

D51EXi-22 D51PXi-22 Tier 3 Engine



PHOTOS MAY INCLUDE OPTIONAL EQUIPMENT



D51i-22 INTRODUCING THE D51i-22

Komatsu D51EX-22 With Typical Aftermarket Machine Control System



We've Made Great, Greater

Customer Driven Solutions, For Your Machine Control Needs

Introducing The Next Generation Of Machine Control

>> D51EXi-22 >> D51PXi-22

Innovative

Automated operation from rough dozing to finish grade.

Intelligent

New dozing mode, load control performance features.

Integrated

Standard factory installed integrated system.

No Cables

No coiled cables between machine and blade.

Photos may include optional equipment

No Climbing

GNSS antenna and mast removed from blade.

No Connections

No daily connections required between machine and blade.



NET HORSEPOWER 97 kW @ 2200 rpm 130 HP @ 2200 rpm **OPERATING WEIGHT** D51EXi-22 12420 kg **27,381 lb** D51PXi-22 13180 kg **29,057 lb** LADE CAPACITY

 Power Angle Tilt Dozer

 D51EXi-22
 2.7 m³ 3.5 yd³

 D51PXi-22
 2.9 m³ 3.8 yd³



INNOVATIVE. INTEGRATED. INTELLIGENT.

Standard Intelligent Machine Control

Standard factory installed integrated 3D GNSS intelligent machine control system.

Improved Machine Control

Up to 9% more efficient dozer operation than comparable aftermarket machine control systems in start to finish grading tests.

Factory Installed Machine Control Components

Machine control components are factory installed and designed as an integral part of the base machine for improved durability.

Komatsu Quality

Machine control components and system validated to Komatsu's rigorous quality & durability standards.

Industry Standard Compatibility

Machine control system makes use of common industry design data file norms and supports typical base station communication.

Simple Operator Interface

Simple touch screen control box with multi-color customizable display.

3D GNSS Machine Control Standard

All on-machine components standard including control box, GNSS receiver/ radio, GNSS antenna, and enhanced inertial measurement unit sensor.

Finish Grade Performance

Enhanced sensor package and intelligent logic provides for finish grade accuracy in an integrated system without traditional blade mounted sensors.

Stroke Sensing Hydraulic Cylinders

Robust stroke sensing hydraulic cylinders employee proven Komatsu sensor technologies for accurate finish grade performance.

Enhanced Inertial Measurement Unit (IMU+)

Chassis mounted enhanced inertial measurement unit (IMU+) and intelligent logic provides for finish grade accuracy without blade mounted sensors.

Cab Top GNSS Antenna

No blade mounted GPS antennas, cables to worry about damaging with cab top GNSS antenna.

Automatic Dozing From Start To Finish

Load control intelligence controls blade elevation to improve productivity and minimize track slip by adjusting blade load. 1.0' from grade or 0.1' from grade – you can run in auto mode.

Intelligent Dozing Mode Settings

Operators are able to select between 4 distinct machine control operating modes to optimize performance to the application whether cutting, spreading, or other.

Operator Selectable Load Settings

Machine control load settings can be adjusted between presets to tailor response to material conditions.



K@MTRAX[®]

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.

INTELLIGENT MACHINE CONTROL



Factory Integrated Sensor Package

Typical blade mounted components are replaced with factory installed cab top GNSS antenna, enhanced inertial measurement unit (IMU+), and stroke sensing hydraulic cylinders. Komatsu durability & quality with factory installation, integration.

Cab Top GNSS Antenna

No blade mounted GNSS antenna(s), cables to worry about damaging with cab top GNSS antenna. Reduced risk of theft due to low visibility as viewed from ground level.





Enhanced Inertial Measurement Unit (IMU+)

Chassis mounted enhanced inertial measurement unit (IMU+) and intelligent logic provides for finish grade accuracy without blade mounted sensors. Positional updates up to 100Hz.

Stroke Sensing Hydraulic Cylinders

Robust stroke sensing hydraulic cylinders employ proven Komatsu sensor technologies for accurate finish grade performance. Stroke sensing angle cylinder allows machine control system to know the angle of the blade.









Operator Selectable Load Settings

Machine control load settings can be adjusted between presets to tailor response to material conditions. From dry loose sandy soils to wet heavy clay materials, system performance can be targeted accordingly.

Improved Machine Control Efficiency

Up to 9% more efficient dozer operation than typical aftermarket machine control systems with Komatsu's intelligent machine control. This is on top of already large time savings that standard machine control offers over manual staking & grading.





As-Built Surface Track Mapping

Cab top GNSS antenna provides for accurate as-built surface data collection by measuring actual elevations as machine continuously tracks in operation. Progress can be measured in real time with operator selectable settings.

Standard Touch Screen Control Box

Factory installed and features simple, easy to use operator interface. Mounted high for excellent visibility, viewing angle is adjustable per operator preference.



PRODUCTIVITY & ECOLOGY FEATURES

This engine is EPA Tier 3, EU

Stage 3A and Japan emissions

D511-22

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 D51i-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.

ecology & economy-technology 3 certified; "ecot3" - ecology and

economy combine with Komatsu technology to create a

high performance engine without sacrificing power or

Long Track-on-ground and Oscillating Track Frame

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

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.

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.



WORKING ENVIRONMENT



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.



D51-22 representation shown

Electronic Controlled Hydraulic System (EPC) Blade Control Joystick

Blade control joystick uses the EPC valve and joystick. EPC control combined with the highly reliable Komatsu hydraulic system enables superb fine control. A switch is used to angle the PAT blade. A button to activate float is also provided.

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.

D51i-22 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 accomodate 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.

MAINTENANCE FEATURES

Hydraulically-driven Swing-up Fan

The D51i-22 utilizes a swing-up fan with a gas strut-assisted lift locking system to provide easy access to the (side-byside) radiator, oil cooler, and charge air cooler. The swingup 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.

KOMATSU PARTS & SERVICE SUPPORT



Komatsu Extended Coverage

- Extended Coverage can provide peace of mind by protecting customers from unplanned expenses that effect cash flow
- Purchasing extended coverage locks-in the cost of covered parts and labor for the coverage period and helps turn these into fixed costs





Komatsu Parts Support

- 24/7/365 to fulfill your parts needs
- 9 parts Distribution Centers strategically located across the U.S. and Canada
- Distributor network of more than 300 locations across U.S. and Canada to serve you
- Online part ordering through Komatsu eParts
- Remanufactured components with same-as-new warranties at a significant cost reduction



Komatsu Oil and Wear Analysis (KOWA)

- KOWA detects fuel dilution, coolant leaks, and measures wear metals
- Proactively maintain your equipment
- Maximize availability and performance
- Can identify potential problems before they lead to major repairs
- Reduce life cycle cost by extending component life

KOMTRAX EQUIPMENT MONITORING



- KOMTRAX is Komatsu's remote equipment monitoring and management system
- KOMTRAX continuously monitors and records machine health and operational data
- Information such as fuel consumption, utilization, and a detailed history aids in making repair or replacement decisions



- Know when your machines are running or idling and make decisions that will improve your fleet utilization
- Detailed movement records ensure you know when and where your equipment is moved
- Up to date records allow you to know when maintenance was done and help you plan for future maintenance needs



intelligent D51i-22

- KOMTRAX data can be accessed virtually anywhere through your computer, the web or your smart phone
- Automatic alerts keep fleet managers up to date on the latest machine notifications



- Knowledge is power make informed decisions to manage your fleet better
- Knowing your idle time and fuel consumption will help maximize your machine efficiency
- Take control of your equipment - any time, anywhere



 KOMTRAX is standard equipment on all Komatsu construction products











For construction and compact equipment.

For production and mining class machines.

SPECIFICATIONS



ENGINE

Model	Komatsu SAA6D10/E-1*
Туре	4-cycle, water-cooled, direct injection
Aspiration	Turbocharged, air-to-air aftercooled
Number of cylinders	
Bore x stroke	107 mm x 124 mm 4.21" x 4.88"
Piston displacement	6.69 ltr 408 in ³
Governor	All-speed, electronic
Horsepower	
SAE J1995	Gross 99 kW 133 HP
ISO 9249 / SAE J1349	9Net 97 kW 130 HP
Hydraulic fan at maxir	mum speed Net 90 kW 120 HP
Rated rpm	
Fan drive type	Hydraulic (reversible)
Lubrication system	
Method	Gear pump, force lubrication
Filter	
*EPA Tier 3 emissions certif	ied

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	





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 SYSTEM

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*	
D51EXi-22	2.39 m 7'10"
D51PXi-22	

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



Suspension	Oscillating equalizer bar and pivot shaft
Track roller frame	
	durable construction
Rollers and idlers	Lubricated track rollers
Lubricated tracks	event entry of foreign abrasive material into

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.

		D51EXi-22	D51PXi-22
Number of track rollers (each side	e)	7	7
Type of shoes (standard)		Single grouser PLUS	Single grouser PLUS
Number of shoes (each side)		44	44
Grouser height	mm in	55 2.2"	5.5 2.2"
Shoe width (standard)	mm in	560 22"	710 28"
Ground contact area	cm ² in ²	30643 4,752	38980 6,042
Ground pressure	kPa	39.7	33.2
(with dozer, ROPS cab)	kgf/cm ²	0.41	0.34
	psi	5.76	4.81
Track gauge	mm ft.in	1790 5'10"	1880 6'2"
Length of track on ground	mm ft.in	2736 9'0"	2736 9'0"





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 tank63 ltr	16.6 U.S. gal
Final drive (each side)4.0 ltr	1.1 U.S. gal

1	
20	

OPERATING WEIGHT

Tractor weight:	
Including ROPS cab, rated capacity of lu fuel tank, operator, and standard equipr	ubricant, coolant, full nent.
D51EXi-22	. 10920 kg 24,074 lb
D51PXi-22	. 11580 kg 25,530 lb
Operating weight:	
Including power angle tilt dozer, ROPS or standard equipment, rated capacity of lu and full fuel tank.	cab, operator, ubricant, coolant,
D51EXi-22 D51PXi-22	12420 kg 27,381 lb 13180 kg 29,057 lb



	D51EXi-22		D51PXi	-22
А	1280 mm	4'2"	1280 mm	4'2"
В	3045 mm	10'0"	3350 mm	11'0"
Β*	3350 mm	11'0"	_	
С	425 mm	1'5"	467 mm	1'6"
C^{*}	505 mm	1'8"	_	
D	2890 mm	9'6"	2890 mm	9'6"
Е	1010 mm	3'4"	1010 mm	3'4"
F	459 mm	1'6"	459 mm	1'6"
G	2736 mm	9'0"	2736 mm	9'0"
Н	4800 mm	15'9"	4800 mm	15'9"
T	2245 mm	7'4"	2245 mm	7'4"
J	3182 mm	10'5"	3182 mm	10'5"
Κ	3002 mm	9'10"	3002 mm	9'10"
L	55 mm	2.2"	55 mm	2.2"
Μ	1790 mm	5'10"	1880 mm	6'2"
Ν	560 mm	1'10"	710 mm	2'4"
0	2350 mm	7'9"	2590 mm	8'6"
Р	26 mm	1"	43 mm	2"
Ρ*	161 mm	6.3"	_	
Q	2859 mm	9'5"	3038 mm	10'0"
Q*	3038 mm	10'0"	_	
*Wide	blade for D51	FXi-22		



SPECIFICATIONS



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.

	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"

Blade capacities are based on the SAE recommended practice J1265. Use of high tensile strength steel in moldboard for strengthened blade construction.

	Overall Length With Dozer mm ft.in	Blade Capacity m³yd³	Blade Width x Height mm ft.in	Max. Lift Above Ground mm ft.in	Max. Drop Below Ground mm ft.in	Max. Tilt Adjustment mm ft.in	Blade Angle
D51EXi-22 PAT	4800	2.7	3045 x 1110	1107	456	459	00 59
Standard Blade	15'9"	3.5	10'0" x 3'8"	3'8"	1'6"	1'6"	20.0
D51EXi-22 PAT	4800	2.9	3350 x 1110	1107	456	505	00 50
Wide Blade	15'9"	3.8	11'0" x 3'8"	3'8"	1'6"	1'8"	20.0
D51PXi-22 PAT	4800	2.9	3350 x 1110	1107	456	505	00 E0
Standard Blade	15'9"	3.8	11'0" x 3'8"	3'8"	1'6"	1'8"	20.0

Hydraulic oil capacity (refill):

Power angle tilt dozer	63 ltr	16.6 U.S. ga
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Control valves:

3-spool control valve for Power Angle Tilt dozer

Positions:

Blade lift	Raise, hold, lower, a	and float
Blade tilt	Right, hold,	and left
Blade angle	Right, hold,	and left

Additional control valve required for ripper

Positions:

Ripper liftRaise, hold, and lower

EQUIPMENT



STANDARD EQUIPMENT FOR BASE MACHINE*

- Air cleaner, dry, double element type with caution lamp on monitor
- Decelerator pedal
- Fan, hydraulic driven, electronic control, reversible
- Water separator
- Alternator, 60 amp (24 V)
- Back-up alarm
- Batteries, large capacity 1000 CCA,170Ah
- Starting motor, 5.5 kW
- Brake pedal
- Electronically controlled Hydrostatic Transmission (HST) with Quick-shift and variable speed settings
- Track roller guards, center and end section

- Track shoe assembly w/sealed and lubricated Iink assembly:
 D51EXi-22: 560 mm 22" HD single grouser shoes PLUS
- D51PXi-22: 710 mm 28" HD single
- grouser shoes PLUS Crankcase guard and underguard
- ROPS/FOPS*
- Sprocket inner guard
- 12 amp (12V) power port (cab only)
- Seat, high back, cloth, suspension type
- Cigarette lighter (24 V, cab only)
- Cup holder
- Electronic monitor panel with on-board diagnostics
- Foot rests, high mounted

- Horn
- AM/FM radio
- Rearview mirror
- Power Angle Tilt dozer assembly, inside arms (EX: 3045 mm 10' blade, PX: 3350 mm 11' blade)

intelligent D51i-22

- Intelligent Machine Control
- Filler cap locks and cover locks
- KOMTRAX function Level 2+
- Lighting package (3 front, 2 rear cab)
- 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.



Drawbar, long type

- Track roller guard, full length
- Hitch Guarding

Multi-shank ripper (for D51EXi/PXi)

ALLIED MANUFACTURER'S ATTACHMENTS (SHIPPED LOOSE)

Hydraulic winch

Note: All comparisons and claims of improved performance made herein are made with respect to the prior Komatsu model unless otherwise specifically stated.

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AD12(Electronic View Only)

12/13 (EV-1)



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