

DL420A

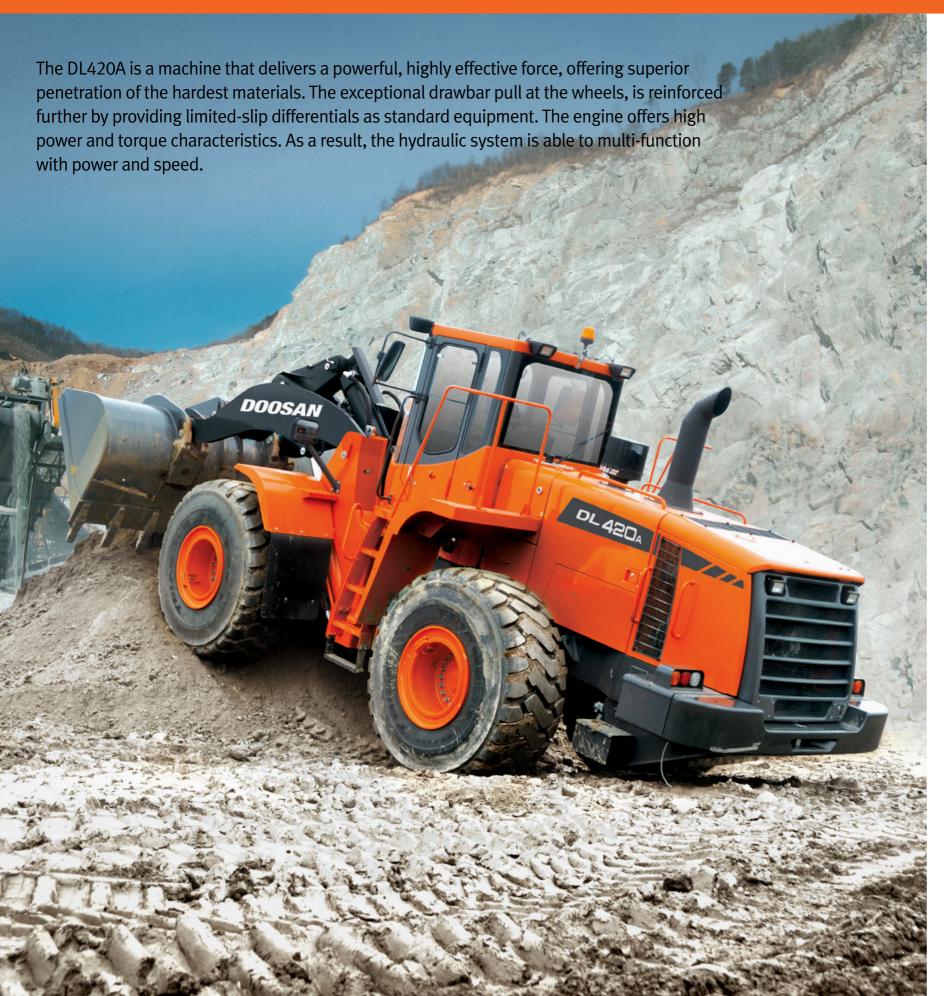






PERFORMANCE & PRODUCTIVITY





TURBO CHARGED-AIR COOLED INTERCOOLER ENGINE

Doosan product gives high performance through in-house engine

Our many years of experience in engine design and production have resulted in the emergence of a highly efficient and very powerful engine that boasts the highest power in its class. Doosan in-house mechanical engine has advantage of easy maintenance and low maintenance cost.

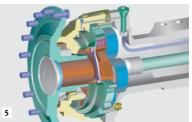
FULL AUTO TRANSMISSION

The electronic powershift transmission is particularly smooth and gear ratios perfectly spaced to give optimal speed. That gives comfort at the same time that it delivers excellent traction in every working conditions. Built-in electronic controls enhance productivity and durability.

The transmission has three modes of operation:

- · Manual
- · Automatic (automatic shift for all gears)
- · Semi Automatic (automatic with a "kick down" for first gear)









1 AXLE

Improved internal oil flow greatly reduced the temperature difference between the hub and the differential, as well as prevents premature disc wear due to overheating of the internal hub compone nts.

LIMITED SLIP ZF DIFFERENTIAL

The standard equipment limited slip differential allows easy driving through soft and swampy grounds.

HYDRAULIC POWER STEERING

Works with a flow amplifier and priority valve. And the emergency steering system is equipped as an option to secure a safety against a malfunction of steering system during traveling.

HIGH LIFT (OPTIONAL)

As High Lift is equipped besides Standard Lift, customers have further options.

INCREASED AXLE DURABILITY

The brake discs have been repositioned to the rear part of the reduction gear where the rotation speed is lower. As a result, the discs are exposed to lower rpm's and heat generation is reduced and the life span of the discs is greatly extended. Automatic disc clearance regulator has been intergrated into the design and the disc clearance is maintained at the optimum level at all times as the discs wear out. These prevents any lag in brake response. Another convenient feature is that brake disc wear can easily be measured without disassembling the hub.

The brake piping has been redesigned into the axle housing and is protected from damage from external shock as the machine drives over rough terrain.

QUICK COUPLER PIPING (OPTIONAL)

Versatility improvement

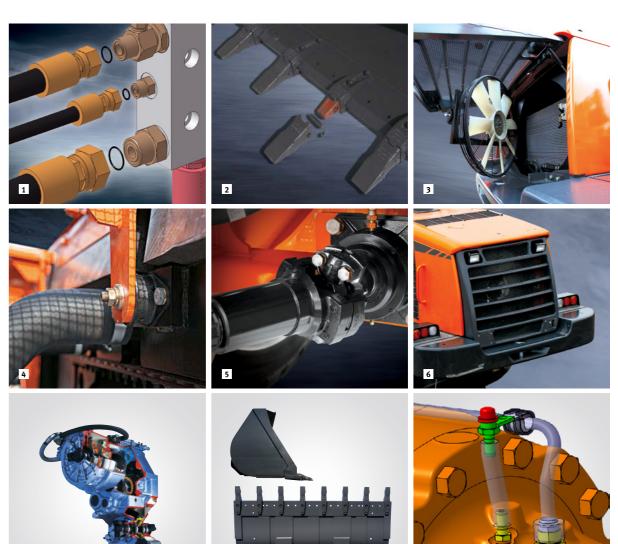
- Add piping, valve and switch for quick coupler
- Customer can use a quick coupler easily



DL420A

Every morning, when the operators commence work, they know that things will go smoothly- because Doosan has taken care of it. The product is soild. Operators know that they have significant reserves at hand and that they won't have to push the machine to its limit. The Doosan DL420A wheel loader is designed and built to last. For Doosan, 'reliable' means availability, accessibility and simplicity.





ORFS-ALL PORTS (EVEN IN PILOT LINE AND LOW PRESSURE LINE)

2-PIECE TYPE TOOTH (PIN-ON+BOLT-ON ADAPTER)

DURABLE FAN MOTOR

More durable fan motor

- Design margin and motor durability is increased
- Motor case material changes from aluminum to cast iron

■ RUBBER-MOUNTING (FOR RADIATOR: LATERAL 2EA / VERTICAL 2EA)

I PROPELLER SHAFT

A protective cover has been installed to protect the oil seal from dust, foreign objects and premature wear.

■ RADIATOR GRILL (STEEL STRUCTURE)

■ LARGE CAPACITY TRANSMISSION OIL COOLER

The large capacity transmission oil cooler ensures durable and stable operation of transmission.

B REINFORCED BUCKET

The lower and side panels of the bucket have been reinforced with additional plates (standard)

- Reinforcement : At both sides - 1 point each At lower panel - 3 point

PARTICLE REMOTE TYPE AXLE BREATHER

Axle durability improvement

- Add remote type axle breather for rear axle like a front axle
- Increase the length of front axle breather for prevention of pollution from particle matter

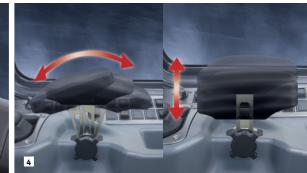


















11 THE STEERING COLUMN

The steering column features both tilting and telescopic functions.

☑ VARIOUS CONTROL LEVER (OPTIONAL)

The joystick installed in compliance with various needs and preferences of operators ensures more convenient work.

I CENTRAL MONITOR PANEL

The compact central monitor panel is ergonomically designed and allows the operator to monitor the status and warning lights at a single glance.

4 ARM REST

The tilting and telescopic wrist rest allows the operator to work more comfortably.

SWITCH PANEL

The ergonomically laid out switch panel in line with the natural movements of the body allows for very convenient operation. The spare switch cut-outs allows easy installation of additional electric accessories.

SUNVISOR & ROOM MIRROR

■ REAR VIEW CARMERA (OPTIONAL)

AIR-SUSPENSION SEAT (OPTIONAL)

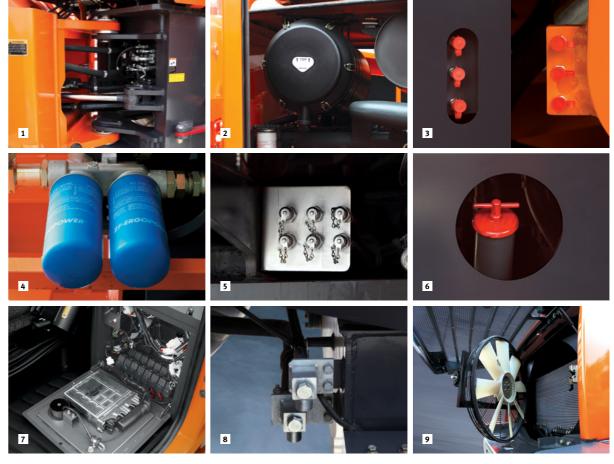
Now available Air-suspension seats provide more comfort and support for the operator.











CENTRAL JOINTS

A good accessibility at the articulation joint is essential for an easy maintenance.

AIR-CLEANER FILTER

The high capacity air cleaner eliminates harmful particles from the air and extends the life of the engine and replacement intervals.

I REMOTE GREASING LUBRICATION PORTS

The front pins can be lubricated from the outside of the machine without crawling under the machine or in awkward positions through the lubrication ports.

TRANSMISSION FILTER

The transmission filters are within easy reach and like the rest of the machine's service components, can be checked from ground level.

■ CENTRAL REMOTE HYDRAULIC CHECK PORT

The centralized remote hydraulic check ports allow main, steering, brake charge, pilot, unloading and transmission clutch pressures to be checked at a convenient.

CONVENIENT TRANSMISSION OIL FILLING

The oil filler pipe is located near the articulation joint for easy access.

TRANSMISSION DIAGNOSIS

The transmission can be diagnosed using a laptop computer to interface with the diagnostic system.

B REMOTE ENGINE OIL & COOLANT DRAIN

Remote drain valves have been installed in an easily accessible location for convenient draining of fluids. (Coolant - upper, Engine oil - lower)

SWING OUT COOLING FAN

Our fan assembly has been designed with the one touch swing out mechanism and cleaning the radiator core is very

SIGHT GAUGES

Well-located, yet easily visible sight gauges for the hydraulic oil and radiator coolant allow easy daily checks while reducing the risk of contaminants entering the systems.

TELEMATICS SERVICE (OPTIONAL)

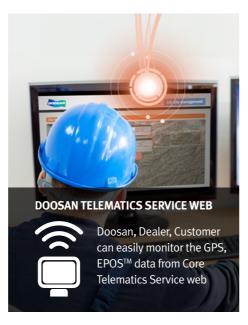
GLOBAL PARTS NETWORK

TELECOMMUNICATIONS

Data flow from machine to web

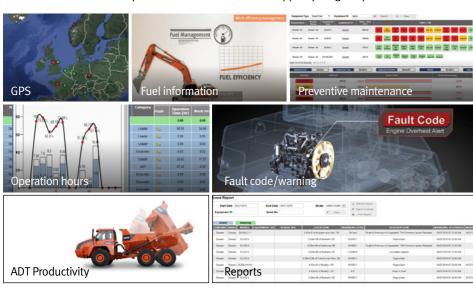






FUNCTIONS

Doosan Telematics Service provides various functions to support your great performance



TELEMATICS SERVICE BENEFITS

Doosan and dealer support customers to improve work efficiency with timely and responsive services

Improve work efficiency

- · Timely and preventive service
- Improve operator's skills by comparing work pattern
- · Manage fleet more effectively

Dealer

Better service for customers

- · Provide better quality of service
- · Maintain machine value
- · Better understanding of market needs

Doosan

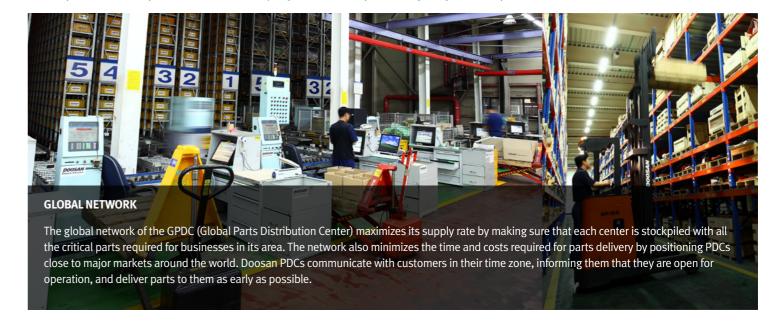
Responsive to customer's voice

- · Utilize quality-related field data
- · Apply customer's usage profile to deveping new

	FUNCTION	EXCAVATOR	WHEEL LOADER	ADT		
GPS	· Location · Geo-fence	All models	All models	All models		
E-mail reports	· Daily, Weekly, Monthly report	All models	All models	All models		
Operation hours	· Total operation hours	All models	All models	All models		
Operation hours	· Operation hours by mode	Tier 4 only	Tier 4 only			
Maintenance parts	· Preventive maintenance by item	All models	Tier 4 only	All models		
	replacement cycle	All models	riei 4 only	All models		
Fault code/ Warning	· Fault code	All models	Tier 4 only	All models		
	· Machine Warnings on Gauge Panel	All models	riei 4 only	All Hodels		
Fuel information	· Fuel level	All models	Tion 6 anh	All models		
Fuel information	· Fuel consumption	Tier 4 only	Tier 4 only	All models		
Duran sanasitu	· Dump tonnage	N/A	NI/A	All models		
Dump capacity	· Count of Work Cycle	N/A	N/A	All models		

GLOBAL PDC (PARTS DISTRIBUTION CENTER) NETWORK

Doosan provides fast and precise worldwide delivery of genuine Doosan parts through its global PDC (parts distribution center) network.



The Global Parts **Distribution Center Network**

PDCs had been set up as shown below, including Mother PDC in Ansan, Korea. The seven other PDCs include one in China (Yantai), one in the USA (Chicago), one in Brazil (Campinas), two in Europe (Germany and the UK), one in the Middle East (Dubai), and one in Asia (Singapore).



PDC BENEFIT



Distribution Cost Reduction



Maximum Parts supply rate



parts delivery

Shortest distance/time



Real-time service support

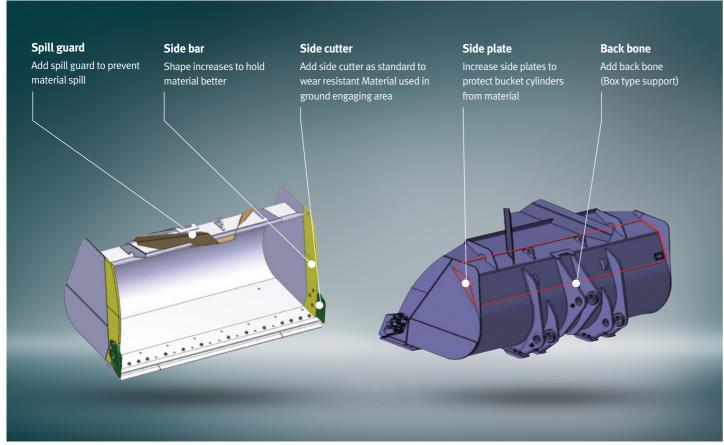


Minimum downtime

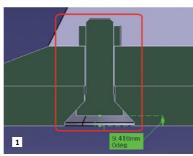




Material handler bucket, is the most commonly used bucket in the construction equipment market and is designed mainly for use in heavy construction but also used in low density mining and quarry application.

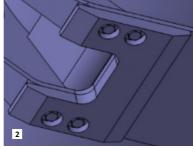






PLOW BOLT FOR CHANGEABLE PARTS

New plow bolt will be applied on tooth adaptor and cutting edge



CHANGEABLE BOTTOM PLATESOperator can change wear plate easily









BUCKETS	General Purpose	Light Material	V-Shape Rock	Material Handler	
	Mounting type	Capacity	Width		
GENERAL PURPOSE	Direct mount	3.7 / 3.9 / 4.0 / 4.1/ 4.2 m ³	3,040 / 3,	200 / 3,270 / 3,354 mm	
GENERAL PURPOSE	Quick coupling	3.9 m ³	3,297 mm		
LIGHT MATERIAL	Direct mount	4.3 / 4.5 / 7.0 m ³	3,200 / 3,	300 / 3,354 mm	
LIGHT MATERIAL	Quick coupling	7.0 m ³	3,300 mm	ı	
V-SHAPE ROCK	Direct mount	3.5 m ³	3,230 mm	ı	
V-SHAPE ROCK	Quick coupling	3.9 m ³	3,297 mm	l	
MATERIAL HANDLER	Direct mount	4.0 / 4.2 / 4.5 / 4.7m ³	3,270 / 3,	270 / 3,354 / 3,354 mm	



Quick coupling

CONNECTING

QUICK COUPLER

Mo	del	Mounting type





Sorting type

DLQC42



Log Grapple

Weight

760 kg



MATERIAL HANDLING

	Model	Length	
PALLET FORK	DLPF42	60" / 72"	
	Model	Туре	
LOG GRAPPLE	DLLG42	General purpose Tropical type	

TECHNICAL SPECIFICATIONS

ENGINE

The High performance Doosan DE12TIS 6 cylinders, direct injection, turbo charged, air—air intercooler engine offers low fuel consumption and low exhaust emissions, which are well below the requirements of the Phase II legislation.

-GROSS SAE J1995

Model

DOOSAN DE12TIS

Number of cylinders

6

Rated power

210 kW (281 HP) @ 2,100 rpm (SAE J1995, gross)

Max torque

130 kgf.m (1,275 N.m) @ 1,200 rpm

Displacement

11,051 cc (674 cu.in)

Bore dia & stroke

Ø 123 x 155 mm

3 stages Air cleaner including a very efficent pre-cleaner, main and safety elements.

Hydraulically driven puller type fan with possibility of adjustment.

Battery

System voltage : 24 V Quantity : 12 V x 2 Capacity(AMP) : 150 Ah

Starter power

24 V / 6.6 kW

Alternator output

24 V / 60 A

AXLES

The front and rear axles with planetary hub reductions are built on the base of very reputed components.

Fitted as standard, the front and rear limited slip differentials, ensure the traction is optimal in all circumstances.

Type

Fully floating planetary-type

Limited slip Differential (front and rear)

30%

Oscillation angle

+/- 12°

Brake

Dual circuit multi-plate wet discs.

Hydraulic actuation with pump and accumulator.

The sintered metal brake discs extended discs service intervals: increased three times

A spring applied and hydraulically released parking brake is mounted on the transmission shaft.

TRANSMISSION

"Full Power Shift" transmission. It can be used in manual or automatic modes.

This transmission is based on components having excellent worldwide reputations. It is equipped with a modulation system allowing soft gear shifting and inversion of travel direction. Safety devices also protect the transmission of bad operations.

The gear and direction shifting is operated by a single lever to the left of the steering wheel. A travel direction control is also mounted on the hydraulic joystick.

With a special electronic device, the transmission can be tested and adjusted easilyt for optimum performance and efficiently.

The transmission can be de-clutched by the operation of brake pedal to increase the power available to the hydraulic pumps.

A safety device prevents the starting of the engine when not in neutral.

Torque converter

Type: 4 Speed, full auto power-shift, countershaft, engine mounted w/ flexible plate

Stall ratio: 3.089

Travel speed, kph

Forward: 7.7 - 12.7 - 27 - 39 (1 - 2 - 3 - 4) Reverse: 7.7 - 12.7 - 27 (1 - 2 - 3)

HYDRAULIC SYSTEM

Main control valve of double acting 2-spool is controlled by standard single lever.

Automatic boom kick out and bucket return to dig. Is standard.

All of hydraulic lines are equipped with special seals (ORFS)

Max flow main

240 *l*/min (63.4 gal/min)

Working Pressure

200 bars

Pressure of the pilot circuit

28 bars

Filtration capacity on the return line

10 microns

Loading cycles time

Lifting speed (loaded): 6 seconds Dumping speed (loaded): 1.3 seconds Lowering speed (empty): 4.2 seconds

OPERATOR' CAB

The modular cab allows excellent visibility in all directions. The optimal ventilation is obtained by numerous ventilation outlets. Touch buttons control the air re-circulation air conditioning and heating systems. The air of the cab is filtered.

All necessary information for the operator are centralized in front of him.

The main functions are actuated via switches located on a console at the right of the operator.

Generous storage places are well located. The cab, mounted on viscous element and equiped with an air suspended seat, offers a better comfort for the operator.

Access door: 1

Emergency exits: 2

The cab conforms ROPS ISO 3471 and FOPS: ISO 3449

FUPS: 15U 344

STEERING

The steering system is a load sensing type with a flow amplifier and a priority valve.

Steering angle

40°

Oil flow

194 ℓ/min (51.2 gal/min)

Working pressure

185 bars

Steering cylinders (2)

bore x dia x stroke: 100 x 50 x 450 mm

Emergency steering system with hydraulic pump driven by electric

motor. (Optional)

LIFTING SYSTEM

The lifting system with two cylinders and Z configuration is designed for the toughest jobs. The breakout force (20 ton with a 3.9m³ bucket) is very important and the bucket movements are fast.

The bucket angles are well kept in good positions on all the range of bucket movement.

Lifting cylinders (2)

bore x stroke: 180 x 928 mm

Bucket cylinders (1)

bore x stroke : 200 x 600 mm

MAINTENANCE

Maintenance is easy due to excellent access.

The transmission is electronically controlled. An error coding system allows easy diagnosis of the systems and proper intervention.

Engine (oil) - 25 ℓ (6.6 US gal)

Radiator (cooling liquid) - 50 ℓ (13.2 US gal)

Fuel - 348 ℓ (91.9 US gal) **Hydraulic oil** - 265 ℓ (67.6 US gal)

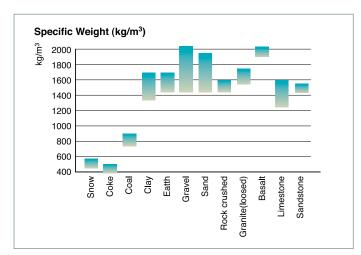
Gear box and torque converter - 54 ℓ (14.3 US gal)

Front axle - 45 ℓ (11.9 US gal) Rear axle - 42 ℓ (11.1 US gal)

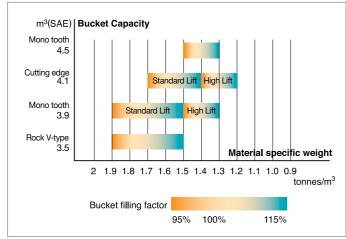
OPERATIONAL DATA

Bucket type				General purpose						Rock	Light material			
Configuration	Code	e Unit	Teeth (std.)	Teeth	Teeth	Teeth	Bolt-on edge	Bolt-on edge	Bolt-on edge	Teeth & segments	Teeth	Teeth	Bolt-on edge	Teeth
Capacity heaped ISO/ SAE		m3	3.9	3.7	3.9	4.0	3.9	4.1	4.2	4.1	3.5	4.3	4.5	4.5
Tooth type			Mono tooth	Adapter tooth	Adapter tooth	Adapter tooth	-	-	-	Adapter tooth	Adapter tooth	Adapter tooth	-	Mono tooth
Bucket width	В	mm	3,200	3,040	3,200	3,270	3,040	3,200	3,270	3,200	3,231	3,354	3,200	3,354
Breakout force		kN	197	198	197	197	197	196	196	195	196	183	181	170
Static tipping load (straight)		kg	17,900	18,030	17,840	17,820	17,830	17,670	17,635	17,635	17,600	17,620	17,420	17,125
Static tipping load (at full turn		kg	15,135	15,250	15,490	15,070	15,075	14,935	14,905	14,905	14,875	14,895	14,720	14,460
Dump height (at 45°) ¹⁾ (at fully raised)	Н	mm	2,985	2,960	2,960	2,960	3,085	3,085	3,085	2,960	2,985	2,985	3,025	2,855
Dump reach (at 45°) ¹⁾ (at fully raised)	I	mm	1,395	1,425	1,425	1,425	1,285	1,285	1,285	1,425	1,395	1,480	1,350	1,535
Digging depth		mm	105	105	105	105	105	105	105	105	105	105	105	105
Height at bucket pivot point	J	mm	4,295	4,295	4,295	4,295	4,295	4,295	4,295	4,295	4,295	4,295	4,295	4,295
Max. tilt angle at carry position	K	degree	47	47	47	47	47	47	47	47	47	47	47	47
Max. tilt angle at fully raised	М	degree	55	55	55	55	55	55	55	55	55	55	55	55
Max. tilt angle on ground		degree	43	43	43	43	43	43	43	43	43	43	43	43
External radius at tire side	0	mm	6,380	6,380	6,380	6,380	6,380	6,380	6,380	6,380	6,380	6,380	6,380	6,380
External radius at bucket edge	Q	mm	6,875	6,970	6,860	6,970	6,955	6,845	6,955	6,930	6,875	7,055	7,035	7,035
Wheel base	Е	mm	3,500	3,500	3,500	3,500	3,500	3,500	3,500	3,500	3,500	3,500	3,500	3,500
Width at tires	N	mm	2,975	2,975	2,975	2,975	2,975	2,975	2,975	2,975	2,975	2,975	2,975	2,975
Tread	F	mm	2,300	2,300	2,300	2,300	2,300	2,300	2,300	2,300	2,300	2,300	2,300	2,300
Ground clearance	G	mm	465	465	465	465	465	465	465	465	465	465	465	465
Overall length	Α	mm	8,850	8,890	8,890	8,890	8,700	8,700	8,700	8,890	8,850	8,975	8,790	9,030
Overall height	С	mm	-	3,535	3,535	3,535	3,535	3,535	3,535	-	-	-	-	-
Operating weight		kg	21,915	21,785	21,955	21,980	21,900	22,060	22,095	22,140	22,210	22,040	22,150	22,170

¹⁾ Measured to the tip of the bucket teeth.



The specific weight of material largely depends on moisture rate, compacting value, percentage of various components etc... This chart is given only for information.



The Bucket filling factor depends also of the nature of material, the working conditions and the operator ability.

STANDARD AND OPTIONAL EQUIPMENT

STANDARD EQUIPMENT

ngine

- DOOSAN DE012TIS Diesel engine
- Air cleaner Double element cartridge + Cyclone filteration in prior stage
- Fuel filter Main fuel filter and fuel pre-filter with water separator
- External drains for engine oil and coolant changes
- Hydraulic radiator fan
- Fuel filler pump

Hydraulic System

- Hydraulic control valve 2 spool
- Hydraulic main pump Vane
- Hydraulic control levers
- Boom kick out Automatic
- Bucket return to dig Automatic

Cabin and Interior

- 12V power socket
- Double filtered air cab
- Air conditioner and heater with recirculation function
- Cup holder
- Tinted glasses
- Floor mat
- AM/FM Radio + MP3(USB)
- Windshield washer front and rear
- Windshield wipers front and rear
- Cigarette lighter
- Multiple storage compartments
- Sun visor
- Glass antenna
- Seat Mechnical suspention
- ROPS cabin ISO 3471
- FOPS cabin ISO 3449
- Adjustable steering column
- Rear view mirrors Interior 2
- Rear view mirrors Exterior 2

Eletrical and lighting

- Battery cut-off switch
- Working light Front 2 + Rear 4
- \bullet Driving light Low and high beams
- Tail indicators Stop, reversing lightsReversing alarm
- Electric horn
- Alternator 24V, 60A
- Self-diagnostic system

Linkage

Z-bar loader linkage

Drivetrain and Brake system

- Gear shift switch Manual, Auto $1 \leftrightarrow 4$, Auto $2 \leftrightarrow 4$
- Kickdown and travelling direction selection
- Starting safety system
- Dual brake circuits with accumulator
- Dual service brake pedals
- 6 I I I I I
- Secondary brake system
- Parking brake Electrical, hydraulic
- Differential Limited slip

Steering system

Load sensing steering system

External equipment

Fender

OPTIONAL EQUIPMENT

Some of these optional equipments may be standard in some markets. Some of these optional equipments cannot be available on 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 application.

Hydraulic System

- Hydraulic Oil VG32 Cold Weather
- Hydraulic Oil VG46 Normal Weather
- Hydraulic Oil VG68 Tropical Weather
- Hydraulic control valve 3 spool
- Load isolation system (LIS)
- Hydraulic control levers Mono
- Hydraulic control levers FNR
- Hydraulic control levers Finger tip
- Quick coupler piping and switch

Cabin and Interior

- Seat Air suspention
- Camera Rear view
- Heat wire Mirror

Eletrical and lighting

- License lamp
- Beacon Rotating
- Alternator 24V, 80AEMI Filter

Linkage

• Z-bar high lift loader linkage

Drivetrain and Brake system

- High effort brake pedal
- Axle oil cooler

Steering system

Emergency steering pump

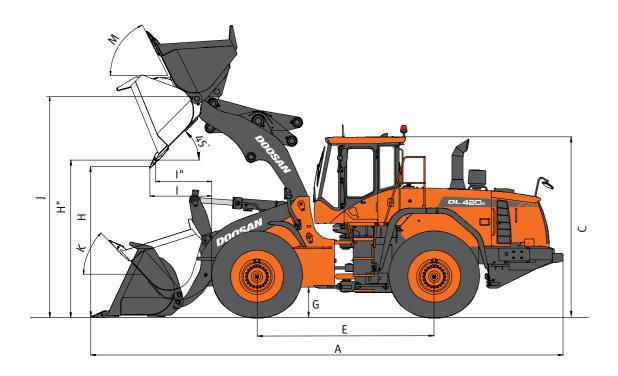
External equipment

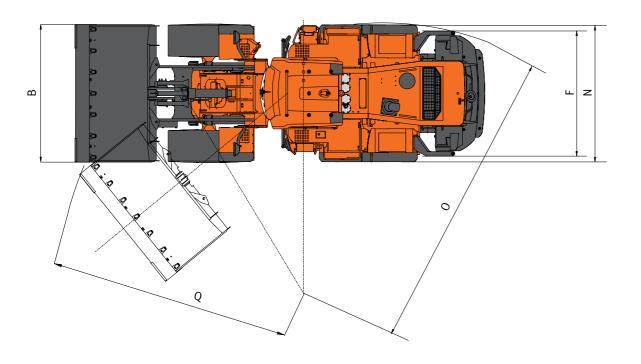
- Fender Full fender + rubber protector
- Fender Rubber protector
- Wheel chocks
- Anti-noise Kit
- Counterweight 0.3t
- Tool KitMud guard
- Maa Saara

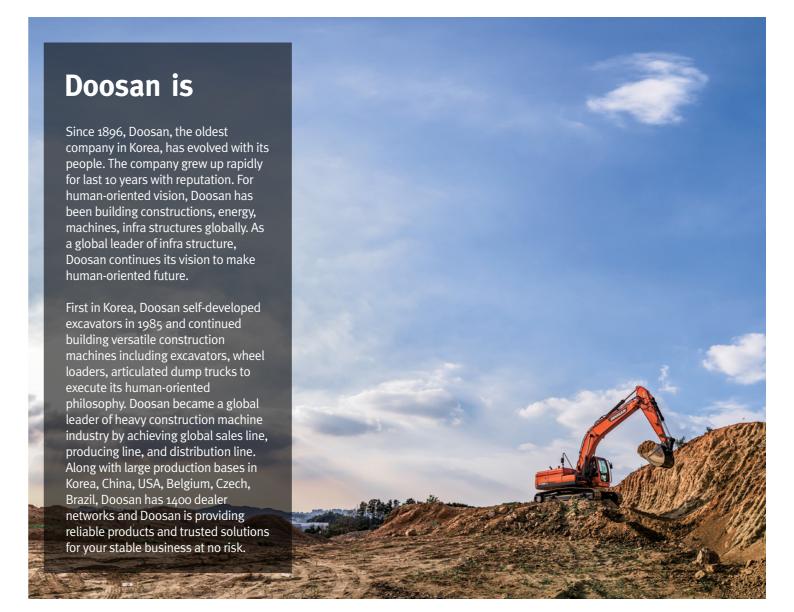
^{*} Standard specification and options may vary by country.

 $[\]hbox{\ensuremath{^{\star\star}} Specification is subject to change without prior notice for quality enhancement.}$

DIMENSIONS









27F, Doosan Tower, 275, Jangchungdan-ro, Jung-gu, Seoul, Korea(04563) Tel: 82 2 3398 8114

www.doosaninfracore.com/ce/

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