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PBP D160W000 0809

The illustrations do not necessary show the product in standard version.
All products and equipment are not available in all markets.
Materials and specifications are subject to change without prior notice.



Doosan Infracore
Construction Equipment

DL160

Engine Power : SAE J1995, gross 81 kW(108 HP)@ 2,000 rpm

Operational Weight : 8,730kg (19,246 lb) - STD.

Bucket capacity(SAE) : 1.5 ~ 1.6m³(2.0~2.1 cu.yd)



Photo may include optional equipment

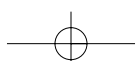


DL160

The new DL160 wheel loader has all the advantages of the previous model, and now offers additional added value to the operator.



The new DL160 was developed with the concept of "providing optimum value to the end user." In concrete terms, this translates, into :



Wheel loader : DOOSAN DL160

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

DL160

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.

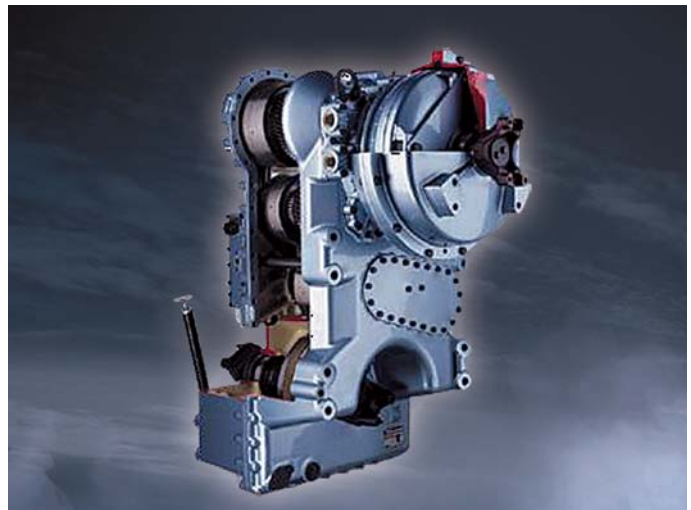
The DL160 loader gives you outstanding productivity. The reason is, on the one hand, the impressive digging power allows the hardest materials to be tackled and, and on the other, high tractive power enables easy penetration.





Cummins QSB 4.5 "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 minimize 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 Cummins QSB 4.5 engine respects and protects the environment, limiting all types of toxic emissions.



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.



Hydraulic Power Steering

The newly designed steering system ensures smooth steering even in the low engine speed ranges.



Comfort

DL160

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 DL160 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.



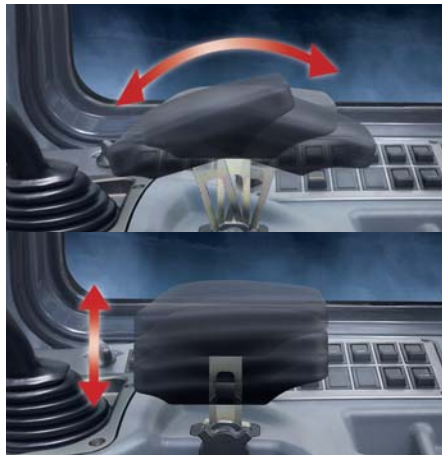
Outside mirrors with built-in hot wires

The hot wires built in the outside mirrors get rid of moisture and frost caused by rain or snow to secure rear fields of vision even in bad weather.



Steering column

The steering column features both tilting and telescopic functions.



Arm rest

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.



Sunvisor & Room mirror(Std.)

Maintenance

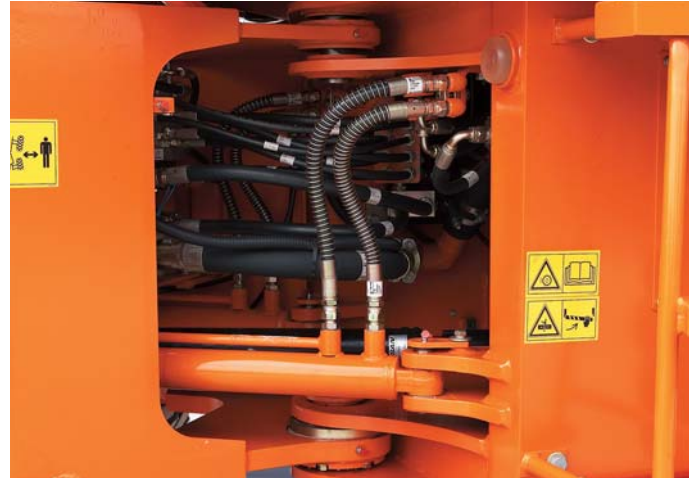
DL160

Short, simple maintenance operations at long intervals increase the availability of the equipment on site. DOOSAN has developed the DL160 with a view to high profitability for its user. A detailed design of each detail guarantees optimum reliability and reduced maintenance costs.



Easy maintenance

Access to the various radiators and coolers is very easy, making cleaning easier. Access to the various parts of the engine is from the top and via side panels.



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 filter is easy to reach and can, like all other maintenance components, be checked from ground level.



Air cleaner

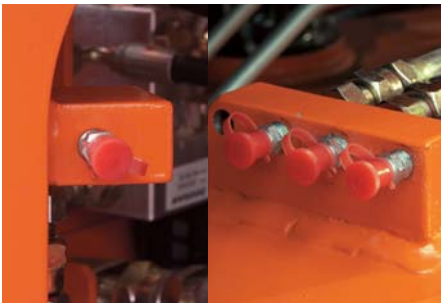
The forced air cleaner removes 99.9% of particles. It is preceded by a high capacity pre-filter.

The cleaning and cartridge replacement intervals are very long.



Brake & Pilot Filter

The pilot filter is easy to replace and a clogged filter warning system has been added for extra protection.



Greasing Lubrication Ports

The front pins and steering cylinders and rear support assembly can be lubricated from the outside of the machine without crawling under the machine or in awkward positions through the lubrication ports.



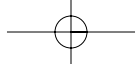
Convenient Transmission Oil Filling

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



Hydraulic pressure check points

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



Transmission diagnostics

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

Engine oil and coolant drains

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

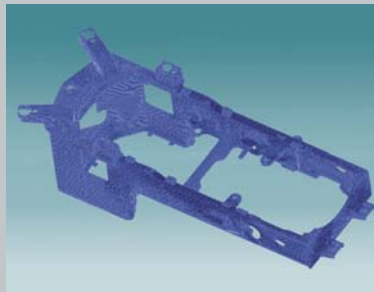
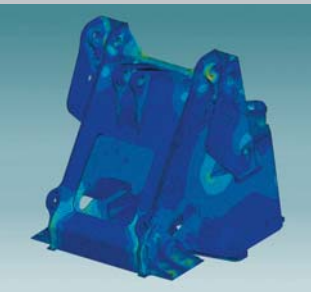


Reliability

DL160

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.



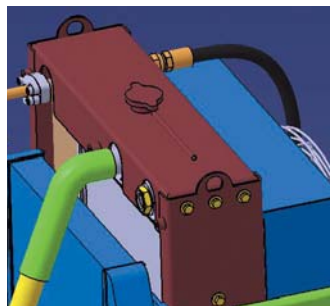
Special attention was given to the design and manufacture of structural components.

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.



Radiator grill

The radiator grill is made from FRP for increased shock resistance.



Aluminium oil cooler/ sight gauge

The material of oil cooler changed to aluminium in order to increase pressure-resistant. The sight gauge can be easy to check coolant level.



Front combination lamp

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



Rear combination lamp

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

DL160

Standard & Optional equipment

STANDARD EQUIPMENT

Engine

- Three stage air cleaner with cyclone precleaner, inner filter, and external filter restriction indicator as at the dashboard
- Fuel filter with water separator
- Fuel filter
- Hydraulically driven fan with bi-direction flow for core cleaning
- External drains for engine oil and coolant changes
- Engine power Mode selector switch (Standard / Economy mode)
- Self-diagnosis function

Lifting and Hydraulic system

- Robust Z bar lifting system
- General purpose bucket 1.6 m³ (SAE,heaped)
- Mono control lever
- Hydraulic control valve with 2 sections
- Automatic boom kick out
- Automatic bucket return to dig.
- Fast couplers for hydraulic check

Steering system

- Load sensing orbital type steering control, full hydraulic, power steering

External equipments

- Lifting hooks
- Articulation lock in the transport position
- Towing hitch
- Tool compartment
- Wheel chocks
- Semi-fender

Electric System

- Alternator 70A / 24V
- Working lights: 2 at the front and 2 at the rear (4 x 70 W)
- Driving lights: low and high beams
- Tail indicators, stop, reversing lights
- Reversing 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)
- Starting safety system
- Travel direction and kickdown selection lever at left of the steering wheel and on the joystick
- Dual brake circuits with accumulator
- Tyres 17.5R25 (L2)
- Dual service brake pedals
- Parking brake on front axle, spring applied hydraulic release

Cab

- Air-conditioning / heating with recirculation function
- Double Filtered air cab
- Mechanical seat with 2" safety belt & telescopic)
- Compartment for cans
- Floor mat
- Tinted glasses
- Left sliding window
- Front and rear wiper
- Front and rear washers
- Sun visor
- Interior cab light
- Interior rear view mirror (2)
- Heated Exterior rear view mirrors (2)
- Machine monitoring (condition, control & maintenance indicators in front of the driver by dials, gauges and lamps)
- Switches for the general functions in the right console
- Electrical horn
- Cigarette lighter
- 12 Volt power socket
- Cup holder
- Compartment for shoes
- Radio antenna built into rear window
- Speakers & connection for radio
- ROPS cabin (Rollover Protective Structure); ROPS meets the following criteria: SAE J 394, SAE 1040, ISO 3471
- FOPS cabin (Falling Objects Protective Structure); FOPS meets the following criteria: SAE J 231, ISO 3449
- Radio AM/FM

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.

Ground Engaging Tools

- Various types of buckets, fork palette, timber grapples and accessories

Tyres

- L2, L3, L5 following various types of manufacturers

Lifting and Hydraulic system

- Hydraulic control valve with 3 sections
- Hydraulically driven fan with adjustable speed proportional to fluid temperature

Electric system

- Rotating beacon
- Fuel heater

Cab

- Rear camera (CCTV) and monitor
- CD MP3 player
- Cassette player

Various

- Tool Kit

External equipments

- Full fenders
- Lower protection plates
- Boom float kick-out

Steering system

- Emergency steering pump driven by electric motor

DL160

Technical specifications

ENGINE

• Model

Cummins QSB 4.5
"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

4

• Rated power

81 kW(108 HP) @ 2,000 rpm (SAE J1995, gross)

• Maximum power

82 kW(110 HP) @ 1,500 rpm (SAE J1995, gross)

• Maximum torque

47 kgf.m (461 Nm) at 1,500 rpm

• Piston displacement

4,500 cc (275 cu.in)

• Bore & stroke

∅95 mm x 115 mm (3.74" X 4.53")

• Starter

24 V / 3.7 kW

• Batteries

2 X 12 V / 100 Ah

• Air cleaner

Double element and pre-filtered with auto dust evacuation.

• Cooling

The speed of rotation is automatically adjusted according to the temperature conditions encountered.(option)

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 130

• Torque converter

Simple stage / mono phase

• Movement speed, kph

Forward: 6.5 - 11.4 - 20.7 - 33.8 (1 - 2 - 3 - 4)

Reverse: 6.8 - 12 - 21.7 (1 - 2 - 3)

• Maximum traction

7.9 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 7.8 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 option. It increases operator comfort and improves output.

• Lifting cylinders (2)

Bore x stroke: 105 mm x 680 mm (4.1" x 26.7")

• Bucket cylinders (1)

Bore x stroke: 130 mm x 400 mm (5.1" x 15.7")

AXLES

• Model DANA

The front and rear drive axles are fully suspended and hermetically sealed final drives and wet disc brakes.

A traction power of 11.6 tonnes allows inclines with a slope of 58% to be tackled.

• Oscillation angle

$\pm 11^\circ$

• Brakes

Dual multi-disc circuit.

The braking system is activated by a pump and accumulator circuits.

The parking brake consists of a disc mounted on the front axle applied by a spring and released hydraulically.

HYDRAULIC SYSTEM

The hydraulic system consists of gear type pump with steel case and automatic wear compensation.

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

Double gear with steel case

• Maximum flow

88 / 88 / 32 ℓ /min (23.2 / 23.2 / 8.5 gal/min)

• Operating pressure

204 kgf/cm² (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.

• Filters

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

• Loading cycle

Lifting speed (loaded)	5.5 seconds
Dumping speed (loaded)	1.4 seconds
Lowering speed (empty)	3.3 seconds

OPERATOR' 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 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

• Guaranteed external noise level (2000/14/EC)

103 dB(A)

• Sound level in cab. (ISO 6396)

71 dB(A)

STEERING SYSTEM

The steering system is electro-hydraulic load sensitive type.

• Steering angle

40°

• Oil flow

88 ℓ /min (23.2 US gpm, 19.4 lmp gpm)

• Operating pressure

179 kgf/cm² (175 bar)

• Steering cylinders (2)

Bore x stroke: 60 mm x 395 mm (2.3" x 15.5")

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

• Refill capacities

Fuel tank: 185 ℓ (48.9 US gal, 40.7 lmp gal)

Cooling system: 44 ℓ (11.6 US gal, 9.7 lmp gal)

Engine oil: 26 ℓ (6.8 US gal, 5.7 lmp gal)

Front axle: 15 ℓ (3.9 US gal, 3.3 lmp gal)

Rear axle: 15 ℓ (3.9 US gal, 3.3 lmp gal)

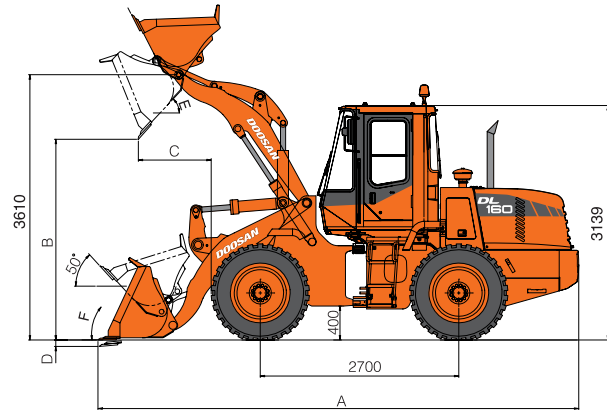
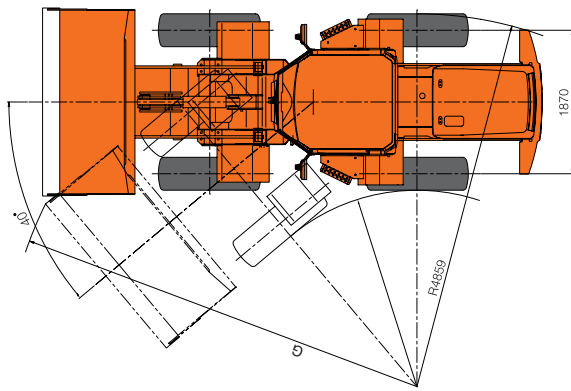
Gearbox and converter: 20 ℓ (5.3 US gal, 4.4 lmp gal)

Hydraulic system: 100 ℓ (26.4 US gal, 22 lmp gal)

DL160

Dimensions

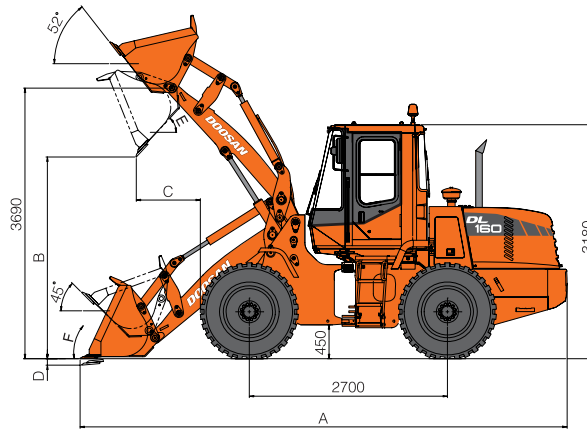
[Z-bar linkage]



SPECIFICATIONS

Bucket Type (With 17.5-25 tires)	Unit	Cutting Edge	Tooth
Capacity heaped	m ³ (yd ³)	1.6 (2.1)	1.5 (2.0)
Material density	kg/m ³ (lb/yd ³)	1,800 (3,033)	
Bucket width	mm(ft.in)	2,450 (8'0")	
Static tipping load, straight	kgf(lbf)	6,500 (14,330)	
Static tipping load, full turn 40°	kgf(lbf)	5,300 (11,680)	
Breakout force	kgf(lbf)	7,800 (17,200)	
Overall length	A mm(ft.in)	6,510(21'4")	6,590 (21'7")
Dump Height at 45°	B mm(ft.in)	2,745 (9'0")	2,685 (8'8")
Dump Reach at 45°	C mm(ft.in)	1,020 (3'4")	1,073 (3'5")
Digging depth	D mm(ft.in)	73 (2.4")	
Max. dump angle at fully raised	E deg	49	
Max. tilt angle on ground	F deg	39	
Turning radius at bucket	G mm(ft.in)	5,390 (17'8")	5,440 (17'10")
Operating weight	kgf(lb)	8,730 (19,246)	8,760 (19,312)

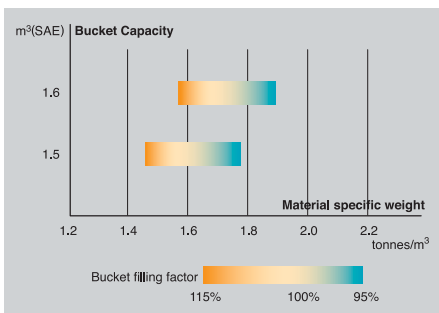
[Parallel linkage]



† All performance data and specifications based on a unit with 17.5-25 tyres and ROPS Cabin.

SPECIFICATIONS

Bucket Type (With 17.5-25 tires)	Unit	Cutting Edge	Tooth
Capacity heaped	m ³ (yd ³)	1.6 (2.1)	1.5 (2.1)
Material density	kg/m ³ (lb/yd ³)	1,800 (3,033)	
Bucket width	mm(ft.in)	2,450 (8'0")	
Static tipping load, straight	kgf(lbf)	6,100 (13,440)	5,700 (12,560)
Static tipping load, full turn 40°	kgf(lbf)	5,200 (11,460)	4,800 (10,580)
Breakout force	kgf(lbf)	7,400 (16,314)	
Overall length	A mm(ft.in)	6,575 (21'6")	6,655 (21'6")
Dump Height at 45°	B mm(ft.in)	2,706 (8'10")	2,619 (8'7")
Dump Reach at 45°	C mm(ft.in)	899 (2'11")	995 (3'3")
Digging depth	D mm(ft.in)	67 (2.6")	73 (2.9")
Max. dump angle at fully raised	E deg	47	
Max. tilt angle on ground	F deg	46	
Turning radius (without bucket)	G mm(ft.in)	4,859 (15'11")	
Operating weight	kgf(lb)	8,730 (19,246)	8,760 (19,312)



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