KOMATSU

D51EXi-24
D51PXi-24

EU Stage IV Engine

intelligent MACHINE CONTROL

D51

CRAWLER DOZER



ENGINE POWER
99,0 kW / 133 HP @ 2.200 rpm

OPERATING WEIGHT
D51EXi-24: 13.830 kg
D51PXi-24: 14.260 kg

BLADE CAPACITY
D51EXi-24: 2,7 - 2,9 m³
D51PXi-24: 2,9 - 3,35 m³

Walk-Around



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99,0 kW / 133 HP @ 2.200 rpm

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INCREASED PRODUCTIVITY & OUTSTANDING FUEL ECONOMY

Intelligent Machine Control

- 3D GNSS system
- Integrated & standard factory installed
- Automated operation from rough dozing to finish grade
- Highly increased efficiency

Powerful and Environmentally Friendly

- Low consumption EU Stage IV engine
- Optimised Hydrostatic Transmission (HST) control system
- Adjustable auto idle shutdown
- Hydrostatic cooling fan with cleaning mode
- 100% passive regeneration and requires no DPF

Optimised Work Equipment

- INPAT blade with adjustable pitch
- Multishank parallelogram ripper



First-Class Operator Comfort

- Unique super-slant nose design
- Quiet and comfortable cab
- Fully adjustable air-suspended seat
- Integrated rear-view camera

State-of-the-Art Controls

- Extremely maneuverable hydrostatic drive
- Variable speed selection or conventional quick shift
- Palm Command Control System (PCCS)
- Large multifunctional monitor with troubleshooting function

Tough and Reliable

- Low-drive “PLUS” undercarriage
- Sturdy, rugged design
- Self-adjusting idler support
- Rear-mount radiator with swing-up hydraulic fan

KOMTRAX

- Komatsu Wireless Monitoring System
- 3G mobile communications
- Integrated communication antenna
- Increased operational data and fuel savings

KOMATSU CARE™

A maintenance program for Komatsu customers

Intelligent Machine Control

Innovative Intelligent Machine Control

The D51i-24 comes with a fully factory installed 3D Global Navigation Satellite System (GNSS) Machine Control system. Add-on components for machine control typically mounted on the blade are now replaced with a factory installed cab top GNSS antenna, an enhanced inertial measuring unit (IMU+), and with stroke sensing hydraulic cylinders. This integrated sensor package is robust and accurate. It eliminates the daily hassles of installing and removing antennas and cables from the blade, and the wear associated with it.

Automatic dozing from start to finish

While high-precision finish grading can be achieved by dozers with a conventional control system, the D51i-24 can also perform rough dozing in automatic mode. When rough dozing, the fully automatic blade control monitors blade load and adjusts blade elevation, to minimise track slip and perform high-efficiency dozing. Blade control adjusts to provide finish grade performance with high-level precision.




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D51PXi

Intelligent Machine Control



Factory integrated

All components for machine control are installed during assembly at the Komatsu manufacturing facility, ensuring a reliable and high quality installation. Komatsu customer support is extended to the machine control system itself.



Cab top GNSS antenna

No more worries about blade mounted antennas or cables. The cab top GNSS antenna on your D51i-24 reduces risk of damage and theft.



Enhanced inertial measuring unit (IMU+)

Chassis mounted enhanced inertial measuring unit (IMU+) and intelligent logic provides for finish grade accuracy without blade mounted sensors. Positional updates up to 100 times/second, for high speed automatic operations.



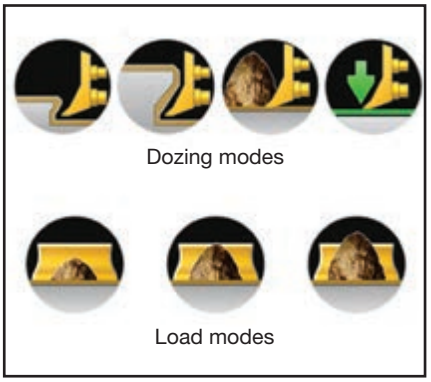
Stroke sensing hydraulic cylinders

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.



Standard touchscreen control box

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



Intuitive 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 efficiency

The fully automatic modes drastically improve efficiency of dozer operations. Intelligent machine control technology helps even less experienced operators perform top quality work.



As-built surface track mapping

Cab top GNSS antenna provides accurate “as-built” surface data by measuring actual elevations. Progress can be measured in real time with operator-selectable settings.



Powerful and Environmentally Friendly



Highly efficient hydrostatic drive line

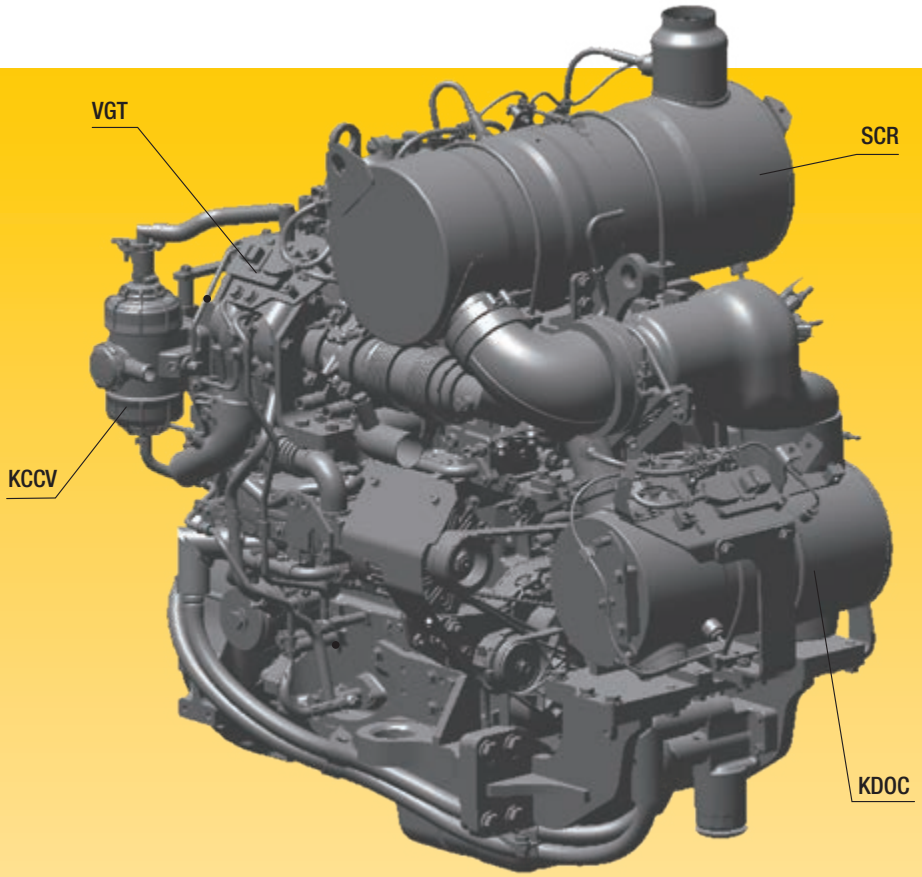
The hydrostatic drive line is a key factor in the performance of the D51i-24 dozer. It supplies high drawbar pull when needed and a highly fuel efficient drive line for grading and precision work. With a choice between two operating modes, the operator can select either “quick-shift” or “variable speed” to match a complete range of applications in the most economic and easy way.

Hydrostatic transmission (HST) control system

The unique, Komatsu-designed hydrostatic transmission controller monitors the engine output and working equipment or travel load. It controls the HST pumps and motors displacement to deliver optimum speed and drawbar pull. In addition, the controller provides ample power to both tracks when turning, enabling counter rotation at very low speeds and making the D51i-24 extremely manoeuvrable.

Efficient hydrostatic engine cooling fan

The cooling fan always runs at the lowest convenient speed. Rotation and velocity are electronically adjusted based on the temperature of the engine coolant and hydraulic oil. This reduces fuel consumption and operating noise levels, and requires less horsepower than a belt-driven fan. For extra efficiency, the fan also has a large air outlet surface.



Komatsu EU Stage IV

The Komatsu EU Stage IV engine is productive, dependable and efficient. With ultra-low emissions, it provides a lesser environmental impact and a superior performance to help reduce operating costs and lets the operator work in complete peace of mind.

Heavy-duty aftertreatment

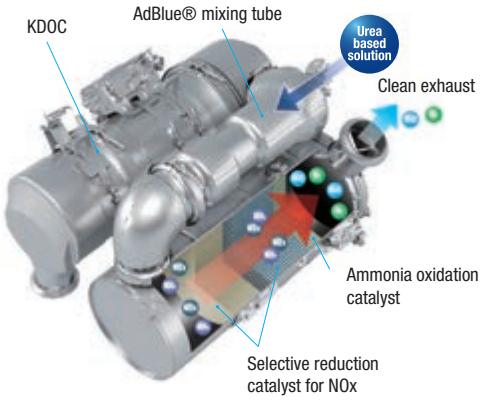
The aftertreatment system combines a Komatsu Diesel Oxidation Catalyst (KDOC) and Selective Catalytic Reduction (SCR). The SCR injects the correct amount of AdBlue® into the system at the proper rate to break down NOx into water (H_2O) and non-toxic nitrogen gas (N_2).

Exhaust Gas Recirculation (EGR)
Cooled EGR is a technology well-proven in current Komatsu engines. The increased capacity of the EGR cooler now ensures very low NOx emissions and a better engine performance.

Komatsu Closed Crankcase Ventilation (KCCV)
Crankcase emissions (blow-by gas) are passed through a CCV filter. The oil mist trapped in the filter is returned back to the crankcase while the filtered gas is returned to the air intake.

High-Pressure Common Rail (HPCR)
To achieve complete fuel burn and lower exhaust emissions, the heavy-duty High-Pressure Common Rail fuel injection system is computer controlled to deliver a precise quantity of pressurised fuel into the redesigned engine combustion chamber by multiple injections.

Variable Geometry Turbo (VGT)
The VGT provides optimal airflow to the engine combustion chamber under all speed and load conditions. Exhaust gas is cleaner, fuel economy is improved while machine power and performance are maintained.

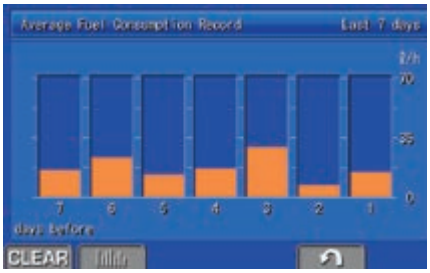




Adjustable idle shutdown automatically turns off the engine after it idles for a set period of time



Eco-gauge, Eco guidance and fuel consumption gauge



Fuel consumption history

Optimised Work Equipment

Komatsu blades

For increased blade performance and better machine balance, Komatsu uses a box blade design, with the highest resistance for a light weight blade. Special Komatsu highly wear resistant steel is used for the front and sides of the blade to increase durability. The deep curved design of the blade makes it easy to handle a wide range of materials, with good penetration and a large capacity, optimising high dozing performance with excellent fuel efficiency.

Komatsu rippers

Komatsu rippers were designed to combine the highest productivity with a long lifetime. The shank is fitted with special wear parts that increase longevity, and offer the best penetration in various types of materials.

Multishank parallelogram ripper (option)

The multishank parallelogram ripper has 3 ripper shanks as standard, but can be easily converted to a single or two-shank ripper, depending on job conditions. The strong parallelogram design offers straight shank movement, adapted for tough applications.

Straight Power Angle Tilt blade with adjustable pitch

The straight Power Angle Tilt blade (INPAT), offers a wide range of working modes. The large diameter centreball design offers a strong and durable solution for the blade attachment to the INPAT frame reducing maintenance costs.






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First-Class Comfort

Quiet and comfortable cab

Operator comfort is essential for safe and productive work. The cab on the D51i-24 is quiet and comfortable, an ideal environment to concentrate on the job. Its hexagonal design and large tinted glass windows offer excellent panoramic visibility. The high capacity climate control system pressurises the cab to keep dust out. A high quality sound-absorbent lining covers the interior to minimise noise levels for the operator.

The best view

A super slant nose gives the D51i-24 the best visibility of any dozers on the market. This unique feature dramatically increases efficiency and jobsite safety, with operators now always having full view of both the blade and the ripper and of objects close to them. The new cab-forward design, with integrated ROPS/FOPS and large glass windows, provides more room and places the operator closer to the blade, further improving visibility and comfort.

Fully-adjustable, heated air suspension seat

The driver's seat and console are amongst the most important components of the driver's equipment. The comfortable, heavy-duty, air suspension seat, complete with headrest, gives the operator a secure and comfortable work environment.



State-of-the-Art Controls



Large TFT colour multi monitor

A large user-friendly colour monitor enables safe, accurate and smooth work. It provides on-hand data to continuously improve productivity and fuel consumption. Multilingual and with all essential information available at a glance, it features simple and easy to operate switches and multifunction keys that provide the operator with fingertip access to a wide range of functions and operating information.

Automatic speed change

Komatsu HST controller always changes the travel speed automatically, depending on load or ground conditions, and efficient operations are facilitated – with no shift shocks. The dozer can work at the optimal speed and drawbar pull point, increasing productivity and fuel efficiency.

Easy operation control

The ergonomic Palm Command Control System (PCCS) provides efficient and comfortable steering of the machine. The blade's electronic control joystick provides precise control. Its reactivity can be customized to the operator's preference, for maximum productivity in any type of application.

Selectable working modes

Working mode can be set to either "Power" for maximum power or to "Economy" for energy saving operations. Combined with a choice between automatic or manual working mode, this lets the operator select the optimum machine power configuration for the work at hand.



Palm Command Control System (PCCS)



Combined decelerator/brake pedal



Fully integrated rear-view camera system

Information & Communication Technology



Lower operating costs

Komatsu ICT contributes to the reduction of operating costs by assisting to comfortably and efficiently manage operations. It raises the level of customer satisfaction and the competitive edge of our products.

Widescreen monitor

Conveniently customisable and with a choice of 26 languages, the widescreen monitor with simple switches and multifunction keys gives fingertip access to a large range of functions and operating info. An AdBlue® level gauge is now incorporated into the default main screen.

An evolutionary interface

Helpful information is now easier than ever to find and understand with the upgraded monitor interface. The main screen can be simply optimised to the operator's preference by just pressing one button.



Quick view on the operation logs



All information at a glance



Operator identification function

KOMTRAX

The way to higher productivity

KOMTRAX uses the latest wireless monitoring technology. Compatible on PC, smartphone or tablet, it delivers insightful and cost saving information about your fleet and equipment, and offers a wealth of information to facilitate peak machine performance. By creating a tightly integrated web of support it allows proactive and preventive maintenance and helps to efficiently run a business.

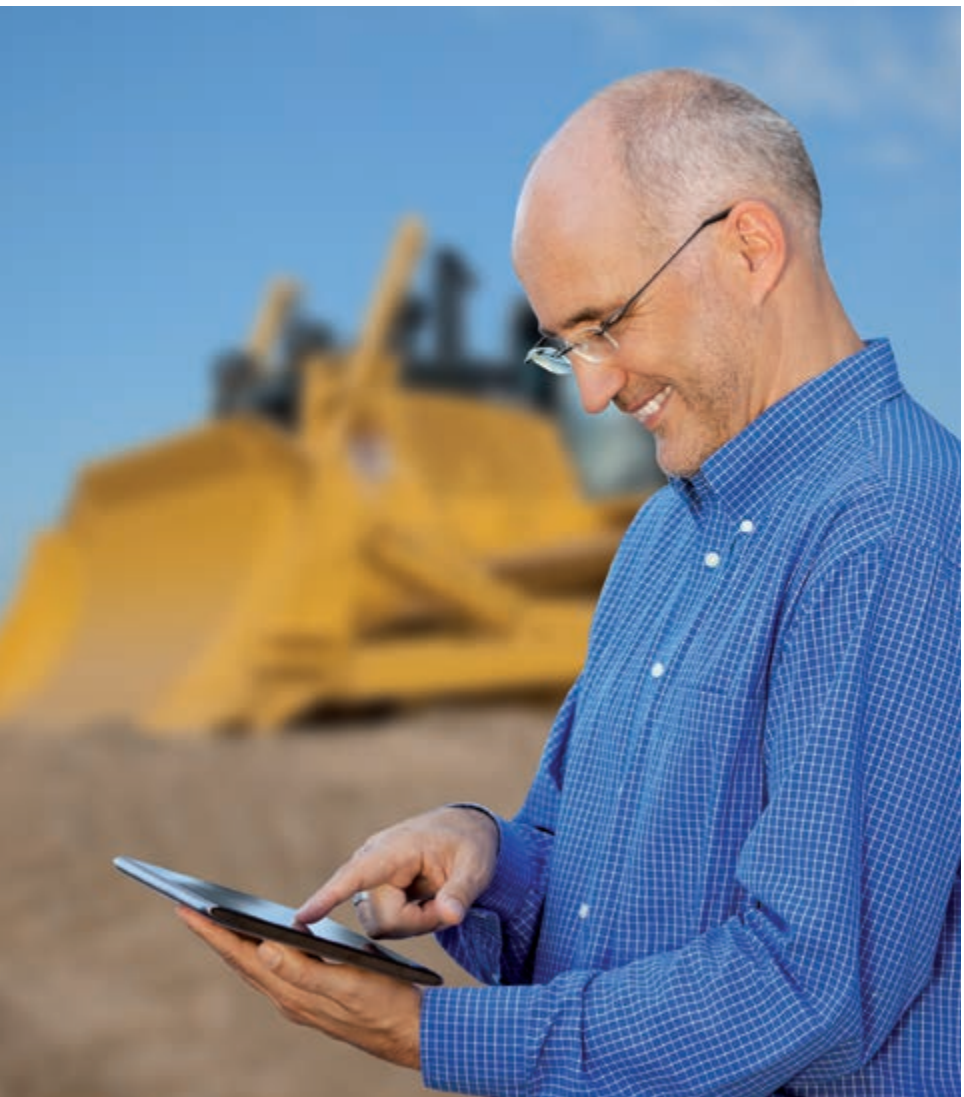


Knowledge

You get quick answers to basic and critical questions about your machines – what they're doing, when they did it, where they're located, how they can be used more efficiently and when they need to be serviced. Performance data is relayed by wireless communication technology (satellite, GPRS or 3G depending on model) from the machine to a computer and to the local Komatsu distributor – who's readily available for expert analysis and feedback.

Power

The detailed information that KOMTRAX puts at your fingertips 24 hours a day, 7 days a week gives the power to make better daily and long-term strategic decisions – at no extra cost. Problems can be anticipated, maintenance schedules customised, downtime minimised and machines kept where they belong: working on the jobsite.



Convenience

KOMTRAX enables convenient fleet management on the web, wherever you are. Data is analysed and packaged specifically for effortless and intuitive viewing in maps, lists, graphs and charts. You can foresee eventual maintenance issues and required spare parts, and troubleshoot a problem before Komatsu technicians arrive on site.

Easy Maintenance







Reversible swing-up fan

The D51i-24 includes a swing-up fan with a gas strut-assisted lift locking system to provide easy access to the radiator, oil cooler, and charge air cooler. The operator can switch the hydraulic fan to “cleaning” mode so that it rotates in reverse at full speed to clean the radiators, reducing maintenance costs and improving fuel efficiency.

Simple and convenient service

Well located service doors allow convenient and safer ground access to daily service points. With the radiator located at the rear of the machine, engine fuel and oil filters can be easily accessed from the front of the engine compartment. Remote grease points facilitate lubrication of the C-frame pivots and angle cylinder bearing.

Self-diagnostic monitor

The multifunction monitor panel displays the running time, engine revs, fuel level and water coolant temperature in real time. It also provides the operator with maintenance and service information, if oil filters need replacing or any abnormality occurs. In addition, it supplies Komatsu mechanics with detailed information, with no need for external service tools.

Modular power train

All the power train components are enclosed in a sealed module. This eliminates oil spills during mounting and dismounting, and prevents dust and dirt polluting individual components. Servicing is much cleaner, smoother and easier.

AdBlue® tank

The AdBlue® tank is easily accessible on the left hand side of the machine.

Komatsu CARE™

Komatsu CARE™ is a maintenance program that comes as standard with your new Komatsu machine. It covers factory-scheduled maintenance, performed with Komatsu Genuine parts by Komatsu-trained technicians. Depending on your machine’s engine, it also offers extended coverage of the Komatsu Diesel Particulate Filter (KDPF) or the Komatsu Diesel Oxidation Catalyst (KDOC), and of the Selective Catalytic Reduction (SCR). Please contact your local Komatsu distributor for terms and conditions.



Tough and Reliable



Low-drive "PLUS" undercarriage

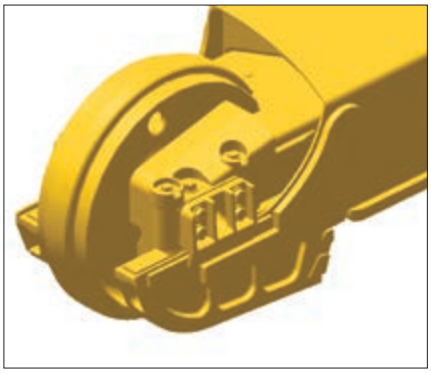
Komatsu's low-drive Parallel Link Undercarriage System (PLUS) is extraordinarily tough, with excellent grading performance and stability. It features PLUS link assemblies, a highly reliable floating bushing concept, substantial track link height, superior oil seals and track guards that maximise undercarriage durability. For easier servicing, the equaliser bar's centre pin is remotely greased. The segmented sprockets are notched to considerably improve the evacuation of mud and further increase the PLUS undercarriage lifetime.

EX undercarriage

The EX undercarriage has been specially designed for working on hard ground. The small to medium-width shoes and PLUS link assembly ensure a large contact area between the machine and the ground for maximum stability, grading performance and undercarriage lifetime.

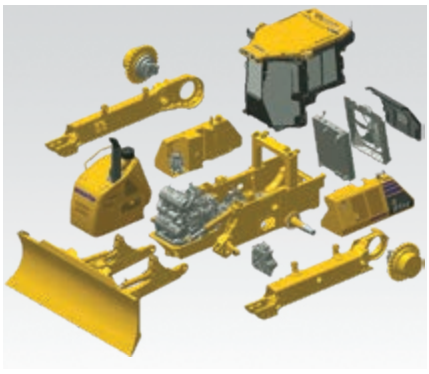
PX undercarriage

The PX undercarriage is ideal for working on soft surfaces. The wide shoes and PLUS link assembly ensure a large contact area between the machine and the ground for maximum stability, grading performance and undercarriage lifetime.



Self-adjusting idler support

The self-adjusting idler support provides constant and even tension on idler guide plates. It reduces noise levels and vibrations and increases undercarriage life.



Modular design

D51i-24 was designed and manufactured to have low maintenance costs and a long lifetime. This was achieved mainly by reducing component complexity and with a strong modular design.

Specifications

ENGINE

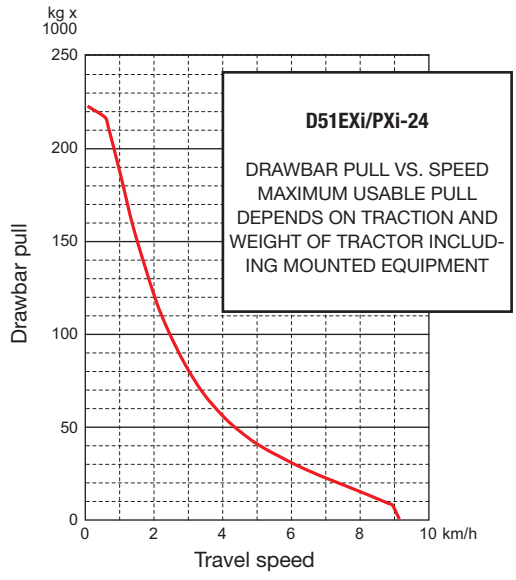
Model	Komatsu SAA4D107-3
Type	Common rail direct injection, water-cooled, emissionised, turbocharged, after-cooled diesel
Engine power	
at rated engine speed	2.200 rpm
ISO 14396	99,0 kW/133 HP
ISO 9249 (net engine power)	98,0 kW/131 HP
No. of cylinders	4
Bore × stroke	107 × 124 mm
Displacement	4,5 l
Fan drive type	Hydraulic, reversible
Lubrication system	
Method	Gear pump, force lubrication
Filter	Full flow
Fuel	Diesel fuel, conforming to EN590 Class 2/Grade D. Paraffinic fuel capability (HVO, GTL, BTL), conforming to EN 15940:2016

HYDROSTATIC TRANSMISSION (HST)

Dual-path, hydrostatic transmission provides infinite speed changes up to 9,0 km/h. The variable capacity travel motors allow the operator to select the optimum speed to match specific jobs. Travel control lock lever and neutral switch.

MAX. TRAVEL SPEEDS (EXi/PXi)

Quick shift mode	Forward	Reverse
1st	0 - 3,4 km/h	0 - 4,1 km/h
2nd	0 - 5,6 km/h	0 - 6,5 km/h
3rd	0 - 9,0 km/h	0 - 9,0 km/h
Variable speed mode	Forward	Reverse
	0 - 9,0 km/h	0 - 9,0 km/h



STEERING SYSTEM

Type	Hydrostatic Steering System (HSS)
Steering control	PCCS-lever
Min. turning radius (counter-rotation)	
D51EXi-24	2,4 m
D51PXi-24	2,6 m

UNDERCARRIAGE

Suspension	Oscillating equaliser bar and pivot shaft
Track roller frame	Monocoque, large section, durable construction
Tracks	PLUS link assembly
Track tension	Combined spring and hydraulic unit
Number of shoes (each side)	44
Grouser height (single grouser)	55 mm
Track rollers (each side)	7
Carrier rollers (each side)	2
Shoe width (standard)	
D51EXi-24	560 mm
D51PXi-24	710 mm
Ground contact area (ISO 16754)	
D51EXi-24	34.331 cm²
D51PXi-24	43.527 cm²
Ground pressure (ISO 16754)	
D51EXi-24	0,40 kg/cm²
D51PXi-24	0,33 kg/cm²

OPERATING WEIGHT (APPR.)

Including INPAT blade, hitch, ROPS/FOPS cab, operator, rated capacity of lubricant, coolant, and full fuel tank.

D51EXi-24	13.830 kg
D51PXi-24	14.260 kg

ENVIRONMENT

Engine emissions	Fully complies with EU Stage IV exhaust emission regulations
Noise levels	
LwA external	106 dB(A) (2000/14/EC Stage II)
LpA operator ear	76 dB(A) (ISO 6396 dynamic test)
Vibration levels (EN 12096:1997)	
Hand/arm	≤ 2,5 m/s² (uncertainty K = 1,07 m/s²)
Body	≤ 0,5 m/s² (uncertainty K = 0,28 m/s²)

Contains fluorinated greenhouse gas HFC-134a (GWP 1430). Quantity of gas 1,1 kg, CO_2 equivalent 1,57 t

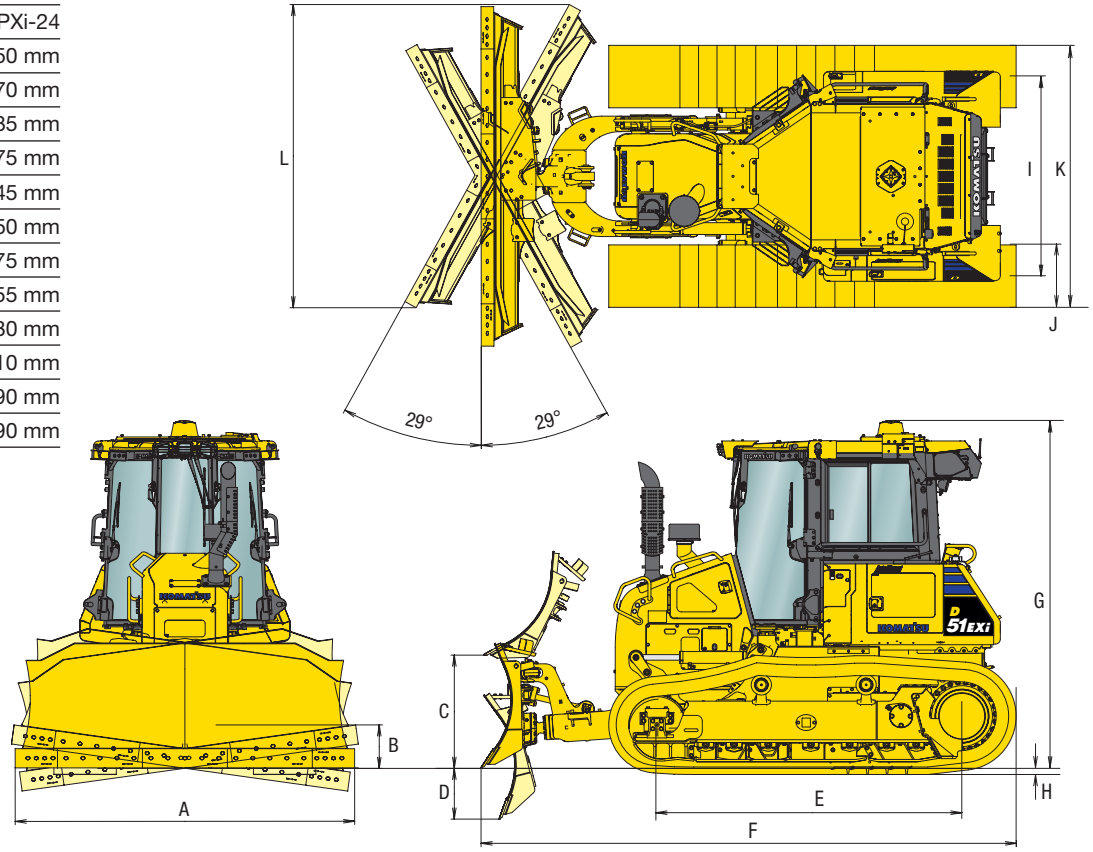
FINAL DRIVE

Type	Spur and planetary gear, double-reduction
Sprocket	Segmented sprocket teeth are bolt-on for easy replacement

DIMENSIONS

	D51EXi-24	D51PXi-24
A	3.350 mm	3.350 mm
B	470 mm	470 mm
C	1.015 mm	1.035 mm
D	470 mm	475 mm
E	2.745 mm	2.745 mm
F	4.800 mm	4.850 mm
G	3.175 mm	3.175 mm
H	55 mm	55 mm
I	1.790 mm	1.880 mm
J	560 mm	710 mm
K	2.350 mm	2.590 mm
L	2.990 mm	2.990 mm

Ground clearance:
390 mm (+ grouser height)



HYDRAULIC SYSTEM

Type	CLSS (closed-centre load sensing system)
All spool valves externally mounted beside the hydraulic tank.	
Maximum pump flow	107 l/min
Relief valve setting	280 kg/cm²
Spool control valve positions	
Blade lift	Raise, hold, lower, and float
Blade tilt & angle	Right, hold, and left
Additional control valve positions for ripper	
Ripper lift	Raise, hold, and lower
Hydraulic cylinders	Double-acting, piston
No. of cylinders × bore	
Blade lift	2 × 90 mm
Blade tilt	1 × 100 mm
Blade angle	2 × 90 mm

MULTISHANK RIPPER

Type	Hydraulically controlled parallelogram ripper
No. of shanks	3
Weight (including hydraulic control unit)	850 kg
Beam length	1.556 mm
Maximum lift above ground	380 mm
Maximum digging depth	425 mm

SERVICE REFILL CAPACITIES

Fuel tank	270 l
Radiator	37 l
Engine oil	16 l
Hydraulic tank	64 l
Final drive (each side)	5,5 l
AdBlue® tank	20,5 l

DOZER EQUIPMENT

	Overall length with dozer	Blade width × height	Maximum lift above ground	Maximum drop below ground	Maximum tilt adjustment	Blade angle
2,7 m³ INPAT blade (EXi) (option)	4.800 mm	3.045 × 1.120 mm	1.015 mm	455 mm	425 mm	29°
2,9 m³ INPAT blade (EXi) (standard)	4.800 mm	3.350 × 1.120 mm	1.015 mm	455 mm	470 mm	29°
2,9 m³ INPAT blade (PXi) (option)	4.800 mm	3.350 × 1.120 mm	1.015 mm	455 mm	470 mm	29°
3,35 m³ INPAT blade (PXi) (standard)	4.850 mm	3.350 × 1.170 mm	1.035 mm	475 mm	470 mm	29°

Blade capacities are based on the SAE recommended practice J1265.

Standard and Optional Equipment

D51EXi/PXi-24

ENGINE AND RELATED PARTS

Komatsu SAA4D107-3 turbocharged common rail direct injection diesel engine	●
EU Stage IV compliant	●
Fuel pre-filter (10 micron) and fuel filter (2 micron)	●
Exhaust pipe with elbow	●
Intake pipe with rain cap	●
Alternator 24 V/85 A	●
Starter motor 4,5 kW/24 V	●
Batteries 92 Ah/2 × 12 V	●
Fuel tank inlet strainer	●
Intake pipe with air pre-cleaner	○

TRANSMISSION AND BRAKES

Electronically controlled HST	●
Palm lever steering control (PCCS)	●
Quick shift selection system	●
Variable speed mode	●
Reverse speed presets	●
Combined decelerator/brake pedal	●

UNDERCARRIAGE

Komatsu PLUS link assembly	●
Single grouser heavy-duty shoes (EXi: 560 mm; PXi: 710 mm)	●
Segmented sprockets	●
Idler cushions	●
Track roller guard, centre and end section	●
Full length track roller guard	○

LIGHTING SYSTEM

Working lights, 3 cab roof front, 2 cab roof rear	●

SERVICE AND MAINTENANCE

Swing-out hydrostatic-driven radiator fan with reversing function	●
Dry type air cleaner, double element with dust indicator and evacuator	●
Water separator	●
Multi-function video compatible colour monitor with Equipment Management and Monitoring System (EMMS) and efficiency guidance	●
KOMTRAX – Komatsu wireless monitoring system (3G)	●
Komatsu CARE™ – a maintenance program for Komatsu customers	●
Tool kit	●
Grease gun holder	●
Shovel holder	●

CABIN

Air suspension seat: fabric, reclining, heated, high backrest	●
Seat belt with visible alert	●
High mount footrest	●
Air conditioner	●
Radio	●
Auxiliary input (MP3 jack)	●
2 × 12 Volt power supply (120 W)	●
1 × 24 Volt power supply	●
Viscous cab mounts	●
Rear-view mirror (inside cab)	●
Wiper front window	●
Wiper rear window	●
Wipers doors	●
Cup holder	●
Lunch box holder	●

HYDRAULIC SYSTEM

Hydraulics for dozing blades	●
Mono lever blade control	●
Hydraulics for ripper	○

SAFETY EQUIPMENT

Steel cab, meets ISO 3471 and SAE J1040, APR88 ROPS standards, as well as ISO 3449 FOPS standards	●
Horn	●
Locks, filter caps and covers	●
Back-up alarm	●
Rear view camera system	●
Rearview side mirrors	○
Fire extinguisher	○

ATTACHMENTS

Front pull hook	●
Hitch (not with ripper)	●
Rigid drawbar	○
Multishank parallelogram ripper	○

DOZER EQUIPMENT

2,9 m³ INPAT blade (EXi)	●
3,35 m³ INPAT blade (PXi)	●
2,7 m³ INPAT blade (EXi)	○
2,9 m³ INPAT blade (PXi)	○

INTELLIGENT MACHINE CONTROL

Standard factory installed integrated 3D GNSS intelligent machine control system	●
Automatic blade load control	●
Radio and modem for correction data	●
Remote support ready	●
Offset switch	●
Backgrading switch	●
Laser and LPS compatibility kit	○

Further equipment on request

● standard equipment
○ optional equipment

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