DOOSAN

Construction Equipment

DX220AF

Engine Power	SAE J1349 net 110 kW (148 HP) @ 1,900 rpm
Operational Weight	22,000 kg
Bucket / SAE	0.81 ~ 0.92 m^3



Key points



The Doosan DX220AF excavator is ready to provide optimum value to you and reaches new levels of forestry machine.







RELIABILITY

- For superior durability, reinforced structure and high quality welding are featured -ensuring long life and high uptime in the forestry applications
  - Heavy duty Boom & Arm
  - Enhanced travel motor with bolt head guard
  - Reinforced undercarriage with newly designed rollers, idler bracket, track guard, under cover and track links
  - Heavy duty under cover of main frame and track frame
  - Cabin protector and upper body protector

PERFORMANCE & STABILITY

- Doosan's DB58TIS mechanical engine, equipped with the new e-EPOS™ (Electronic Power Optimizing System) technology, delivers excellent work capability
- Working in forestry applications is more stable with the DX220AF thanks to its long and large crawler
  - Track height : 982mm
  - Track length : 4,445mm

HANDLING & COMFORT

- More space, better visibility and comfort of the newly designed cab ensure the operator can work in the best possible conditions
  - New cab with low noise and vibration levels
  - Improved all-round visibility
  - Air conditioning with climate control
  - 3 working modes for maximum efficiency
  - Colour LCD monitor panel

Reliability

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.

Roller



Reinforced track idler bracket



Large & strong track guards



Travel motor cover

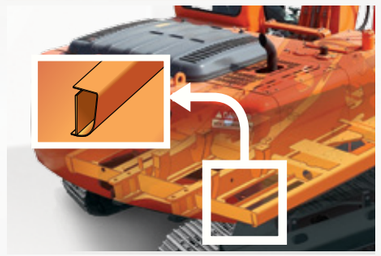




Cabin protector



D-Type Frame



Upper body protector



X-chassis



Under cover



① TRACK HEIGHT

982mm

② TRACK LENGTH

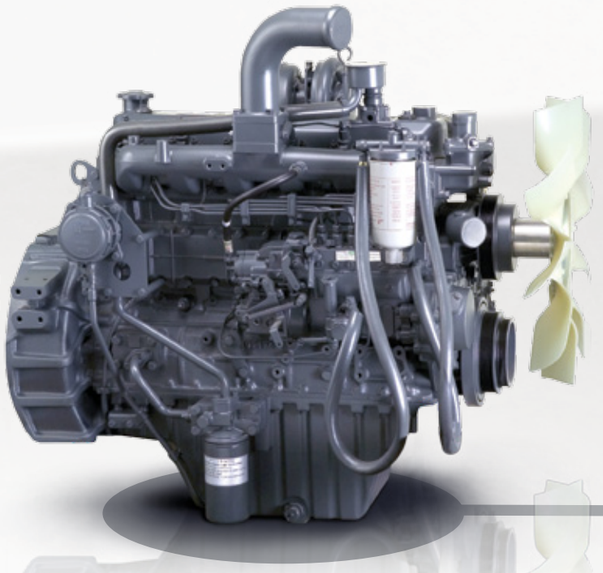
4,445mm

* Protector guard, grapple are dealer installed option.

Performance

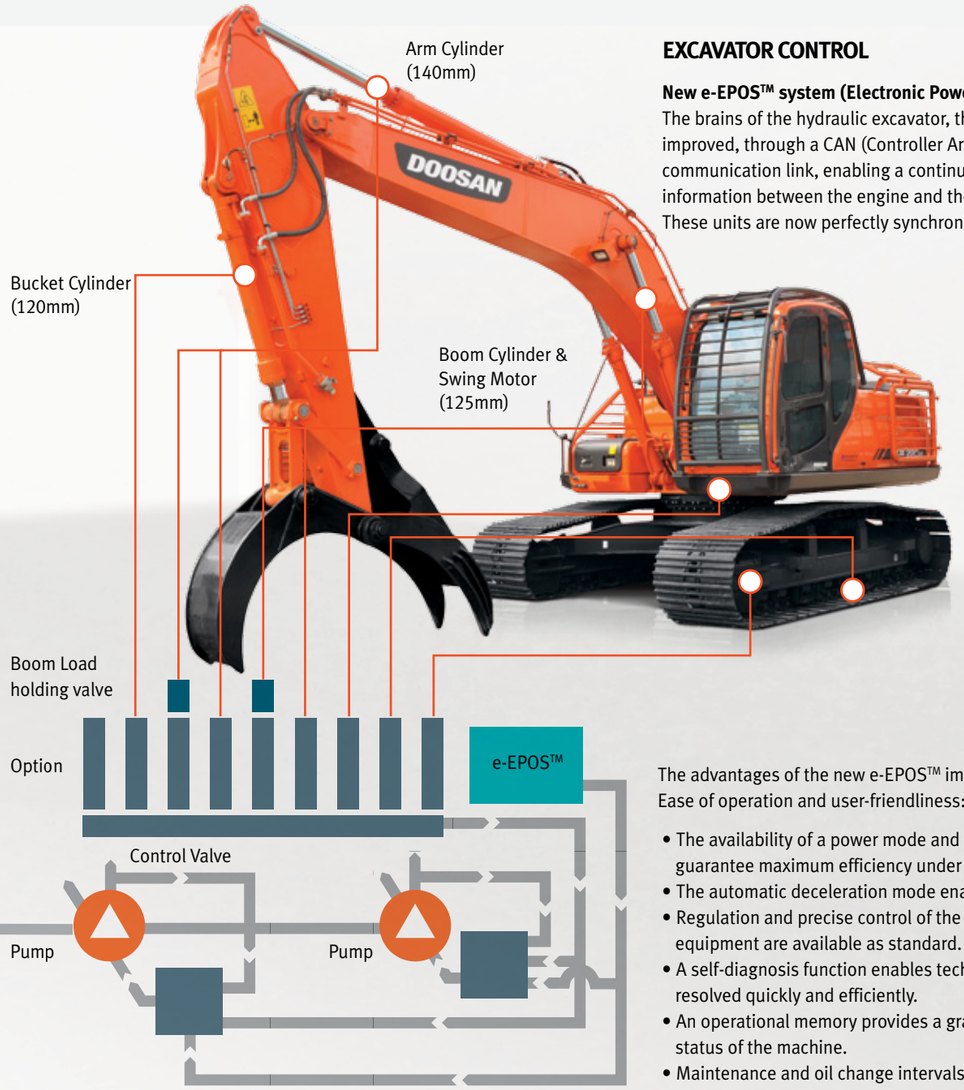
DOOSAN DB58TIS ENGINE
At the heart of the hydraulic excavator is the improved DOOSAN DB58TIS engine. It is combined with the new e-EPOS™ electronic control system, for optimum power and fuel saving.

- Better performance by improved engine
- Energy efficiency reduces fuel consumption



Doosan DX220AF engine

Make and Model	DOOSAN DB58TIS - 6 cylinders
Rated Horse Power	115 kW(157 PS, 154 HP) @1,900 rpm (SAE J1995) 110 kW(150 PS,148 HP) @1,900 rpm (SAE J1349)
Torque	61.5 kgf.m (603 Nm) @ 1,400 rpm
Alternator	24 V / 4.5 kW

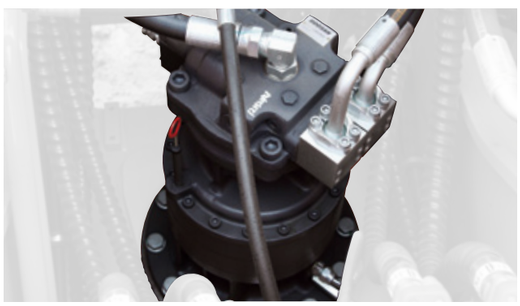


EXCAVATOR CONTROL

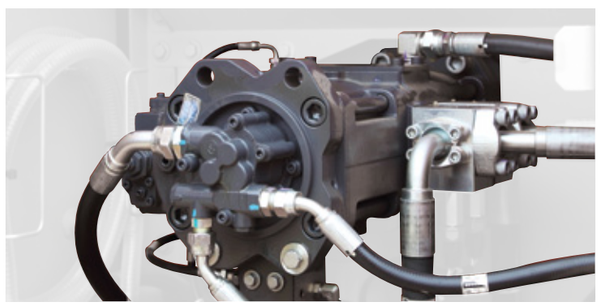
New e-EPOS™ system (Electronic Power Optimizing System)
The brains of the hydraulic excavator, the e-EPOS™, have been improved, through a CAN (Controller Area Network) communication link, enabling a continuous exchange of information between the engine and the hydraulic system. These units are now perfectly synchronized.

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

- The availability of a power mode and standard mode guarantee maximum efficiency under all conditions.
- 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.



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



HYDRAULIC PUMP
The main pump has a capacity of 2x206.5 ℓ /min
Reducing cycle time while a high capacity gear pump improves pilot line efficiency.



TRAVEL DEVICE
For prevent insert soil into travel motor, DX220AF apply new travel motor



NEW OPTION BUCKET AND GRAPPLE
Newly provide HD option bucket & grapple for forestry

Maintenance & Safety

Short maintenance operations at long intervals increase the availability of the equipment on site. DOOSAN has developed the DX220AF with a view to high profitability for the user .





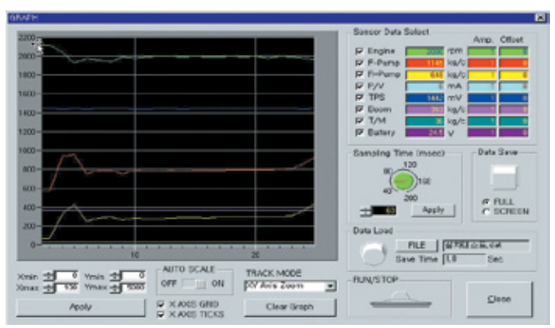
EASY MAINTENANCE
Access to the various radiators is very easy, making cleaning easier. Access to the various parts of the engine is from the top and via side panels.



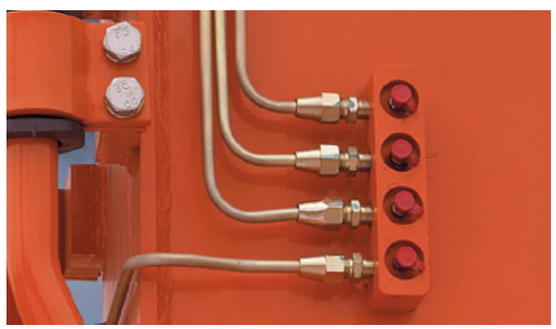
ENGINE OIL FILTER
The engine oil filter offers a high level of filtration allowing the oil change interval to be increased to 500 hours. It is easy to access and is positioned to avoid contaminating the surrounding environment.



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.



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.



CENTRALIZED GREASE INLETS FOR EASY MAINTENANCE
The arm grease inlets are grouped for easy access.



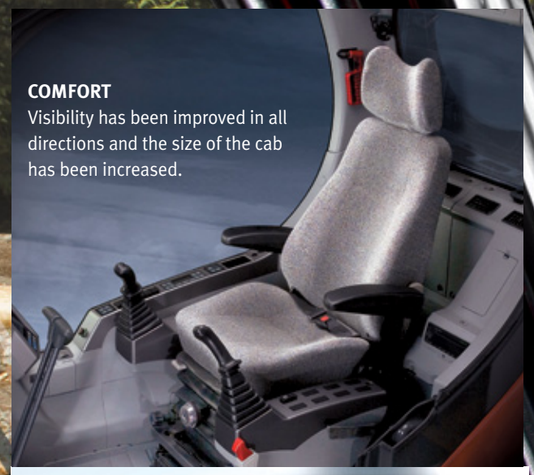
WATER SEPARATOR
High efficiency and large capacity water separator protect the engine by removing most moisture from the fuel (additional water separator as standard).



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.

Handling & Comfort

More space, better visibility, air conditioning with climate control, very comfortable seat. These are the elements that ensure the operator can work in the best possible conditions.
Furthermore, a new, user-friendly colour 7" TFT LCD monitor panel gives full access to machine settings and maintenance data allowing you to work safely and confidently with an accurate overview of all conditions.



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

CHOICE OF OPERATING MODES



Working mode

- Power : uses 100% engine power for heavy work
- Standard : uses 85% engine power for all work
- Economy : uses 70% engine power for light work

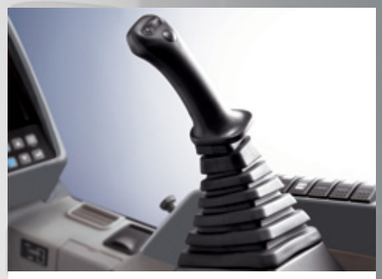


Comfortable 2-stage sliding seat

Control stand (Telescopic Function)



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



CONTROL LEVER
Levelling operations and the movement of lifted loads in particular are made easier and safer. The control levers have additional electrical buttons for controlling other additional equipment (for example, grapples, crushers, breakers, etc.)



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.

Technical Specification

Engine

MODEL
DOOSAN DB58TIS
2 valves per cylinder, vertical injectors, water cooled, turbo charged with air to air intercooler. Meets Tier 2 emission regulation.

TYPE
WATER-COOLED, 4-CYCLE DIRECT

NUMBER OF CYLINDERS
6

NOMINAL FLYWHEEL POWER
GROSS POWER : 115 kW(157 PS, 154 HP) @1,900 rpm (SAE J1995)
NET POWER : 110 kW(150 PS,148 HP) @1,900 rpm (SAE J1349)

MAX TORQUE
61.5 kgf.m (603 Nm) @ 1,400 rpm

PISTON DISPLACEMENT
5,785 cc (353 cu.in)

BORE & STROKE
102 mm X 118 mm

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 hydraulic system enables independent or combined operations.
- Two travel speeds offer either increased torque or high speed tracking.
- 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 206.5 ℓ /min

PILOT PUMP
Gear Pump - Max Flow Rate : 28.5 Liter/min
Displacement : 15 cc/rev
Relief valve Pressure : 40 kgf/cm²

MAXIMUM SYSTEM PRESSURE
Boom/arm/Bucket: Normal mode: 330 kgf/cm²(324 bar)
Power mode: 350 kgf/cm²(343 bar)
Travel: 330 kgf/cm²(324 bar)
Swing: 270 kgf/cm²(264 bar)

Weight

SHOE WIDTH (mm)	GROUND PRESSURE (kgf/cm²)	MACHINE WEIGHT (ton)
800G	0.35	22,000 kg (48,501 lb)

Digging force (ISO)

		Boom : 5,700 mm Arm : 2,900 mm Bucket : 0.92 m³ - CW : 3.8 t
BUCKET(normal / press. Up)	t	14.3 / 15.2
	kN	142 / 151
ARM(normal / press. Up)	t	10.2 / 10.8
	kN	102 / 108

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.

CYLINDERS	QUANTITY	BORE X ROD DIAMETER X STROKE
Boom	2	125 X 85 X 1,260 mm
Arm	1	140 X 100 X 1,450 mm
Bucket	1	120 X 80 X 1,060 mm

Undercarriage

Chassis are of very robust construction, all welded structures are designed to limit stresses. High-quality material used for durability. Lateral chassis welded and rigidly attached to the undercarriage. Track rollers lubricated for life, idlers and sprockets fitted with floating seals. Tracks shoes made of induction-hardened alloy with double grouser. Heat-treated connecting pins. Hydraulic track adjuster with shock-absorbing tension mechanism.

NUMBER OF ROLLERS AND TRACK SHOES PER SIDE

Upper rollers	2 ea
Lower rollers	8 ea
Track shoes	49 ea
Track length	4,445 mm

Environment

Noise levels comply with environmental regulations (dynamic values).

SOUND LEVEL GUARANTEE
103 dB(A) (2000/14/EC)

CAB SOUND LEVEL
73 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.

TYPE	AXIAL PISTON
SWING SPEED	11.3 rpm
MAX SWING TORQUE	6,460 kgf.m

Drive

Each track is driven by an independent axial piston motor through a planetary reduction gearbox. Two levers with control pedals guarantee smooth travel with counter-rotation on demand.

TRAVEL SPEED (FAST/SLOW)	3.0 / 5.5 km/hr
MAXIMUM TRACTION FORCE	21.8 / 11.5 ton
MAXIMUM GRADE	70%

Refill Capacities

FUEL TANK
400 ℓ (105.7 US gal, 88 lmp gal)

COOLING SYSTEM (RADIATOR CAPACITY)
24 ℓ (6.3 US gal, 5.3 lmp gal)

ENGINE OIL
28 ℓ (7.1 US GAL, 5.9 LMP GAL)

SWING DEVICE
5 ℓ (1.32 US gal, 1.1 lmp gal)

TRAVEL DEVICE
3.3 ℓ (0.87 US gal, 0.73 lmp gal)

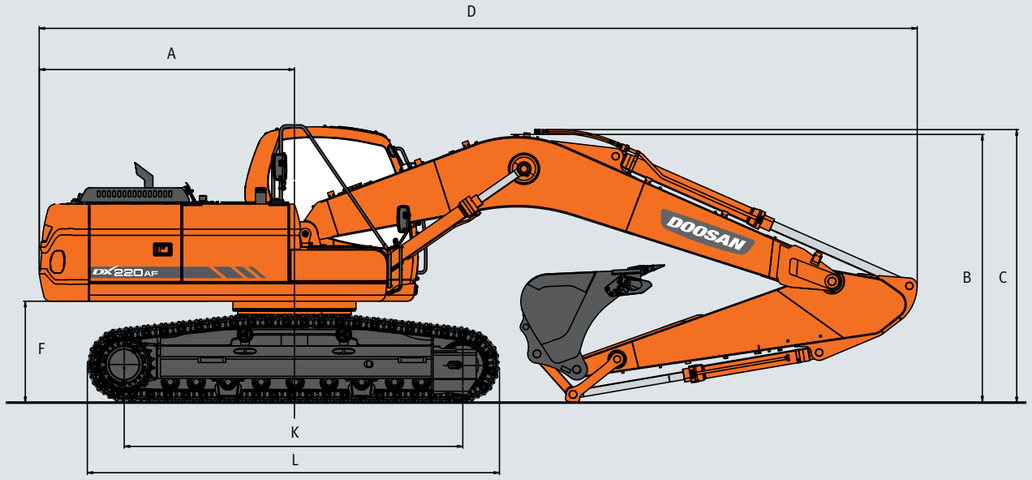
OIL TANK
195 ℓ (63.4 US GAL, 52.8 LMP GAL)

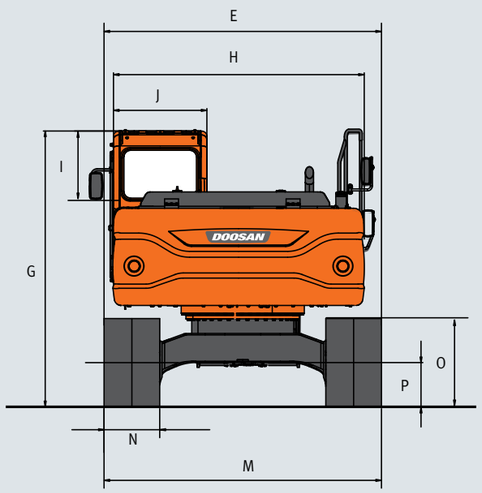
Bucket

Bucket Type	Capacity (m³)		Width (mm)		C/W (ton)	3.8
					SHOE (mm)	800
	SAE/PCSA	CECE	W/O Cutter	With Cutter	Weight (kg)	5.7 m Boom
						2.9 m Arm
GP	0.81	0.72	1,064	1,126	654	A
	0.92	0.81	1,230	1,305	707	B
H class	0.73	0.67	916	982	732	A
	0.9	0.8	1,064	1,130	804	C
Maximum load pin-on(payload+bucket)						2,402

Based on ISO 10567 and SAE J296, arm length without quick change clamp
A : Suitable for materials with density of 2,100 kg/m³ (3,500 lb/yd³) or less
B : Suitable for materials with density of 1,800 kg/m³ (3,000 lb/yd³) or less
C : Suitable for materials with density of 1,500 kg/m³ (2,500 lb/yd³) or less
D : Suitable for materials with density of 1,200 kg/m³ (2,000 lb/yd³) or less
- : Not recommended

Dimensions

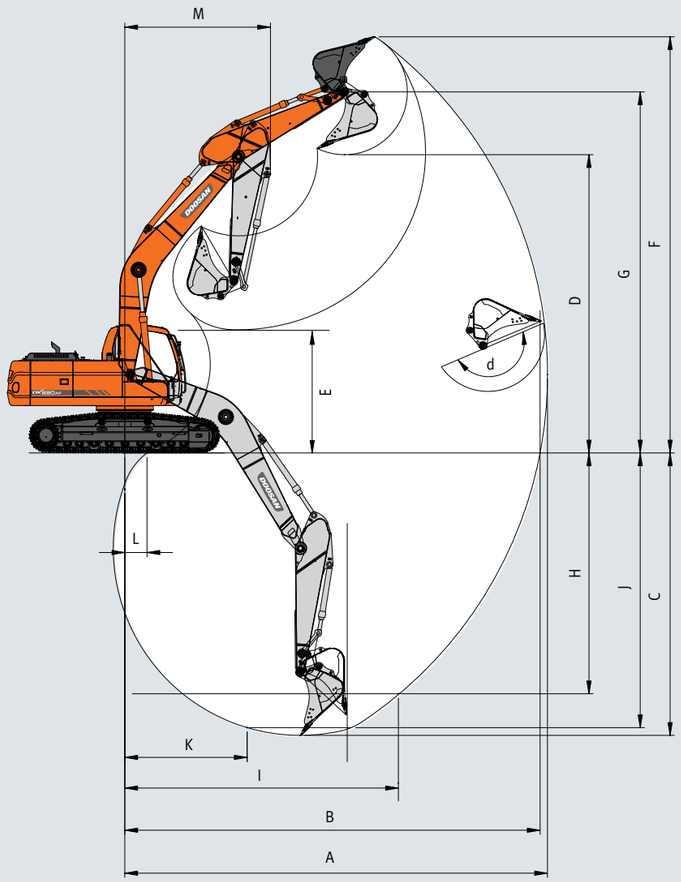




Dimensions

BOOM TYPE (ONE PIECE)	**(mm)**		**5,700**
ARM TYPE	**(mm)**		**2,900**
BUCKET TYPE (PCSA)	(m^3)		0.92
TAIL SWING RADIUS	(mm)	A	2,750
SHIPPING HEIGHT (BOOM)	(mm)	B	2,940
SHIPPING HEIGHT (HOSE)	(mm)	C	3,005
SHIPPING LENGTH	(mm)	D	9,485
SHIPPING WIDTH	Forestry Track (mm)	E	3,190
C/WEIGHT CLEARANCE	(mm)	F	1,055
HEIGHT OVER CAB.	(mm)	G	2,975
HOUSE WIDTH	(mm)	H	2,710
CAB. HEIGHT ABOVE HOUSE	(mm)	I	845
CAB. WIDTH	(mm)	J	960
TUMBLER DISTANCE	Forestry Track (mm)	K	3,650
TRACK LENGTH	Forestry Track (mm)	L	4,445
UNDERCARRIAGE WIDTH	Forestry Track (mm)	M	3,190
SHOE WIDTH	Forestry Track (mm)	N	800
TRACK HEIGHT	Forestry Track (mm)	O	982
CAR BODY CLEARANCE	(mm)	P	480

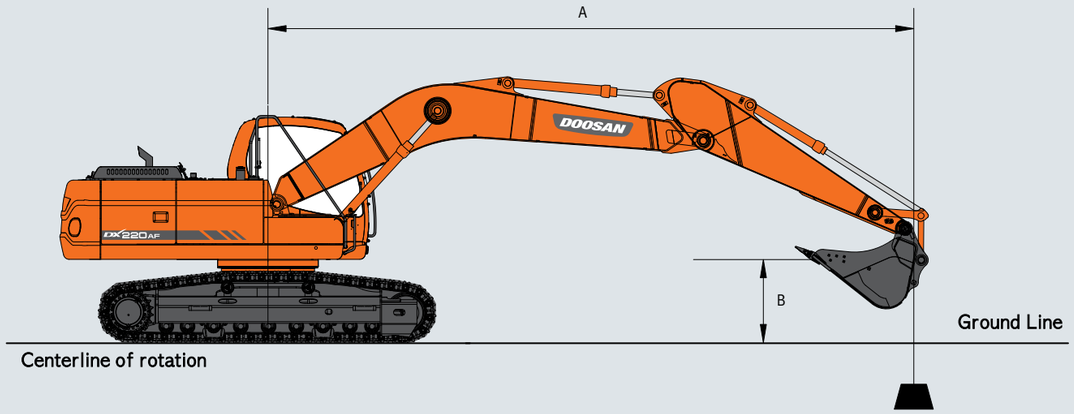
Working Ranges



Working Ranges

BOOM TYPE (ONE PIECE)	**(mm)**		**5,700**
ARM TYPE	**(mm)**		**2,900**
BUCKET TYPE (PCSA)	(m^3)		0.92
MAX. DIGGING REACH	(mm)	A	9,900
MAX. DIGGING REACH (GROUND)	(mm)	B	9,730
MAX. DIGGING DEPTH	(mm)	C	6,620
MAX. LOADING HEIGHT	(mm)	D	6,990
MIN. LOADING HEIGHT	(mm)	E	2,555
MAX. DIGGING HEIGHT	(mm)	F	9,750
MAX. BUCKET PIN HEIGHT	(mm)	G	8,450
MAX. VERTICAL WALL DEPTH	(mm)	H	5,640
MAX. RADIUS VERTICAL	(mm)	I	6,410
MAX. DEPTH TO 8' LINE	(mm)	J	6,430
MIN. RADIUS 8' LINE	(mm)	K	2,865
MIN. DIGGING REACH	(mm)	L	519
MIN. SWING RADIUS	(mm)	M	3,410
BUCKET ANGLE	(deg)	d	166

Lifting Capacity



Boom : 5.7 m Arm : 2.9 m SHOE : 800 mm LC TRACK

Unit : 1,000kg

A(m) / B(m)	2		3		4		5		6		7		8		Max. Reach		
																	A(m)
8															*3.19	*3.19	@5.95
7															*3.00	*3.00	@6.86
6									*4.50	*4.50	*4.08	3.39			*2.92	*2.92	@7.51
5									*4.81	4.39	*4.61	3.33			*2.92	2.56	@7.99
4							*5.88	5.73	*5.28	4.23	*4.89	3.23	*4.03	2.51	*2.98	2.32	@8.32
3			*11.80	*11.80	*8.44	7.7	*6.80	5.41	*5.85	4.03	*5.23	3.11	4.38	2.44	*3.10	2.16	@8.52
2			*9.12	*9.12	*9.98	7.14	*7.72	5.09	*6.42	3.84	5.36	2.99	4.3	2.37	*3.28	2.07	@8.60
1			*7.74	*7.74	*11.08	6.74	*8.47	4.83	6.71	3.67	5.24	2.87	4.22	2.3	*3.56	2.04	@8.56
0(GROUND)	*5.22	*5.22	*8.82	*8.82	*11.63	6.5	8.85	4.65	6.56	3.54	5.14	2.79	4.16	2.25	3.85	2.07	@8.40
1	*7.64	*7.64	*10.77	10.35	*11.70	6.4	8.73	4.55	6.47	3.46	5.08	2.73	4.13	2.22	4.04	2.17	@8.11
2	*10.02	*10.02	*13.31	10.42	*11.37	6.4	8.69	4.52	6.44	3.43	5.06	2.72			4.4	2.36	@7.68
3	*12.68	*12.68	*13.69	10.56	*10.64	6.46	*8.53	4.54	6.46	3.45	5.1	2.75			5	2.7	@7.09
4	*15.88	*15.88	*11.94	10.78	*9.44	6.59	*7.59	4.64	*6.06	3.54					*5.64	3.32	@6.27
5			*9.38	*9.38	*7.49	6.81	*5.84	4.83							*5.60	4.64	@5.14

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

A Solid Promise



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Materials and Specifications in the catalogue are subject to change without notice.

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