

**DOOSAN**

Construction Equipment

# DX210W

Engine Power	SAE J1349, net 120 kW (162 HP) @ 2,000 rpm
Operational Weight	19,900 ~ 20,400 kg (43,872 ~ 44,974 lb)
Bucket Capacity (SAE/PCSA)	0.51 ~ 1.28 m <sup>3</sup> (0.67 ~ 1.67 yd <sup>3</sup> )



# DOOSAN DX210W HYDRAULIC EXCAVATOR : A NEW MODEL WITH NOVEL FEATURES

## DX210w



THE NEW DX210W HYDRAULIC EXCAVATOR HAS ALL THE ADVANTAGES OF THE PREVIOUS MODEL, AND NOW OFFERS ADDITIONAL ADDED VALUE TO THE OPERATOR.

The new DX210W was developed with the concept of “providing optimum value to the end user.” In concrete terms, this translates, into :

INCREASED PRODUCTION AND IMPROVED FUEL ECONOMY are 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.



### HEAVY-DUTY FRONT

- Overall reinforcement of steel plate by increasing thickness. (Side plate 20%, Bottom 15%)
- Reinforced boom-end bracket and enlarged arm-center boss
- Enlarged arm-end boss and reinforcement plate with abrasion-resistant beams.



### ADVANCED FRONT BUSH

- EM bushing (Enhanced Macro-surface)
- Pocket & Dimple surface pattern : Optimized greasing & Trap foreign object
- Wear resistant solid lubricant coating : Noise free & enhanced anti-seizure property
- 30% longer life time than competitors



### ADVANCED H-CLASS BUCKET

- Doosan new H-class bucket has the best strength of steel & the optimized design
- Add side cutter / add chamfer and inner plate at member part
- Increase bucket solidity and change casting type



### 7 INCH MONITOR

- New, user-friendly LCD color monitor with full access to machine settings and maintenance data.
- Operator can see rear view through new monitor (If customer selects rear view camera option)



### ADVANCED HD CABIN (OPTIONAL)

- ROPS, FOPS optional
- The latest interior (MP3, Joystick, Air suspension seat, etc.)



### PRE CLEANER

- Install rotor type pre-cleaner (Donaldson Top Spin 5"). So filtering efficiency 20% increased



### WATER SEPARATOR

- Fuel water separator filters water in fuel and enhance engine's durability and reduce quality problem caused by water in fuel (Extra Filter + Pre Filter + Main Filter)



### TROPICAL HYDRAULIC OIL (ISO VG 68)

- Maintain best performance of your machine by keeping optimum viscosity in tropical area.

\* Above image may differ from actual product.



# PERFORMANCE & PRODUCTIVITY

## DX210W

The performance of the DX210W has a direct effect on its productivity. Its new "Common Rail" engine and new EPOS™ controlled hydraulic system have combined to create an unbeatable hydraulic excavator, with a cost/performance ratio that makes the DX210W even more appealing.

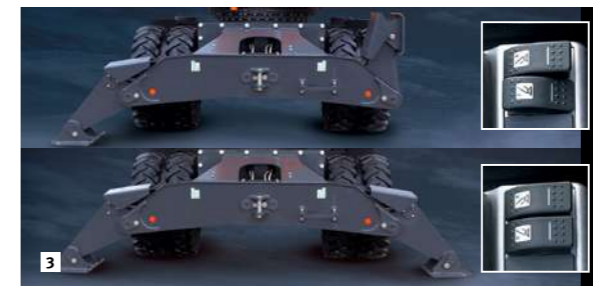
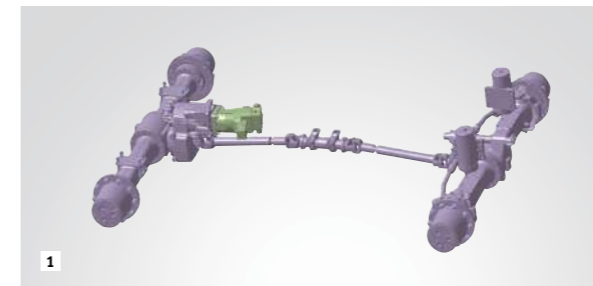
### DOOSAN ENGINE (DL06)

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

The new engine produces 162 hp(120 kw/164 PS) at only 2,000 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.



### 1 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.

### 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.

### EXCAVATOR CONTROL

Improved Excavator control by New EPOS™ system The brains of the hydraulic excavator, the EPOS™ (Electronic Power Optimizing system), have been improved, through a CAN (Controller Area Network) communication link, these units are now perfectly synchronised.

### 2 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 pin type for maximum flexibility. An optional work tool restraint bar is available.

### 3 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.

### 4 DOZER

The bolt-on design allows the dozer 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 blade bottom and parallel design provide minimized ground pressure.

### 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 2x231.7l/min(@ 2,000rpm) 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.



\* Above image may differ from actual product.



# DURABILITY & RELIABILITY

## DX 210w

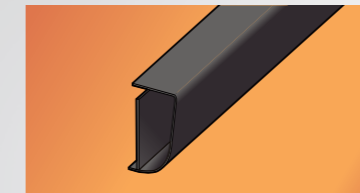
The reliability of an item of plant contributes to its overall lifetime operating costs. DOOSAN uses computer-assisted design techniques, highly durable materials and structures then test these under extreme conditions. Durability of materials and longevity of structures are our first priorities.



\* Above image may differ from actual product.

### D-TYPE FRAME

The D-type frame and chassis frame add strength and minimize distortion due to shocks.



### STRESS ANALYSIS DESIGN USING BY FEM (FINITE ELEMENT METHOD) AND INNOVATIVE MANUFACTURING TECHNIQUE PROVIDES A STRONG AND STABLE UNDERCARRIAGE

The Chassis Frame, Outrigger Assembly and Dozer Blade have been designed by interpretative techniques and reliability testing using 3 dimension CAD tools, to ensure improved durability and reliability.



### 1 ADVANCED 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.

### 2 POLYMER SHIM

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

### 3 DOZER & OUTRIGGER CYLINDERS PROTECTION COVERS

Large reinforced protective covers have been adopted to completely protect the Dozer & Outrigger cylinders from falling stones etc, while the machine is operating.

### 4 CAST COUNTERWEIGHT

A Cast Counterweight has been adopted to minimize deformation by external impact. In addition, operating stability has been increased by use of a low center of gravity design.

### 5 LED (LUMINESCENT DIODE) TYPE STOP LAMPS

The use of LED type Stop Lamps ensures considerably improved average service life compared to the existing standard filament bulbs. Furthermore, the faster lighting speed helps contribute to accident prevention.



### RELIEF CUTOFF

The pump continues to supply flow even when the maximum pressure on the system is reached due to severe working environments and large workloads. Relief cutoff technology of DX210W prevents transfer of unnecessary flow to maintain powerful working level at the maximum value while reducing consumption of fuel.



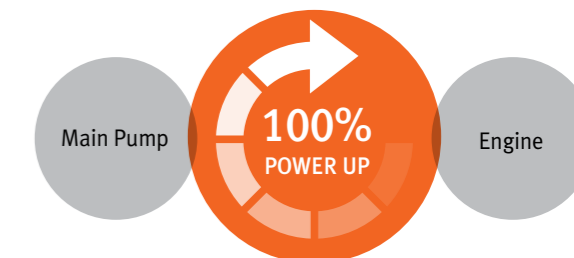
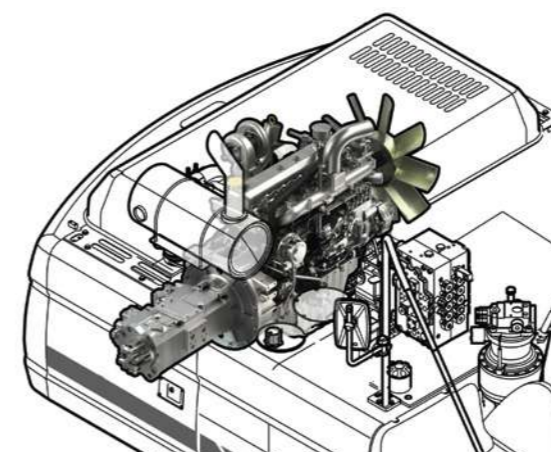
### OPTIMIZED LEVER CONTROL & AUTO IDLE

When operator takes a break and leaves the control joystick fixed, both of the engine and the pump are kept in standby mode and prevents unnecessary fuel consumption.



### PUMP MATCHING TECHNOLOGY

Engine & pump matching, the new technology of Doosan, fully resolves problems; low responses time of the system, unnecessary fuel consumption. Matching response time between pump and engine efficiently reduces unnecessary fuel consumption as well as exhaust fumes.



\* Above image may differ from actual product.



# OPERATOR COMFORT

# DX210W

The work rate of the hydraulic excavator is directly linked to the performance of its operator. DOOSAN designed the DX210W 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.

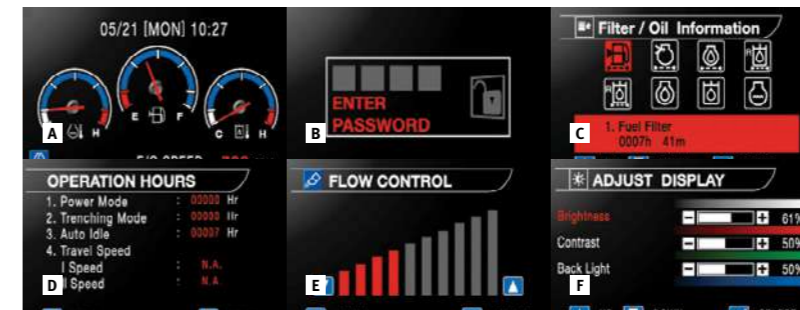


## MONITOR



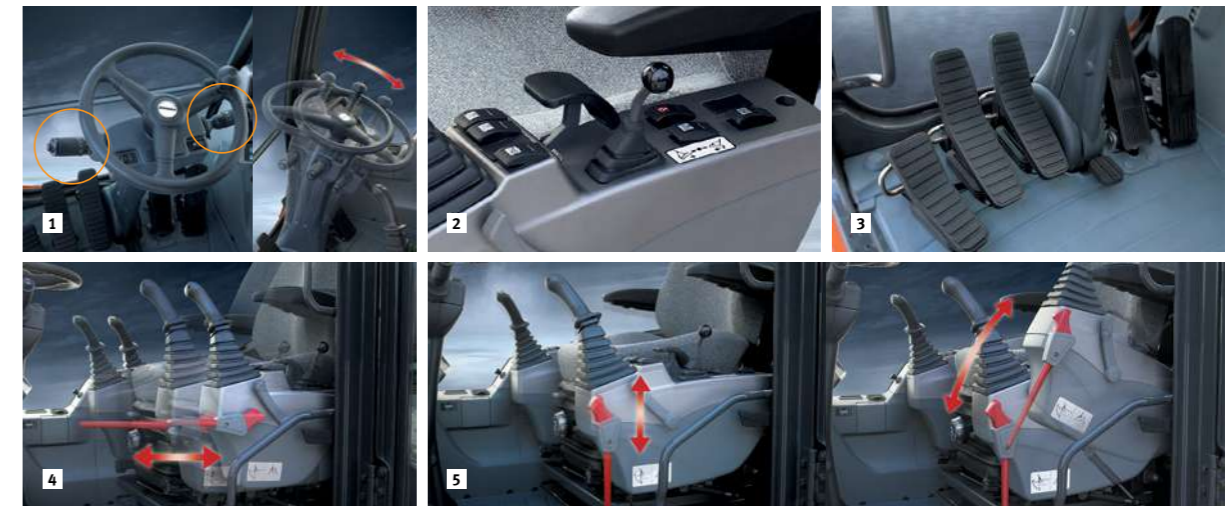
- 3 power modes for maximum efficiency
  - Power mode
  - Standard mode
  - Economy mode
- 3 work modes to suit your application
  - 1-way mode
  - 2-way mode
  - Digging mode

- 1 Control panel
- 2 Navigation modes
  - Rearview camera, Display selector
- 3 Working modes
  - Auto-idle & Flow rate control



## CONTROL PANEL

- A Standard screen
- B Anti-theft protection
- C Filter/oil information
- D Operation history
- E Flow rate control
- F Contrast control



## 1 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.

## 2 DOZER/OUTRIGGER CONTROL

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

## 3 FOOT PEDALS

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

## 4 COMFORTABLE 2-STAGE SLIDING SEAT

## 5 CONTROL STAND (TELESCOPIC & TILTING FUNCTION)

## AIR CONDITIONING

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.



## 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.)

## 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.



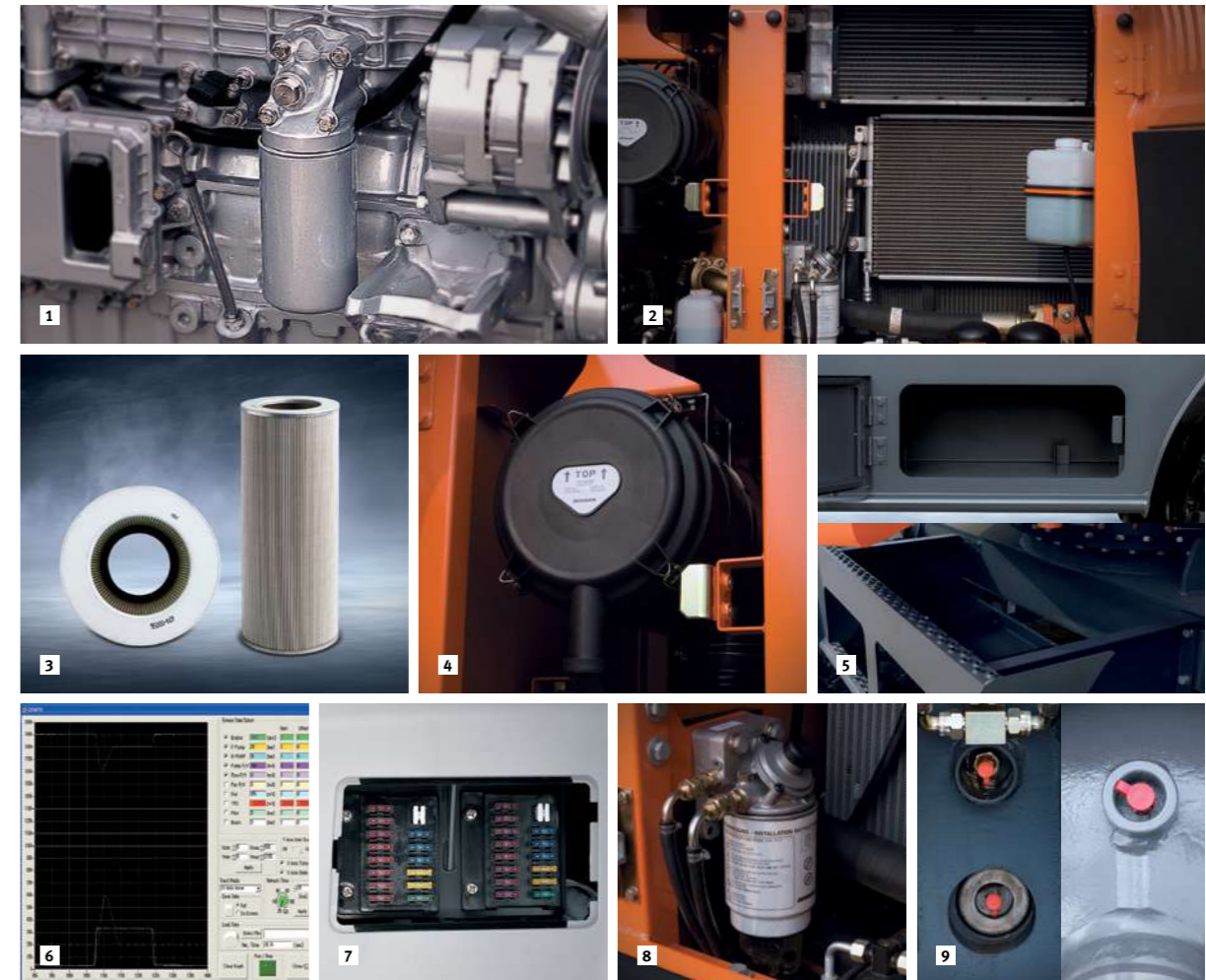
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# EASY MAINTENANCE

# DX210W

Short maintenance operations at long intervals increase the availability of the equipment on site. DOOSAN has developed the DX210W with a view to high profitability for the user.



### 1 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.

### 2 EASY MAINTENANCE

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

### 3 HYDRAULIC OIL RETURN FILTER

The protection of the hydraulic system is made more effective by the use of 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.

### 4 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.

### 5 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.

### 6 PC MONITORING (DMS)

A PC monitoring function enables connection to the EPOSTM 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.

### 7 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.

### 8 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.

### 9 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.

\* Above image may differ from actual product.



# TELEMATICS SERVICE (OPTIONAL)

# GLOBAL PARTS NETWORK

## TELECOMMUNICATIONS

Data flow from machine to web




**TELEMATICS SERVICE TERMINAL**

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



**TELECOMMUNICATION**

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



**DOOSAN TELEMATICS SERVICE WEB**

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

## BENEFITS

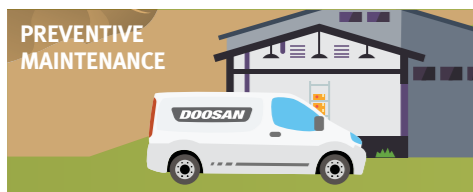
**JOB SITE MANAGEMENT**



**WORK EFFICIENCY MANAGEMENT**



**PREVENTIVE MAINTENANCE**



**PROACTIVE SERVICE**



## FUNCTIONS

**Location**

- GPS
- Geo-fence



**Reports**

- Periodic operation report
- Utilization



**Operation Trend**

- Total operation hour
- Operation hour by mode



**Fuel Efficiency\***

- Fuel level
- Fuel consumption



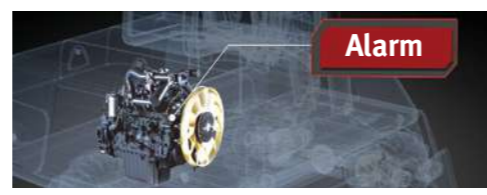
**Filter & Oil Management**

- Preventive maintenance by item replacement cycle

Item	Filter	Oil	Alert
Excavator 200-6	OK	OK	OK
Excavator 400	OK	OK	OK
Excavator 270-6	OK	OK	OK
Excavator 80.2	OK	OK	OK
Excavator 240.2	OK	OK	OK

**Warning & Alert**

- Detect machine warnings
- Antenna disconnection
- Geo/Time fence



\* Functions may not be applied to all models. Please contact your sales representative to get more information of the service.

## TELEMATICS SERVICE BENEFITS

### Customer

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

### Dealer

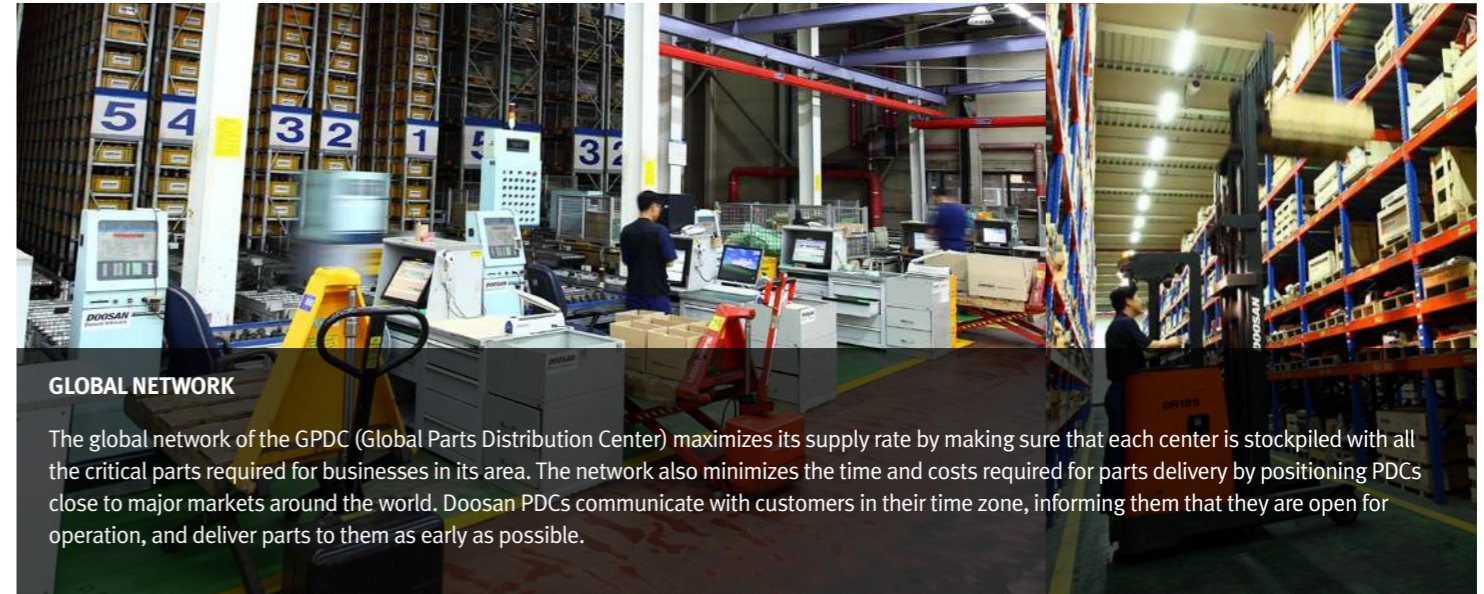
- Better service for customers
- Provide better quality of service
- Maintain machine value
- Better understanding of market needs

### Doosan

- Responsive to customer's voice
- Utilize quality-related field data
- Apply customer's usage profile to developing new machine

## GLOBAL PDC (PARTS DISTRIBUTION CENTER) NETWORK

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



**GLOBAL NETWORK**

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

## The Global Parts

### Distribution Center Network

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



## PDC BENEFIT

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

Heavy Construction Bucket, which is also called Heavy Duty bucket, is the most commonly used bucket in the construction equipment market and is designed mainly for use in heavy construction but also used in low density mining and quarry application.

**Hinge**  
Optimized reinforced construction for high strength and performance matched to the machine's power.

**Adapter**  
Corner adapter Positioned under Side cutter to increase strength.

**Wrapper (Shell)**  
Shape increases heel clearance and decreases wear rate.

**Horizontal Bottom Wear Plates**  
Protects bottom section and reinforces bucket for greater strength and rigidity. Designed for easily replacement during maintenance repair.

**Lip Plate (Cutting Edge)**  
Beveled edge for better penetration and 500BHN material for high abrasion resistance.

**Tooth (Tip)**  
Designed with mechanical properties that maintain hardness for long wear life in tough digging applications.

**Side cutter**  
Designed for better penetration and used high wear resistant material.

**Side Wear Plates**  
Side plates meet up with bottom wear plates for seamless corner protection.



### General Purpose bucket

which is also called General Purpose bucket, is designed for digging and re-handling soft to medium materials e.g. materials with low wear characteristics such as top-soil, loam, coal.



### Heavy Duty bucket

which is also called Heavy Duty bucket, is the most commonly used bucket in the construction equipment market and is designed mainly for use in heavy construction but also used in low density mining and quarry application.



### Severe Duty bucket

which is also called Severe Duty bucket. The bucket is designed for use in high density mining and quarry application using high strength and high abrasion resistance materials. It can be used in the toughest of applications.



### Extra Severe Duty Bucket

which is also called X class bucket. The bucket is designed for use in high density mining and quarry application using high strength and high abrasion resistance materials. It can be used in the toughest of applications.

**TOOTH**

**GD (General Duty) Tooth**  
Optimized design for Doosan's GP and the new General Construction bucket. Suitable for machines ranging from 14 to 70 tons. Recommended for general construction and utility loading applications.

**HD (Heavy Duty) Tooth**  
Optimized design for the Heavy Construction bucket. Suitable for machines ranging from 14 to 70 tons. Recommended for most applications including excavating, trenching, loading and medium density quarries and mining.

**SD (Severe Duty) Tooth**  
Optimized design for the Severe Mining bucket and the Xtreme Mining bucket. Suitable for machines ranging 22 to 70 tons. Recommended for extremely tough quarries and mining application.

## BUCKET



	Capacity (Width) [m <sup>3</sup> (mm)]
<b>GENERAL PURPOSE BUCKET</b>	0.51(768) / 0.81(1,125) / 0.86(1,170) / 1.05(1,369) / 1.17(1,490) / 1.28(1,604)
<b>HEAVY DUTY BUCKET</b>	0.60(796) / 0.76(946) / 0.92(1,096) / 1.08(1,246) / 1.24(1,396) / 1.35(1,496) / 1.40(1,546) / 1.51(1,646)
<b>SEVERE DUTY BUCKET</b>	0.91(1,094) / 1.07(1,244) / 1.23(1,394)

## DEMOLITION



	Model	Weight	Tool diameter	Operating Pressure	Oil Flow	Frequency
<b>HYDRAULIC BREAKER</b>	HB20	1,862 kg	135 mm	170~210 mm	130~150 l/min	400~800 BPM
	DXB180	1,720 kg	140 mm	160~180 mm	130~180 l/min	320~580 BPM

	Model	Weight	Max. Jaw opening	Force at Tip
<b>FIXED PULVERIZER</b>	FP22	1,375 kg	732 mm	54 t
<b>ROTATING CRUSHER</b>	RC22	1,780 kg	732 mm	56 t
<b>MULTI-PROCESSOR</b>	C / D / P / S MP22	2,040 / 2,050 / 2,210 / 1,880 kg	903 / 797 / 893 / 503 mm	68 / 70 / 64 / 80 t

C : Crushing jaw  
D : Demolition jaw  
P : Pulverizing jaw  
S : Shearing jaw



## MATERIAL HANDLING

	Model	Weight	Max Jaw opening	Max. Closing Force	Capacity
<b>MULTI-GRAPPLE</b>	MG22	1,423 kg	2,044 mm	5.7 t	0.75 m <sup>3</sup>
<b>STONE GRAPPLE</b>	SG22	1,235 kg	2,000 mm	-	0.45 m <sup>2</sup>
<b>WOOD GRAPPLE</b>	L / P WG22	1,132 / 1,010 kg	2,000 mm	-	0.62 m <sup>2</sup>
<b>LOG GRAPPLE</b>	L / P LG22	1,280 / 1,250 kg	2,000 mm	-	0.67 m <sup>2</sup>
<b>ORANGE GRAPPLE</b>	OG22	1,300 kg	2,150 mm	-	0.50 m <sup>3</sup>

L : Link type  
P : Pendulum type



## EARTH MOVING

	Model	Weight	Max. Jaw opening	Capacity
<b>CLAMSHELL BUCKET</b>	CB22	1,440 kg	1,725 mm	0.80 m <sup>3</sup>
	Model	Weight	Base plate (WxL)	Impulse force
<b>PLATE COMPACTOR</b>	PC22	1,325 kg	860 x 1,200 mm	11.2 t
	Model	Weight	Length	
<b>RIPPER</b>	RP22	450 kg	1,278 mm	



## CONNECTING

	Model	Weight	Bucket Pin dia.	Working rage (Pin to Pin)
<b>QUICK COUPLER</b>	QC22	319 kg	80 mm	445 ~ 514 mm

# TECHNICAL SPECIFICATIONS

## ENGINE

<b>Model</b>
Doosan DL06 “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.
<b>Number of cylinders</b>
6
<b>Nominal flywheel power</b>
120 kW(162 HP) @ 2,000 rpm (SAE J1349, net)
<b>Max torque</b>
72 kgf.m(706.08 Nm) at 1,400 rpm
<b>Piston displacement</b>
5,890 cc (359 cu.in)
<b>Bore &amp; stroke</b>
Φ100 mm x 125 mm (3.9” X 4.9”)
<b>Starter</b>
24 V / 4.5 kW
<b>Batteries</b>
2 x 12 V / 100 Ah
<b>Air cleaner</b>
Double element with auto dust evacuation.

## 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.

<b>Travel speed (High)</b>
36 km/h (23 mph)
<b>Maximum traction force</b>
12,325 kgf (27,172 lbf)
<b>Maximum grade</b>
31° / 60%

## WEIGHT

Operating weight, including 5,600 mm (18’4”) one-piece boom and 3,000 mm (9’10”) arm, or 1,920 mm (6’4”) +3,840 mm (12’7”) two-piece boom and 2,400mm (7’10”) arm, operator, lubricant, coolant, full fuel tank and the standard equipment. Weights are with 675kg (1,488 lb)bucket.

Undercarriage type		Operating weight (One-piece Boom)	Operating weight (Two-piece Boom)
Front	Rear		
Outrigger	Dozer	20,760 kg (45,768 lb)	20,460 kg (45,107 lb)
Dozer	Outrigger	20,710 kg (45,658 lb)	20,420 kg (45,018 lb)
Outrigger	Outrigger	20,900 kg (46,077 lb)	20,600 kg (45,415 lb)

## 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.

<b>Main pumps</b>
2 variable displacement axial piston pumps max flow: 2 x 231.7 l/min (2 X 61.21 US gpm, 2 X 50.97 Imp gpm)
<b>Pilot pump</b>
Gear pump - max flow: 27.4 l/min (7.24 US gpm, 6.03 Imp gpm)
<b>Maximum system pressure</b>
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)

## 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 11 rpm**

## 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.

## 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 1,225mm(4.7” X 3.3” X 4’)
Arm	1	135 X 95 X 1,450mm(5.3” X 3.7” X 4’9”)
Bucket	1	120 X 80 X 1,060mm(4.7” X 3.2” X 3’6”)

[ Two-piece Boom ]		
Cylinders	Quantity	Bore x Rod diameter x stroke
Boom	2	120 X 85 X 1,045mm(4.7” X 3.3” X 3’5”)
Two-piece Boom 1	1	170 X 105 X 748mm(6.7” X 4.1” X 2’5”)
Arm	1	135 X 95 X 1,538mm(5.3” X 3.7” X 5’1”)
Bucket	1	120 X 80 X 1,060mm(4.7” X 3.2” X 3’6”)

## ENVIRONMENT

Noise levels comply with environmental regulations (dynamic values).

<b>LwA External sound level</b>
103 dB(A) (2000/14/EC)
<b>LPA Operator sound level</b>
74 dB(A) (ISO 6396)

## REFILL CAPACITIES

<b>Fuel tank</b>
350 l (92.46 US gal, 76.99 Imp gal)
<b>Cooling system (Radiator capacity)</b>
24 l (6.34 US gal, 5.28 Imp gal)
<b>Engine oil</b>
27 l (7.13US gal, 5.94 Imp gal)
<b>Swing drive</b>
3.8 l (1.00 US gal, 0.84 Imp gal)
<b>Power train(each)</b>
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)

<b>Hydraulic system</b>
280 l (73.97 US gal, 61.59 Imp gal)
<b>Hydraulic tank</b>
205 l (54.16US gal, 45.09 Imp gal)

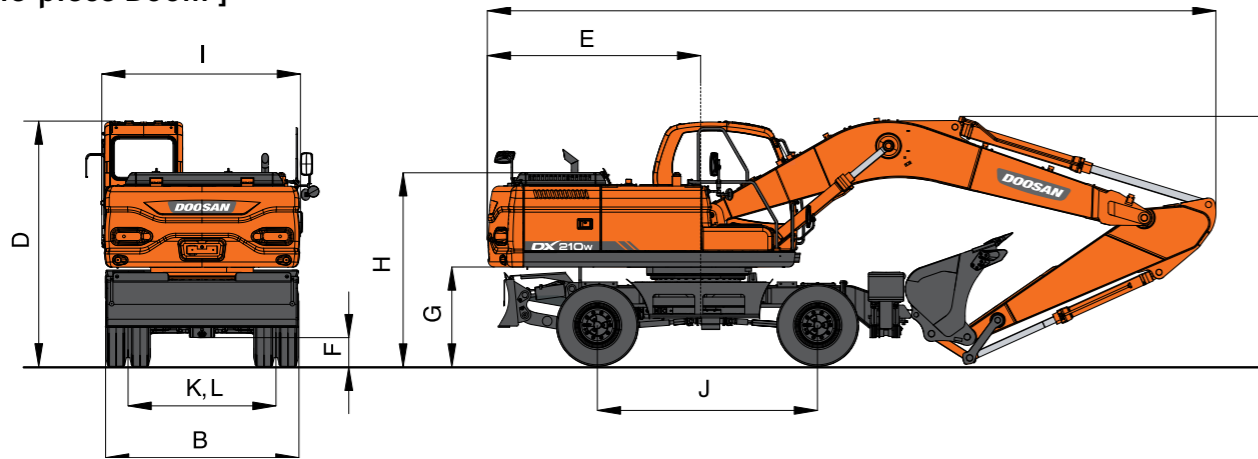
## BUCKET

Capacity		Width		Weight	Recommendation					
					5,600mm (18’4”) One-piece Boom				5,400mm (17’9”) Two-piece Boom	
PCSA, heaped	CECE heaped	Without side cutters	With side cutters		2,000mm (6’7”)Arm	2,400mm (7’10”)Arm	2,750mm (9’)Arm	3,000mm (9’10”)Arm	2,000mm (6’7”)Arm	2,400mm (7’10”)Arm
0.51m <sup>3</sup> (0.67yd <sup>3</sup> )	0.47m <sup>3</sup>	722mm (2’4”)	722mm (2’4”)	530 kg (1,168 lb)	A	A	A	A	A	A
0.81m <sup>3</sup> (1.06yd <sup>3</sup> )	0.72m <sup>3</sup>	1063.5mm (3’6”)	1,126mm (3’8”)	655 kg (1,444 lb)	A	A	B	B	A	B
0.86m <sup>3</sup> (1.13yd <sup>3</sup> )	0.76m <sup>3</sup>	1,115mm (3’8”)	1,178mm (3’10”)	675 kg (1,488 lb)	A	B	B	B	B	B
0.86m <sup>3</sup> (1.13yd <sup>3</sup> )	0.76m <sup>3</sup>	1,115mm (3’8”)	1,179mm (3’10”)	696 kg (1,534 lb)	A	B	B	B	B	B
1.05m <sup>3</sup> (1.37yd <sup>3</sup> )	0.92m <sup>3</sup>	1,307.5mm (4’3”)	1,370mm (4’6”)	740 kg (1,631 lb)	B	C	C	-	C	-
1.17 <sup>3</sup> (1.53yd <sup>3</sup> )	1.0m <sup>3</sup>	1,428mm (4’8”)	1,491mm (4’11”)	795 kg (1,753 lb)	C	-	-	-	-	-
1.28m <sup>3</sup> (1.67yd <sup>3</sup> )	1.10m <sup>3</sup>	1,542mm (5’)	1,605mm (5’3”)	830 kg (1,830 lb)	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

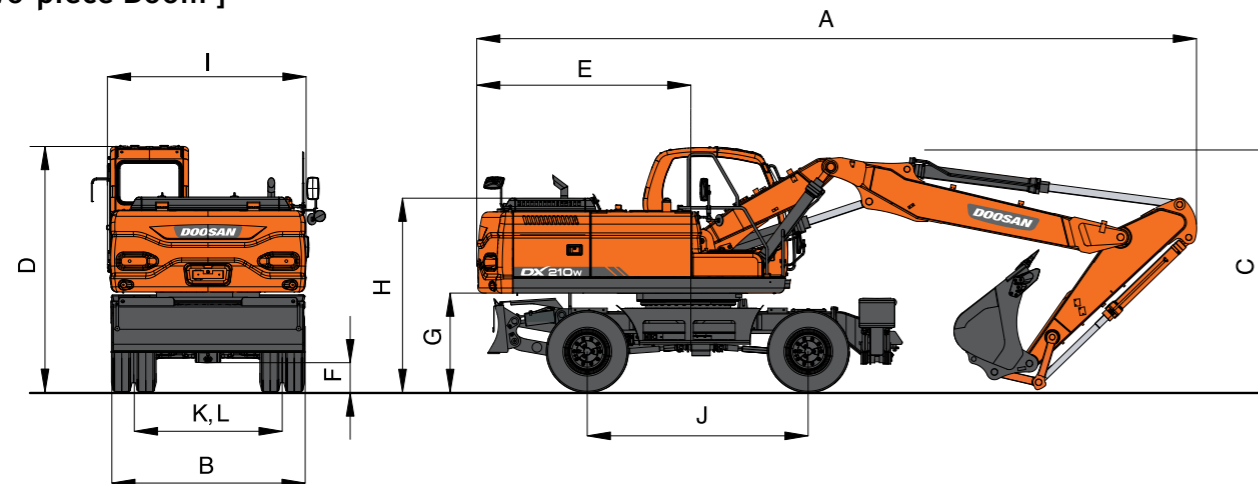
[ One-piece Boom ]



## DIMENSIONS

Boom type (One-piece)	5,600mm(18'4")			
Arm type	2,000mm(6'7")	2,400mm(7'10")	2,750mm(9')	3,000mm(9'10")
A Shipping Length	9,520mm(31'3")	9,470mm(31'1")	9,420mm(30'11")	9,400mm(30'10")
B Shipping Width	→	→	2,500mm(8'2")	←
C Shipping Height (Boom)	3,250mm(10'8")	3,200mm(10'6")	3,200mm(10'6")	3,490mm(11'5")
D Height Over Cab.	→	→	3,140mm(10'4")	←
E Counter Weight Swing Clearance	→	→	2,750mm(9')	←
F Ground Clearance	→	→	350mm(1'2")	←
G Counter Weight Clearance	→	→	1,259mm(4'2")	←
H Engine Cover Height	→	→	2,485mm(8'2")	←
I Upper Housing Width	→	→	2,530mm(8'4")	←
J Wheel Base	→	→	2,850mm(9'4")	←
K,L Tread Width	→	→	1,914mm(6'3")	←

[ Two-piece Boom ]

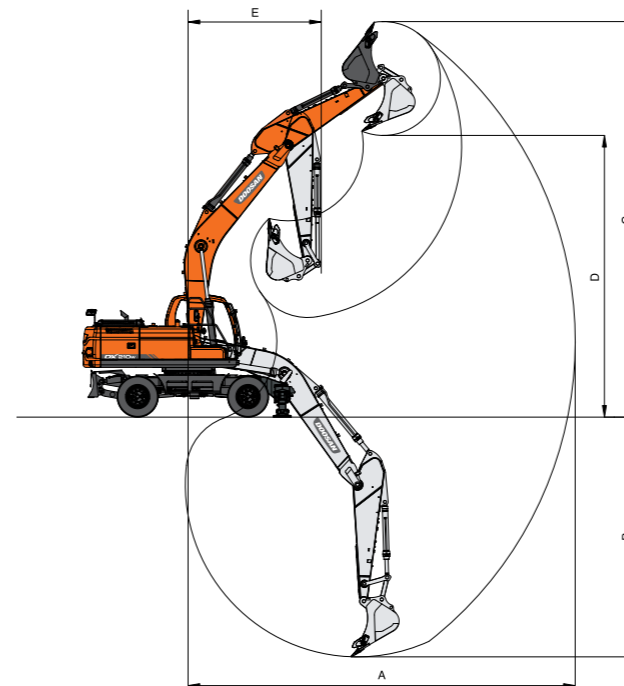


## DIMENSIONS

Boom type (Two-piece)	5,400mm(17'9")	
Arm type	2,000mm(6'7")	2,400mm(7'10")
A Shipping Length	9,275mm(30'5")	9,210mm(30'3")
B Shipping Width	→	2,500mm(8'2")
C Shipping Height (Boom)	→	3,140mm(10'4")
D Height Over Cab.	→	3,140mm(10'4")
E Counter Weight Swing Clearance	→	2,750mm(9')
F Ground Clearance	→	350mm(1'2")
G Counter Weight Clearance	→	1,259mm(4'2")
H Engine Cover Height	→	2,485mm(8'2")
I Upper Housing Width	→	2,530mm(8'4")
J Wheel Base	→	2,850mm(9'4")
K,L Tread Width	→	1,914mm(6'3")

# WORKING RANGES

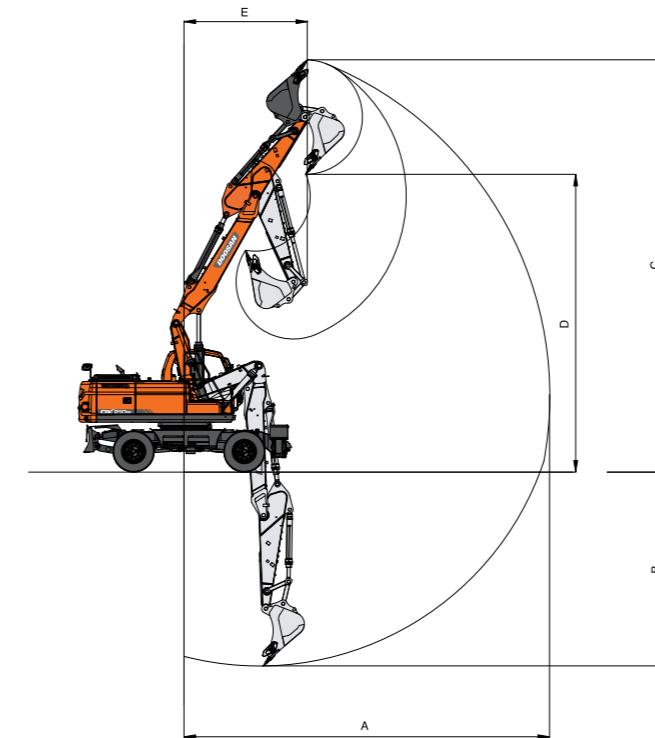
[ One-piece Boom ]



## WORKING RANGES

Boom type (One-piece)	5,200mm (17'1")			
Arm type	2,000mm (6'7")	2,400mm (7'10")	2,750mm (9')	3,000mm (9'10")
A Max. Digging Reach	9,050mm (29'8")	9,430mm (30'11")	9,730mm (31'11")	10,000mm (32'8")
B Max. Digging Depth	5,255mm (17'3")	5,655mm (18'7")	6,010mm (19'9")	6,255mm (20'6")
C Max. Digging Height	9,435mm (30'11")	9,690mm (31'9")	9,800mm (32'2")	10,050mm (32'12")
D Max. Dump Height	6,650mm (21'10")	6,890mm (22'7")	7,020mm (23')	7,250mm (23'9")
E Min. Swing Radius	3,680mm (12'1")	3,390mm (11'1")	3,375mm (11'1")	3,440mm (11'3")

[ Two-piece Boom ]



## WORKING RANGES

Boom type (Two-piece)	5,400mm(17'9")	
Arm type	2,000mm (6'7")	2,400mm (7'10")
A Max. Digging Reach	9,005mm (29'7")	9,405mm (30'10")
B Max. Digging Depth	5,225mm (17'2")	5,625mm (18'5")
C Max. Digging Height	10,210mm (33'6")	10,560mm (34'8")
D Max. Dump Height	7,275mm (23'10")	7,620mm (24'12")
E Min. Swing Radius	3,380mm (11'1")	3,185mm (10'5")

## DIGGING FORCE (ISO)

Bucket (PCSA)	0.51m <sup>3</sup>	0.81m <sup>3</sup>	0.86m <sup>3</sup> (w/cutter)	0.86m <sup>3</sup> (w/o cutter)	1.05m <sup>3</sup>	1.17m <sup>3</sup>	1.28m <sup>3</sup>
Digging force	15,200 kgf 149.06 kN 33,510 lbf	15,200 kgf 149.06 kN 33,510 lbf	15,200 kgf 149.06 kN 33,510 lbf	15,200 kgf 149.06 kN 33,510 lbf	15,200 kgf 149.06 kN 33,510 lbf	15,200 kgf 149.06 kN 33,510 lbf	15,200 kgf 149.06 kN 33,510 lbf
Arm	2,000mm		2,400mm		2,750mm		3,000mm
Digging force	13,400 kgf 131.41 kN 29,542 lbf		11,900 kgf 116.70 kN 26,235 lbf		10,600 kgf 103.95 kN 23,369 lbf		10,200 kgf 100.03 kN 22,487 lbf

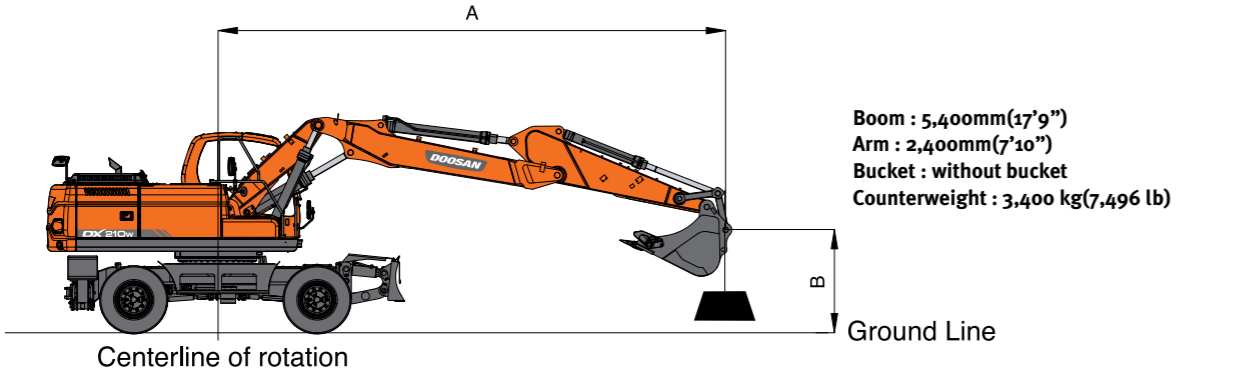
At power boost (ISO)





# LIFTING CAPACITY

[ Two-piece Boom ]



**Metric**

Unit : 1,000kg

A(m)	B(m)	Chassis Frame Attachment		2		3		4		5		6		7		Max. Reach		A(m)	
		[Icon]	[Icon]	[Icon]	[Icon]	[Icon]	[Icon]	[Icon]	[Icon]	[Icon]	[Icon]	[Icon]	[Icon]	[Icon]					
8		F-Dozer + R-Outrigger															*6.20	*6.20	4.81
7		F-Outrigger + R-Outrigger															*6.20	*6.20	5.89
6		F-Dozer + R-Outrigger								*5.88	*5.88						*5.87	4.85	6.64
5		F-Outrigger + R-Outrigger								*6.07	*6.07	*5.80	4.72				*5.87	*5.87	7.17
4		F-Dozer + R-Outrigger								*6.07	*6.07	*5.80	*5.80				*5.74	4.02	7.53
3		F-Outrigger + R-Outrigger								*7.51	*7.51	*6.60	6.12	*6.04	4.66	*5.73	3.69	*5.70	8.22
2		F-Dozer + R-Outrigger								*7.51	*7.51	*6.60	*6.60	*6.04	*6.04	*5.73	5.26	*5.70	9.18
1		F-Outrigger + R-Outrigger								*12.32	*12.32	*8.92	8.32	*7.35	5.96	*6.45	4.57	*5.90	10.00
0 (Ground)		F-Dozer + R-Outrigger								*12.32	*12.32	*8.92	*8.92	*7.35	*7.35	*6.45	*6.45	*5.90	11.43
-1		F-Outrigger + R-Outrigger								*10.45	7.97	*8.18	5.78	*6.93	4.47	*6.15	3.59	*5.75	12.82
-2		F-Dozer + R-Outrigger								*10.45	*10.45	*8.18	*8.18	*6.93	6.49	*6.15	5.16	*5.75	14.26
		F-Outrigger + R-Outrigger								*10.45	*10.45	*8.18	*8.18	*6.93	6.49	*6.15	5.16	*5.75	15.70
		F-Dozer + R-Outrigger								*10.27	7.70	*8.89	5.62	*7.36	4.37	*6.39	3.54	*5.81	17.14
		F-Outrigger + R-Outrigger								*10.27	*10.27	*8.89	8.42	*7.36	6.39	*6.39	5.10	*5.81	18.58
		F-Dozer + R-Outrigger								*9.00	7.56	*9.32	5.51	*7.66	4.30	*6.55	3.49	*5.89	20.02
		F-Outrigger + R-Outrigger								*9.00	*9.00	*9.32	8.29	*7.66	6.30	*6.55	5.04	*5.89	21.46
		F-Dozer + R-Outrigger								*2.96	*2.96	*11.08	7.51	*9.41	5.45	*7.75	4.25	*6.55	22.90
		F-Outrigger + R-Outrigger								*2.96	*2.96	*11.08	*11.08	*9.41	8.22	*7.75	6.25	*6.55	24.34
		F-Dozer + R-Outrigger								*7.40	*7.40	*11.30	7.51	*9.18	5.43	*7.58	4.23	*6.31	25.78
		F-Outrigger + R-Outrigger								*7.40	*7.40	*11.30	*11.30	*9.18	8.20	*7.58	6.23	*6.31	27.22
		F-Dozer + R-Outrigger								*8.47	*8.47	*12.13	*12.13	*10.43	7.56	*8.59	5.45	*7.07	28.66
		F-Outrigger + R-Outrigger								*8.47	*8.47	*12.13	*12.13	*10.43	*10.43	*8.59	8.22	*7.07	30.10

**Feet**

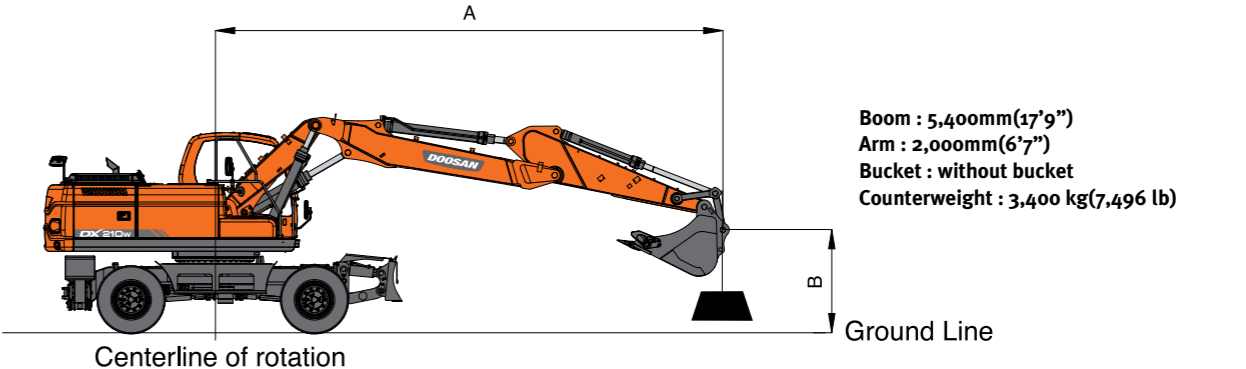
Unit : 1,000lb

A(ft)	B(ft)	Chassis Frame Attachment		10'		15'		20'		25'		Max. Reach		A(ft)	
		[Icon]	[Icon]	[Icon]	[Icon]	[Icon]	[Icon]	[Icon]	[Icon]	[Icon]	[Icon]				
25		F-Dozer + R-Outrigger											*13.31	12.69	17.30
20		F-Outrigger + R-Outrigger											*13.31	*13.31	21.59
15		F-Dozer + R-Outrigger											*12.74	10.15	24.09
10		F-Outrigger + R-Outrigger											*12.74	*12.74	25.37
5		F-Dozer + R-Outrigger											*12.68	9.00	25.61
0 (Ground)		F-Outrigger + R-Outrigger											*12.68	*12.68	24.83
-5		F-Dozer + R-Outrigger											*12.57	7.52	22.94
-10		F-Outrigger + R-Outrigger											*12.57	10.73	19.60

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

[Icon] : Rating Over Front  
[Icon] : Rating Over Side or 360 degree

[ Two-piece Boom ]



**Metric**

Unit : 1,000kg

A(m)	B(m)	Chassis Frame Attachment		3		4		5		6		7		Max. Reach		A(m)		
		[Icon]	[Icon]	[Icon]	[Icon]	[Icon]	[Icon]	[Icon]	[Icon]	[Icon]	[Icon]	[Icon]	[Icon]					
7		F-Dozer + R-Outrigger														*6.35	5.22	6.21
6		F-Outrigger + R-Outrigger														*6.35	*6.35	6.77
5		F-Dozer + R-Outrigger														*6.49	5.86	7.15
4		F-Outrigger + R-Outrigger														*6.49	*6.49	8.11
3		F-Dozer + R-Outrigger														*6.49	*6.49	9.55
2		F-Outrigger + R-Outrigger														*6.49	*6.49	10.99
1		F-Dozer + R-Outrigger														*6.49	*6.49	12.43
0 (Ground)		F-Outrigger + R-Outrigger														*6.49	*6.49	13.87
-1		F-Dozer + R-Outrigger														*6.49	*6.49	15.31
-2		F-Outrigger + R-Outrigger														*6.49	*6.49	16.75

**Feet**

Unit : 1,000lb

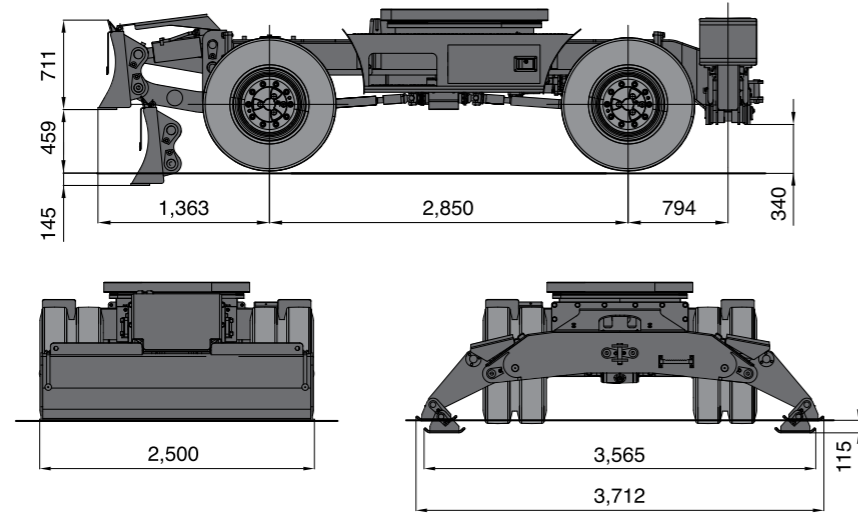
A(ft)	B(ft)	Chassis Frame Attachment		10'		15'		20'		Max. Reach		A(ft)		
		[Icon]	[Icon]	[Icon]	[Icon]	[Icon]	[Icon]	[Icon]	[Icon]					
25		F-Dozer + R-Outrigger										*14.59	*14.59	15.46
20		F-Outrigger + R-Outrigger										*14.59	*14.59	20.15
15		F-Dozer + R-Outrigger										*14.68	*14.68	22.82
10		F-Outrigger + R-Outrigger										*14.68	*14.68	24.17
5		F-Dozer + R-Outrigger										*15.50	13.34	24.42
0 (Ground)		F-Outrigger + R-Outrigger										*15.50	13.34	23.60
-5		F-Dozer + R-Outrigger										*16.59	13.05	21.60
-10		F-Outrigger + R-Outrigger										*16.59	13.05	18.00

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

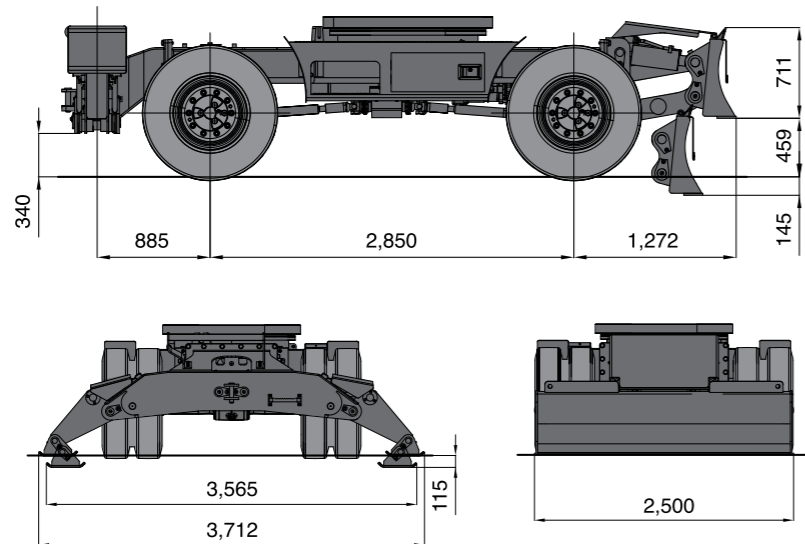
[Icon] : Rating Over Front  
[Icon] : Rating Over Side or 360 degree

# UNDERCARRIAGE

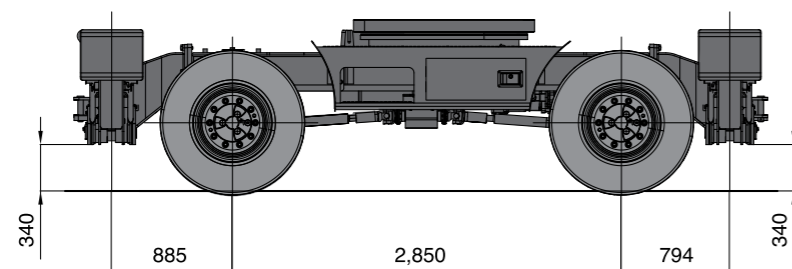
## Undercarriage with front dozer and rear outrigger



## Undercarriage with front outrigger and rear dozer



## Undercarriage with front outrigger 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
- 3.8ton counter weight

### 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

### Cabin & Interior

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

### Others

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

### Undercarriage

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



# Doosan is

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

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



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