

BRING BACK THE SUBSTANTIVE RETURN

DX360LCA-7M and DX360LC-7M

To Reap the Most of What You've Sown

## Take On The New Shape Of A Success. Professional Partners For Both Machine Owner And Operator

To get more back what you have invested. DX360LCA-7M and DX360LC-7M represent a new generation of Doosan excavator, with application-based functionality and all-round capability. Newly released DX360LCA-7M and DX360LC-7M, completion of awaited series ready to be shown.

Top performer of all spheres. DX360LCA-7M and DX360LC-7M deliver extensive line of performance with optimally prepared features, to be an efficient support where it counts. Solid structure holding up the dynamic character line, both can be suitable for any rough action. Outstanding productivity, touching and intuitive cabin features along with efficient Doosan services. DX360LCA-7M and DX360LC-7M, make light work of even the toughest challenges in construction site.

Choose between our double feature, either will be an excellent choice. DX360LCA-7M and DX360LC-7M, finally right answers for investment that live up to your expectations.

Doosan will be the lifetime reliable partner to let your business get the most out of what you have invested

#### **EXTENSIVE LINE OF PERFORMANCE**

DX360LCA-7M and DX360LC-7M guarantee the best productivity at all job sites. Powered by a reliable Doosan engine, which delivers unparalleled power, while improved hydraulic system get the most out of the engine power. Superior workload along with lifting capacities and traction force, all combined for the overwhelming performance.

#### WITH A LONG-TERM EFFICIENCY

DX360LCA-7M and DX360LC-7M bring smart and innovative solutions which serve to increase long term profit. A standard auto-idle feature and relief cutoff, optionally available SPC system automatically controls engine RPM and hydraulic system to serve best fuel efficiency.

#### **CARRIED BY A SOLID STRUCTURE**

DX360LCA-7M and DX360LC-7M are both featured by reinforced heavy-duty arm and boom with fortified undercarriage to withstand high-impact materials. Take your choice between standard undercover and heavy duty undercover. Both designed using reliable element and formed in optimal structural integrity. Ensuring long life and high uptime even in extreme job sites.



2

WE ARE BACK
WITH NEW FEATURES

All the nice features of previous model bodily succeeded, even nicer things to come.

#### **HEAVY DUTY UNDERCARRIAGE**

Heavy duty X- shaped undercarriage with integrated track spring and idler. Offered with durable box section track frame. The sprocket structure and tooth have been strengthened to prevent debris and increase durability.

#### **ADDITIONAL LED WORKING LAMP (OPTIONAL)**

New additional working lamp contributes to enhanced safety. Optionally available LED lamp enhances visibility through improved illumination.

#### SIDE AND REAR VIEW CAMERA

Optional side and rear-view camera keep watch in ways beyond operator's sight. Additional LED lighting system attached on each side for the clear identification.

#### **INCREASED CONTROLLABILITY**

Joystick and switches integrated in control stand for precise operation. All switches grouped together and ergonomically positioned to the right.

#### **OIL WASHED PRE-CLEANER (OPTIONAL)**

Oil washed-type pre-cleaner provides better filtering in dusty environments. Increase maintenance interval resulting in more uptime.

## DOOSANCONNECT® TELEMATICS SERVICE (OPTIONAL)

Offering 'preventive maintenance service' based on machine operating data. Providing an expert level consultation to dealers. Functioning as fleet management tool for the customers.



HEATING AND COOLING SEAT (OPTIONAL, DX360LC-7M)

STRENGTHENED BOOM AND ARM

and end boss have been strengthened.

Reinforced castings and forged steel pivot points. Reinforced heavy-duty arm and boom with new optional

boom floating system. To better protect the base of the

arm, reinforced bars have been added and the arm center

The optional, air-suspended, climatized driver's

suspension seat provides pleasant seating conditions







#### DOOSAN ENGINE (DX12) - DX360LCA-7M

The DX12 is a whole new mechanical engine built on Doosan's continuously evolving engine technology. Greater engine outputs of 238kW and impressive torque enables to precisely deliver the power you need. Our many years of experience in engine design and production have resulted in both efficient and powerful engine. Delivering greater engine output through various system improvements.



#### **DOOSAN ENGINE (DL08) - DX360LC-7M**

"Common Rail" DOOSAN DL08 engine shows a superior performance with excellent fuel efficiency. Outputs of 213kW, it delivers exceptional power and high torque at low revs. Highly effective exhaust after-treatment system reduce emissions without interrupting productivity. Combined with the new EPOS™ electronic control system, the engine contributes for optimum power and fuel saving.



#### X- CHASSIS UNDERCARRIAGE

X- chassis undercarriage enables increased ground clearance and improved maneuvering ability. Sloped surface design optimized to shed debris and maximize uptime.



#### **INTEGRATED TRACK SPRING AND IDLER**

The track spring and idler have been joined directly for even greater durability and improved maintenance convenience.

## CUTTING EQUIPMENT ISSUES IN HALF

Tested and Reliable, Free of Equipment Problems
Trusty Partner for Lifetime Working

DX360LCA-7M and DX360LC-7M cut off the source of probable troubles by consummate quality. The fortified front and robust track are responsible for all demands. Computer assisted design technique applied to remote possibilities in hydraulic system and frame structures.

DX360LCA-7M and DX360LC-7M are trusty partner with outstanding reliability proven by undergoing strenuous tests. Every component is engineered for uptime and extensively tested to validate its performance. Enhanced durability achieved through applying highly robust materials to structures of overall frames. The lasting technology, with structural design through analysis enable Doosan's equipment to last under the harshest conditions.

























#### 1. SMALL DETAILS ADD THE FEELING OF REFINEMENT

Heating and ventilation, Air conditioning system upgraded for pleasant environment. USB charger and sunglass case is also equipped for additional comfort. Rear sun visor is also equipped for UV protection.

#### 2. SPACIOUS CABIN COMFORT

Refined interior with enhanced legroom and extendable storage space guarantees a serene ride to you. A more orderly interior Equipped with high-class designed upholstery and thoroughly changed comfort accessories. This ensures operator to have a clear and uncluttered workplace at all times.

#### 3. HEATING AND COOLING SEAT (OPTIONAL)

The optional, air-suspended, climatized driver's suspension seat provides pleasant seating conditions and a high level of comfort. Heating and cooling temperature range segmented in three stage to meet various customer needs.

#### 4. ERGONOMICALLY DESIGNED WORK PEDAL

Ergonomically designed Work pedals placed at both ends. Pedal angle adjusted to relieve the pressure on ankle and joints, Reducing fatigue and to lessen the load of operator

#### **5. ADDITIONAL WORKING LED LAMP**

New additional working lamp contributes to enhanced safety through improved illumination.

#### 6. REAR VIEW CAMERA (OPTIONAL)

Optional rear-view camera increases safety by giving visibility beyond operator's sight. Additional LED lighting system attached on each side for the clear identification.

#### 7. AVM (AROUND VIEW MONITOR) (OPTIONAL)

The images can be viewed on a monitor in the interior of the cab. The operator can directly view the area around equipment, when changing implements. Also can have a perfect view of the front structure.

#### 8. SIMPLE OPERATION

Precise control of the equipment increases versatility, safety and facilitates tricky operations requiring great precision. Leveling operations and the movement of lifted load made easier and safer. Joystick and Switches integrated in control stand for precise operation.



## **REGULAR CHECK** BY SIMPLIFIED MAINTENANCE

## A Short Cut to Long-Term Gain, **Cutting Cost and Extending Uptime**

Easy to operate and simple to repair. Carrying out regular check and maintaining equipment is essential in order to sustain maximum performance and productivity. DX360LCA-7M and DX360LC-7M are always poised for action with short maintenance operations and increased service interval of many components.

Centralized grease inlets are designed for simple routine maintenance. Extensive service network and expert assistance are also readily available, Doosan CONNECT provides you the operational machine data in an hourly cycle and broad range of service to get the most productivity out of your equipment.











## 4

3. AIR CLEANER

Air cleaner of large capacity removes 99% of airborne particles, reducing the risk of engine contamination.



1. CONVENIENT FUSE BOX

and convenient access.

Glass fiber filter technology filtering out up to 99.5 % of impurities, increasing oil change interval.

The fuse box is located in the storage compartment

behind the seat, providing an organized environment

#### 4. WATER SEPARATOR

Highly efficient water separator in fuel to prevent engine damage by removing moisture. Reducing the risk of external engine contamination and lengthen the engine's lifespan.



Rotor type dry pre-cleaner attached as a standard option.

### 6. CENTRALIZED GREASE INLETS FOR EASY MAINTENANCE

The boom & arm grease inlets are grouped for easy access. Remote grease points make it easier to lubricate hard-to-reach pins on the lift arm and articulation system.



# 6

## 7. ETP (ELECTRIC TRANSFER PUMP) (OPTIONAL) Use this switch to easily refill fuel for your machine

Use this switch to easily refill fuel for your machine after its inspection or repair.



#### 8. DOOSAN CONNECT (OPTIONAL)

Allowing various parameters to be checked during maintenance procedure, such as pump pressure and engine rotation speed. Parameters can be stored and printed for subsequent analysis.



## TECHNICAL SPECIFICATION (DX360LC-7M)

#### **ENGINE**

#### Model

Doosan DL08

2 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 iii.

#### Number of cylinders

#### Nominal flywheel power

213 KW (286 HP) @ 1,900rpm (SAE J1995, gross) 209 KW (280 HP) @ 1,900rpm (SAE J1349, net)

#### Max torque

1,275 N.m @ 1,500 rpm

#### Piston displacement

7,640 cc (466 cu.in)

#### Bore & stroke

108 mm x 139 mm (4.2" x 5.5")

#### Starter

24 V / 6 kW

#### **Batteries**

2 X 12 V / 150 Ah

#### Air cleaner

Double element with auto dust evacuation.

#### **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 shockfree operation and extend piston life.

Cylinders	Quantity	Bore x Rod diameter x stroke			
Boom	2	150 x 100 x 1,450 mm			
Arm	1	170 x 120 x 1,805 mm			
Bucket	1	150 x 100 x 1,300 mm			

#### **ARM DIGGING FORCE**

Arm	Length (mm)	Weight (kg)	Digging Force (Nom./ Press.Up, ton)
STD.	3,200	1,285	[SAE] 17.6 / 18.6, [ISO] 17.9 / 19.0, [KN] 176 / 186
SHORT	2,600	1,170	[SAE] 21.6 / 22.8, [ISO] 22.1 / 23.4, [KN] 217 / 229
LONG	3,950	1,496	[SAE] 14.9 / 15.8, [ISO] 15.1 / 16.0, [KN] 148 / 157
HD.	3,200	1,365	[SAE] 17.6 / 18.6, [ISO] 17.9 / 19.0, [KN] 176 / 186

#### **HYDRAULIC SYSTEM**

The heart of the system is the EPOS<sup>™</sup> (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
- 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 350 l/min

#### Pilot pump

Gear pump - max flow: 24.12 l/min

#### Maximum system pressure

Boom/arm/Bucket: Normal mode: 350 kgf/cm<sup>2</sup> Power mode: 370 kgf/cm<sup>2</sup> Travel: 350 kgf/cm<sup>2</sup> Swing: 286 kgf/cm<sup>2</sup>

#### **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 9.3 rpm

#### **BUCKET DIGGING FORCE**

Ducket Type	Capacity (m³)	DIGGING FORCE (NOM/PRESS UP, TON)					
Bucket Type	SAE						
G.P. 1.25 / *1.28 / 1.49 / 1.61 / 1.83		[SAE] 21.7 / 22.9 [ISO] 24.5 / 25					
H CLASS 1.44 / 1.66 / 1.81 / 2.03 / **2.03 / 2.32		[SAE] 22.3 / 23.6 [ISO] 24.7 / 26.1					
S CLASS	***1.71 / 1.71 / 1.92 / 2.22	   [SAE] 21.7 / 22.9 [ISO] 24.7 / 26.1					
X CLASS	1.56 / 1.71	[SAE] 21./ / 22.9 [ISU] 24./ / 20.1					

<sup>\*:</sup> Rock Bucket \*\*: H+ Class \*\*\*: S+ Class

#### WEIGHT 6,500 mm(21'5") HD Boom, 3,200 mm (10'6") HD Arm, 1.81 m<sup>3</sup> (2.37 yd<sup>3</sup>) H Class Bucket

Shoe Type	Shoe width	Operating weight	Ground pressure (kgf/cm²)
TG	600 mm (2')	37,700 kg (83,114 lb)	0.73 kgf/cm <sup>2</sup>
DG	600 mm (2')	38,300 kg (83,437 lb)	0.74 kgf/cm <sup>2</sup>
TG	700 mm (2' 4")	38,100 kg (83,996 lb)	0.63 kgf/cm <sup>2</sup>
TG	800 mm (2' 6")	38,500 kg (84,878 lb)	0.56 kgf/cm <sup>2</sup>
TG	850 mm (2' 8")	38,700 kg (85,319 lb)	0.52 kgf/cm <sup>2</sup>
TG	900 mm (3')	38,900 kg (85,760 lb)	0.50 kgf/cm <sup>2</sup>

#### **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 (standard shoes)

Lower rollers: 9 Shoes: 48

Total length of track: 4,960 mm (16' 3")

#### **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 counterrotation on demand.

#### Travel speed (fast/slow)

5.5 / 3.4 km/h (3.4 / 2.1 mph)

#### Maximum traction force

18.7 / 30.7 ton

#### Maximum grade

35 (70%)

#### **ENVIRONMENT**

Noise levels comply with environmental regulations (dynamic values).

#### Sound level guarantee

110 DB (A) (2000/14/EC)

#### Cab sound level

74 DB (A) (ISO 6396)

#### **REFILL CAPACITIES**

#### Fuel tank

600 L (158.5 US gal)

#### Cooling system (Radiator capacity)

65.6 L (17.3 US gal)

#### Engine oil

31 L (8.1 US gal)

#### Swing drive

8 L (2.11 US gal)

#### Final drive

(each =Travel Device = travel motor + travel reduction gear)

2 X 7 L (2 X 1.85 US gal)

#### Hydraulic tank

380 L (100.3 US gal)

#### **BUCKET**

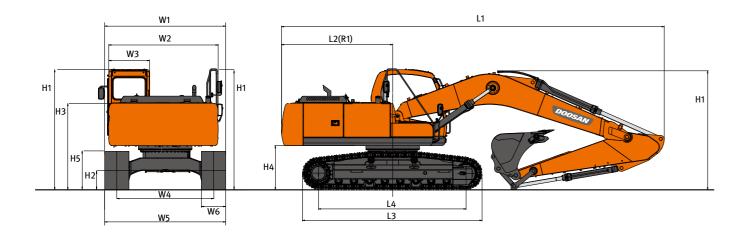
Bucket Type	Capacity (m³)	Bucket Width (mm)		Weight (kg)		6.2 MONO Boom		
Ducker Type	SAE/PCSA	W/cutter	W/O Cutter	Treignt (tg)	2.6 Arm	3.2 Arm	3.95 Arm	2.6 A
	1.25	1,278	1,228	1,249	А	A	А	А
	*1.28	-	1,382	1,427	А	А	А	A
GP	1.49	1,460	1,410	1,344	А	А	В	А
	1.61	1,550	1,500	1,392	А	В	С	А
	1.83	1,718	1,688	1,522	В	С	D	А
	1.44	1,272	1,238	1,389	А	A	В	A
	1.66	1,428	1,394	1,489	Α	В	С	A
H Class	1.81	1,534	1,500	1,588	В	С	D	A
II Class	2.03	1,684	1,650	1,684	С	D	D	В
	**2.03	1,684	1,650	1,820	С	D	-	В
	2.32	1,892	1,858	1,817	D	D	-	С
	1.56	-	1,352	1,893	Α	С	D	A
	***1.71	-	1,452	2,104	В	С	-	В
S Class	1.71	-	1,452	1,973	В	С	D	A
	1.92	-	1,602	2,094	С	D	-	В
	2.22	-	1,809	2,309	D	-	-	D
V Class	1.56	1,370	1,352	2,050	В	С	D	A
X Class	1.71	1,470	1,452	2,136	В	D	-	В

<sup>\*:</sup> Rock Bucket \*\*: H+ Class \*\*\*: S+ Class

Based on ISO 10567 and SAE J296, arm length without quick change clamp A: Suitable for materials with density of 2,100kg/m³ (3,500 lb/yd) or less B: Suitable for materials with density of 1,800kg/m<sup>3</sup> (3,000 lb/yd) or less

C: Suitable for materials with density of 1,500kg/m³ (2,500 lb/yd) or less D: Suitable for materials with density of 1,200kg/m³ (2,000 lb/yd) or less

## **DIMENSIONS** (DX360LC-7M)

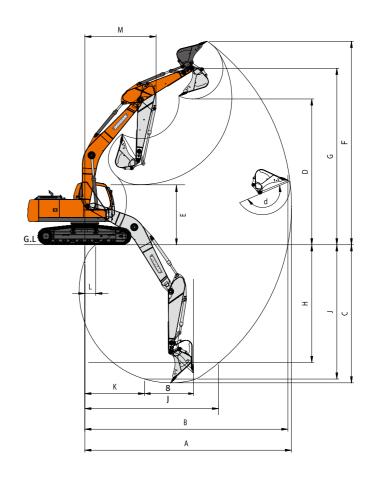


#### **DIMENSIONS**

Model					DX360LC-7M				
		Dimension			STD	OPT1	OPT2	OPT3	
		Boom		mm	6,500 HD	6,500 HD	6,500	6,200	
		Arm		mm	mm 3,200 HD 2,600 3,950				
		Bucket (PCSA)		m³	m³ 1.81 R2H 2.03 R2H 1.44 R2H 2.0				
	Undercarriage (Track+Grouser)			mm	LC 600 TG	LC 600 TG	LC 600 TG	LC 600 TG	
	L1	Overall	Length	mm	11,315	11,405	11,343	11,105	
			Boom	mm	3,255	3,495	3,315	3,605	
_	H1	Overall Height	Hose	mm	3,420	3,640	3,565	3,705	
Overall			Cabin	mm	3,100	3,100	3,100	3,100	
Ó	W1	Overall Width (SHIPPING)		mm	3,280	3,280	3,280	3,280	
	R1	Rear Swir	mm	3,530	3,530	3,530	3,530		
	H2	Ground C	mm	*475	*475	*475	*475		
	W2	House Width	Frame only	mm	2,990	2,990	2,990	2,990	
γþα	W Z		w/Protector	mm	3,103	3,103	3,103	3,103	
Swing Body	W3	Cabin Width		mm	1,010	1,010	1,010	1,010	
Swi	Н3	Height Over Cover		mm	2,240	2,240	2,240	2,240	
	H4	Counterweigh	nt Clearance*	mm	*1,160	*1,160	*1,160	*1,160	
	H5	Track Height*		mm	*970	*970	*970	*970	
	L3	Track Length		mm	*4,960	*4,960	*4,960	*4,960	
iage	L4	Tumbler	Distance	mm	4,040	4,040	4,040	4,040	
Undercarriage	W4	Track	Gauge	mm	2,680	2,680	2,680	2,680	
Inde	W5	Undercarriage Width	STD	mm	3,280	3,280	3,280	3,280	
_	W6	Shoe Width		mm	600	600	600	600	
		Grouse	Height	mm	36	36	36	36	
CAB	-	Cabin	Height	mm	853	853	853	853	

#### \*Grouser 미포함

## WORKING RANGES (DX360LC-7M)



#### **WORKING RANGE**

BOOM LENGTH	Н	mm		6,200		
ARM TYPE		mm	2,600	(Std.) 3,200	3,950	2,600
BUCKE	T TYPE (SAE / PCSA)	m³	2.03 H	(Std.) 1.81 H	1.44 H	2.03 H
A MAX. DIG	GGING REACH	mm	10,540	11,120	11,930	10,235
B MAX. DIG	GGING REACH (GROUND)	mm	10,325	10,920	11,740	10,020
C MAX. DIG	GGING DEPTH	mm	6,885	7,485	8,290	6,670
D MAX. DUI	MPING HEIGHT	mm	8,605	7,220	7,635	6,640
E MIN. DUM	MIN. DUMPING HEIGHT		3,380	2,755	2,000	3,105
F MAX. DIG	GGING HEIGHT	mm	9,910	10,215	10,815	9,585
G MAX. BUG	CKET PIN HEIGHT	mm	8,605	8,875	9,335	8,295
H MAX. VER	RTICAL WALL DEPTH	mm	3,715	4,020	6,830	3,525
I MAX. RAI	DIUS VERTICAL	mm	8,760	9,265	9,885	8,530
J MAX. DIG	GGING DEPTH(8'LEVEL)	mm	6,650	7,295	8,156	6,430
K MIN. RAD	DIUS 8' LINE	mm	3,260	3,310	3,380	3,045
L MIN. DIG	GING REACH	mm	2,245	795	-290	1,825
M MIN. SWI	ING RADIUS	mm	4,445	4,455	4,515	4,325
D. BUCKET A	ANGLE (DEG)	0	178.4	178.4	178.4	178.4

36

## STANDARD & OPTION (DX360LC-7M)

#### **STANDARD EQUIPMENT**

#### Boom & Arm

- 6.5 m Boom (Heavy duty)
- 3.2 m Arm (Heavy duty)

#### Hydraulic system

- Boom and arm flow regeneration
- Boom and arm holding valves(MCV)
- Swing anti-rebound valves
- Spare ports (Control valve)
- One-touch power boost

#### Cabin & Interior

- 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
- Cup holder
- Hot & Cool box
- LCD color monitor panel
- E/G RPM control dial
- AM/FM radio + MP3 (USB)
- Remote radio ON/OFF switch
- 12V,24V power socket
- Serial communication port for laptop PC interface
- Joystick lever with 3 switches

#### 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 rearview mirrors
- Travel alarm

#### Others

- Double element air cleaner
- Additional water separator
- Dry type pre cleaner
- Fuel filter
- Dust screen for radiator/oil cooler
- Engine overheat prevention system
- Engine restart prevention system
- Self-diagnostic system
- 60A Alternator (24V, 50 amps)
- Electric horn
- Halogen working lights (frame mounted 1, boom mounted 2)
- Hydraulic track adjuster
- Track guards
- Greased and sealed track link
- Hydraulic oil tank air breather filter
- Long & Fixed track
- Counterweight (7.1 Ton)
- ROPS Cabin

#### **OPTIONAL EQUIPMENT**

Some of optional equipments may be standard in some markets. Some of this optional equipment is not available in some markets. You must check with the local DOOSAN dealer to know about the availability or to release the adaptation following the needs of the applications

#### Boom & Arm

- 6.2 m Boom
- 6.5 m Boom
- 6.5 m Boom (Heavy duty)
- 2.6 m Arm
- 3.2 m Arm
- 3.95 m Arm
- 3.2 m Arm (Heavy duty)

#### Safety

- Boom and arm hose rupture protection valve
- Overload warning device
- FOGS (ISO 10262, FOGS standard)
- Travel & swing alarm
- Rotating beacon
- Rear lamp
- LED lights
- Side & Rear view camera
- Around View Monitor

#### Cabin & Interior

- Air suspension seat
- Rain Shield
- High seat Mount
- Breaker pedal
- Cabin front guard (Upper and lower guard)
- Steel roof cover
- Additional mirror
- DAB Audio

#### Others

- Piping option
- Piping for Crusher
- Piping for Breaker
- Piping for Quick clamp
- Shoe (mm)
- $600\,\mathrm{DG}$  /  $700\,\mathrm{TG}$  /  $800\,\mathrm{TG}$  /  $850\,\mathrm{TG}$  /  $900\,\mathrm{TG}$  /  $600\,\mathrm{DG}$
- Lower wiper
- 60A/80A alternator
- Fuel filler pump
- Working Lights
- 4-front / 2-rear on cabin
- 2-front on cabin
- 1 on counterweight
- Hydraulic Oil
- Cold weather (VG32)
- Normal (VG46)
- Tropical weather (VG68)
- Breaker filter
- Water separator with heater

• Heavy duty & Fixed track

- Heavy duty under cover
- Short & Fixed track

38