DOOSAN

Construction Equipment

DL250A

Engine Power	SAE J1995, gross 127 kW (172 PS) @ 2,200 rpm
Operational Weight	14,200 kg (31,306 lb)
Bucket Capacity (SAE)	2.5 ~ 5.0 m^3 (3.3 ~ 6.5 yd^3)

THE NEW DL250A WHEEL LOADER HAS ALL THE ADVANTAGES

DL 250A

THE NEW DL250A WHEEL LOADER HAS ALL THE ADVANTAGES OF THE PREVIOUS MODEL, THE KEY PHRASE USED DURING THE DEVELOPMENT OF THE DL250A WAS “GIVING OPTIMUM VALUE TO THE END USER.”

INCREASED PRODUCTION, due to the use of a Doosan (in-house) engine and the excellent synchronisation of the drive train with the hydraulics system

IMPROVED ERGONOMICS, increased comfort and excellent all round visibility ensuring safe and pleasant working conditions.

IMPROVED RELIABILITY, through the use of higher performance new materials, the development of new computer-assisted structural design techniques and by intensive and systematic test programs. All of these combine to increase the life of vital components and reduce operating costs.

PERFORMANCE & PRODUCTIVITY

Perfect integration of power and intelligence. When exceptional power is combined with the very best workmanship, the wheel loader reaches the peak of its performance. The DL250A loader gives you outstanding productivity. The reason is, on the one hand, the impressive digging power allows the hardest materials to be tackled and, and on the other, high tractive power enables easy penetration. With a powerful hydraulic system, the operator can work quickly and powerfully. At the heart of the loader is the Doosan D1146T (in-house) mechanical engine.

DOOSAN ENGINE (D1146T)

Doosan product gives high performance through in-house engine.

Doosan engine(In-house) perfectly harmonized with the hydraulic system and provides strong power. Mechanical engine provides high resistance to moisture, dust, and bad fuel quality. The best engine power in the industry(170HP) provides stable working speed even in the heavy workload situation.

AUTOMATIC TRANSMISSION

The transmission is particularly smooth and the gear ratios are optimised. There are no shocks, resulting in an appreciable level of comfort for the operator. The traction force is optimum under all working conditions. The combination of these characteristics enables the loader to maintain high speed under all conditions and favours penetration and thus optimum bucket filling at each cycle.

The transmission has three modes of operation:
· Manual
· Automatic (automatic shift for all gears)
· Semi - Automatic (automatic with a "kick down" for first gear)

1 HIGH LIFT (OPTIONAL)

As High Lift is equipped besides Standard Lift, customers have further options.

2 Z KINETICS

The Z lifting geometry is very robust and especially designed for heavy loads. Few moving parts, reduced loads, simplicity, everything contributes to good loader stability. This geometry enables very rapid bucket movements and ensures correct angle positioning in all situations. The rapid bucket dump capability makes it easier to unload adhesive materials.

3 LIMITED SLIP DIFFERENTIAL (OPTIONAL)

The machines axles are fitted with limited slip differentials at the front and rear. This automatically ensures the maximum tractive effort and easy driving over soft and muddy ground. It also reduces the risk of skidding and, at the same time, prevents excessive tyre wear.

4 LOAD ISOLATION SYSTEM (OPTIONAL)

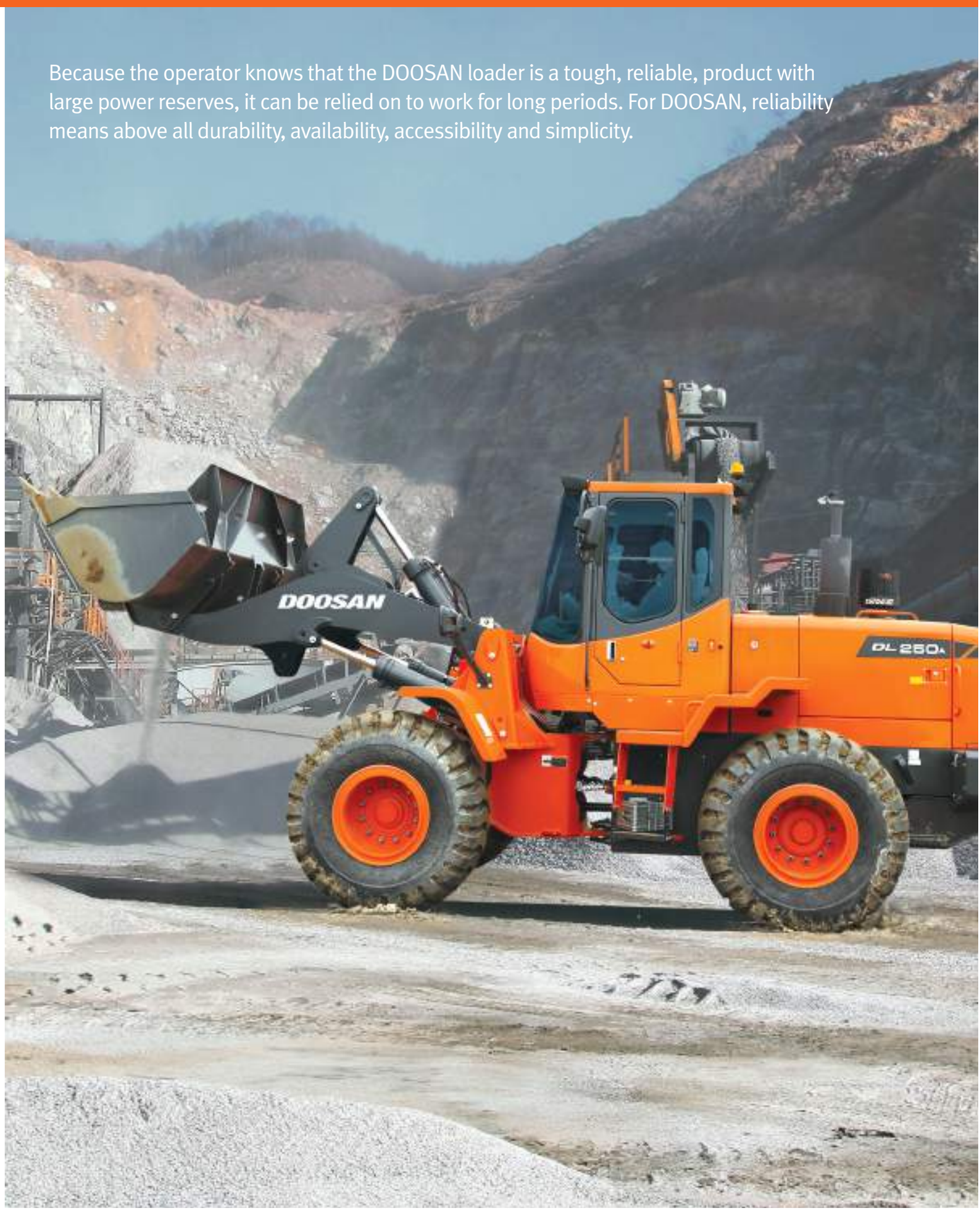
This system is ideal for all loading and movement situations and increases driver productivity and comfort. It also minimises the amount of material spilt during travelling.

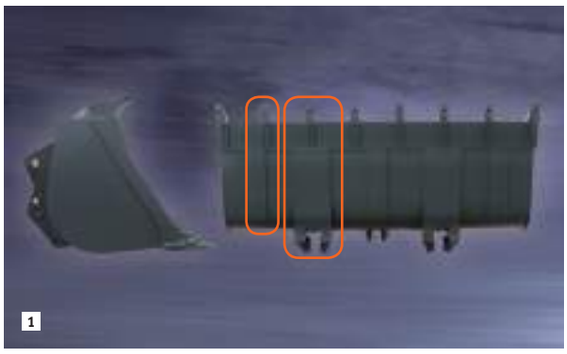
5 HYDRAULIC POWER STEERING

The newly designed steering system ensures smooth steering even in the low engine speed ranges.
- Steering control valve

DURABILITY & RELIABILITY

Because the operator knows that the DOOSAN loader is a tough, reliable, product with large power reserves, it can be relied on to work for long periods. For DOOSAN, reliability means above all durability, availability, accessibility and simplicity.

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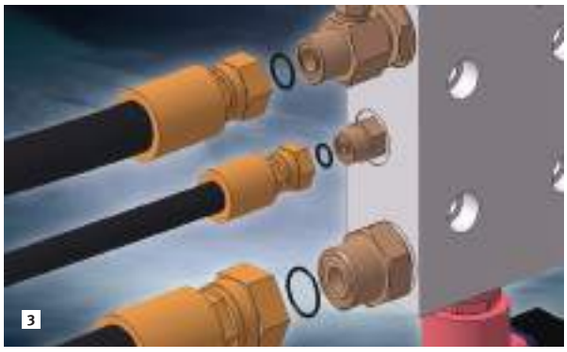
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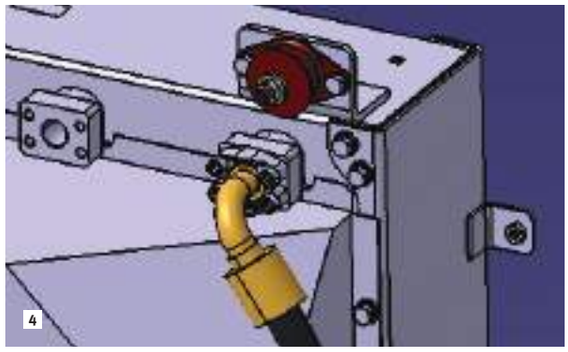
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6


7

1 REINFORCED BUCKET

The bottom of the bucket are reinforced.

2 RADIATOR GRILL

The radiator grill is made from reinforced steel for increased shock resistance.

3 ORFS

To ensure perfect oil tightness, all ports, even the low pressure ports which are used for the pilot lines, are ORFS type.

4 RADIATORS MOUNTED ON RUBBER MOUNTS

The aluminium radiators are mounted on rubber mounts to effectively withstand vibrations.

5 FRONT COMBINATION LAMP

With the application of high-grade Hella products, the lamp life has extended much more.

6 REAR COMBINATION LAMP

A semi-permanent lamp life has been secured with the application of LED-type stop and position lamps.

7 DRIVE SHAFT

The dust seal has been fitted to protect dust and mud, sand, thus wear during use is reduced. The air vent relief valve is installed against over-filling.

OPERATOR COMFORT

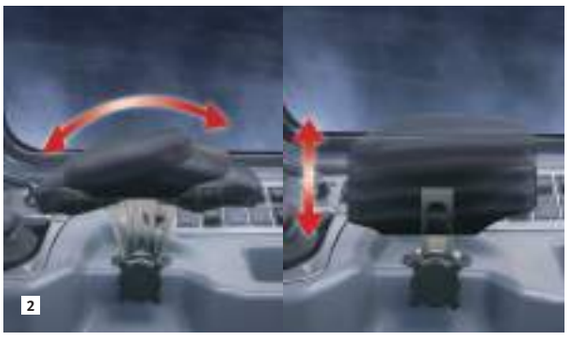
A perfect workspace has been created for you. The work rate of the wheel loader is directly linked to the performance of its operator. DOOSAN designed the DL250A by putting the operator at the centre of their development goals. More space, better visibility, air conditioning, a very comfortable seat, sufficient storage space... All these elements ensure that the operator can work for hours in excellent conditions.

VISIBILITY

Visibility has been improved in all directions and the size of the cab has been increased.

AIR CONDITIONING

The high performance air conditioning system provides an air flow which is adjusted and electronically controlled according to the conditions. A double air filter protects the operator's environment. The comfort is comparable to that of a new car.



1 STEERING COLUMN

The steering column features both tilting and telescopic functions.

2 ARM REST

Correct positioning with clear controls makes the operator's task easier.

3 CONTROL LEVERS (OPTIONAL)

The control levers are very precise. Different options are available to match what the operator is accustomed to as well as an optional auxiliary lever.

4 LATERAL CONSOLE

The control console is thoughtfully placed to the right of the operator.
Provision is provided to fit switches for additional equipment if required.

5 CENTRAL INDICATOR PANEL

A high visibility indicator panel allows the operator to check essential loader functions.

6 SUNVISOR & ROOM MIRROR

EASY MAINTENANCE

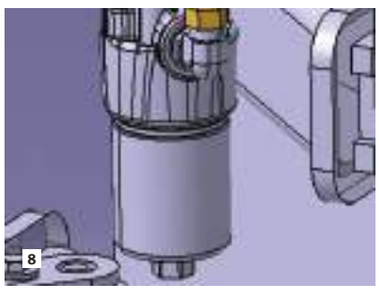
Short, simple maintenance operations at long intervals increase the availability of the equipment on site. DOOSAN has developed the DL250A with a view to high profitability for its user. A detailed design of each detail guarantees optimum reliability and reduced maintenance costs.

HYDRAULIC OIL RETURN FILTER

The high-efficiency, large-capacity return filter manufactured with the glass-fiber media can eliminate foreign substances up to 99.5 percent to protect the costly hydraulic equipment and substantially extend the replacement cycle.

CENTRAL JOINTS

The central joints of the machine are particularly robust. The attachment points are positioned to withstand bending and torsion forces. A large amount of space has been left to allow easy access to internal components.



1 TRANSMISSION FILTER

The transmission filters are within easy reach and like the rest of the machine's service components, can be checked from ground level.

2 AIR-CLEANER FILTER

The forced air cleaner removes 99.9% of particles. It is preceded by a high capacity pre-filter. The cleaning and cartridge replacement intervals are very long.

3 CONVENIENT TRANSMISSION OIL FILLING

The oil filler pipe is located near the articulation joint for easy access.

4 GREASING LUBRICATION PORTS

Rear axle pivot and propeller shaft can be lubricated from the outside of the machine without crawling under the machine or in awkward positions through the lubrication ports.

5 HYDRAULIC PRESSURE CHECK POINTS

The pressure test points are grouped together.
(Main pressure, steering, braking etc).

6 TRANSMISSION DIAGNOSIS

The transmission can be diagnosed using a laptop computer to interface with the diagnostic system.

7 ENGINE OIL AND COOLANT DRAINS

Drains are installed in very accessible places to facilitate emptying without the risk of polluting the environment.

8 BRAKE & PILOT FILTER

The pilot filter is easy to replace and protect hydraulic system.

TELEMATICS SERVICE (OPTIONAL)

TELECOMMUNICATIONS

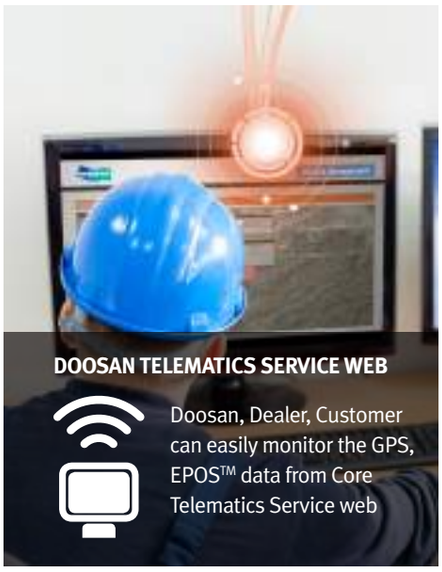
Data flow from machine to web

TELEMATICS SERVICE TERMINAL

Telematics Service terminal is installed to machine / connected to EPOS™

TELECOMMUNICATION

GPS, EPOS™ data is sent to designated server by GSM, Satellite telecommunication



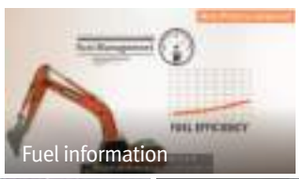
DOOSAN TELEMATICS SERVICE WEB

Doosan, Dealer, Customer can easily monitor the GPS, EPOS™ data from Core Telematics Service web

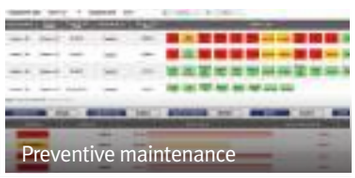
FUNCTIONS

Doosan Telematics Service provides various functions to support your great performance

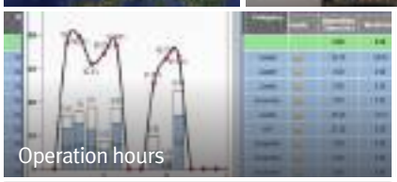
GPS



Fuel information



Preventive maintenance



Operation hours

Fault code/warning

ADT Productivity

Reports

TELEMATICS SERVICE BENEFITS

Doosan and dealer support customers to improve work efficiency with timely and responsive services

Customer

Improve work efficiency

- Timely and preventive service
- Improve operator's skills by comparing work pattern
- Manage fleet more effectively

Dealer

Better service for customers

- Provide better quality of service
- Maintain machine value
- Better understanding of market needs

Doosan

Responsive to customer's voice

- Utilize quality-related field data
- Apply customer's usage profile to deveping new machine

	FUNCTION	EXCAVATOR	WHEEL LOADER	ADT
GPS	· Location · Geo-fence	All models	All models	All models
E-mail reports	· Daily, Weekly, Monthly report	All models	All models	All models
Operation hours	· Total operation hours · Operation hours by mode	All models Tier 4 only	All models Tier 4 only	All models
Maintenance parts	· Preventive maintenance by item replacement cycle	All models	Tier 4 only	All models
Fault code/ Warning	· Fault code · Machine Warnings on Gauge Panel	All models	Tier 4 only	All models
Fuel information	· Fuel level · Fuel consumption	All models Tier 4 only	Tier 4 only	All models
Dump capacity	· Dump tonnage · Count of Work Cycle	N/A	N/A	All models

GLOBAL PARTS NETWORK

GLOBAL PDC (PARTS DISTRIBUTION CENTER) NETWORK

Doosan provides fast and precise worldwide delivery of genuine Doosan parts through its global PDC (parts distribution center) network.

GLOBAL NETWORK

The global network of the GPDC (Global Parts Distribution Center) maximizes its supply rate by making sure that each center is stockpiled with all the critical parts required for businesses in its area. The network also minimizes the time and costs required for parts delivery by positioning PDCs close to major markets around the world. Doosan PDCs communicate with customers in their time zone, informing them that they are open for operation, and deliver parts to them as early as possible.

The Global Parts Distribution Center Network

PDCs had been set up as shown below, including Mother PDC in Ansan, Korea. The seven other PDCs include one in China (Yantai), one in the USA (Chicago), one in Brazil (Campinas), two in Europe (Germany and the UK), one in the Middle East (Dubai), and one in Asia (Singapore).

PDC BENEFIT

- **Distribution Cost Reduction**
- **Maximum Parts supply rate**
- **Shortest distance/time parts delivery**
- **Real-time service support**
- **Minimum downtime**

TECHNICAL SPECIFICATIONS

ENGINE

Model

Doosan D1146T
Turbo charged and direct injection type. The number of cylinder is 6.

Number of cylinders

6

Rated power

127 kW (172 PS) @ 2,200 rpm (SAE J1995, gross)

Maximum power

127 kW (172 PS) @ 2,200 rpm (SAE J1995, gross)

Maximum torque

71 kgf.m (696 Nm) at 1,400 rpm

Piston displacement

8,000 cc(488 cu.in)

Bore & stroke

111 x 139 mm

Starter

24 V / 6.0 kW

Batteries

System voltage : 24 V

Quantity : 12 V x 2

Capacity(AMP) : 150 Ah

Air cleaner

Double element and pre-filtered with auto dust evacuation

TRANSMISSION

The “Power Shift” transmission can be used in manual mode, fully automatic or semi-automatic with the “kick down” function.
This transmission is based on components of excellent reputation. It is equipped with a modulation system designed to protect it and ensure smooth gear and direction changes.
A manual transmission control lever is located to the left of the operator. In automatic or semi-automatic mode a change of direction function is also available.
The transmission can be disengaged by the brake pedal to make all the engine power available for the hydraulics. A safety device prevents the engine being started if the transmission is not in neutral. The transmission can be tested and adjusted with special equipment. A computer can be connected to monitor the history of its operation.

Torque converter

Type : Single stage, mono phase,

Stall ratio : 3.009

Travel speed, kph

Forward : 7.3 - 12 - 23.6 - 36.5 (1 - 2 - 3 - 4)
Reverse : 7.7 - 12.6 - 24.7 (1 - 2 - 3)

Maximum traction

13.8 ton

LIFTING SYSTEM

The type Z lifting system has a simple lifting piston system and is designed for the toughest jobs. The breakout force of 118 kN combines with a Bucket angle that is well maintained throughout the range of movement. The bucket angles are optimised in the travelling position and at ground level.
The load isolation system (LIS) is fitted as option. It increases operator comfort and improves output.

Lifting cylinders (2)

Bore x stroke : 140 mm x 790 mm

Bucket cylinders (1)

Bore x stroke : 160 mm x 510 mm

AXLES

The front and rear drive axles are fully suspended and have planetary reduction gears in the hubs.
Equipped with limited slip differentials in the front and rear axles, traction is optimum under all conditions.
A traction power of 12.0 tonnes allows inclines with a slope of 58% to be tackled.

Limited slip differential (front and rear)

45%

Oscillation angle

+/- 11°

Brakes

Dual multi-disc circuit.
Self auto adjusted discs extend service life. The braking system is activated by a pump and accumulator circuits.
The parking brake consists of a disc mounted on the transmission shaft applied by a spring and released hydraulically.

HYDRAULIC SYSTEM

The hydraulic system consists of triple section vane pump.
Automatic functions for positioning the bucket for digging as well as stopping the boom at the desired height position are standard.
A simple levelling function is also available as standard.
The hydraulic control valve has a third port for powering an auxilary hydraulic function.

Main pumps

Triple section vane pump

Maximum flow

115 / 126 / 39 l /min(30.4 /33.3 /10.3 gal/min)

Operating pressure

196 bars

Pilot system

Automatic functions for positioning the bucket for digging as well as for stopping the boom at the desired height position are standard.
A simple levelling function is also standard.

Filters

In the oil return to the tank, the glass fibre filter has a filtering capability of 10 micron.

Loading cycle

Lifting speed(loaded) 5.4 seconds
Dumping speed(loaded) 1.4 seconds
Lowering speed(empty) 3.4 seconds

CAB

The modular cab gives excellent visibility in all directions.
The driving position provides an excellent view of the bucket, the tires and the loading area.
The ventilation is optimum. The air conditioning and heating are controlled by pushbuttons with an air recirculation function.
A double cab air filter is installed in the cab and a slight overpressure effectively protects the operator in dusty and polluted environments.
The cab is mounted on viscous suspension mounts for maximum comfort.
The cab is spacious and has generous amounts of storage.
All information necessary for operating the machine is displayed in front of the operator. The control functions are centralised on a console on the right.
Seat and arm rests are adjustable according to the operator.
The same applies for the steering column.

Number of doors

1

Emergency exits

2

Standards

ROPS ISO 3471 and FOPS: ISO 3449

STEERING SYSTEM

The steering system is hydraulic load sensitive type.

Steering angle

40°

Oil flow

80 ℓ /min (21.1 gal/min)

Operating pressure

196 bars

Steering cylinders (2)

Bore x stroke : 70 mm x 430 mm
Emergency steering system with hydraulic pump driven by electric motor. (Optional)

MAINTENANCE

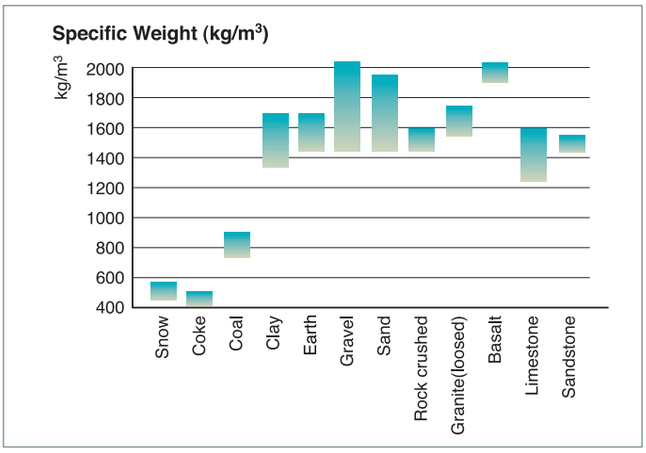
Maintenance is easy due to excellent access.
The transmission is electronically controlled. An error coding system allows easy diagnosis of the systems and proper intervention.

Fuel tank : 275 ℓ (72.6 US gal)
Cooling system : 50 ℓ (13.2 US gal)
Engine oil : 21 ℓ (5.5 US gal)
Front axle : 35 ℓ (9.2 US gal)
Rear axle : 22 ℓ (5.8 US gal)
Gearbox and converter : 45 ℓ (11.8 US gal)
Hydraulic system : 174 ℓ (46 US gal)

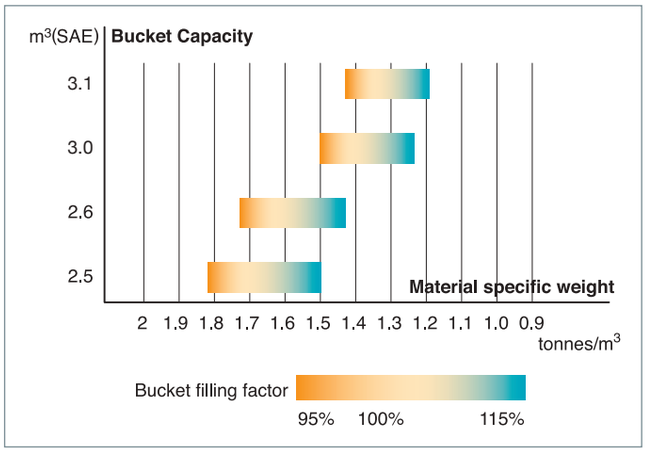
OPERATIONAL DATA

Bucket mount			PIN ON	PIN ON	PIN ON	PIN ON
Configuration	**Code**	**Unit**	**Teeth (std.) (BOT)**	**Bolt-on edges (BOC)**	**Teeth (BOT)**	**Bolt-on edges (BOC)**
Capacity heaped ISO/SAE		m^3	2.5	2.6	3.0	0
Bucket width	U	mm	2,740	2,740	2,838	0
Breakout force		ton	12.0	12.0	11.0	0
Static tipping load (straight)		kg	10,952	10,832	10,818	0
Static tipping load (at full turn)		kg	9,495	9,391	9,379	0
Dump height (at 45°)[1] (at fully raised)	A	mm	2,800	2,880	2,739	0
Dump reach (at 45°)[1] (at fully raised)	B	mm	1,175	1,106	1,244	0
Digging depth	E	mm	97	97	97	97
Height at bucket pivot point	F	mm	3,957	3,957	3,957	3,957
Max. tilt angle at carry position	G	degree	50	50	50	50
Max. tilt angle at fully raised	H	degree	61	61	61	61
Max. tilt angle on ground	I	degree	44	44	44	44
Max. dump angle at fully raised	M	degree	45	45	45	45
External radius at tire side	R	mm	5,450	5,450	5,450	5,450
External radius at bucket edge	D	mm	6,097	6,071	6,166	6,166
Wheel base	C	mm	3,020	3,020	3,020	3,020
Width at tires	Q	mm	2,608	2,608	2,608	2,608
Tread	J	mm	2,040	2,040	2,040	2,040
Ground clearance	S	mm	428	428	428	428
Overall length	T	mm	7,704	7,599	7,808	7,703
Overall height	V	mm	3,321	3,321	3,321	3,321
Tire size			20.5-25-16PR (L3)	20.5-25-16PR (L3)	20.5-25-16PR (L3)	20.5-25-16PR (L3)
Operating weight		kg	14,200	14,310	14,280	14,400

1) Measured to the tip of the bucket teeth or bolt-on edges.

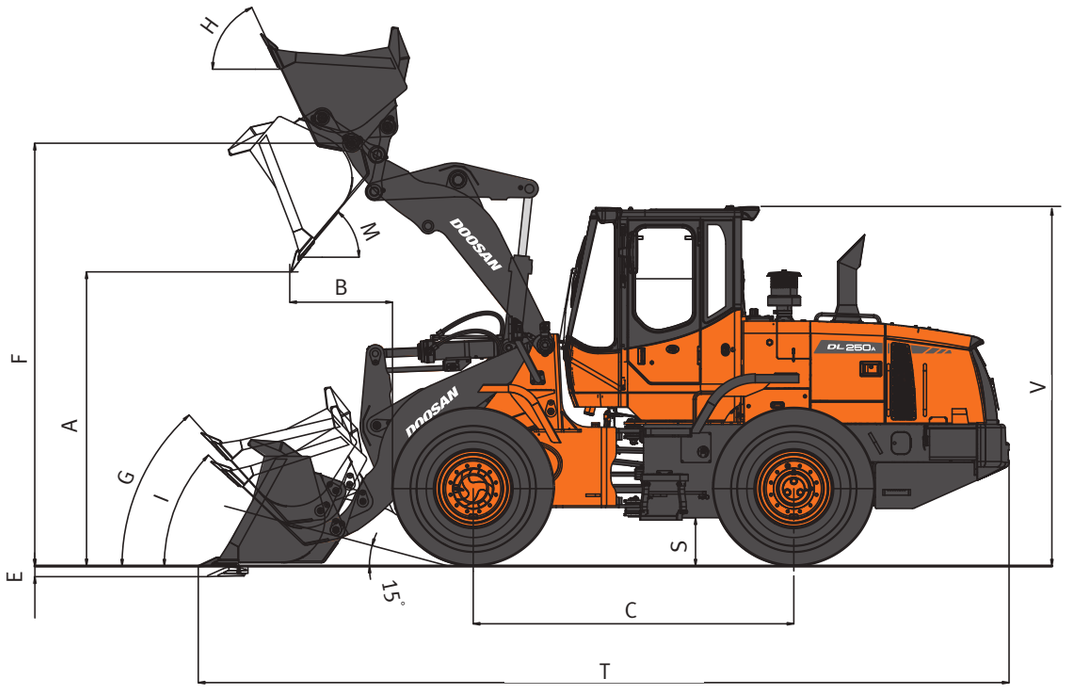


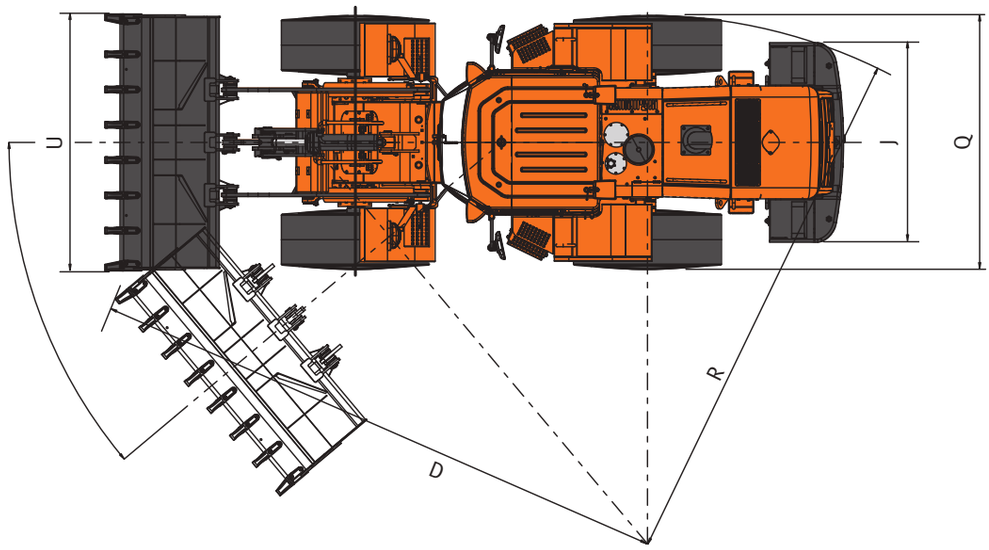
The specific weight of material largely depends on moisture rate, compacting value, percentage of various components etc... This chart is given only for information.



The Bucket filling factor depends also of the nature of material, the working conditions and the operator ability.

DIMENSIONS





STANDARD AND OPTIONAL EQUIPMENT

STANDARD EQUIPMENT

Engine

- DOOSAN D1146T Diesel engine
- Air cleaner - Double element cartridge + Cyclone filteration in prior stage
- Fuel filter - Main fuel filter and fuel pre-filter with water separator
- External drains for engine oil and coolant changes
- Hydraulic radiator fan

Hydraulic System

- Hydraulic control valve - 2 spool
- Hydraulic main pump - Vane
- Hydraulic control levers
- Boom kick out - Automatic
- Bucket return to dig - Automatic

Cabin and Interior

- 12V power socket
- Double filtered air cab
- Air conditioner and heater with recirculation function
- Cup holder
- Tinted glasses
- Floor mat
- AM/FM Radio + MP3(USB)
- Windshield washer front and rear
- Windshield wipers front and rear
- Cigarette lighter
- Multiple storage compartments
- Sun visor
- Glass antenna
- Seat - Mechnical suspention
- ROPS cabin - ISO 3471
- FOPS cabin - ISO 3449
- Adjustable steering column
- Rear view mirrors - Interior 2

Eletrical and lighting

- Battery cut-off switch
- Working light - Front 2 + Rear 4
- Driving light - Low and high beams
- Tail indicators - Stop, reversing lights
- Reversing alarm
- Electric horn
- Alternator - 24V, 60A
- Self-diagnostic system

Linkage

- Z-bar loader linkage

Drivetrain and Brake system

- Gear shift switch - Manual, Auto 1 ↔ 4, Auto 2 ↔ 4
- Kickdown and travelling direction selection
- Starting safety system
- Dual brake circuits with accumulator
- Dual service brake pedals
- Secondary brake system
- Parking brake - Electrical, hydraulic
- Differential - Limited slip

Steering system

- Load sensing steering system

External equipment

- Fender

OPTIONAL EQUIPMENT

Some of these optional equipments may be standard in some markets. Some of these optional equipments cannot be available on some markets. You must check with the local DOOSAN dealer to know about the availability or to release the adaptation following the needs of the application.

Hydraulic System

- Hydraulic Oil - VG32 Cold Weather
- Hydraulic Oil - VG46 Normal Weather
- Hydraulic Oil - VG68 Tropical Weather
- Hydraulic control valve - 3 spool
- Load isolation system (LIS)
- Hydraulic control levers - Mono
- Hydraulic control levers - FNR
- Hydraulic control levers - Finger tip

Cabin and Interior

- Seat - Air suspention
- Canopy - 4 Pillar

Eletrical and lighting

- License lamp
- Beacon - Rotating
- Alternator - 24V, 80A
- EMI Filter

Linkage

- Z-bar high lift loader linkage

Steering system

- Emergency steering pump

External equipment

- Fender - Full fender + rubber protector
- Wheel chocks
- Anti-noise Kit
- Tool Kit

* Standard specification and options may vary by country.
** Specification is subject to change without prior notice for quality enhancement.

ATTACHMENTS

General Purpose

Light Material

BUCKETS

	Mounting type	Capacity	Width
GENERAL PURPOSE	Direct mount	2.5 / 2.6 / 3.0 / 3.1 m^3	2,740 / 2,838 mm
	Quick coupling	2.5 m^3	2,740 mm
LIGHT MATERIAL	Direct mount	3.0 / 5.0 m^3	2,800 / 2,900 mm
	Quick coupling	3.0 / 5.0 m^3	2,800 / 2,900 mm

Quick Coupler

CONNECTING

	Mounting type	Model	Weight
QUICK COUPLER	Quick coupling	DLQC25	390 kg

Pallet Fork

General purpose

Tropical type

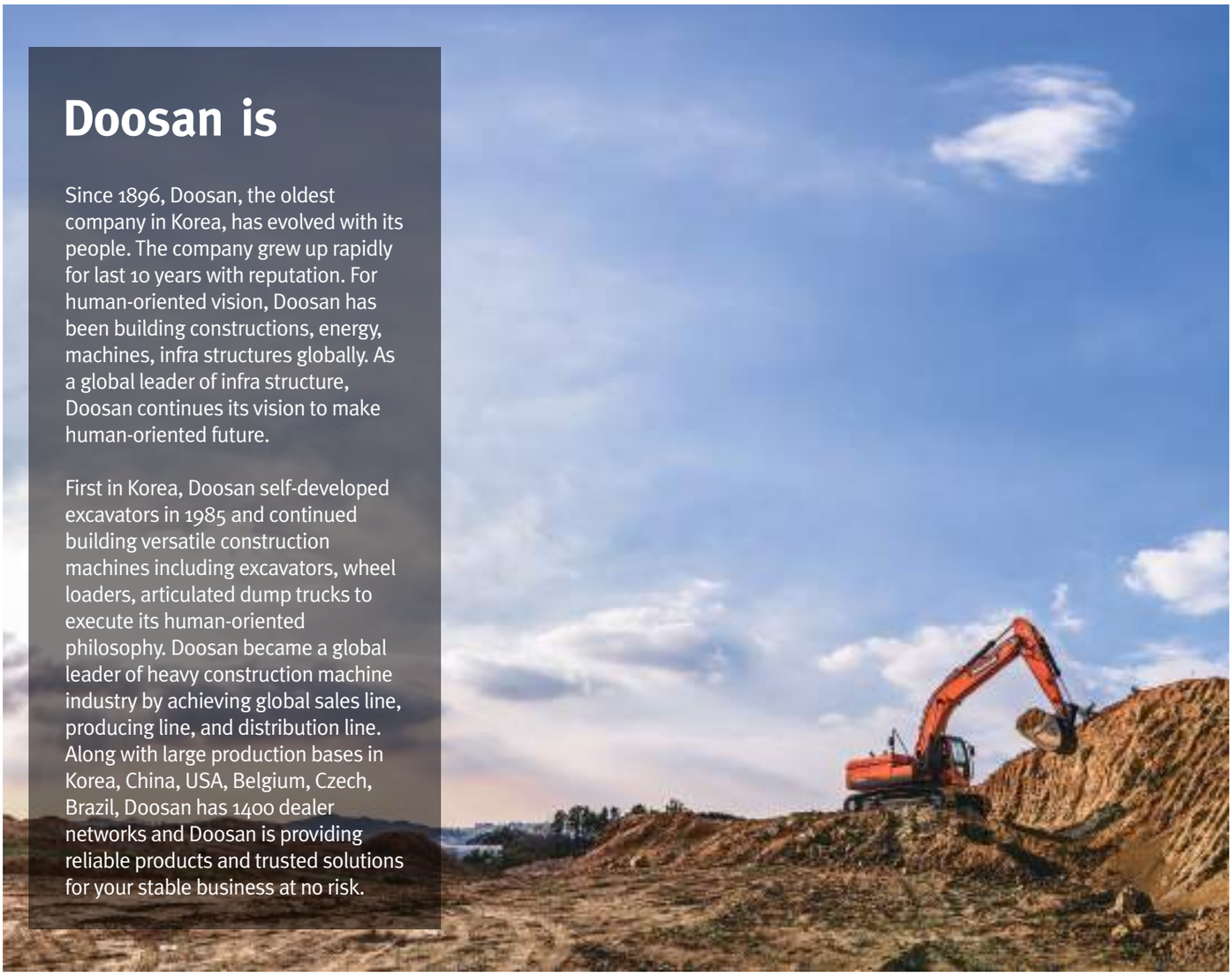
Sorting type

Log Grapple

MATERIAL HANDLING

	Model	Length
PALLET FORK	DLPF25	48” / 60” / 72”

	Model	Type
LOG GRAPPLE	DLLG25	General purpose Tropical type Sorting type



Doosan is

Since 1896, Doosan, the oldest company in Korea, has evolved with its people. The company grew up rapidly for last 10 years with reputation. For human-oriented vision, Doosan has been building constructions, energy, machines, infra structures globally. As a global leader of infra structure, Doosan continues its vision to make human-oriented future.

First in Korea, Doosan self-developed excavators in 1985 and continued building versatile construction machines including excavators, wheel loaders, articulated dump trucks to execute its human-oriented philosophy. Doosan became a global leader of heavy construction machine industry by achieving global sales line, producing line, and distribution line. Along with large production bases in Korea, China, USA, Belgium, Czech, Brazil, Doosan has 1400 dealer networks and Doosan is providing reliable products and trusted solutions for your stable business at no risk.

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