

DOOSAN

Construction Equipment

Material Handler

DX210W MH / DX225 MH / DX300 MH /
DX340 MH / DX420 MH / DX520 MH



Material Handler

DX 210W MH

DX 225 MH

DX 300 MH

DX 340 MH

DX 420 MH

DX 520 MH

KEY POINT

Customized Features

- Optimized front linkage part
- Specialized cabin & Guard option
- Various selectable Attachments

Reliability

- Reliable and well protected hydraulic, electric and lubrication routings with simple, optimized layout

Comfort

- Operator orientated cabin design
- Simple and easy control panel

Fuel Efficiency

- Relief cut off
- Optimized lever control & Idle
- Engine & Pump Matching

Performance

- Powerful Doosan Engine for each model
- E-POS System
(Electronic Power Optimizing System)

Maintenance

- Easy access to all maintenance components
- Intuitive maintenance data management



CUSTOMIZED FEATURES

Material Handler is commonly designed for handling metal scrap, industrial waste and garbage in recycling yards or landfill sites. Sometime it also used in loading and unloading materials alongside barges. Doosan offer this type machine from 22ton to 52ton.

Wide range of model choice

Model	Front Type	Max. Pin Height (mm)	Max. Pin Reach (mm)	Boom Length (mm)	Arm Length (mm)	Additional Counterweight (t)
DX210W MH	2-piece	12,140	10,895	6,500	4,500	1.5
DX225 MH	2-piece	12,125	10,835	6,500	4,500	1.5
DX300 MH	2-piece	14,310	12,960	7,800	5,400	2.0
DX340 MH	2-piece	15,665	14,385	8,600	6,050	2.5
DX420 MH	2-piece	16,880	15,845	9,600	6,600	3.2
DX520 MH	2-piece	18,135	16,720	10,000	7,100	2.8

OPTIMIZED FRONT LINKAGE PART

Various choice

Doosan offer two-piece front linkage as a standard and optional three-piece front linkage of DX520 MH models for customized working condition.

The front linkage designed for considered reach of object and optimized enhancing machine availability.

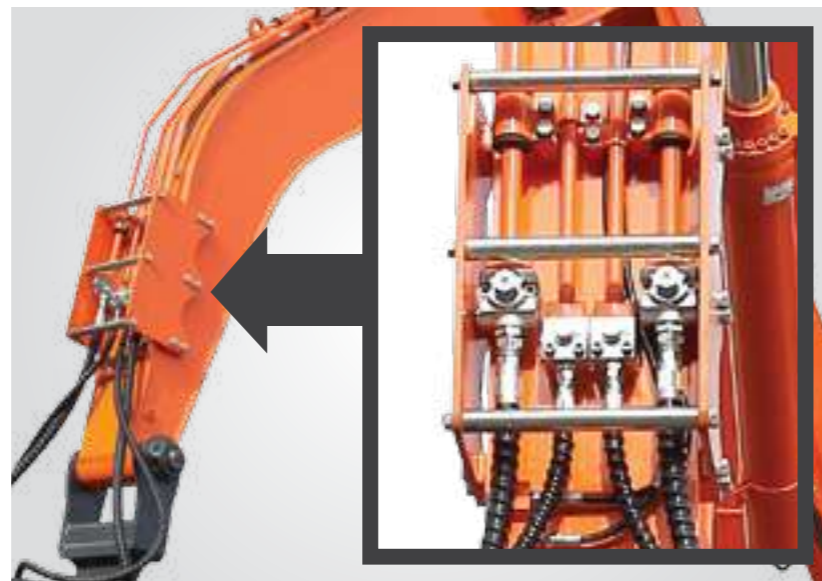
Doosan provide a maximum horizontal reach from 11m to 16.8m and maximum vertical reach from 12.2m to 18.1m by carrier weight.

Well-made design

Designed to fit job application such as recycling yards or landfill sites where MH mainly using.

Easy maintenance

Set Piping Guard to prevent damage from bounced debris.



SPECIALIZED CABIN & GUARD OPTION

Cabin riser system

Provides a stable position to offer wide viewing range.



Elevating cabin system

Provides excellent visibility and high flexibility.



Fall Objective Protection Structure (FOPS)

Operator protective guard (OPG) on the cabin to protect operator from falling objective from the top.



Lowering cab in emergency

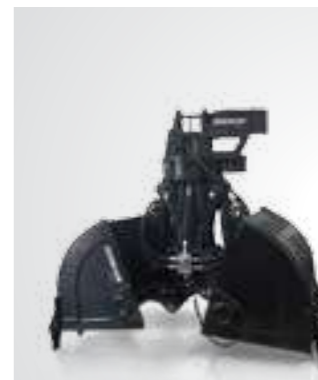
When problem occurred during tilting position, it help the cab to change back into original position.

VARIOUS SELECTABLE ATTACHMENTS



Orange Grapple

is commonly designed for handling scrap iron in wrecking yards or recycling plants and waste in landfill sites. Sometime it also used in building sites for transferring stones.



Clamshell Bucket

is commonly used in dredging, excavation or material handling however, each application has its unique characteristics and has to be designed optimally for maximum efficiency.



Wood Grapple

is mainly designed for loading or unloading logs in forestry loading dock and lumberyard.



Log Grapple

is specially designed for sorting, loading, unloading and laying timber, log and wood with Doosan Log loader in forestry.

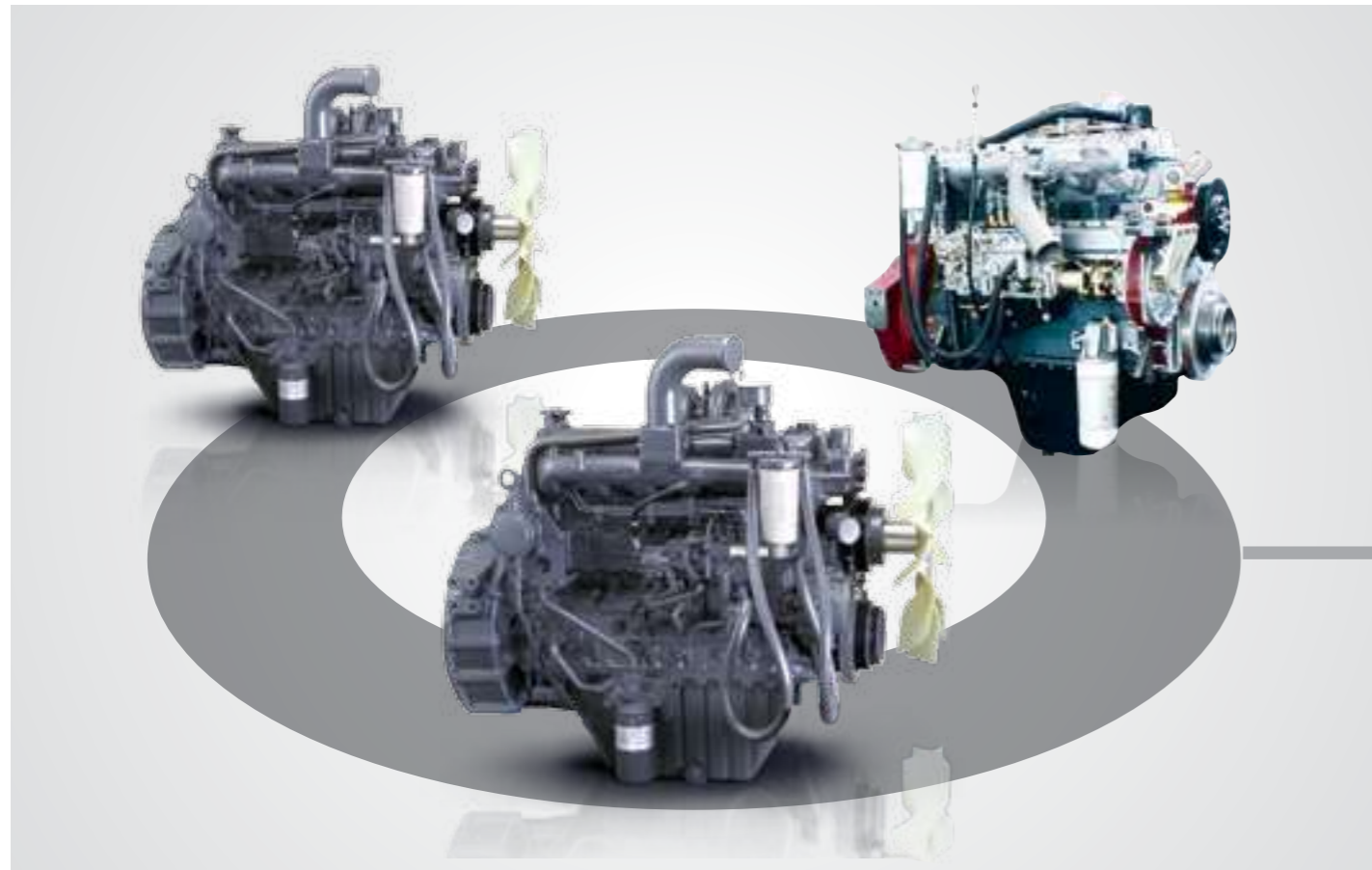
Attachments		Orange Grapple		Clamshell Bucket			Wood Grapple			Log Grapple		
Model		OG22	OG34	CB14	CB18	CB25	WG22	WG30	WG34	LG22	LG30	LG34
Type		Hydraulic rotating / Half closed tine										
Operating Weight	kg	1,300	2,000	900	1,200	1,560	1,190	1,580	1,620	1,270	1,700	1,750
Overall height	mm	1,880	2,300	1,950	1,950	2,148	2,440	2,600	2,685	1,850	2,000	2,200
Jaw/Bucket opened length	mm	1,840	2,100	1,868	1,868	2,080	2,300	2,500	2,500	1,675	1,790	1,920
Jaw/Bucket closed length	mm	2,090	2,300	1,455	1,455	1,725	1,340	1,480	1,480	2,225	2,385	2,700
Jaw Bucket width	mm	-	-	600	1,100	1,100	570	665	665	805	900	915
Capacity	m ³	0.5	0.72	0.37	0.7	1	-	-	-	-	-	-
Operating Pressure	bar	280	280	280	280	280	250	300	300	220	220	220
Required Oil Flow	lpm	156	201	78	78	95	180	200	200	180	200	200
Applicable Carrier	DX210W MH	●	-	●	-	-	●	-	-	●	-	-
	DX225 MH	●	-	●	-	-	●	-	-	●	-	-
	DX300 MH	●	-	-	●	-	-	●	-	-	●	-
	DX520 MH	-	●	-	-	●	-	-	●	-	-	●

PERFORMANCE

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

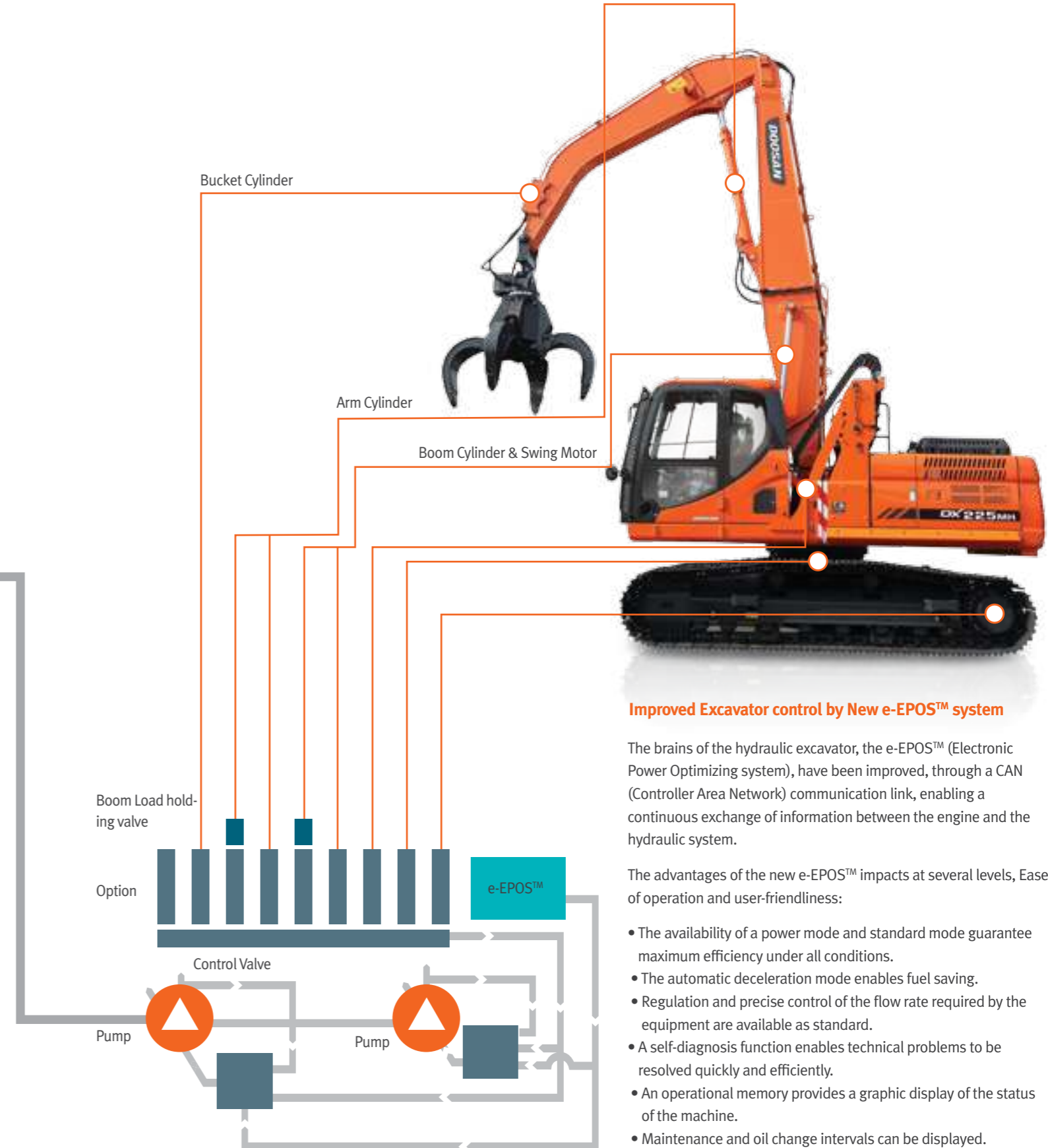
Maximum performance by Doosan engine

Doosan engine perfectly harmonized with the hydraulic system and provides strong power. Mechanical engine providing high resistance to moisture, dust, and bad fuel quality.



Smooth swing with Increased Swing torque

New motor swing reduction gear minimizes shocks during rotation while making increased swing torque.



Improved Excavator control by New e-EPOS™ system

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

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.

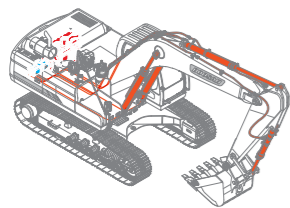
FUEL EFFICIENCY



RELIEF CUTOFF

to prevent transfer of unnecessary flow

1. Typically, the pump tends to supply flow even when the maximum pressure on the system is reached due to severe working environments and large workloads.
2. Relief cutoff technology of Doosan prevent transfer of unnecessary flow to keep powerful working level at the maximum value while reducing consumption of fuel.



OPTIMIZED LEVER CONTROL

to prevent unnecessary fuel consumption

1. When operator takes break for rest with the joystick kept fixed, both of the engine and the pump are kept in standby mode with maximum rotation rate and hydraulic power. In such a case, unnecessary fuel consumption takes place.

& AUTO IDLE

2. The auto idle technology effectively controls the engine, and prevents unnecessary fuel consumption while the engine is kept in standby mode. Further, the optimized lever control technology effectively controls the pump to keep power of the pump maximum and prevent fuel consumption while the system is kept shut down. When operating the joystick, rotation rate of the engine and maximum hydraulic power of the pump increase simultaneously for efficient consumption of fuel. The technologies of Doosan enable operation of the system with maximum power in time.



ENGINE & PUMP MATCHING

to reduce matching response time of the system

1. It is common that response time of the system (time for generating rated power from the minimum power) is slower than response speed of the pump. In such a case, the pump is kept in standby mode until the engine reaches the rated power to cause unnecessary fuel consumption. In addition, more fuel is supplied to the engine for matching the pump speed with the engine to result in more exhaust fumes.
2. Engine & pump matching, the new technology of Doosan, fully resolves these problems. Matching response time between pump and engine efficiently reduces unnecessary fuel consumption as well as exhaust fumes.

Relief Cutoff

Relief cutoff technology saves 20~30% of fuel consumption in the heavy workload.



Optimized Lever Control

In auto idle, you can save 90% of fuel than in operation.



Engine & pump matching

Matching response time between pump and engine makes higher performance with reduced fuel consumption.



Doosan Efficient Dynamics Features

"NEW CONTROL LOGIC" for Better Fuel Efficiency

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.

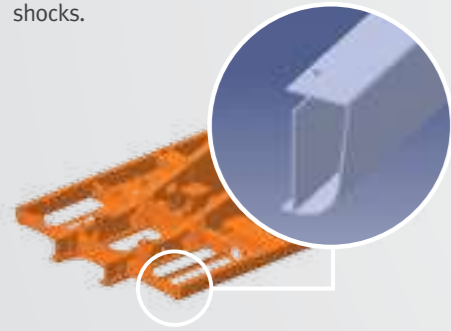
X-chassis

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.



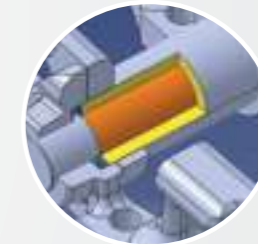
Polymer shim

A polymer shim is added to the bucket pivot to maintain precise control over the equipment.



Tracks

The chain is composed of self-lubricating sealed links isolated from all external contamination. The tracks are locked by mechanically bolted pins.



Integrated Track Spring and Idler

The track spring and the idler have been joined directly to achieve high durability and improved maintenance convenience.



Additional counter weight options

For keeping machine stability and performance, Doosan offer sand witch type or Bottom mounting type.



Dry type of pre cleaner

Pre cleaner filters out impurities again for keeping steady machine performance.



Outrigger

Outrigger is necessary for the extra stability needed, especially when using a Elevating cabin system with wheel based material handler models.



High Ground Clearance

It helps to have lower damage risk of transmission or shaft.



COMFORT

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

VISIBILITY

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



Air suspension seat (Optional)

Equipped with various functions of adjustment forth and back and, and lumbar support, it reduces the vibration of equipment transmitted during work in an effective way. Also for considering winter working environment, Seat warmer functions equipped.



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



MP3/CD Player (Optional)



Audio Button



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

Appropriate storage spaces show the attention given to the operator.



Rear Camera (Optional)



Comfortable 2-stage sliding seat



Control stand (Telescopic Function)

CONTROL OPTIONS

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



Control lever

Very precise control of the equipment increases versatility, safety and facilitates tricky operations requiring great precision. 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, grabs, crushers, grippers, etc.)

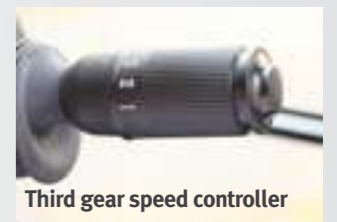


Outrigger control

Outrigger control lever, combined with the associated switches, allows for the operator to select between any combination of independent or simultaneous operation of outriggers.

Steering Column

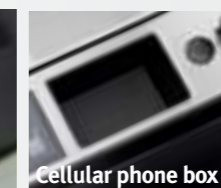
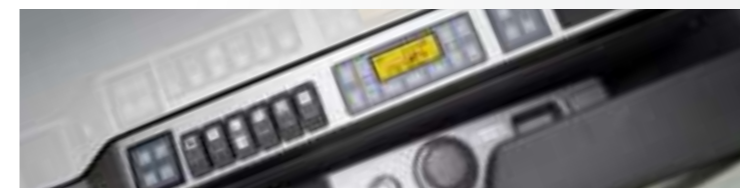
The Forward/Neutral/Reverse & gear selection switch is mounted on the steering column to minimize operator movements while traveling so that safety and operator comfort are ensured. The lower part of Steering Column can be tilted for improved operator comfort.



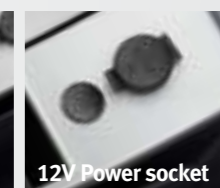
Third gear speed controller

Control panel

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



Cellular phone box



12V Power socket

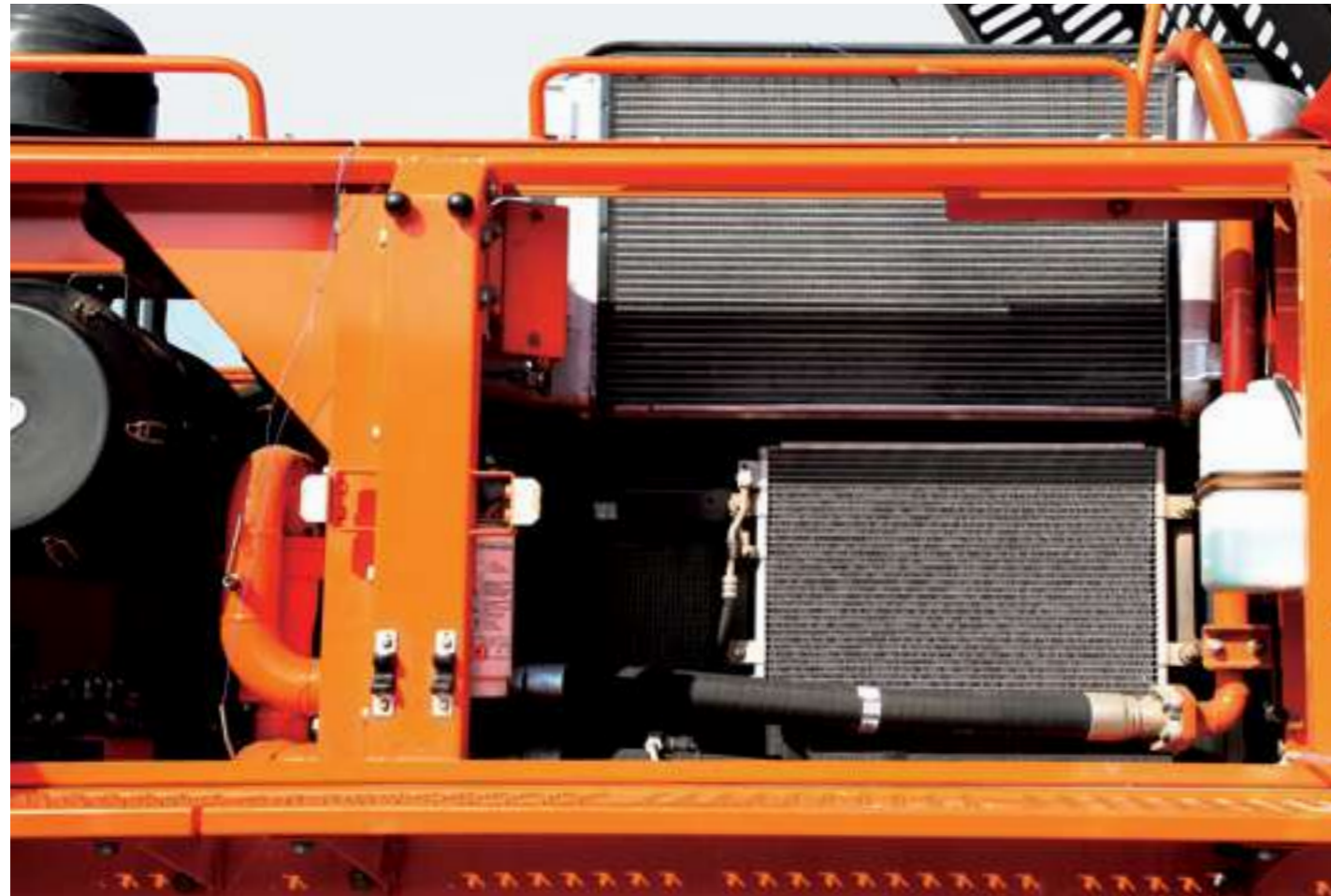


Cigarette lighter

MAINTENANCE

Easy maintenance

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



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.



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.



Remote greasing points

For comfortable maintenance, the arm and boom greasing points have been centralized. Remote & grouped greasing points on boom & arm.



Hydraulic oil return filter

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



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.



New battery box

- a. Cut-off switch easier to reach
- b. New spring to facilitate fixing
- c. New locking device

PC monitoring

A PC monitoring function enables connection to the e-EPOS system. Thus, various parameters can be checked during maintenance, including pump pressures, engine rotation and engine speed. These can be stored and printed for analysis.



Larger anti-slip surface

High friction coefficient guarantees user's safety while maintaining main parts in wet condition.



Improved Rim & Rubber space

New type Rim makes it possible to inject air from outside of machine. And expanded rubber space increases safety for maintenance.



TECHNICAL SPECIFICATION

DX210w MH

Engine

Model

DB58TIS

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 phase II.

Number of cylinders

6

Rated Horse Power

164 PS @2,000 rpm (KS R1004)

120 kW (164 PS) @2,000 rpm (DIN 6271)

120 kW (162 HP) @2,000 rpm (SAE J1349)

Max torque

70 KGF.M @ 1,400 rpm

Piston displacement

Ø100 mm x 125 mm (3.9" X 4.9")

Starter

24 V / 4.5 kW

Batteries

2 x 12 V / 150AH

Air cleaner

Double element with auto dust evacuation.

Hydraulic System

The heart of the system is the e-EPOS (Electronic Power Optimizing System). It allows the efficiency of the system to be optimized for all working conditions and minimizes fuel consumption. The new e-EPOS is connected to the engine electronic control via a data transfer link to harmonize the operation of the engine and hydraulics.

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

Main pumps

2 variable displacement axial piston pumps

max flow : 2 x 231.7 ℓ /min (2 x 61.21 US gpm, 2 x 50.97 Imp gpm)

Pilot pump

Gear pump - max flow : 27.4 ℓ /min (7.24 US gpm, 6.03 Imp gpm)

Maximum system pressure

Boom/arm/Bucket:

- Normal mode : 330 kgf/cm²(324 bar)

- Power mode : 350 kgf/cm²(343 bar)

Travel : 350 kgf/cm²(343 bar)

Swing : 270 kgf/cm²(265bar)

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 diameter x Rod diameter x Stroke
Boom	2	120 x 85 x 1,225 mm
Arm	1	140 x 100 x 1,705 mm

Undercarriage

Heavy-duty frame, all-welded stress-relieve structure. Top grade materials used for toughness. Specially heat-treated connecting pins. 10.0-20-16PR double tires with tire spacer. Front axle oscillating hydraulically.

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 11.0 rpm

Max. swing torque

6,387 kgf.m (EFF.=0.76)

Drive

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

Travel speed (high)

36 km/h (23 mph)

Maximum traction force

12,325 kgf (27,172 lbf)

Maximum grade

33° / 65%

Refill Capacities

Fuel tank

350 ℓ (92.46 US gal, 76.99 Imp gal)

Cooling system (Radiator capacity)

24 ℓ (6.34 US gal, 5.28 Imp gal)

Engine oil

26 ℓ (6.87 US gal, 5.73 Imp gal)

Hydraulic tank

205 ℓ (54.16US gal, 45.09 Imp gal)

TECHNICAL SPECIFICATION

DX225 MH

Engine

Model

Doosan DB58TIS
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 phase II.

Number of cylinders

6

Nominal flywheel power

116 kW(155 HP) @ 1,900 rpm (SAE J1995, gross)
110 kW(148 HP) @ 1,900 rpm (SAE J1349, net)

Max torque

61.5 kgf.m(603 Nm) at 1,400 rpm

Piston displacement

5,785 cc (353 cu.in)

Bore & stroke

Ø102 mm x 118 mm (4.0" x 4.6")

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 (2 x 55 US gpm, 2 x 45 Imp gpm)

Pilot pump

Gear pump - max flow : 28.5 l /min (7.5 US gpm, 6.3 Imp gpm)

Maximum system pressure

Boom/arm/Bucke :
- 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)

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 diameter x Rod diameter x Stroke
Boom	2	125 x 85 x 1,260 mm
Arm	1	140 x 100 x 1,705 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.

Upper rollers(Standard shoe)

2

Lower rollers

9

Track shoes

49

Overall track length

4,445 mm

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 10.5 rpm

Max. swing torque

6,477 kgf.m (EFF.=0.77)

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 (low/high)

3.0 / 5.5 km/h (1.9 / 3.4 mph)

Maximum traction force

11,700 / 22,200 kgf (25,794 / 48,942 lbf)

Maximum grade

35° / 70%

Refill Capacities

Fuel tank

400 l (105.7 US gal, 88 Imp gal)

Cooling system (Radiator capacity)

24 l (6.3 US gal, 5.3 Imp gal)

Engine oil

27 l (7.1 US gal, 5.9 Imp gal)

Swing drive

5 l (1.32 US gal, 1.1 Imp gal)

Final drive

3.3 l (0.87 US gal, 0.73 Imp gal)

Hydraulic system

330 l (87 US gal, 73 Imp gal)

Hydraulic tank

240 l (63.4 US gal, 52.8 Imp gal)

TECHNICAL SPECIFICATION

DX300 MH

Engine

Model

Doosan DE08TIS

Type

Water-Cooled, Direct Injection

Number of cylinders

6

Rated Horse Power

200 PS @ 1900rpm (KS R1004)

147 kW (200 PS) @ 1,900 rpm (DIN 6271)

147 kW (197 HP) @ 1,900 rpm (SAE J1349)

Max torque

86 kgf.m @ 1,300 rpm

Piston displacement

8,071 cc

Bore & stroke

Ø111mm x 139 mm

Starting Motor

24 V x 6.0 kW

Batteries

12 V x 2/150 AH

Air cleaner

Double element and pre-filtered Turbo with auto dust evacuation.

Hydraulic System

The heart of the system is the e-EPOS (Electronic Power Optimizing System). It allows the efficiency of the system to be optimized for all working conditions and minimizes fuel consumption. The new e-EPOS is connected to the engine electronic control via a data transfer link to harmonize the operation of the engine and hydraulics.

- The hydraulic system enables independent or combined operations.
- 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

Tandem, Axial Piston

max flow : 2-247 ℓ /min

Displacement : 131 cc/rev

weight : 130 kg

Pilot pump

Gear pump - max flow : 28.5 ℓ /min

Pilot pump : 15 cc/rev

Relief valve pressure : 40 kgf/cm²

Main relief Pressure

Boom/Arm/Bucket

Working, Travel : 330 [+10~0] kg/cm²

Pressure up : 350 [+10~0] kg/cm²

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 diameter x Rod diameter x Stroke
Boom	2	140 x 95 x 1,440 mm
Arm	1	150 x 105 x 1,755 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 triple grousers. Heat-treated connecting pins. Hydraulic track adjuster with shock-absorbing tension mechanism.

Upper rollers(Standard shoe)

2

Lower rollers

9

Track shoes

48

Overall track length

4,940 mm

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.

Swing speed

0 to 9.9 rpm

Max. swing torque

10,070 kgf.m (EFF.=0.84)

Drive

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

Travel speed (low/high)

3.0 / 5.1 km/h (EFF.=98.5 / 97.7%)

Maximum traction force

25.2 / 13.7 ton (EFF.=76.5 / 71.2%)

Maximum grade

70 %

Refill Capacities

Fuel tank

500 ℓ

Cooling system (Radiator capacity)

35 ℓ

Engine oil

31.5 ℓ

Swing drive

6 ℓ

Final drive

2 x 7 ℓ

Hydraulic tank

280 ℓ

TECHNICAL SPECIFICATION

DX340 MH

Engine

Model

Doosan DE12TIS

Type

4-Cycle ATA Intercooler in-Line

Number of cylinders

6

Rated Horse Power

195 kW (265 PS) @ 1,800 rpm (DIN 6271)

185 kW (261 HP) @ 1,800 rpm (SAE J1349)

Max torque

112 kgf.m @ 1,400 rpm

Piston displacement

11,051 cc

Bore & stroke

Ø123 mm x 155 mm

Starting Motor

24 V x 6.0 kW

Batteries

12 V x 2/150 AH

Air cleaner

Double element

Hydraulic System

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- 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

Parallel, Bentaxis, Piston

max flow : 2 x 265 l /min

Displacement : 140 cc/rev

weight : 290 kg

Pilot pump

Gear pump - max flow : 22.5 l /min

Pilot pump : 11.86 cc/rev

Relief valve pressure : 40 kgf/cm²

Main relief Pressure

Boom/Arm/Bucket

Working, Travel : 330 [+10~0] kg/cm²

Pressure up : 350 [+10~0] kg/cm²

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 diameter x Rod diameter x Stroke
Boom	2	150 x 100 x 1,430 mm
Arm	1	170 x 115 x 1,810 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 triple grousers. Heat-treated connecting pins. Hydraulic track adjuster with shock-absorbing tension mechanism.

Upper rollers(Standard shoe)

2

Lower rollers

9

Track shoes

48

Overall track length

4,940 mm

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.

Swing speed

0 to 8.9 rpm

Max. Swing Torque

11,660 kgf.m (EFF.=0.863)

Drive

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

Travel speed (low/high)

3.1 / 4.7 km/h (EFF.=99.0 / 95.2%)

Maximum traction force

27.0 / 15.1 ton (EFF.=75.7 / 68.8%)

Maximum grade

70 %

Refill Capacities

Fuel tank

550 l

Cooling system (Radiator capacity)

34 l

Engine oil

39 l

Swing drive

6 l

Final drive

2 x 5.5 l

Hydraulic tank

380 l

TECHNICAL SPECIFICATION

DX420 MH

Engine

Model

DOOSAN DE12TIS
4-Cycle Air-To-Air Intercooler In-line
Water-Cooled, Direct Injection, Tier II

No. of cylinders

6

Rated horse power

218 kW (297 PS) @2,000 rpm (DIN 6271)
218 kW (293 HP) @2,000 rpm (SAE J1349)

Max. torque

127 kgf/m at 1,300 rpm

Idle (low - high)

975 [+/-50] - 2190 [+/-25] rpm

Piston displacement

11,051 cc

Bore & stroke

Ø123 mm x 155 mm

Starter

24 V / 7.0 kW

Batteries

2 x 12 V / 150 Ah

Air filter

Double element and pre-filtered Turbo with auto dust evacuation.

Hydraulic System

The brain of the excavator is the e-EPOS (Electronic Power Optimizing System). It allows the efficiency of the hydraulic system to be optimised for all working conditions and minimises fuel consumption. The e-EPOS is connected to the engine's electronic control unit (ECU) via a data transfer link to harmonise the operation of the engine and hydraulics.

- The hydraulic system enables independent or combined operations
- Two travel speeds offer either increased torque or high speed
- Cross-sensing pump system for fuel savings
- Auto deceleration system
- Three operating modes, three power modes
- Button control of flow in auxiliary hydraulic circuits
- Computer-aided pump flow control

Main pumps

Parallel, Bent-axis, Piston
Max. flow : 2 x 315 ℓ /min
Displacement : 162 cc/rev.
Weight : 180 kg

Pilot pump

Gear pump
Max. flow : 27.36 ℓ /min
Displacement : 11.0 cc /rev.
Relief valve pressure : 40 kgf/cm²

Maximum system pressure

Implement : 320 kgf/cm²
Travel : 320 kgf/cm²
Power Boost : 350 kgf/cm²
Pilot : 40 kgf/cm²

Hydraulic Cylinders

Piston rods and cylinder bodies of high-strength steel. Shock-absorbing mechanism fitted in all cylinders for shock-free operation and extended piston life.

Cylinders	Quantity	Bore diameter x Rod diameter x Stroke
Boom	2	165 x 115 x 1,460 mm
Arm	1	180 x 120 x 1,820 mm

Undercarriage

Very robust construction of all chassis elements. All welded structures designed to limit stresses. High-quality, durable materials. Lateral chassis welded and rigidly attached to undercarriage. Track rollers lubricated for life. Idlers and sprockets fitted with floating seals. Track shoes made of induction-hardened alloy with triple grouser. Heat-treated connecting pins. Hydraulic track adjuster with shock-absorbing tension mechanism.

Upper rollers(Standard shoe)

2

Lower rollers

9

Track shoes

50

Overall track length

5,200 mm

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.

Swing speed

0 to 9.1 rpm

Max. swing torque

13,510 kgf.m (EFF.=0.83)

Drive

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

Travel speed (low/high)

3.3 / 5.5 km/h

Maximum traction force

37.74 / 18.05 ton (EFF.=85 / 75%)

Maximum grade

35° (70%)

Refill Capacities

Fuel tank

550 ℓ

Cooling system (Radiator Capacity)

29.5 ℓ

Engine oil

28 ℓ

Swing drive

7.9 ℓ

Final drive

2 x 6.3 ℓ

Hydraulic tank

390 ℓ

TECHNICAL SPECIFICATION

DX520 MH

Engine

Model

DOOSAN DE12TIS
4-Cycle Air-To-Air Intercooler In-line
Water-Cooled, Direct Injection, Tier II

No. of cylinders

6

Rated horse power

238 kW (323 PS) at 2,000 rpm (DIN 6271)
238 kW (318 HP) at 2,000 rpm (SAE J1349)

Max. torque

139 kgf/m (1363 Nm) at 1,300 rpm

Piston displacement

11,051 cc

Bore & stroke

Ø123 mm x 155 mm

Starter

24 V / 6.6 kW

Batteries

2 x 12 V / 150 Ah

Air filter

Double element and pre-filtered Turbo with auto dust evacuation.

Hydraulic System

The brain of the excavator is the e-EPOS (Electronic Power Optimizing System). It allows the efficiency of the hydraulic system to be optimised for all working conditions and minimises fuel consumption. The e-EPOS is connected to the engine's electronic control unit (ECU) via a data transfer link to harmonise the operation of the engine and hydraulics.

- The hydraulic system enables independent or combined operations
- Two travel speeds offer either increased torque or high speed
- Cross-sensing pump system for fuel savings
- Auto deceleration system
- Three operating modes, three power modes
- Button control of flow in auxiliary hydraulic circuits
- Computer-aided pump flow control

Main pumps

Parallel, Bent-axis, Piston
Max. flow : 2 x 360 ℓ /min
Displacement : 186 cc/rev.
Weight : 195 kg

Pilot pump

Gear pump
Max. flow : 27.4 ℓ /min
Displacement : 11.0 cc/rev.
Relief valve pressure : 40 kgf/cm²

Maximum system pressure

Implement (boom/arm/bucket):
Work, travel : 20 kg/cm² [+10~0]
Rotation : 300 kg/cm²
Power : 350 kg/cm² [+10~0]

Hydraulic Cylinders

Piston rods and cylinder bodies of high-strength steel.
Shock-absorbing mechanism fitted in all cylinders for shock-free operation and extended piston life.

Cylinders	Quantity	Bore diameter x Rod diameter x Stroke
Boom	2	170 x 115 x 1,610 mm
Arm	1	180 x 120 x 1,820 mm

Undercarriage

Very robust construction of all chassis elements. All welded structures designed to limit stresses. High-quality, durable materials. Lateral chassis welded and rigidly attached to undercarriage. Track rollers lubricated for life. Idlers and sprockets fitted with floating seals. Track shoes made of induction-hardened alloy with triple grouser. Heat-treated connecting pins. Hydraulic track adjuster with shock-absorbing tension mechanism.

Upper rollers(Standard shoe)

3

Lower rollers

11

Track shoes

53

Overall track length

5,465 mm

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.

Swing speed

0 to 9.2 rpm

Max. swing torque

15,500 kgf.m (EFF.=0.77)

Drive

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

Travel speed (low/high)

3.2 / 5.6 km/h

Maximum traction force

37.6 / 18.9 ton (EFF.=85 / 75%)

Maximum gradeability

35° (70%)

Refill Capacities

Fuel tank

620 ℓ

Cooling system (Radiator capacity)

29.5 ℓ

Engine oil

28 ℓ

Swing drive

2 x 5 ℓ

Final drive

2 x 10 ℓ

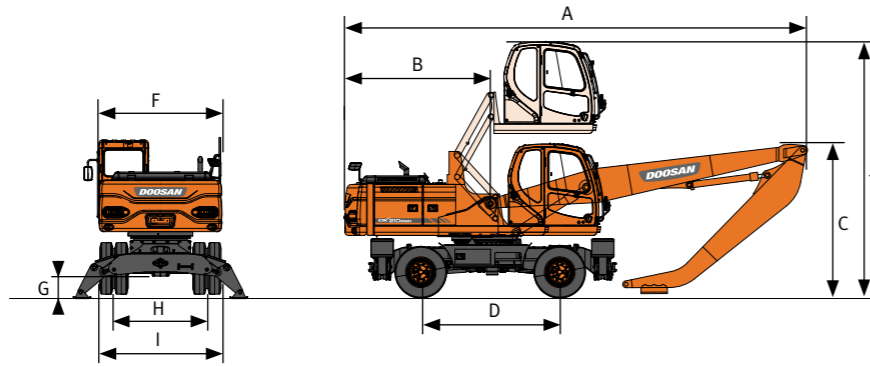
Hydraulic tank

390 ℓ

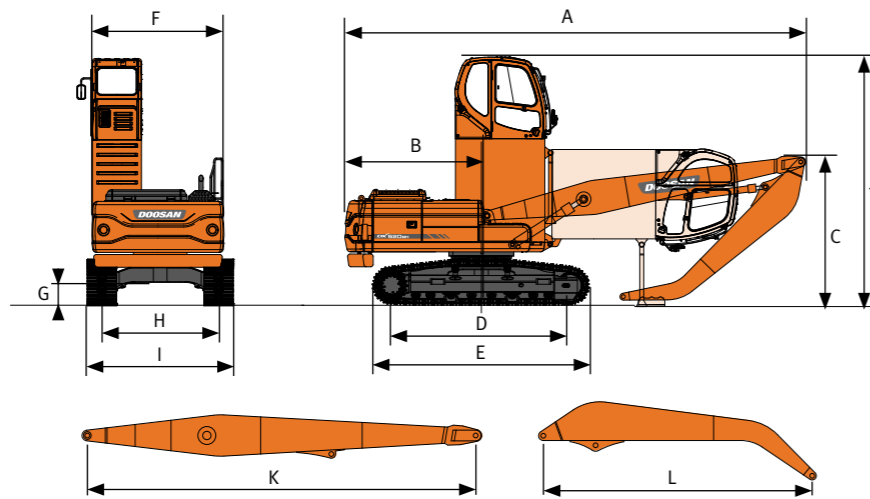
DIMENSIONS

WORKING RANGE

Wheel machine with elevating cabin



Crawler machine with cabin riser



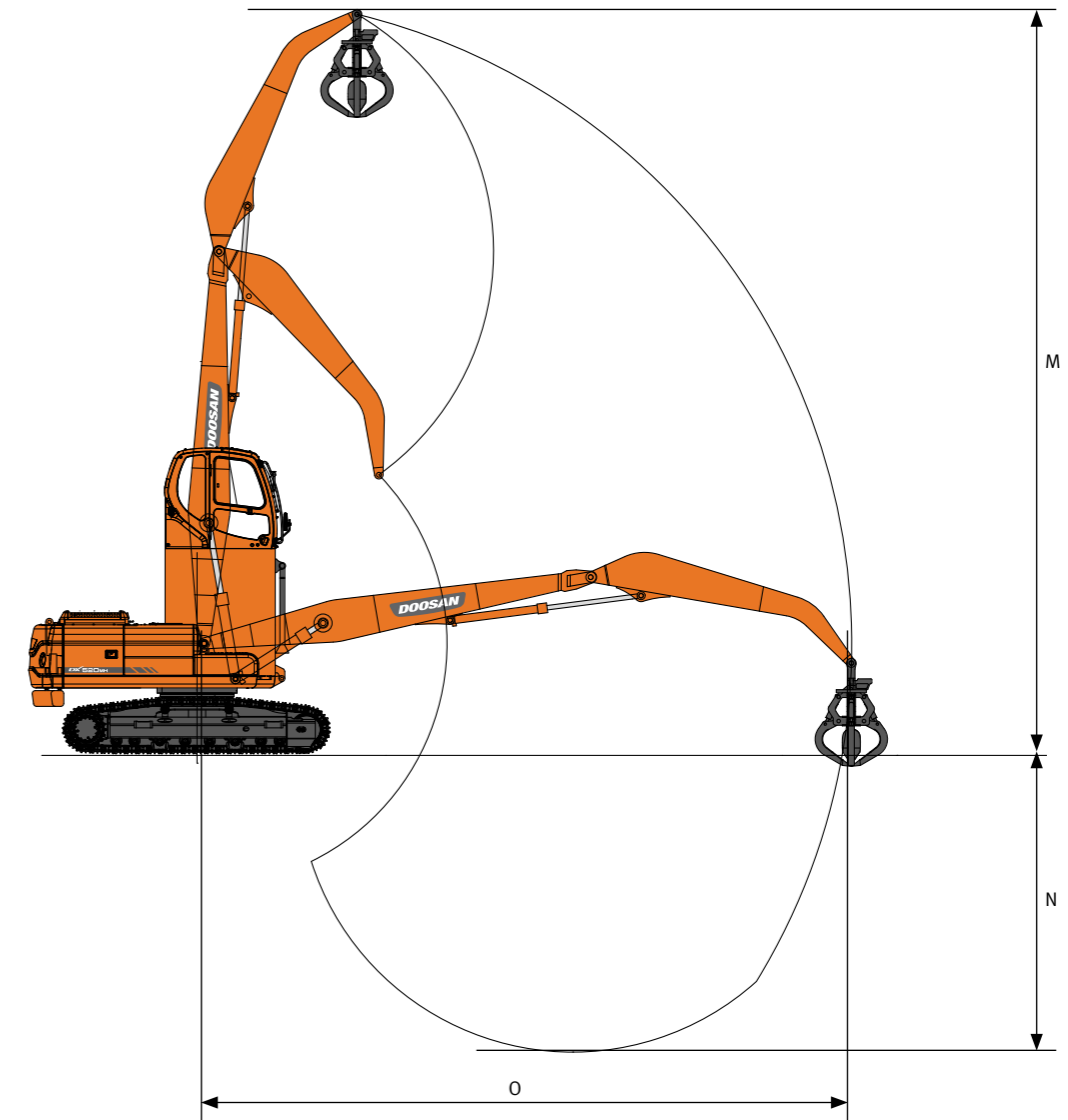
Transport Dimension

Dimension	Unit	DX210W MH	DX225 MH	DX300 MH	DX340 MH	DX420 MH	DX520 MH
A Shipping Length	mm	9,625	9,650	11,180	12,100	13,270	13,600
B Tail Swing Radius	mm	2,850	2,750	3,200	3,500	3,660	3,700
C Shipping Height	mm	3,550	3,500	4,450	3,450	3,500	6,350
D Tumbler Distance (Wheel Base)	mm	2,850	3,650	4,040	4,040	4,250	4,470
E Track Length	mm	-	4,445	4,940	4,940	5,200	5,465
F House Width	mm	2,530	2,710	2,960	2,990	2,990	2,990
G Ground Clearance	mm	350	480	500	510	540	770
H Track Gauge (Tread Width)	mm	1,914	2,390	2,600	2,680	2,750	2,740 / 3,300*
I Shipping Width	mm	2,500	2,990	3,200	3,280	3,350	3,340 / 3,900*
J Height over Cabin	mm	5,450	4,800	4,850	4,950	4,980	5,150
K Boom Length	mm	6,500	6,500	7,800	8,600	9,600	10,000
L Arm Length	mm	4,500	4,500	5,400	6,050	6,600	7,100

[Note] * : Retracted / Extended

Weight of Main Parts

Parts	Unit	DX210W MH	DX225 MH	DX300 MH	DX340 MH	DX420 MH	DX520 MH
Additional CWT	kg	1,500	1,100	2,000	2,500	3,200	2,800
Cabin	kg	1,200	2,200	1,200	1,200	1,200	1,200
Boom	kg	1,670	1,670	2,700	3,000	3,900	4,000
Arm	kg	860	860	1,500	1,625	1,800	2,000
Etc. (Cylinder & Piping)	kg	450	450	1,000	1,100	1,415	1,825
Total	kg	5,680	6,280	8,400	9,425	11,515	11,825



Working Range

Dimension	Unit	DX210W MH	DX225 MH	DX300 MH	DX340 MH	DX420 MH	DX520 MH
M Max. Pin Height	mm	12,140	12,125	14,310	15,665	16,880	18,135
N Max. Pin Depth	mm	5,025	5,300	6,515	6,915	8,575	7,595
O Max. Pin Reach	mm	10,895	10,835	12,960	14,385	15,845	16,720

LIFTING CAPACITY

DX210W MH

Unit : kg

	3m		4.5m		6m		7.5m		9m		10.5m		Maximum Reach Position				
	Front	Side	Front	Side	Front	Side	Front	Side	Front	Side	Front	Side	Front	Side	Reach (m)		
12m															*8,697	*8,697	@3.84
10.5m					*5,925	*5,925									*5,728	*5,728	@6.61
9m					*5,556	*5,556	*5,058	*5,058							*4,882	4,692	@8.23
7.5m					*5,549	*5,549	*4,977	*4,977	*4,525	4,085					*4,435	3,831	@9.33
6m					*5,817	*5,817	*5,086	*5,086	*4,518	4,073					*4,136	3,361	@10.09
4.5m			*7,838	*7,838	*6,297	*6,297	*5,308	*5,308	*4,588	4,006	*3,944	3,130	*3,902	3,090			@10.58
3m			*9,054	*9,054	*6,845	*6,845	*5,554	5,149	*4,663	3,914	*3,900	3,096	*3,692	2,945			@10.84
1.5m			*9,860	*9,860	*7,220	6,897	*5,700	4,974	*4,661	3,820	*3,762	3,054	*3,474	2,899			@10.89
0m	*3,012	*3,012	*9,748	*9,748	*7,204	6,657	*5,622	4,837	*4,492	3,745	*3,427	3,026	*3,218	2,944			@10.72
-1.5m	*4,609	*4,609	*8,761	*8,761	*6,685	6,534	*5,215	4,759	*4,049	3,706					*2,883	*2,883	@10.33
-3m	*6,300	*6,300	*7,097	*7,097	*5,625	*5,625	*4,370	*4,370	*3,159	*3,159					*2,406	*2,406	@9.69
-4.5m			*4,777	*4,777	*3,949	*3,949	*2,915	*2,915									

DX225 MH

Unit : kg

	3m		4.5m		6m		7.5m		9m		10.5m		Maximum Reach Position				
	Front	Side	Front	Side	Front	Side	Front	Side	Front	Side	Front	Side	Front	Side	Reach (m)		
12m															*8,930	*8,930	@3.54
10.5m					*5,811	*5,811									*5,705	5,513	@6.43
9m					*5,390	*5,390	*4,980	*4,419							*4,874	3,875	@8.09
7.5m					*5,362	*5,362	*4,872	*4,448	*4,496	3,284					*4,451	3,144	@9.22
6m					*5,621	*5,621	*4,976	*4,386	*4,476	3,279					*4,100	2,742	@9.99
4.5m			*7,491	*7,491	*6,108	*5,969	*5,209	*4,262	*4,554	3,220	3,771	2,507	*3,902	3,090			@10.58
3m			*8,759	*8,660	*6,692	5,670	*5,554	4,103	*4,651	3,135	3,739	2,477	*3,692	2,945			@10.84
1.5m			*9,712	8,040	*7,152	5,375	*5,684	3,942	4,616	3,046	3,698	2,438	*3,474	2,899			@10.89
0m	*3,012	*3,012	*9,831	7,653	*7,256	5,148	*5,689	3,812	4,539	2,975	*3,561	2,412	*3,218	2,944			@10.72
-1.5m	*4,618	*4,618	*9,097	7,508	*6,888	5,027	*5,384	3,734	*4,223	2,936					*2,883	*2,883	@10.33
-3m	*6,291	*6,291	*7,657	7,510	*5,994	5,006	*4,665	3,718	*3,441	2,946					*2,406	*2,406	@9.69
-4.5m			*5,547	*5,547	*4,482	*4,482	*3,350	*3,350									

DX300 MH

Unit : kg

	3m		4.5m		6m		7.5m		9m		10.5m		12m		Maximum Reach Position				
	Front	Side	Front	Side	Front	Side	Front	Side	Front	Side	Front	Side	Front	Side	Front	Side	Reach (m)		
13.5m																	*8,271	*8,271	@5.84
12m							*7,407	*7,407	*6,853	*6,853							*6,714	*6,122	@8.18
10.5m									*6,474	*6,474	*6,094	5,364					*5,973	4,641	@9.75
9m									*6,422	*6,422	*5,967	5,403	*5,617	4,137			*5,548	3,862	@10.89
7.5m							*7,343	*7,343	*6,610	*6,610	*6,038	5,346	*5,581	4,138			*5,097	3,389	@11.72
6m							*8,020	*8,020	*6,997	6,936	*6,245	5,220	*5,660	4,074	4,893	3,241	4,677	3,086	@12.32
4.5m																			
3m																			
1.5m																			
0m																			
-1.5m	*3,260	*3,260	*6,299	*6,299	*10,686	7,555	*8,476	5,598	6,855	4,394	5,542	3,575	*4,589	2,996			*4,135	2,856	@12.47
-3m	*4,940	*4,940	*7,643	*7,643	*9,787	7,482	*7,881	5,532	*6,413	4,346	*5,175	3,558					*3,812	3,039	@11.94
-4.5m																			
-6m																			

DX340 MH

Unit : kg

	3m		4.5m		6m		7.5m		9m		10.5m		12m		13.5m		Maximum Reach Position		
	Front	Side	Front	Side	Front	Side	Front	Side	Front	Side	Front	Side	Front	Side	Front	Side	Front	Side	Reach (m)
15m																			
13.5m																			
12m																			
10.5m																			
9m																			
7.5m																			
6m																			
4.5m																			
3m																			
1.5m																			
0m																			
-1.5m																			
-3m	*5,189	*5,189	*7,783	*7,783	*11,247	9,757	*9,145	7,217	*7,542	5,685	*6,263	4,656	*5,124	3,919			*3,826	3,408	@13.46
-4.5m																			
-6m																			

DX420 MH

Unit : kg

	3m		4.5m		6m		7.5m		9m		10.5m		12m		13.5m		15m		Maximum Reach Position		
	Front	Side	Front	Side	Front	Side	Front	Side	Front	Side	Front	Side	Front	Side	Front	Side	Front	Side	Front	Side	Reach (m)
16.5m																					
15m																					
13.5m																					
12m																					
10.5m																					
9m																					
7.5m																					
6m																					
4.5m																					
3m																					
1.5m																					
0m																					
-1.5m																					
-3m	*4,251	*4,251	*6,267	*6,267	*10,255	*10,255	*10,677	8,349	*8,915	6,583	*7,511	5,389	*6,346	4,530	*5,278	3,885					

DX520 MH

Unit : kg

	6m		7.5m		9m		10.5m		12m		13.5m		15m		16.5m		Maximum Reach Position				
	Front	Side	Front	Side	Front	Side	Front	Side	Front	Side	Front	Side	Front	Side	Front	Side	Front	Side	Reach (m)		
18m																					
16.5m																					
15m																					
13.5m																					
12m																					
10.5m																					
9m																					
7.5m																					
6m																					
4.5m																					
3m																					
1.5m																					
0m																					
-1.5m																					
-3m	*9,151	*9,151	*13,949	11,359	*11,659	8,922	*9,873	7,295	*8,431	6,132	*7,179	5,259	*5,939	4,594			*5,114	4,315			@15.8
-4.5m	*10,577	*10,577	*12,658	11,327	*10,715	8,878	*9,100	7,257	*7,713	6,10											

STANDARD AND OPTIONAL EQUIPMENT

Standard Equipment

Front and counterweight parts

- Straight boom and gooseneck arm
- Arm cylinder
- Hydraulic piping for arm, attachment and rotating functions
- Additional counterweight

Hydraulic system

- Boom and arm flow regeneration
- Boom and arm holding valves
- Swing anti-rebound valves
- One-touch power boost
- Piping for special attachment
 - Attachment open/close
 - Rotating

Cabin & Interior

- Viscous cab mounts
- All weather sound suppressed type cab
- Air conditioner & Heater
- 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
- 7" LCD color monitor panel
- E/G RPM control dial
- AM/FM radio
- Remote radio ON/OFF switch
- 12V spare powers socket
- Serial communication port for laptop PC interface
- Joystick lever with 3 switches
- Sun visor
- Sun roof

Safety

- Large handrails and step
- Convex metal anti-slip plates
- Seat belt
- Hydraulic safety lock lever
- Safety glass
- Hammer for emergency escape
- Right and left rear view mirrors
- Travel alarm
- Battery protector cover
- Battery cut off switch
- Lock valve

Others

- Double element air cleaner
- Water separator
- Fuel filter
- Dust screen for radiator/oil cooler
- Engine overheat prevention system
- Engine restart prevention system
- Self-diagnostic system
- Alternator (24V, 50 amps)
- Electric horn
- Halogen working lights (frame mounted 1, boom mounted 2)
- Hydraulic track adjuster for crawler machine
- Greased and sealed track link for crawler machine
- Twin tire for wheel machine
- Hydraulic oil tank air breather filter

Optional Equipment

Front parts and hydraulic system

- Drain piping for attachment

Cabin & Interior

- Cabin elevating system
- Cabin riser with hydraulic tilting system
- Cabin riser with manual tilting system
- OPG(Operator protective guard) on cabin
- Air suspension seat
- MP3/CD player
- Cassette player
- Rain shield
- High mount seat
- Rear Camera

Safety

- ROPS cabin
- Overload warning device
- Cabin Top/Front guard(ISO 10262, FOGS standard)
- Travel & swing alarm
- Rotation beacon

Others

- 700 mm / 800 mm / 900 mm shoe for crawler machine
- Solid tire for wheel machine
- Lower wiper
- Fuel heater
- 80A alternator
- Fuel filler pump
- Additional working lights
 - 4-fornt / 2-rear on cabin
 - 2-front on cabin
 - 1 on counterweight
- Additional count weight



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