



# 7 Series Forklifts

Heavy Forklift - 40,000 to 55,000 lb Series

EPA Tier IV / Euro Stage IV



Lifting Your Dreams

# Doosan

## A name to be proud of

### **The foundation on which Doosan has built its century of success is the trust in its people.**

Doosan's management philosophy has always been "people first".

"Business is not meant to make profits, but to help people grow."

—Late Too-Pyung Park, First Chairman

We believe this value drives our future growth and it continues to spur corporate development with global competitiveness.

### **Doosan – the oldest, but the fastest growing company**

Doosan holds the record for having the longest business history in Korea since its inauguration in 1896. We are also the fastest growing company, with steady growth rates over the years and reaching our fastest pace in the past 10 years.

### **Doosan – the global Infrastructure Support Business (ISB)**

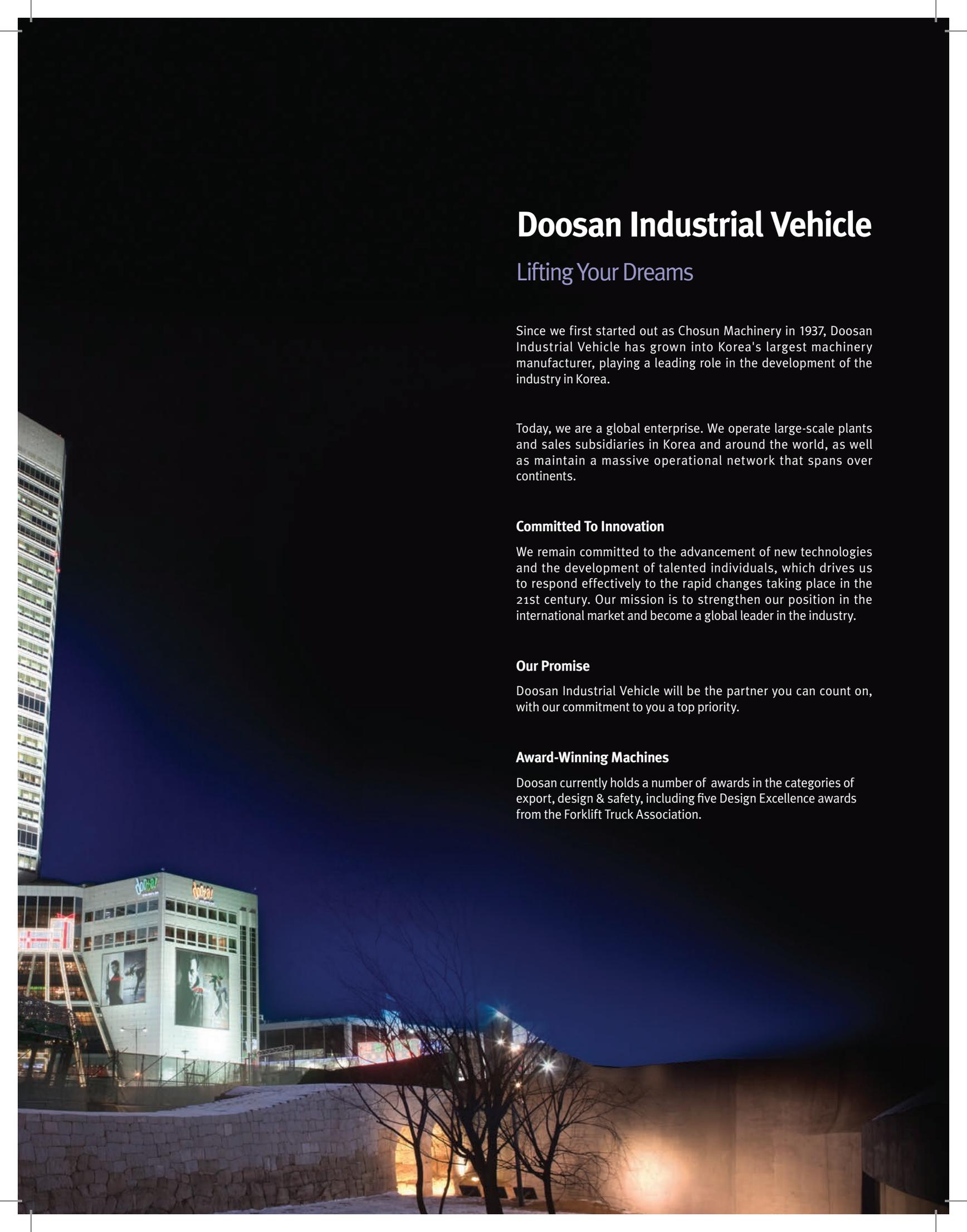
Doosan has achieved an excess of 90% of its sales within the ISB sector through vigorous reorganization of its business portfolio since 1998. Prior to the transformation in the late 90s, 70% of our business was concentrated on consumer goods, but we have successfully transformed our business DNA into an ISB, that constructs and reinforces social infrastructure.

### **Doosan – surging as a global company**

Doosan has become a global leader in the ISB by providing communities across five continents with the fundamental solutions, tools and structures they need to advance their societies.

With over 43,000 employees in 38 different countries, and 50% of its human resources being locally employed, Doosan is truly a global company.





# Doosan Industrial Vehicle

## Lifting Your Dreams

Since we first started out as Chosun Machinery in 1937, Doosan Industrial Vehicle has grown into Korea's largest machinery manufacturer, playing a leading role in the development of the industry in Korea.

Today, we are a global enterprise. We operate large-scale plants and sales subsidiaries in Korea and around the world, as well as maintain a massive operational network that spans over continents.

### Committed To Innovation

We remain committed to the advancement of new technologies and the development of talented individuals, which drives us to respond effectively to the rapid changes taking place in the 21st century. Our mission is to strengthen our position in the international market and become a global leader in the industry.

### Our Promise

Doosan Industrial Vehicle will be the partner you can count on, with our commitment to you a top priority.

### Award-Winning Machines

Doosan currently holds a number of awards in the categories of export, design & safety, including five Design Excellence awards from the Forklift Truck Association.

# 7 Series Highlights..

- A New Generation of Doosan's own Diesel Engines - superb performance and high power output.
- Diesel Oxidation Catalyst(DOC) and Selective Catalytic Reduction(SCR) system - meets and exceeds the EPA Tier IV and Euro Stage IV emission regulations.
- Rugged Reliability - a major part of Doosan's ethos for all of its products.
- A Strong, Rigid Frame and Powertrain - ensures that Doosan is the best choice for all applications.
- Zeus Cabins - excellent visibility and superior comfort for the operator.
- Reduced Maintenance - extended service interval means increased uptime and reduced servicing cost.

## **DL08P engines and Doosan's reliable components**

Doosan's 7.6 liter engine is one of the most powerful and clean burning engines available. DL08P engine provides high-end torque at low rpms, reduced fuel consumption, and fully meets EPA Tier IV / Euro Stage IV emission regulations without a Diesel Particulate Filter (DPF). Combined with our signature semi-permanent heat treated oil cooled disc brakes, it ensures improved productivity and reduced cost of maintenance.

## **Reliable Automatic Transmission**

The transmission is notably smooth and the gear ratio is optimized for heavy lifting. The seamless shifting results in a sizable difference in operator comfort. In addition, the traction force is suited for all working conditions, thanks to the CANbus information exchange technology. The combination of these features enables the truck to maintain high speed under all conditions.

## **Load Detection System**

By detecting the presence of the load, the Load Detection System channels surplus power to the drivetrain to ensure a smooth and efficient operation. The Bosch-Rexroth piston pump with Closed Center Load Sensing (CCLS) technology is installed not only to conserve energy, but to provide superb comfort to the operator and to increase durability of the engine and hydraulic systems.

## 7 Series Forklifts

40,000 to 55,000 lb Series



### Comfortable & Convenient Operator Compartment

Designed to provide greater rigidity and comfort, the Zeus Cabin offers outstanding visibility, a clear dashboard and high quality interior, along with excellent heating and air conditioning.

### Extended Safety with OSS (Operator Sensing System)

Seat belt warning light reminds operator to fasten seat belt.

When the operator leaves the seat :

- Truck will not move forward or backward.
- Lifting and Lowering functions are disabled.
- Tilt function will be locked.
- Alarm will sound if parking brake is not applied.

### Meets Emission Regulation (Tier IV & Stage IV) with SCR + DOC System

- Extended SCR cleaning interval means increased uptime and reduced servicing cost.
- No ash cleaning or changing needed.



## Greater durability and easier maintenance.

Doosan's powerful, electronically controlled DL08P engine delivers excellent fuel efficiency. Combined with an automatic transmission and driveaxle, the new inhouse diesel engine provides greater productivity and durability for the Doosan heavy forklifts.

Not only that, Doosan's innovative technology with Diesel Oxidation Catalyst (DOC) and Selective Catalytic Reduction (SCR) meets all emission regulations.

Doosan guarantees the highest quality for its engines and components, since it manufactures all of its diesel engines that go into a Doosan forklift, thus offering the best deals in parts and service at the most competitive prices.

A robust design and the heavy-duty build quality ensure that Doosan's 7-series is tough enough for any application.

The maintenance-free Oil-cooled Disc Brake system ensures maximum up-time, less damage, as well as zero maintenance costs for the end user.

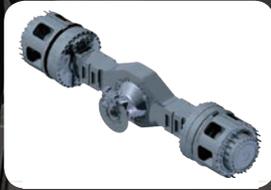


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### Reliable Powertrain

Dependable driveaxle, transmission, brakes and powertrain components ensure long lasting durability. The electronically controlled transmission provides the optimum gear ratio at any speed and in all situations.



### Durable Steeraxle

An I-beam steeraxle adds greater strength to turns and the tapered roller bearings increase rigidity, durability and stability of the machine.



### Anti Slip Step Plate

Increases safety upon entry and exit, especially in inclement weather.



### Power Tilt Cab

The power tilt cab and the wide rear hood opening allow easy access to key drivetrain components.



### Easy Access to Steeraxle Grease Port

The remote access grease port makes it easy to perform maintenance on the steeraxle.



### Hydraulic Motor Driven Remote Cooling Fan

The cooling fan adjusts to the engine speed and provides maximum cooling capacity with minimum energy loss.



### LED Lights

LED lighting provides greater visibility in dark conditions and lasts much longer than conventional light bulbs.



### All-in-one Electronic Inch & Brake Pedal

Doosan's all-in-one pedal enables the operator to maneuver precisely while maintaining higher engine revs for hydraulic functions. The red control button lets the operator seamlessly regulate speeds with the brake while lifting at full power.





## High Power, Fuel Efficient Performance.

Powerful and fuel efficient, Doosan's electronically controlled DL08P engine, combined with top-notch transmission and oil-cooled disc brakes (ODB) provide excellent levels of productivity, durability and the best value for the money.



### Doosan 7.6 Liter Diesel Engine

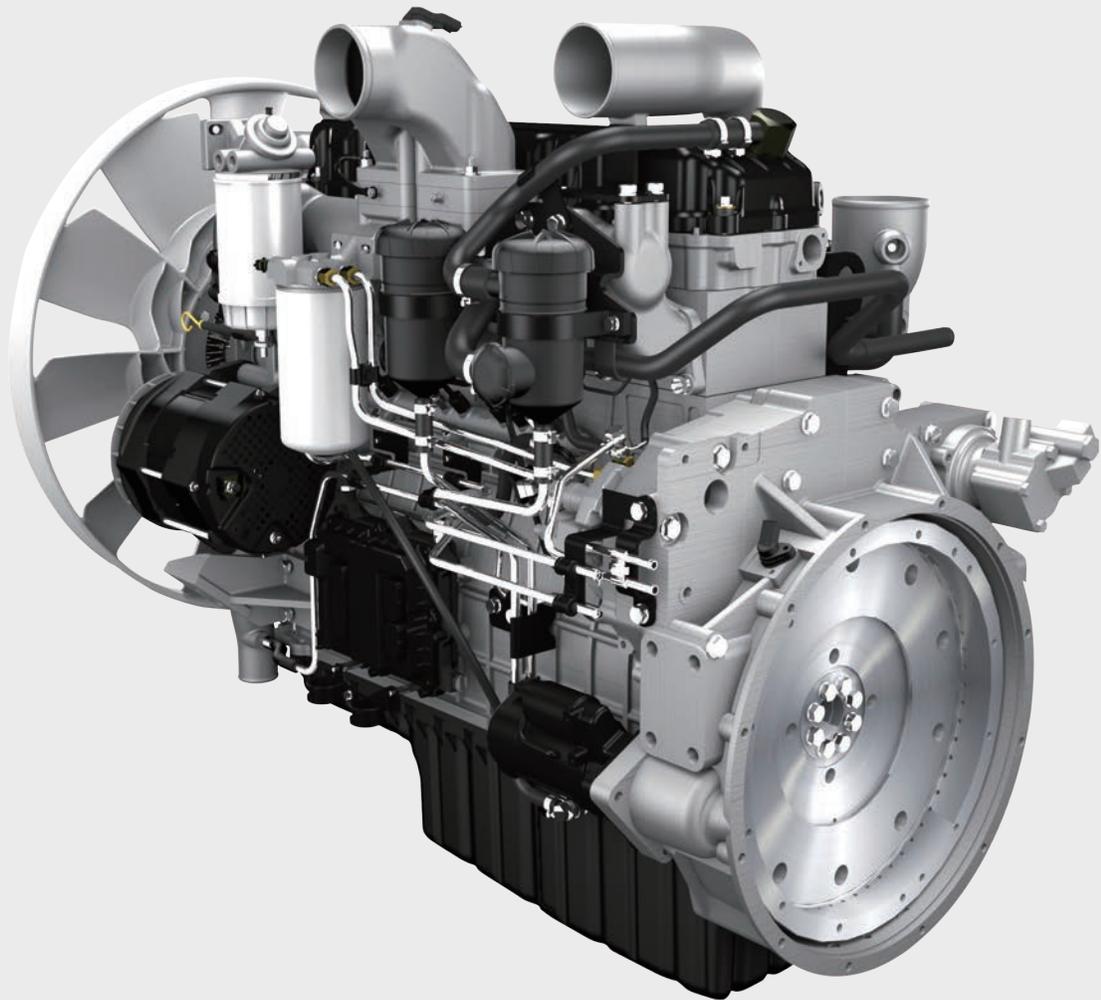
Doosan 7.6 liter Diesel Engine offers high power output and maximum torque, maintaining its best performance in the most challenging conditions for all kinds of applications.

- Advanced fuel injection system: The advanced fuel injection system enables accurate fuel injection control through its high pressure common rail. This modern fuel technology of Doosan's 7.6 liter Diesel Engine improves performance and fuel efficiency, while reducing emissions, noise and vibration.

- Variable Geometry Turbocharger (VGT) : Designed to maintain an effective aspect ratio of the turbo, making smart adjustments as conditions change. By altering the geometry of the turbine housing as the engine accelerates, the turbo's aspect ratio can be maintained at its optimum. Because of this, VGT has a minimal amount of lag, a low boost threshold, and superb efficiency at higher engine speeds.

Category	Unit	Doosan	
Model	-	DV180S-7	DV250S-7
Engine	-	Doosan DL08P	
Rated Output	hp/rpm	246.5 / 2,100	285.9 / 2,100
Max. Torque	lb.ft/rpm	853 / 1,300	911 / 1,300
No. of Cylinders	-	6	
No. of Cycle	-	4	
Displacement	cc	7,640	

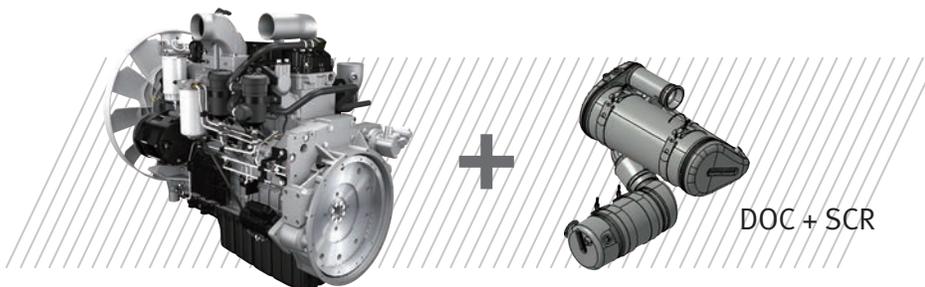




### Aftertreatment System

- Diesel Oxidation Catalyst (DOC) : The primary function being the oxidation of CO and unburned hydrocarbons, while activating hydrocarbon oxidation, it can also be used to generate exotherms required for downstream components.
- Selective Catalyst Reduction (SCR) System : Technology that uses a Diesel Exhaust Fluid (DEF) and a catalytic converter to significantly reduce NOx emissions.

\* Needs SCR cleaning process every 150 hrs. SCR Cleaning is available anytime with its switch operation.



# Eco-Friendly and more...

Doosan's unique and innovative Ultra-Low Particulate Matter Combustion system uses a Selective Catalytic Reducer (SCR) and a Diesel Oxidation Catalyst (DOC). This is the most modern and reliable system available and complies to all emission regulations.

The absence of Diesel Particulate Filters(DPF) ensures maximum up-time and minimum maintenance cost.

Doosan meets all regulations and emissions standards to protect the environment and promote a greener future.

## What is the EEA & EPA?

- EEA : European Environment Agency
- EPA : Environment Protection Agency

The EEA and EPA are the departments of the European Union and the United States that is responsible for writing and enforcing regulations based on laws to protect human health and the environment.

Directive 1999/94/EC requires the reduction of emissions, especially Particulate Matter(PM) and Nitrogen Oxides(NOx), in non-road diesel engine vehicles. The different stages of the directive are based on engine power and are designed to gradually phase in new levels of requirements.

## The Evolution of Off-Highway Diesel Emissions

The EPA Tier IV & EU Stage IV regulations came into effect in 2014 for engines over 130kW. Currently, both PM and NOx emissions of off-highway diesel engines are required by law to be reduced by 90% from the previous standards (EPA Tier III / EU Stage IIIA).

## Doosan's green technology meets Tier IV(Stage IV) emissions regulations

- Exhaust Gas Reduction (EGR)
- Diesel Oxidation Catalysts (DOC) : Oxidizing HC, CO, SOF and Converting NO into NO2
- Selective Catalyst Reduction (SCR) : Reducing Nox
- Diesel Exhaust Fluid(DEF) : Helps reduce Ammonia

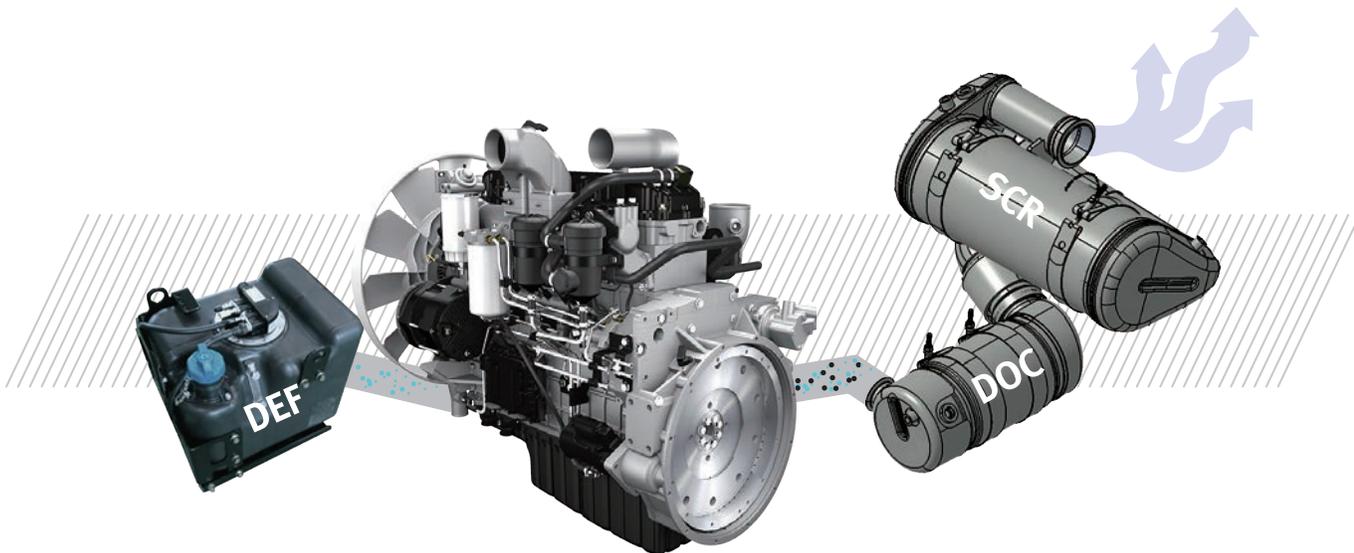
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[NOx+HC] PM  
NOx/HC/PM  
P/I : Phase In  
P/O : Phase Out

		2008	2009	2010	2011	2012	2013	2014	2015	
North America	19≤kW↔37	Tier IV Interim [7.5]/0.3					Tier IV Interim [4.7]/0.3	Tier IV [4.7]/0.03		
	37≤kW↔56	Tier III [4.7]/0.4				Tier IV Interim 3.4/0.19/0.02		Tier IV 0.40/0.19/0.02		
	56≤kW↔75	Tier III [4.7]/0.3								
	75≤kW↔130	Tier III [4.7]/0.2				Tier IV Interim 2.0/0.19/0.02				
	130≤kW↔560									
Europe	19≤kW↔37	Stage IIIA [7.5]/0.6								
	37≤kW↔56	Stage IIIA [4.7]/0.4					Stage IIIB [4.7]/0.025			
	56≤kW↔75	Stage IIIA [4.0]/0.3					Stage IIIB 3.3/0.19/0.025			Stage IV 0.4/0.19/0.25
	75≤kW↔130	Stage IIIA [4.0]/0.2					Stage IIIB [2.0]/0.025			
	130≤kW↔560									



# New Zeus Cabin

## Comfort + Productivity

The New Zeus Cabin provides the operator not only great comfort, but also higher productivity with its ergonomically design features.

The quality of Cabin is guaranteed to be the best of Doosan.

### Ergonomic Design

- All switches are positioned for optimal operator convenience.
- Extremely comfortable suspension seat.
- Ergonomic parking lever on the left side of the seat.

### Spacious Leg Room and Operator Comfort

- The wide-open floorboard provides operators with plenty of leg space to make entry and exit a breeze.
- Low Noise Level and Low Vibration Level.
- Telescopic Steering Column : Infinitely adjusts to a wide range for operators of all sizes.

### Improved Visibility

- Operator seat centered for better visibility.
- Wide viewing angle without distortion.



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### 5" Full Color Information Center

- DEF warning, DEF level gauge, SCR cleaning request, SCR cleaning inhibit, Engine RPM and Engine check lamp keeps operator aware of machine's operating and maintenance conditions.



### Convenience Package

- Deck mounted control valve levers simplify hydraulic actuation. Convenience tray keeps paperwork and supplies organized and handy.



### Other Features

- Heater
- Air Conditioner
- Panoramic Mirror
- CD or MP3 Player
- Front & Rear View Camera
- Defrost Fan
- Rear Grab Bar with Horn
- Siren & Microphone
- Air Compressor

# Dependable

## Quality and Service

The ownership of a Doosan forklift comes with a high quality, responsive customer support team.

As a Doosan customer, your authorized factory-trained dealer will provide the best after-sales service and support. All are backed by Doosan's own customer service center. In addition, Doosan's excellent parts fill rate will ensure minimal downtime.

The Doosan network starts with your local dealer and extends to a national team of highly qualified and experienced personnel, ready to support a wide array of material handling needs.



# Standard Features and Option Availability

Safety	Standard	Option
Direction Lever Function	☒	
Operation Sensing System (OSS)	☒	
Anti Cinching Orange Seat Belt	☒	
Autoshift Controller	☒	
Emergency Switch	☒	
Panoramic Rear View Mirror	☒	
Combination Lamps	☒	
Tilt Forward 6° Warning Alarm	☒	
Back-up buzzer	☒	
Side Mirrors with Heat rays	☒	
Weight Scale(Load Cell)		☒
Siren and Microphone		☒
2 Front 1 Rear View Camera		☒
Rear View Camera (w/ Steer tire angle)		☒
Strobe Light (Amber / Red, LED)		☒
Ground Speed Control		☒
Productivity	Standard	Option
Electric Controlled TCI (Turbo Charged Intercooler) Doosan Engines	☒	
Pedal Location (Accelerator, Brake and Inching)	☒	
All in one electronic Brake and Inching Pedal	☒	
Rear Grab Bar (w/ Horn)	☒	
2 Front LED Lights on Mast (DV180S-7 only)	☒	
4 Front LED Lights on Mast (DV250S-7 only)	☒	
2 Rear Lights on Counterweight		☒
Ergonomics	Standard	Option
Telescopic Steering column	☒	
Integrated Instrument Panel	☒	
Seat - Suspension w/ Heat Rays	☒	
Easy to Service	☒	
- Integrated Electric Components (Relays and Fuses)		
- Automatic Tilttable OPC		
- Wide Hood Open Range		
Full Cabin (ZEUS)	☒	
- Wide Front and Rear View		
- Low noise & Low Vibration Level		
- Automatic Tilttable		
- Front, Rear & Top Wiper		
- CD & MP3 Player		
- Sun Visor		
Heater		☒
Air Conditioner		☒
Steering Knob		☒
Sound Suppression (Only for DV180S-7)		☒
Air Compressor		☒
Durability	Standard	Option
Waterproof connectors	☒	
Dual Element Air Cleaner	☒	
Rigid Driveaxle (w/ ODB)	☒	
Full Autoshift Transmission	☒	
Environment	Standard	Option
Emission Regulation (Tier IV and Stage IV)	☒	
ISO 9001 / ISO 14001	☒	
Homologation	Standard	Option
UL		☒
CE		☒

\* Other options are also available. Please ask your local Doosan representative for more details.

Oil-Cooled Disc Brakes  
Operator Sensing System  
**EQUIPPED**



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