

# DOOSAN

Mini Excavators |  
DX27Z



Maximum power: 20.6 hp  
Operating weight: 2.705 t  
Max. bucket capacity: 0.063 m<sup>3</sup>



# Doosan DX27Z high-performance hydraulic excavator

## ▣ A model with novel features

Developed with the concept of 'providing optimum value to the end-user', the DX27Z (zero tail swing) hydraulic excavator offers additional value to the operator. In concrete terms, this translates into:

- Increased production and improved fuel economy achieved with the electronic optimization of the hydraulic system and the new-generation engine
- Improved ergonomics, increased comfort and excellent all-round visibility, ensuring a safe and pleasant working environment
- Improved reliability, using high-performance materials - combined with new methods of structural stress analysis - have increased component life expectancy, thus reducing running costs
- Reduced maintenance increases the excavator's availability and lowers the operating costs



### Guaranteed highest performance in any work environment

The advanced hydraulic system, combined with a powerful engine, provides the biggest break-out and tractive forces for efficient operation. As a result, the DX27Z provides outstanding performance, work efficiency and the ability to adapt to any work environment.

### Engine speed lever

The conveniently located engine speed lever allows easy engine control.

### Kubota D1105-EF07 engine

The DX27Z has a powerful and eco-friendly heart, always providing high operating efficiency and pleasant working conditions.

### Boom swing

The boom swing function allows you to work in very narrow areas.

### Powerful digging force (bucket)

Powerful, efficient, and with increased digging force. Bucket digging force: 23720 N

### Dozer blade

Welded, unitized blade provides durability even under harsh working conditions. Automatically controlled blade floating for quick and easy leveling operations.

### Second speed, auto-shift and auto-idle

The travel motors automatically return to high speed after downshifting under load. This allows smoother turns and easier dozing work. Auto-idle is available as an option to reduce fuel consumption.



Rear swing radius:  
785 mm

Minimum front swing radius:  
2135 mm



Right swing angle: 55°  
Left swing angle: 70°

# Comfort

## ▣ The cab has been ergonomically designed with comfort in mind

Starting fresh, the DX27Z is the result of an innovative technical design!

The cab space is more comfortable than any other excavator in its class - and the variety of convenient features provide the operator with maximum comfort.



**Comfortable sliding seat**



**Control stand tilting function**

### **Comfortable operating cab**

A roomy ROPS-TOPS, independent minimal shock and low noise operator's cab with safety glass provides all-round visibility. The right side window opens for ventilation and the front window slides up.

### **Monitor**

The centralized display panel provides comprehensive information about the machine in an easy-to-read format. The high-quality display panel is waterproof and all information can be seen at a glance.

The ergonomically placed switches maximize convenience for the operator.

### **Control stand**

The left and right control stands are ergonomically placed for convenient operation. The control stand surfaces have ample room to install several option switches. The uni-body plastic design provides the operator with a spacious and comfortable cab environment.

### **Thumb control for boom swing and auxiliary hydraulics**

A thumb control is integrated in the joystick for better metering of the boom swing and the proportional auxiliary hydraulics.

### **Suspension seat**

A fully adjustable suspension seat provides operator comfort during long working days.

### **Cup holder**

The conveniently located cup holder adds to the operator's comfort.

### **Lower weight**

The lighter machine means that you can tow more attachments on a trailer.

### **Transportability**

Easy to transport with the new integrated upper-structure tie-down points.



# Maintenance

▣ **The status and condition of all components can be seen at a glance. The convenient and easy serviceability is really impressive.**

The most advanced technology developed by Doosan Infracore Co., Ltd. was integrated into the DX27Z excavator for powerful performance and simple, easy maintenance. This provides the operator with convenient maintenance check points and maximizes the DX27Z's work efficiency.



## Easy maintenance

Access to the various coolers is very easy, making cleaning more convenient. The washer fluid level can be checked easily.

## Air breather

The hydraulic system was designed to prevent the pump from cavitating.

## Strengthened boom

Using finite elements and 3-dimensional computer simulation, the shape of the boom has been optimally designed for better load distribution throughout the structure. This enhancement, combined with increased material thickness, limit element fatigue for improved durability and reliability.

## Arm assembly

In the arm assembly greater strength is gained by using cast elements and reinforcement around the bosses to increase the life of the component.

## Rubber tracks

The rubber tracks offer greater non-slip and grip capabilities, and are less harmful to sidewalks and road surfaces in urban environments. These rubber shoes can be easily installed or removed with the idler, sprocket and other main parts.

## Engine room

The engine compartment is designed for easier service, and the sturdy sound-proofing inside the engine cover reduces the noise to provide a more comfortable environment for the operator and those working around the machine.

## Oil gauge

Hydraulic oil level can be easily checked through the gauge on the side of the hydraulic tank.

## Grease piping

Integrated grease piping is designed for easy maintenance of the swing bearing and boom swing cylinder.

## External fuel cap

The external lockable fuel cap makes refueling easy and safe. For extra convenience, a warning beep sounds when the maximum fuel level has been reached.

# Technical specifications

## Engine

DX27Z	
Make/model	Kubota/D1105-EFo7
Fuel/cooling	Diesel/Liquid, forced circulation
No. of cylinders	3
Displacement	1123 cm <sup>3</sup>
Maximum power @ 2400 rpm (ISO 14396)	15.4 kW (20.6 hp)
Maximum torque (SAE)	71.2 Nm

## Fluid capacities

DX27Z	
Fuel reservoir	34.4 l
Cooling system	4.3 l
Final drive (each)	0.6 l
Hydraulic system	23 l
Engine lubrication plus oil filter	3.6 l
Hydraulic reservoir	10.2 l

## Environment

Noise levels comply with environmental regulations (dynamic values).

### > Noise emission & vibration

DX27Z	
Noise level LpA (EU Directive 2006/42/EC)	77 dB(A)
Noise level LwA (EU Directive 2006/14/EC)	93 dB(A)
Whole body vibration (ISO 2631-1)	0.18 ms <sup>-2</sup>
Hand-arm vibration (ISO 5349-1)	0.51 ms <sup>-2</sup>

## Undercarriage

Tractor-type undercarriage. Heavy-duty track frame, all welded stress-relieved structure. Top-grade materials are used for toughness. Side frames are welded, securely and rigidly, to the track frame. Lifetime-lubricated track rollers, idlers with floating seals. Hydraulic track adjusters with shock-absorbing recoil springs.

### > Number of rollers and track shoes

DX27Z	
Lower rollers (per side)	3
Track shoes	Rubber
Overall track length	1965 mm
Shoe width	300 mm

## Weight

DX27Z	
Operating weight with cab and standard digging bucket (ISO 6016)	2705 kg
Weight reduction with canopy	- 118 kg
Additional weight for heavy counterweight	123 kg
Additional weight for long arm	10 kg

## Hydraulic system

This original design enables both independent and combined operations of all functions, joystick control type operations.

DX27Z	
Pump type	Dual outlet variable displacement piston pump with gear pumps
Total hydraulic capacity	87 l/min
Auxiliary flow	50 l/min
Auxiliary relief	180 bar

### > Maximum system pressure

DX27Z	
Boom / arm / bucket	240 bar
Travel	240 bar
Swing	191 bar

## Drive

Each track is driven by an independent, high-torque, axial piston motor through planetary reduction gears. Two control levers provide smooth travel or counter-rotation upon demand.

### > Speed & traction

DX27Z	
Travel speed (high/low)	4.3/2.5 km/h
Traction force	2960 kgf
Gradeability	30°

## Swing mechanism

High-torque, axial piston motor with planetary reduction gear bathed in oil. Swing circle is single-row, shear type ball bearing with induction-hardened internal gear. Internal gear and pinion gear immersed in lubricant. A two position swing lock secures the upper structure for transportation.

### > Swing speed & radius

DX27Z	
Swing speed	9.3 rpm
Rear swing radius	785 mm
Boom swing angle L/R	70° / 55°
Slew rate	9.3 rpm

## Performance

At power boost.

DX27Z	
Digging force, standard arm (ISO 6015)	16200 N
Digging force, long arm (ISO 6015)	13470 N
Digging force, bucket (ISO 6015)	23720 N
Drawbar pull	29023 N

# Lifting capacities

## DX27Z

### With canopy • standard arm (1100 mm) • standard counterweight • without bucket

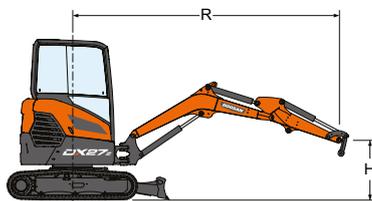
Lift Point Height [H]	Over blade, blade down				Over blade, blade up				Over side, blade up				Max. radius [R] (mm)
	Lift at max. radius (kg)	Lift radius [R] (kg)			Lift at max. radius (kg)	Lift radius [R] (kg)			Lift at max. radius (kg)	Lift radius [R] (kg)			
		2.0 m	3.0 m	4.0 m		2.0 m	3.0 m	4.0 m		2.0 m	3.0 m	4.0 m	
3.0 m	585*	-	585*	-	445	-	538*	-	388	-	425	-	3210
2.0 m	601*	-	605*	-	349	-	510	-	296	-	436	-	3810
1.0 m	636*	-	833*	642*	317	-	484	320	271	-	408	274	4030
0.0 m	684*	1722*	957*	-	337	869	491	-	285	693	393	-	3880
-1.0 m	746*	1551*	916*	-	436	1002	514	-	362	752	423	-	3330

### With cab • long arm (1400 mm) • heavy counterweight • without bucket

Lift Point Height [H]	Over blade, blade down				Over blade, blade up				Over side, blade up				Max. radius [R] (mm)
	Lift at max. radius (kg)	Lift radius [R] (kg)			Lift at max. radius (kg)	Lift radius [R] (kg)			Lift at max. radius (kg)	Lift radius [R] (kg)			
		2.0 m	3.0 m	4.0 m		2.0 m	3.0 m	4.0 m		2.0 m	3.0 m	4.0 m	
3.0 m	497*	-	-	-	497*	-	-	-	378	-	-	-	3630
2.0 m	526*	-	492*	510*	361	-	492*	373	307	-	492*	322	4070
1.0 m	565*	-	722*	576*	336	-	566	372	282	-	474	310	4270
0.0 m	614*	1614*	918*	648*	350	982	549	370	292	780	453	308	4150
-1.0 m	665*	1559*	937*	-	428	1102	568	-	352	833	451	-	3600
-2.0 m	697*	1070*	-	-	697*	1070*	-	-	697*	1070*	-	-	2550

### With cab • standard arm (1100 mm) • standard counterweight • without bucket

Lift Point Height [H]	Over blade, blade down				Over blade, blade up				Over side, blade up				Max. radius [R] (mm)
	Lift at max. radius (kg)	Lift radius [R] (kg)			Lift at max. radius (kg)	Lift radius [R] (kg)			Lift at max. radius (kg)	Lift radius [R] (kg)			
		2.0 m	3.0 m	4.0 m		2.0 m	3.0 m	4.0 m		2.0 m	3.0 m	4.0 m	
3.0 m	585*	-	538*	-	466	-	538*	-	403	-	442	-	3210
2.0 m	601*	-	605*	-	366	-	605*	-	308	-	453	-	3810
1.0 m	636*	-	833*	-	333	-	507	-	283	-	425	286	4030
0.0 m	684*	1722*	957*	642*	354	912	515	336	298	723	411	-	3880
-1.0 m	746*	1551*	916*	-	456	1045	538	-	377	782	440	-	3330



Center line of rotation

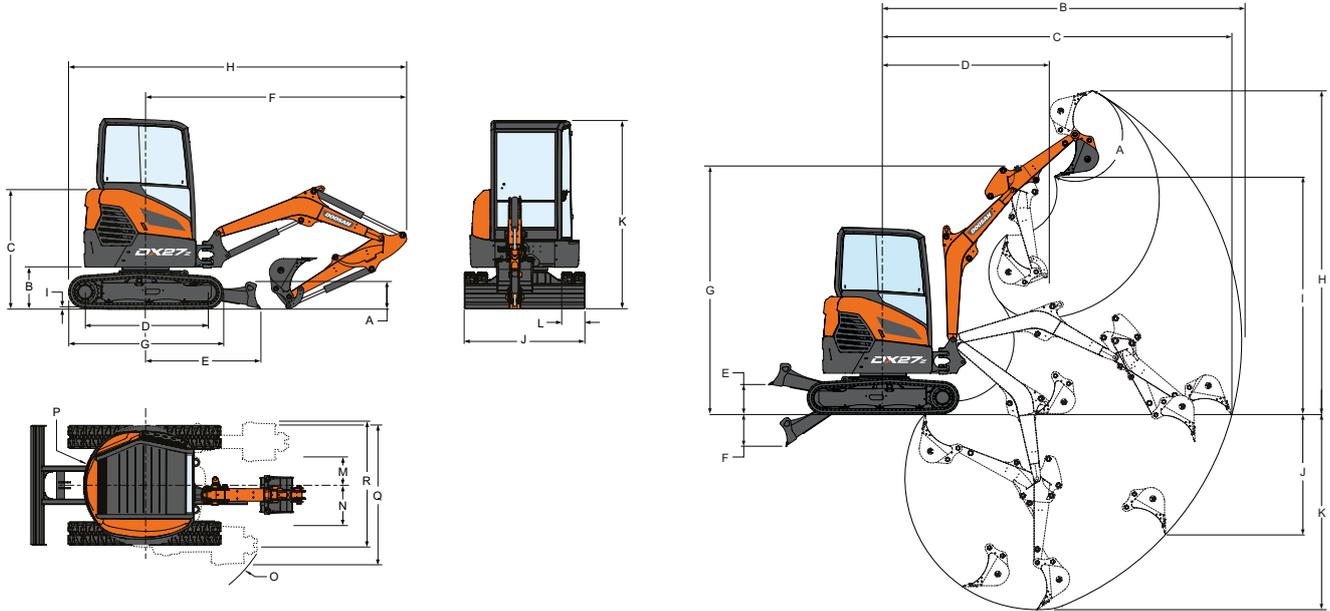
Ground level

-  : Over front
-  : Over side or 360°

1. The nominal forces are based on the SAE J1097 standard.
2. \* = The nominal loads are based on hydraulic capacity.
3. The nominal loads do not exceed 87% of the hydraulic capacity or 75% of the capacity of the swing.



# Dimensions & working range



## Dimensions

	DX27Z		
A	Blade height	mm	319
B	Clearance under counterweight	mm	539
C	Height to top of engine cover	mm	1540
D	Tumbler distance	mm	1543
E	Center line to blade - std blade	mm	1462
F	Front length - std arm	mm	3343
G	Overall length of track assembly	mm	1965
H	Shipping length	mm	4325
I	Grouser height	mm	21
J	Blade width	mm	1550
K	Overall height	mm	2438
L	Track width	mm	300
M	Machine center line to working equipment center line, left-hand rotation	mm	565
N	Machine center line to working equipment center line, right-hand rotation	mm	773
O	Minimum turning radius - std arm	mm	1726
P	Rear swing radius - std arm/std counterweight	mm	785
Q	Working width at maximum right-hand rotation	mm	1808
R	Working width at maximum left-hand rotation	mm	1599

## Working range

	DX27Z		
A	Max. bucket angle	°	185
B	Max. forward reach - std arm	mm	4644
B	Max. forward reach - long arm	mm	4931
C	Max. digging reach - std arm	mm	4518
C	Max. digging reach - long arm	mm	4814
D	Min. front swing radius - std arm	mm	2131
D	Min. front swing radius - long arm	mm	2135
E	Blade lift height	mm	385
F	Blade cutting depth	mm	420
G	Max. height with arm retracted - std arm	mm	3247
G	Max. height with arm retracted - long arm	mm	3239
H	Max. digging height - std arm	mm	4230
H	Max. digging height - long arm	mm	4430
I	Max. dump height - std arm	mm	3043
I	Max. dump height - long arm	mm	3243
J	Max. vertical wall depth - std arm	mm	1567
J	Max. vertical wall depth - long arm	mm	1818
K	Max. digging depth - std arm	mm	2547
K	Max. digging depth - long arm	mm	2847

## Standard and optional equipment

### Cab & interior

Cup holder	●
Foldable and ergonomic pedals	●
Proportional fingertip auxiliary and boom swing	●
Retractable seat belt	●
TOPS/ROPS/FOPS canopy*	●
AM/FM stereo radio with Bluetooth	○
Dix textile suspension seat	○
TOPS/ROPS/FOPS cab with heater	○

### Safety

Battery disconnect	●
Control console locks	●
Engine/hydraulic monitor with shutdown	●
Full fuel warning alarm	●
Horn	●
Object handling device (safety valves + overload warning device + life eye)	○
Travel motion alarm	○

### Other

Adjustable double acting auxiliary hydraulic on arm with blind caps	●
Blade float feature	●
Grease gun holder	●
Offset hydraulic control	●
Two speed travel with Auto shift	●
Upper structure four-point tie down	●
Water separator	●
Work light (boom)	●
Warranty: 12 months, 2000 hours (whichever occurs first)	●
1550 mm dozer blade	●
300 mm rubber tracks	●
2nd AUX hydraulics on arm with blind caps	○
Additional lights (2+1)	○
Direct-to-tank-AUX1 line	○
Heavy counterweight with long arm	○
Hydr. coupler lines	○

Standard: ●  
Optional: ○

\* roll over protective structure (ROPS) - meets requirements of ISO3471. Tip over protective structure (TOPS)- meets requirements of ISO 12117. Falling Object Protective Structure (FOPS)- meets requirements of ISO 3449.

Some of these options may be standard in some markets. Some of these options may not be available for certain markets. Please check with your local DOOSAN dealer for more information about availability or to adapt your machine to your application needs.

# Powered by Innovation

