# **DEVELON**

Wheel Loaders

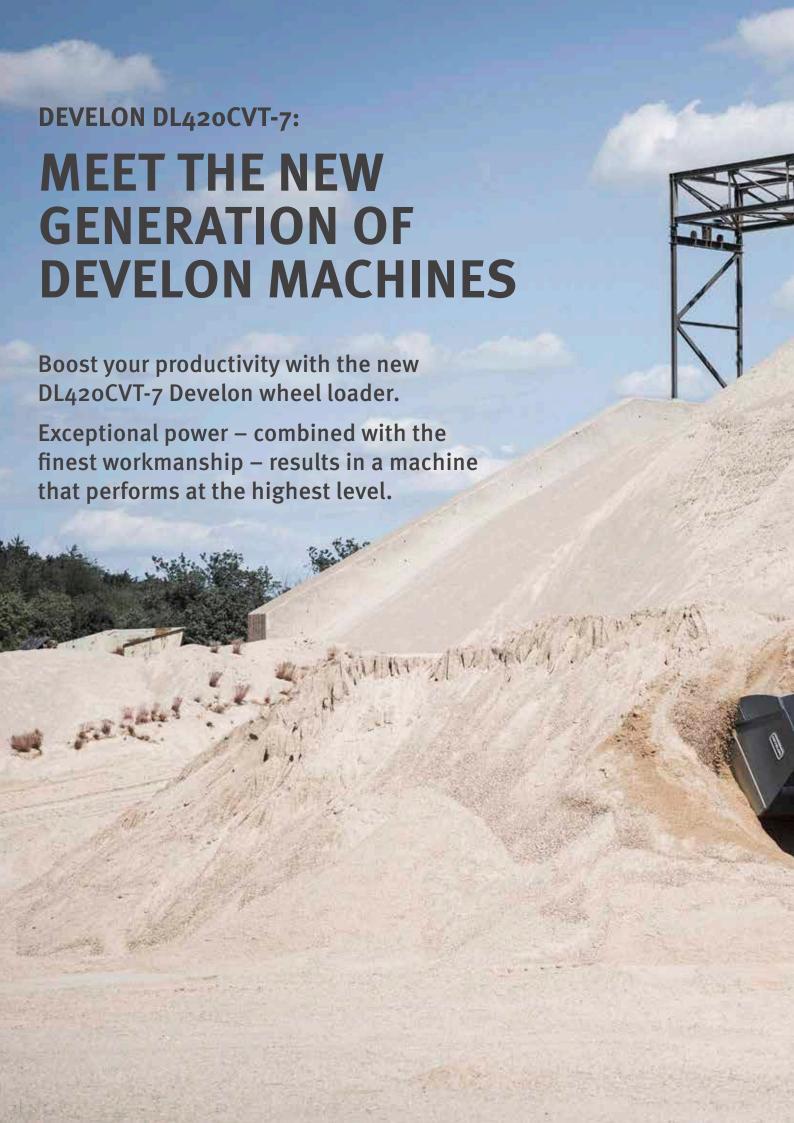
# DL420CVT-7



Maximum power 326 hp

Operating weight 23.4 t

Bucket capacity 4.3 m<sup>3</sup>









# The DL42oCVT-7 enhances your output from every angle

Impressive breakout force and high traction make penetration easy and allow you to tackle the hardest materials.

- Powerful hydraulic system makes work quick and efficient.
- Scania DC9 engine provides the power you need while meeting Stage V environmental regulations. The combination of these features gives Develon wheel loaders excellent penetration power, ensuring optimum bucket load in each cycle.





In your profession, you need equipment you can depend on. At Develon, we put durability and reliability at the core of our machines' development. Our materials and structures undergo stringent testing for strength and resilience under the most extreme conditions.

# DESIGNED FOR LONG-TERM, ALL-ROUND, HEAVY-DUTY PERFORMANCE

# **POWERTRAIN**

The complete driving range, forward and in reverse, is controlled by continuously variable transmission (CVT). Low engine speeds ensure high efficiency and the highest driving comfort irrespective of the traction speed. The power splitting continuously variable technology facilitates moving off softly and hydraulically. Furthermore, with the CVT a fuel saving of up to 15% can be achieved. Traction force is also maximized. Together, these qualities enable high working speed in all conditions.

### **AXLE**

New stronger axle allows you to carry more.

- Hydraulic differential lock on the front engages automatically to ensure maximum tractive effort with a lock of 100% and driving ease. Muddy and slippery areas can be navigated by the operator with the manual foot control. These features also reduce the risk of skidding and prevent excessive tire wear.
- The brake discs in the planetary reduction gears are reinforced, ensuring long hours of operation and easy maintenance access.
- Axle oil cooler is available for the most demanding conditions. Fully independent cooling circuit with filters for each axle.

# **ROBUST AND RELIABLE**

We pay the closest attention to the design and manufacture of structural components. Finite Element Analysis is used to ensure an extended lifetime for main structures such as the chassis, joints and lift arm. Then, after modelling, they are subjected to intensive laboratory and field testing in extreme conditions. Ongoing statistical analysis is used to continually increase reliability.

# **DURABLE STEEL PARTS**

Rear parts – such as the radiator grille, engine hood and fenders – are made of durable steel. They're also designed for easy repair, reducing the need to replace them if they are damaged.

## **EXHAUST**

The inner exhaust pipe sucks air out of the engine compartment through an outer pipe — this 'chimney' effect provides constant air circulation and prevents deposits of flammable material on hot parts.

# **FAST CYCLE TIMES**

The entire Develon wheel loader lineup is carefully engineered for a perfect balance of speed and controllability – so you benefit from optimal production. Variable displacement piston pumps in all models allow Develon wheel loaders to power through difficult jobs with minimal fuel consumption and multifunction operation of the lift arm and bucket.

#### **FULL FENDERS**

To keep them clean and avoid mud splashing on the windows or accidents on slippery steps, Develon's wheel loaders are standard equipped with full fenders and mud guards. Enlarged front fenders protect front windows and ensure maximum operator visibility.

# **DRIVING ASSISTANCE**

- Automatic transmission with smooth shifting
- Automatic transmission digging mode
- Automatic Hydraulic Differential Lock (HDL)
- Automatic Load Isolation System (LIS)
- Automatic kick-out function on lift arm
- Automatic return to dig position
- Automatic reversing fan
- Automatic greasing system







# OPERATING IN HIGH COMFORT

# **ADJUSTABLE STEERING COLUMN**

Enhance your driving comfort, and work without fatigue, by easily adjusting the steering column's tilt and telescopic movements to fit your preferred position.

# **DEVELON SMART TOUCH**

- An easy to read and use 8" touch screen integrates all functions in one place.
- All information about the machine, settings, rear-view camera, weighing system, A/C control, multimedia.
- Help function operators can quickly and easily understand all functions without referring to the operator's manual.

# **ELECTRONIC JOYSTICK**

Reduce your cycle times with fully integrated electronic joystick in right armrest. Sensitivity settings and shock prevention are designed to ensure maximum machine controllability and operator comfort. Less movement for repetitive tasks with autoleveling function.

# Return to Dig

Sensors on the lift arm and bucket linkage allow you to change your 'return to dig' setting from inside the cab. The cylinders and cutting edge return to the same position every time, enabling more efficient, consistent work.

# Lift Kickout

Set the maximum lift height for working inside buildings or other areas with height restrictions. Simply pull back on the control joystick to override.

# **ELECTRIC JOYSTICK STEERING**

Keep your concentration and reduce strain with the comfortable joystick steering integrated on the armrest. Drive your machine easily, especially in repetitive tasks and tight spaces. You can customize the sensitivity level – from low to high. For better controllability, steering sensitivity changes with travel speed.

# **LUXURY CHAIR**

Improved high comfortable seat with vertical and horizontal low-frequency suspension, pneumatic lumbar support, heating and 3-point safety belt with alarm icon on gauge panel and in Develon Smart Touch.



The ergonomic controls and the easy-to-view color monitor place the machine firmly in your hands.

# TOTAL CONTROL IN ALL SIMPLICITY

#### **DEVELON SMART KEY**

We bring automotive standards and comfort to construction machinery

- Search function
- Coming/leaving home light function
- Remote door opening
- Keyless engine start

# **DEVELON SMART GUIDANCE SYSTEM**

Boost your performance and reduce fuel consumption based on the system's recommendation. Machine automatically monitors and analyses driving strategy and recommends how to improve settings.

# **SPACIOUS CAB**

Re-designed interior offers much larger, quieter and more comfortable operator environment, which improves safety and productivity and helps the operator work with high concentration. Increased leg room with re-designed accelerator and brake pedal position. Enlarged storage area and cool-box position increase operator comfort. Improved air conditioning system, with optimized air circulation, ensures a pleasant working environment.

#### **VISIBILITY**

Completely re-designed cab improves operator comfort and safety. Enlarged front windshield ensures better front visibility, while larger mirrors extend operator's view on the sides and rear - providing maximum safety for pedestrians and machine and improving productivity at the same time.

# **COMFORTABLE AUTOMATIC LIFT ARM**

Save time and reduce the number of operations with the new bucket leveling function. Automatically return the bucket to dig position from roll back or dump position. Automatic function is also available for lift arm positions.

# **EASY ENTRY AND EXIT**

Grab handles and offset steps with slip-resistant surfaces provide safe & easy access to the cab and easy exit when work is finished. The door opens 180° - and can be locked in the open position - to provide a wide opening for moving in and out of the machine.





# RAISE PROFITS, PRODUCTIVITY & FUEL EFFICIENCY

# STRENGTH AND INTELLIGENCE - A WINNING COMBINATION!

With tremendous lift height and capacity, along with enough torque to bite into the toughest materials, Develon wheel loaders go a step beyond scooping, carrying and loading. It's your ticket to making harder work easier, longer days more enjoyable, and every minute more productive and profitable.

# **BOOST YOUR PRODUCTIVITY**

- Ride control Load Isolation System
- Bucket auto leveling function
- End-stroke cushioning for smooth arm and work tools movements
- Optimized driving program

# **MAXIMUM SAFETY**

- Rear-view camera
- Full hand rails for safe maintenance
- Up to 12 LED working lights available
- Rear-view mirrors with electric adjustment possibility
- 3-point safety belt

# **READY FOR VERSATILITY**

- Improved Develon weighing system
- Attachments fully tailored for application
- Wide selection of tires



# **MAXIMIZE YOUR UPTIME**

- Massive frame
- Automatic lubrication system
- Wide fin radiator and reversible fan
- DEVELON Fleet Management Web fleet management

# **BUSINESS CLASS OPERATOR COMFORT**

The new spacious cab offers an operator-friendly environment with top-class all-round visibility. It centers around a high comfortable seat with 3-point safety belt for maximum operator safety. The joystick is fully integrated in the seat's right armrest. The electrically adjustable rear mirror contributes to maximum operator comfort.



# ALL-IN-ONE FOR BETTER PERFORMANCE

All important functions are easily accessible on the Develon Smart Touch

- Machine settings
- Rear-view camera
- Radio
- HVAC
- Weighing system
- Develon Smart Guidance

# **BETTER FUEL EFFICIENCY**

The DL42oCVT-7 is equipped with a powerful, new engine with low fuel consumption - without requiring an EGR (exhaust gas recirculation) valve.

# CVT – CONTINUOUSLY VARIABLE TRANSMISSION

Hydrostatic and mechanical power split transmission ensures significant fuel consumption savings of up to 15%. Enables carrying high loads at low engine speeds in combination with high dynamics.







# SIMPLE MAINTENANCE WITH MAXIMUM UPTIME

# **COOLING PACKAGE**

Wide pitch fin radiators coupling with reversible fan keep the cooling system performing constantly - minimizing machine downtime and reducing daily maintenance.

The operator can easily set standard intervals for fan reverse from the Develon Smart Touch. Performance is regulated for lower fuel consumption and shorter warm-up periods.

# **AIR INTAKE**

Maintenance-free cyclone air pre-filter separates more than 99% of particles 20 microns in size and larger. Cleaning and cartridge replacement are only needed at long intervals.

In addition to extending the air filter's lifetime, the pre-filter also ensures better combustion and a longer engine lifetime.

# **AUTOMATIC LUBRICATION SYSTEM**

The DL42oCVT-7 is standard equipped with a factory-fitted autolube system, with greasing point at the middle of the pin and bushing for better grease distribution and enhanced lifetime.

# **WE ARE HERE FOR YOU**

Boost your productivity and machine uptime with our genuine Develon parts; Protection+, an extended warranty covering parts, travel and service (check with your local dealer); and a maintenance contract in which your dealer supports you with routine service at regular intervals.

## **FLEET MANAGEMENT**

With DEVELON Fleet Management Web, you can proactively react to machine status, properly plan maintenance, and reduce downtime.

# **SAFE ACCESS**

To facilitate access and mobility on the machine, multiple platforms and hand-rails ensure that the operator always has a firm support to hold on to and 3-point contacts.



# TECHNICAL SPECIFICATIONS

#### **ENGINE**

Designed to deliver superior performance and fuel efficiency, the Scania DC9 diesel engine fully meets the latest Stage V emission regulations. To optimize machine performance, the engine uses high-pressure fuel injectors, air-to-air inter-cooler and electronic engine controls. 4-Cycle Water-Cooled, Variable Geometry Turbocharged, Diesel Oxidation Catalyst (DOC) & Selective Catalytic Reduction (SCR) and Diesel Particulate Filter (DPF), no Exhaust Gas Recirculation (EGR).

# Model

Scania DC9

# No. of cylinders

5

#### Max. power (SAE J1995)

240 kW/326 hp @ 1800 rpm

# Max. torque (SAE J1995)

1846 N·m @ 1200 rpm

#### Displacement

9300 cm<sup>3</sup>

#### Bore × stroke

130 mm × 140 mm

#### **Starter**

24 V / 6 kW

### **Batteries - Alternator**

2 X 12 V - 28 V/100 A

#### Air filter

Centrifugal pre-cleaner Top Spin™ Donaldson® with 2-stage dry filter

#### Cooling

Cooling package with automatic reversing fan to facilitate radiator cleaning. Automatic rotation speed adjustment according to temperature conditions.

#### Radiator

Wide fin radiator — Intercooler/Hydraulic oil cooler/Transmission oil cooler

# **AXLES**

Front & rear axles manufactured by ZF with outboard planetary reduction gears.

Maximum traction power 22.4 t allows operation on slopes of  $27^{\circ}$  (51%).

### **LSD** lock ratio

30% (front & rear)

# **HDL lock ratio**

100% (front)

# Oscillation angle

+/- 12°

# Tire size - standard

26.5R25

#### **TRANSMISSION**

The full power-split CVT (Continuously Variable Transmission) technology combines these characteristics with reduced fuel consumption of up to 15%. The transmission operates at low engine speeds, thus increasing efficiency and driver comfort even more. Continuously variable drive over complete drive range forward and reverse, smooth, hydraulic start due to continuously variable power-split technology and high efficiency through low engine speeds, independent of vehicle speed.

# Туре

CVT (Continuously Variable Transmission)

# Speeds - forward 1 / 2 / 3 / 4

7.2 / 13.6 / 19.7 / 38.3

# Speeds - reverse 1 / 2 / 3

7.2 / 13.6 / 19.7

### **Maximum traction**

22.1 ton

#### Maximum gradeability

27° (51%)

# **HYDRAULIC SYSTEM**

#### Type

Load sensing – closed center hydraulic system

#### Main pump

 $\label{eq:displacement} \textbf{Dual variable displacement axial pistons pumps}$ 

### **Maximum flow**

266 l/min

# Maximum pressure

315 bar

# **EMCV**

Automatic functions for positioning the bucket ready to dig and a function for stopping the lift arm at the desired height.

#### Filtration

In the oil return to the tank, the fiberglass filter has a filtering capability of 10 micron.

#### **LIFT ARM**

Z-kinematics with simple lifting piston system designed for heavy-duty applications. 183 kN breakout force combined with a bucket angle that is maintained throughout the range of movement. Bucket angles are optimized in the travelling position and at ground level. Load Isolation System (LIS) is fitted as standard for improved operator comfort, output and lifetime.

# Load cycle

Lift arm – up	6 s
Lift arm – down	2.7 S
Bucket – dump	2 S

# **HYDRAULIC CYLINDERS**

High-strength steel piston rods and cylinder bodies. Shockabsorbing mechanism fitted in all cylinders for shock-free operation and extended piston life.

Cylinders	Quantity	Bore × rod diameter × stroke (mm				
Lift	2	150 × 95 × 795				
Bucket	1	160 × 100 × 615				

# **CAB**

Safety compliance with Roll Over Protection System (ROPS) and Falling Object Protective Structure (FOPS) requirements. Spacious modular cab with excellent all-round visibility and ample storage space. Good overview of the bucket, tires and loading area thanks to wide windows. Pushbutton controlled air conditioning and heating with air recirculation function. Double cab air filter installed in the cab with extra protection for the operator in dusty or polluted environments. Viscous suspension mount for maximum comfort. Adjustable high-quality heated seat with air suspension, arm rests and height and tilt adjustable steering column. All operating information clearly displayed in front of the operator. Control functions are centralized on a console on the right.

# Safety standards

ROPS ISO 3471:2008 FOPS ISO 3449

#### **Noise emissions**

Operator Sound Pressure Level (ISO 6396)	69 dB
Exterior Sound Power Level (ISO 6395)	106 dB

# **BRAKES**

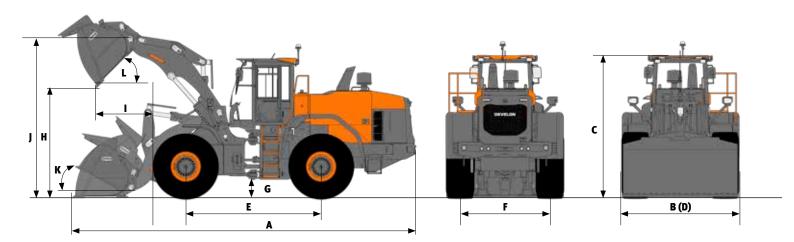
Dual multi-disc circuit with sintered metal discs for extended service life. Braking system activated by a pump and accumulator circuits. Spring-applied, hydraulically released parking brake is mounted on the transmission shaft and accumulator circuits and is electronically activated. Brake type: spring-applied / hydraulically released. Brake pump with variable displacement axial pistons provide 58 l/min. Operator can activate/deactivate the Inching function on the brake pedal from a switch and can adjust the sensor proximity with the same switch. The emergency brakes are composed of a double system continually under pressure by accumulators.

# **FLUID CAPACITIES**

Fuel tank	313 l
DEF (AdBlue®) tank	60 l
Cooling system (radiator)	53 l
Engine oil	36 l
Front axle	42 l
Rear axle	42 l
Hydraulic system	223 l
Hydraulic oil tank	125 l
Transmission oil	66 l



# **PERFORMANCE DATA & DIMENSIONS**

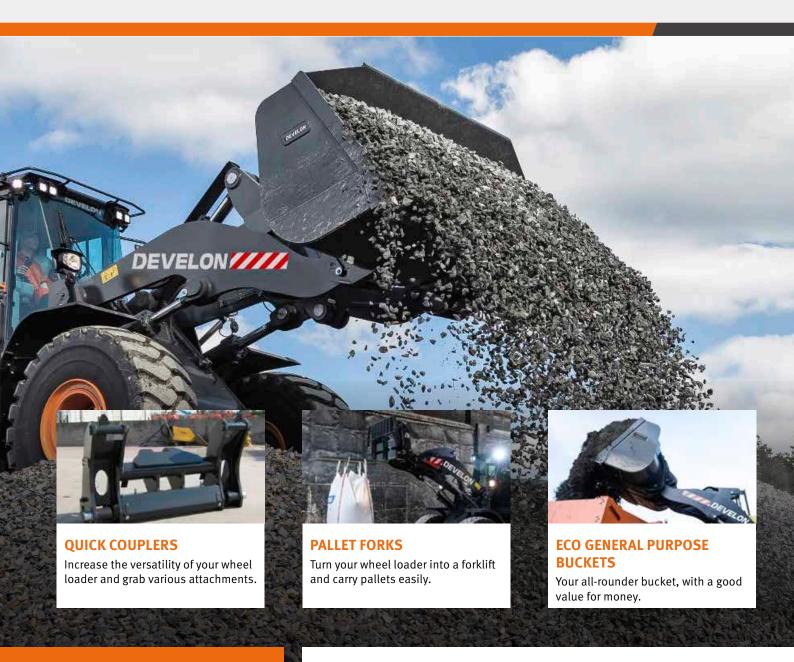


# **DL420CVT-7**

			Performance bucket				Eco bucket General purpose			
Pin-on  Ground engaging tools			General purpose		Material handling					
		Unit	4.5 m³ BOCE	4.4 m³ BOT	4.9 m³ BOCE	4.7 m³ BOT	4.3 m³ BOT	4.5 m³ BOCE	High lift	
	Configuration		1	straight sides	straight sides	convex sides	convex sides	straight sides	straight sides	
	Capacity heaped ISO/SAE	m³	4.5	4.4	4.9	4.7	4.3	4.5	=	
	Capacity at 110% fill factor	m³	4.9	4.8	5.3	5.2	4.8	5.0	=	
В	Bucket width	mm	3000	3000	3000	3000	3200	3200	-5	
	Breakout force	kN	167	173	167	172	183	171	=	
	Static tipping load (straight)	kg	19287	19347	19250	19310	19351	18696	-2838	
	Static tipping load (full turn - 40°)	kg	17273	17334	17235	17295	17071	16493	-2591	
Н	Dump height (at 45° - fully raised)	mm	2911	2719	2911	2719	2835	2990	+483	
I	Dump reach (at 45°- fully raised)	mm	1342	1503	1342	1503	1465	1320	+72	
	Digging depth	mm	145	165	145	165	110	115	+119	
J	Height at bucket pivot point	mm	4265	4265	4265	4265	4265	4265	+480	
	Max. tilt angle in carry position	0	50	50	50	50	48	48	+4	
	Max. tilt angle fully raised	0	63	63	63	63	62	62	+1	
K	Max. tilt angle on ground	0	44	45	44	45	43	43	+1	
	Max. tilt angle at max. reach	0	59	59	59	59	59	59	=	
	Max. dump angle at max. reach	0	72	72	72	72	71	71	-10	
	Max. dump angle on ground	0	64	64	64	64	65	65	-1	
L	Max. dump angle fully raised	0	46	46	46	46	45	45	-1	
	External radius - tire side	mm	6388	6388	6388	6388	6388	6388	=	
	External radius - bucket edge	mm	7028	7146	7028	7146	7065	7000	+212	
Ε	Wheel base	mm	3525	3525	3525	3525	3525	3525	=	
D	Width at tires edge	mm	2982	2982	2982	2982	2982	2982	=	
F	Tread	mm	2300	2300	2300	2300	2300	2300	=	
G	Ground clearance (at 12° osc.)	mm	495	495	495	495	495	495	=	
Α	Overall length	mm	9244	9510	9244	9510	9138	8926	+471	
С	Overall height	mm	3660	3660	3660	3660	3660	3660	=	
	Operating weight	kg	23437	23373	23494	23430	23419	23570	+585	

 $All\ capacities\ according\ ISO\ 7546, with\ straight\ blade\ [measure\ at\ the\ tip\ of\ bucket\ teeth\ or\ cutting\ edge],\ tires\ 26.5\ R25\ (L3),\ base\ EU\ configuration.$ 

# **OPTIONAL ATTACHMENTS**



# PERFORMANCE GENERAL PURPOSE BUCKETS

# **ON-DEMAND**

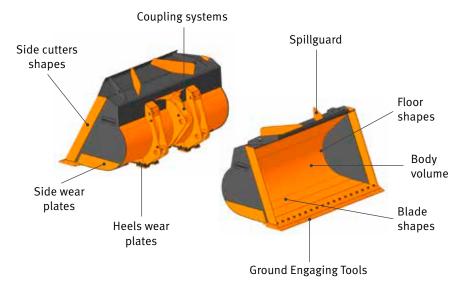
The on-demand, high quality bucket for your Develon wheel loader

# **DRIVING COMFORT**

Driving comfort is increased thanks to the shock absorbers on the stoppers

# **EXCELLENT RESISTANCE**

Excellent resistance to wear: 85% of the structure is made out of Hardox



# **DEVELON SMART LOAD**



# **DEVELON SMART VIEW**

# FOR US, DEVELON, SAFETY IS VERY IMPORTANT

Safety features are designed and tested to meet your needs in the real world, even offering an extra pair of eyes with the optional Around View Monitoring (AVM) and ultrasonic sensors.

Operator confidence is improved, especially when he is working in rough, tight condition with a lot of pedestrians and passing machines.

# **SAFER PLACE AND MORE PRODUCTIVITY**

The optional Develon Smart View system for all the Develon wheel loader is improving operator confidence, especially when he is working in rough, tight condition with a lot of pedestrians and passing machines.

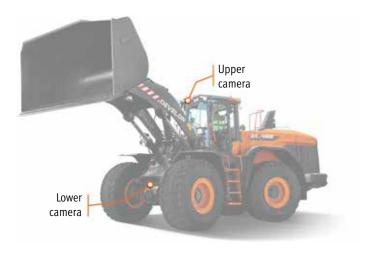
System can be combined also with Develon Transparent bucket, for full overview about machine surrounding.

The ultrasonic sensor monitors the rear area of the wheel loader and automatically warns the operator of dangers by means of a visual symbol on the display and an acoustic signal.





Another advantage of the transparent bucket system is that it can significantly improve work efficiency by providing a forward-view perspective for the driver during loading/unloading or when carrying materials such as aggregates, sand and soil.



# **DEVELON TRANSPARENT BUCKET**

The Develon Transparent Bucket is a fully integrated system that allows a wheel loader operator to see the bucket blind spots on the machine through the in-cab monitor.

Owing to blind spots caused by the buckets on wheel loaders, the area in front of the machine has been considered an area of major concern in terms of safety.

The patented system records images at the front of the wheel loader with two cameras mounted on the top and bottom of the machine and displays the combined images in real time on the monitor in the cab using a curved projection method.

# **BENEFITS**

- Safet
- Significantly increased level of operational safety
- Superior prevention of bodily injuries and accidents
- Work efficiency
- Intuitive and easy to operate
- Greater productivity less tiredness/stress
- Enhanced operator comfort
- More comfortable environment
- $\circ\,$  Increased peace of mind for the operator
- High quality fully integrated system



# **TELEMATICS TERMINAL**

Terminal device is installed and connected to a machine to capture machine data.

# **TELECOMMUNICATION**

Develon provides dual-mode (Mobile, Satellite) communication to maximize communication coverage.

# **DEVELON FLEET MANAGEMENT WEB**

Users can monitor machine status from Develon Fleet Management Web.

# STANDARD AND OPTIONAL EQUIPMENT

◆ Standard ○ Optional

# **Engine**

- Exhaust aftertreatment (DOC + DPF + SCR)
- Auto idle function
- Auto shutdown function
- Variable Geometric Turbocharger (VGT)
- Air pre-cleaner (centrifugal)
- Engine management
- Fan reversible, variable speed, with automatic function
- Wide fin radiator

#### **Powertrain**

- CVT transmission
- Transmission mode managment
- Inching brake pedal
- Axle differential Hydraulic Differential Lock (HDL)
- Axle differential Limitied Slip Differential (LSD)
- Axles oil cooler

# **Hydraulic**

- Load sensing hydraulic system, variable displacement pump
- EMCV (Electric main control valve)
- 3<sup>rd</sup> spool valve
- o MCV

# **Lift Arm**

- Standard lift arm, Z-bar kinematic
- Hydraulic lift arm suspension Load Isolation System (LIS)
- Smooth end position bucket & arm (only with EMCV)
- Position memories
- Automatic bucket position "return to dig"
- O High lift arm, Z-bar kinematic

# **Work tools**

- O DEVELON quick coupler
- O DEVELON bucket
- DEVELON performance bucket

# Cab & operator comfort

- ROPS (ISO 3471:2008)/FOPS (ISO 3449) pressurized cab
- Grammer seat with vertical and horizontal low-frequency suspension, pneumatic lumbar support, heating, 3-point safety belt
- Joystick lever with FNR and thumbwheel roller integrated to the seat's right armrest
- Electric joystick steering on left armrest
- DEVELON Smart Key
- Door remote opening
- DEVELON Smart Touch 8" touch screen, all-in-one
- DEVELON Smart Guidance System
- Rear-view mirrors heated
- DEVELON Fleet Management Web (telematic system)
- 12V socket
- USB socket
- Fingertip control
- O Rear-view mirrors heated, electric adjustment

#### Safety

- Safety belt alarm
- Rear-view camera
- Full handrails and maintenance platforms
- Strobe reversing light
- LED working lights on cab (4× front + 4× rear)
- LED working lights on cab (6× front + 6× rear)

#### Other

- Automatic lubrication system
- 26.5R25 (L3)
- O 26.5R25 (L4)
- 0 26.5R25 (L5)
- O Additional counterweight
- O DEVELON weighing system
- O DEVELON Transparent Bucket
- DEVELON Smart View
- O DEVELON Smart Load

# List of Attachments\*

- O Eco. general purpose bucket, for direct mount
  - 4.3 m<sup>3</sup>, width 3.20 m, with teeth
  - 4.5 m<sup>3</sup>, width 3.20 m, with bolt-on edge
- Performance general purpose bucket, for direct mount, width 2.995 m 4.0 m³, one strip teeth ITR
  - 4.1 m³, bolt-on edge
  - 4.4 m<sup>3</sup>, one strip teeth ITR
  - 4.5 m<sup>3</sup>, bolt-on edge
- O Performance general purpose bucket, for direct mount, width 3.20 m
  - 4.4 m³, one strip teeth ITR 4.5 m³, bolt-on edge
- O Quick coupler, ISO
- O Quick coupler, LARGE
- Control kit for quick coupler
- Pallet forks attachment,
  - 7 t (FEM class 4), 1.5 m, for ISO quick coupler, width 1.5 m
  - 9 t (FEM class 5), 1.5 m, for ISO quick coupler, width 1.5 m  $\,$
  - 9 t (FEM class 5), 1.5 m, for LARGE quick coupler, width 1.5 m
- O Performance general purpose bucket,
  - 4.1 m³, for ISO quick coupler, width 2.995 m, bolt-on edge 4.1 m³, for ISO quick coupler, width 3.20 m, bolt-on edge
- \* Visit our WHEEL LOADER BUCKET CONFIGURATOR to customize your bucket for your application

# Powered by Innovation

**DISCOVER MORE:** DL420CVT-7



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