

KOMATSU®

D51EXi-22 D51PXi-22 Tier 3 Engine

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3D GNSS MACHINE CONTROL

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

OPERATING WEIGHT
D51EXi-22 12420 kg 27,381 lb
D51PXi-22 13180 kg 29,057 lb

BLADE CAPACITY
3.5–3.8 yd³
2.7–2.9 m³



PHOTOS MAY INCLUDE OPTIONAL EQUIPMENT

intelligent™
MACHINE CONTROL

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

D51i-22

Introducing The Next Generation Of Machine Control

>> **D51EXi-22**

Innovative

Automated operation from
rough dozing to finish grade.

>> **D51PXi-22**

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**

BLADE 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 employ 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.

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.



INTELLIGENT MACHINE CONTROL



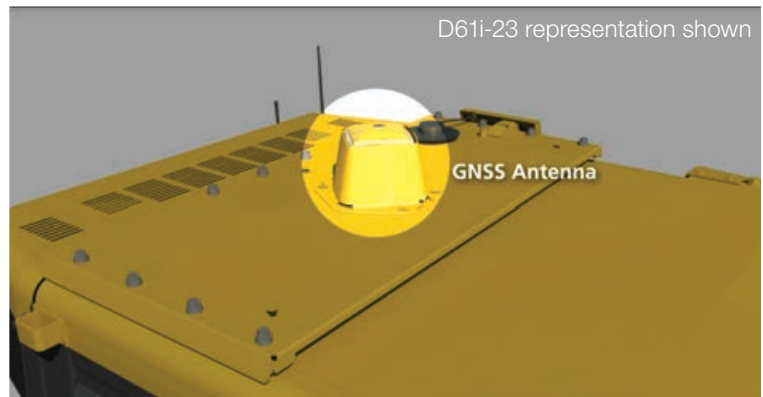
D61i-23 representation shown

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.



D61i-23 representation shown



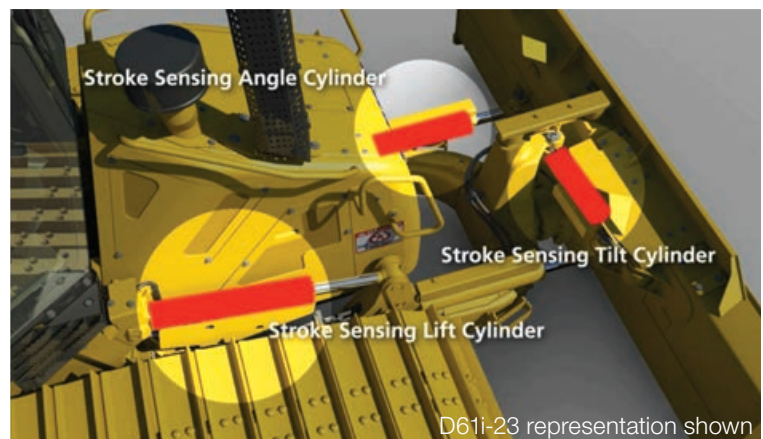
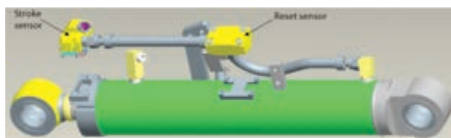
D61i-23 representation shown

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.



D61i-23 representation shown

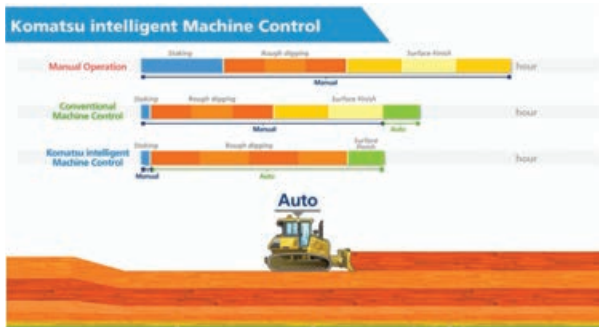


Operator Selectable Load Settings

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



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 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.

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



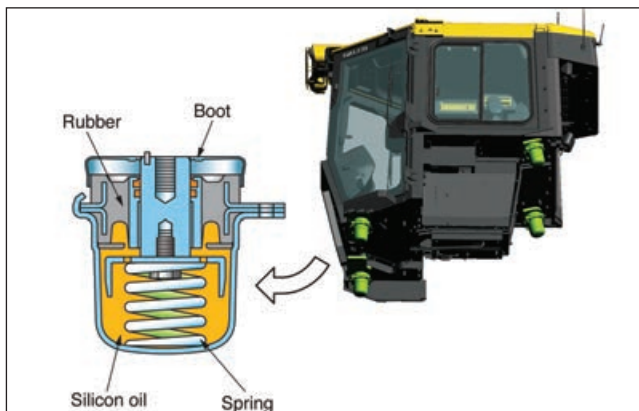
D51-22 representation shown

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.



Electronic Controlled Hydraulic System (EPC) Blade Control Joystick

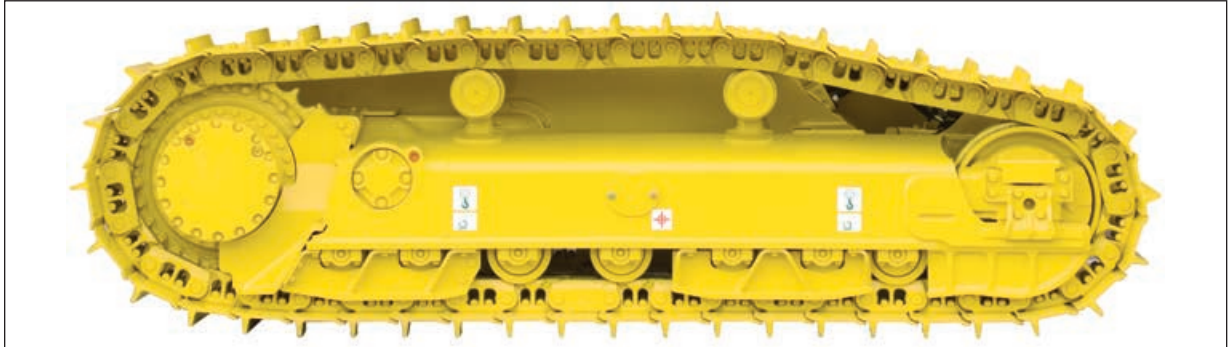
Blade control joystick uses the EPC valve and joystick. EPC control combined with the highly reliable Komatsu hydraulic system enables superb fine control. A switch is used to angle the PAT blade. A button to activate float is also provided.

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.



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.

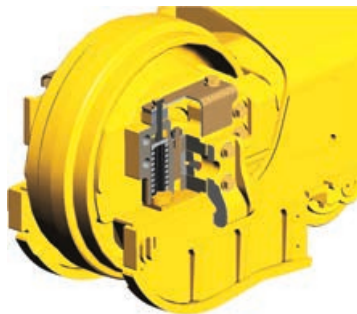


Monocoque Track Frame

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

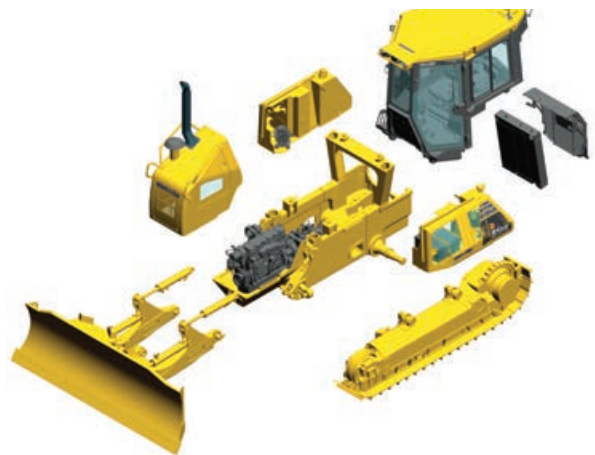
Self-adjusting Idler Support

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

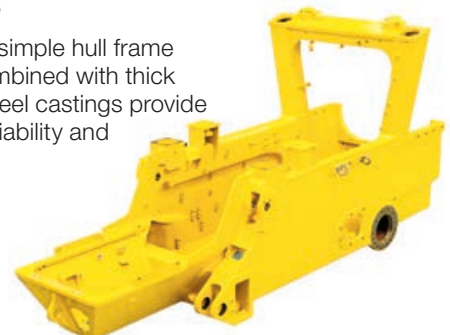
Simplified high-rigidity structure with thicker plates reduces vibration and noise.

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.



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-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.

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

GET THE WHOLE STORY WITH
KOMTRAX[®]

✓ WHAT

- 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**

✓ WHEN

- 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

✓ WHERE

- 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

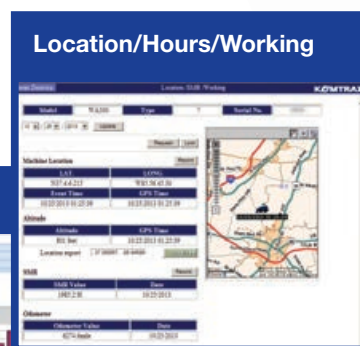
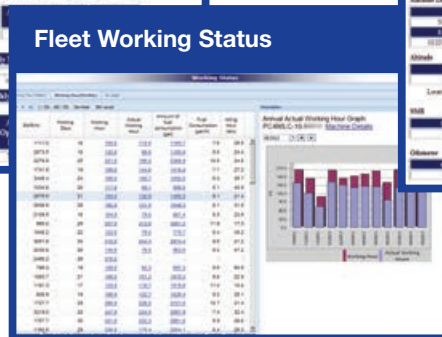
✓ WHO

- KOMTRAX is **standard** equipment on all Komatsu construction products



✓ WHY

- 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





ENGINE

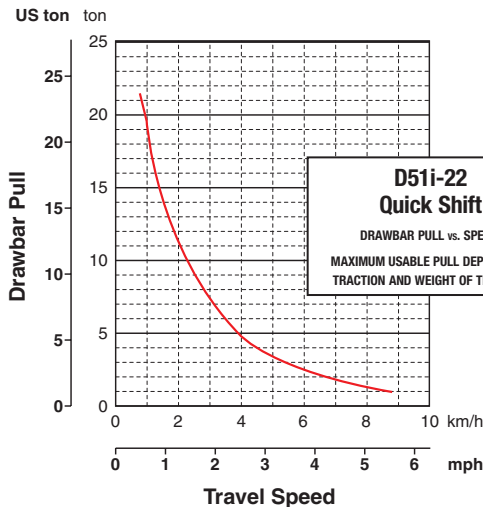
Model.....Komatsu SAA6D107E-1*
 Type 4-cycle, water-cooled, direct injection
 Aspiration..... Turbocharged, air-to-air aftercooled
 Number of cylinders..... 6
 Bore x stroke..... 107 mm x 124 mm **4.21" x 4.88"**
 Piston displacement..... 6.69 ltr **408 in³**
 Governor..... All-speed, electronic
 Horsepower
 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 typeHydraulic (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 DRIVES

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 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.

	D51EXi-22	D51PXi-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	mm in 55 2.2"	5.5 2.2"
Shoe width (standard)	mm in 560 22"	710 28"
Ground contact area	cm ² 30643	38980
	in ² 4,752	6,042
Ground pressure (with dozer, ROPS cab)	kPa 39.7	33.2
	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"



SERVICE REFILL CAPACITIES

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

Tractor weight:

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

D51EXi-22..... 10920 kg **24,074 lb**

D51PXi-22..... 11580 kg **25,530 lb**

Operating weight:

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

D51EXi-22..... 12420 kg **27,381 lb**

D51PXi-22..... 13180 kg **29,057 lb**

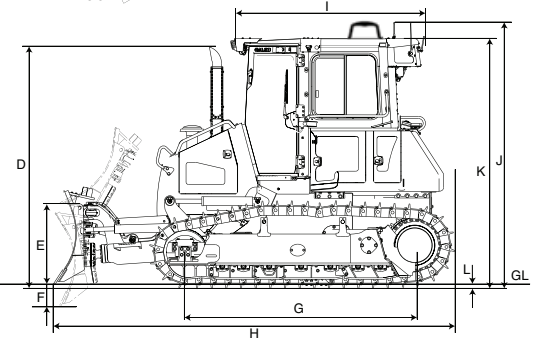
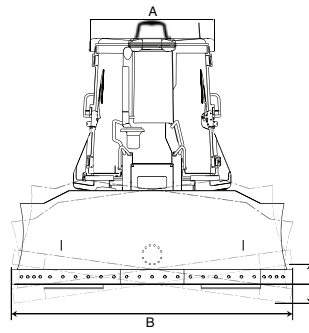
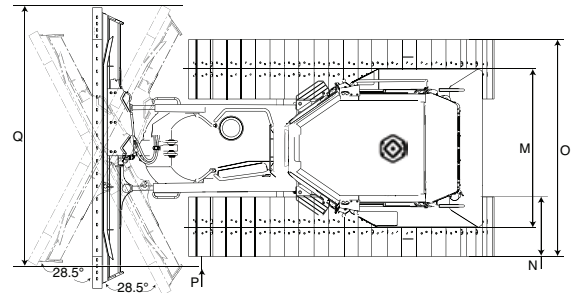


DIMENSIONS

	D51EXi-22	D51PXi-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	425 mm 1'5"	467 mm 1'6"
C*	505 mm 1'8"	—
D	2890 mm 9'6"	2890 mm 9'6"
E	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"
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	560 mm 1'10"	710 mm 2'4"
O	2350 mm 7'9"	2590 mm 8'6"
P	26 mm 1"	43 mm 2"
P*	161 mm 6.3"	—
Q	2859 mm 9'5"	3038 mm 10'0"
Q*	3038 mm 10'0"	—

*Wide blade for D51EXi-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"



DOZER EQUIPMENT

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 m ³ yd ³	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	28.5°
Standard Blade	15'9"	3.5	10'0" x 3'8"	3'8"	1'6"	1'6"	
D51EXi-22 PAT	4800	2.9	3350 x 1110	1107	456	505	28.5°
Wide Blade	15'9"	3.8	11'0" x 3'8"	3'8"	1'6"	1'8"	
D51PXi-22 PAT	4800	2.9	3350 x 1110	1107	456	505	28.5°
Standard Blade	15'9"	3.8	11'0" x 3'8"	3'8"	1'6"	1'8"	

Hydraulic oil capacity (refill):

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

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 link 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 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.



OPTIONAL EQUIPMENT

- 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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D51i-22



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AD12(Electronic View Only)

12/13 (EV-1)

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