



DL Wheel Loaders

Features and Benefits





Models	Engine				Dimensions		
	Make	HP, SAE Gross hp @ rpm (kW @ rpm)	Torque ft. lb. @ rpm (Nm @ rpm)	Emission Level	Weight lb. (kg)	Min. Turning Radius ft. in. (mm)	Max. Dump Clearance ft. in. (mm)
DL200	Doosan	143 @ 2,100 (107 @ 2,100)	506 @ 1,400 (686 @ 1,400)	T3	24,912 (11,300)	18'5" (5,610)	9'0" (2,745)
DL200HL	Doosan	143 @ 2,100 (107 @ 2,100)	506 @ 1,400 (686 @ 1,400)	T3	26,323 (11,940)	18'8" (5,690)	10'4" (3,150)
DL200TC	Doosan	143 @ 2,100 (107 @ 2,100)	506 @ 1,400 (686 @ 1,400)	T3	25,574 (11,600)	18'4" (5,595)	8'11" (2,719)
DL220	Doosan	143 @ 2,100 (107 @ 2,100)	506 @ 1,400 (686 @ 1,400)	T3	27,205 (12,340)	19'2" (5,840)	9'4" (2,835)
DL250	Doosan	163 @ 2,100 (121 @ 2,100)	593 @ 1,400 (804 @ 1,400)	T3	30,865 (14,000)	19'9" (6,010)	8'11" (2,730)
DL250HL	Doosan	163 @ 2,100 (121 @ 2,100)	593 @ 1,400 (804 @ 1,400)	T3	32,108 (14,564)	19'9" (6,010)	9'2" (2,794)
DL250TC	Doosan	163 @ 2,100 (121 @ 2,100)	593 @ 1,400 (804 @ 1,400)	T3	32,243 (14,625)	20'8" (6,300)	8'8" (2,633)
DL300	Doosan	217 @ 2,000 (162 @ 2,000)	759 @ 1,300 (1,030 @ 1,300)	T3	38,493 (17,460)	20'11" (6,380)	9'6" (2,890)
DL300HL	Doosan	217 @ 2,000 (162 @ 2,000)	759 @ 1,300 (1,030 @ 1,300)	T3	39,084 (17,728)	22'6" (6,858)	11'4" (3,454)
DL350	Doosan	232 @ 2,000 (172 @ 2,000)	810 @ 1,200 (1,098 @ 1,200)	T3	43,358 (19,667)	21'8" (6,600)	10'0" (3,041)
DL420	Cummins	284 @ 2,000 (209 @ 2,000)	1,070 @ 1,400 (1,451 @ 1,400)	T3	49,383 (22,400)	22'11" (6,980)	10'2" (3,087)
DL450	Cummins	300 @ 1,900 (224 @ 1,900)	1,070 @ 1,400 (1,451 @ 1,400)	T3	56,165 (25,476)	22'6" (6,850)	10'9" (3,290)
DL450HL	Cummins	300 @ 1,900 (224 @ 1,900)	1,070 @ 1,400 (1,451 @ 1,400)	T3	52,779 (23,940)	23'2" (7,061)	11'10" (3,607)
DL500	Cummins	335 @ 1,900 (250 @ 1,900)	1,237 @ 1,400 (1,677 @ 1,400)	T3	66,017 (29,945)	24'2" (7,370)	10'8" (3,250)
DL500HL	Cummins	335 @ 1,900 (250 @ 1,900)	1,237 @ 1,400 (1,677 @ 1,400)	T3	66,359 (30,100)	24'10" (7,569)	12'8" (3,861)

Wheel Loaders



Welcome to the Doosan DL wheel loaders – the world's best in class wheel loaders. Doosan DL wheel loaders offer increased performance, minimal downtime, state-of-the-art comfort, and quick and easy maintenance.

The new DL Series was developed with the concept of providing the best value to the end user. In concrete terms, this translates into:

Increased production due to the common rail engine and the excellent synchronization of the drive train and the hydraulic system.

Improved reliability by using high performance materials, computer-assisted structural design techniques and by intensive and systematic test programs. All of these combine to increase the life of components and reduce operating costs.

Improved comfort with 360 degree visibility and a comfortable working environment means greater productivity.

Reduced maintenance improves uptime and reduces overall operating costs.

Bucket Hinge Pin Height ft. in. (mm)	Lifting Performance				Transportability		
	Bucket Capacity yd ³ (m ³)	Breakout Force lbf. (kgf)	Tipping Capacity Straight, lbf. (kgf)	Tipping Capacity Full Turn, lb. (kg)	Height ft. in. (mm)	Length ft. in. (mm)	Width ft. in. (mm)
12'7" (3,845)	2.6 (2.0)	23,149 (10,500)	19,555 (8,870)	16,667 (7,560)	10'8" (3,255)	23'11" (7,285)	8'4" (2,550)
13'8" (4,166)	2.6 (2.0)	22,046 (10,000)	16,795 (7,618)	14,661 (6,650)	10'8" (3,255)	24'10" (7,569)	8'4" (2,550)
12'6" (3,813)	2.6 (2.0)	23,149 (10,500)	18,913 (8,579)	16,272 (7,381)	10'8" (3,240)	23'9" (7,240)	8'4" (2,550)
12'8" (3,870)	3.0 (2.3)	22,928 (10,400)	22,220 (10,079)	19,282 (8,746)	10'8" (3,240)	24'1" (7,333)	8'4" (2,550)
12'9" (3,886)	3.3 (2.6)	29,101 (13,200)	26,896 (12,200)	22,487 (10,200)	10'10" (3,290)	25'3" (7,694)	9'0" (2,740)
12'8" (3,861)	3.3 (2.6)	26,896 (12,200)	25,342 (11,495)	21,114 (9,577)	10'8" (3,240)	26' (7,925)	9'0" (2,740)
13'0" (3,962)	3.4 (2.6)	22,708 (10,300)	20,765 (9,419)	17,073 (7,744)	10'8" (3,260)	26'4" (8,032)	9'0" (2,740)
13'1" (4,000)	4.2 (3.2)	35,715 (16,200)	31,967 (14,500)	26,676 (12,100)	11'3" (3,438)	26'5" (8,045)	9'7" (2,920)
14'10" (4,521)	3.8 (2.9)	35,969 (16,315)	24,698 (11,203)	21,171 (9,603)	11'3" (3,438)	27'11" (8,509)	9'7" (2,920)
13'8" (4,160)	4.8 (3.7)	37,699 (17,100)	33,810 (15,336)	29,855 (13,542)	11'3" (3,426)	27'2" (8,275)	9'10" (3,000)
14'3" (4,350)	5.5 (4.2)	47,210 (21,414)	39,432 (17,886)	34,240 (15,531)	11'7" (3,522)	28'7" (8,700)	10'9" (3,270)
14'10" (4,520)	6.3 (4.8)	53,572 (24,300)	43,973 (19,946)	37,507 (17,013)	11'8" (3,550)	29'2" (8,900)	10'0" (3,300)
15'9" (4,801)	5.4 (4.1)	46,086 (20,904)	34,141 (15,486)	29,729 (13,485)	11'3" (3,426)	29'11" (9,119)	10'6" (3,200)
15'0" (4,565)	6.8 (5.2)	60,186 (27,300)	50,706 (23,000)	44,092 (20,000)	12'6" (3,820)	31'3" (9,525)	11'2" (3,400)
16'8" (5,080)	6.8 (5.2)	66,319 (30,082)	45,803 (20,776)	39,763 (18,036)	12'6" (3,820)	32'2" (9,804)	11'2" (3,400)



Performance

Performance equals productivity, and Doosan provides both with the DL Series of wheel loaders. The impressive digging power allows the hardest materials to be tackled, and the high tractive power enables easy penetration.



Engines

All the DL wheel loaders have power plants that produce excellent torque and horsepower. High performance begins with the electronic common rail injection. The engine provides low emissions through an industry exclusive internal EGR system. This internal EGR system is mechanical and more reliable than external electronic EGR systems and lowers maintenance costs.



Automatic Transmission

The DL wheel loaders have two working modes. Power and economy. The power mode gives you optimal power, while economy mode provides fuel efficiency in load and carry operations. The fully automatic transmission has three settings: Manual Mode. Automatic Mode – 1st through 4th gear in which the transmission senses the load and drops down to first gear automatically. Automatic Mode – 2nd through 4th gear where the operator decides when to drop into first gear. The transmissions on the DL wheel loaders have optimally spaced gears for optimal performance on any work site.



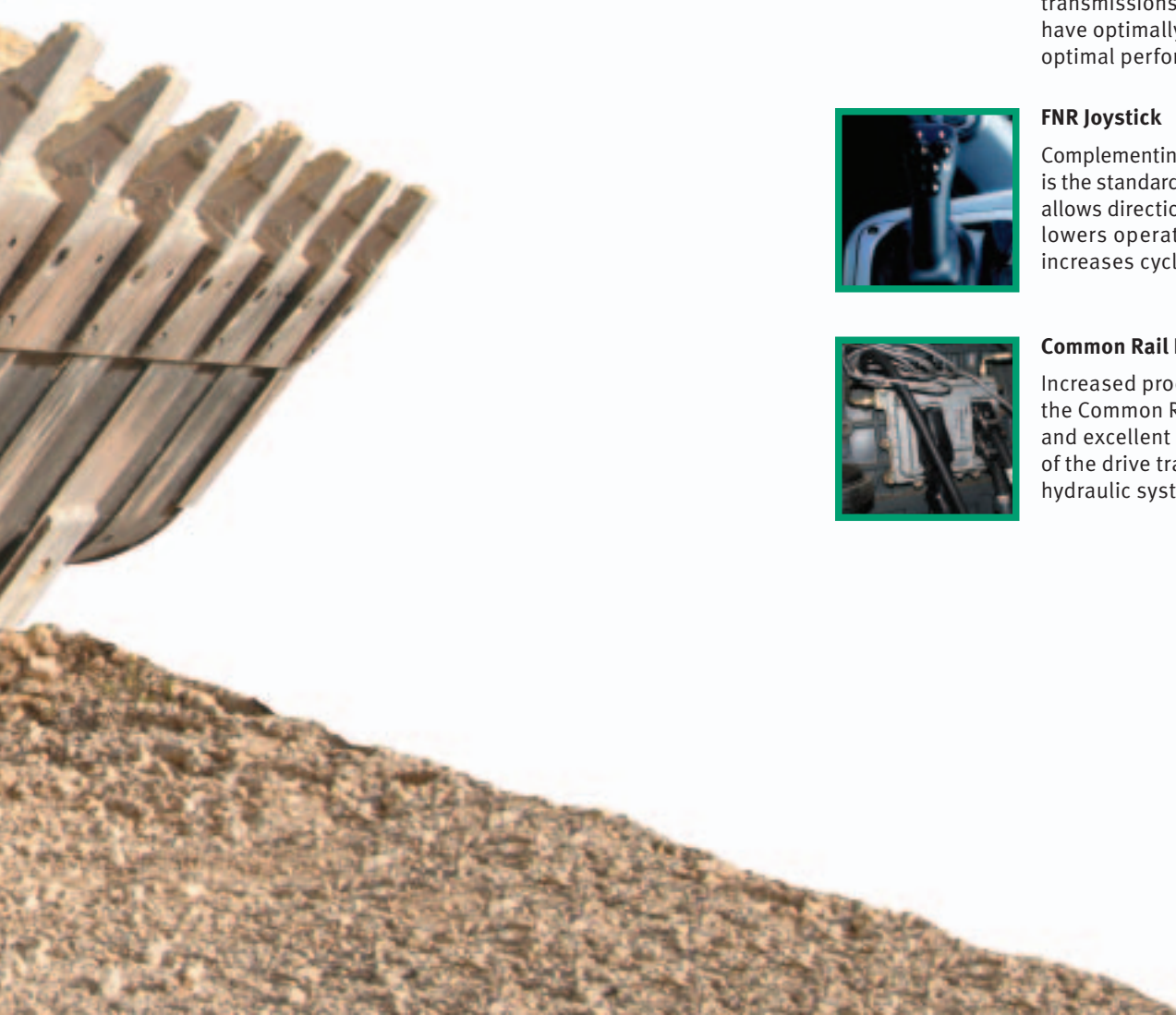
FNR Joystick

Complementing the transmission is the standard FNR joystick. This allows directional control which lowers operator fatigue and increases cycle times.



Common Rail Fuel System

Increased production with the Common Rail Fuel System and excellent synchronization of the drive train with the hydraulic system.





Performance (Cont'd)



Axle

The axles on the DL wheel loaders provide exceptional drawbar pull with standard limited slip, or torque-proportional differentials, to maximize traction in any application. Also, the self-adjusting brake piston ensure maximum performance through the life of the brakes.



Hydraulics

Whether you are talking about vane pumps or piston pumps, the high hydraulic flows of the DL wheel loaders allow fast front cycle times. The DL wheel loaders (up to the DL350) have vane pumps. The vane pumps are very durable and have low maintenance costs. The DL400 and up all have variable displacement piston pumps to maximize fuel consumption and allow multifunction operation of the front. All the DL wheel loaders have cycle times that are a perfect match between speed and controllability for optimal production.



Outstanding Productivity

The DL wheel loader gives the end user outstanding productivity. The impressive digging power allows the hardest material to be tackled and high tractive power enables easy penetration into the pile.





Reliability

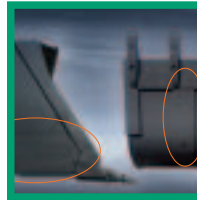
Doosan engineers reliability into every DL Series wheel loader.



Structural Components

Special attention was given to the design and manufacture of structural components.

To ensure long lifetime for the main structures, Doosan has used finite element techniques. All the structural components such as the chassis, the joints and the lifting arm have been designed using this method. After modeling, they are subjected to intensive laboratory and field-testing where extreme conditions are simulated and tested. Statistical data is established in order to constantly increase the level of reliability.



Front

All the DL Series buckets have extra reinforcement on the side plates and heels. All the pins on the front are 10 percent larger than previous models for longer pin and bushing life in the harshest of applications. The articulation joint has double roller bearings coupled with thick rigid frames for class-leading durability. Also the large center bearing for the driveline is sealed and has reinforced mounting for greater reliability.



Panels

Doosan expects the DL Series of wheel loaders to run hard and perform. All the panels and fenders are metal versus plastic or fiberglass. This will better protect major components in the harshest of applications.





Reliability (Cont'd)



Cooler Group

The large cooler groups on the DL wheel loaders come standard with a hydraulic cooler and aluminum transmission cooler. The cooler group is mounted on rubber mounts to withstand the vibration of any work site. The DL Series also has a heat exchanger to pull the heat out of the engine compartment.



Transmission Oil Cooler

A large transmission oil cooler ensures low transmission operating temperatures in the harshest of applications.



Axles

Reliability has been increased in the axles on the DL wheel loaders by improved internal oil flow which translates to lower running temperatures. Also, the brake disks have been repositioned to lower their rotational speed, thus increasing their life span. The longevity of the brake disks has also been increased through a self-adjusting brake piston. The material of the brake disks has been changed to metal for increased durability. This all translates to more uptime and lower operating costs.





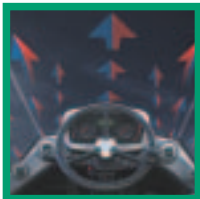
Comfort

Doosan engineers comfort into every DL wheel loader by providing the ultimate working environment for the operator. From class-leading cabin size to automatic climate control, the DL Series keeps the operator comfortable and more productive.



Cabin

Getting into the cabin is made easy with offset steps that allow easy three point entry. Once inside the cabin, operators can configure the optimal operational profile. With class-leading cabin size and a standard suspension seat, adjustable joystick arm rest, tilting and telescopic steering column, greatly increased A/C and heater venting, and a tightly sealed cabin make for ultimate comfort. Further increasing comfort are some of the lowest cabin noise levels in the industry.



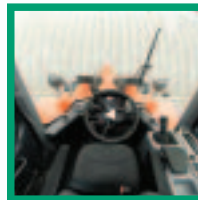
Air-Conditioning and Heating

The cabin environment of the DL Series is packed with features to ensure the operator is comfortable in any climate. The air conditioner system has automatic temperature control, along with extra venting to ensure sufficient airflow to the operator. The air conditioner system is double filtered for maximum clean airflow to the operator.



Ergonomics

The DL wheel loaders feature an ergonomically designed switch panel that aligns with the natural movement of the operator. Likewise the joystick and control levers are positioned to offer maximum operating access and comfort. Doosan recognizes the operator's responsibility to monitor all the critical systems with a single glance. The critical systems can be monitored from a centralized display directly behind the steering wheel. It includes an integrated FNR display along with gauges and lights for all the systems.



Visibility

Visibility is also key to operator comfort. There are no pillars on the front glass, and the DL Series has a sloping rear design, enabling 360 degree visibility.



Load Isolation System (LIS)

The optional load isolation system (LIS) is available for the roading applications. This system will isolate the movement of a loaded bucket from the machine for a smoother ride.



Maintenance

Doosan DL wheel loaders provide exceptional ease of maintenance for the technician.



Hoses and Electrical

The hoses on all DL wheel loaders have clean hose routing, making it easier to reach all the hose connections. The wiring on the DL wheel loaders is colored, and most electrical connections are labeled for easy identification.



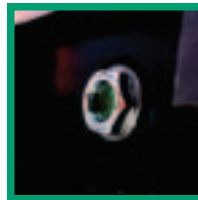
Grease Points

All the grease points on the DL wheel loaders can be reached from ground level without having to get under the machine, even the articulation joint of the rear axle.



Hydraulic Pressure Checks

Critical hydraulic systems can be easily monitored without removing a hydraulic fitting. This includes pilot, brake charge, convertor, and main relief. A remote port is also located on the hydraulic fan motor as well as both axles for service brake pressure, all increasing uptime.



Sight Glasses

All the sight glasses for major fluids are easily located for quick daily checks.



Filters

All the filters on the DL wheel loaders have plenty of work area around them so they are easily reached during routine maintenance. Filter materials have been greatly improved to increase maintenance intervals and longevity of the major components.



Solid State Components

The solid state electrical components for the DL wheel loaders are located inside the controlled environment of the cabin. The diagnostic connections for the engine ECU and transmission controller are located inside the electrical compartment. The technician can perform diagnostics on the major systems from inside the cabin.



Reversible Fan

The electronically-controlled, reversible fan is a variable speed, on-demand system. Temperature levels of the engine coolant and transmission oil are constantly monitored. The fan system on the DL wheel loaders is also reversible from inside the cabin for increased uptime and lower maintenance. The fan can swing out of the way to make cleaning the cooler group very simple.





Doosan Elite PLUS™ *

Doosan's Customer Commitment

Doosan is committed to helping you be more productive. Our long-standing reputation of quality equipment, parts and product support has continued to instill customer confidence because everything we do is with our customer in mind.

With Doosan Elite PLUS™, we take our customer commitment one step further by offering a full selection of product support solutions that help increase productivity, decrease downtime and improve your bottom line.

Doosan Elite PLUS™ is designed to protect and enhance resale value and help you control costs. Our repair-before-failure approach allows you to manage your cash no matter what equipment brand you own. Doosan Elite PLUS™ offers Doosan Elite Assurance™ Warranty, Doosan GPS Program, Doosan Component Analysis Program™, and All-Makes Parts and Attachments. Each one of these valuable programs can be used separately or as a comprehensive product support system for your entire fleet.

North American Parts Commitment

Because of Doosan's commitment to parts support, Doosan dealers are able to provide parts when customers need them. If a part is not available at the dealer, Doosan has major and minor components ready at our Parts Distribution Center in Atlanta, Georgia.

Dealers can easily find, order and track parts using our online Parts Books and a user-friendly ordering system. Your dealer can get you set up with online parts books, too. This is all part of the Doosan Elite PLUS™ parts commitment.

The Doosan Elite PLUS™ parts program reiterates Doosan's dedication to customers' immediate access to parts. It is all about maximizing your uptime.

48 Hour Parts Guarantee**

Rest assured with Doosan's industry-leading parts guarantee. Doosan is so confident that we can meet your parts needs we have the industry's only uptime focused parts guarantee. At Doosan, we guarantee that a machine debilitating part will be in your hands within 48 hours, or we'll pay for a rental. Our guarantee goes so much further because we know how critical uptime is. We know that the money you save on a free part doesn't compare to the money you'll lose if you can't finish your job.

Doosan REMAN

Doosan's REMAN program is another integral part of Doosan Elite PLUS™. Need to rebuild a component? Reduce downtime with Doosan REMAN. Is a new component too expensive? Save money with Doosan REMAN.

Savings from remanufactured components versus new can be up to 50% off the new price.

Product Offering

Doosan's REMAN program offers components including complete engines, long blocks, turbos, injection pumps, nozzles, starters, alternators, main hydraulic pumps, travel motors, and hydraulic cylinders.

Doosan Elite PLUS™ All-Makes Parts

You are busy, and Doosan understands that you don't have time to shop around for parts.

Doosan Elite PLUS™ All-Makes Parts provides customers a one-stop-shop for all their parts needs. Doosan has partnered with leading parts manufacturing companies and offers their products to end users no matter what part you need.

Because of Doosan's buying power, we are able to pass on competitive pricing and industry-leading products to the customer.

*At participating dealers only.

**The 48 Hour Parts Guarantee is subject to carrier delivery restrictions and/or government agency delays.



DL Series

Doosan Component Analysis Program™

Avert expensive repairs and downtime with the Doosan Component Analysis Program™ (DCAP™). Through simple, periodic fluid analyses, we can check for metal particles and contaminants to measure performance, interpret trends of components and detect mechanical problems. And, we can do it on any piece of heavy equipment you operate, even if it's not a Doosan.

Participating in the DCAP™ will give you the peace of mind that your equipment will keep working as hard as you do.

- Lower your repair costs
- Control your expenses
- Increase fluid change intervals
- Manage your repairs and budget on your terms

Doosan's GPS Program

Doosan's GPS Program is a Total Fleet Management System that will lower your operating costs.

Doosan's GPS provides three-tier protection:

- You are the first line of defense by monitoring your own GPS-equipped fleet.
- Your trusted dealer provides the second line of defense by monitoring your machine and assisting with any needs you may have.
- Doosan provides the last line of defense by monitoring all GPS-equipped machines on a daily basis.

All three tiers have access to the information through any Internet capable device (computer, cell phone or PDA).

Doosan Elite Assurance™ Warranty

Your new Doosan machine already includes a standard warranty of 12 months or 1,500 hours, whichever comes first.

Do you want more assurance? Extend your warranty when you purchase a new unit or anytime during the standard warranty term.*

The Doosan Elite Assurance™ Warranty makes good business sense because you protect your cash flow with planned expenses and customize the coverage to fit your needs.

Doosan Elite Assurance™ Used Coverage

At Doosan, we want to partner with you to help you manage your entire fleet. Doosan's Used Coverage backs all Doosan and non-Doosan equipment with a warranty that gives customers the peace of mind they need to run a more profitable business.

Any Doosan or non-Doosan machine that is less than four years old and has less than 4000 hours qualifies for this program.

Choose your coverage:

- Power Train
- Power Train Plus Hydraulic

Choose from three terms:**

- 6 months (750 hours)
- 12 months (1500 hours)
- 24 months (2500 hours)

Remember, Doosan makes it easy. Any equipment brand is eligible for used coverage.

*Any machine with less than 60 days base warranty remaining is eligible for new equipment coverage extension. A physical inspection and current oil sample reports are required.

**\$500 deductible applies. Years and hours of extension are from start date of original standard warranty.





M-DL-MP (12/11)

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For more information visit www.doosanequipment.com



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