



Doosan Infracore
Construction Equipment

DL300

Engine Power: 162 kW / 217 Hp at 2.000 rpm

Operational weight: 18.100 ~ 18.300 kg

Bucket capacity (SAE): 2,7 ~ 3,5 m³



Wheel loader: DOOSAN DL300



Look at these innovations !

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The key phrase used during the development of the DL300 was “giving optimal value to the end user”. This translates, in concrete terms, into:

A powerful wheel loader with novel features

- **Increased production** due to the use of a new generation “Common Rail” 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.
- **Reduced maintenance** increases the availability of the loader and reduces operating costs.



Performance

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 DL300 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 new DOOSAN DLo8 “Common Rail” engine.



DOOSAN DLo8 «Common Rail» engine

The engine features excellent power and torque characteristics. With 4 valves per cylinder and electronic control, combustion is optimised and reduced emissions minimise pollution.

Increased torque and a generous torque reserve allow efficient use of power by the hydraulic system.

High torque means high manoeuvrability of the loader when moving.

The engine has two modes of operation: **“power”** or **“economy”**.



Automatic transmission

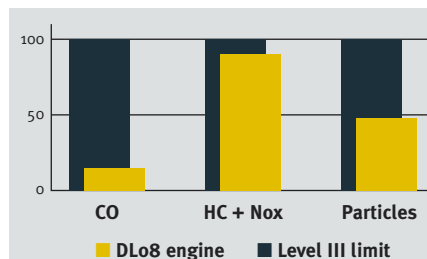
The transmission is particularly smooth and the gear ratios are optimised.

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:

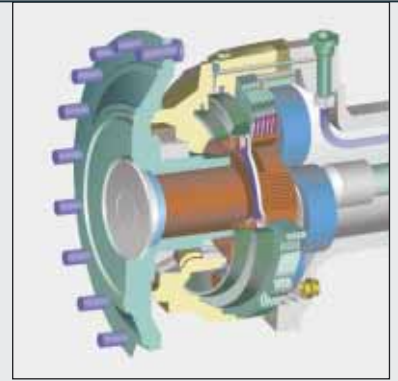
- Manual
- Automatic (automatic shift for all gears)
- Semi – Automatic (automatic with a “kick down” for first gear)



DOOSAN Infracore is aware of the importance of protecting the environment.

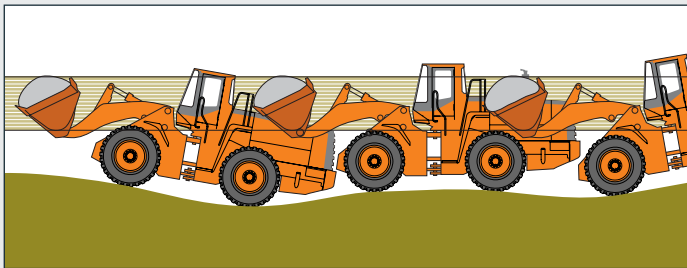
Ecology was uppermost in the minds of the research workers right from the start of the design of the new machines. The new challenge for the engineers is to combine the protection of nature with equipment performance. DOOSAN has been investing heavily to this end.

The new DOOSAN DLo8 engine respects and protects the environment, limiting all types of toxic emissions.



Limited slip ZF differential

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. The brake discs integrated into the planetary reduction gears in the hubs are metal reinforced, ensuring long hours of operation and reduced maintenance.



Load stabiliser (standard)

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



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.



Load sensitive control system

The control system is sensitive to load and ensures gradual, precise control even at low speed.

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 DL300 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.



Air cushioned seat

The DL300 is equipped with a very comfortable air suspension seat. Multiple adjustment controls are provided.



Steering column

The steering column is adjustable for reach and rake.



Arm rests

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



Control levers

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.



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.



Central indicator panel

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

Maintenance

Short, simple maintenance operations at long intervals increase the availability of the equipment on site. DOOSAN has developed the DL300 with a view to high profitability for its user. A detailed design of each detail guarantees optimum reliability and reduced maintenance costs.



Hydraulic circuit return filter

The engine oil filter offers a high level of filtration. Thanks to its high quality, oil change intervals are increased. The hydraulic circuit return filter, made of glass fibre, eliminates up to 99.5% of foreign substances. It effectively protects the hydraulic circuit and extends service intervals.



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.



Transmission filter

The transmission filters are easy to reach and can, like all other maintenance components, be checked from ground level.



Air cleaner

The forced air cleaner removes 99% of particles. It is preceded by a high capacity Turbo pre-filter. The cleaning and cartridge replacement intervals are very long.



Reversible fan

The radiator fan has a reversible flow capability to make cleaning of the coolers easier when the machine is operating in dusty environments.



Hydraulic test points

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



Transmission diagnostics

The laptop PC “monitoring” function allows the status of the transmission to be checked very easily. Disc brake wear is automatically compensated for, and wear can be checked without disassembly.



Engine oil and coolant drains

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

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.



Special attention was given to the design and manufacture of structural components.

To ensure long lifetime for the main structures, DOOSAN has used finite element techniques. All the structural components such as the chassis, the joints and the lifting arm have been designed using this method. After modelling, they are subjected to intensive laboratory and field testing where extreme conditions are simulated and tested. Statistical data is established in order to constantly increase the level of reliability.



Reinforced bucket

The sides and bottom of the bucket are reinforced.



Propeller shaft

A protective cover has been fitted to protect the oil seal from dust and foreign objects, thus wear during use is reduced.



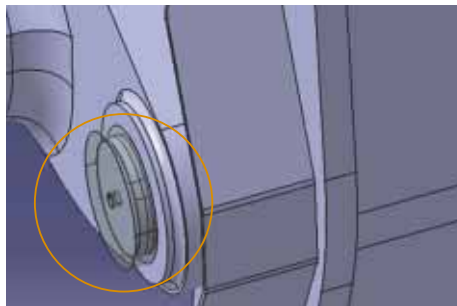
ORFS

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



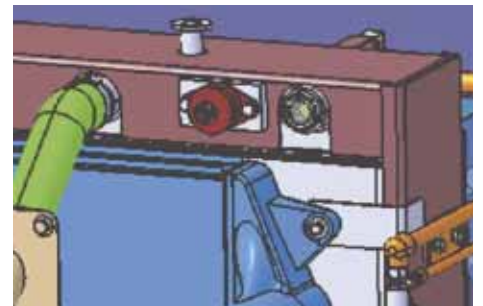
Radiator grille

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



Drive shaft cover plates

- Increased diameter
- Bronze bearings
- Chrome-plated shaft



Radiators mounted on rubber mounts

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

Standard and optional equipment

* Standard equipment

• Engine

- Three stage air cleaner with cyclone pre-cleaner
- Water separator
- Fuel filter
- Hydraulically driven fan with bi-direction flow
- External drains for engine oil and coolant changes
- Engine power Mode selector switch (Standard/Economy mode)
- Self-diagnostic system

• Lifting and hydraulic system

- Robust Z bar lifting system
- General purpose bucket 3 m³ (SAE, heaped)
- Hydraulic control valve with 3 spools
- Automatic boom kick out
- Automatic bucket kick out
- Fast couplers for hydraulic check
- 2 variable displacement load sensing pumps
- Mono control lever (FNR)
- Additional lever for 3rd function
- Load isolation system (LIS)

• Steering system

- Emergency steering pump driven by electric motor
- Load sensing

• External equipments

- Lower protection plates
- Lifting hooks
- Articulation lock in the transport position
- Towing hitch
- Tool compartment
- Full fenders with rubber protection
- Wheel chocks
- Boom float kick-out

• Electric System

- Alternator 60 A / 24 V
- Working lights: 2 at the front and 4 at the rear (6 x 70 W)
- Driving lights: low and high beams
- Tail indicators, stop, reversing lights
- Reverse travel alarm

• Drive line and brake system

- Transmission which can be declutched when braking
- Transmission with self diagnosis and monitoring indicator, plus electronic plug for fast adjustment
- Transmission Mode selector switch (Manual / Auto 1 ↔ 4 / Auto 2 ↔ 4 with kick down)
- Starting safety system
- Limited slip differentials on front and rear axles
- Dual brake circuits with accumulator
- Tyres 23.5-25-16PR (L3)
- Dual service brake pedals
- Parking brake on the transmission, spring applied hydraulic release

• Cab

- Air conditioning with climat control
- Double filtered air cab
- Air suspended seat with safety belt
- Adjustable steering column (inclination & telescopic)
- Floor mat
- Tinted glasses
- Left sliding window
- Front and rear wiper and washers
- Sun visor
- Interior cab light
- Interior rear view mirrors
- Heated side mirrors
- Machine monitoring (dials, gauges and lamps)
- Main switches in front of the driver
- Switches for the general functions in the right console
- Horn
- Cigarette lighter
- 12 Volt power socket
- Cup holder
- Storage compartment
- Radio antenna built into rear window
- Loudspeakers and connections for radio
- ROPS cabin which meets the following criteria: SAE J 394, SAE 1040, ISO 3471
- FOPS for cabin which meets the following criteria: SAE J 231, ISO 3449

* 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.

• Tyres

- L3, L4, L5, following various types of manufacturers

• Lifting and hydraulic system

- Two hydraulic levers with FNR + additional lever for 3rd function

• Electric system

- Rotating beacon
- Additional lighting
- Fuel filling pump
- Fuel heater

• Cab

- Video system with color LCD and o Lux camera
- Radio / CD
- Radio / CD / MP3

• External equipments

- Semi-fender
- Additional counterweight

Technical specifications

DL 300

* Engine

• Model

DOOSAN DLo8
“Common Rail” engine with direct fuel injection and electronic control, 4 valves per cylinder, vertical injectors, water cooled, turbo compressor and air-air cooling of the intake air.
The emission levels are well below the values required for Phase III.
Two modes available: normal and economy.

• Number of cylinders

6

• Nominal power

162 kW (220 Ps) at 2.000 rpm (Din 6271)
162 kW (217 Hp) at 2.000 rpm (SAE J 1995)

• Maximum power

169 kW (230 Ps) at 1.800 rpm (Din 6271)
169 kW (227 Hp) at 1.800 rpm (SAE J 1995)

• Maximum torque

105 kgf.m (1.029 Nm) at 1.300 rpm

• Piston displacement

7.640 cm³

• Bore & stroke

108 mm x 139 mm

• Starter

24 V / 6,6 kW

• Batteries

2 x 12 V / 150 Ah

• Air cleaner

Double element and pre-filtered Turbo with auto dust evacuation.

• Cooling

The hydraulic motor fan direction is reversible to facilitate cleaning. The speed of rotation is automatically adjusted according to the temperature conditions encountered.

* 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.

• Gearbox

ZF 4 WG 210

• Torque converter

Simple stage / mono phase

• Movement speed, kph

Forward: 6,2 - 11,6 - 22,5 - 34,5 (1 - 2 - 3 - 4)
Reverse: 6,4 - 12,2 - 23,8 (1 - 2 - 3)

• Maximum traction

18,2 tonnes

* Lifting system

The type Z lifting system has a simple lifting piston system and is designed for the toughest jobs. The breakout force of 18 tonnes 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 standard. It increases operator comfort and improves output.

• Lifting cylinders (2)

Bore x stroke: 150 mm x 831 mm

• Tilting cylinders (1)

Bore x stroke: 190 mm x 495 mm

* Axles

• Model ZF

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 18 tonnes allows inclines with a slope of 58% to be tackled.

• Maximum torque transmission (front and rear)

45%

• Oscillation angle

+/- 12°

• Brakes

Dual multi-disc circuit.

Sintered metal 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 two vane pumps.

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 auxiliary hydraulic function.

• Main pumps

Two vane type pumps

• Maximum flow

150 / 132 / 37 l/min

• Operating pressure

200 bar

• 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.

• Maximum flow

20 l/min

• Operating pressure

30 bar

• Filters

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

• Loading cycle

Lifting (sec)	5,9
Lowering (sec)	3,7
Emptying (sec)	1,9

* Cab

The modular cab gives excellent visibility in all directions.

The driving position provides an excellent view of the bucket, the tyres 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 high quality seat is equipped with air suspension.

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

Noise Levels (dynamic value)

• LwA external noise:

LwA external noise: 103 dB(A) (ISO6395-2000/14/EC)

• LpA operator noise:

LpA operator noise: 71 dB(A) (ISO6396)

* Steering system

The steering system is electro-hydraulic load sensitive type.

• Steering angle

40°

• Oil flow

130 l/min

• Operating pressure

190 bar

• Steering cylinders (2)

Bore x stroke: 80 mm x 450 mm

Emergency steering system with hydraulic pump driven by an electric motor.

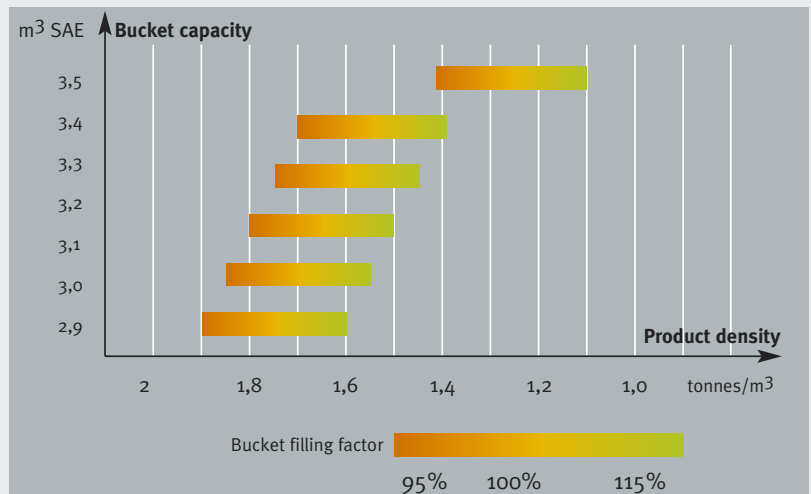
• Refill capacities

Fuel tank:	330 l
Cooling system:	50 l
Engine oil:	35 l
Front axle:	38 l
Rear axle:	30 l
Gearbox and converter:	48 l
Hydraulic system:	210 l

Operational data

	Tyre size 26.5-25-20PR(L3)		General purpose						Light material		High Lift
			Teeth	Teeth (std.)	Teeth	Bolt-on edge	Bolt-on edge	Teeth and segments	Teeth	Bolt-on edge	Bolt-on edge
Capacity heaped		m ³	2,7	3,0	3,0	2,9	3,2	3,2	3,3	3,5	2,9
Tooth type			Adapter tooth	Adapter tooth	Integrated tooth			Adapter tooth	Adapter tooth		
Bucket width	A	mm	2.730	2.920	2.920	2.730	2.920	2.920	2.920	2.920	2.920
Breakout force		kN	162	162	162	162	162	162	162	162	160
Static tipping load (at straight)		kgf	13.557	13.500	13.500	13.392	13.332	13.342	13.450	13.273	11.203
Static tipping load (at 40°)		kgf	11.150	11.100	11.100	11.004	10.951	10.961	11.055	10.899	9.603
Dump height (at 45°) (at fully raised)	J	mm	2.760	2.780	2.782	2.880	2.890	2.780	2.750	2.880	3.465
Dump reach (at 45°) (at fully raised)	I	mm	1.307	1.285	1.280	1.183	1.171	1.285	1.320	1.183	1.175
Dump height (at max. dump) at max reach		mm	644	677	690	820	833	677	644	820	1.014
Dump reach (at max. dump) at max reach		mm	1.474	1.445	1.452	1.399	1.392	1.445	1.474	1.399	2.240
Digging depth	H	mm	76	76	76	76	76	76	76	76	200
Height at bucket pivot point	K	mm	4.000	4.000	4.000	4.000	4.000	4.000	4.000	4.000	4.532
Max. tilt angle at carry position	α	°	46	46	46	46	46	46	46	46	50
Max. tilt angle at fully raised		°	58	58	58	58	58	58	58	58	55
Max. tilt angle on ground		°	43	43	43	43	43	43	43	43	45
Max. tilt angle at max. reach	β	°	59	59	59	59	59	59	59	59	69
Max. dump angle at max. reach		°	68	68	68	68	68	68	68	68	61
Max. dump angle on ground		°	72	72	72	72	72	72	72	72	56
Max. dump angle at fully raised		°	47	47	47	47	47	47	47	47	47
External radius at tire side	R	mm	5.800	5.800	5.800	5.800	5.800	5.800	5.800	5.800	5.800
External radius at bucket edge	D	mm	6.300	6.360	6.320	6.290	6.380	6.360	6.360	6.380	6.868
Wheel basis	G	mm	3.200	3.200	3.200	3.200	3.200	3.200	3.200	3.200	3.200
Width at tyres	B	mm	2.760	2.760	2.760	2.760	2.760	2.760	2.760	2.760	2.760
Tread	V	mm	2.150	2.150	2.150	2.150	2.150	2.150	2.150	2.150	2.150
Ground clearance	C	mm	470	470	470	470	470	470	470	470	470
Overall length	F	mm	8.160	8.150	8.110	8.110	8.045	8.150	8.150	8.055	8.533
Overall height	E	mm	3.438	3.438	3.438	3.438	3.438	3.438	3.438	3.438	3.438
Operating weight		kg	17.120	17.300	17.300	17.260	17.460	17.450	17.360	17.520	17.728

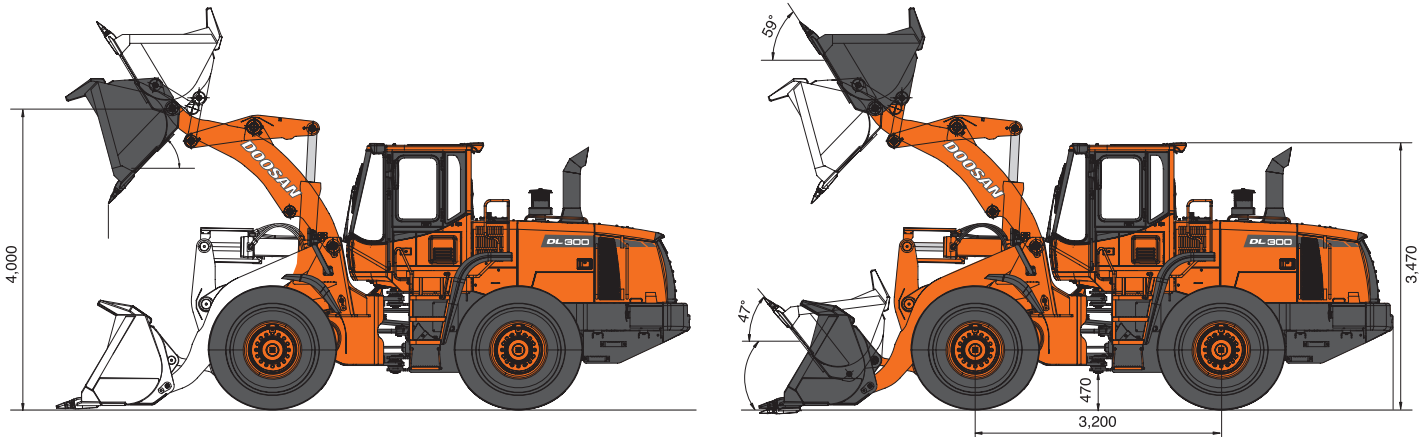
- 1) Max height at the teeth or bolt-on edge
 2) All dimensions given with 26.5-25-20PR(L3) tyres.



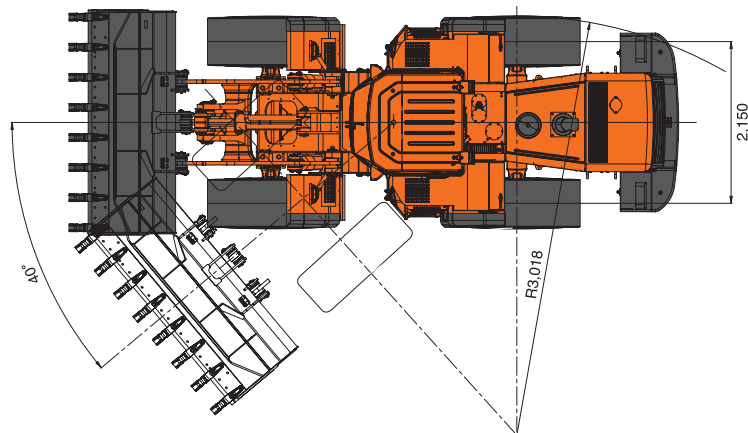
The filling factor depends on the nature of the material, the working conditions and the experience of the operator.

Dimensions

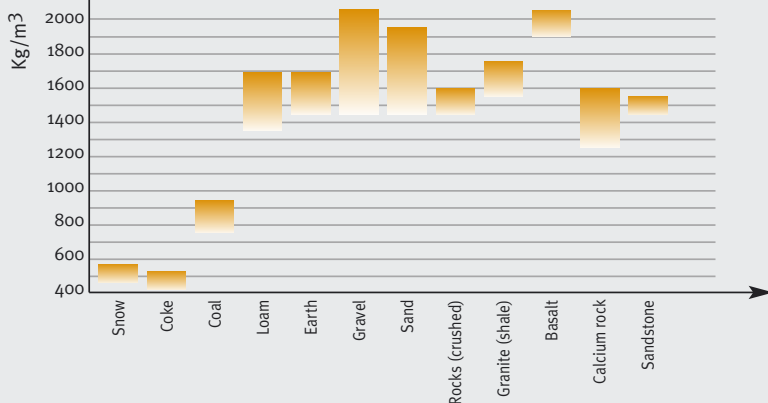
DL300



Maximum height at the teeth with 23.5-25-16PR(L3) tyres



Density of operating materials



The specific mass of the material largely depends of the humidity level, the degree of compaction, composition, etc.

This table is given for information only.

DOOSAN Infracore Europe S.A.

1st, rue Achille Degrâce
7080 Frameries, Belgium
Tel : +32-65-61 32 30 • Fax : +32-65-67 73 38

DOOSAN Infracore France SA

Buroplus 2
Parc d'Activités de La Clef St Pierre
Avenue Jean d'Alembert, bâtiment n° 2
78990 Elancourt, France
Tel : +33-1-30 16 21 41 • Fax : +33-1-30 16 21 44

DOOSAN Infracore U.K., Ltd.

Doosan House, Unit 6, 3 Heol-Y-Gamlas, Parc Nantgarw,
Nantgarw, Cardiff CF15 7QU, U.K.
Tel : +44-1443-84-2273 • Fax : +44-1443-84-1933

DOOSAN Infracore Germany GmbH

Heinrich-von-Stephan-Str. 2
D-40764, Langenfeld, Germany
Tel : +49-2173-2035212 • Fax : +49-2173-2035219

Head Office

Doosan Tower 26th FL. 18-12, Euljiro-6Ga,
Jung-Gu, Seoul, Korea 100-730
Tel : +82-2-3389-8114 • Fax : +82-2-3389-8117

www.doosaneurope.com

