

DOOSAN

Mini Excavators |
DX27z / DX30z



Maximum power: 21.2 / 24.3 hp
Operating weight: 2.85 / 3.18 t
Max. bucket capacity: 0.08 / 0.091 m³



Doosan DX27z & DX30z hydraulic excavators: two models with high performance

Two models with novel features

The DX27z & DX30z (zero tail swing) hydraulic excavators offer additional value to the operator. These models were developed with the concept of “providing optimum value to the end user”. 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 lead to increased component life expectancy, thus reducing running costs
- Reduced maintenance increases the availability and lowers the operating costs of the excavator



The highest performance is guaranteed in any working condition

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 and DX30z provide outstanding performance, work efficiency and the ability to adapt to any work environment.

E/G control lever

The engine speed lever convenient location allows easy engine control.

3TNV82A-SDB (DX27z) – 3TNV82A-PDB (DX30z) engine

The DX27z and DX30z have a powerful and eco-friendly heart, that always provides high operating efficiency and pleasant working conditions.

Powerful digging force (bucket)

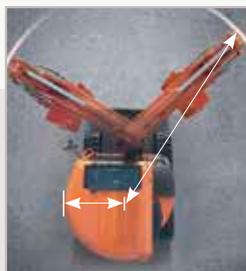
Powerful, efficient, and with increased digging force. Bucket digging force: 2000 kgf (DX27z) – 2800 kgf (DX30z)

Dozer blade

Welded, unitized blade provides durability even under harsh working conditions.

Boom swing

The boom swing function permits to work in very narrow areas. The newly designed swing bracket and the increased boom cylinder size ensures powerful and stable swing performance.



Rear swing radius:
760 mm (DX27z)
775 mm (DX30z)

Minimum front swing radius:
1950 mm (DX27z)
2015 mm (DX30z)



Right swing angle: 50°
Left swing angle: 70°

Comfort

▣ The cabin has been ergonomically designed with comfort in mind

Starting a fresh, the newly designed DX27z and DX30z provide the operator with maximum comfort and various convenient features.

The DX27z and DX30z are the result of an innovative technical design!

The cabin space is more comfortable than any other excavator in its class.



Comfortable sliding seat



Control stand tilting function

Comfortable operating cabin

A ROPS-TOPS roomy, 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 cabin environment.

Joystick

The hydraulic joystick levers have very comfortable grips that allow the operator to perform precise operations very easily.

Arm rest

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

Cup holder

The conveniently located cup holders add to the operator's comfort.

Defroster

The high capacity defroster, installed on the right, eliminating both frost and moisture very efficiently, provides a safer working condition for the operator. (Cabin Type Only)

Floor plate (rubber mat)

The breaker pedal (left) and boom swing pedal (right) are installed in a very spacious and convenient location. In addition, the rubber floor mats contribute to a very comfortable environment. The door opening has been increased by removing the lower lip which provides easy cleaning of the interior.

Maintenance

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

The most advanced technology developed by Doosan Infracore Co., Ltd. was integrated into the DX27z and DX30z excavators for powerful performance and simple, easy maintenance. This provides the operator with convenient maintenance check points and maximizes the work efficiency of the DX27z and DX30z.



Easy maintenance

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

Air cleaner

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

Air breather

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

Strengthened boom

The shape of the boom has been optimally designed using finite elements and 3-dimensional computer simulation, allowing the loads to be better distributed 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 is gained by using cast elements and reinforcement around the bosses to increase the life of the component.

X-chassis

The X-chassis frame section has been designed using finite element and 3-dimensional computer simulation, to ensure greater durability and optimum structural integrity. The swing gear is solid and stable.

D-type frame

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

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 around it.

Bucket

Hardened bucket teeth provide durability and can be easily unbolted for removal, straightening or replacing.

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.

Rubber tracks

The rubber tracks offer greater non-slip and grip capabilities, 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.

Technical specifications

Engine

	DX27z	DX30z
Model	Yanmar, 3TNV82A-SDB	Yanmar, 3TNV82A-PDB
No. of cylinders	3	
Piston displacement	1331 cm ³	
Nominal flywheel power	15.8 kW (21.2 hp) at 2200 rpm	18.1 kW (24.3 hp) at 2400 rpm
Max torque	8.97 kgf·m (88 Nm) at 1000 rpm	8.97 kgf·m (88 Nm) at 1200 rpm
Bore × stroke	82 mm × 84 mm	
Alternator	12 V / 40 Ah	

Fluid capacities

	DX27z	DX30z
Fuel tank	30 l	
Cooling system (radiator capacity)	3.5 l	
Engine oil	5.5 l	
Final drive (each)	0.5 l	
Hydraulic tank	30 l	

Environment

Noise levels comply with environmental regulations (dynamic values).

Noise emission

	DX27z	DX30z
Noise level LwA (2000/14/EC), guaranteed	93 dB(A)	94 dB(A)
Noise level LpA (ISO 6396)	79 dB(A)	81 dB(A)

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	DX30z
Lower rollers (per side)	3	4
Track shoes	Rubber	
Overall track length	1970 mm	2100 mm
Shoe width	300 mm	

Weight

DX27z with 2000 mm boom, 1100 mm arm, 0.08 m³ bucket (SAE), 300 mm shoe.
DX30z with 2280 mm boom, 1190 mm arm, 0.091 m³ bucket (SAE), 300 mm shoe.

	DX27z	DX30z
Operating weight	2850 kg	3180 kg
Ground pressure	0.27 kgf/cm ²	0.29 kgf/cm ²

Hydraulic system

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

Pumps

Pump	Type	Max. flow	
		DX27z	DX30z
Main	2 variable displacement axial piston pumps	2 × 26.4 l/min + 18.9 l/min	2 × 37.2 l/min + 20.4 l/min
Pilot	Gear pump	11.2 l/min	10.8 l/min

Maximum system pressure

	DX27z	DX30z
Boom / arm / bucket	220 kgf/cm ² (215 bar)	210 kgf/cm ² (205 bar)
Travel	220 kgf/cm ² (215 bar)	210 kgf/cm ² (205 bar)
Swing	170 kgf/cm ² (167 bar)	195 kgf/cm ² (191 bar)

Drive

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

Speed & traction

	DX27z	DX30z
Travel speed (high/low)	4.3/2.4 km/h	4.6/2.6 km/h
Maximum traction force	2400 kgf	2750 kgf
Maximum gradeability	30° / 58 %	30° / 59 %

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	DX30z
Swing speed	9.63 rpm	9.67 rpm
Rear swing radius	760 mm	775 mm
Boom swing angle L/R	70° / 50°	

Digging forces (ISO)

At power boost.

	DX27z		DX30z	
	0.08		0.091	
Bucket - m ³	1100	1300	1190	1300
Arm length - mm	2020	2020	2800	2800
Bucket (PCSA) - kgf	1400	1260	1800	1700
Arm - kgf	2020	2020	2800	2800

Lifting capacities

DX27Z

Standard

Unit: 1000 kg	A		2.0 m				2.5 m				3.0 m				3.5 m				Max. reach								
			Dozer up		Dozer down		Dozer up		Dozer down		Dozer up		Dozer down		Dozer up		Dozer down		Dozer up		Dozer down						
	B		☺	☹	☺	☹	☺	☹	☺	☹	☺	☹	☺	☹	☺	☹	☺	☹	☺	☹	A (m)	☺	☹	A (m)			
Boom: 2000 mm Arm: 1100 mm Bucket: SAE 0.08 m ³ (CECE 0.07 m ³) Shoe: 300 mm	3.0 m									0.51	0.43	*0.58	0.43					0.5	0.42	3.03	*0.59	0.42	3.03				
	2.5 m									0.52	0.43	*0.57	0.43					0.42	0.35	3.39	*0.59	0.35	3.39				
	2.0 m																										
	1.5 m	0.98	0.79	*1.17	0.79	0.68	0.56	*0.67	0.57	*0.85	0.56	0.51	0.42	*0.71	0.42	0.39	0.33	*0.60	0.33	0.37	0.31	3.63	*0.60	0.31	3.63		
	1.0 m																										
	0.5 m	0.93	0.74	*1.24	0.74	0.64	0.53	*1.04	0.54	0.50	0.41	*0.81	0.41	*0.39	0.32	*0.69	0.32	*0.34	0.28	0.34	0.28	3.80	*0.64	0.28	3.80		
	0.0 m	0.92	0.74	*1.67	0.74	0.64	0.52	*1.17	0.74	0.64	0.52	*1.22	0.52	0.48	0.40	*0.92	0.40	0.38	0.32	*0.74	0.32	0.36	0.30	3.63	*0.69	0.30	3.63
	-0.5 m	0.92	0.74	*1.66	0.74	0.64	0.52	*1.19	0.52	0.48	0.40	*0.90	0.40									0.40	0.33	3.40	*0.72	0.33	3.40
	-1.0 m	0.93	0.74	*1.46	0.74	0.64	0.53	*1.07	0.53	0.49	0.40	*0.77	0.40									0.48	0.39	3.04	*0.75	0.39	3.04
	-1.5 m	0.94	0.76	*1.09	0.76																	0.67	0.55	2.46	*0.76	0.55	2.46

Option

Unit: 1000 kg	A		2.0 m				2.5 m				3.0 m				3.5 m				Max. reach						
			Dozer up		Dozer down		Dozer up		Dozer down		Dozer up		Dozer down		Dozer up		Dozer down		Dozer up		Dozer down				
	B		☺	☹	☺	☹	☺	☹	☺	☹	☺	☹	☺	☹	☺	☹	☺	☹	☺	☹	A (m)	☺	☹	A (m)	
Boom: 2000 mm Arm: 1300 mm Bucket: SAE 0.08 m ³ (CECE 0.07 m ³) Shoe: 300 mm	3.5 m																								
	3.0 m																								
	2.5 m																								
	2.0 m																								
	1.5 m	*0.98	0.88	*0.98	0.88	0.74	0.61	*0.75	0.61	0.55	0.46	*0.65	0.46	0.43	0.36	*0.59	0.36	0.35	0.29	3.95	*0.57	0.29	3.95		
	1.0 m	1.04	0.84	*1.42	0.84	0.72	0.60	*0.96	0.60	0.54	0.45	*0.76	0.45	0.43	0.35	*0.65	0.35	0.35	0.29	3.99	*0.59	0.29	3.99		
	0.5 m	1.01	0.81	*1.48	0.81	0.71	0.58	*1.12	0.58	0.53	0.44	*0.85	0.44	0.42	0.35	*0.70	0.35	0.35	0.29	3.95	*0.61	0.29	3.95		
	0.0 m	1.00	0.80	*1.65	0.80	0.70	0.57	*1.20	0.57	0.53	0.44	*0.90	0.44	0.42	0.35	*0.73	0.35	0.36	0.30	3.83	*0.64	0.30	3.83		
	-0.5 m	1.00	0.80	*1.71	0.80	0.70	0.57	*1.20	0.57	0.53	0.43	*0.91	0.43	0.42	0.35	*0.71	0.35	0.40	0.33	3.61	*0.67	0.33	3.61		
	-1.0 m	1.01	0.81	*1.56	0.81	0.70	0.57	*1.12	0.57	0.53	0.44	*0.84	0.43								0.46	0.38	3.28	*0.70	0.38
-1.5 m	1.02	0.82	*1.27	0.82	0.71	0.58	*0.90	0.58												0.60	0.50	2.78	*0.73	0.50	2.78

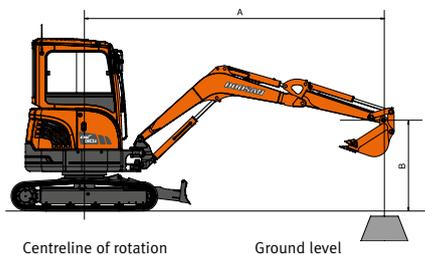
DX30Z

Standard

Unit: 1000 kg	A		2.0 m				2.5 m				3.0 m				3.5 m				Max. reach							
			Dozer up		Dozer down		Dozer up		Dozer down		Dozer up		Dozer down		Dozer up		Dozer down		Dozer up		Dozer down					
	B		☺	☹	☺	☹	☺	☹	☺	☹	☺	☹	☺	☹	☺	☹	☺	☹	☺	☹	A (m)	☺	☹	A (m)		
Boom: 2280 mm Arm: 1190 mm Bucket: SAE 0.09 m ³ (CECE 0.078 m ³) Shoe: 300 mm	3.0 m																									
	2.5 m																									
	2.0 m	0.90	0.88	0.90	0.90	0.73	0.61	0.73	0.65	*0.65	0.45	0.65	0.49	0.51	0.35	0.61	0.38	0.40	0.27	4.01	0.61	0.30	4.01			
	1.5 m					0.88	0.59	0.98	0.63	0.65	0.44	0.78	0.48	0.51	0.34	0.68	0.37	0.38	0.26	4.12	0.63	0.28	4.12			
	1.0 m					0.85	0.56	1.22	0.61	0.64	0.43	0.92	0.46	0.50	0.34	0.76	0.36	0.38	0.25	4.16	0.66	0.27	4.16			
	0.5 m					0.84	0.55	1.38	0.59	0.63	0.42	1.02	0.45	0.49	0.33	0.83	0.36	0.38	0.25	4.12	0.69	0.28	4.12			
	0.0 m	1.21	0.77	1.27	0.83	0.83	0.54	1.45	0.59	0.62	0.41	1.09	0.45	0.49	0.33	0.87	0.36	0.40	0.26	4.00	0.72	0.29	4.00			
	-0.5 m	1.22	0.77	2.00	0.83	0.83	0.54	1.44	0.59	0.62	0.41	1.10	0.45	0.49	0.32	0.87	0.35	0.43	0.29	3.80	0.76	0.31	3.80			
	-1.0 m	1.23	0.78	1.88	0.84	0.83	0.55	1.37	0.59	0.62	0.41	1.05	0.45								0.49	0.33	3.49	0.81	0.36	3.49
	-1.5 m	1.24	0.79	1.63	0.85	0.84	0.56	1.20	0.60	0.63	0.42	0.88	0.46								0.62	0.42	3.02	0.87	0.45	3.02

Option

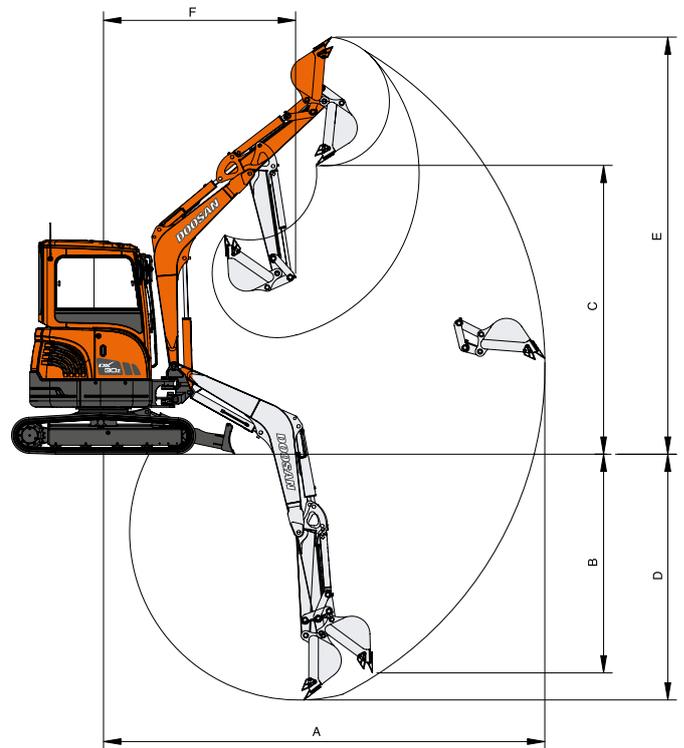
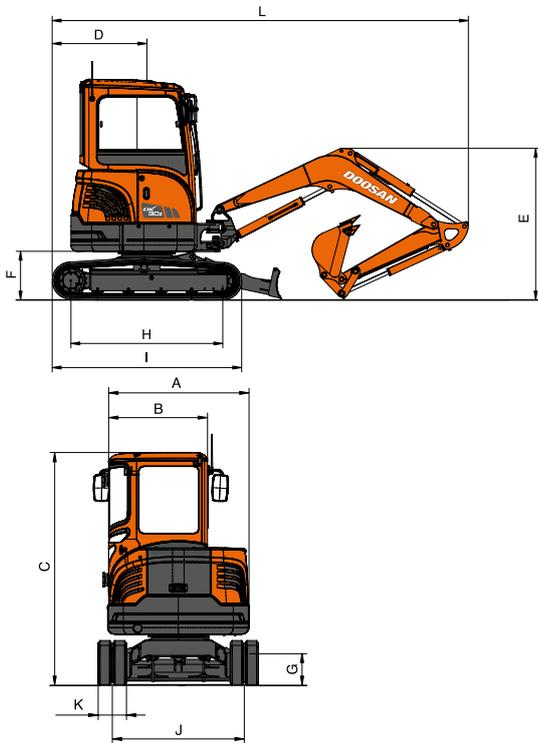
Unit: 1000 kg	A		2.0 m				2.5 m				3.0 m				3.5 m				Max. reach					
			Dozer up		Dozer down		Dozer up		Dozer down															
	B		☺	☹	☺	☹	☺	☹	☺	☹	☺	☹	☺	☹	☺	☹	☺	☹	☺	☹	A (m)	☺	☹	A (m)
Boom: 2280 mm Arm: 1300 mm Bucket: SAE 0.09 m ³ (CECE 0.078 m ³) Shoe: 300 mm	3.0 m																							
	2.5 m																							
	2.0 m					0.66	0.66	0.66	0.66	0.61	0.49	0.61	0.49	0.55	0.38	0.58	0.38	0.42	0.28	4.11	0.58	0.28	4.11	
	1.5 m					0.92	0.63	0.92	0.63	0.70	0.48	0.74	0.48	0.55	0.37	0.65	0.37	0.40	0.27	4.22	0.60	0.27	4.22	
	1.0 m					0.92	0.61	1.17	0.61	0.69	0.46	0.88	0.46	0.54	0.36	0.74	0.36	0.39	0.26	4.26	0.63	0.26	4.26	
	0.5 m					0.90	0.59	1.34	0.59	0.68	0.45	1.00	0.45	0.53	0.36	0.81	0.36	0.39	0.26	4.22	0.66	0.26	4.22	
	0.0 m	1.29	0.82	1.29	0.82	0.89	0.58	1.43	0.58	0.67	0.45	1.07	0.45	0.53	0.35	0.86	0.35	0.41	0.27	4.11	0.69	0.27	4.11	
	-0.5 m	1.30	0.83	1.90	0.83	0.89	0.58	1.44	0.58	0.67	0.44	1.09	0.44	0.52	0.35	0.87	0.35	0.44	0.30	3.91	0.73	0.30	3.91	
	-1.0 m	1.31	0.83	1.92	0.83	0.89	0.59	1.39	0.59	0.67	0.44	1.06	0.44	0.53	0.35	0.83	0.35	0.50	0.34	3.61	0.78	0.34	3.61	
	-1.5 m	1.33	0.84	1.70	0.84	0.90	0.59	1.24	0.59	0.67	0.45	0.93	0.45								3.18	0.83	0.41	3.18



☺ : Over front
☹ : Over side or 360°

1. The nominal forces are based on the SAE J1097 standard.
2. The load point is the hook at the rear of the bucket.
3. * = The nominal loads are based on hydraulic capacity.
4. The nominal loads do not exceed 87% of the hydraulic capacity or 75% of the capacity of the swing.

Dimensions & working range



Dimensions

		DX27z	DX30z
Boom length	mm	2000	2280
Arm length	mm	1100	1190
A Overall width of upper structure	mm	1440	1440
B Overall width of cabin	mm	1030	1030
C Overall height of cabin	mm	2445	2480
D Tail swing radius	mm	760	775
E Boom transport height	mm	1488	1590
F Clearance under counterweight	mm	520	535
G Ground clearance	mm	440	450
H Tumbler distance	mm	1550	1650
I Track length	mm	1970	2100
J Track gauge	mm	1270	1250
K Track shoe width	mm	300	300
L Overall length	mm	4060	4507

Working range

		DX27z		DX30z	
Boom length	mm	2000		2280	
Arm length	mm	1100	1300	1190	1300
Bucket capacity (SAE)	m ³	0.08		0.09	
A Max. digging reach	mm	4505	4690	4882	4984
B Max. vertical wall depth	mm	2295	2500	2278	2383
C Max. loading height	mm	2775	2935	3122	3185
D Max. digging depth	mm	2490	2690	2838	2948
E Max. digging height	mm	4165	4280	4555	4618
F Min. swing radius	mm	1950	1985	2015	2034

Standard and optional equipment

Cab & interior

DX27z / DX30z

All weather sound suppressed type cab	●
Adjustable suspension seat	●
Pull-up type front window and removable lower front window	●
Room light	●
Cigarette lighter	●
Cup holder	●
Heater and defroster	●
Fresh air filter	●
Storage box	●

Safety

ROPS & TOPS Cabin	●
Hydraulic safety lock lever	●
Side mirror	●
Safety glass	●
Hammer for emergency escape	●
ROPS & TOPS Canopy (4-Pillar)	○
Rotating beacon	○
Accumulator	○
Travel alarm	○

Other

DX27z / DX30z

Double element air cleaner	●
Water separator	●
Alternator (12 V, 40 Ah)	●
Electric horn	●
Working lights	●
- Boom mounted 1	●
- Cabin mounted 2	●
Piping for hammer (One way) & for rotation (Two way)	●
Rubber shoe	●
Maintenance free battery	●
Track guards (front)	○
Piping for quick clamp	○
Lever pattern changing valve	○
Air-conditioner	○

Standard: ●
Optional: ○

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.

