise levels, and requires less horsepower than a belt-driven fan. Additionally, cool ambient air is pulled in through perforations in the rear access doors adding to its cooling efficiency.

Long Track-on-ground and Oscillating Track Frame

Long track-on-ground and oscillating track frame improves machine stability and grading/dozing performance.

Hydrostatic Transmission (HST) Control System

The HST controller monitors engine output and work equipment/travel load. It controls HST pump and motor displacement to provide the optimum speed and drawbar pull. Power to both tracks during turns and counter-rotation makes the D51 extremely maneuverable.



Machine Control Systems

Automatic blade movements on a dozer can greatly improve dozing productivity and grading accuracy. They also allow operators to work faster and more efficiently. Machine control systems are the best way to automate blade movements. Depending on the control system used, blade movement is operator controlled (indicate) or fully automated. As a result, even inexperienced operators work much faster and deliver a high-quality final graded area. All the information from the laser or GPS systems is constantly available on an in-cab display, clearly showing the slope and elevation. In addition, the calculated corrections to a laser reference or design model are sent directly to the blade's hydraulics.

Two different types of systems are available for Komatsu dozers.

- Two-dimensional (2D): allow creation of flat areas, possibly combined with a slope depending on the configuration. These systems are based on one or two laser signal receivers and/or a slope sensor installed on the dozer blade.
- Three-dimensional (3D): allow any complicated landscape design to be made. This requires GPS receivers, and can be extended with a laser zone system for millimeter accuracy.

MAINTENANCE FEATURES

Hydraulically-driven Swing-up Fan

The D51-22 utilizes a swing-up fan with a gas strut-assisted lift locking system to provide easy access to the (side-by-side) radiator, oil cooler, and charge air cooler. The swing-up feature makes it easier to access cooling cores. The hydraulic fan has a “cleaning” mode. The fan rotates in the reverse direction and helps to clear off objects in front of the cooling areas. The fan is protected by thick steel louvers and an additional fan screen for added durability.



New Monitor with Self-diagnostic Function

The monitor system provides critical information about the machine. It provides operating condition status and notifies the operator with a lamp and buzzer when an abnormality occurs. In addition, fault codes are indicated to aid troubleshooting and help reduce machine downtime. Service reminders for fluids and filters are also indicated. KOMTRAX adds a valuable dimension to troubleshooting and maintenance.



Daily Checks

All daily checks can be performed efficiently at ground level.



Remote Grease Points

Remote grease points facilitate lubrication of the C-frame pivots, equalizer center pins, and angle cylinder bearing.

Segmented Sprocket Teeth

This design reduces servicing time as compared to solid sprocket designs. Each of the nine bolt-on segments can be replaced without splitting the track.

Adjustment-free Parking Disc Brake

An adjustment-free spring-applied hydraulic-release wet parking brake is located in each final drive. Dynamic HST braking is used until the machine stops moving, then the parking brake engages, minimizing wear.

Easy Engine Oil Drain

Changing the engine oil is easy with a strategically mounted access cover. There is no need to crawl under the machine to drain the engine oil. An ecology drain and hose is provided to minimize spillage.

SPECIFICATIONS



ENGINE

Model Komatsu SAA6D107E-1*
 Type 4-cycle, water-cooled, direct injection
 Aspiration Turbocharged, air-to-air aftercooled
 Number of cylinders 6
 Bore x stroke 107 mm x 124 mm **4.21" x 4.88"**
 Piston displacement 6.69 ltr **408 in³**
 Governor All-speed, electronic
 Horsepower
 SAE J1995 Gross 99 kW **133 HP**
 ISO 9249 / SAE J1349 Net 97 kW **130 HP**
 Hydraulic fan at maximum speed Net 90 kW **120 HP**
 Rated rpm 2200 rpm
 Fan drive type Hydraulic (reversible)
 Lubrication system
 Method Gear pump, force lubrication
 Filter Full-flow
 *EPA Tier 3 emissions certified

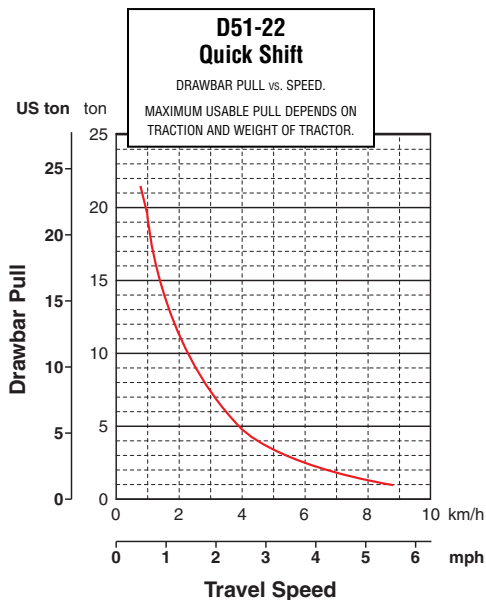


HYDROSTATIC TRANSMISSION

Dual-path, hydrostatic transmission provides infinite speed changes up to 9.0 km/h **5.6 mph**. The variable capacity travel motors allow the operator to select the optimum speed to match specific jobs. Travel control lock lever and neutral switch.

Travel speed (quick shift mode)	Forward	Reverse
1st	0-3.4 km/h 0-2.1 mph	0-4.1 km/h 0-2.5 mph
2nd	0-5.6 km/h 0-3.5 mph	0-6.5 km/h 0-4.0 mph
3rd	0-9.0 km/h 0-5.6 mph	0-9.0 km/h 0-5.6 mph

Travel speed (variable mode)	Forward	Reverse
	0-9.0 km/h 0-5.6 mph	0-9.0 km/h 0-5.6 mph



FINAL DRIVE

Two-stage planetary gear integrated into axial piston travel motors. Compact in-shoe mount reduces risk of damage by debris. Bolt-on sprocket segments for easy replacement.



STEERING

Palm Command Control System (PCCS) joystick control for all directional movements. Pushing the joystick forward results in forward machine travel, while pulling it rearward reverses the machine. Simply tilt the joystick to the left or right to make a turn. Tilting the joystick fully to the left or right activates counter-rotation. Hydrostatic Transmission (HST) eliminates steering clutches and brakes, providing smooth powerful turns. Fully electronic control enables smooth control. The PCCS utilizes shift buttons to increase and decrease speed.

Minimum turning radius:
 D51EX-22 2.39 m **7'10"**
 D51PX-22 2.62 m **8'7"**

As measured by track marks on the ground at pivot turn.



UNDERCARRIAGE

Suspension Oscillating equalizer bar and pivot shaft
 Track roller frame Monocoque, large section, durable construction
 Rollers and idlers Lubricated track rollers

Lubricated tracks

Unique seals help prevent entry of foreign abrasive material into pin to bushing clearances for long service life.

Parallel Link Undercarriage System (PLUS)

Increased component size and strength, and rotating bushing design provide extended wear life and lower maintenance.

	D51EX-22	D51PX-22
Number of track rollers (each side)	7	7
Type of shoes (standard)	Single grouser PLUS	Single grouser PLUS
Number of shoes (each side)	44	44
Grouser height	55 mm 2.2"	55 mm 2.2"
Shoe width (standard)	510 mm 20"	710 mm 28"
Ground contact area	28000 cm ² 4,340 in²	38980 cm ² 6,042 in²
Ground pressure (with dozer, ROPS cab)	44.6 kPa 0.45 kgf/cm ² 6.46 psi	33.3 kPa 0.34 kgf/cm ² 4.82 psi
Track gauge	1790 mm 5'10"	1880 mm 6'2"
Length of track on ground	2736 mm 9'0"	2736 mm 9'0"



COOLANT AND LUBRICANT CAPACITY (REFILLING)

Coolant 35 ltr **9.3 U.S. gal**
 Fuel tank 270 ltr **71.3 U.S. gal**
 Engine oil 20 ltr **5.3 U.S. gal**
 Hydraulic tank 63 ltr **16.6 U.S. gal**
 Final drive (each side) 4.0 ltr **1.1 U.S. gal**



OPERATING WEIGHT (APPROXIMATE)

Tractor weight:

Including ROPS cab, rated capacity of lubricant, coolant, full fuel tank, operator, and standard equipment.

D51EX-22 11220 kg **24,736 lb**
 D51PX-22 11620 kg **25,618 lb**

Operating weight:

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

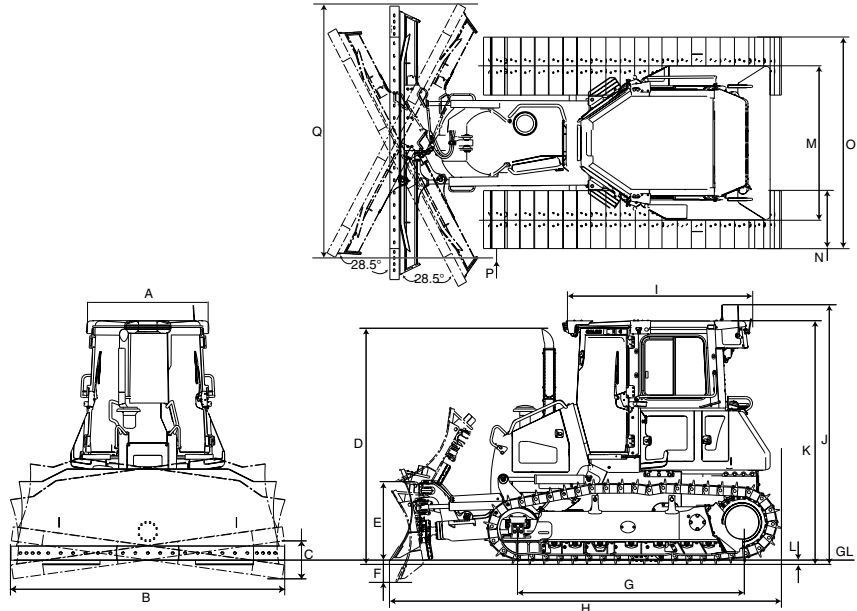
D51EX-22 12720 kg **28,043 lb**
 D51PX-22 13220 kg **29,145 lb**



DIMENSIONS

	D51EX-22	D51PX-22
A	1280 mm 4'2"	1280 mm 4'2"
B	3045 mm 10'0"	3350 mm 11'0"
B*	3350 mm 11'0"	—
C	459 mm 1'6"	505 mm 1'8"
C*	505 mm 1'8"	—
D	2890 mm 9'6"	2890 mm 9'6"
E	1107 mm 3'8"	1107 mm 3'8"
F	456 mm 1'6"	456 mm 1'6"
G	2736 mm 9'0"	2736 mm 9'0"
H	4800 mm 15'9"	4800 mm 15'9"
I	2245 mm 7'4"	2245 mm 7'4"
J	3182 mm 10'5"	3182 mm 10'5"
K	3002 mm 9'10"	3002 mm 9'10"
L	55 mm 2.2"	55 mm 2.2"
M	1790 mm 5'10"	1880 mm 6'2"
N	510 mm 1'8"	710 mm 2'4"
O	2300 mm 7'6"	2590 mm 8'6"
P	29 mm 1.14"	16 mm 0.63"
P*	161 mm 6.3"	—
Q	2725 mm 8'11"	2990 mm 9'10"
Q*	2990 mm 9'10"	—

*Wide blade for D51EX-22



Ground clearance 390 mm **15.4"**



HYDRAULIC SYSTEM

Closed-center Load Sensing System (CLSS) designed for precise and responsive control and for efficient simultaneous operation.

Hydraulic control unit:

All spool control valves externally mounted remote to the hydraulic tank. Piston-type hydraulic pump with capacity (discharge flow) of 99 ltr/min **26.2 U.S. gal/min** at rated engine rpm.

Relief valve setting 27.4 MPa, 280 kg/cm² **3,983 psi**

Hydraulic cylinders Double-acting, piston type

	Number of cylinders	Bore
Blade lift	2	90 mm 3.54"
Blade tilt	1	100 mm 3.94"
Blade angle	2	90 mm 3.54"

Hydraulic oil capacity (refilling):

Power angle tilt dozer. 63 ltr **16.6 U.S. gal**

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 ripper.

Positions:

- Ripper lift Raise, hold and lower



DOZER EQUIPMENT

Use of high tensile strength steel in moldboard for strengthened blade construction.

	Overall Length With Dozer	Blade Capacity (SAE)	Blade Width x Height	Maximum Lift Above Ground	Maximum Drop Below Ground	Maximum Tilt Adjustment	Blade Angle
D51EX-22 PAT Standard Blade	4800 mm 15'9"	2.7 m ³ 3.5 yd³	3045 mm x 1110 mm 10'0" x 3'8"	1107 mm 3'8"	456 mm 1'6"	459 mm 1'6"	28.5°
D51EX-22 PAT Wide Blade	4800 mm 15'9"	2.9 m ³ 3.8 yd³	3350 mm x 1110 mm 11'0" x 3'8"	1107 mm 3'8"	456 mm 1'6"	505 mm 1'8"	28.5°
D51PX-22 PAT Standard Blade	4800 mm 15'9"	2.9 m ³ 3.8 yd³	3350 mm x 1110 mm 11'0" x 3'8"	1107 mm 3'8"	456 mm 1'6"	505 mm 1'8"	28.5°



STANDARD EQUIPMENT FOR BASE MACHINE

ENGINE AND RELATED ITEMS

- Air cleaner, dry, double element type with caution lamp on monitor
- Decelerator pedal
- Engine, KOMATSU SAA6D107E-1, net output of 97 kW **130 HP** direct injection, turbocharged, air-to-air aftercooler, EPA Tier 3 emissions certified
- Exhaust pipe elbow
- Fan, hydraulic driven, electronic control, reversible
- Fuel pre-filter (10 micron) and fuel filter (2 micron)
- Grid heater
- Intake pipe with precleaner
- Water separator

ELECTRIC SYSTEM

- Alternator, 60 amp (24 V)
- Back-up alarm
- Batteries, large capacity 1000 CCA, 170Ah
- Starting motor, 5.5 kW

POWER TRAIN AND CONTROLS

- Brake pedal
- Counter rotation
- Electronically controlled Hydrostatic Transmission (HST) with Quick-shift and variable speed settings
- Palm Command Control System (PCCS) with electronic control for travel control
- Reverse speed presets

UNDERCARRIAGE

- Idler cushions
- Track frames
- Track roller guards, center and end section
- Sprockets, segmented type
- Track shoe assembly w/sealed and lubricated link assembly:
 - D51EX-22: 510 mm **20"** HD single grouser shoes PLUS
 - D51PX-22: 710 mm **28"** HD single grouser shoes PLUS

GUARDS AND COVERS

- Crankcase guard and underguard
- Engine hood and side panels
- ROPS/FOPS*
- Sprocket inner guard

OPERATOR ENVIRONMENT

- 12 amp (12V) power port (cab only)
- Cab seat, high back fabric, suspension type
- Seat, high back, cloth, suspension type
- Cigarette lighter (24 V, cab only)
- Cup holder, lunch box holder
- Electronic monitor panel with on-board diagnostics
- Foot rests, high mounted
- Horn
- Provision for radio (cab only)
- Rearview mirror
- Seat belt, 76 mm **3"** wide retractable

DOZER ASSEMBLY

- Power Angle Tilt dozer assembly, inside arms (EX: 3045 mm **10'** blade, PX: 3350 mm **11'** blade)

HYDRAULICS AND CONTROLS

- Accumulator for Proportional Pressure Control (PPC)
- Hydraulics for PAT dozer
- Palm Command Control System (PCCS) with Proportional Pressure Control (PPC) for blade control

VANDALISM PROTECTION

- Filler cap locks and cover locks

OTHER STANDARD EQUIPMENT

- Grease gun holder
- Hitch, standard type
- High altitude arrangement (no fuel adjustment up to 3000 m **9,843 ft**)
- KOMTRAX function Level 2+
- Lighting package - (3 front, 2 rear cab)
- Marks and plates, English
- Pullhook, front

* ROPS cab must be ordered for all machines. Cab FOPS Level 2. ROPS/FOPS meets all OSHA/MSHA standards and regulations criteria.

Dozer assembly and rear-mounted equipment are not included in base machine price.



OPTIONAL EQUIPMENT

TRACK SHOE ASSEMBLY WITH SEALED AND LUBRICATED LINK ASSEMBLY

- D51EX-22
 - 560 mm **22"** single grouser, PLUS
 - 510 mm **20"** single grouser, PLUS with center hole
 - 560 mm **22"** single grouser, PLUS with center hole
- D51PX-22
 - 720 mm **28"** single grouser, PLUS

DOZER ASSEMBLY

- D51EX-22 – 3350 mm **11'** blade

TRACK ROLLER GUARDS

- Track roller guards, segmented, full length

OPERATOR ENVIRONMENT

- Cab machine
 - Seat, air suspension type, fabric high back

REAR EQUIPMENT AND HYDRAULICS

- Forestry winch
- Long drawbar
- Ripper, multi-shank (D51EX-22 only)
- Rear, hydraulics
- Rescue/recovery winch

ROPS CAB EQUIPMENT

- ROPS cab (includes air conditioner with heater, defroster, pressurizer)
 - Optional radio, AM/FM, cassette

OPERATOR ENVIRONMENT

- Forestry guards for cab

MACHINE CONTROL SYSTEMS

- Topcon® Plug n Play
- Trimble® Ready

KOMATSU®