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PBP D190W000 0703

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

# DX190W

Engine Power : SAE J1349, net 116 kW(156HP)@1,900rpm

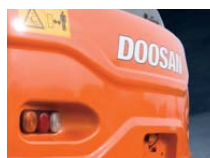
Operational Weight : 17,770 ~ 19,530 kg (39,176 ~ 43,056 lb)

Bucket capacity(SAE) : 0.38 ~ 0.93 m<sup>3</sup> (0.5 ~ 1.21 cu.yd)



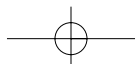


# DX 190W



The new DX190W hydraulic excavator has all the advantages of the previous model, and now offers additional added value to the operator.

The new DX190W was developed with the concept of "providing optimum value to the end user." In concrete terms, this translates, into :





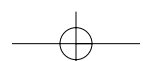
## Doosan DX190W Hydraulic Excavator : A New Model with Novel Features

**Increased production and improved fuel economy** is attributed to the electronic optimization of the hydraulic system and the new generation DOOSAN engine (Tier III / Stage III).

**Improved ergonomics** increases comfort and excellent all round visibility ensuring a safe and pleasant working environment.

**Improved reliability** is achieved through the use of high performance materials combined with new methods of structural stress analysis, and leads to increased component life expectancy, thus reducing running costs.

**Reduced maintenance** increases the availability and reduces operating costs of the excavator.



# HANDLING

The hydraulic excavator's power, durability, ease of servicing and its precise control increase its effectiveness and life expectancy. With the DX190W, DOOSAN offers an excellent return on investment.



Multi-function Color LCD Monitor Panel

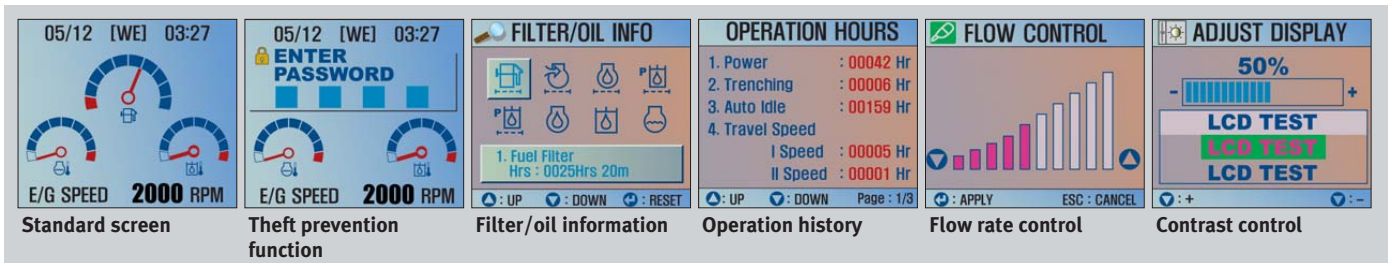
Warning lights

Operation modes

- . Mode selection
- . Flow rate control
- . Auto deceleration
- . Display selection

### Control panel

With color LCD display



Cellular phone box



12V Power socket/Cigarette lighter



Glass antenna



Storage space

### Choice of operating modes

#### Working mode

- Digging mode: for general excavation, loading, lifting...
- Trenching mode: swing priority for trench work, canal digging, embankments...

#### Power mode

- Standard: uses 85% engine power for all work
- Power: uses 100% engine power for heavy work



### Control lever

Very precise control of the equipment increases versatility, safety and facilitates tricky operations requiring great precision.

Leveling operations and particularly the movement of suspended loads are made easier and safer.

The control levers have additional electrical buttons for controlling other additional equipment (for example, grabs, crushers, grippers, etc.)

# COMFORT

# DX190W

The work rate of the hydraulic excavator is directly linked to the performance of its operator. DOOSAN designed the DX190W by putting the operator at the centre of the development goals. The result is significant ergonomic value that improves the efficiency and safety of the operator.

More space, better visibility, air conditioning, a very comfortable seat... These are all elements that ensure that the operator can work for hours and hours in excellent conditions.



### Control panel

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



The high performance air conditioning provides an air flow which is adjusted and electronically controlled for the conditions. Five operating modes enable even the most demanding operator to be satisfied.



### MP3/CD Player (Optional)



### Audio Button

Audio Button has been positioned in a way that the driver can turn on/off the radio, control the volume, and select a channel conveniently.



### Air suspension seat (Optional)

An Air Suspension Seat is available as an option, which further reduces any vibration being transmitted to the operator while working or travelling. In addition, this option is fitted with a heating system for operator comfort in cold weather.



### Dozer/Outrigger Control

The Dozer/Outrigger Control Lever, combined with the associated switches, allows for the operator to select between a combination of independent or simultaneous operation of the dozer/Outriggers.



### Steering wheel



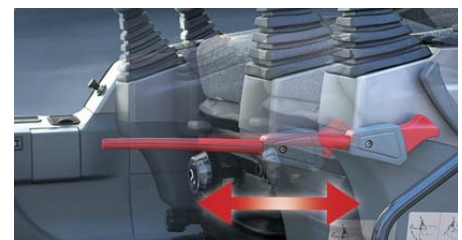
### Steering Column

The Forward/Neutral/Reverse & gear selection switch is mounted on the steering column to minimize operator movements while traveling so that safety and operator comfort are ensured. The lower part of Steering Column can be tilted for improved operator comfort.

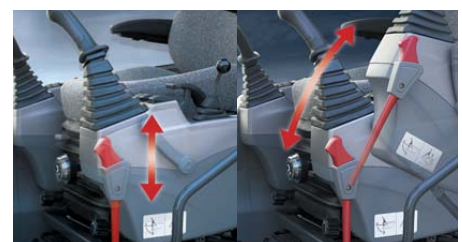


### Foot Pedals

The position of the Option, Brake and Accelerator Pedal have been set by ergonomic analysis to maximize operating efficiency while minimizing foot movement. The required pedal operating forces have also been decreased to reduce fatigue.



### Comfortable 2-stage sliding seat

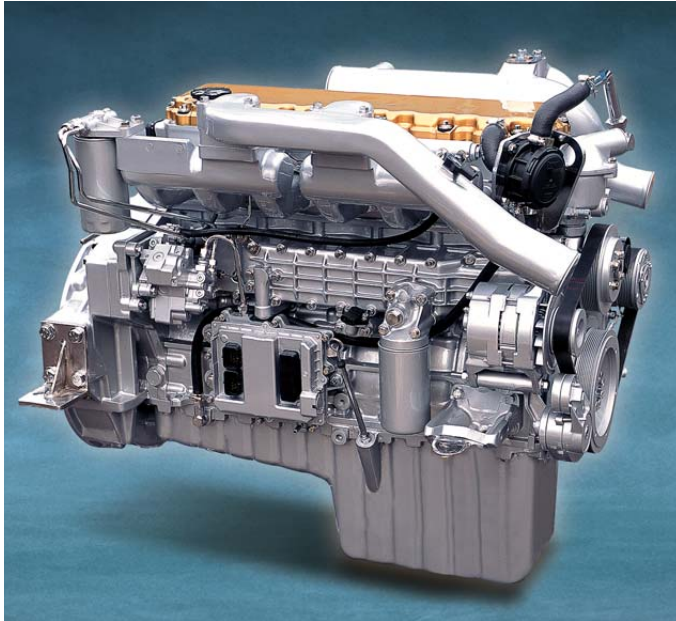


### Control stand (Telescopic & Tilting Function)



# PERFORMANCE

The performance of the DX190W has a direct effect on its productivity. Its new "Common Rail" engine and new e-EPOS controlled hydraulic system have combined to create an unbeatable hydraulic excavator, with a cost/performance ratio that makes the DX190W even more appealing.

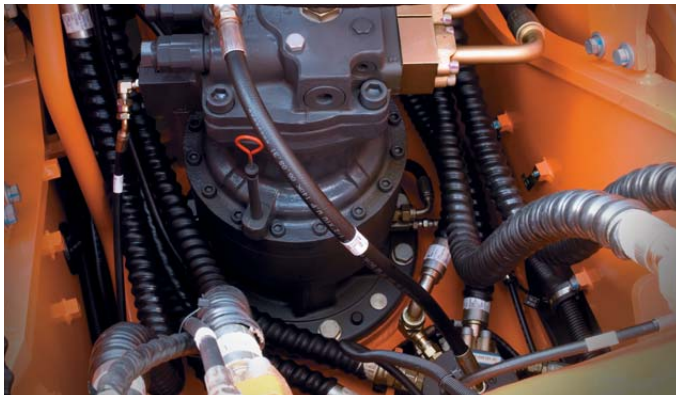


**"COMMON RAIL" DOOSAN DL06 ENGINE**



## Hydraulic Pump

Considering the property of wheel excavator that intensively performs traveling operation, bent axis piston pump is adopted for its high efficiency and excellent response in high pressure. The Main pump has a capacity of 2x200  $\frac{\text{L}}{\text{min}}$  (@ 1,900rpm) reducing cycle time while a high capacity gear pump improves pilot line efficiency.



## Swing drive

Shocks during rotation are minimized, while increased torque is available to ensure rapid cycles.

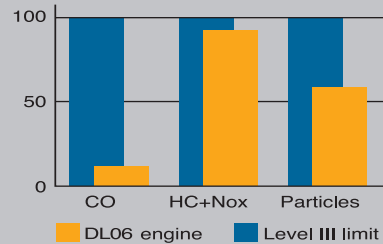
At the heart of the hydraulic excavator is the new "Common Rail" DOOSAN DL06 engine. It is combined with the new e-EPOS electronic control system, for optimum power and fuel saving.

The new engine produces 156 hp(116 kw/158 PS) at only 1,900 rpm, and more torque, due to its careful design combined with the use of common rail injection and 4 valves per cylinder. These features help optimize combustion and minimize pollution through reduced Nox & particulate emissions.

Increased torque allows efficient use of the power of the hydraulic system.

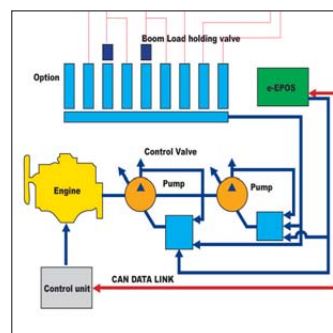
- Faster working cycles increase productivity.
- Increased torque means the excavator is able to move more easily.
- Energy efficiency reduces fuel consumption.

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 and to this end DOOSAN has been investing heavily.



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

## EXCAVATOR CONTROL

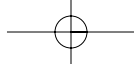


### New e-EPOS system (Electronic Power Optimizing System)

The brains of the hydraulic excavator, the e-EPOS, have been improved and now can electronically link to the engines ECU (Electronic Control Unit), through a CAN (Controller Area Network) communication link, enabling a continuous exchange of information between the engine and the hydraulic system. These units are now perfectly synchronised.

The advantages of the new e-EPOS impacts at several levels, Ease of operation and user-friendliness:

- The availability of a power mode and a normal operating mode guarantee maximum efficiency under all conditions.
- Electronic control of fuel consumption optimizes efficiency.
- The automatic deceleration mode enables fuel saving.
- Regulation and precise control of the flow rate required by the equipment are available as standard.
- A self-diagnosis function enables technical problems to be resolved quickly and efficiently.
- An operational memory provides a graphic display of the status of the machine.
- Maintenance and oil change intervals can be displayed.



# DX190W



## Undercarriage Design

A rigid, welded frame provides excellent durability. Efficient hydraulic lines routing, transmission protection and heavy duty axles make the undercarriage perfect for wheel excavator applications.

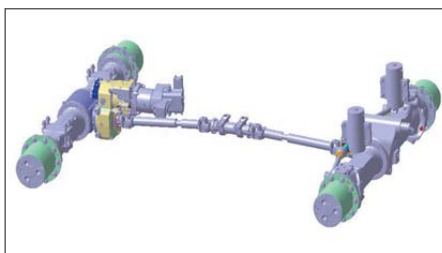
Both outriggers and dozer blade are bolt-on for maximum flexibility.

An optional work tool restraint bar is available.



## Outriggers

The bolt-on design allows the outriggers to be mounted on the front and/or rear for maximum operating stability when digging or lifting and are individually controlled for leveling on slopes.



## Heavy Duty Axles

The front axle offers wide oscillating and steering angles. The transmission is mounted directly on the rear axle for protection and optimum ground clearance.

## Advanced Disc Brake System

The new disc brake system works directly on the hub instead of the drive shaft to avoid planetary gear backlash. This eliminates the rocking effect associated with working free on wheels. The new axle is designed for low maintenance and the oil change intervals have been increased from 1,000 to 2,000 hours further reducing owning and operating costs.

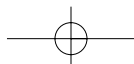
## New Drive Line Concept

The new travel motor and transmission control in the drive line provide comfortable travel due to increased smoothness, improved hydraulic retarding and improved gear shifting.



## Dozer Blade

The bolt-on design allows the dozer blade to be mounted on the front and/or rear and is used for leveling, clean-up work and for stabilizing the machine during digging applications. The large dozer bottom and parallel design provide minimized ground pressure.

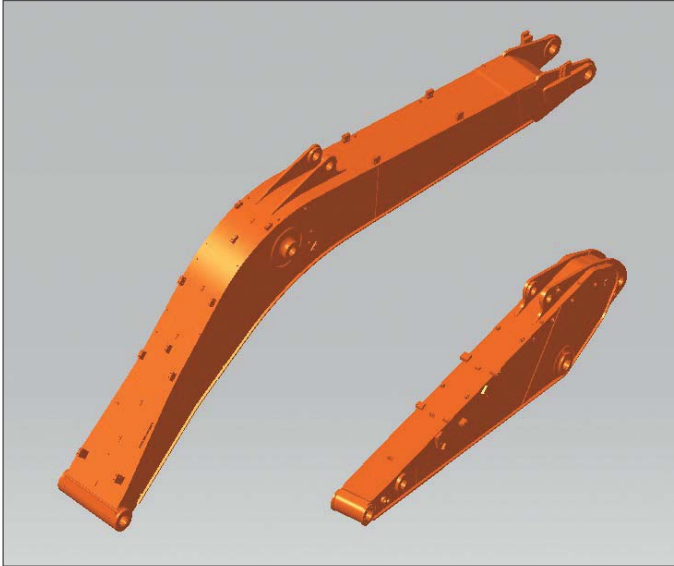




# RELIABILITY

The reliability of an item of plant contributes to its overall lifetime operating costs. DOOSAN uses computer-assisted design techniques, highly durable materials and structures then test these under extreme conditions.

Durability of materials and longevity of structures are our first priorities.

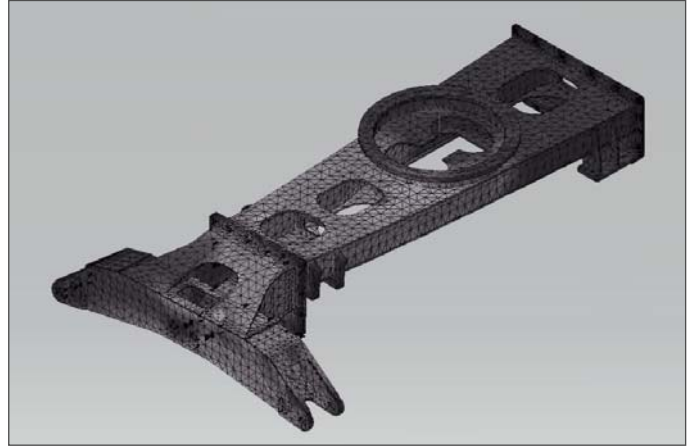


## Strengthened Boom

The shape of the boom has been optimized by finite elements design, allowing uniform load distribution throughout the structure. This combined with increased material thickness means improved durability and reliability by limiting element fatigue.

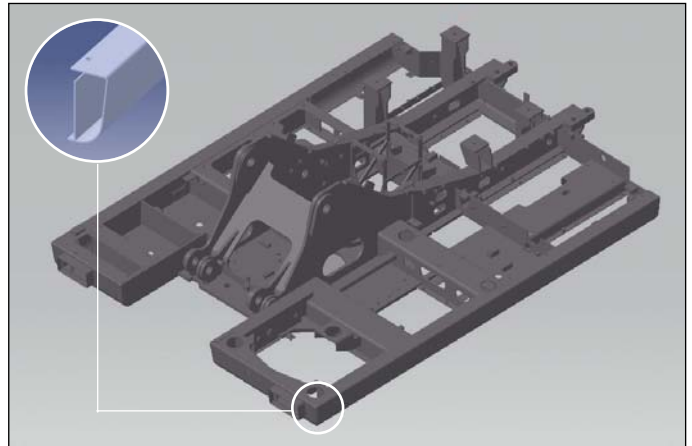
## Arm Assembly

In the arm assembly greater strength has been gained by using cast elements and reinforcement around the bosses to give it an increased lifetime.



## Stress Analysis Design(FEM) and Innovative Manufacturing Technique Provide a strong and stable Undercarriage

As Chassis Frame, Outrigger Frame and Dozer Blade are designed by interpretative technique and reliability test using 3 dimension CAD tool, durability and reliability are improved.



## D-type Frame

The D-type frame design adds strength and minimizes distortion due to shocks.



## Bucket

Highly wear-resistant materials are used for the most susceptible elements such as the blades, teeth, rear and lateral reinforcement plates and corners of the bucket.



## Bushing

A highly lubricated metal is used for the boom pivot in order to increase the lifetime and extend the greasing intervals to 250 hours. A rolled bushing, with very fine grooves, has been added to the arm bucket, dozer, and outrigger pivot; so greasing is only required every 50 hours.



## Polymer shim

A polymer shim is added to the bucket, dozer, and outrigger pivot to promote extended pin and bushing life.

# DX190W



**Dozer & Outrigger cylinders protector cover**  
 Large reinforced protective cover is adopted to completely protect Dozer & Outrigger cylinder from the fallen stone while operating.



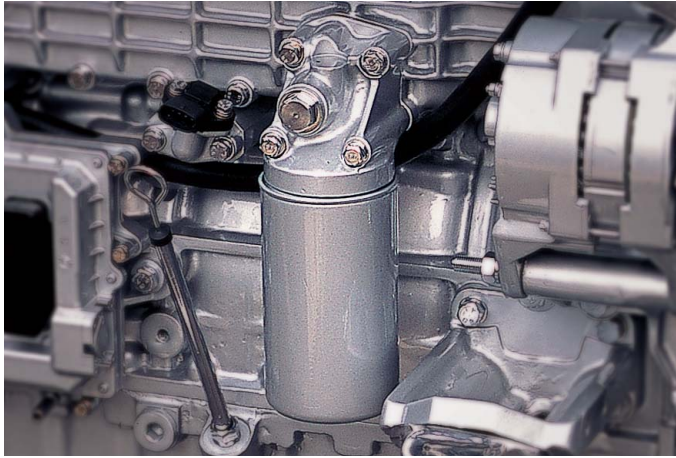
**Counterweight**  
 Operating stability has been increased by use of a low center of gravity design.



**Stop lamp (LED type)**  
 As stop lamp in LED type is adopted, life and recognition have been improved considerably compared to the existing standard filament bulb. Furthermore, the fast lighting speed contributes to prevent accident.

# MAINTENANCE

Short maintenance operations at long intervals increase the availability of the equipment on site. DOOSAN has developed the DX190W with a view to high profitability for the user.



## Engine oil filter

The engine oil filter offers a high level of filtration allowing the oil change interval to be increased to 500 hours. It is easy to access and is positioned to avoid contaminating the surrounding environment.



## 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.



## Hydraulic oil return filter

The protection of the hydraulic system is more effective, using glass fiber filter technology in the main oil return filter. This means that with more than 99.5% of foreign particles filtered out, the oil change interval is increased.



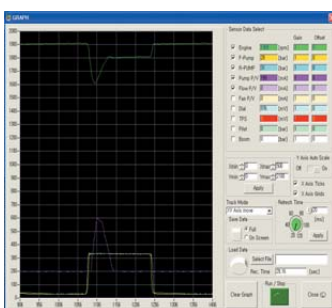
## Air cleaner

The large capacity forced air cleaner removes over 99% of airborne particles, reducing the risk of engine contamination and making the cleaning and cartridge change intervals greater.



## Tool box and Storage Places

A large sized and lockable tool box is mounted on the left side of undercarriage and the storage places for grease can be provided in the right side of undercarriage.



## PC Monitoring (DMS)

A PC monitoring function enables connection to the e-EPOS system, allowing various parameters to be checked during maintenance, such as pump pressures, engine rotation speed, etc. and these can be stored and printed for subsequent analysis.



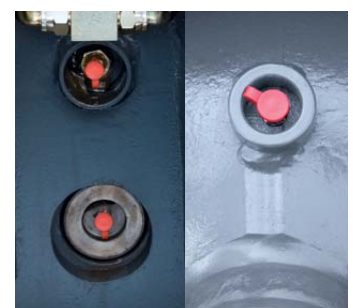
## Convenient Fuse Box

The fuse box is conveniently located in a section of the storage compartment behind the operator's seat providing a clean environment and easy access.



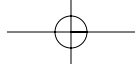
## Fuel pre-filter

High efficiency fuel filtration is attained by the use of multiple filters, including a fuel pre-filter fitted with a water separator that removes most moisture from the fuel.

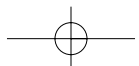


## Centralized front axle pin grease inlets for easy maintenance

The grease lubricating position of front axle pin is located in front of equipment for easy accessibility.



# DX190W



# TECHNICAL SPECIFICATIONS

# DX190W

## \* ENGINE

### • Model

Doosan DLo6  
"Common Rail" engine with direct fuel injection and electronic control, 4 valves per cylinder, vertical injectors, water cooled, turbo charged with air to air intercooler. The emission levels are well below the values required for stage III.

### • Number of cylinders

6

### • Nominal flywheel power

116 kW(156HP) @ 1,900 rpm (SAE J1349, net)

### • Max torque

70 kgf.m(686 Nm) at 1,400 rpm

### • Piston displacement

5,890 cc (359 cu.in)

### • Bore & stroke

∅100 mm x 125 mm (3.9" X 4.8")

### • Starter

24 V / 4.5 kW

### • Batteries

2 x 12 V / 100 Ah

### • Air cleaner

Double element with auto dust evacuation.

## \* HYDRAULIC SYSTEM

The heart of the system is the e-EPOS (Electronic Power Optimizing System). It allows the efficiency of the system to be optimized for all working conditions and minimizes fuel consumption.

The new e-EPOS is connected to the engine electronic control via a data transfer link to harmonize the operation of the engine and hydraulics.

- The hydraulic system enables independent or combined operations.
- Cross-sensing pump system for fuel savings.
- Auto deceleration system.
- Two operating modes, two power modes.
- Button control of flow in auxiliary equipment circuits.
- Computer-aided pump power control.

### • Main pumps

2 variable displacement axial piston pumps  
max flow: 2 x 200 ℓ /min (2 X 52.8US gpm, 2 X 44 lmp gpm)

### • Pilot pump

Gear pump - max flow: 26.1 ℓ /min (6.9US gpm, 5.7 lmp gpm)

### • Maximum system pressure

Boom/arm/Bucket:

Normal mode: 330 kgf/cm<sup>2</sup>(324 bar)

Power mode: 350 kgf/cm<sup>2</sup>(343 bar)

Travel: 350 kgf/cm<sup>2</sup>(343 bar)

Swing: 270 kgf/cm<sup>2</sup>(265 bar)

## \* WEIGHT

Operating weight, including 5,200 mm (17'1") one-piece boom and 2,600 mm (8'6") one-piece boom, or 1,940+3,820 mm (6'4" + 12'6") two-piece boom, 2,300mm (7'7")arm, operator, lubricant, coolant, full fuel tank and the standard equipment. Weights are with 616kg (1,358 lb) bucket.

Undercarriage type		Operating weight (One-piece Boom)	Operating weight (Two-piece Boom)
Front attach	Rear attach		
Cradle	Dozer	17,770 kg (39,176 lb)	18,270 kg (40,278 lb)
Cradle	Outrigger	17,920 kg (39,507 lb)	18,410 kg (40,587 lb)
Dozer	Outrigger	18,850 kg (41,557 lb)	19,330 kg (42,615 lb)
Outrigger	Dozer	18,910 kg (41,689 lb)	19,390 kg (42,748 lb)
Outrigger	Outrigger	19,050 kg (41,998 lb)	19,530 kg (43,056 lb)

## \* HYDRAULIC CYLINDERS

The piston rods and cylinder bodies are made of high-strength steel. A shock absorbing mechanism is fitted in all cylinders to ensure shock-free operation and extend piston life.

### [ One-piece Boom ]

Cylinders	Quantity	Bore x Rod diameter x stroke
Boom	2	120 X 85 X 1,195mm(4.7" X 3.3" X 3'11")
Arm	1	125 X 90 X 1,470mm(4.9" X 3.5" X 4'10")
Bucket	1	115 X 80 X 1,025mm(4.5" X 3.1" X 3'4")

### [ Two-piece Boom ]

Cylinders	Quantity	Bore x Rod diameter x stroke
Boom	2	120 X 85 X 1,030mm(4.7" X 3.3" X 3'5")
Two-piece Boom	1	160 X 95 X 760mm(6.3" X 3.7" X 2'6")
Arm	1	125 X 90 X 1,470mm(4.9" X 3.5" X 4'10")
Bucket	1	115 X 80 X 1,025mm(4.5" X 3.1" X 3'4")

## \* UNDERCARRIAGE

Heavy-duty frame, all-welded stress-relieve structure. Top grade materials used for toughness. Specially heat-treated connecting pins. 10.0-20-14PR double tires with tire spacer. Front axle oscillating hydraulically. Dozer and outrigger can be installed in front and rear interchangeably. 18.0-19.5-20PR tubeless single and 10.0-20-16PR double tires as an option.

## \* ENVIRONMENT

Noise levels comply with environmental regulations (dynamic values).

### • LWA External sound level

101 dB(A) (2000/14/EC)

### • LPA Operator sound level

74 dB(A) (ISO 6396)

## \* SWING MECHANISM

- An axial piston motor with two-stage planetary reduction gear is used for the swing.
- Increased swing torque reduces swing time.
- Internal induction-hardened gear.
- Internal gear and pinion immersed in lubricant bath.
- The swing brake for parking is activated by spring and released hydraulically.

**Swing speed: 0 to 12.6 rpm**

## \* DRIVE

Fully hydrostatic driven, 3 speed power shift transmission, variable displacement, high torque, axial piston motor, foot pedal controls provide smooth travel, hub reduction type front steering axle and rear rigid axle.

### • Travel speed (High)

36 km/h (22.4 mph)

### • Maximum traction force

11,075 kgf ( 24,416 lbf)

### • Maximum grade

35° / 70%

## \* REFILL CAPACITIES

### • Fuel tank

310 ℓ (81.9 US gal, 68.2 Imp gal)

### • Cooling system (Radiator capacity)

24 ℓ (6.3 US gal, 5.3 Imp gal)

### • Engine oil

25 ℓ (6.6 US gal, 5.5 Imp gal)

### • Swing drive

3.8 ℓ (10 US gal, 0.8 Imp gal)

### • Power train(each)

Front Axle 2.5 ℓ (0.66 US gal, 0.55 Imp gal)

Rear Axle 2.5 ℓ (0.66 US gal, 0.55 Imp gal)

Transmission 2.5 ℓ (0.66 US gal, 0.55 Imp gal)

### • Hydraulic system

205 ℓ (54.2 US gal, 45.1 Imp gal)

### • Hydraulic tank

116 ℓ (51.7 US gal, 43.1 Imp gal)

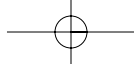
## \* BUCKET

Capacity		Width		Weight	Recommendation				
PCSA, heaped	CECE heaped	Without side cutters	With side cutters		5,200mm (17'1") One-piece Boom			5,360mm (17'7") Two-piece Boom	
					2,200mm (7'3")Arm	2,600mm (8'6")Arm	3,100mm (10'2")Arm	2,300mm (7'7")Arm	2,600mm (8'6")Arm
0.38m <sup>3</sup> (0.5yd <sup>3</sup> )	0.35m <sup>3</sup>	604mm (2')	640mm (2'1")	441 kg (972 lb)	A	A	A	A	A
0.45m <sup>3</sup> (0.59yd <sup>3</sup> )	0.41m <sup>3</sup>	727mm (2'5")	775mm (2'7")	465 kg (1,025 lb)	A	A	A	A	A
0.57m <sup>3</sup> (0.75yd <sup>3</sup> )	0.51m <sup>3</sup>	865.2mm (2'10")	913.2mm (3')	520 kg (1,146 lb)	A	A	B	A	A
0.70m <sup>3</sup> (0.92yd <sup>3</sup> )	0.62m <sup>3</sup>	1,015mm (3'4")	1,063mm (3'6")	567 kg (1,250 lb)	A	B	C	A	A
0.76m <sup>3</sup> (1 yd <sup>3</sup> )	0.67m <sup>3</sup>	1,079mm (3'6")	1,127mm (3'8")	602 kg (1,327 lb)	B	B	C	A	B
0.80m <sup>3</sup> (1.05yd <sup>3</sup> )	0.7m <sup>3</sup>	1,123mm (3'8")	1,171mm (3'10")	616 kg (1,358 lb)	B	C	-	B	C
0.93m <sup>3</sup> (1.22yd <sup>3</sup> )	0.81m <sup>3</sup>	1,267mm (4'2")	1,315mm (4'4")	664 kg (1,332 lb)	C	-	-	C	-

A. Suitable for materials with density of 2,000 kg/m<sup>3</sup> (3,370 lb/cu · yd) or less

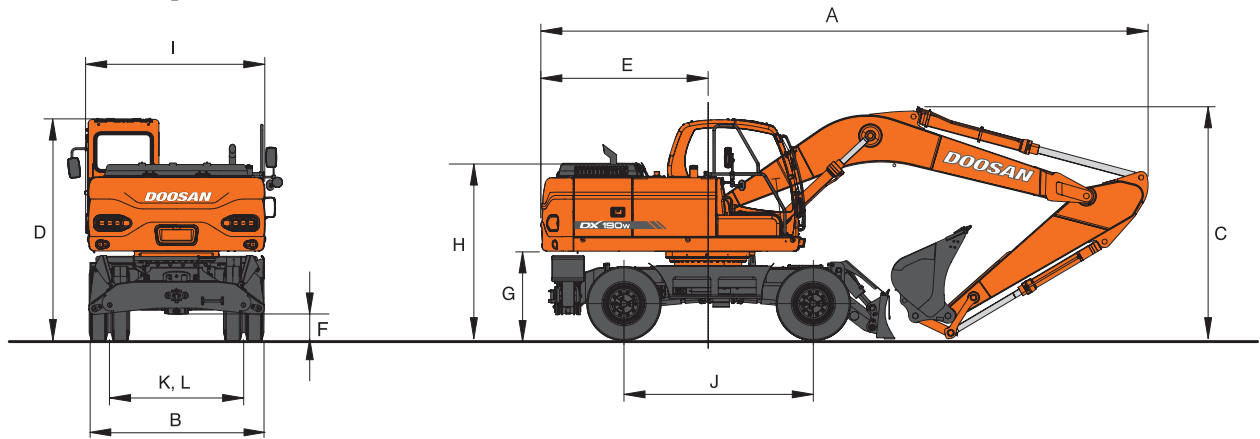
B. Suitable for materials with density of 1,600 kg/m<sup>3</sup> (2,700 lb/cu · yd) or less

C. Suitable for materials with density of 1,100 kg/m<sup>3</sup> (1,850 lb/cu · yd) or less



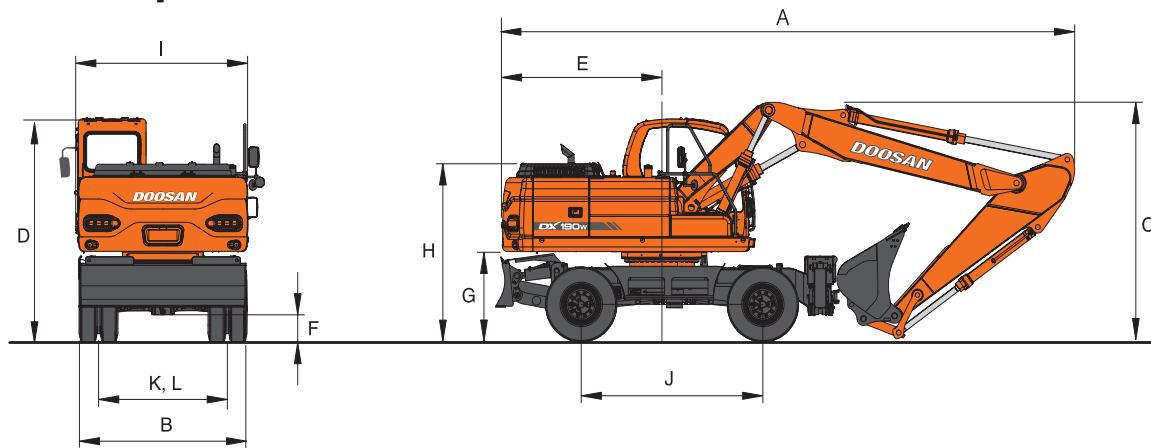
# DIMENSIONS

## [ One-piece Boom ]

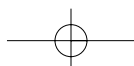


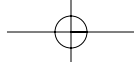
Boom type (One-piece)		5,200mm(17'1")	
Arm type	2,200mm(7'3")	2,600mm(8'6")	3,100mm(10'2")
A Shipping Length	8,715mm(28'7")	8,659mm(28'5")	8,507mm(24'6")
B Shipping Width	→	2,496mm(8'2")	↑
C Shipping Height (Boom)	3,212mm(10'6")	3,310mm(10'10")	3,772mm(12'5")
D Height Over Cab.	→	3,135mm(10'3")	↑
E Counter Weight Swing Clearance	→	2,450mm(8')	↑
F Ground Clearance	→	350mm(1'2")	↑
G Counter Weight Clearance	→	1,249mm(4'1")	↑
H Engine Cover Height	→	2,530mm(8'4")	↑
I Upper Housing Width	→	2,494mm(8'2")	↑
J Wheel Base	→	2,700mm(8'10")	↑
K, L Tread Width	→	1,944mm(6'5")	↑

## [ Two-piece Boom ]



Boom type (Two-piece)		5,360mm(17'7")	
Arm type	2,300mm(7'7")	2,600mm(8'6")	2,600mm(8'6")
A Shipping Length	8,860mm(29'1")	8,610mm(28'3")	
B Shipping Width	2,496mm(8'2")		↑
C Shipping Height (Boom)	3,140mm(10'4")		3,360mm(11')
D Height Over Cab.	3,135mm(10'3")		↑
E Counter Weight Swing Clearance	2,450mm(8')		↑
F Ground Clearance	350mm(1'2")		↑
G Counter Weight Clearance	1,249mm(4'1")		↑
H Engine Cover Height	2,530mm(8'4")		↑
I Upper Housing Width	2,494mm(8'2")		↑
J Wheel Base	2,700mm(8'10")		↑
K, L Tread Width	1,944mm(6'5")		↑

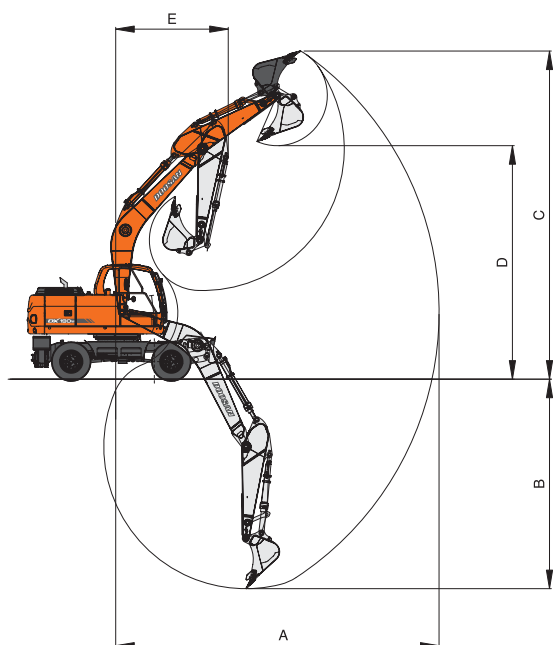




# WORKING RANGES

## DX190W

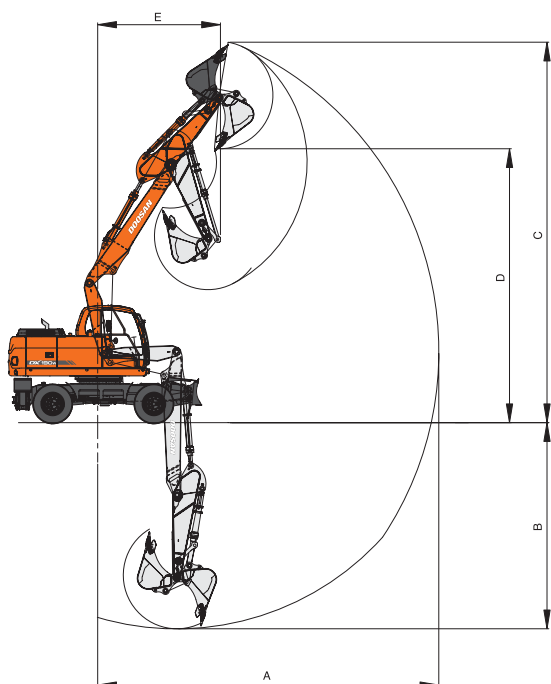
### [ One-piece Boom ]



#### \* WORKING RANGE

Boom type (One-piece)	5,200mm(17'1")		
Arm type	2,200mm (7'3")	2,600mm (8'6")	3,100mm (10'2")
<b>A Max. Digging Reach</b>	8,830mm (29')	9,200mm (30'2")	9,560mm (31'4")
<b>B Max. Digging Depth</b>	5,565mm (18'3")	5,965mm (19'7")	6,465mm (21'3")
<b>C Max. Digging Height</b>	9,115mm (29'11")	9,340mm (30'8")	9,270mm (30'5")
<b>D Max. Dump Height</b>	6,420mm (21'1")	6,650mm (21'10")	6,645mm (21'10")
<b>E Min. Swing Radius</b>	3,195mm (10'6")	3,200mm (10'6")	3,185mm (10'5")

### [ Two-piece Boom ]



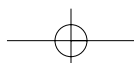
#### \* WORKING RANGE

Boom type (Two-piece)	5,360mm(17'7")	
Arm type	2,300mm (7'7")	2,600mm (8'6")
<b>A Max. Digging Reach</b>	9,235mm (30'3")	9,530mm (31'3")
<b>B Max. Digging Depth</b>	5,600mm (18'4")	5,900mm (19'4")
<b>C Max. Digging Height</b>	10,260mm (33'8")	10,510mm (34'6")
<b>D Max. Dump Height</b>	7,415mm (24'4")	7,660mm (25'2")
<b>E Min. Swing Radius</b>	2,965mm (9'9")	3,160mm (10'4")

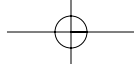
#### \* DIGGING FORCE (ISO)

Bucket (PCSA)	0.38m <sup>3</sup>	0.45m <sup>3</sup>	0.57m <sup>3</sup>	0.70m <sup>3</sup>	0.76m <sup>3</sup>	0.80m <sup>3</sup>	0.93m <sup>3</sup>
Digging force	14,200 kgf	14,200 kgf	14,200 kgf	14,200 kgf	14,200 kgf	14,200 kgf	14,200 kgf
	139.25 kN	139.25 kN	139.25 kN	139.25 kN	139.25 kN	139.25 kN	139.25 kN
	31,305 lbf	31,305 lbf	31,305 lbf	31,305 lbf	31,305 lbf	31,305 lbf	31,305 lbf
Arm	<b>2,200mm</b>		<b>2,300mm</b>	<b>2,600mm</b>	<b>3,100mm</b>		
Digging force	10,800 kgf		9,900 kgf	9,300 kgf	8,500 kgf		
	105.91 kN		97.08 kN	91.20 kN	83.36 kN		
	23,810 lbf		21,816 lbf	20,503 lbf	18,739 lbf		

At power boost (ISO)



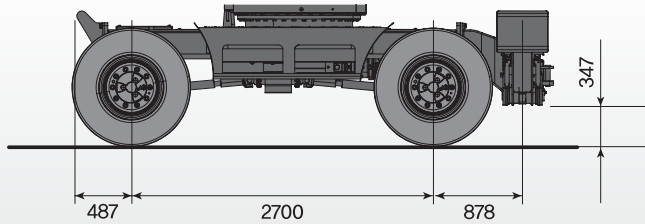




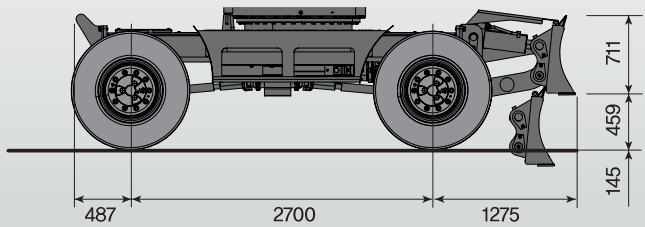
# Undercarriage

DX190W

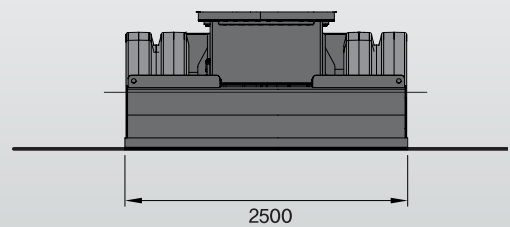
**\* Undercarriage with front cradle and rear outrigger / front cradle and rear dozer**



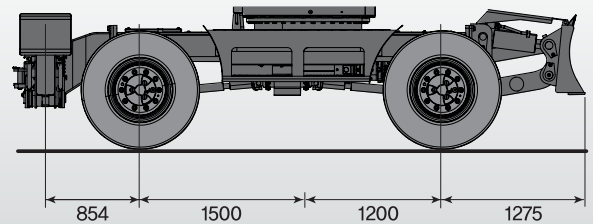
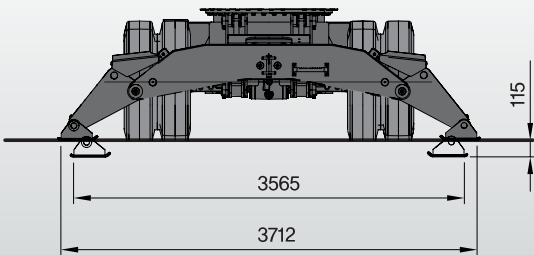
▲ Front Cradle and Rear outrigger



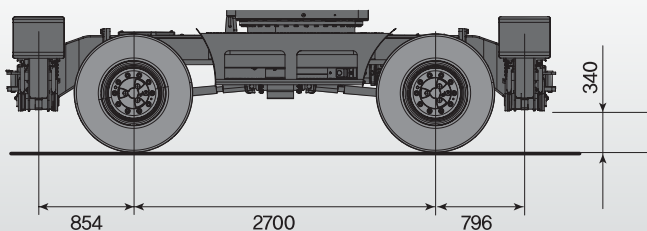
▲ Front Cradle and Rear Dozer



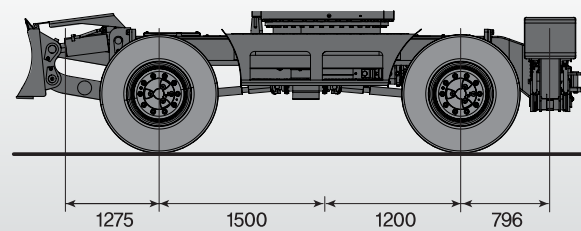
**\* Undercarriage with front outrigger and rear dozer**



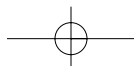
**\* Undercarriage with front outrigger and rear outrigger / front dozer and rear outrigger**

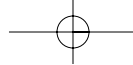


▲ Front Outrigger and Rear Outrigger



▲ Front Dozer and Rear Outrigger





# STANDARD AND OPTIONAL EQUIPMENT

## \* STANDARD EQUIPMENT

### ▪ Hydraulic system

- Boom and arm flow regeneration
- Boom and arm holding valves
- Swing anti-rebound valves
- Spare ports(valve)
- One-touch power boost

### ▪ Cabin & Interior

- Viscous cab mounts
- All weather sound suppressed type cab
- Air conditioner
- Adjustable suspension seat with head rest and adjustable arm rest
- Pull-up type front window and removable lower front window
- Room light
- Intermittent windshield wiper
- Cigarette lighter and ashtray
- Cup holder
- Hot & Cool box
- LCD color monitor panel
- Engine speed(RPM) control dial
- AM/FM radio and cassette player
- Remote radio ON/OFF switch
- 12V spare powers socket
- Serial communication port for laptop PC interface
- Joystick lever with 3 switches
- Sunvisor
- Sun roof
- wiper

### ▪ Safety

- Large handrails and step
- Punched metal anti-slip plates
- Seat belt
- Hydraulic safety lock lever
- Safety glass
- Hammer for emergency escape
- Right and left rearview mirrors
- Reverse travel alarm
- Emergency engine stop
- LED stop lamps

### ▪ Others

- Double element air cleaner
- Fuel pre-filter
- Dust screen for radiator/oil cooler/charged air cooler
- Engine overheat prevention system
- Engine restart prevention system
- Self-diagnostic system
- Large capacity alternator(24V, 60 amps)
- Electric horn
- Halogen working lights(frame mounted 2, boom mounted 2)
- Fuel filler pump
- 3.2ton countweight

### ▪ Undercarriage

- 10.0-20-14PR double tires
- Heavy duty axles
- Parallel dozer blade & individually controlled outriggers
- Tool box
- Front axle oscillation auto lock

## \* 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 applications.

### ▪ Safety

- Boom and arm hose rupture protection valve
- Overload warning device
- Cabin Top/Front guard(ISO 10262, FOGS standard)
- Travel & swing alarm
- Rotation beacon
- Mirror & Lamp on counter weight

### ▪ Others

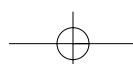
- Piping for crusher
- Piping for quick clamp
- Piping for front attachment rotation
- Breaker filter
- Lower wiper
- Fuel heater

### ▪ Cabin & Interior

- Air suspension seat
- MP3/CD player
- Rain shield
- 2 front lamps
- 4 front + 2 rear lamps

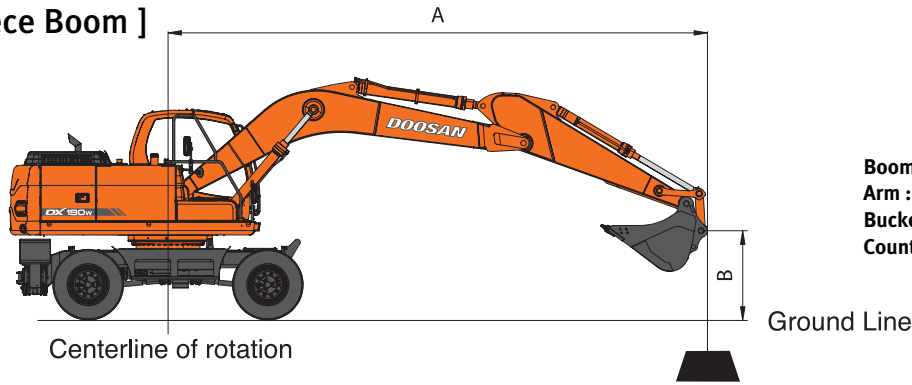
### ▪ Undercarriage

- 10.0-20-16PR double tire / 18.0-19.5-20PR single tire



# LIFTING CAPACITY

[ One-piece Boom ]



Boom : 5,200mm(17'1")  
 Arm : 2,600mm(8'6")  
 Bucket : without bucket  
 Counter weight : 3,200 kg(7,055 lb)











## Metric

Unit : 1,000kg


A(m)	B(m)	Chassis Frame Attachment	2		3		4		5		6		7		Max. Reach		A(m)	
8		R-Rear Dozer Only Up													*3.84	*3.84	4.72	
		R-Rear Dozer Only Down													*3.84	*3.84		
		R-Outrigger Only Down													*3.84	*3.84		
		F-Dozer + R-Outrigger Down													*3.84	*3.84		
7		R-Rear Dozer Only Up													*3.51	3.29	5.83	
		R-Rear Dozer Only Down													*3.51	*3.51		
		R-Outrigger Only Down													*3.51	*3.51		
		F-Dozer + R-Outrigger Down													*3.51	*3.51		
6		R-Rear Dozer Only Up									*5.09	3.17			*3.37	2.72	6.59	
		R-Rear Dozer Only Down									*5.09	4.09			*3.37	*3.37		
		R-Outrigger Only Down										5.00	*5.09			*3.37		*3.37
		F-Dozer + R-Outrigger Down										*5.09	*5.09			*3.37		*3.37
5		R-Rear Dozer Only Up							*5.84	4.12	5.23	3.14	*4.03	2.47	*3.33	2.39	7.13	
		R-Rear Dozer Only Down							*5.84	5.36	5.12	4.06	*4.03	3.20	*3.33	3.10		
		R-Outrigger Only Down							*5.84	*5.84	4.97	*5.57	3.90	*4.03	*3.33	*3.33		
		F-Dozer + R-Outrigger Down							*5.84	*5.84	*5.57	*5.57	*4.03	*4.03	*3.33	*3.33		
4		R-Rear Dozer Only Up			*9.56	8.52	*7.57	5.53	*6.54	4.01	5.17	3.08	4.10	2.45	*3.36	2.20	7.50	
		R-Rear Dozer Only Down			*9.56	*9.56	*7.57	7.37	*6.54	5.24	5.06	4.00	4.01	3.18	*3.36	2.86		
		R-Outrigger Only Down			*9.56	*9.56	*7.57	*7.57	6.49	*6.54	4.90	5.79	3.88	4.56	*3.36	*3.36		
		F-Dozer + R-Outrigger Down			*9.56	*9.56	*7.57	*7.57	*6.54	*6.54	*5.94	5.79	*5.45	4.56	*3.36	*3.36		
3		R-Rear Dozer Only Up					*9.11	5.28	6.68	3.88	5.09	3.00	4.06	2.41	*3.44	2.08	7.71	
		R-Rear Dozer Only Down					*9.11	7.09	6.54	5.10	4.97	3.92	3.96	3.14	3.43	2.72		
		R-Outrigger Only Down					9.03	*9.11	6.34	*7.39	4.82	5.70	3.83	4.51	3.32	*3.44		
		F-Dozer + R-Outrigger Down					*9.11	*9.11	*7.39	*7.39	*6.42	5.70	*5.83	4.51	*3.44	*3.44		
2		R-Rear Dozer Only Up					9.24	5.06	6.54	3.75	5.00	2.93	4.01	2.37	3.44	2.03	7.79	
		R-Rear Dozer Only Down					9.04	6.85	6.39	4.96	4.89	3.84	3.92	3.09	3.35	2.65		
		R-Outrigger Only Down					8.75	*10.50	6.19	7.43	4.73	5.61	3.79	4.46	3.24	*3.59		
		F-Dozer + R-Outrigger Down					*10.50	*10.50	*8.20	7.43	*6.90	5.61	*6.09	4.46	*3.59	*3.59		
1		R-Rear Dozer Only Up					9.06	4.91	6.42	3.65	4.93	2.86	3.97	2.33	3.45	2.03	7.74	
		R-Rear Dozer Only Down					8.86	6.68	6.82	4.86	4.82	3.77	3.87	3.05	3.37	2.66		
		R-Outrigger Only Down					8.57	10.56	6.07	7.30	4.66	5.54	3.74	4.42	3.25	*3.80		
		F-Dozer + R-Outrigger Down					*11.35	10.56	*8.81	7.30	*7.29	5.54	*6.30	4.42	*3.80	*3.80		
0(Ground)		R-Rear Dozer Only Up			*5.74	*5.74	8.97	4.84	6.35	3.58	4.88	2.82	3.94	2.30	3.55	2.08	7.55	
		R-Rear Dozer Only Down			*5.74	*5.74	8.77	6.60	6.20	4.79	4.77	3.72	3.85	3.02	3.47	2.73		
		R-Outrigger Only Down			*5.74	*5.74	8.48	10.47	6.00	7.23	4.61	5.48	3.72	4.39	3.35	3.95		
		F-Dozer + R-Outrigger Down			*5.74	*5.74	*11.61	10.47	*9.11	7.23	*7.50	5.48	*6.36	4.39	*4.12	3.95		
-1		R-Rear Dozer Only Up	*5.29	*5.29	*8.62	7.35	8.94	4.82	6.32	3.56	4.86	2.80	3.93	2.30	3.78	2.21	7.22	
		R-Rear Dozer Only Down	*5.29	*5.29	*8.62	*8.62	8.74	6.58	6.17	4.76	4.74	3.70	3.84	3.02	3.69	2.90		
		R-Outrigger Only Down	*5.29	*5.29	*8.62	*8.62	8.46	10.44	5.97	7.19	4.59	5.46	3.71	4.38	3.56	4.21		
		F-Dozer + R-Outrigger Down	*5.29	*5.29	*8.62	*8.62	*11.40	10.44	*9.07	7.19	*7.45	5.46	*6.17	4.38	*4.60	4.21		
-2		R-Rear Dozer Only Up	*8.48	*8.48	*12.39	7.40	8.97	4.83	6.32	3.56	4.87	2.81			4.18	2.44	6.72	
		R-Rear Dozer Only Down	*8.48	*8.48	*12.39	10.59	8.77	6.60	6.18	4.76	4.75	3.71			4.08	3.21		
		R-Outrigger Only Down	*8.48	*8.48	*12.39	*12.39	8.40	10.46	5.98	7.20	4.60	5.47			3.95	4.67		
		F-Dozer + R-Outrigger Down	*8.48	*8.48	*12.39	*12.39	*10.74	10.46	*8.63	7.20	*7.03	5.47			*5.36	4.67		
-3		R-Rear Dozer Only Up	*12.31	*12.31	*11.96	7.50	9.04	4.89	6.37	3.61	4.93	2.86			4.93	2.86	6.00	
		R-Rear Dozer Only Down	*12.31	*12.31	*11.96	10.69	8.83	6.66	6.23	4.81	4.81	3.77			4.81	3.77		
		R-Outrigger Only Down	*12.31	*12.31	*11.96	*11.96	8.55	*9.54	6.03	7.25	4.66	5.53			4.66	5.53		
		F-Dozer + R-Outrigger Down	*12.31	*12.31	*11.96	*11.96	*9.54	*9.54	*7.66	7.25	*5.85	5.53			*5.85	5.53		
-4		R-Rear Dozer Only Up			*9.33	7.65	*7.46	5.00							*5.50	3.73	4.98	
		R-Rear Dozer Only Down			*9.33	*9.33	*7.46	6.78							*5.50	4.96		
		R-Outrigger Only Down			*9.33	*9.33	*7.46	*7.46							*5.50	*5.50		
		F-Dozer + R-Outrigger Down			*9.33	*9.33	*7.46	*7.46							*5.50	*5.50		

## Feet

Unit : 1,000lb

A(ft) B(ft)	Chassis Frame Attachment	10'		15'		20'		25'		Max. Reach		A(ft)
												
25	R-Rear Dozer Only Up									*8.12	*8.12	17.04
	R-Rear Dozer Only Down									*8.12	*8.12	
	R-Outrigger Only Down									*8.12	*8.12	
	F-Dozer + R-Outrigger Down									*8.12	*8.12	
20	R-Rear Dozer Only Up					*10.62	6.81			*7.45	6.08	21.42
	R-Rear Dozer Only Down					*10.62	8.80			*7.45	*7.45	
	R-Outrigger Only Down					*10.62	*10.62			*7.45	*7.45	
	F-Dozer + R-Outrigger Down					*10.62	*10.62			*7.45	*7.45	
15	R-Rear Dozer Only Up			*14.02	10.23	11.21	6.71			*7.35	5.06	23.97
	R-Rear Dozer Only Down			*14.02	13.42	10.97	8.69			*7.35	6.58	
	R-Outrigger Only Down			*14.02	*14.02	10.63	*12.51			*7.35	*7.35	
	F-Dozer + R-Outrigger Down			*14.02	*14.02	*12.51	*12.51			*7.35	*7.35	
10	R-Rear Dozer Only Up	*27.19	17.16	16.94	9.69	10.96	6.48	7.89	4.68	*7.57	4.60	25.28
	R-Rear Dozer Only Down	*27.19	24.12	16.58	12.83	10.72	8.46	7.70	6.10	*7.57	6.00	
	R-Outrigger Only Down	*27.19	*27.19	16.07	*17.51	10.38	12.27	7.45	8.75	7.32	*7.57	
	F-Dozer + R-Outrigger Down	*27.19	*27.19	*17.51	*17.51	*13.95	12.27	*8.89	8.75	*7.57	*7.57	
5	R-Rear Dozer Only Up			16.34	9.18	10.70	6.25	7.79	4.59	7.56	4.46	25.53
	R-Rear Dozer Only Down			15.98	12.28	10.46	8.21	7.61	6.01	7.38	5.83	
	R-Outrigger Only Down			15.47	18.74	10.12	12.00	7.36	8.66	7.14	*8.11	
	F-Dozer + R-Outrigger Down			*20.72	18.74	*15.44	12.00	*10.90	8.66	*8.11	*8.11	
0(Ground)	R-Rear Dozer Only Up	*13.23	*13.23	16.01	8.90	10.52	6.09			7.83	4.60	24.77
	R-Rear Dozer Only Down	*13.23	*13.23	15.65	11.98	10.28	8.04			7.65	6.03	
	R-Outrigger Only Down	*13.23	*13.23	15.14	18.38	9.94	11.81			7.39	8.71	
	F-Dozer + R-Outrigger Down	*13.23	*13.23	*22.14	18.38	*16.25	11.81			*9.09	8.71	
-5	R-Rear Dozer Only Up	*23.63	15.86	15.94	8.84	10.47	6.05			8.73	5.10	22.89
	R-Rear Dozer Only Down	*23.63	22.62	15.58	11.91	10.23	7.99			8.52	6.71	
	R-Outrigger Only Down	*23.63	*23.63	15.07	18.31	9.89	11.76			8.24	9.74	
	F-Dozer + R-Outrigger Down	*23.63	*23.63	*21.49	18.31	*15.76	11.76			*10.91	9.74	
-10	R-Rear Dozer Only Up	*25.85	16.13	16.09	8.97					10.97	6.37	19.55
	R-Rear Dozer Only Down	*25.85	22.94	15.73	12.05					10.72	8.39	
	R-Outrigger Only Down	*25.85	*25.85	15.22	*18.42					10.37	12.32	
	F-Dozer + R-Outrigger Down	*25.85	*25.85	*18.42	*18.42					*12.88	12.32	

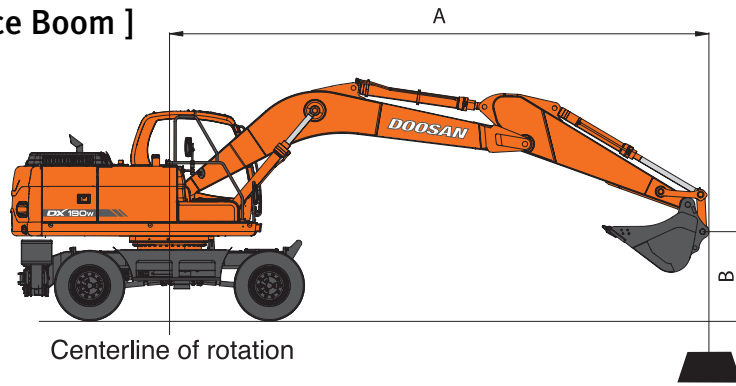
1. Ratings are based on SAE J1097
2. Load point is the end of arm.
3. \* Rated loads are based on hydraulic capacity.
4. Rated loads do not exceed 87% of hydraulic capacity or 75% of tipping capacity.

 : Rating Over Front

 : Rating Over Side or 360 degree

# LIFTING CAPACITY

[ One-piece Boom ]



Boom : 5,200mm(17'1")  
 Arm : 2,200mm(7'3")  
 Bucket : without bucket  
 Counter weight : 3,200 kg(7,055 lb)

Ground Line









## Metric

Unit : 1,000kg

A(m)	B(m)	Chassis Frame Attachment	2		3		4		5		6		7		Max. Reach		A(m)
			⤴	⤵	⤴	⤵	⤴	⤵	⤴	⤵	⤴	⤵	⤴	⤵	⤴	⤵	
7		R-Rear Dozer Only Up							*6.00	4.14					*5.02	3.76	5.31
		R-Rear Dozer Only Down							*6.00	5.39					*5.02	4.88	
		R-Outrigger Only Down							*6.00	*6.00					*5.02	*5.02	
		F-Dozer + R-Outrigger Down							*6.00	*6.00					*5.02	*5.02	
6		R-Rear Dozer Only Up							*5.91	4.15	5.22	3.13			*4.77	3.01	6.14
		R-Rear Dozer Only Down							*5.91	5.39	5.11	4.05			*4.77	3.90	
		R-Outrigger Only Down							*5.91	*5.91	4.95	*5.54			*4.77	*4.77	
		F-Dozer + R-Outrigger Down							*5.91	*5.91	*5.54	*5.54			*4.77	*4.77	
5		R-Rear Dozer Only Up							*6.30	4.08	5.21	3.11			4.37	2.61	6.72
		R-Rear Dozer Only Down							*6.30	5.32	5.09	4.04			4.27	3.39	
		R-Outrigger Only Down							*6.30	*6.30	4.94	5.83			4.13	*4.69	
		F-Dozer + R-Outrigger Down							*6.30	*6.30	*5.94	5.83			*4.69	*4.69	
4		R-Rear Dozer Only Up				*8.23	5.45	6.79	3.97	5.15	3.06	4.08	2.43	3.99	2.38	7.10	
		R-Rear Dozer Only Down				*8.23	7.28	6.64	5.20	5.03	3.98	3.99	3.16	3.90	3.09		
		R-Outrigger Only Down				*8.23	*8.23	6.44	*6.97	4.88	5.76	3.86	4.54	3.77	4.43		
		F-Dozer + R-Outrigger Down				*8.23	*8.23	*6.97	*6.97	*6.26	5.76	*5.53	4.54	*4.72	4.43		
3		R-Rear Dozer Only Up				9.41	5.20	6.64	3.84	5.07	2.99	4.05	2.40	*3.78	2.24	7.33	
		R-Rear Dozer Only Down				9.20	7.00	6.50	5.06	4.96	3.90	3.96	3.13	3.69	2.92		
		R-Outrigger Only Down				8.92	*9.73	6.29	7.54	4.80	5.68	3.83	4.50	3.57	4.20		
		F-Dozer + R-Outrigger Down				*9.73	*9.73	*7.77	7.54	*6.69	5.68	*6.06	4.50	*4.84	4.20		
2		R-Rear Dozer Only Up				9.16	4.99	6.50	3.72	4.99	2.92	4.01	2.37	3.69	2.18	7.42	
		R-Rear Dozer Only Down				8.95	6.77	6.36	4.93	4.88	3.83	3.91	3.09	3.61	2.85		
		R-Outrigger Only Down				8.67	10.67	6.16	7.39	4.72	5.60	3.79	4.46	3.49	4.10		
		F-Dozer + R-Outrigger Down				*10.96	10.67	*8.50	7.39	*7.12	5.60	*6.26	4.46	*5.05	4.10		
1		R-Rear Dozer Only Up				9.01	4.87	6.40	3.63	4.93	2.86	3.97	2.34	3.71	2.18	7.36	
		R-Rear Dozer Only Down				8.81	6.64	6.26	4.84	4.81	3.77	3.88	3.06	3.62	2.86		
		R-Outrigger Only Down				8.53	10.51	6.05	7.28	4.66	5.53	3.75	4.43	3.50	4.12		
		F-Dozer + R-Outrigger Down				*11.56	10.51	*8.99	7.28	*7.43	5.53	*6.38	4.43	*5.38	4.12		
0(Ground)		R-Rear Dozer Only Up				8.96	4.83	6.34	3.58	4.89	2.83	3.96	2.32	3.84	2.25	7.16	
		R-Rear Dozer Only Down				8.76	6.59	6.20	4.79	4.77	3.73	3.86	3.04	3.75	2.95		
		R-Outrigger Only Down				8.47	10.45	6.00	7.22	4.62	5.49	3.73	4.41	3.62	4.27		
		F-Dozer + R-Outrigger Down				*11.58	10.45	*9.15	7.22	*7.53	5.49	*6.33	4.41	*5.87	4.27		
-1		R-Rear Dozer Only Up			*8.80	7.39	8.96	4.83	6.33	3.57	4.88	2.82		4.11	2.41	6.81	
		R-Rear Dozer Only Down			*8.80	*8.80	8.76	6.59	6.18	4.77	4.76	3.72		4.02	3.16		
		R-Outrigger Only Down			*8.80	*8.80	8.47	10.45	5.98	7.21	4.61	5.48		3.88	4.59		
		F-Dozer + R-Outrigger Down			*8.80	*8.80	*11.15	10.45	*8.96	7.21	*7.35	5.48		*6.19	4.59		
-2		R-Rear Dozer Only Up	*9.45	*9.45	*12.76	7.46	9.00	4.87	6.35	3.59	4.90	2.84		4.62	2.70	6.27	
		R-Rear Dozer Only Down	*9.45	*9.45	*12.76	10.65	8.80	6.63	6.21	4.79	4.79	3.75		4.52	3.55		
		R-Outrigger Only Down	*9.45	*9.45	*12.76	*12.76	8.52	*10.30	6.01	7.23	4.63	5.51		4.37	5.18		
		F-Dozer + R-Outrigger Down	*9.45	*9.45	*12.76	*12.76	*10.30	*10.30	*8.34	7.23	*6.69	5.51		*6.18	5.18		
-3		R-Rear Dozer Only Up	*13.23	*13.23	*10.85	7.56	*8.84	4.94	6.43	3.66				5.62	3.25	5.50	
		R-Rear Dozer Only Down	*13.23	*13.23	*10.85	10.77	*8.84	6.72	6.28	4.86				5.49	4.29		
		R-Outrigger Only Down	*13.23	*13.23	*10.85	*10.85	8.61	*8.84	6.08	*7.04				5.32	*6.00		
		F-Dozer + R-Outrigger Down	*13.23	*13.23	*10.85	*10.85	*8.84	*8.84	*7.04	*7.04				*6.00	*6.00		
-4		R-Rear Dozer Only Up			*7.78	7.75	*6.14	5.09						*5.33	4.54	4.36	
		R-Rear Dozer Only Down			*7.78	*7.78	*6.14	*6.14						*5.33	*5.33		
		R-Outrigger Only Down			*7.78	*7.78	*6.14	*6.14						*5.33	*5.33		
		F-Dozer + R-Outrigger Down			*7.78	*7.78	*6.14	*6.14						*5.33	*5.33		

## Feet

Unit : 1,000lb

A(ft) B(ft)	Chassis Frame Attachment	10'		15'		20'		Max. Reach		A(ft)
										
25	R-Rear Dozer Only Up							*11.75	10.27	15.10
	R-Rear Dozer Only Down							*11.75	*11.75	
	R-Outrigger Only Down							*11.75	*11.75	
	F-Dozer + R-Outrigger Down							*11.75	*11.75	
20	R-Rear Dozer Only Up							*10.56	6.76	19.92
	R-Rear Dozer Only Down							*10.56	8.75	
	R-Outrigger Only Down							*10.56	*10.56	
	F-Dozer + R-Outrigger Down							*10.56	*10.56	
15	R-Rear Dozer Only Up			*15.16	10.13	11.16	6.66	9.21	5.50	22.65
	R-Rear Dozer Only Down			*15.16	13.30	10.91	8.64	9.00	7.14	
	R-Outrigger Only Down			*15.16	*15.16	10.57	12.48	8.72	10.25	
	F-Dozer + R-Outrigger Down			*15.16	*15.16	*13.28	12.48	*10.35	10.25	
10	R-Rear Dozer Only Up			16.80	9.58	10.92	6.45	8.35	4.96	24.03
	R-Rear Dozer Only Down			16.44	12.71	10.68	8.42	8.16	6.46	
	R-Outrigger Only Down			15.93	*18.52	10.34	12.23	7.89	9.28	
	F-Dozer + R-Outrigger Down			*18.52	*18.52	*14.54	12.23	*10.65	9.28	
5	R-Rear Dozer Only Up			16.25	9.11	10.68	6.24	8.13	4.80	24.30
	R-Rear Dozer Only Down			15.89	12.20	10.44	8.19	7.94	6.27	
	R-Outrigger Only Down			15.38	18.64	10.10	11.98	7.67	9.03	
	F-Dozer + R-Outrigger Down			*21.34	18.64	*15.82	11.98	*11.45	9.03	
0(Ground)	R-Rear Dozer Only Up			15.99	8.89	10.54	6.11	8.46	4.97	23.50
	R-Rear Dozer Only Down			15.63	11.96	10.29	8.05	8.26	6.51	
	R-Outrigger Only Down			15.12	18.36	9.95	11.83	7.99	9.42	
	F-Dozer + R-Outrigger Down			*22.20	18.36	*16.33	11.83	*12.95	9.42	
-5	R-Rear Dozer Only Up	*25.67	15.96	15.99	8.89	10.54	6.11	9.57	5.60	21.50
	R-Rear Dozer Only Down	*25.67	22.73	15.63	11.96	10.30	8.06	9.35	7.35	
	R-Outrigger Only Down	*25.67	*25.67	15.12	18.36	9.96	11.83	9.04	10.70	
	F-Dozer + R-Outrigger Down	*25.67	*25.67	*20.97	18.36	*15.30	11.83	*13.65	10.70	
-10	R-Rear Dozer Only Up	*23.44	16.28	16.21	9.08			12.55	7.25	17.90
	R-Rear Dozer Only Down	*23.44	23.10	15.85	12.17			12.26	9.57	
	R-Outrigger Only Down	*23.44	*23.44	15.34	*17.01			11.87	*13.20	
	F-Dozer + R-Outrigger Down	*23.44	*23.44	*17.01	*17.01			*13.20	*13.20	

1. Ratings are based on SAE J1097
2. Load point is the end of arm.
3. \* Rated loads are based on hydraulic capacity.
4. Rated loads do not exceed 87% of hydraulic capacity or 75% of tipping capacity.

 : Rating Over Front

 : Rating Over Side or 360 degree





**Feet**

Unit : 1,000lb

A(ft) B(ft)	Chassis Frame Attachment	10'		15'		20'		25'		Max. Reach		A(ft)
25	R-Rear Dozer Only Up									*7.37	*7.37	18.77
	R-Rear Dozer Only Down									*7.37	*7.37	
	R-Outrigger Only Down									*7.37	*7.37	
	F-Dozer + R-Outrigger Down									*7.37	*7.37	
20	R-Rear Dozer Only Up					*10.11	6.83			*6.96	5.50	22.81
	R-Rear Dozer Only Down					*10.11	8.84			*6.96	*6.96	
	R-Outrigger Only Down					*10.11	*10.11			*6.96	*6.96	
	F-Dozer + R-Outrigger Down					*10.11	*10.11			*6.96	*6.96	
15	R-Rear Dozer Only Up					11.21	6.69	*7.54	4.70	*6.98	4.63	25.22
	R-Rear Dozer Only Down					10.97	8.68	*7.54	6.13	*6.98	6.04	
	R-Outrigger Only Down					10.63	*11.44	7.49	*7.54	*6.98	*6.98	
	F-Dozer + R-Outrigger Down					*11.44	*11.44	*7.54	*7.54	*6.98	*6.98	
10	R-Rear Dozer Only Up	*23.62	17.52	*15.97	9.71	10.92	6.42	7.82	4.60	7.17	4.21	26.46
	R-Rear Dozer Only Down	*23.62	*23.62	*15.97	12.87	10.68	8.40	7.64	6.03	7.00	5.52	
	R-Outrigger Only Down	*23.62	*23.62	*15.97	*15.97	10.34	12.24	7.38	8.70	6.77	*7.27	
	F-Dozer + R-Outrigger Down	*23.62	*23.62	*15.97	*15.97	*13.01	12.24	*10.69	8.70	*7.27	*7.27	
5	R-Rear Dozer Only Up	*15.04	*15.04	16.28	9.09	10.60	6.14	7.68	4.48	6.99	4.06	26.70
	R-Rear Dozer Only Down	*15.04	*15.04	15.91	12.20	10.36	8.10	7.50	5.90	6.82	5.36	
	R-Outrigger Only Down	*15.04	*15.04	15.40	18.68	10.02	11.91	7.25	8.55	6.58	7.76	
	F-Dozer + R-Outrigger Down	*15.04	*15.04	*19.55	18.68	*14.70	11.91	*12.25	8.55	*7.87	7.76	
0(Ground)	R-Rear Dozer Only Up	*15.90	15.41	15.83	8.71	10.36	5.93	7.58	4.38	7.19	4.16	25.98
	R-Rear Dozer Only Down	*15.90	*15.90	15.46	11.79	10.12	7.88	7.40	5.80	7.02	5.50	
	R-Outrigger Only Down	*15.90	*15.90	14.95	18.20	9.78	11.66	7.14	8.45	6.77	8.00	
	F-Dozer + R-Outrigger Down	*15.90	*15.90	*21.60	18.20	*15.85	11.66	*12.61	8.45	*8.91	8.00	
-5	R-Rear Dozer Only Up	*23.32	15.40	15.67	8.58	10.27	5.84			7.91	4.56	24.19
	R-Rear Dozer Only Down	*23.32	22.13	15.31	11.65	10.02	7.79			7.72	6.05	
	R-Outrigger Only Down	*23.32	*23.32	14.80	18.04	9.68	11.56			7.46	8.83	
	F-Dozer + R-Outrigger Down	*23.32	*23.32	*21.65	18.04	*15.88	11.56			*10.77	8.83	
-10	R-Rear Dozer Only Up	*28.06	15.63	15.76	8.66	10.35	5.91			9.65	5.54	21.07
	R-Rear Dozer Only Down	*28.06	22.39	15.40	11.73	10.11	7.86			9.42	7.35	
	R-Outrigger Only Down	*28.06	*28.06	14.89	18.13	9.77	11.64			9.10	10.82	
	F-Dozer + R-Outrigger Down	*28.06	*28.06	*19.51	18.13	*13.95	11.64			*12.79	10.82	
-15	R-Rear Dozer Only Up	*19.75	16.15	*13.41	9.00					*12.33	8.40	15.81
	R-Rear Dozer Only Down	*19.75	*19.75	*13.41	12.10					*12.33	11.25	
	R-Outrigger Only Down	*19.75	*19.75	*13.41	*13.41					*12.33	*12.33	
	F-Dozer + R-Outrigger Down	*19.75	*19.75	*13.41	*13.41					*12.33	*12.33	

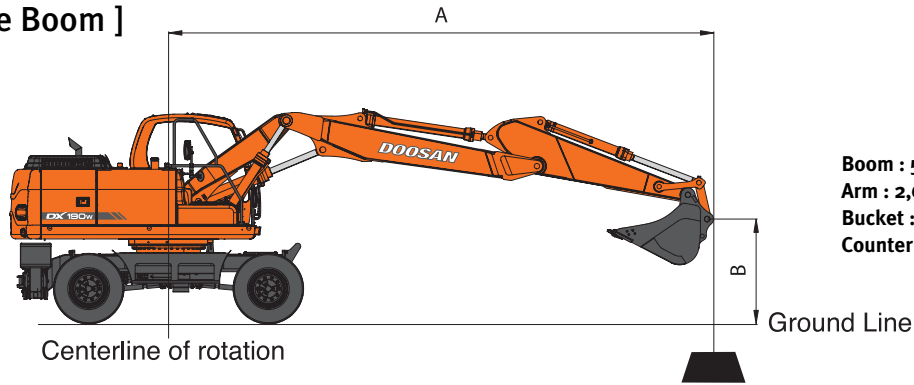
1. Ratings are based on SAE J1097
2. Load point is the end of arm.
3. \* Rated loads are based on hydraulic capacity.
4. Rated loads do not exceed 87% of hydraulic capacity or 75% of tipping capacity.

: Rating Over Front  
 : Rating Over Side or 360 degree



# LIFTING CAPACITY

[ Two-piece Boom ]



Boom : 5,360mm(17'7")  
 Arm : 2,600mm(8'6")  
 Bucket : without bucket  
 Counter weight : 3,200 kg(7,055 lb)











## Metric

Unit : 1,000kg

A(m)	B(m)	Chassis Frame Attachment	3		4		5		6		7		8		Max. Reach		A(m)
			☝	☝☞	☝	☝☞	☝	☝☞	☝	☝☞	☝	☝☞	☝	☝☞	☝	☝☞	
9		R-Rear Dozer Only Up													*4.03	*4.03	3.67
		R-Rear Dozer Only Down													*4.03	*4.03	
		R-Outrigger Only Down													*4.03	*4.03	
		F-Dozer + R-Outrigger Down													*4.03	*4.03	
8		R-Rear Dozer Only Up					*4.47	4.15							*3.22	*3.22	5.22
		R-Rear Dozer Only Down					*4.47	*4.47							*3.22	*3.22	
		R-Outrigger Only Down					*4.47	*4.47							*3.22	*3.22	
		F-Dozer + R-Outrigger Down					*4.47	*4.47							*3.22	*3.22	
7		R-Rear Dozer Only Up					*4.18	*4.18	*4.31	3.16					*2.89	*2.89	6.23
		R-Rear Dozer Only Down					*4.18	*4.18	*4.31	4.09					*2.89	*2.89	
		R-Outrigger Only Down					*4.18	*4.18	*4.31	*4.31					*2.89	*2.89	
		F-Dozer + R-Outrigger Down					*4.18	*4.18	*4.31	*4.31					*2.89	*2.89	
6		R-Rear Dozer Only Up					*4.29	4.19	*4.45	3.18					*2.72	2.50	6.95
		R-Rear Dozer Only Down					*4.29	*4.29	*4.45	4.11					*2.72	*2.72	
		R-Outrigger Only Down					*4.29	*4.29	*4.45	*4.45					*2.72	*2.72	
		F-Dozer + R-Outrigger Down					*4.29	*4.29	*4.45	*4.45					*2.72	*2.72	
5		R-Rear Dozer Only Up			*5.00	*5.00	*4.78	4.11	*4.67	3.14	4.14	2.48			*2.63	2.23	7.47
		R-Rear Dozer Only Down			*5.00	*5.00	*4.78	*4.78	*4.67	4.07	4.05	3.22			*2.63	*2.63	
		R-Outrigger Only Down			*5.00	*5.00	*4.78	*4.78	*4.67	*4.67	3.92	4.61			*2.63	*2.63	
		F-Dozer + R-Outrigger Down			*5.00	*5.00	*4.78	*4.78	*4.67	*4.67	*4.72	4.61			*2.63	*2.63	
4		R-Rear Dozer Only Up			*6.36	5.51	*5.54	4.00	*5.11	3.08	4.11	2.46			*2.60	2.06	7.81
		R-Rear Dozer Only Down			*6.36	*6.36	*5.54	5.24	5.07	4.01	4.02	3.19			*2.60	*2.60	
		R-Outrigger Only Down			*6.36	*6.36	*5.54	*5.54	4.91	*5.11	3.89	4.58			*2.60	*2.60	
		F-Dozer + R-Outrigger Down			*6.36	*6.36	*5.54	*5.54	*5.11	*5.11	*4.91	4.58			*2.60	*2.60	
3		R-Rear Dozer Only Up			*8.04	5.26	*6.48	3.87	5.09	3.01	4.07	2.42	*2.91	1.98	*2.61	1.97	8.02
		R-Rear Dozer Only Down			*8.04	7.07	*6.48	5.10	4.98	3.92	3.98	3.15	*2.91	2.58	*2.61	2.57	
		R-Outrigger Only Down			*8.04	*8.04	6.34	*6.48	4.82	*5.67	3.85	4.53	*2.91	*2.91	*2.61	*2.61	
		F-Dozer + R-Outrigger Down			*8.04	*8.04	*6.48	*6.48	*5.67	*5.67	*5.23	4.53	*2.91	*2.91	*2.61	*2.61	
2		R-Rear Dozer Only Up			9.23	5.04	6.54	3.74	5.01	2.93	4.02	2.37	3.32	1.96	*2.66	1.93	8.10
		R-Rear Dozer Only Down			9.02	6.83	6.39	4.96	4.90	3.84	3.93	3.10	3.24	2.56	*2.66	2.52	
		R-Outrigger Only Down			8.74	*9.64	6.19	*7.43	4.74	5.62	3.80	4.48	3.13	3.68	*2.66	*2.66	
		F-Dozer + R-Outrigger Down			*9.64	*9.64	*7.43	*7.43	*6.26	5.62	*5.60	4.48	*3.82	3.68	*2.66	*2.66	
1		R-Rear Dozer Only Up			9.06	4.90	6.43	3.65	4.94	2.87	3.98	2.33	3.30	1.95	*2.75	1.93	8.05
		R-Rear Dozer Only Down			8.86	6.68	6.28	4.86	4.83	3.78	3.88	3.06	3.23	2.55	*2.75	2.53	
		R-Outrigger Only Down			8.58	10.57	6.08	7.32	4.67	5.55	3.76	4.43	3.12	*3.44	*2.75	*2.75	
		F-Dozer + R-Outrigger Down			*10.68	10.57	*8.23	7.32	*6.81	5.55	*5.95	4.43	*3.44	*3.44	*2.75	*2.75	
0(Ground)		R-Rear Dozer Only Up			8.99	4.84	6.36	3.59	4.89	2.83	3.95	2.31			*2.89	1.98	7.87
		R-Rear Dozer Only Down			8.78	6.61	6.22	4.80	4.78	3.73	3.86	3.03			*2.89	2.60	
		R-Outrigger Only Down			8.50	10.49	6.01	7.24	4.62	5.50	3.73	4.40			*2.89	*2.89	
		F-Dozer + R-Outrigger Down			*11.29	10.49	*8.79	7.24	*7.23	5.50	*6.23	4.40			*2.89	*2.89	
-1		R-Rear Dozer Only Up	*6.81	*6.81	8.97	4.83	6.33	3.56	4.87	2.81	3.94	2.30			*3.10	2.10	7.55
		R-Rear Dozer Only Down	*6.81	*6.81	8.77	6.60	6.19	4.77	4.76	3.71	3.85	3.03			*3.10	2.75	
		R-Outrigger Only Down	*6.81	*6.81	8.48	10.47	5.99	7.21	4.60	5.48	3.72	4.40			*3.10	*3.10	
		F-Dozer + R-Outrigger Down	*6.81	*6.81	*11.60	10.47	*9.08	7.21	*7.47	5.48	*6.36	4.40			*3.10	*3.10	
-2		R-Rear Dozer Only Up	*10.44	7.44	9.00	4.85	6.34	3.57	4.88	2.81	3.97	2.33			*3.42	2.30	7.07
		R-Rear Dozer Only Down	*10.44	*10.44	8.80	6.62	6.20	4.78	4.77	3.72	3.88	3.05			*3.42	3.02	
		R-Outrigger Only Down	*10.44	*10.44	8.51	10.50	6.00	7.22	4.61	5.49	3.75	4.43			*3.42	*3.42	
		F-Dozer + R-Outrigger Down	*10.44	*10.44	*11.44	10.50	*9.08	7.22	*7.46	5.49	*4.71	4.43			*3.42	*3.42	
-3		R-Rear Dozer Only Up			9.07	4.91	6.39	3.61	4.93	2.86					4.83	2.81	6.10
		R-Rear Dozer Only Down			8.86	6.69	6.24	4.82	4.82	3.77					4.72	3.69	
		R-Outrigger Only Down			8.58	10.58	6.04	7.27	4.66	5.54					4.56	5.42	
		F-Dozer + R-Outrigger Down			*10.86	10.58	*8.67	7.27	*6.98	5.54					*6.82	5.42	

## Feet

Unit : 1,000lb

A(ft) B(ft)	Chassis Frame Attachment	10'		15'		20'		25'		Max. Reach		
												A(ft)
25	R-Rear Dozer Only Up			*9.16	*9.16					*6.75	*6.75	18.54
	R-Rear Dozer Only Down			*9.16	*9.16					*6.75	*6.75	18.54
	R-Outrigger Only Down			*9.16	*9.16					*6.75	*6.75	18.54
	F-Dozer + R-Outrigger Down			*9.16	*9.16					*6.75	*6.75	18.54
20	R-Rear Dozer Only Up			*9.24	*9.24	*9.85	6.84			*6.02	5.58	22.62
	R-Rear Dozer Only Down			*9.24	*9.24	*9.85	8.84			*6.02	*6.02	22.62
	R-Outrigger Only Down			*9.24	*9.24	*9.85	*9.85			*6.02	*6.02	22.62
	F-Dozer + R-Outrigger Down			*9.24	*9.24	*9.85	*9.85			*6.02	*6.02	22.62
15	R-Rear Dozer Only Up			*11.54	10.22	*10.63	6.72	*6.15	4.75	*5.76	4.73	25.04
	R-Rear Dozer Only Down			*11.54	*11.54	*10.63	8.71	*6.15	*6.15	*5.76	*5.76	25.04
	R-Outrigger Only Down			*11.54	*11.54	*10.63	*10.63	*6.15	*6.15	*5.76	*5.76	25.04
	F-Dozer + R-Outrigger Down			*11.54	*11.54	*10.63	*10.63	*6.15	*6.15	*5.76	*5.76	25.04
10	R-Rear Dozer Only Up			*15.34	9.66	10.98	6.49	7.92	4.70	*5.75	4.35	26.30
	R-Rear Dozer Only Down			*15.34	12.81	10.74	8.47	7.74	6.13	*5.75	5.67	26.30
	R-Outrigger Only Down			*15.34	*15.34	10.40	12.30	7.49	8.80	*5.75	*5.75	26.30
	F-Dozer + R-Outrigger Down			*15.34	*15.34	*12.31	12.30	*11.21	8.80	*5.75	*5.75	26.30
5	R-Rear Dozer Only Up			16.34	9.16	10.72	6.26	7.82	4.61	*5.94	4.24	26.54
	R-Rear Dozer Only Down			15.98	12.27	10.48	8.22	7.64	6.03	*5.94	5.55	26.54
	R-Outrigger Only Down			15.47	18.75	10.14	12.03	7.38	8.69	*5.94	*5.94	26.54
	F-Dozer + R-Outrigger Down			*19.13	18.75	*14.20	12.03	*12.06	8.69	*5.94	*5.94	26.54
0(Ground)	R-Rear Dozer Only Up			16.04	8.91	10.54	6.10	7.76	4.55	*6.36	4.37	25.81
	R-Rear Dozer Only Down			15.68	11.99	10.30	8.06	7.58	5.97	*6.36	5.73	25.81
	R-Outrigger Only Down			15.17	18.42	9.96	11.84	7.32	8.63	*6.36	*6.36	25.81
	F-Dozer + R-Outrigger Down			*21.47	18.42	*15.68	11.84	*12.66	8.63	*6.36	*6.36	25.81
-5	R-Rear Dozer Only Up	*19.43	15.93	15.99	8.86	10.50	6.06			*7.16	4.83	24.01
	R-Rear Dozer Only Down	*19.43	*19.43	15.63	11.95	10.26	8.01			*7.16	6.34	24.01
	R-Outrigger Only Down	*19.43	*19.43	15.12	18.37	9.92	11.80			*7.16	*7.16	24.01
	F-Dozer + R-Outrigger Down	*19.43	*19.43	*22.13	18.37	*16.25	11.80			*7.16	*7.16	24.01
-10	R-Rear Dozer Only Up			16.14	8.99					10.88	6.31	19.68
	R-Rear Dozer Only Down			15.78	12.09					10.63	8.32	19.68
	R-Outrigger Only Down			15.27	18.53					10.28	12.22	19.68
	F-Dozer + R-Outrigger Down			*20.91	18.53					*15.30	12.22	19.68

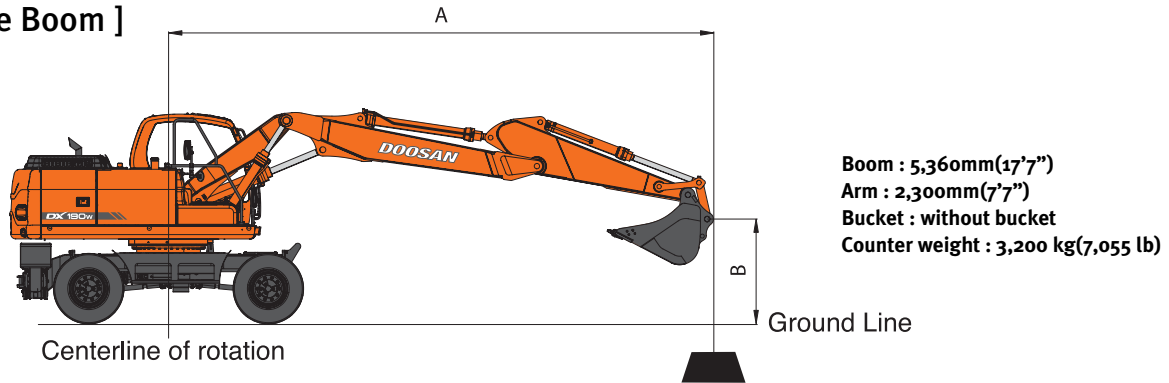
1. Ratings are based on SAE J1097
2. Load point is the end of arm.
3. \* Rated loads are based on hydraulic capacity.
4. Rated loads do not exceed 87% of hydraulic capacity or 75% of tipping capacity.

 : Rating Over Front

 : Rating Over Side or 360 degree

# LIFTING CAPACITY

## [ Two-piece Boom ]













## Metric

Unit : 1,000kg

A(m)	B(m)	Chassis Frame Attachment	3		4		5		6		7		Max. Reach		A(m)	
8		R-Rear Dozer Only Up												*3.49	*3.49	4.74
		R-Rear Dozer Only Down												*3.49	*3.49	
		R-Outrigger Only Down												*3.49	*3.49	
		F-Dozer + R-Outrigger Down												*3.49	*3.49	
7		R-Rear Dozer Only Up					*4.58	4.16						*3.08	*3.08	5.84
		R-Rear Dozer Only Down					*4.58	*4.58						*3.08	*3.08	
		R-Outrigger Only Down					*4.58	*4.58						*3.08	*3.08	
		F-Dozer + R-Outrigger Down					*4.58	*4.58						*3.08	*3.08	
6		R-Rear Dozer Only Up					*4.63	4.14	*4.77	3.13				*2.89	2.67	6.60
		R-Rear Dozer Only Down					*4.63	*4.63	*4.77	4.06				*2.89	*2.89	
		R-Outrigger Only Down					*4.63	*4.63	*4.77	*4.77				*2.89	*2.89	
		F-Dozer + R-Outrigger Down					*4.63	*4.63	*4.77	*4.77				*2.89	*2.89	
5		R-Rear Dozer Only Up			*5.47	*5.47	*5.10	4.07	*4.93	3.11	4.10	2.44		*2.79	2.36	7.14
		R-Rear Dozer Only Down			*5.47	*5.47	*5.10	*5.10	*4.93	4.03	4.01	3.18		*2.79	*2.79	
		R-Outrigger Only Down			*5.47	*5.47	*5.10	*5.10	*4.93	*4.93	3.88	*4.26		*2.79	*2.79	
		F-Dozer + R-Outrigger Down			*5.47	*5.47	*5.10	*5.10	*4.93	*4.93	*4.26	*4.26		*2.79	*2.79	
4		R-Rear Dozer Only Up			*6.86	5.43	*5.86	3.95	5.14	3.05	4.08	2.43		*2.76	2.17	7.51
		R-Rear Dozer Only Down			*6.86	*6.86	*5.86	5.19	5.03	3.97	3.99	3.16		*2.76	*2.76	
		R-Outrigger Only Down			*6.86	*6.86	*5.86	*5.86	4.87	*5.34	3.86	4.54		*2.76	*2.76	
		F-Dozer + R-Outrigger Down			*6.86	*6.86	*5.86	*5.86	*5.34	*5.34	*5.13	4.54		*2.76	*2.76	
3		R-Rear Dozer Only Up			*8.55	5.18	6.63	3.82	5.06	2.97	4.04	2.39		*2.77	2.06	7.72
		R-Rear Dozer Only Down			*8.55	6.99	6.49	5.05	4.95	3.89	3.95	3.12		*2.77	2.70	
		R-Outrigger Only Down			*8.55	*8.55	6.28	*6.78	4.79	5.67	3.82	4.50		*2.77	*2.77	
		F-Dozer + R-Outrigger Down			*8.55	*8.55	*6.78	*6.78	*5.88	5.67	*5.41	4.50		*2.77	*2.77	
2		R-Rear Dozer Only Up			9.15	4.98	6.49	3.70	4.98	2.90	4.00	2.35		*2.82	2.01	7.80
		R-Rear Dozer Only Down			8.95	6.76	6.35	4.92	4.87	3.82	3.91	3.08		*2.82	2.64	
		R-Outrigger Only Down			8.66	*10.08	6.15	7.39	4.71	5.59	3.78	4.46		*2.82	*2.82	
		F-Dozer + R-Outrigger Down			*10.08	*10.08	*7.68	7.39	*6.44	5.59	*5.75	4.46		*2.82	*2.82	
1		R-Rear Dozer Only Up			9.01	4.86	6.40	3.62	4.92	2.85	3.96	2.32		*2.92	2.02	7.75
		R-Rear Dozer Only Down			8.81	6.64	6.25	4.83	4.80	3.76	3.87	3.04		*2.92	2.65	
		R-Outrigger Only Down			8.53	*9.51	6.05	7.28	4.65	5.53	3.74	4.42		*2.92	*2.92	
		F-Dozer + R-Outrigger Down			*9.51	*9.51	*8.42	7.28	*6.95	5.53	*6.06	4.42		*2.92	*2.92	
0(Ground)		R-Rear Dozer Only Up			8.96	4.82	6.34	3.57	4.88	2.81	3.94	2.30		*3.08	2.08	7.56
		R-Rear Dozer Only Down			8.76	6.59	6.20	4.78	4.76	3.72	3.85	3.02		*3.08	2.74	
		R-Outrigger Only Down			8.48	10.47	5.99	7.22	4.61	5.48	3.72	4.40		*3.08	*3.08	
		F-Dozer + R-Outrigger Down			*11.13	10.47	*8.90	7.22	*7.32	5.48	*6.29	4.40		*3.08	*3.08	
-1		R-Rear Dozer Only Up	*7.07	*7.07	8.97	4.82	6.32	3.56	4.86	2.80	3.94	2.30		*3.32	2.22	7.23
		R-Rear Dozer Only Down	*7.07	*7.07	8.76	6.60	6.18	4.76	4.75	3.71	3.85	3.03		*3.32	2.91	
		R-Outrigger Only Down	*7.07	*7.07	8.48	10.47	5.98	7.21	4.59	5.47	3.72	4.40		*3.32	*3.32	
		F-Dozer + R-Outrigger Down	*7.07	*7.07	*11.57	10.47	*9.11	7.21	*7.49	5.47	*6.33	4.40		*3.32	*3.32	
-2		R-Rear Dozer Only Up	*11.45	7.46	9.01	4.86	6.34	3.57	4.88	2.82				*3.70	2.46	6.73
		R-Rear Dozer Only Down	*11.45	10.67	8.80	6.63	6.20	4.78	4.77	3.73				*3.70	3.23	
		R-Outrigger Only Down	*11.45	*11.45	8.52	10.51	6.00	7.23	4.61	5.49				*3.70	*3.70	
		F-Dozer + R-Outrigger Down	*11.45	*11.45	*11.29	10.51	*9.00	7.23	*7.37	5.49				*3.70	*3.70	

## Feet

Unit : 1,000lb

A(ft) B(ft)	Chassis Frame Attachment	10'		15'		20'		25'		Max. Reach		A(ft)
												
25	R-Rear Dozer Only Up			*10.26	*10.26					*7.27	*7.27	17.09
	R-Rear Dozer Only Down			*10.26	*10.26					*7.27	*7.27	
	R-Outrigger Only Down			*10.26	*10.26					*7.27	*7.27	
	F-Dozer + R-Outrigger Down			*10.26	*10.26					*7.27	*7.27	
20	R-Rear Dozer Only Up			*10.07	*10.07	*10.59	6.74			*6.40	5.98	21.46
	R-Rear Dozer Only Down			*10.07	*10.07	*10.59	8.73			*6.40	*6.40	
	R-Outrigger Only Down			*10.07	*10.07	*10.59	*10.59			*6.40	*6.40	
	F-Dozer + R-Outrigger Down			*10.07	*10.07	*10.59	*10.59			*6.40	*6.40	
15	R-Rear Dozer Only Up	*15.84	*15.84	*12.36	10.09	11.15	6.64	7.86	4.65	*6.11	4.99	24.01
	R-Rear Dozer Only Down	*15.84	*15.84	*12.36	*12.36	10.91	8.63	7.68	6.07	*6.11	*6.11	
	R-Outrigger Only Down	*15.84	*15.84	*12.36	*12.36	10.57	*11.17	7.42	8.73	*6.11	*6.11	
	F-Dozer + R-Outrigger Down	*15.84	*15.84	*12.36	*12.36	*11.17	*11.17	*8.92	8.73	*6.11	*6.11	
10	R-Rear Dozer Only Up			*16.14	9.54	10.91	6.42	7.78	4.58	*6.10	4.55	25.31
	R-Rear Dozer Only Down			*16.14	12.68	10.66	8.40	7.60	6.00	*6.10	5.95	
	R-Outrigger Only Down			15.91	*16.14	10.32	12.22	7.35	8.65	*6.10	*6.10	
	F-Dozer + R-Outrigger Down			*16.14	*16.14	*12.77	12.22	*11.35	8.65	*6.10	*6.10	
5	R-Rear Dozer Only Up			16.24	9.07	10.66	6.20			*6.31	4.43	25.57
	R-Rear Dozer Only Down			15.88	12.18	10.42	8.17			*6.31	5.81	
	R-Outrigger Only Down			15.37	18.64	10.08	11.97			*6.31	*6.31	
	F-Dozer + R-Outrigger Down			*19.73	18.64	*14.55	11.97			*6.31	*6.31	
0(Ground)	R-Rear Dozer Only Up			15.99	8.86	10.51	6.07			*6.80	4.59	24.81
	R-Rear Dozer Only Down			15.63	11.95	10.27	8.02			*6.80	6.03	
	R-Outrigger Only Down			15.12	18.37	9.93	11.81			*6.80	*6.80	
	F-Dozer + R-Outrigger Down			*21.73	18.37	*15.87	11.81			*6.80	*6.80	
-5	R-Rear Dozer Only Up	*20.88	15.98	15.99	8.86	10.50	6.06			*7.72	5.13	22.93
	R-Rear Dozer Only Down	*20.88	*20.88	15.62	11.94	10.26	8.01			*7.72	6.73	
	R-Outrigger Only Down	*20.88	*20.88	15.12	18.37	9.92	11.80			*7.72	*7.72	
	F-Dozer + R-Outrigger Down	*20.88	*20.88	*22.04	18.37	*16.19	11.80			*7.72	*7.72	

1. Ratings are based on SAE J1097

2. Load point is the end of arm.

3. \* Rated loads are based on hydraulic capacity.

4. Rated loads do not exceed 87% of hydraulic capacity or 75% of tipping capacity.

 : Rating Over Front : Rating Over Side or 360 degree